INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: January 24, 2006

RE: Louis Dreyfus Agricultural Industries, LLC / 085-21297-00102

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:
(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

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(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNTVOP.dot 1/10/05

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NEW SOURCE CONSTRUCTION
And
PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Louis Dreyfus Agricultural Industries LLC
East of SR 15 between CR 700 S and CR 800 S
Claypool, Indiana 46510

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T085-21297-00102	
Issued by: Paul Dubenetzky Paul Dubenetzky, Assistant Commissioner Office of Air Quality	Issuance Date: **January 24, 2006** Expiration Date: **January 24, 2011**

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Remainder of page left blank intentionally.

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee has submitted an application for construction and operation of a refined bleached soybean oil (RB Oil), soybean salad oil, soybean meal, and biodiesel manufacturing plant. It will have a capacity to crush 1,686,300 tons of soybeans to manufacture the various products. The soybean crush plant will produce enough soybean oil to produce 80 million gallons of soybean oil. The company may purchase up to 80 million gallons of soybean oil from the outside vendors. The plant will produce a maximum of 80 million gallons of biodiesel and a maximum of 80 million gallons of refined oil products (salad oil or RB Oil).

Responsible Official:	Bradley Johannes, Vice President
Source Address:	East of SR 15 between CR 700 S and CR 800 S, Claypool, Indiana 46510
Mailing Address:	4800 Main, Suite 107, Kansas City, MO 64112
General Source Phone Number:	Not Available
SIC Code:	2075, 2079 & 2869
County Location:	Kosciusko
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Minor Source, under PSD Rules Major Source, Section 112 of the Clean Air Act Nested Source with Biodiesel process Part as One of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices to be constructed in 2006:

(a)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A030000	Truck Dump No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020000	Truck Dump No. 2	360	Grain Receiving Baghouse	Stack AF-1
A030100	Discharge Conveyor No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020100	Discharge Conveyor No. 2	360	Grain Receiving Baghouse	Stack AF1
A040000	Bean Receiving Leg No. 1	360	Grain Receiving Baghouse	Stack AF-1
A050000	Bean Receiving Leg No. 2	360	Grain Receiving Baghouse	Stack AF-1

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A170100	Screenings Tank Feed Conveyor	5	Grain Receiving Baghouse	Stack AF-1
A010000	Rail Collection Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A070000	Screener No. 1	360	Grain Receiving Baghouse	Stack AF-1
A060000	Screener No. 2	360	Grain Receiving Baghouse	Stack AF-1
A010090	Rail Scale Dump	330	Grain Receiving Baghouse	Stack AF-1
A010100	Rail Scale Discharge Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A150100	Cross Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A120100	Cross Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A151000	Discharge Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A121000	Discharge Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A153000	Day Bin Leg	360	Grain Receiving Baghouse	Stack AF-1
A160100	Feed Day Tank Conveyor	360	Grain Receiving Baghouse	Stack AF-1
AF-1 A20000	Grain Receiving Baghouse	21,900 acfm @ 0.005 grain/acf outlet gr loading		Stack AF1
A160000	Day Bin Vent	192.5	Prep exhaust baghouse	Stack AF-3
A170000	Screenings Tank	5	Prep exhaust baghouse	Stack AF-3
A170300	Screenings Recycle Leg	5	Prep exhaust baghouse	Stack AF-3
A170400	Screenings Reclaim Conveyor	5	Prep exhaust baghouse	Stack AF-3
B011300	Bean Weigh Scale	192.5	Prep exhaust baghouse	Stack AF-3
B310000	Screenings Weight Belt	5	Prep exhaust baghouse	Stack AF-3
B310300	Destoner	5	Prep exhaust baghouse	Stack AF-3
B011200	VSC Feed Leg	192.5	Prep exhaust baghouse	Stack AF-3
B160300	VSC Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
B010100	Whole Bean Aspirator No 1	192.5	Prep exhaust baghouse	Stack AF-3
B020100	Whole Bean Aspirator No 2	192.5	Prep exhaust baghouse	Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
B010900	Whole Bean Aspirator Cyclone	192.5	Prep exhaust baghouse	Stack AF-3
B030800	Conditioned Bean Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
A152000	West Bin Cross Conveyor 1-3	360	Prep exhaust baghouse	Stack AF-3
A122000	East Bin Cross Conveyor 4-6	360	Prep exhaust baghouse	Stack AF-3
A130100	West Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
A100100	East Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
B030900	Hull Collection Conveyor	0.02	Prep exhaust baghouse	Stack AF-3
E130200	Screening Refining Conveyor	9.6	Prep exhaust baghouse	Stack AF-3
E130000	Hull Screener No.1	9.6	Prep exhaust baghouse	Stack AF-3
E150000	Hull Screener No.2	9.6	Prep exhaust baghouse	Stack AF-3
E130100	Secondary Aspirator No 1	9.6	Prep exhaust baghouse	Stack AF-3
E150100	Secondary Aspirator No 2	9.6	Prep exhaust baghouse	Stack AF-3
E160000	Secondary Aspirator Cyclone	9.6	Prep exhaust baghouse	Stack AF-3
E070300	4 Hour Hull Tank	9.6	Prep exhaust baghouse	Stack AF-3
E070100	Pellet Mill / Conditioner	9.6	Prep exhaust baghouse	Stack AF-3
E080000	Pellet Cooler	9.6	Prep exhaust baghouse	Stack AF-3
E090000	Pellet Cooler Cyclone	9.6	Prep exhaust baghouse	Stack AF-3
E050200	Hull Hammer Mill Feeder	9.6	Prep exhaust baghouse	Stack AF-3
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G140000	Hull Pellet Rail Loadout	9.6	Prep exhaust baghouse	Stack AF-3
G050100	Pelleted Hulls Leg	9.6	Prep exhaust baghouse	Stack AF-3
G050200	Pelleted Hulls Storage Conveyor	15	Prep exhaust baghouse	Stack AF-3
E070400	Hull Receiver Cyclone	125	Prep exhaust baghouse	Stack AF-3
AF-3 G100000	Prep exhaust baghouse	29,500 acfm		Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
		@ 0.005 grain/acf outlet grain loading		
G060000	Pelleted Hulls Truck Loadout		Hull Bin Filter	
G080000	Ground Hulls Truck Loadout		Hull Bin Filter	

(b)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
G070300	Truck Meal Load out Feed Conveyor	300	Load out baghouse	Stack AF2
G070500	Truck Load out No. 1 Conveyor	330	Load out baghouse	Stack AF2
G060500	Truck Load out No. 2 Conveyor	330	Load out baghouse	Stack AF2
G150000	Truck Loader No.1	330	Load out baghouse	Stack AF2
G160000	Truck Loader No.2	330	Load out baghouse	Stack AF2
G060000	Pelleted Hull Load out Bin	148	Load out baghouse	Stack AF2
G070000	Meal Load out Bin	300	Load out baghouse	Stack AF2
G130000	Meal Bulk Weigh Scale (Rail)	330	Load out baghouse	Stack AF2
G170000	Rail Car Load out	330	Load out baghouse	Stack AF2
Stack AF2 G090000	Load out baghouse	38,000 acfm @ 0.005 grain/acf outlet grain loading		
C010600	Flake Collection Conveyor (9 flakers)	101.6	Flaker aspiration baghouse	Stack AF-4
C010000	Flaking Roll No 1	20.3	Flaker aspiration baghouse	Stack AF-4
C020000	Flaking Roll No 2	20.3	Flaker aspiration baghouse	Stack AF-4
C030000	Flaking Roll No 3	20.3	Flaker aspiration baghouse	Stack AF-4
C040000	Flaking Roll No 4	20.3	Flaker aspiration baghouse	Stack AF-4
C050000	Flaking Roll No 5	20.3	Flaker aspiration baghouse	Stack AF-4

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
C060000	Flaking Roll No 6	20.3	Flaker aspiration baghouse	Stack AF-4
C070000	Flaking Roll No 7	20.3	Flaker aspiration baghouse	Stack AF-4
C080000	Flaking Roll No 8	20.3	Flaker aspiration baghouse	Stack AF-4
C090000	Flaking Roll No 9	20.3	Flaker aspiration baghouse	Stack AF-4
AF-4 C110000	Flaker aspiration baghouse	24,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-4
B040000	Hulloosenator No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B0801000	Hulloosenator No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B130000	Hulloosenator No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B170000	Hulloosenator No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B050000	Cascade Dryer No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B090000	Cascade Dryer No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B140000	Cascade Dryer No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B180000	Cascade Dryer No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B210000	CCD Cyclone	192.5	Hot dehulling baghouse	Stack AF-5
B060000	Cracking Roll No.1	48.1	Hot dehulling baghouse	Stack AF-5
B100000	Cracking Roll No.2	48.1	Hot dehulling baghouse	Stack AF-5
B150000	Cracking Roll No.3	48.1	Hot dehulling baghouse	Stack AF-5
B190000	Cracking Roll No.4	48.1	Hot dehulling baghouse	Stack AF-5
B070000	Cascade Conditioner No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B110000	Cascade Conditioner No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B160000	Cascade Conditioner No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B200000	Cascade Conditioner No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B230000	CCC Cyclone	192.5	Hot dehulling baghouse	Stack AF-5

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
AF-5 B260000	Hot dehulling baghouse	60,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-5
E020300	Hammer Mill Mixing Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E010100	Meal L-Path Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E010300	Meal Hammer Mill Feed Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020200	Meal Hammer Mill Feeder No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030200	Meal Hammer Mill Feeder No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040200	Meal Hammer Mill Feeder No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020000	Meal Hammer Mill No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030000	Meal Hammer Mill No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040000	Meal Hammer Mill No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020100	Meal Hammer Mill Bin No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030100	Meal Hammer Mill Bin No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040100	Meal Hammer Mill Bin No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020300	Meal Hammer Mill Discharge Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020500	Meal Storage Discharge Conveyor	125	Meal Grinding Baghouse	Stack AF-6
E010390	Meal Leg	300	Meal Grinding Baghouse	Stack AF-6
G010000	Meal Bin No. 1	148	Meal Grinding Baghouse	Stack AF-6
G020000	Meal Bin No. 2	148	Meal Grinding Baghouse	Stack AF-6
G030000	Meal Bin No. 3	148	Meal Grinding Baghouse	Stack AF-6
G040000	Meal Bin No. 4	148	Meal Grinding Baghouse	Stack AF-6
AF-6 E110000	Mill Grinding Baghouse	22,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-6
B010000	VSC No. 1	96.25	VSC Cyclone	Stack S-1

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
B020000	VSC No. 2	96.25	VSC Cyclone	Stack S-1
B010500	VSC Air Heater	192.5	VSC Cyclone	Stack S-1
B010400	VSC Discharge Conveyor	192.5	VSC Cyclone	Stack S-1
B010300	Conditioner Bean Loop Path	192.5	VSC Cyclone	Stack S-1
B010700	VSC Cyclone	192.5		Stack S-1
B120000	Jet Dryer No. 1	96.25	Jet Dryer Cyclone No. 1A &1B	Stack S-1
B030000	Jet Dryer No. 2	96.25	Jet Dryer Cyclone No. 2A &2B	Stack S-1
B120100	Jet Dryer Cyclone No. 1A	96.25		Stack S-1
B120200	Jet Dryer Cyclone No. 1B	96.25		Stack S-1
B030100	Jet Dryer Cyclone No. 2A	96.25		Stack S-1
B030200	Jet Dryer Cyclone No. 2B	96.25		Stack S-1

(c)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
	Soybean oil extractor	196.5	Mineral oil absorber	Stack S-4
	One (1) set of evaporators		Mineral oil absorber	Stack S-4
	One (1) Desolventizer/toaster		Mineral oil absorber	Stack S-4
	One (1) set of water separators		Mineral oil absorber	Stack S-4
VS030000	Main Vent Condenser		Mineral Oil Absorber	Stack S-4
	One (1) hexane storage tank	20,000 gallons	Mineral Oil Absorber	Stack S-4
	One (1) soybean oil storage tank	235,000 gallons		
	Mineral oil absorber			Stack S-4
EX020000-1	DTDC Dryer Deck No. 1	156	DTDC Dryer Cyclone No. 1	Stack S-2
EX020000-4	DTDC Cooler Deck	149.7	DTDC Cooler Cyclone No. 1	Stack S-2
EX020000-2	DTDC Dryer Deck No. 2	156	DTDC Dryer Cyclone No. 2	Stack S-2
EX020000-3	DTDC Dryer Deck No. 3	156	DTDC Dryer Cyclone No. 2	Stack S-2

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
EX020400	DTDC Dryer Cyclone No. 1	42,600 scfm		Stack S-2
EX020500	DTDC Dryer Cyclone No. 2	42,600 scfm		Stack S-2

(d)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
TR010000	1st loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR020000	2nd loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR030000	3rd transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
VU010000	Vacuum group package	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
	Biodiesel Soy oil Absorber	156 gpm		Stack S-5
	Biodiesel Water Absorber	0.448 gpm		Stack S-5
BD010000	Biodiesel Day Tank #1	164,000 gals		
BD020000	Biodiesel Day Tank #2	164,000 gals		
BD030000	Biodiesel Storage Tank #1	164,000 gals		
BD040000	Biodiesel Storage Tank #2	164,000 gals		
BD050000	Biodiesel Storage Tank #3	164,000 gals		
BD060000	Biodiesel Storage Tank #4	164,000 gals		
GS010000	Glycerine Tank #1	40,900 gals		
GS020000	Glycerine Tank #2	40,900 gals		
LS010000	Methanol Storage Tank #1	19,400 gallons		
LS020000	Methanol Storage Tank #2	19,400 gallons		
LS030000	Methanol Storage Tank #3	19,400 gallons		
LS040000	Methanol Storage Tank #4	19,400 gallons		
LS050000	Methanol Storage Tank #5	19,400 gallons		

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
ES010000	Methoxide (catalyst) Storage	19,400 gallons		
ML010000	Biodiesel Loading Rack	1000 gallons per minute		

(e)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
SP010000 (B-1)	Main Boiler, natural gas fired and #2 fuel oil as back up fuel	220 MMBtu/hr	Low NOx burner and Flue gas recirculation	Stack S-3

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

Description	Capacity (gallons)	Control
Natural gas fired high pressure steam generator	9 MMBtu/hr	None
Clay Bin	10,800	Clay Bin Filter
Hull Bin	13,900 cu. ft	Hull Bin Filter
Silica Bin	<10,800	Silica Bin Filter
Bleaching Earth Bins	<10,800	Bleaching Earth Bins Filter
Salt Tank	<10,800	Filter
Filter Aid	<10,800	Filter
#2 fuel oil storage tank	29,500 gallons	None
Cooling tower	11,000 gpm	None
Three (3) Diesel Fire Pumps	575 BHP each	None
Paved and unpaved roads and parking lots with public access		None
Bean Storage Bin No. 1 thru 4	720 tons/hr	

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated hereunder, as well as other applicable local, state, and federal requirements.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-8(5)]

Pursuant to 326 IAC 2-1.1-8(5) (Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of the approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for modifications pursuant to 326 IAC 2.

B.5 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.6 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

(a) This permit, T085-21297-00102, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.7 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.8 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.9 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is

invalid shall not affect the validity of the remainder of the permit.

B.10 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.11 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ, copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.12 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form or its equivalent with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

B.13 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than July 1st of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ

on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.14 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:

(1) Identification of the individual(s), by job title, responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.15 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, may

require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.16 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ has issued the modification. [326 IAC 2-7-12(b)(8)]

B.17 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.18 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.19 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5 (6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.20 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, any additional information identified as being needed to process the application.

B.21 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue,
Indianapolis, Indiana 46204

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.22 Permit Revision under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.23 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b), (c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.24 Source Modification Requirement [326 IAC 2-7-10.5] [326 IAC 2-2-2]

(a) A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

(b) Any modification at an existing major source is governed by the requirements of 326 IAC 2-2-2.

B.25 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-17-3-2][IC13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to

assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.26 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.27 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)] [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due July 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section (BLT)), to determine the appropriate permit fee.

B.28 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

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SECTION C **SOURCE OPERATION CONDITIONS**

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c), which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply, shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2. 326 IAC 9-1-2 is not federally enforceable.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2 1-7-3(c) and (d), 326 IAC 1-7-4 and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of

326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.11 Maintenance of Continuous Opacity Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous opacity monitoring systems (COMS) and related equipment. For a boiler, the COMS shall be in operation at all times that the induced draft fan is in operation.

(b) All COMS shall meet the performance specifications of 40 CFR 60, Appendix B, Performance Specification No. 1, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5.

(c) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(d) Whenever a COMS is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader~~(s)~~, who may be an employee~~s~~ of the Permittee or an independent contractor~~s~~, to self-monitor the emissions from the emission unit stack.

(1) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.

(2) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) hours between each set of readings, until a COMS is online.

(3) Method 9 readings may be discontinued once a COMS is online.

(4) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.

(e) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 3-5, 40 CFR 60 and/or 40 CFR 63.

C.12 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification, which shall be submitted by the Permittee, does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment in accordance with applicable federal regulations and 326 IAC 3-5.

(c) The CEMS shall be operated at all times as specified in Section D, except during CEMS malfunctions, reasonable periods of necessary CEMS calibration or CEMS maintenance activities. CEMS calibration and maintenance activities shall be properly documented and shall be conducted pursuant to the standard operating procedures under 326 IAC 3-5-4(a).

(d) The Permittee shall keep records in accordance with 326 IAC 3-5-6(b) that includes the following:

(1) All documentation relating to:

(A) design, installation, and testing of all elements of the monitoring system; and

(B) required corrective action or compliance plan activities.

(2) All maintenance logs, calibration checks, and other required quality assurance activities.

(3) All records of corrective and preventive action.

(4) A log of plant operations, including the following:

(A) Date of facility downtime.

(B) Time of commencement and completion of each downtime.

(C) Reason for each downtime.

(e) In accordance with 326 IAC 3-5-7(5), the Permittee shall submit reports of continuous monitoring system instrument downtime, except for zero (0) and span checks, which shall be reported separately. The reports shall include the following:

(1) Date of downtime.

(2) Time of commencement.

(3) Duration of each downtime.

(4) Reasons for each downtime.

(5) Nature of system repairs and adjustments.

(f) Except where permit conditions streamline similar applicable requirements pursuant to 326 IAC 2-7-24, nothing in this permit shall excuse the Permittee from complying with 326 IAC 3-5.

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(c) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.15 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

within 180 days from the date on which this source commences operation.

The ERP does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the

approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.16 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the source must comply with the applicable requirements of 40 CFR 68.

C.17 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.19 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

(a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2007 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

C.20 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.21 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.22 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

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SECTION D.1 **FACILITY OPERATION CONDITIONS**

Facility Description [326 IAC 2-7-5(15)]:

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A030000	Truck Dump No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020000	Truck Dump No. 2	360	Grain Receiving Baghouse	Stack AF-1
A030100	Discharge Conveyor No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020100	Discharge Conveyor No. 2	360	Grain Receiving Baghouse	Stack AF1
A040000	Bean Receiving Leg No. 1	360	Grain Receiving Baghouse	Stack AF-1
A050000	Bean Receiving Leg No. 2	360	Grain Receiving Baghouse	Stack AF-1
A170100	Screenings Tank Feed Conveyor	5	Grain Receiving Baghouse	Stack AF-1
A010000	Rail Collection Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A070000	Screener No. 1	360	Grain Receiving Baghouse	Stack AF-1
A060000	Screener No. 2	360	Grain Receiving Baghouse	Stack AF-1
A010090	Rail Scale Dump	330	Grain Receiving Baghouse	Stack AF-1
A010100	Rail Scale Discharge Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A150100	Cross Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A120100	Cross Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A151000	Discharge Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A121000	Discharge Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A153000	Day Bin Leg	360	Grain Receiving Baghouse	Stack AF-1
A160100	Feed Day Tank Conveyor	360	Grain Receiving Baghouse	Stack AF-1
AF-1 A20000	Grain Receiving Baghouse	21,900 acfm @ 0.005 grain/acf outlet gr loading		Stack AF1
A160000	Day Bin Vent	192.5	Prep exhaust baghouse	Stack AF-3
A170000	Screenings Tank	5	Prep exhaust baghouse	Stack AF-3
A170300	Screenings Recycle Leg	5	Prep exhaust baghouse	Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A170400	Screenings Reclaim Conveyor	5	Prep exhaust baghouse	Stack AF-3
B011300	Bean Weigh Scale	192.5	Prep exhaust baghouse	Stack AF-3
B310000	Screenings Weight Belt	5	Prep exhaust baghouse	Stack AF-3
B310300	Destoner	5	Prep exhaust baghouse	Stack AF-3
B011200	VSC Feed Leg	192.5	Prep exhaust baghouse	Stack AF-3
B160300	VSC Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
B010100	Whole Bean Aspirator No 1	192.5	Prep exhaust baghouse	Stack AF-3
B020100	Whole Bean Aspirator No 2	192.5	Prep exhaust baghouse	Stack AF-3
B010900	Whole Bean Aspirator Cyclone	192.5	Prep exhaust baghouse	Stack AF-3
B030800	Conditioned Bean Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
A152000	West Bin Cross Conveyor 1-3	360	Prep exhaust baghouse	Stack AF-3
A122000	East Bin Cross Conveyor 4-6	360	Prep exhaust baghouse	Stack AF-3
A130100	West Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
A100100	East Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
B030900	Hull Collection Conveyor	0.02	Prep exhaust baghouse	Stack AF-3
E130200	Screening Refining Conveyor	9.6	Prep exhaust baghouse	Stack AF-3
E130000	Hull Screener No.1	9.6	Prep exhaust baghouse	Stack AF-3
E150000	Hull Screener No.2	9.6	Prep exhaust baghouse	Stack AF-3
E130100	Secondary Aspirator No 1	9.6	Prep exhaust baghouse	Stack AF-3
E150100	Secondary Aspirator No 2	9.6	Prep exhaust baghouse	Stack AF-3
E160000	Secondary Aspirator Cyclone	9.6	Prep exhaust baghouse	Stack AF-3
E070300	4 Hour Hull Tank	9.6	Prep exhaust baghouse	Stack AF-3
E070100	Pellet Mill / Conditioner	9.6	Prep exhaust baghouse	Stack AF-3
E080000	Pellet Cooler	9.6	Prep exhaust baghouse	Stack AF-3
E090000	Pellet Cooler Cyclone	9.6	Prep exhaust baghouse	Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
E050200	Hull Hammer Mill Feeder	9.6	Prep exhaust baghouse	Stack AF-3
E050000	Hull Hammer Mill	9.6	Prep exhaust baghouse	Stack AF-3
E050100	Hull Hammer Mill Plenum	9.6	Prep exhaust baghouse	Stack AF-3
G140000	Hull Pellet Rail Loadout	9.6	Prep exhaust baghouse	Stack AF-3
G050100	Pelleted Hulls Leg	9.6	Prep exhaust baghouse	Stack AF-3
G050200	Pelleted Hulls Storage Conveyor	15	Prep exhaust baghouse	Stack AF-3
E070400	Hull Receiver Cyclone	125	Prep exhaust baghouse	Stack AF-3
AF-3 G100000	Prep exhaust baghouse	29,500 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-3
G060000	Pelleted Hulls Truck Loadout		Hull Bin Filter	
G080000	Ground Hulls Truck Loadout		Hull Bin Filter	
The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.				

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the units described in Condition D.1.2 except when otherwise specified in 40 CFR Part 60, Subpart DD.

D.1.2 New Source Performance Standards (NSPS) Grain Elevators [326 IAC 12] [40 CFR Part 60, Subpart DD]

Pursuant to 40 CFR Part 60, Subpart DD (Standards of Performance for Grain Elevators),

(a) On and after the date on which the performance test required to be conducted (within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup) by 40 CFR 60.8 is completed, the particulate matter emissions from the Grain receiving baghouse and Prep exhaust baghouse, which exhaust through Stacks AF-1 and AF-3, respectively, shall not exceed 0.01 gr/dscf and the gasses discharged shall not exceed zero percent (0 %) opacity.

(b) On and after the 60th day of achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall not cause to be discharged any fugitive emissions from:

(1) The truck unloading station or rail car unloading station which exhibits greater than five percent (5 %)opacity.

(2) Any grain handling operation, which exhibits greater than zero percent (0 %) opacity.

D.1.3 PSD Minor Limit for Particulate [326 IAC 2-2]

(a) The amount of soybeans processed shall be limited to less than 1,686,300 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

During the first twelve (12) months after startup of the soybean extraction process, the total amount of soybeans processed shall be limited such that the total soybean processed divided by the accumulated months of operation shall not exceed 140,525 tons up to a maximum total of 1,686,300 tons for the first twelve (12) months.

(b) The following facility's PM, and PM10 emissions rates shall be limited as follows:

Process	Control	PM Limit (lbs/hour)	PM_{10} Limit (lbs/hour)
Grain Receiving	Baghouse AF-1	0.939	0.939
Prep Area	Baghouse AF-3	1.26	1.26
Truck Receiving # 1 and #2 Fugitive		1.78	0.464
Rail Receiving Fugitive		0.576	0.140

The soybean usage limit in Condition D.1.3(a), and the PM/PM_{10} emissions limits in Conditions D.1.3(b), D.2.1, D.3.1, D.5.1, and D.6.1 are required to limit the potential to emit of PM/PM_{10} to less than 250 tons per 12 consecutive month period. Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

Compliance Determination Requirements

D.1.4 Particulate Control

(a) In order to comply with Conditions D.1.2, and D.1.3, baghouses AF-1 and AF-3, used for PM and PM_{10} control, shall be in operation and control emissions from all emission units exhausting to stacks AF-1 and AF-3 at all times when an emission unit that the baghouse controls is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.5 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11], and [40 CFR 60.303]

Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup of the grain receiving system, and prep system, the Permittee shall perform PM, PM_{10}, and opacity testing on baghouses AF-1, and AF-3, to verify compliance with Conditions D.1.2, and D.1.3 (b) utilizing methods as approved by the Commissioner.

These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM_{10} includes filterable and condensable PM_{10}. Testing shall be conducted in accordance with Section C- Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.6 Visible Emissions Notations

(a) Daily visible emission notations of Stacks AF-1, and AF-3 exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.7 Parametric Monitoring

The Permittee shall record pressure drop across baghouses AF-1 and AF-3, used in conjunction with the grain receiving system and prep system, at least once per day when the grain receiving system and prep system are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.8 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.9 Record Keeping Requirements

(a) To document compliance with Condition D.1.3(a), the Permittee shall maintain records of the quantity of soybeans processed.

(b) To document compliance with Condition D.1.6, the Permittee shall maintain records of visible emission notations of the stack exhaust from Stacks AF-1, and AF-3.

(c) To document compliance with Condition D.1.7, the Permittee shall maintain records of the pressure drop across the baghouses.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.3(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). This is the same report as required in Conditions D.2.1(a) and D.3.1(a).

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SECTION D.2 **FACILITY OPERATION CONDITIONS**

Facility Description [326 IAC 2-7-5(15)]:

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
G070300	Truck Meal Load out Feed Conveyor	300	Load out baghouse	Stack AF2
G070500	Truck Load out No. 1 Conveyor	330	Load out baghouse	Stack AF2
G060500	Truck Load out No. 2 Conveyor	330	Load out baghouse	Stack AF2
G150000	Truck Loader No.1	330	Load out baghouse	Stack AF2
G160000	Truck Loader No.2	330	Load out baghouse	Stack AF2
G060000	Pelleted Hull Load out Bin	148	Load out baghouse	Stack AF2
G070000	Meal Load out Bin	300	Load out baghouse	Stack AF2
G130000	Meal Bulk Weigh Scale (Rail)	330	Load out baghouse	Stack AF2
G170000	Rail Car Load out	330	Load out baghouse	Stack AF2
Stack AF2 G090000	Load out baghouse	38,000 acfm @ 0.005 grain/acf outlet grain loading		
C010600	Flake Collection Conveyor (9 flakers)	101.6	Flaker aspiration baghouse	Stack AF-4
C010000	Flaking Roll No 1	20.3	Flaker aspiration baghouse	Stack AF-4
C020000	Flaking Roll No 2	20.3	Flaker aspiration baghouse	Stack AF-4
C030000	Flaking Roll No 3	20.3	Flaker aspiration baghouse	Stack AF-4
C040000	Flaking Roll No 4	20.3	Flaker aspiration baghouse	Stack AF-4
C050000	Flaking Roll No 5	20.3	Flaker aspiration baghouse	Stack AF-4
C060000	Flaking Roll No 6	20.3	Flaker aspiration baghouse	Stack AF-4
C070000	Flaking Roll No 7	20.3	Flaker aspiration baghouse	Stack AF-4
C080000	Flaking Roll No 8	20.3	Flaker aspiration baghouse	Stack AF-4
C090000	Flaking Roll No 9	20.3	Flaker aspiration baghouse	Stack AF-4

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
AF-4 C110000	Flaker aspiration baghouse	24,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-4
B040000	Hulloosenator No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B0801000	Hulloosenator No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B130000	Hulloosenator No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B170000	Hulloosenator No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B050000	Cascade Dryer No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B090000	Cascade Dryer No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B140000	Cascade Dryer No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B180000	Cascade Dryer No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B210000	CCD Cyclone	192.5	Hot dehulling baghouse	Stack AF-5
B060000	Cracking Roll No.1	48.1	Hot dehulling baghouse	Stack AF-5
B100000	Cracking Roll No.2	48.1	Hot dehulling baghouse	Stack AF-5
B150000	Cracking Roll No.3	48.1	Hot dehulling baghouse	Stack AF-5
B190000	Cracking Roll No.4	48.1	Hot dehulling baghouse	Stack AF-5
B070000	Cascade Conditioner No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B110000	Cascade Conditioner No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B160000	Cascade Conditioner No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B200000	Cascade Conditioner No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B230000	CCC Cyclone	192.5	Hot dehulling baghouse	Stack AF-5
AF-5 B260000	Hot dehulling baghouse	60,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-5
E020300	Hammer Mill Mixing Conveyor	148	Meal Grinding Baghouse	Stack AF-6

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
E010100	Meal L-Path Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E010300	Meal Hammer Mill Feed Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020200	Meal Hammer Mill Feeder No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030200	Meal Hammer Mill Feeder No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040200	Meal Hammer Mill Feeder No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020000	Meal Hammer Mill No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030000	Meal Hammer Mill No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040000	Meal Hammer Mill No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020100	Meal Hammer Mill Bin No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030100	Meal Hammer Mill Bin No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040100	Meal Hammer Mill Bin No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020300	Meal Hammer Mill Discharge Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020500	Meal Storage Discharge Conveyor	125	Meal Grinding Baghouse	Stack AF-6
E010390	Meal Leg	300	Meal Grinding Baghouse	Stack AF-6
G010000	Meal Bin No. 1	148	Meal Grinding Baghouse	Stack AF-6
G020000	Meal Bin No. 2	148	Meal Grinding Baghouse	Stack AF-6
G030000	Meal Bin No. 3	148	Meal Grinding Baghouse	Stack AF-6
G040000	Meal Bin No. 4	148	Meal Grinding Baghouse	Stack AF-6
AF-6 E110000	Mill Grinding Baghouse	22,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-6
B010000	VSC No. 1	96.25	VSC Cyclone	Stack S-1
B020000	VSC No. 2	96.25	VSC Cyclone	Stack S-1
B010500	VSC Air Heater	192.5	VSC Cyclone	Stack S-1
B010400	VSC Discharge Conveyor	192.5	VSC Cyclone	Stack S-1
B010300	Conditioner Bean Loop Path	192.5	VSC Cyclone	Stack S-1

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
B010700	VSC Cyclone	192.5		Stack S-1
B120000	Jet Dryer No. 1	96.25	Jet Dryer Cyclone No. 1A &1B	Stack S-1
B030000	Jet Dryer No. 2	96.25	Jet Dryer Cyclone No. 2A &2B	Stack S-1
B120100	Jet Dryer Cyclone No. 1A	96.25		Stack S-1
B120200	Jet Dryer Cyclone No. 1B	96.25		Stack S-1
B030100	Jet Dryer Cyclone No. 2A	96.25		Stack S-1
B030200	Jet Dryer Cyclone No. 2B	96.25		Stack S-1
The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.				

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 PSD Minor Limit [326 IAC 2-2]

The following facilities' PM, and PM_{10} emissions rates shall be limited as follows:

Process	Control	PM Limit (lbs/hour)	PM_{10} Limit (lbs/hour)
Load out	Baghouse AF-2	1.64	1.64
Jet Dryer/VSC	VSC cyclone and Jet dryers cyclones	4.93	3.35
Hot Dehulling	Baghouse AF-5	2.56	2.56
Flaker Aspiration	Baghouse AF-4	1.03	1.03
Meal Grinding	Baghouse AF-6	0.945	0.945
Truck load out Pellets/hulls #1 and 2 Fugitive		0.0545	0.0132
Truck Loadout Meal #1 and 2 Fugitive		4.46	2.72
Rail Car Loadout Meal Fugitive		4.46	2.72
Rail Car Loadout Pellets/Hulls Fugitive		0.0545	0.0132

The soybean usage limit in Condition D.1.3(a), and the PM/PM_{10} emissions limits in Conditions D.1.3(b), D.2.1, D.3.1, D.5.1, and D.6.1 are required to limit the potential to emit of PM/PM_{10} to less than 250 tons per 12 consecutive month period. Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.2.2 Particulate Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the following processes shall not exceed the limitations specified in the following table:

Process	Process Weight Rate (tons/hr)	PM Emission Limit (lbs/hr)
Truck Load out (Meal)	330	64.1
Truck Loadout (Pellets/Hulls)	330	64.1
Rail Loadout (meal)	330	64.1
Rail Loadout (Pellets/Hulls)	330	64.1
Jet Dryer/VSC	192.5	58.5
Hot Dehulling	192.5	58.5
Flaker Aspiration	182.9	57.5
Meal Grinding	148	55.3

Compliance Determination Requirements

D.2.4 Particulate Control

(a) In order to comply with Conditions D.2.1, and D.2.2, baghouses AF-2, AF-4, AF-5, AF-6; and the VSC and jet dryers cyclones, used for PM and PM_{10} control, shall be in operation and control emissions from all emission units exhausting to stacks AF-2, AF-4, AF-5, AF-6, and S-1 at all times when an emission unit that the baghouse or the cyclones control is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.2.5 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform PM and PM_{10} testing on baghouses AF-2, AF-4, AF-5, AF-6; and the VSC, and jet dryer cyclones to verify compliance with Condition D.2.1, utilizing methods as approved by the Commissioner.

These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM_{10} includes filterable and condensable PM_{10}. Testing shall be conducted in accordance with Section C- Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.6 Visible Emissions Notations

(a) Daily visible emission notations of Stacks AF-2, AF-4, AF-5, AF-6, and S-1 exhausts shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.7 Parametric Monitoring

(a) Alarms shall be operational on all cyclone's high level indicators. If an alarm sounds, the Permittee shall take appropriate response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(b) The Permittee shall record the pressure drop across baghouses AF-2, AF-4, AF-5, and AF-6, used in conjunction with the load out, flaking, hot dehulling, and meal grinding, processes, respectively, at least once per day when the load out, flaking, hot dehulling, and meal grinding processes are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take appropriate response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(c) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.2.8 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature,

flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.9 Record Keeping Requirements

(a) To document compliance with Condition D.2.5, the Permittee shall maintain records of visible emission notations of the stack exhaust from Stacks AF-2, AF-4, AF-5, AF-6, and S1.

(b) To document compliance with Condition D.2.6 (a), the Permittee shall maintain records of the alarm activation.

(c) To document compliance with Condition D.2.7 (b), the Permittee shall maintain records of the pressure drop across the baghouses.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

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SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
	Soybean oil extractor	196.5	Mineral oil absorber	Stack S-4
	One (1) set of evaporators		Mineral oil absorber	Stack S-4
	One (1) Desolventizer/toaster		Mineral oil absorber	Stack S-4
	One (1) set of water separators		Mineral oil absorber	Stack S-4
VS030000	Main Vent Condenser		Mineral Oil Absorber	Stack S-4
	One (1) hexane storage tank	20,000 gallons	Mineral Oil Absorber	Stack S-4
	One (1) soybean oil storage tank	235,000 gallons		
	Mineral oil absorber			Stack S-4
EX O20000-1	DTDC Dryer Deck No. 1	156	DTDC Dryer Cyclone No. 1	Stack S-2
EX O20000-4	DTDC Cooler Deck	149.7	DTDC Cooler Cyclone No. 1	Stack S-2
EX O20000-2	DTDC Dryer Deck No. 2	156	DTDC Dryer Cyclone No. 2	Stack S-2
EX O20000-3	DTDC Dryer Deck No. 3	156	DTDC Dryer Cyclone No. 2	Stack S-2
The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.				

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 PSD Minor Limit [326 IAC 2-2]

The following facilities' PM and PM_{10} emissions rates shall be limited as follows:

Process	Control	PM Limit (lbs/hour)	PM_{10} Limit (lbs/hour)
DTDC Dryers and cooler	DTDC Cyclones	10.74	7.28

The soybean usage limit in Condition D.1.3(a), and the PM/PM_{10} emissions limits in Conditions D.1.3(b), D.2.1, D.3.1, D.5.1, and D.6.1 are required to limit the potential to emit of PM/PM_{10} to less than 250 tons per 12 consecutive month period. Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.3.2 PSD Minor Limit for VOC [326 IAC 2-2]

(a) The amount of purchased soybean oil shall be limited to 80 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

During the first twelve (12) months after the startup of the solvent and refinery plant, the total amount of purchased soybean oil shall be limited such that the total amount of

purchased soybean oil used divided by the accumulated months of operation shall not exceed 6,666,666.7 gallons up to a maximum total of 80 million gallons for the first twelve (12) months.

(b) The following facilities' VOC emissions shall be limited as follows:

Process	Control	VOC Limit (lbs/hour)
Soybean oil extractor system Normal operation	Mineral oil absorber	9.3
DTDC Dryers and cooler Normal operation	DTDC Cyclones	32.8
Purchased crude soybean oil	Super Stripper	35 ppmwt.
Purchased refined bleached (RB Oil) soybean oil.	Analytical Testing of Incoming Oil	35 ppmwt.

The purchased soybean oil limit in Condition D.3.2(a), the soybean oil limit in Condition D.4.1(a), the VOC emission limits in Condition D.3.2(b), the VOC emission limits in Condition D.4.1(b), the VOC emission limit in Condition D.5.2, the VOC emission limits in Condition D.6.2, and the limit on hours of biodiesel manufacturing process upset operation in Condition D.4.1(b), are required to limit the potential to emit of VOC to less than 250 tons per 12 consecutive month period.

Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.3.3 Particulate Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the following processes shall not exceed the limitations specified in the following table:

Process	Process Weight Rate (tons/hr)	PM Emission Limit (lbs/hr)
DTDC Dryers and cooler	156	55.9

D.3.4 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT Requirements):

(a) The Permittee shall limit the volatile organic compound (VOC) emissions from the soybean oil extraction process as follows:

Facility	Control	Emission Limit
Oil extractor process	Mineral oil absorber system	0.048 pounds of VOC per ton of soybean received and 9.3 lbs/hr
Meal dryers and meal cooler	None	0.03 gals of VOC/ton of soybean and 32.8 lbs/hr
Overall solvent loss ratio	1st twelve months operation	0.136 gal VOC/ton soybean received
Overall solvent loss ratio	After 1st twelve months	0.134 gal VOC/ton soybean received
Maximum annual soybean received		1,686,300 tons/yr

(b) BACT for the fugitive hexane loss shall include an enhanced inspection, maintenance, and repair program. Within 60 days of achieving full production, but in no case later than 180 days after initial startup, the Permittee shall institute the following enhanced inspection, maintenance, and repair program for the solvent extraction portion of the installation.

Table 1

Equipment	Leak Standard
Pumps	500 ppm
Valves	500 ppm
Pressure relief Devices	500 ppm
Flanges, Connectors, and Seals	10,000 ppm

(1) The Permittee shall determine compliance with the standards in Table 1 by using the procedures of 40 CFR Part 60, Appendix A, Method 21. The instrument shall be calibrated before each day of its use by the procedures as specified in Method 21. A leak is defined as an instrument reading of 500 ppm above background or greater, except for flanges, and connectors where a leak is defined as 10,000 ppm above background.

(2) The Permittee shall immediately tag all detected leaks with a weatherproof, and readily visible, identification tag with a distinct number. Once a leaking component is detected, first-attempt repairs must be done within five days and be completed within 15 days of detecting the leaking components. If the repair can not be accomplished within 15 days, then the Permittee shall send a notice of inability to repair to the OAQ within 20 days of detecting the leak. The notice must be received by the Compliance Branch, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204, within 20 days after the leak was detected. At a minimum the notice shall include the following:

(A) Equipment, operator, and instrument identification number;

(B) Date of leak detection;

(C) Measured concentration (ppm) and background (ppm);

(D) Leak identification number associated with the corresponding tag; and

(E) Reason of inability to repair within 5 to 15 days of detection.

(3) The Permittee shall maintain records of the following to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) equipment inspected;

(B) date of inspection; and

(C) determination of whether a leak was detected.

(4) If a leak is detected, the Permittee shall record the following information to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) the equipment, operator, and instrument identification number;

(B) measured concentration;

(C) leak identification number associated with the corresponding tag;

(D) date of repair;

(E) reason for non-repair if unable to repair within 5 to 15 days of detection; and

(F) maintenance recheck if repaired-date, concentration, background.

Compliance Determination Requirements

D.3.5 Particulate Control

In order to comply with Conditions D.3.1, and D.3.3, the dryer cyclones and cooler cyclone, for PM and PM_{10} control, shall be in operation and control emissions from the DTDC dryers and cooler at all times, when an emission unit that the cyclones control is in operation.

D.3.6 Volatile Organic Compounds (VOC)

In order to comply with Conditions D.3.2 and D.3.4(a), the condenser, the mineral oil absorber and the super stripper shall operate at all times that the oil extractor process is in operation.

D.3.7 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform PM and PM_{10} testing on the meal dryers and cooler cyclones to verify compliance with Condition D.3.1and D.3.3, utilizing methods as approved by the Commissioner. PM_{10} includes filterable and condensable PM_{10}.

(b) Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform VOC testing on the mineral oil absorber stack and determine the mineral oil absorber's solvent flow rate and the temperature of mineral oil to the absorber to verify compliance with Condition D.3.2(b), and D.3.4(a), utilizing methods as approved by the Commissioner.

(c) Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform testing on the vent condenser to determine the flow rate and the temperature of the coolant to the condenser to verify compliance with Condition D.3.2(b), and D.3.4(a), utilizing methods as approved by the Commissioner.

(d) Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform VOC testing on the meal dryers and cooler cyclones stack to verify compliance with Condition D.3.2(b), and D.3.4(a), utilizing methods as approved by the Commissioner.

(e) Within 180 days after processing the purchased crude soybean oil in the super stripper, the Permittee shall perform VOC testing on the super stripper while processing the purchased crude soybean oil; and determine the temperature of the soybean oil in the super stripper to verify compliance with Condition D.3.2(b), utilizing methods as approved by the Commissioner.

(f) Within 180 days after initial processing of the purchased oil, the Permittee shall perform

VOC testing on the purchased refined bleached soybean oil (RB Oil) to verify compliance with Condition D.3.2(b), utilizing methods as approved by the Commissioner.

(g) These tests, except the test in (f), shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.8 Visible Emissions Notations

(a) Daily visible emission notations of Stack S-2 exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.9 Parametric Monitoring

Alarms shall be operational on all cyclones' high level indicators. If an alarm sounds, the Permittee shall take appropriate response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.10 Monitoring for Mineral Oil Absorber, Mineral Oil Condenser and Mineral oil Stripping Column

(a) The Permittee shall monitor and record the mineral oil flow rate to the mineral oil absorber at least once per day.

(b) The Permittee shall monitor and record the mineral oil condenser's coolant flow rate at least once per day.

(c) A continuous monitoring system shall be calibrated, maintained, and operated on the mineral oil absorber for measuring operating temperature. For purposes of this condition continuous shall mean temperature measurement no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the mineral oil absorber at or above the 3-hour average temperature as recommended by the manufacturer.

(1) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with the limits in conditions D.3.2(b) and D.3.4(a), as approved by IDEM.

(2) On and after the date the approved stack test results are available, the Permittee shall maintain the temperature of the mineral oil to the absorber at or above the 3-hour average temperature as observed during the compliant stack test.

(d) A continuous monitoring system shall be calibrated, maintained, and operated on the vent condenser for measuring the temperature of the coolant. For purposes of this condition continuous shall mean temperature measurement no less than once per minute. The output of this system shall be recorded as 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the mineral oil condenser at or above the 3-hour average temperature as recommended by the manufacturer.

(1) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in condition D.3.2(b) and D.3.4(a), as approved by IDEM.

(2) On and after the date the approved stack test results are available, the Permittee shall operate the mineral oil condenser's coolant at or above the 3-hour average temperature as observed during the compliant stack test.

(e) A continuous monitoring system shall be calibrated, maintained, and operated on the soybean oil super stripper for measuring the temperature of soybean oil in the stripper. For purposes of this condition continuous shall mean temperature measurement no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available; the Permittee shall maintain the mineral oil temperature in the stripper at or above the 3-hour average temperature as recommended by the manufacturer.

(1) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in condition D.3.2(b), as approved by IDEM.

(2) On and after the date the approved stack test results are available, the Permittee shall operate the mineral oil absorber at or above the 3-hour average temperature as observed during the compliant stack test.

(f) If any of the following operating conditions occur, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(1) When the mineral oil flow rate reading is below the minimum mineral oil flow rate for any one reading. The minimum mineral oil flow rate to the mineral oil absorber will be as recommended by the manufacturer or the minimum flow rate established during the latest stack test.

(2) When the temperature reading of the mineral oil to the absorber is below the minimum temperature for any one reading. The minimum temperature of the mineral oil to the absorber will be as recommended by the manufacturer or the minimum temperature established during the latest stack test.

(3) When the mineral oil condenser's coolant flow rate reading is below the minimum flow rate for any one reading. The minimum coolant flow rate for the mineral oil condenser will be as recommended by the manufacturer or the minimum flow rate established during the latest stack test.

(4) When the temperature reading of the mineral oil condenser's coolant is below the minimum temperature for any one reading. The minimum temperature of the mineral oil condenser's coolant will be as recommended by the manufacturer or the minimum temperature established during the latest stack test.

(5) When the temperature reading of the mineral oil in the super stripper is below the minimum temperature for any one reading. The minimum temperature of the mineral oil in the super stripper will be as recommended by the manufacturer or the minimum temperature established during the latest stack test.

(g) A flow rate or temperature reading that is below the minimum flow rate or temperature reading is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(h) The instruments used for determining the flow rate and temperature reading shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

(i) The gauge employed to take the mineral oil flow across the scrubber shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within + 10% of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.11 Record Keeping Requirements

(a) To document compliance with Condition D.3.2 (a), the Permittee shall maintain records of the amounts of the purchased soybean oil used.

(b) To document compliance with Condition D.3.8, the Permittee shall maintain records of visible emission notations of the stack exhaust from Stack S-2.

(c) To document compliance with Condition D.3.9, the Permittee shall maintain records of the alarm activation of the DTDC dryer and cooler cyclones.

(d) To document compliance with Condition D.3.10, the Permittee shall maintain records of the mineral oil flow rate, the temperature of the mineral oil absorber, and the temperature of the stripping column.

(e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

D.3.13 General Provisions Relating to NESHAP GGGG [326 IAC 20-1] [40 CFR Part 63, Subpart A]

Pursuant to 40 CFR 63.2870, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the soybean oil extraction processes as specified in Appendix A of 40 CFR Part 63, Subpart GGGG in accordance with schedule in 40 CFR 63, Subpart GGGG.

D.3.14 NESHAP GGGG [40 CFR Part 63, Subpart GGGG] [326 IAC 20-60]

Pursuant to CFR Part 63, Subpart GGGG, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart GGGG, which are incorporated by reference as 326 IAC 20-60 for soybean oil extraction process as specified as follows:

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§ 63.2834 When do I have to comply with the standards in this subpart?

You must comply with this subpart in accordance with one of the schedules in Table 1 of this section, as follows:

Table 1 of § 63.2834_Compliance Dates for Existing and New Sources

If your affected source is categorized as...	And if...	Then your compliance date is...
(c) a new source.....	you startup your affected source on or after the effective date of this subpart.	your startup date.

Standards
§ 63.2840 What emission requirements must I meet?

For each facility meeting the applicability criteria in §63.2832, you must comply with either the requirements specified in paragraphs (a) through (d), or the requirements in paragraph (e) of this section.

(a)(1) The emission requirements limit the number of gallons of HAP lost per ton of listed oilseeds processed. For each operating month, you must calculate a compliance ratio which compares your actual HAP loss to your allowable HAP loss for the previous 12 operating months as shown in Equation 1 of this section. An operating month, as defined in §63.2872, is any calendar month in which a source processes a listed oilseed, excluding any entire calendar month in which the source operated under an initial startup period subject to §63.2850(c)(2) or (d)(2) or a malfunction period subject to §63.2850(e)(2). Equation 1 of this section follows:

$$\text{Compliance Ratio} = \frac{\text{Actual Hap Loss}}{\text{Allowable Hap Loss}} \qquad (Eq.\ 1)$$

(2) Equation 1 of this section can also be expressed as a function of total solvent loss as shown in Equation 2 of this section. Equation 2 of this section follows:

$$\text{Compliance Ratio} = \frac{f * \text{Actual Solvent Loss}}{0.64 * \sum_{i=1}^{n}\left((\text{Oilseed})_i * (\text{SLF})_i\right)} \qquad (Eq.\ 2)$$

Where:

f = The weighted average volume fraction of HAP in solvent received during the previous 12 operating months, as determined in §63.2854, dimensionless.

0.64 = The average volume fraction of HAP in solvent in the baseline performance data, dimensionless.

Actual Solvent Loss = Gallons of actual solvent loss during previous 12 operating months, as determined in §63.2853.

Oilseed = Tons of each oilseed type "i" processed during the previous 12 operating months, as shown in §63.2855.

SLF = The corresponding solvent loss factor (gal/ton) for oilseed "i" listed in Table 1 of this section, as follows:

Table 1 of § 63.2840_Oilseed Solvent Loss Factors for Determining Allowable HAP Loss

Type of oilseed process	A source that...	Oilseed solvent loss factor (gal/ton)
		New sources
(ix) Soybean, Conventional.....	uses a conventional style desolventizer to produce crude soybean oil products and soybean animal feed products.	0.2

(b) When your source has processed listed oilseed for 12 operating months, calculate the compliance ratio by the end of each calendar month following an operating month using Equation 2 of this section. When calculating your compliance ratio, consider the conditions and exclusions in paragraphs (b)(1) through (6) of this section:

(1) If your source processes any quantity of listed oilseeds in a calendar month and the source is not operating under an initial startup period or malfunction period subject to §63.2850, then you must categorize the month as an operating month, as defined in §63.2872.

(2) The 12-month compliance ratio may include operating months occurring prior to a source

shutdown and operating months that follow after the source resumes operation.

(3) If your source shuts down and processes no listed oilseed for an entire calendar month, then you must categorize the month as a nonoperating month, as defined in §63.2872. Exclude any nonoperating months from the compliance ratio determination.

(4) If your source is subject to an initial startup period as defined in §63.2872, exclude from the compliance ratio determination any solvent and oilseed information recorded for the initial startup period.

(5) If your source is subject to a malfunction period as defined in §63.2872, exclude from the compliance ratio determination any solvent and oilseed information recorded for the malfunction period.

(c) If the compliance ratio is less than or equal to 1.00, your source was in compliance with the HAP emission requirements for the previous operating month.

(d) To determine the compliance ratio in Equation 2 of this section, you must select the appropriate oilseed solvent loss factor from Table 1 of this section. Then, under the appropriate new source column, select the oilseed solvent loss factor that corresponds to each type oilseed or process operation for each operating month.

(1) You shall determine the HAP content of your solvent in accordance with the specifications in §63.2854(b)(1).

(2) You shall maintain documentation of the HAP content determination for each delivery of the solvent at the facility at all times.

(4) You must submit an initial notification for new sources in accordance with §63.2860(b).

(5) You must submit an annual compliance certification in accordance with §63.2861(a). The certification should only include the information required under §63.2861(a)(1) and (2), and a certification indicating whether the source complied with all of the requirements in paragraph (e) of this section.

Compliance Requirements
§ 63.2850 How do I comply with the hazardous air pollutant emission standards?

(a) *General requirements.* The requirements in paragraphs (a)(1)(i) through (iv) of this section apply to all affected sources:

(1) Submit the necessary notifications in accordance with §63.2860, which include:

(ii) Initial notifications for new sources.

(iv) Notification of compliance status.

(2) Develop and implement a plan for demonstrating compliance in accordance with §63.2851.

(3) Develop a written startup, shutdown and malfunction (SSM) plan in accordance with the

provisions in §63.2852.

(4) Maintain all the necessary records you have used to demonstrate compliance with this subpart in accordance with §63.2862.

(5) Submit the reports in paragraphs (a)(5)(i) through (iii) of this section:

(i) Annual compliance certifications in accordance with §63.2861(a).

(ii) Periodic SSM reports in accordance with §63.2861(c).

(iii) Immediate SSM reports in accordance with §63.2861(d).

(c) *New sources.* Your new source must meet the requirements associated with one of two compliance options. Within 15 days of the startup date, you must choose to comply with one of the options listed in paragraph (c)(1) or (2) of this section:

(1) *Normal operation.* Upon startup of your new source, you must meet all of the requirements listed in §63.2850(a) and Table 1 of this section for sources under normal operation, and the schedules for demonstrating compliance for new sources under normal operation in Table 2 of this section.

(2) *Initial startup period.* For up to 6 calendar months after the startup date of your new source, you must meet all of the requirements listed in paragraph (a) of this section and Table 1 of this section for sources operating under an initial startup period, and the schedules for demonstrating compliance for new sources operating under an initial startup period in Table 2 of this section. After a maximum of 6 calendar months, your new source must then meet all of the requirements listed in Table 1 of this section for sources under normal operation.

(e) *new sources experiencing a malfunction.* A *malfunction* is defined in §63.2. In general, it means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment or process equipment to function in a usual manner. If your new source experiences an unscheduled shutdown as a result of a malfunction, continues to operate during a malfunction (including the period reasonably necessary to correct the malfunction), or starts up after a shutdown resulting from a malfunction, then you must meet the requirements associated with one of two compliance options. Routine or scheduled process startups and shutdowns resulting from, but not limited to, market demands, maintenance activities are not startups or shutdowns resulting from a malfunction and, therefore, do not qualify for this provision. Within 15 days of the beginning date of the malfunction, you must choose to comply with one of the options listed in paragraphs (e)(1) through (2) of this section:

(1) *Normal operation.* Your source must meet all of the requirements listed in paragraph (a) of this section and one of the options listed in paragraphs (e)(1)(i) through (iii) of this section:

(ii) New source normal operation requirements in paragraph (c)(1) of this section.

(2) *Malfunction period.* Throughout the malfunction period, you must meet all of the requirements listed in paragraph (a) of this section and Table 1 of this section for sources operating during a malfunction period. At the end of the malfunction period, your source must then meet all of the requirements listed in Table 1 of this section for sources under normal operation. Table 1 of this section follows:

Table 1 of § 63.2850_Requirements for Compliance with HAP Emission Standards

Are you required to . . .	For periods of normal operation?	For initial startup periods subject to § 63.2850(c)(2) or (d)(2)?	For malfunction periods subject to § 63.2850(e)(2)?
(a) Operate and maintain your source in accordance with your SSM plan as described in § 63.2852?.	No, your source is not subject to the SSM plan, but rather the HAP emission limits of this standard.	Yes, throughout the entire initial startup period.	Yes, throughout the entire malfunction period.
(b) Determine and record the extraction solvent loss in gallons from your source?.	Yes, as described in § 63.2853.	Yes, as described in § 63.2862(e).	Yes, as described in § 63.2862(e).
(c) Record the volume fraction of HAP present at greater than 1 percent by volume and gallons of extraction solvent in shipment received?.	Yes.....	Yes.....	Yes.
(d) Determine and record the tons of oilseed processed by your source?.	Yes, as described in § 63.2855.	No.....	No.
(e) Determine the weighted average volume fraction of HAP in extraction solvent received as described in § 63.2854 by the end of the following calendar month?.	Yes.....	No. Except for solvent received by a new or reconstructed source commencing operation under an initial startup period, the HAP volume fraction in any solvent received during an initial startup period is included in the weighted average HAP determination for the next operating month.	No, the HAP volume fraction in any solvent received during a malfunction period is included in the weighted average HAP determination for the next operating month.

(f) Determine and record the actual solvent loss, weighted average volume fraction HAP, oilseed processed and compliance ratio for each 12 operating month period as described in § 63.2840 by the end of the following calendar month?.	Yes,.....	No, these requirements are not applicable because your source is not required to determine the compliance ratio with data recorded for an initial startup period.	No, these requirements are not applicable because your source is not required to determine the compliance ratio with data recorded for a malfunction period.
(g) Submit a Notification of Compliance Status or Annual Compliance Certification as appropriate?.	Yes, as described in §§ 63.2860(d) and 63.2861(a).	No. However, you may be required to submit an annual compliance certification for previous operating months, if the deadline for the annual compliance certification happens to occur during the initial startup period.	No. However, you may be required to submit an annual compliance certification for previous operating months, if the deadline for the annual compliance certification happens to occur during the malfunction period.
(h) Submit a Deviation Notification Report by the end of the calendar month following the month in which you determined that the compliance ratio exceeds 1.00 as described in § 63.2861(b)?.	Yes.....	No, these requirements are not applicable because your source is not required to determine the compliance ratio with data recorded for an initial startup period.	No, these requirements are not applicable because your source is not required to determine the compliance ratio with data recorded for a malfunction period.
(i) Submit a Periodic SSM Report as described in § 63.2861(c)?.	No, a SSM activity is not categorized as normal operation.	Yes.....	Yes.
(j) Submit an Immediate SSM Report as described in § 63.2861(d)?.	No, a SSM activity is not categorized as normal operation.	Yes, only if your source does not follow the SSM plan.	Yes, only if your source does not follow the SSM plan.

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Table 2 of § 63.2850_Schedules for Demonstrating Compliance Under Various Source Operating Modes

If your source is . . .	and is operating under. . .	then your recordkeeping schedule. . .	You must determine your first compliance ratio by the end of the calendar month following. . .	Base your first compliance ratio on information recorded. . .
(b) New.....	(1) Normal operation.	Begins on the startup date of your new source.	The first 12 operating months after the startup date of the new source.	During the first 12 operating months after the startup date of the new source.
	(2) An initial startup period.	Begins on the startup date of your new source.	The first 12 operating months after termination of the initial startup period, which can last for up to 6 months.	During the first 12 operating months after the initial startup period, which can last for up to 6 months.

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§ 63.2851 What is a plan for demonstrating compliance?

(a) You must develop and implement a written plan for demonstrating compliance that provides the detailed procedures you will follow to monitor and record data necessary for demonstrating compliance with this subpart. Procedures followed for quantifying solvent loss from the source and amount of oilseed processed vary from source to source because of site-specific factors such as equipment design characteristics and operating conditions. Typical procedures include one or more accurate measurement methods such as weigh scales, volumetric displacement, and material mass balances. Because the industry does not have a uniform set of procedures, you must develop and implement your own site-specific plan for demonstrating compliance before the compliance date for your source. You must also incorporate the plan for demonstrating compliance by reference in the source's title V permit and keep the plan on-site and readily available as long as the source is operational. If you make any changes to the plan for demonstrating compliance, then you must keep all previous versions of the plan and make them readily available for inspection for at least 5 years after each revision. The plan for demonstrating compliance must include the items in paragraphs (a)(1) through (7) of this section:

(1) The name and address of the owner or operator.

(2) The physical address of the vegetable oil production process.

(3) A detailed description of all methods of measurement your source will use to determine your solvent losses, HAP content of solvent, and the tons of oilseed processed.

(4) When each measurement will be made.

(5) Examples of each calculation you will use to determine your compliance status. Include examples of how you will convert data measured with one parameter to other terms for use in compliance determination.

(6) Example logs of how data will be recorded.

(7) A plan to ensure that the data continue to meet compliance demonstration needs.

(b) IDEM may require you to revise your plan for demonstrating compliance. IDEM may require reasonable revisions if the procedures lack detail, are inconsistent or do not accurately determine solvent loss, HAP content of the solvent, or the tons of oilseed processed.

§ 63.2852 What is a startup, shutdown, and malfunction plan?

You must develop a written SSM plan in accordance with §63.6(e)(3) and implement the plan, when applicable. You must complete the SSM plan before the compliance date for your source. You must also keep the SSM plan on-site and readily available as long as the source is operational. The SSM plan provides detailed procedures for operating and maintaining your source to minimize emissions during a qualifying SSM event for which the source chooses the §63.2850(e)(2) malfunction period, or the §63.2850(c)(2) or (d)(2) initial startup period. The SSM plan 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. Some or all of the procedures may come from plans you developed for other purposes such as a Standard Operating Procedure manual or an Occupational Safety and Health Administration Process Safety Management plan. To qualify as a SSM plan, other such plans must meet all the

applicable requirements of these NESHAP.

§ 63.2853 How do I determine the actual solvent loss?

By the end of each calendar month following an operating month, you must determine the total solvent loss in gallons for the previous operating month. The total solvent loss for an operating month includes all solvent losses that occur during normal operating periods within the operating month. If you have determined solvent losses for 12 or more operating months, then you must also determine the 12 operating months rolling sum of actual solvent loss in gallons by summing the monthly actual solvent loss for the previous 12 operating months. The 12 operating months rolling sum of solvent loss is the "actual solvent loss," which is used to calculate your compliance ratio as described in §63.2840.

(a) To determine the actual solvent loss from your source, follow the procedures in your plan for demonstrating compliance to determine the items in paragraphs (a)(1) through (7) of this section:

(1) *The dates that define each operating status period during a calendar month.* The dates that define each operating status period include the beginning date of each calendar month and the date of any change in the source operating status. If the source maintains the same operating status during an entire calendar month, these dates are the beginning and ending dates of the calendar month. If, prior to the effective date of this rule, your source determines the solvent loss on an *accounting month,* as defined in §63.2872, rather than a calendar month basis, and you have 12 complete accounting months of approximately equal duration in a calendar year, you may substitute the accounting month time interval for the calendar month time interval. If you choose to use an accounting month rather than a calendar month, you must document this measurement frequency selection in your plan for demonstrating compliance, and you must remain on this schedule unless you request and receive written approval from IDEM for these NESHAP.

(2) *Source operating status.* You must categorize the operating status of your source for each recorded time interval in accordance with criteria in Table 1 of this section, as follows:

Table 1 of § 63.2853_Categorizing Your Source Operating Status

If during a recorded time interval . . .	then your source operating status is . . .
(i) Your source processes any amount of listed oilseed and source is not operating under an initial startup operating period or a malfunction period subject to § 63.2850(c)(2), (d)(2), or (e)(2).	A normal operating period.
(ii) Your source processes no product and your source is not operating under an initial startup period or malfunction period subject to § 63.2850(c)(2), (d)(2), or (e)(2).	A nonoperating period.
(iii) You choose to operate your source under an initial startup period subject to § 63.2850(c)(2) or (d)(2).	An initial startup period.
(iv) You choose to operate your source under a malfunction period subject to § 63.2850(e)(2).	A malfunction period.

(3) *Measuring the beginning and ending solvent inventory.* You are required to measure and record the solvent inventory on the beginning and ending dates of each normal operating period that occurs during an operating month. An operating month is any calendar month with at least one normal operating period. You must consistently follow the procedures described in your plan for demonstrating compliance, as specified in §63.2851, to determine the extraction solvent inventory, and maintain readily available records of the actual solvent loss inventory, as described in §63.2862(c)(1). In general, you must measure and record the solvent inventory only when the source is actively processing any type of agricultural product. When the source is not active, some or all of the solvent working capacity is transferred to solvent storage tanks which can artificially inflate the solvent inventory.

(4) *Gallons of extraction solvent received.* Record the total gallons of extraction solvent received in each shipment. For most processes, the gallons of solvent received represents purchases of delivered solvent added to the solvent storage inventory. However, if your process refines additional vegetable oil from off-site sources, recovers solvent from the off-site oil, and adds it to the on-site solvent inventory, then you must determine the quantity of recovered solvent and include it in the gallons of extraction solvent received.

(5) *Solvent inventory adjustments.* In some situations, solvent losses determined directly from the measured solvent inventory and quantity of solvent received is not an accurate estimate of the "actual solvent loss" for use in determining compliance ratios. In such cases, you may adjust the total solvent loss for each normal operating period as long as you provide a reasonable justification for the adjustment. Situations that may require adjustments of the total solvent loss include, but are not limited to, situations in paragraphs (a)(5)(i) and (ii) of this section:

(ii) Changes in solvent working capacity. In records you keep on-site, document any process modifications resulting in changes to the solvent working capacity in your vegetable oil production process. *Solvent working capacity* is defined in §63.2872. In general, solvent working capacity is the volume of solvent normally retained in solvent recovery equipment such as the extractor, desolventizer-toaster, solvent storage, working tanks, mineral oil absorber, condensers, and oil/solvent distillation system. If the change occurs during a normal operating period, you must determine the difference in working solvent volume and make a one-time documented adjustment to the solvent inventory.

(b) Use Equation 1 of this section to determine the actual solvent loss occurring from your affected source for all normal operating periods recorded within a calendar month. Equation 1 of this section follows:

$$\text{Monthly Actual Solvent (gal)} = \sum_{i=1}^{n} \left(SOLV_B - SOLV_E + SOLV_R \pm SOLV_A\right)_i \qquad (Eq.\ 1)$$

Where:

$SOLV_B$ = Gallons of solvent in the inventory at the beginning of normal operating period "i" as determined in paragraph (a)(3) of this section.

$SOLV_E$ = Gallons of solvent in the inventory at the end of normal operating period "i" as determined in paragraph (a)(3) of this section.

$SOLV_R$ = Gallons of solvent received between the beginning and ending inventory dates of normal operating period "i" as determined in paragraph (a)(4) of this section.

$SOLV_A$ = Gallons of solvent added or removed from the extraction solvent inventory during normal operating period "i" as determined in paragraph (a)(5) of this section.

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

(c) The actual solvent loss is the total solvent losses during normal operating periods for the previous 12 operating months. You determine your actual solvent loss by summing the monthly actual solvent losses for the previous 12 operating months. You must record the actual solvent loss by the end of each calendar month following an operating month. Use the actual solvent loss in Equation 2 of §63.2840 to determine the compliance ratio. Actual solvent loss does not include losses that occur during operating status periods listed in paragraphs (c)(1) through (4) of this section. If any one of these four operating status periods span an entire month, then the month is treated as nonoperating and there is no compliance ratio determination.

(1) Nonoperating periods as described in paragraph (a)(2)(ii) of this section.

(2) Initial startup periods as described in §63.2850(c)(2) or (d)(2).

(3) Malfunction periods as described in §63.2850(e)(2).

§ 63.2854 How do I determine the weighted average volume fraction of HAP in the actual solvent loss?

(a) This section describes the information and procedures you must use to determine the weighted average volume fraction of HAP in extraction solvent received for use in your vegetable oil production process. By the end of each calendar month following an operating month, determine the weighted average volume fraction of HAP in extraction solvent received since the end of the previous operating month. If you have determined the monthly weighted average volume fraction of HAP in solvent received for 12 or more operating months, then also determine an overall weighted average volume fraction of HAP in solvent received for the previous 12 operating months. Use the volume fraction of HAP determined as a 12 operating months weighted average in Equation 2 of §63.2840 to determine the compliance ratio.

(b) To determine the volume fraction of HAP in the extraction solvent determined as a 12 operating months weighted average, you must comply with paragraphs (b)(1) through (3) of this section:

(1) Record the volume fraction of each HAP in each delivery of solvent, including solvent recovered from off-site oil. To determine the HAP content of the material in each delivery of solvent, the reference method is EPA Method 311 of appendix A of this part. You may use EPA Method 311, an approved alternative method, or any other reasonable means for determining the HAP content. Other reasonable means of determining HAP content include, but are not limited to, a material safety data sheet or a manufacturer's certificate of analysis. A certificate of analysis is a legal and binding document provided by a solvent manufacturer. The purpose of a certificate of analysis is to list the test methods and analytical results that determine chemical properties of the solvent and the volume percentage of all HAP components present in the solvent at quantities greater than 1 percent by volume. You are not required to test the materials that you use, but the Administrator may require a test using EPA Method 311 (or an approved alternative method) to confirm the reported HAP content. However, if the results of an analysis by EPA Method 311 are

different from the HAP content determined by another means, the EPA Method 311 results will govern compliance determinations.

(2) Determine the weighted average volume fraction of HAP in the extraction solvent each operating month. The weighted average volume fraction of HAP for an operating month includes all solvent received since the end of the last operating month, regardless of the operating status at the time of the delivery. Determine the monthly weighted average volume fraction of HAP by summing the products of the HAP volume fraction of each delivery and the volume of each delivery and dividing the sum by the total volume of all deliveries as expressed in Equation 1 of this section. Record the result by the end of each calendar month following an operating month. Equation 1 of this section follows:

$$\begin{array}{c}\text{Monthly Weighted}\\ \textit{Average}\text{ HAP Content}\\ \text{of Extraction Solvent}\\ \text{(volume fraction)}\end{array} = \frac{\sum_{i=1}^{n}(\text{Received}_i * \textit{Content}_i)}{\textit{Total}\text{ Received}} \qquad (\textit{Eq. } 1)$$

Where:

Received_i = Gallons of extraction solvent received in delivery "i."

Content_i = 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.

(3) Determine the volume fraction of HAP in your extraction solvent as a 12 operating months weighted average. When your source has processed oilseed for 12 operating months, sum the products of the monthly weighted average HAP volume fraction and corresponding volume of solvent received, and divide the sum by the total volume of solvent received for the 12 operating months, as expressed by Equation 2 of this section. Record the result by the end of each calendar month following an operating month and use it in Equation 2 of §63.2840 to determine the compliance ratio. Equation 2 of this section follows:

$$\begin{array}{c}\text{12-Month Weighted}\\ \textit{Average}\text{ of HAP Content}\\ \text{in Solvent Received}\\ \text{(volume fraction)}\end{array} = \frac{\sum_{i=1}^{12}(\text{Received}_i * \textit{Content}_i)}{\textit{Total}\text{ Received}} \qquad (\textit{Eq. } 2)$$

Where:

Received_i = Gallons of extraction solvent received in operating month "i" as determined in accordance with §63.2853(a)(4).

Content_i = Average volume fraction of HAP in extraction solvent received in operating month "i" as

determined in accordance with paragraph (b)(1) of this section.

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

§ 63.2855 How do I determine the quantity of oilseed processed?

All oilseed measurements must be determined on an *as received* basis, as defined in §63.2872. The as received basis refers to the oilseed chemical and physical characteristics as initially received by the source and prior to any oilseed handling and processing. By the end of each calendar month following an operating month, you must determine the tons as received of each listed oilseed processed for the operating month. The total oilseed processed for an operating month includes the total of each oilseed processed during all normal operating periods that occur within the operating month. If you have determined the tons of oilseed processed for 12 or more operating months, then you must also determine the 12 operating months rolling sum of oilseed processed by summing the tons of oilseed processed for the previous 12 operating months. The 12 operating months rolling sum of oilseed processed is used to calculate the compliance ratio as described in §63.2840.

(a) To determine the tons as received of oilseed processed at your source, follow the procedures in your plan for demonstrating compliance to determine the items in paragraphs (a)(1) through (5) of this section:

(1) *The dates that define each operating status period.* The dates that define each operating status period include the beginning date of each calendar month and the date of any change in the source operating status. If, prior to the effective date of this rule, your source determines the oilseed inventory on an accounting month rather than a calendar month basis, and you have 12 complete accounting months of approximately equal duration in a calendar year, you may substitute the accounting month time interval for the calendar month time interval. If you choose to use an accounting month rather than a calendar month, you must document this measurement frequency selection in your plan for demonstrating compliance, and you must remain on this schedule unless you request and receive written approval from the agency responsible for these NESHAP. The dates on each oilseed inventory log must be consistent with the dates recorded for the solvent inventory.

(2) *Source operating status.* You must categorize the source operation for each recorded time interval. The source operating status for each time interval recorded on the oilseed inventory for oilseed must be consistent with the operating status recorded on the solvent inventory logs as described in §63.2853(a)(2).

(3) *Measuring the beginning and ending inventory for oilseed.* You are required to measure and record the oilseed inventory on the beginning and ending dates of each normal operating period that occurs during an operating month. An operating month is any calendar month with at least one normal operating period. You must consistently follow the procedures described in your plan for demonstrating compliance, as specified in §63.2851, to determine the oilseed inventory on an as received basis and maintain readily available records of the oilseed inventory as described by §63.2862(c)(3).

(4) *Tons of oilseed received.* Record the type of oilseed and tons of each shipment of oilseed received and added to your on-site storage.

(5) *Oilseed inventory adjustments.* In some situations, determining the quantity of oilseed processed directly from the measured oilseed inventory and quantity of oilseed received is not an

accurate estimate of the tons of oilseed processed for use in determining compliance ratios. For example, spoiled and molded oilseed removed from storage but not processed by your source will result in an overestimate of the quantity of oilseed processed. In such cases, you must adjust the oilseed inventory and provide a justification for the adjustment. Situations that may require oilseed inventory adjustments include, but are not limited to, the situations listed in paragraphs (a)(5)(i) through (v) of this section:

(i) Oilseed that mold or otherwise become unsuitable for processing.

(ii) Oilseed you sell before it enters the processing operation.

(iii) Oilseed destroyed by an event such as a process malfunction, fire, or natural disaster.

(iv) Oilseed processed through operations prior to solvent extraction such as screening, dehulling, cracking, drying, and conditioning; but that are not routed to the solvent extractor for further processing.

(v) Periodic physical measurements of inventory. For example, some sources periodically empty oilseed storage silos to physically measure the current oilseed inventory. This periodic measurement procedure typically results in a small inventory correction. The correction factor, usually less than 1 percent, may be used to make an adjustment to the source's oilseed inventory that was estimated previously with indirect measurement techniques. To make this adjustment, your plan for demonstrating compliance must provide for such an adjustment.

(b) Use Equation 1 of this section to determine the quantity oilseed processed at your affected source during normal operating periods recorded within a calendar month. Equation 1 of this section follows:

$$\begin{array}{l}\text{Monthly Quantity}\\ \text{of Each Oilseed}\\ \text{Processed (tons)}\end{array} = \sum_{n=1}^{n}\left(SEED_B - SEED_E + SEED_R \pm SEED_A\right) \qquad (Eq.\ 1)$$

Where:

$SEED_B$ = Tons of oilseed in the inventory at the beginning of normal operating period "i" as determined in accordance with paragraph (a)(3) of this section.

$SEED_E$ = Tons of oilseed in the inventory at the end of normal operating period "i" as determined in accordance with paragraph (a)(3) of this section.

$SEED_R$ = Tons of oilseed received during normal operating period "i" as determined in accordance with paragraph (a)(4) of this section.

$SEED_A$ = Tons of oilseed added or removed from the oilseed inventory during normal operating period "i" as determined in accordance with paragraph (a)(5) of this section.

n = Number of normal operating periods in the calendar month during which this type oilseed was processed.

(c) The quantity of each oilseed processed is the total tons of each type of listed oilseed

processed during normal operating periods in the previous 12 operating months. You determine the tons of each oilseed processed by summing the monthly quantity of each oilseed processed for the previous 12 operating months. You must record the 12 operating months quantity of oilseed processed by the end of each calendar month following an operating month. Use the 12 operating months quantity of oilseed processed to determine the compliance ratio as described in §63.2840. The quantity of oilseed processed does not include oilseed processed during the operating status periods in paragraphs (c)(1) through (4) of this section:

(1) Nonoperating periods as described in §63.2853 (a)(2)(ii).

(2) Initial startup periods as described in §63.2850(c)(2) or (d)(2).

(3) Malfunction periods as described in §63.2850(e)(2).

(4) Exempt operation periods as described in §63.2853 (a)(2)(v).

(5) If any one of these four operating status periods span an entire calendar month, then the calendar month is treated as a nonoperating month and there is no compliance ratio determination.

Notifications, Reports, and Records
§ 63.2860 What notifications must I submit and when?

You must submit the one-time notifications listed in paragraphs (a) through (d) of this section to IDEM:

(b) *Initial notifications for new sources.* New sources must submit a series of notifications before, during, and after source construction per the schedule listed in §63.9. The information requirements for the notifications are the same as those listed in the General Provisions with the exceptions listed in paragraphs (b)(1) and (2) of this section:

(1) The application for approval of construction does not require the specific HAP emission data required in §63.5(d)(1)(ii)(H) and (iii), (d)(2) and (d)(3)(ii). The application for approval of construction would include, instead, a brief description of the source including the oilseeds processed, nominal operating capacity, and type of desolventizer(s) used.

(2) The notification of actual startup date must also include whether you have elected to operate under an initial startup period subject to §63.2850(c)(2) and provide an estimate and justification for the anticipated duration of the initial startup period.

(c) *Significant modification notifications.* Any existing or new source that plans to undergo a significant modification as defined in §63.2872 must submit two reports as described in paragraphs (c)(1) and (2) of this section:

(1) Initial notification. You must submit an initial notification to the agency responsible for these NESHAP 30 days prior to initial startup of the significantly modified source. The initial notification must demonstrate that the proposed changes qualify as a significant modification. The initial notification must include the items in paragraphs (c)(1)(i) and (ii) of this section:

(i) The expected startup date of the modified source.

(ii) A description of the significant modification including a list of the equipment that will be replaced or modified. If the significant modification involves changes other than adding or replacing extractors, desolventizer-toasters (conventional and specialty), and meal dryer-coolers, then you must also include the fixed capital cost of the new components, expressed as a percentage of the fixed capital cost to build a comparable new vegetable oil production process; supporting documentation for the cost estimate; and documentation that the proposed changes will significantly affect solvent losses.

(2) Notification of actual startup. You must submit a notification of actual startup date within 15 days after initial startup of the modified source. The notification must include the items in paragraphs (c)(2)(i) through (iv) of this section:

(i) The initial startup date of the modified source.

(ii) An indication whether you have elected to operate under an initial startup period subject to §63.2850(d)(2).

(iii) The anticipated duration of any initial startup period.

(iv) A justification for the anticipated duration of any initial startup period.

(d) *Notification of compliance status.* As new source, you must submit a notification of compliance status report to the IDEM no later than 60 days after determining your initial 12 operating months compliance ratio. If you are a new source, the notification of compliance status is generally due no later than 20 calendar months after initial startup (6 calendar months for the initial startup period, 12 operating months to record data, and 2 calendar months to complete the report). The notification of compliance status must contain the items in paragraphs (d)(1) through (6) of this section:

(1) The name and address of the owner or operator.

(2) The physical address of the vegetable oil production process.

(3) Each listed oilseed type processed during the previous 12 operating months.

(4) Each HAP identified under §63.2854(a) as being present by volume in each delivery of solvent received during the 12 operating months period used for the initial compliance determination.

(5) A statement designating the source as a major source of HAP or a demonstration that the source qualifies as an area source. An area source is a source that is not a major source and is not collocated within a plant site with other sources that are individually or collectively a major source.

(6) A compliance certification indicating whether the source complied with all of the requirements of this subpart throughout the 12 operating months used for the initial source compliance determination. This certification must include a certification of the items in paragraphs (d)(6)(i) through (iii) of this section:

(i) The plan for demonstrating compliance (as described in §63.2851) and SSM plan (as described in §63.2852) are complete and available on-site for inspection.

(ii) You are following the procedures described in the plan for demonstrating compliance.

(iii) The compliance ratio is less than or equal to 1.00.

§ 63.2861 What reports must I submit and when?

After the initial notifications, you must submit the reports in paragraphs (a) through (d) of this section to the IDEM for these NESHAP at the appropriate time intervals:

(a) *Annual compliance certifications.* The first annual compliance certification is due 12 calendar months after you submit the notification of compliance status. Each subsequent annual compliance certification is due 12 calendar months after the previous annual compliance certification. The annual 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. Include the information in paragraphs (a)(1) through (6) of this section in the annual certification:

(1) The name and address of the owner or operator.

(2) The physical address of the vegetable oil production process.

(3) listed oilseed processed during the 12 calendar months period covered by the report.

(4) Each HAP identified under §63.2854(a) as being present by volume in each delivery of solvent received during the 12 calendar months period covered by the report.

(5) A statement designating the source as a major source of HAP or a demonstration that the source qualifies as an area source. An area source is a source that is not a major source and is not collocated within a plant site with other sources that are individually or collectively a major source.

(6) 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. For each such compliance determination, you must include a certification of the items in paragraphs (a)(6)(i) through (ii) of this section:

(i) You are following the procedures described in the plan for demonstrating compliance.

(ii) The compliance ratio is less than or equal to 1.00.

(b) *Deviation notification report.* Submit a deviation report for each compliance determination you make in which the compliance ratio exceeds 1.00 as determined under §63.2840(c). Submit the deviation report by the end of the month following the calendar month in which you determined the deviation. The deviation notification report must include the items in paragraphs (b)(1) through (4) of this section:

(1) The name and address of the owner or operator.

(2) The physical address of the vegetable oil production process.

(3) Each listed oilseed type processed during the 12 operating months period for which you

determined the deviation.

(4) The compliance ratio comprising the deviation. You may reduce the frequency of submittal of the deviation notification report if the agency responsible for these NESHAP does not object as provided in §63.10(e)(3)(iii).

(c) *Periodic startup, shutdown, and malfunction report.* If you choose to operate your source under an initial startup period subject to §63.2850(c)(2) or (d)(2) or a malfunction period subject to §63.2850(e)(2), you must submit a periodic SSM report by the end of the calendar month following each month in which the initial startup period or malfunction period occurred. The periodic SSM report must include the items in paragraphs (c)(1) through (3) of this section:

(1) The name, title, and signature of a source's responsible official who is certifying that the report accurately states that all actions taken during the initial startup or malfunction period were consistent with the SSM plan.

(2) A description of events occurring during the time period, the date and duration of the events, and reason the time interval qualifies as an initial startup period or malfunction period.

(3) An estimate of the solvent loss during the initial startup or malfunction period with supporting documentation.

(d) *Immediate SSM reports.* If you handle a SSM during an initial startup period subject to §63.2850(c)(2) or (d)(2) or a malfunction period subject to §63.2850(e)(2) differently from procedures in the SSM plan and the relevant emission requirements in §63.2840 are exceeded, then you must submit an immediate SSM report. Immediate SSM reports consist of a telephone call or facsimile transmission to the responsible agency 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 items in paragraphs (d)(1) through (3) of this section:

(1) The name, title, and signature of a source's responsible official who is certifying the accuracy of the report, an explanation of the event, and the reasons for not following the SSM plan.

(2) A description and date of the SSM event, its duration, and reason it qualifies as a SSM.

(3) An estimate of the solvent loss for the duration of the SSM event with supporting documentation.

§ 63.2862 What records must I keep?

(a) You must satisfy the recordkeeping requirements of this section by the compliance date for your source specified in Table 1 of §63.2834.

(b) Prepare a plan for demonstrating compliance (as described in §63.2851) and a SSM plan (as described in §63.2852). In these two plans, describe the procedures you will follow in obtaining and recording data, and determining compliance under normal operations or a SSM subject to the §63.2850(c)(2) or (d)(2) initial startup period or the §63.2850(e)(2) malfunction period. Complete both plans before the compliance date for your source and keep them on-site and readily available as long as the source is operational.

(c) If your source processes any listed oilseed, record the items in paragraphs (c)(1) through (5) of

this section:

(1) For the solvent inventory, record the information in paragraphs (c)(1)(i) through (vii) of this section in accordance with your plan for demonstrating compliance:

(i) Dates that define each operating status period during a calendar month.

(ii) The operating status of your source such as normal operation, nonoperating, initial startup period, malfunction period, or exempt operation for each recorded time interval.

(iii) Record the gallons of extraction solvent in the inventory on the beginning and ending dates of each normal operating period.

(iv) The gallons of all extraction solvent received, purchased, and recovered during each calendar month.

(v) All extraction solvent inventory adjustments, additions or subtractions. You must document the reason for the adjustment and justify the quantity of the adjustment.

(vi) The total solvent loss for each calendar month, regardless of the source operating status.

(vii) The actual solvent loss in gallons for each operating month.

(2) For the weighted average volume fraction of HAP in the extraction solvent, you must record the items in paragraphs (c)(2)(i) through (iii) of this section:

(i) The gallons of extraction solvent received in each delivery.

(ii) The volume fraction of HAP by volume in each delivery of extraction solvent.

(iii) The weighted average volume fraction of HAP in extraction solvent received since the end of the last operating month as determined in accordance with §63.2854(b)(2).

(3) For oilseed processed, record the items in paragraphs (c)(3)(i) through (vi) of this section, in accordance with your plan for demonstrating compliance:

(i) The dates that define each operating status period. These dates must be the same as the dates entered for the extraction solvent inventory.

(ii) The operating status of your source such as normal operation, nonoperating, initial startup period, malfunction period, or exempt operation for each recorded time interval. On the log for oilseed that is not being processed during a normal operating period, you must record the source operating status.

(iii) The oilseed inventory for the oilseed being processed on the beginning and ending dates of each normal operating period.

(iv) The tons of oilseed received at the affected source each normal operating period.

(v) All oilseed inventory adjustments, additions or subtractions for normal operating periods. You

must document the reason for the adjustment and justify the quantity of the adjustment.

(vi) The tons of oilseed processed during each operating month.

(d) After your source has processed oilseed for 12 operating months, and you are not operating during an initial startup period as described in §63.2850(c)(2) or (d)(2), or a malfunction period as described in §63.2850(e)(2), record the items in paragraphs (d)(1) through (5) of this section by the end of the calendar month following each operating month:

(1) The 12 operating months rolling sum of the actual solvent loss in gallons as described in §63.2853(c).

(2) The weighted average volume fraction of HAP in extraction solvent received for the previous 12 operating months as described in §63.2854(b)(3).

(3) The 12 operating months rolling sum of oilseed processed at the affected source in tons as described in §63.2855(c).

(4) A determination of the compliance ratio. Using the values from §§63.2853, 63.2854, 63.2855, and Table 1 of §63.2840, calculate the compliance ratio using Equation 2 of §63.2840.

(5) A statement of whether the source is in compliance with all of the requirements of this subpart. This includes a determination of whether you have met all of the applicable requirements in §63.2850.

(e) For each SSM event subject to an initial startup period as described in §63.2850(c)(2) or (d)(2), or a malfunction period as described in §63.2850(e)(2), record the items in paragraphs (e)(1) through (3) of this section by the end of the calendar month following each month in which the initial startup period or malfunction period occurred:

(1) A description and date of the SSM event, its duration, and reason it qualifies as an initial startup or malfunction.

(2) An estimate of the solvent loss in gallons for the duration of the initial startup or malfunction period with supporting documentation.

(3) A checklist or other mechanism to indicate whether the SSM plan was followed during the initial startup or malfunction period.

§ 63.2863 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for review in accordance with §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, in accordance with §3.10(b)(1). You can keep the records off-site for the remaining 3 years.

§ 63.2872 What definitions apply to this subpart?

Terms used in this subpart are defined in the sources listed:

(a) The Clean Air Act, section 112(a).

(b) In 40 CFR 63.2, the NESHAP General Provisions.

(c) In this section as follows:

Accounting month means a time interval defined by a business firm during which corporate economic and financial factors are determined on a consistent and regular basis. An accounting month will consist of approximately 4 to 5 calendar weeks and each accounting month will be of approximate equal duration. An accounting month may not correspond exactly to a calendar month, but 12 accounting months will correspond exactly to a calendar year.

Actual solvent loss means the gallons of solvent lost from a source during 12 operating months as determined in accordance with §63.2853.

Allowable HAP loss means the gallons of HAP that would have been lost from a source if the source was operating at the solvent loss factor for each listed oilseed type. The allowable HAP loss in gallons is determined by multiplying the tons of each oilseed type processed during the previous 12 operating months, as determined in accordance with §63.2855, by the corresponding oilseed solvent loss factor (gal/ton) listed in Table 1 of §63.2840, and by the dimensionless constant 0.64, and summing the result for all oilseed types processed.

Area source means any source that does not meet the major source definition.

As received is the basis upon which all oilseed measurements must be determined and refers to the oilseed chemical and physical characteristics as initially received by the source and prior to any oilseed handling and processing.

Calendar month means 1 month as specified in a calendar.

Compliance date means the date on which monthly compliance recordkeeping begins. For new sources, recordkeeping typically begins upon initial startup, except as noted in §63.2834.

Compliance ratio means a ratio of the actual HAP loss in gallons from the previous 12 operating months to an allowable HAP loss in gallons, which is determined by using oilseed solvent loss factors in Table 1 of §63.2840, the weighted average volume fraction of HAP in solvent received for the previous 12 operating months, and the tons of oilseed processed in the previous 12 operating months. Months during which no oilseed is processed, or months during which the §63.2850(c)(2) or (d)(2) initial startup period or the §63.2850(e)(2) malfunction period applies, are excluded from this calculation. Equation 2 of §63.2840 is used to calculate this value. If the value is less than or equal to 1.00, the source is in compliance. If the value is greater than 1.00, the source is deviating from compliance.

Continuous operation means any process that adds raw material and withdraws product simultaneously. Mass, temperature, concentration and other properties typically approach steady-state conditions.

Conventional desolventizer means a desolventizer toaster that operates with indirect and direct-contact steam to remove solvent from the extracted meal. Oilseeds processed in a conventional desolventizer produce crude vegetable oil and crude meal products, such as animal feed.

Extraction solvent means an organic chemical medium used to remove oil from an oilseed. Typically, the extraction solvent is a commercial grade of hexane isomers which have an approximate HAP content of 64 percent by volume.

Hazardous air pollutant (HAP) means any substance or mixture of substances listed as a hazardous air pollutant under section 112(b) of the Clean Air Act, as of April 12, 2001.

Initial startup date means the first calendar day that a new source processes any listed oilseed.

Initial startup period means a period of time from the initial startup date of a new source, for which you choose to operate the source under an initial startup period subject to §63.2850(c)(2) or (d)(2). During an initial startup period, a source is in compliance with the standards by following the operating and maintenance procedures listed for minimizing HAP emissions in the source's SSM plan rather than being subject to a HAP emission limit. The initial startup period following initial startup of a new source may not exceed 6 calendar months. The initial startup period following a significant modification may not exceed 3 calendar months. Solvent and oilseed inventory information recorded during the initial startup period is excluded from use in any compliance ratio determinations.

Malfunction period means a period of time between the beginning and end of a process malfunction and the time reasonably necessary for a source to correct the malfunction for which you choose to operate the source under a malfunction period subject to §63.2850(e)(2). This period may include the duration of an unscheduled process shutdown, continued operation during a malfunction, or the subsequent process startup after a shutdown resulting from a malfunction. During a malfunction period, a source complies with the standards by following the operating and maintenance procedures described for minimizing HAP emissions in the source's SSM plan rather than being subject to a HAP emission limit. Therefore, solvent and oilseed inventory information recorded during a malfunction period is excluded from use in any compliance ratio determinations.

Nonoperating period means any period of time in which a source processes no agricultural product. This operating status does not apply during any period in which the source operates under an initial startup period as described in §63.2850(c)(2) or (d)(2), or a malfunction period, as described in §63.2850(e)(2).

Normal operating period means any period of time in which a source processes oilseed that is not categorized as an initial startup period as described in §63.2850(c)(2) or (d)(2), or a malfunction period, as described in §63.2850(e)(2). At the beginning and ending dates of a normal operating period, solvent and oilseed inventory information is recorded and included in the compliance ratio determination.

Oilseed means the soybean.

Oilseed solvent loss factor means a ratio expressed as gallons of solvent loss per ton of oilseed processed. The solvent loss factors are presented in Table 1 of §63.2840 and are used to determine the allowable HAP loss.

Operating month means any calendar or accounting month in which a source processes any quantity of oilseed, excluding any entire calendar or accounting month in which the source

operated under an initial startup period as described in §63.2850(c)(2) or (d)(2), or a malfunction period as described in §63.2850(e)(2). An operating month may include time intervals characterized by several types of operating status. However, an operating month must have at least one normal operating period.

Solvent extraction means removing vegetable oil from listed oilseed using an organic solvent in a direct-contact system.

Solvent working capacity means the volume of extraction solvent normally retained in solvent recovery equipment. Examples include components such as the solvent extractor, desolventizer-toaster, solvent storage and working tanks, mineral oil absorption system, condensers, and oil/solvent distillation system.

Vegetable oil production process means the equipment comprising a continuous process for producing crude vegetable oil and meal products, in which oil is removed from oilseeds through direct contact with an organic solvent. Process equipment typically includes the following components: oilseed preparation operations (including conditioning, drying, dehulling, and cracking), solvent extractors, desolventizer-toasters, meal dryers, meal coolers, meal conveyor systems, oil distillation units, solvent evaporators and condensers, mineral oil absorption system, vessels storing solvent-laden materials, and crude meal packaging and storage vessels. A vegetable oil production process does not include vegetable oil refining operations (including operations such as bleaching, hydrogenation, and deodorizing).

D.3.16 One Time Deadlines Relating to NESHAP GGGG

The Permittee shall comply with the following requirements by the dates listed:

(a) The notification of actual startup date must also include whether you have elected to operate under an initial startup period subject to §63.2850(c)(2) and provide an estimate and justification for the anticipated duration of the initial startup period.

(b) The Permittee must submit a notification of compliance status report to the IDEM no later than 60 days after determining initial 12 operating months compliance ratio. If the facility is a new source, the notification of compliance status is generally due no later than 20 calendar months after initial startup (6 calendar months for the initial startup period, 12 operating months to record data, and 2 calendar months to complete the report). The notification of compliance status must contain the followings:

(1) The name and address of the owner or operator.

(2) The physical address of the vegetable oil production process.

(3) Oilseed type processed during the previous 12 operating months.

(4) HAP identified under §63.2854(a) by volume in each delivery of solvent received during the 12 operating months period used for the initial compliance determination.

(5) A statement designating the source as a major source of HAP.

(6) A compliance certification indicating whether the source complied with all of the requirements of this subpart throughout the 12 operating months used for the initial source compliance determination. This certification must include a certification of the following items:

(i) The plan for demonstrating compliance (as described in 40 CFR 63.2851) and SSM plan (as described in 40 CFR 63.2852) are complete and available on-site for inspection.

(ii) You are following the procedures described in the plan for demonstrating compliance.

(iii) The compliance ratio is less than or equal to 1.00.

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SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
TR010000	1st loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR020000	2nd loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR030000	3rd transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
VU010000	Vacuum group package	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
	Biodiesel Soy oil Absorber	156 gpm		Stack S-5
	Biodiesel Water Absorber	0.448 gpm		Stack S-5
BD010000	Biodiesel Day Tank #1	164,000 gals		
BD020000	Biodiesel Day Tank #2	164,000 gals		
BD030000	Biodiesel Storage Tank #1	164,000 gals		
BD040000	Biodiesel Storage Tank #2	164,000 gals		
BD050000	Biodiesel Storage Tank #3	164,000 gals		
BD060000	Biodiesel Storage Tank #4	164,000 gals		
GS010000	Glycerine Tank #1	40,900 gals		
GS020000	Glycerine Tank #2	40,900 gals		
LS010000	Methanol Storage Tank #1	19,400 gallons		
LS020000	Methanol Storage Tank #2	19,400 gallons		
LS030000	Methanol Storage Tank #3	19,400 gallons		
LS040000	Methanol Storage Tank #4	19,400 gallons		
LS050000	Methanol Storage Tank #5	19,400 gallons		
ES010000	Methoxide (catalyst) Storage	19,400 gallons		
ML010000	Biodiesel Loading Rack	1000 gallons per minute		
The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.				

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 PSD Minor Limit for VOC [326 IAC 2-2]

(a) The amount of soybean oil processed to manufacture biodiesel shall be limited to less than 80,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

During the first twelve (12) months after issuance of this Part 70 permit, the total amount of soybeans oil processed shall be limited such that the total soybean oil processed divided by the accumulated months of operation shall not exceed 6,666,666.7 gallons up to a maximum total of 80,000,000 gallons for the first twelve (12) months.

(b) The following facilities' VOC emissions rates shall be limited as follows:

Process	Control	VOC (lbs/hour)	Hours of operation limit
Biodiesel manufacturing process Normal operation	Soy oil absorber followed by a water absorber	0.30	
Biodiesel manufacturing process upset operation	Soy oil absorber followed by a water absorber	29.4	24 hrs/yr
Biodiesel storage tanks and loading rack operation	None	1.40	
Glycerine storage tanks	None	0.0008	
Methanol storage tanks	None	0.38	
Methoxide (catalyst) storage tank	None	0.079	
Biodiesel wastewater	None	0.560	
Biodiesel fugitive emissions	LDR as required by 40 CFR 60, Subpart VV	1.01	

The soybean oil limit in Condition D.4.1(a), the VOC emission limits in Condition D.4.1(b), and the limit on hours of biodiesel manufacturing process upset operation in Condition D.4.1(b), are required to limit the potential to emit of VOC from the biodiesel process to less than 100 tons per 12 consecutive month period.

The purchased soybean oil limit in Condition D.3.2(a), the soybean oil limit in Condition D.4.1(a), the VOC emission limits in Condition D.3.2(b), the VOC emission limits in Condition D.4.1(b), the VOC emission limit in Condition D.5.2, the VOC emission limits in Condition D.6.2, and the limit on hours of biodiesel manufacturing process upset operation in Condition D.4.1(b), are required to limit the potential to emit of VOC from the entire source to less than 250 tons per 12 consecutive month period.

Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.4.2 VOC BACT Requirements [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Permittee shall limit the volatile organic compound (VOC) emissions from the biodiesel manufacturing process as follows:

Facility	Control	Emission Limit
Biodiesel manufacturing process without methanol unloading	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 99% and a VOC emission rate of 0.30 lbs/hr
Biodiesel manufacturing process Upset operation	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 95% and a VOC emission rate of 29.4 lbs/hr
Biodiesel manufacturing process with methanol tank unloading	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 99% and a VOC emission rate of 0.63 lbs/hr
Fugitive emissions	Comply with the provisions of 40 CFR 60, Subpart VV	4.43 tons/year

D.4.3 New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart NNN]

Pursuant to 326 IAC 12 and 40 CFR 60, Subpart NNN (Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations), the Permittee shall reduce emissions of TOC (less methane and ethane) by 98 weight-percent from distillation vent stream on and after the date on which the initial performance test required by 40 CFR 60.8 and 40 CFR 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the distillation unit will be operated, or 180 days after the initial start-up, whichever date comes first.

D.4.4 New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart RRR]

Pursuant to 326 IAC 12 and 40 CFR 60, Subpart RRR (Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes), the Permittee shall operate the reactor with a vent stream flow rate less than 0.011 scm/min.

Compliance Determination Requirements

D.4.5 Volatile Organic Compounds (VOC)

In order to comply with Conditions D.4.1(b) and D.4.2, the soy oil absorber and water absorber shall operate at all times that the biodiesel manufacturing process and the methanol tank unloading are in operation.

D.4.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, the Permittee shall perform VOC testing on the outlet of water absorber with methanol unloading and without methanol unloading; and determine the soy oil absorber's soy oil flow rate and water absorber's water flow rate to verify compliance with Condition D.4.1(b), and D.4.2, utilizing methods as approved by the Commissioner.

(b) These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.4.7 NSPS NNN Testing Requirements [326 IAC 12] [40 CFR 60.664(g)]]

(a) Pursuant to 40 CFR 60.664(g), the Permittee shall recalculate the TRE index value for the distillation unit whenever process changes are made. The TRE index value shall be recalculated based on test data.

(b) Where the recalculated TRE index value is less than or equal to 1.0, the Permittee shall notify IDEM within one week of the recalculation and shall conduct a performance test according to the methods and procedures required by 40 CFR 60.664 in order to determine compliance with 40 CFR 60.662(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(c) Where the initial TRE index value is greater than 8.0 and the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with 40 CFR 60.8 and 60.664 and shall comply with 40 CFR 60.663, 60.664 and 60.665. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

D.4.8 NSPS RRR Testing Requirements [326 IAC 12] [40 CFR 60.704(g)]]

Pursuant to 40 CFR 60.704(g), the Permittee shall use Method 2, 2A, 2C, or 2D of appendix A to 40 CFR Part 60, as appropriate, for determination of volumetric flow rate.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.4.9 Monitoring for soy oil absorber and water absorber

(a) The Permittee shall monitor and record the soy oil flow rate for the soy oil absorber at least once per day.

(b) The Permittee shall monitor and record the water flow rate for the water absorber at least once per day.

(c) A continuous monitoring system shall be calibrated, maintained, and operated on the soy oil absorber for measuring the temperature of the soy oil to the soy oil absorber. For purposes of this condition continuous shall mean temperature measurement no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the soy oil absorber at or above the 3-hour average temperature as recommended by the manufacturer.

(1) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with the limits in conditions D.4.1(b) and D.4.2, as approved by IDEM.

(2) On and after the date the approved stack test results are available, the Permittee shall operate the soy oil absorber at or above the 3-hour average temperature as observed during the compliant stack test.

(d) A continuous monitoring system shall be calibrated, maintained, and operated for measuring the temperature of the water to the water absorber. For purposes of this condition continuous shall mean temperature measurement no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the water absorber at or above the 3-hour average temperature as recommended by the manufacturer.

(1) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in condition D.4.1(b) and D.4.2, as approved by IDEM.

(2) On and after the date the approved stack test results are available, the Permittee shall operate the water absorber at or above the 3-hour average temperature as observed during the compliant stack test.

(e) If any of the following operating conditions occur, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(1) When the soy oil flow rate reading is below the minimum flow rate for any one reading. The minimum flow rate for the mineral oil absorber will be 78 gpm or the minimum soy oil flow rate established during the latest stack test.

(2) When the water flow rate reading is below the minimum flow rate for any one reading. The minimum flow rate for the water absorber will be 0.22 gpm or the minimum water flow rate established during the latest stack test.

(3) When the soy oil absorber temperature reading is below the minimum temperature for any one reading. The minimum temperature for the soy oil absorber will be as recommended by the manufacturer or the minimum temperature established during the latest stack test.

(4) When the water absorber temperature reading is below the minimum temperature for any one reading. The minimum temperature for the water absorber will be as recommended by the manufacturer or the minimum temperature established during the latest stack test.

(f) A flow rate or temperature reading that is below the minimum flow rate or temperature reading is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(g) The instruments used for determining the flow rate and temperature reading shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

(h) The gauges employed to take the soy oil flow and water flow across the soy oil scrubber or water scrubber, respectively, shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within + 10% of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.1, the Permittee shall maintain records of the amount of the soybean oil used to manufacture biodiesel.

(b) To document compliance with Condition D.4.9 (a) and (b), the Permittee shall maintain records of the soy oil flow rate of the soy oil absorber, and the water flow rate of the water

absorber.

(c) To document compliance with Conditions D.4.9(c) and (d), the Permittee shall maintain records of the readings of the operating temperature of the soy oil scrubber and water scrubber, respectively.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.1(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

D.4.12 NSPS RRR Reporting and Recordkeeping Requirements [40 CFR 60.705]

(a) Pursuant to 40 CFR 60.705(h), The Permittee shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.011 scm/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(b) Pursuant to 40 CFR 60.705(l), The Permittee shall submit to the IDEM semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in 40 CFR 60.700(c)(4), including a measurement of the new vent stream flow rate, as recorded under 40 CFR 60.705(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and E_{TOC}.

(c) The Permittee must submit to the IDEM an initial report including a flow rate measurement using the test methods specified in 40 CFR 60.704.

New Source Performance Standard VV

D.4.13 New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart VV]

Pursuant to CFR Part 60, Subpart VV, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart VV, which are incorporated by reference as 326 IAC 12, for the biodiesel process as specified as follows:

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in §60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007–2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5

kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

§ 60.482-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1 through 60.482–10 or §60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in §60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2 to 60.482–10 if it is identified as required in §60.486(e)(5).

§ 60.482-2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482–1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), *Provided* the following requirements are met:

(1) Each dual mechanical seal system is—

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the

requirements of §60.482–10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in §60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482–10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

§ 60.482-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482–9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9.

§ 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in §60.482–1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this

section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482–10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

§ 60.482-6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482–1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ 60.482-7 Standards: Valves in gas/vapor service and in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), §60.483–1, 2, and §60.482–1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the

valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through §60.14 or §60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482-8 Standards: pressure relief devices in light liquid, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §60.482–7(e).

§ 60.482-9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from

immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

§ 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual inspections according to the procedures in §60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in

§60.486(c).

(4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

§ 60.483-1 Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

§ 60.483-2 Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative

work practices, as specified in §60.487(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment.

§ 60.486 Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in §60.482–10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2(e), 60.482–3(i) and 60.482–7(f).

(ii) The designation of equipment as subject to the requirements of §60.482–2(e), §60.482–3(i), or §60.482–7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4.

(4)(i) The dates of each compliance test as required in §§60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of §60.482–7(g) and (h) and to all pumps subject to the requirements of §60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with §60.483–2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482–2(d)(5) and 60.482–3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of §60.482–7, excluding those valves designated for no detectable emissions under the provisions of §60.482–7(f).

(3) Number of pumps subject to the requirements of §60.482–2, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2(e) and those pumps complying with §60.482–2(f).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in §60.482(7)(b) or §60.483–2,

(ii) Number of valves for which leaks were not repaired as required in §60.482–7(d)(1),

(iii) Number of pumps for which leaks were detected as described in §60.482–2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in §60.482–2(c)(1) and (d)(6)(ii),

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§60.483–1 or 60.483–2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless

EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

§ 60.489 List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. a	Chemical
56-81-5	Glycerol.

a CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

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SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:				
Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
SPO10000 (B-1)	Main Boiler, natural gas fired and #2 fuel oil as back up fuel	220 MMBtu/hr	Low NOx burner and Flue gas recirculation	Stack S-3
The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.				

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 PSD Minor Limit for PM/PM_{10} [326 IAC 2-2]

The main boiler's PM, and PM10 emissions rates shall be limited as follows:

Process	Control	PM Limit (lbs/hour)	PM10 Limit (lbs/hour)
Main Boiler	None	3.14	5.19

The soybean usage limit in Condition D.1.3(a), and the PM/PM_{10} emissions limits in Conditions D.1.3(b), D.2.1, D.3.1, D.5.1, and D.6.1 are required to limit the potential to emit of PM/PM_{10} to less than 250 tons per 12 consecutive month period. Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.5.2 PSD Minor Limit for VOC [326 IAC 2-2]

The VOC emissions rate from the main boiler shall be limited as follows:

Process	Control	VOC (lbs/hour)
Boiler	None	1.19

The purchased soybean oil limit in Condition D.3.2(a), the soybean oil limit in Condition D.4.1(a), the VOC emission limits in Condition D.3.2(b), the VOC emission limits in Condition D.4.1(b), the VOC emission limit in Condition D.5.2, the VOC emission limits in Condition D.6.2, and the limit on hours of biodiesel manufacturing process upset operation in Condition D.4.1(b), are required to limit the potential to emit of VOC to less than 250 tons per 12 consecutive month period.

Compliance with the above limits makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.5.3 PSD Minor Limit for SO_2 [326 IAC 2-2]

The amount of distillate oil combusted in the main boiler shall be less than 7,100,857 gallons per twelve consecutive month period with compliance determined at the end of each month.

During the first twelve (12) months after startup of the main boiler, the total amount of distillate oil combusted in the main boiler shall be limited such that the total distillate oil combusted divided by the accumulated months of operation shall not exceed 591,738 gallons up to a maximum total of 7,100,857 gallons for the first twelve (12) months

D.5.4 Particulate [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating) the PM from the main boiler shall be limited to 0.265 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = (1.09/ Q^{0.26})$$

Where Pt = Max Allowable Particulate Emissions in lbs/MMBtu

Q = Total Source Operating Capacity of 229 MMBtu

D.5.5 SO_2 Emissions Limit [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 7-1.1-(2)(a)(3), (SO_2 Emissions Limitations) the SO_2 emissions from the 220 MMBtu per hour oil-fired boiler shall not exceed five tenths (0.5) pound per MMBtu heat input. Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a thirty (30) day rolling weighted average.

Compliance Determination Requirements

D.5.6 SO_2 Emissions [326 IAC 7-2-1]

Compliance with 40 CFR 60, Subpart Db requirements will satisfy Condition D.5.5.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.5.7 Visible Emissions Notations

(a) Visible emission notations of the main boiler stack exhaust shall be performed once per day during normal daylight operations when combusting No. 2 fuel oil. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.8 Record Keeping Requirements

(a) To document compliance with Condition D.5.7, the Permittee shall maintain records of visible emission notations of the main boiler stack exhaust.

(b) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.5.9 Reporting Requirements

The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after the end of the six (6) month period being reported. The natural gas-fired boiler certification does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

D.5.10 New Source Performance Standard (NSPS) [326 IAC 12] [40 CFR 60, Subpart Db]

Pursuant to CFR Part 60, Subpart Db, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart Db, which are incorporated by reference as 326 IAC 12, for the main boiler as specified as follows:

§ 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour).

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

§ 60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, Standard Specifications for Fuel Oils (incorporated by reference—see §60.17).

Full capacity means operation of the steam generating unit at 90 percent or more of the

maximum steady-state design heat input capacity.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hour) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m ^{3} (70,000 Btu/hour-ft ^{3}).

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835–82, 86, 87, 91, or 97, "Standard Specification for Liquid Petroleum Gases" (IBR—see §60.17).

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Potential sulfur dioxide emission rate means the theoretical sulfur dioxide emissions (ng/J, lb/million Btu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Steam generating unit means a device that combusts any fuel or byproduct/waste to produce steam or to heat water or any other heat transfer medium.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Very low sulfur oil means an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 215 ng/J (0.5 lb/million Btu) heat input.

§ 60.42b Standard for sulfur dioxide.

(d) On and after the date on which the performance test is completed or required to be completed under §60.8 of this part, whichever comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 215 ng/J (0.5 lb/million Btu) heat input if the affected facility combusts oil other than very low sulfur oil.

(e) Except as provided in paragraph (f) of this section, compliance with the emission limits,

fuel oil sulfur limits, under this section are determined on a 30-day rolling average basis.

(g) Except as provided in paragraph (i) of this section, the sulfur dioxide emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) The owner or operator of an affected facility combusting very low sulfur oil shall demonstrate that the oil meets the definition of very low sulfur oil by maintaining fuel receipts as described in §60.49b(r).

§ 60.43b Standard for particulate matter.

(f) On and after the date on which the initial performance test is completed or is required to be completed under 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil, shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(g) The opacity standards apply at all times, except during periods of startup, shutdown or malfunction.

§ 60.44b Standard for nitrogen oxides.

(h) For purposes of paragraph (i) of this section, the nitrogen oxide standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test:

(l) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility which commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO_2) in excess of the following limits:

(1) If the affected facility combusts oil, or natural gas: A limit of 86 ng/J_I (0.20 lb/million Btu) heat input

§ 60.45b Compliance and performance test methods and procedures for sulfur dioxide.

(a) The sulfur dioxide emission standards under §60.42b apply at all times.

(j) The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in §60.49b(r).

§ 60.46b Compliance and performance test methods and procedures for particulate matter and

nitrogen oxides.

(a) The opacity limits under §60.43b apply at all times except during periods of startup, shutdown, or malfunction. The nitrogen oxides emission standards under §60.44b apply at all times.

(c) Compliance with the nitrogen oxides emission standards under §60.44b shall be determined through performance testing under paragraph (e) of this section.

(d) To determine compliance with the opacity limits under §60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under §60.8 using the following procedures and reference methods:

(7) Method 9 is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for nitrogen oxides required under §60.44b, the owner or operator of an affected facility shall conduct the performance test as required under §60.8 using the continuous system for monitoring nitrogen oxides under §60.48(b).

(1) For the initial compliance test, nitrogen oxides from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standards under §60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

§ 60.47b Emission monitoring for sulfur dioxide.

(f) The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the emission monitoring requirements of this section if the owner or operator obtains fuel receipts as described in §60.49b(r).

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

(a) The owner or operator of an affected facility subject to the opacity standard under §60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

(c) The continuous monitoring systems required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by paragraph (b) of this section and required under §60.13(h) shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under §60.44b. The 1-hour averages shall be calculated using the data points required

under §60.13(b). At least 2 data points must be used to calculate each 1-hour average.

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(2) For affected facilities combusting oil, or natural gas, the span value for nitrogen oxides is determined as follows:

Fuel	Span values for nitrogen oxides (PPM)
Natural gas.....	500
Oil	500

(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

§ 60.49b Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by §60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility,

(b) The owner or operator of each affected facility subject to the sulfur dioxide, and/or nitrogen oxides emission limits under §§60.42b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

(f) For facilities subject to the opacity standard under §60.43b, the owner or operator shall maintain records of opacity.

(g) the owner or operator of an affected facility subject to the nitrogen oxides standards under §60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date.

(2) The average hourly nitrogen oxides emission rates (expressed as NO_2) (ng/J or lb/million Btu heat input) measured or predicted.

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted

hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

(4) Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken.

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

(7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.

(8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(j) The owner or operator of any affected facility subject to the sulfur dioxide standards under §60.42b shall submit reports.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

(r) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under §60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in §60.41b. For the purposes of this section, the oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the reporting period.

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_X and/or opacity in lieu of submitting the written reports required under paragraphs (i), (j), of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority

to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

D.5.12 General Provisions Relating to NESHAP DDDDD [326 IAC 20-1] [40 CFR Part 63, Subpart A]

Pursuant to 40 CFR 63.7505, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the main boiler, as specified in Appendix A of 40 CFR Part 63, Subpart DDDDD in accordance with the schedule in 40 CFR 63, Subpart DDDD.

D.5.13 NESHAP DDDDD [40 CFR Part 63, Subpart DDDDD]

Pursuant to CFR Part 63, Subpart DDDDD, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart DDDDD, for the main boiler as specified as follows:

§ 63.7490 What is the affected source of this subpart?

(a) This subpart applies to new affected sources as described in paragraphs (a)(1) and (2) of this section.

(2) The affected source of this subpart is each new industrial, commercial, or institutional boiler or process heater located at a major source as defined in §63.7575.

(b) A boiler is new if you commence construction of the boiler after January 13, 2003, and you meet the applicability criteria at the time you commence construction.

§ 63.7495 When do I have to comply with this subpart?

(a) If you have a new boiler, you must comply with this subpart upon startup of your boiler.

(d) You must meet the notification requirements in §63.7545 according to the schedule in §63.7545 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limits and work practice standards in this subpart.

Emission Limits and Work Practice Standards
§ 63.7499 What are the subcategories of boilers?

The subcategories of boilers are large solid fuel, limited use solid fuel, small solid fuel, large liquid fuel, limited use liquid fuel, small liquid fuel, large gaseous fuel, limited use gaseous fuel, and small gaseous fuel. Each subcategory is defined in §63.7575.

§ 63.7500 What emission limits, work practice standards, and operating limits must I meet?

(a) You must meet the requirements in paragraphs (a)(1) of this section.

(1) You must meet each emission limit and work practice standard in Table 1 to this subpart that applies to your boiler, except as provided under §63.7507.

(b) As provided in §63.6(g), EPA may approve use of an alternative to the work practice standards in this section.

General Compliance Requirements
§ 63.7505 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limits and the work practice standards in this subpart at all times, except during periods of startup, shutdown, and malfunction.

(b) You must always operate and maintain your affected source, and monitoring equipment, according to the provisions in §63.6(e)(1)(i).

(e) If you have an applicable emission limit or work practice standard, you must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3).

§ 63.7506 Do any boilers have limited requirements?

(a) New boilers in the large liquid fuel subcategory that burn only fossil fuels and other gases and do not burn any residual oil are subject to the emission limits and applicable work practice standards in Table 1 to this subpart. You are not required to conduct a performance test to demonstrate compliance with the emission limits. You are not required to set and maintain operating limits to demonstrate continuous compliance with the emission limits. However, you must meet the requirements in paragraphs (a)(1) and (2) of this section and meet the CO work practice standard in Table 1 to this subpart.

(1) To demonstrate initial compliance, you must include a signed statement in the Notification of Compliance Status report required in §63.7545(e) that indicates you burn only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels.

(2) To demonstrate continuous compliance with the applicable emission limits, you must also keep records that demonstrate that you burn only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels. You must also include a signed statement in each semiannual compliance report required in §63.7550 that indicates you burned only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels, during the reporting period.

Testing, Fuel Analyses, and Initial Compliance Requirements

§ 63.7510 What are my initial compliance requirements and by what date must I conduct them?

(c) For affected sources that have an applicable work practice standard, your initial compliance requirements depend on the subcategory and rated capacity of your boiler. If your boiler is in any of the large subcategories and has a heat input capacity of 100 MMBtu per hour or greater, your initial compliance demonstration is conducting a performance evaluation of your continuous emission monitoring system for carbon

monoxide according to §63.7525(a).

(g) If your new affected source commences construction after November 12, 2004, you must demonstrate initial compliance with the promulgated emission limits and work practice standards no later than 180 days after startup of the source.

§ 63.7525 What are my monitoring, installation, operation, and maintenance requirements?

(a) If you have an applicable work practice standard for carbon monoxide, and your boiler is in any of the large subcategories and has a heat input capacity of 100 MMBtu per hour or greater, you must install, operate, and maintain a continuous emission monitoring system (CEMS) for carbon monoxide according to the procedures in paragraphs (a)(1) through (6) of this section by the compliance date specified in §63.7495.

(1) Each CEMS must be installed, operated, and maintained according to Performance Specification (PS) 4A of 40 CFR part 60, appendix B, and according to the site-specific monitoring plan developed according to §63.7505(d).

(2) You must conduct a performance evaluation of each CEMS according to the requirements in §63.8 and according to PS 4A of 40 CFR part 60, appendix B.

(3) Each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(4) The CEMS data must be reduced as specified in §63.8(g)(2).

(5) You must calculate and record a 30-day rolling average emission rate on a daily basis. A new 30-day rolling average emission rate is calculated as the average of all of the hourly CO emission data for the preceding 30 operating days.

(6) For purposes of calculating data averages, you must not use data recorded during periods of monitoring malfunctions, associated repairs, out-of-control periods, required quality assurance or control activities, or when your boiler or process heater is operating at less than 50 percent of its rated capacity. You must use all the data collected during all other periods in assessing compliance. Any period for which the monitoring system is out of control and data are not available for required calculations constitutes a deviation from the monitoring requirements.

§ 63.7530 How do I demonstrate initial compliance with the emission limits and work practice standards?

(b) New boilers in one of the liquid fuel subcategories that burn only fossil fuels and other gases and do not burn any residual oil must demonstrate compliance according to §63.7506(a).

Continuous Compliance Requirements
§ 63.7535 How do I monitor and collect data to demonstrate continuous compliance?

(a) You must monitor and collect data according to this section and the site-specific monitoring plan required by §63.7505(d).

(b) Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) at all times that the affected source is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, or required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system. Boilers and process heaters that have an applicable carbon monoxide work practice standard and are required to install and operate a CEMS, may not use data recorded during periods when the boiler or process heater is operating at less than 50 percent of its rated capacity.

§ 63.7540 How do I demonstrate continuous compliance with the emission limits and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit, operating limit, and work practice standard in Tables 1 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (10) of this section.

(2) You must keep records of the type and amount of all fuels burned in each boiler during the reporting period to demonstrate that all fuel types burned would either result in lower emissions of, HCl, than the applicable emission limit for each.

(10) If you have an applicable work practice standard for carbon monoxide, and you are required to install a CEMS according to §63.7525(a), then you must meet the requirements in paragraphs (a)(10)(i) through (iii) of this section.

(i) You must continuously monitor carbon monoxide according to §§63.7525(a) and 63.7535.

(ii) Maintain a carbon monoxide emission level below your applicable carbon monoxide work practice standard in Table 1 to this subpart at all times except during periods of startup, shutdown, malfunction, and when your boiler or process heater is operating at less than 50 percent of rated capacity.

(iii) Keep records of carbon monoxide levels according to §63.7555(b).

(b) You must report each instance in which you did not meet each emission limit, operating limit, and work practice standard in Tables 1 through 4 to this subpart that apply to you. You must also report each instance during a startup, shutdown, or malfunction when you did not meet each applicable emission limit, operating limit, and work practice standard. These instances are deviations from the emission limits and work practice standards in this subpart. These deviations must be reported according to the requirements in §63.7550.

(c) During periods of startup, shutdown, and malfunction, you must operate in accordance with the SSMP as required in §63.7505(e).

(d) Consistent with §§63.6(e)and 63.7(e)(1), deviations that occur during a period of

startup, shutdown, or malfunction are not violations if you demonstrate to the EPA Administrator's satisfaction that you were operating in accordance with your SSMP. The EPA Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in §63.6(e).

Notification, Reports, and Records
§ 63.7545 What notifications must I submit and when?

(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8 (e), (f)(4) and (6), and 63.9 (b) through (h) that apply to you by the dates specified.

(c) As specified in §63.9(b)(4) and (b)(5), if you startup your new affected source on or after November 12, 2004, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source.

§ 63.7550 What reports must I submit and when?

(a) You must submit each report in Table 9 to this subpart that applies to you.

(b) Unless the EPA Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.7495 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for your source in §63.7495.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.7495.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The compliance report must contain the information required in paragraphs (c)(1) through (11) of this section.

(1) Company name and address.

(2) 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.

(3) Date of report and beginning and ending dates of the reporting period.

(4) The total fuel use by each affected source subject to an emission limit, for each calendar month within the semiannual reporting period, including, but not limited to, a description of the fuel and the total fuel usage amount with units of measure.

(6) A signed statement indicating that you burned no new types of fuel.

(9) If you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your SSMP, the compliance report must include the information in §63.10(d)(5)(i).

(10) If there are no deviations from any emission limits or operating limits in this subpart that apply to you, and there are no deviations from the requirements for work practice standards in this subpart, a statement that there were no deviations from the emission limits, or work practice standards during the reporting period.

(11) If there were no periods during which the CMSs, including CEMS, , were out of control as specified in §63.8(c)(7), a statement that there were no periods during which the CMSs were out of control during the reporting period.

(d) For each deviation from an emission limit or operating limit in this subpart and for each deviation from the requirements for work practice standards in this subpart that occurs at an affected source where you are not using a CMSs to comply with that emission limit, operating limit, or work practice standard, the compliance report must contain the information in paragraphs (c)(1) through (10) of this section and the information required in paragraphs (d)(1) through (4) of this section. This includes periods of startup, shutdown, and malfunction.

(1) The total operating time of each affected source during the reporting period.

(2) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated.

(3) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.

(e) For each deviation from an emission limitation or work practice standard in this subpart occurring at an affected source where you are using a CMS to comply with that emission limit, or work practice standard, you must include the information in paragraphs (c) (1) through (10) of this section and the information required in paragraphs (e) (1) through (12) of this section. This includes periods of startup, shutdown, and malfunction and any deviations from your site-specific monitoring plan as required in §63.7505(d).

(1) The date and time that each malfunction started and stopped and description of the nature of the deviation (*i.e.*, what you deviated from).

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out of control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMSs downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(9) A brief description of the source for which there was a deviation.

(10) A brief description of each CMS for which there was a deviation.

(11) The date of the latest CMS certification or audit for the system for which there was a deviation.

(12) A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to Table 9 to this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

§ 63.7555 What records must I keep?

(a) You must keep records according to paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in §63.10(b)(2)(xiv).

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, fuel analyses, or other compliance demonstrations,

performance evaluations, and opacity observations as required in §63.10(b)(2)(viii).

(b) For each CEMS, you must keep records according to paragraphs (b)(1) through (5) of this section.

(1) Records described in §63.10(b)(2) (vi) through (xi).

(3) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(4) Request for alternatives to relative accuracy test for CEMS as required in §63.8(f)(6)(i).

(5) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(d) For each boiler subject to an emission limit, you must also keep the records in paragraphs (d)(1) through (5) of this section.

(1) You must keep records of monthly fuel use by each boiler, including the type(s) of fuel and amount(s) used.

§ 63.7560 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records off site for the remaining 3 years.

Other Requirements and Information
§ 63.7565 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§ 63.7570 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities listed in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not

transferred to the State, local, or tribal agency, however, the U.S. EPA retains oversight of this subpart and can take enforcement actions, as appropriate.

(1) Approval of alternatives to the non-opacity emission limits and work practice standards in §63.7500(a) and (b) under §63.6(g).

(2) Approval of alternative opacity emission limits in §63.7500(a) under §63.6(h)(9).

(3) Approval of major change to test methods in Table 5 to this subpart under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(4) Approval of major change to monitoring under §63.8(f) and as defined in §63.90.

(5) Approval of major change to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

§ 63.7575 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in §63.2 (the General Provisions), and in this section as follows:

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Waste heat boilers are excluded from this definition.

Deviation. (1) Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(i) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard;

(ii) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(iii) Fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless or whether or not such failure is permitted by this subpart.

(2) A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

Distillate oil means fuel oils, including recycled oils, that comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D396–02a, "Standard Specifications for Fuel Oils[1]" (incorporated by reference, see §63.14(b)).

Firetube boiler means a boiler in which hot gases of combustion pass through the tubes and water contacts the outside surfaces of the tubes.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, subbituminous coal, lignite, anthracite, biomass, construction/demolition material, salt water laden wood, creosote treated wood, tires, residual oil. Individual fuel types received from different suppliers are not considered new fuel types except for construction/demolition material.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas is exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Large liquid fuel subcategory includes any watertube boiler or process heater that does not burn any solid fuel and burns any liquid fuel either alone or in combination with gaseous fuels, has a rated capacity of greater than 10 MMBtu per hour heat input, and has an annual capacity factor of greater than 10 percent. Large gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply emergencies are not included in this definition.

Liquid fossil fuel means petroleum, distillate oil, residual oil and any form of liquid fuel derived from such material.

Liquid fuel includes, but is not limited to, distillate oil, residual oil, waste oil, and process liquids.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835–03a, "Standard Specification for Liquid Petroleum Gases" (incorporated by reference, see §63.14(b)).

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an alternative method.

Residual oil means crude oil, and all fuel oil numbers 4, 5 and 6, as defined by the American Society for Testing and Materials in ASTM D396–02a, "Standard Specifications for Fuel Oils[1]" (incorporated by reference, see §63.14(b)).

Responsible official means responsible official as defined in 40 CFR 70.2.

Total selected metals means the combination of the following metallic HAP: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Watertube boiler means a boiler in which water passes through the tubes and hot gases of combustion pass over the outside surfaces of the tubes.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

Tables to Subpart DDDDD of Part 63
Table 1 to Subpart DDDDD of Part 63.—Emission Limits and Work Practice Standards

As stated in § 63.7500, you must comply with the following applicable emission limits and work practice standards:

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	You must meet the following emission limits and work practice standards . . .
4. New large liquid fuel.	a. Particulate Matter.	0.03 lb per MMBtu of heat input.
	b. Hydrogen Chloride	0.0005 lb per MMBtu of heat input.
	c. Carbon Monoxide..	400 ppm by volume on a dry basis corrected to 3 percent oxygen (30-day rolling average for units 100 MMBtu/hr or greater, 3-run average for units less than 100 MMBtu/hr).

Table 8 to Subpart DDDDD of Part 63.—Demonstrating Continuous Compliance

As stated in § 63.7540, you must show continuous compliance with the emission limitations for affected sources according to the following:

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
7. Fuel Pollutant Content.....	b. Keeping monthly records of fuel use according to § 63.7540(a).

Table 9 to Subpart DDDDD of Part 63.—Reporting Requirements

As stated in § 63.7550, you must comply with the following requirements for reports:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report.....	a. Information required in § 63.7550(c)(1) through (11); and b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards in Table 8 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period;	Semiannually according to the requirements in § 63.7550(b).

	and c. If you have a deviation from any emission limitation (emission limit and operating limit) or work practice standard during the reporting period, the report must contain the information in § 63.7550(d). If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control, as specified in § 63.8(c)(7), the report must contain the information in § 63.7550(e); and d. If you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in § 63.10(d)(5)(i)	
2. An immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your startup, shutdown, and	a. Actions taken for the event; and	i. By fax or telephone within 2 working days after starting actions inconsistent with the plan; and

malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard.			
	b. The information in § 63.10(d)(5)(ii)	7 working days	ii. By letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority.

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Table 10 to Subpart DDDDD of Part 63.—Applicability of General Provisions to Subpart DDDDD

As stated in § 63.7565, you must comply with the applicable General Provisions according to the following:

Citation	Subject	Brief description	Applicable
§ 63.1	Applicability	Initial Applicability Determination; Applicability After Standard Established; Permit Requirements; Extensions, Notifications.	Yes.
§ 63.2	Definitions	Definitions for part 63 standards.	Yes.
§ 63.3	Units and Abbreviations	Units and abbreviations for part 63 standards.	Yes.
§ 63.4	Prohibited Activities	Prohibited Activities; Compliance date; Circumvention, Severability.	Yes.
§ 63.6(a)	Applicability	GP apply unless compliance extension;.	Yes.
§ 63.6(b)(1)-(4)	Compliance Dates for New	Standards apply at upon startup;	Yes.
§ 63.6(b)(5)	Notification	Must notify if commenced construction	Yes.
§ 63.6(b)(6)	[Reserved]		
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(d)	[Reserved]		
§ 63.6(e)(1)-(2)	Operation & Maintenance.	Operate to minimize emissions at all times; and Correct malfunctions as soon as practicable; and Operation and maintenance requirements independently enforceable; Administrator will use to determine if operation and maintenance requirements were met.	Yes.
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction Plan (SSMP).	Requirement for SSM and startup, shutdown, malfunction plan; and content of SSMP.	Yes.
§ 63.6(f)(1)	Compliance Except During SSM.	Comply with emission standards at all times except during SSM.	Yes.
§ 63.6(f)(2)-(3)	Methods for Determining Compliance.	Compliance based on operation and maintenance plans, records, inspection.	Yes.
§ 63.6(g)(1)-(3)	Alternative Standard	Procedures for getting an	Yes.

		alternative standard.	
§ 63.6(h)(2)(ii).....	[Reserved]		
§ 63.6(h)(3).....	[Reserved]		
§ 63.6(i)(1)-(14).....	Compliance Extension.....	Procedures and criteria for Administrator to grant compliance extension.	Yes.
§ 63.6(j).....	Presidential Compliance Exemption.	President may exempt source category from requirement to comply with rule.	Yes.
§ 63.7(a)(1).....	Performance Test Dates....	Dates for Conducting Initial Performance Testing and Other Compliance Demonstrations.	Yes.
§ 63.7(a)(2)(ii-viii).....	[Reserved]		
§ 63.7(a)(3).....	Section 114 Authority.....	Administrator may require a performance test under CAA Section 114 at any time.	Yes.
§ 63.7(e)(4).....	Interaction with other sections of the Act.	Nothing in § 63.7(e)(1) through (4) can abrogate the Administrator's authority to require testing under	Yes.
§ 63.8(c)(1).....	Monitoring System Operation and Maintenance.	Maintain monitoring system in a manner consistent with good air pollution control practices.	Yes.
§ 63.8(c)(1)(i).....	Routine and Predictable SSM.	Maintain and operate CMS according to § 63.6(e)(1).	Yes.
§ 63.8(c)(1)(ii).....	SSM not in SSMP.....	Must keep necessary parts available for routine repairs of CMSs.	Yes.
§ 63.8(c)(1)(iii).....	Compliance with Operation and Maintenance Requirements.	Must develop and implement an SSMP for CMSs.	Yes.
§ 63.8(c)(2)-(3).....	Monitoring System Installation.	Must install to get representative emission and parameter measurements; and must verify operational status before or at performance test.	Yes.
§ 63.8(c)(7)-(8).....	Continuous Monitoring Systems Requirements.	Out-of-control periods, including reporting.	Yes.
§ 63.8(d).....	Continuous Monitoring Systems Quality Control.	Requirements for continuous monitoring systems quality control, including calibration, etc.; and must keep quality control plan on record for the life of the affected source. Keep old versions for 5 years	Yes.

		after revisions.	
§ 63.8(e)	Continuous monitoring systems Performance Evaluation.	Notification, performance evaluation test plan, reports.	Yes.
§ 63.8(f)(1)-(5)	Alternative Monitoring Method.	Procedures for Administrator to approve alternative monitoring.	Yes.
§ 63.9(a)	Notification Requirements.	Applicability and State Delegation.	Yes.
§ 63.9(b)(1)-(5)	Initial Notifications	Submit notification 120 days after effective date; and Notification of intent to construct and Notification of commencement of construct; Notification of startup; and Contents of each.	Yes.
§ 63.9(c)	Request for Compliance Extension.	Can request if cannot comply by date.	Yes.
§ 63.9(h)(1)-(6)	Notification of Compliance Status.	Contents; and due 60 days after end of performance test or other compliance demonstration, and when to submit to Federal vs. State authority.	Yes.
§ 63.9(i)	Adjustment of Submittal Deadlines.	Procedures for Administrator to approve change in when notifications must be submitted.	Yes.
§ 63.9(j)	Change in Previous Information.	Must submit within 15 days after the change.	Yes.
§ 63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension; and when to submit to Federal vs. State authority; and procedures for owners of more than 1 source.	Yes.
§ 63.10(b)(1)	Recordkeeping/Reporting	General Requirements; and keep all records readily available and keep for 5 years.	Yes.
§ 63.10(b)(2)(i)-(v)	Records related to Startup, Shutdown, and Malfunction.	Occurrence of each of operation (process, equipment); and actions during startup, shutdown, and malfunction.	Yes.
§ 63.10(b)(2)(vi) and (x-xi)	Continuous monitoring systems Records.	Malfunctions, inoperative, out-of-control; and calibration checks; and adjustments, maintenance.	Yes.
§ 63.10(b)(2)(vii)-(ix)	Records	Measurements to demonstrate compliance with emission limitations; and	Yes.

		performance test, performance evaluation; and measurements to determine conditions of performance tests and performance evaluations.	
§ 63.10(b)(2)(xii)	Records	Records when under waiver.	Yes.
§ 63.10(b)(2)(xiv)	Records	All documentation supporting Initial Notification and Notification of Compliance Status.	Yes.
§ 63.10(b)(3)	Records	Applicability Determinations.	Yes.
§ 63.10(c)(1),(5)-(8),(10)-(15).	Records	Additional Records for continuous monitoring systems.	Yes.
§ 63.10(d)(1)	General Reporting Requirements.	Requirement to report	Yes.
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports.	Contents and submission	Yes.
§ 63.10(e)(1)(2)	Additional continuous monitoring systems Reports.	Must report results for each CEM on a unit; and written copy of performance evaluation	Yes.
§ 63.10(e)(3)	Reports	Excess Emission Reports	No.
§ 63.10(e)(3)(i-iii)	Reports	Schedule for reporting excess emissions	No.
§ 63.10(f)	Waiver for Recordkeeping/ Reporting.	Procedures for Administrator to waive.	Yes.
§ 63.12	Delegation	State authority to enforce standards.	Yes.
§ 63.13	Addresses	Addresses where reports, notifications, and requests are sent.	Yes.
§ 63.14	Incorporation by Reference	Test methods incorporated by reference.	Yes.
§ 63.15	Availability of Information.	Public and confidential Information.	Yes.

D.5.13 One Time Deadlines Relating to NESHAP DDDDD

The Permittee shall comply with the following requirements by the dates listed:

As specified in 40 CFR 63.9(b)(4) and (b)(5), the Permittee must submit an Initial Notification not later than 15 days after the actual date of startup of the main boiler.

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SECTION D.6 **FACILITY OPERATION CONDITIONS**

Description	Capacity (gallons)	Control
Natural gas fired high pressure steam generator	9 MMBtu/hr	None
Clay Bin	10,800	Clay Bin Filter
Hull Bin	13,900 cu. ft	Hull Bin Filter
Silica Bin	<10,800	Silica Bin Filter
Bleaching Earth Bins	<10800	Bleaching Earth Bins Filter
Salt Tank	<10,800	Filter
Filter Aid	<10,800	Filter
#2 fuel oil storage tank	29,500 gallons	None
Cooling tower	11,000 gpm	None
Three (3) Diesel Fire Pumps	575 BHP each	None
Paved and unpaved roads and parking lots with public access		None
Bean Storage Bin No. 1 thru 4	720 tons/hr	None

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 PSD Minor Limit for PM/PM_{10} [326 IAC 2-2]

The PM, and PM_{10} emissions limits as specified in the following table shall be as follows:

Process	Control	PM Limit (lbs/hour)	PM10 Limit (lbs/hour)
Clay Bin	Clay Bin Filter	0.032	0032
Hull Bin	Hull Bin Filter	0.107	0.107
Silica Bin	Silica Bin Filter	0.0322	0.0322
Bleaching Earth Bins	Bleaching Earth Bins Filter	0.0322	0.0322
Salt Tank	Filter	0.0322	0.0322
Filter Aid	Filter	0.0322	0.0322
High Pressure Steam Generator	None	0.017	0.067

Process	Control	PM Limit (lbs/hour)	PM10 Limit (lbs/hour)
Fire Pumps	None	0.61	0.61
Cooling Tower	None	0.12	0.12
Road vehicle emissions.	None	4.14 tpy	1.88 tpy
Bean Storage Bins #1-4		1.80	0.45

The soybean usage limit in Condition D.1.3(a), and the PM/PM_{10} emissions limits in Conditions D.1.3(b), D.2.1, D.3.1, D.5.1, and D.6.1 are required to limit the potential to emit of PM/PM_{10} to less than 250 tons per 12 consecutive month period. Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.6.2 PSD Minor Limit for VOC [326 IAC 2-2]

The VOC emission limits as specified in the following table shall be as follows:

Process	Control	VOC (lbs/hour)
#2 fuel oil storage tank	None	0.002
High pressure steam generator	None	0.045
Diesel fire pumps	None	0.57

The purchased soybean oil limit in Condition D.3.2(a), the soybean oil limit in Condition D.4.1(a), the VOC emission limits in Condition D.3.2(b), the VOC emission limits in Condition D.4.1(b), the VOC emission limit in Condition D.5.2, the VOC emission limits in Condition D.6.2, and the limit on hours of biodiesel manufacturing process upset operation in Condition D.4.1(b), are required to limit the potential to emit of VOC to less than 250 tons per 12 consecutive month period.

Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

D.6.3 Particulate [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating) the PM from the high pressure steam generating unit shall be limited to 0.265 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = (1.09/ Q^{0.26})$$

Where Pt = Max Allowable Particulate Emissions in lbs/MMBtu

Q = Total Source Operating Capacity of 229 MMBtu

D.6.4 Particulate Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the following processes shall not exceed the limits specified in the following table:

Process	Process Weight Rate (tons/hr)	PM Emission Limit (lbs/hr)
Clay Bin	20	30.5
Hull Bin	330	64.1
Silica Bin	20	30.5
Bleaching Earth	20	30.5
Filter Aid vents	20	30.5
Salt Tank	20	30.5
Cooling Tower	Less than 100 lbs/hr	0.551

D.6.5 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the Bean Storage Bins #1-4except when otherwise specified in 40 CFR Part 60, Subpart DD.

D.6.6 New Source Performance Standards (NSPS) Grain Elevators [326 IAC 12] [40 CFR Part 60, Subpart DD]

Pursuant to 40 CFR Part 60, Subpart DD (Standards of Performance for Grain Elevators), on and after the date on which the performance test required to be conducted (within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup) by 40 CFR 60.8 is completed, the particulate matter emissions from the Bean Storage Bins #1-4 shall not exceed 0.01 gr/dscf and the gasses discharged shall not exceed zero percent (0 %) opacity.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

D.6.7 NESHAP DDDDD [40 CFR Part 63, Subpart DDDDD]

Pursuant to CFR Part 63, Subpart DDDDD, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart DDDDD, for the high pressure steam generator as specified as follows:

§ 63.7490 What is the affected source of this subpart?

(a) This subpart applies to new affected sources as described in paragraphs (a)(1) and (2) of this section.

(2) The affected source of this subpart is each new industrial boiler located at a major source as defined in §63.7575.

(b) A boiler is new if you commence construction of the boiler after January 13, 2003, and you meet the applicability criteria at the time you commence construction.

§ 63.7495 When do I have to comply with this subpart?

(a) If you have a new boiler, you must comply with this subpart upon startup of your boiler.

Emission Limits and Work Practice Standards
§ 63.7499 What are the subcategories of boilers?

The subcategories of boilers are large solid fuel, limited use solid fuel, small solid fuel, large liquid fuel, limited use liquid fuel, small liquid fuel, large gaseous fuel, limited use gaseous fuel, and small gaseous fuel. Each subcategory is defined in §63.7575.

§ 63.7506 Do any boilers have limited requirements?

(c) The affected boilers listed in paragraphs (c) (4) of this section are not subject to the initial notification requirements in §63.9(b) and are not subject to any requirements in this subpart or in subpart A of this part (*i.e.*, they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSM plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart, or any other requirements in subpart A of this part.

(4) New small gaseous fuel units.

§ 63.7575 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in §63.2 (the General Provisions), and in this section as follows:

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Waste heat boilers are excluded from this definition.

Firetube boiler means a boiler in which hot gases of combustion pass through the tubes and water contacts the outside surfaces of the tubes.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas is exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835–03a, "Standard Specification for Liquid Petroleum Gases" (incorporated by reference, see §63.14(b)).

Responsible official means responsible official as defined in 40 CFR 70.2.

Small gaseous fuel subcategory includes any firetube boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment or gas

supply emergencies, and any boiler or process heater that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment or gas supply emergencies, and has a rated capacity of less than or equal to 10 MMBtu per hour heat input.

Watertube boiler means a boiler in which water passes through the tubes and hot gases of combustion pass over the outside surfaces of the tubes.

Remainder of page left blank intentionally.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT CERTIFICATION

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)

☐ Report (specify)

☐ Notification (specify)

☐ Affidavit (specify)

☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE BRANCH
100 North Senate Avenue
Indianapolis, Indiana 46204
Phone: 317-233-5674
Fax: 317-233-5967

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name:	Louis Dreyfus Agricultural Industries LLC
Source Address:	Claypool, Indiana 46510
Mailing Address:	4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.:	OP T085-21297-00102

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)

X The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and

X The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed By: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
SEMI-ANNUAL NATURAL GAS FIRED MAIN BOILER CERTIFICATION

Source Name:	Louis Dreyfus Agricultural Industries LLC
Source Address:	Claypool, Indiana 46510
Mailing Address:	4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.:	OP T085-21297-00102

☐ Natural Gas Only
☐ Alternate Fuel burned
From:_____ To:_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Signature:
Printed Name:
Title/Position:
Phone:
Date:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Grain Receiving
Parameter: Soybean Processed
Limit: 1,686,300 tons/twelve months

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report
for First 12 months of Operation

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Grain Receiving
Parameter: Soybean Processed
Limits: (1) 1,686,300 tons/twelve months
(2) Running Monthly Average: 140,525 tons

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2	(Column 1 + Column 2) / (Total Months of Operation)
	This Month	Previous 11 Months	*Total Months of Operation	Running average up to current month
Month 1				
Month 2				
Month 3				

* When determining the total usage for previous 11 months, assume zero usage during the months when the source was not in operation.

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Refinery
Parameter: Purchased soybean oil
Limit: 80,000,000 gallons/twelve months

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report
for First Twelve months of Operation

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Refinery
Parameter: Purchased soybean oil
Limit: (1) 80,000,000 gallons/twelve months
(2) Running Monthly Average: 6,666,666.7 gallons

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2	(Column 1 + Column 2) / (Total Months of Operation)
	This Month	Previous 11 Months	*Total Months of Operation	Running average up to current month
Month 1				
Month 2				
Month 3				

* When determining the total usage for previous 11 months, assume zero usage during the months when the source was not in operation.

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Biodiesel Reactor
Parameter: Soy bean oil
Limit: 80,000,000 gallons/twelve months

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report
for First Twelve months of Operation

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Biodiesel Reactor
Parameter: Soy bean oil
Limit: (1) 80,000,000 gallons/twelve months
(2) Running monthly average: 6,666,666.7 gallons

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2	(Column 1 + Column 2) / (Total Months of Operation)
	This Month	Previous 11 Months	*Total Months of Operation	Running average up to current month
Month 1				
Month 2				
Month 3				

* When determining the total usage for previous 11 months, assume zero usage during the months when the source was not in operation.

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Main boiler
Parameter: Fuel oil #2
Limit: 7,100,857 gallons/twelve months

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report
for First Twelve months of Operation

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Facility: Main boiler
Parameter: Fuel oil #2
Limit: (1) 7,100,857 gallons/twelve months
(2) Running monthly average: 591,738 gallons

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2	(Column 1 + Column 2) / (Total Months of Operation)
	This Month	Previous 11 Months	*Total Months of Operation	Running average up to current month
Month 1				
Month 2				
Month 3				

* When determining the total usage for previous 11 months, assume zero usage during the months when the source was not in operation.

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Annual Report

Source Name:	Louis Dreyfus Agricultural Industries LLC
Source Address:	Claypool, Indiana 46510
Mailing Address:	4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.:	OP T085-21297-00102
Facility:	Biodiesel Process upset operation
Parameter:	Hour
Limit:	24 hrs/Twelve months

YEAR: _____

Hours of upset operation

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Louis Dreyfus Agricultural Industries LLC
Source Address: Claypool, Indiana 46510
Mailing Address: 4800 Main, Suite 107, Kansas City, MO 64112
Part 70 Permit No.: OP T085-21297-00102
Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title / Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for
New Source Construction and Part 70 Permit

Source Name:	Louis Dreyfus Agricultural Industries LLC
Source Location:	East of SR 15 between CR 700 S and CR 800 S, Claypool, Indiana 46510
County:	Kosciusko
SIC Code:	2075, 2079 & 2869
Part 70 Application No:	New Source Construction and Part 70 Operation Permit T085-21297-00102
Permit Reviewer:	Dr. Trip Sinha

On November 12, 2005, the Office of Air Quality (OAQ) had a notice published in the Times Union, Warsaw, Indiana, stating that Louis Dreyfus Agricultural Industries LLC had applied for a permit relating to the construction and operation of a soybean oil (Salad oil and Refined/Bleached OIL (RB OIL)), soybean meal, and biodiesel manufacturing plant. The notice also stated that OAQ proposed to issue a permit for this construction and operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Written comments were received from a citizen, Louis Dreyfus Agricultural Industries LLC, Bunge North America and U.S. EPA Region 5.

The comments and responses appear below. Any revisions to the permit are shown by the additions being in bold and the deletions being in strikeout.

Steven A. Johnson and Sally A. Johnson

Comment 1: Louis Dreyfus Agricultural Industries LLC held a town meeting in Claypool, Indiana, concerning the proposed plant. At this meeting a question was asked if there would be anything toxic or hazardous. Their response was no. According to the notice published in the local newspaper pertaining to air permits, it states the OAQ regulates the operations of sources that emit relatively large amounts of air pollutants. This is not about odors, but Hexane (C_6H_{14}) oilseed extraction solvent. This is listed by the U. S. EPA as a hazardous air pollutant.

My wife and I visited the soybean plant in Morristown. We talked for a period of time to people living approximately the same distance from that plant as we will be from the plant in Claypool. After talking to these residents for a while, I started getting a scratchy sore throat. From talking to a chemist in your office, I found out that it is an effect of Hexane (Flue like systems, direct exposure affects the nervous system).

With a loss of 15% Hexane, as Louis Dreyfus told us, this size plant would be emitting approximately 8,400 pounds of Hexane per day, seven days a week, 363 days a year, into the environment. The wind blows from the west, southwest most of the time. This pollutant will be going right over the town and small subdivision.

Response 1: The NESHAP 40 CFR 63, Subpart GGGG, requires all existing and new solvent extraction for vegetable oil production processes that are major sources to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT). This MACT standard allows the source to use no more than 0.2 gallons of hexane per ton of soybean received by the source. This plant is only allowed to use 0.134 gallons of hexane per ton of soybean received, which is 33 percent less than that allowed by NESHAP.

The U.S EPA does not consider n-hexane as a human carcinogen (see 40 CFR 63, Subpart GGGG, Final Rule Summary). However, exposure to hexane can have other health effects. Short term exposure to high levels of hexane may cause irritation of the skin and mucous membranes in humans. Other effects include dizziness, giddiness, confusion, slight nausea, and headache. Long term exposure to hexane in air may be associated with numbness in the hands and feet, muscular weakness, blurred vision, headache, fatigue, possibly paralysis of the arms and legs, dermatitis, jaundice, and coma. IDEM conducted an analysis to determine whether the maximum concentration of n-hexane expected due to emissions from the source would cause either short-term or long-term health effects.

This risk assessment is based on the assumption that the exposure to HAP would be harmful to sensitive subpopulations. That is, the risk assessment was performed assuming that exposed individuals fall into some sort of a sensitive subpopulation category (elderly, children, individuals with compromised immune systems, etc.) and are continuously exposed to the maximum predicted concentration of HAPs for seventy (70) years. This is a health protective assumption to account for those subpopulations mixed within the general population.

There is no reasonable expectation of acute (short term) health effects due to HAPs exposure beyond the property line resulting from the operation of this facility. Maximum modeled 24-hr concentrations for the facility of 940 $\mu g/m^3$ are below the 2100 $\mu g/m^3$ level where acute effects are expected to occur.

There is no reasonable expectation of chronic non-cancer health effects due to HAP exposure resulting from the operation of this facility. The chronic Hazard Quotient (HQ) is less than one (1.0). The HQ is used to determine if it is reasonable to expect adverse health effects to be observed when individuals are exposed to the pollutant over a period of 70 years. A Hazard Quotient below a level of one (1.0) indicates that there is no reasonable expectation of health effects occurring due to HAP exposure. Maximum annual n-hexane concentrations of 59.6 $\mu g/m^3$ are below the 200 $\mu g/m^3$ Minimal Risk Level for n-hexane. This calculates to a Hazard Quotient for the maximum concentration of n-hexane of 0.298, which, being below one (1.0), means that there is no reasonable expectation of adverse health effects from the hexane emissions from the source.

Note that the calculated hazard is not a regulatory limit set by IDEM. There are no federal or state air quality standards for hexane. However, IDEM's analysis provides an indication of the source's impact on human health with respect to n-hexane, which in this case is insignificant.

The information, which you received from Louis Dreyfus meeting, that this proposed plant will emit 8,400 lbs of hexane per day, is not correct. IDEM's calculation shows that it is approximately 2,811 lbs per day.

Calculation:

The amount of hexane used per year = 645 tons per year
(See Addendum to Appendix A, Page 1 of 4)

The amount leaves the area with the products = 132 tons per year
(The 132 tons per year of hexane is not emitted at the plant site, because the products are shipped to different places.)

The amount of hexane emitted from the plant	=	(645 – 132) tons per year
	=	513 tons per year
	=	(513 tons per year)*(2,000 lbs/ton)/(8760 hours/year)
	=	117.12 lbs per hour
	=	(117.12 lbs per hour)* (24 hours/day)
	=	2,811 lbs/day

Out of 2,811 lbs per day emissions, only 64% is n-hexane, which is labeled as hazardous air pollutant.

Therefore, hexane as HAP is emitted in the amount of 1,799 lbs per day.

Comment 2: There are other ways of extracting oil from soybeans. Centripetal process is not as efficient or as fast, but with no hazards to humans, livestock or the environment.

Response 2: IDEM is not aware of any plant in USA using this process. Centripetal process is not used on a large soybean oil extraction plant such as the proposed plant. Therefore, the IDEM has determined that Centripetal process is not an appropriate candidate [best demonstrated technology] for this industry.

Best Available Control Technology (BACT) is an emission limitation, determined on a case-by-case basis, taking into account energy, environmental, and economics impacts and other costs.

BACT has been determined pursuant to 326 IAC 8-1-6 for the oil extraction process and biodiesel process. IDEM has determined that the proposed mineral oil scrubber to control hexane from oil extraction process is the most advanced control equipment available right now in the soybean oil extraction industry. Best available control technology is also employed to control VOC emissions from the leaking equipment such as valves, pumps, flanges etc. The soy oil absorber and water absorber to control VOC emissions from the biodiesel process are the most advanced control equipment available right now in the biodiesel industry.

New Source Performance Standards (NSPS), 40 CFR 60, Subpart VV, a technology based standard, requires the source to control the fugitive emissions from the biodiesel plant.

Comment 3: Please deny Louis Dreyfus's proposed air permit.

Response 3: The applicant has an obligation to submit an application that shows they will comply with all applicable state and federal rules governing air pollution. In turn, IDEM has a legal obligation to issue a permit if such a demonstration has been made by the applicant. IDEM has determined that the applicant can comply with all state and federal rules governing air pollution. As a result, IDEM has no legal authority to deny the permit.

Comment 4: We would like to be included in your mailing list so we may receive a notice of decision.

Response 4: Your name has been added to the list of people receiving the notice of decision for this permit. You will be sent the notice of decision at your address.

Louis Dreyfus Agricultural Industries LLC comment:

Comment 1: The table in Section D.2.2 shows 330 tons/hour for "Load out". Our calculations were based on the following:

Truck Loadout (meal)	330 tons/hr
Truck Loadout (pellets/hulls)	330 tons/hr

Truck Loadout has two bays, so both could occur simultaneously.

Rail Loadout (meal)	330 tons/hr
Rail Loadout (pellets/hulls)	330 tons/hr

Rail Loadout only has one location, so either meal or pellet/hulls will be loaded (although calculations do not limit this, since they are shown as simultaneous).

Please revise the meal loadout calculation to allow the loading rates as shown above.

Response 1: For clarity purposes the table in Condition No. D.2.2 has been revised accordingly. There are no changes in the PM/PM_{10} emissions. The revised condition is as follows:

D.2.2 Particulate Emissions Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the following processes shall not exceed the limitations specified in the following table:

Remainder of page left blank intentionally.

Process	Process Weight Rate (tons/hr)	PM Emission Limit (lbs/hr)
Truck Load out **(Meal)**	330	64.1
Truck Loadout (Pellets/Hulls)	**330**	**64.1**
Rail Loadout (meal)	**330**	**64.1**
Rail Loadout (Pellets/Hulls)	**330**	**64.1**
Jet Dryer/VSC	192.5	58.5
Hot Dehulling	192.5	58.5
Flaker Aspiration	182.9	57.5
Meal Grinding	148	55.3

Comment 2: Louis Dreyfus has requested that a general condition for Preventive Maintenance Plan be included in Section B of the permit, which will apply to the entire source.

Response 2: Conditions D.1.4, D.2.3, D.3.5, D.4.5, D.5.6 have been removed from the permit, and B.14 (a) in Section B has been revised. The subsequent D section conditions have been renumbered.

~~D.1.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the applicable facilities and associated control devices.~~

~~D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the applicable facilities and associated control devices.~~

~~D.3.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the applicable facilities and associated control devices.~~

~~D.4.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the applicable facilities and associated control devices.~~

~~D.5.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device~~

B.14 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) ~~If required by specific condition(s) in Section D of this permit, t~~**T**he Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, ~~including the following information on each facility:~~ **for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:**

(1) Identification of the individual(s), by job title, responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

~~If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:~~

~~Indiana Department of Environmental Management~~
~~Compliance Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~The PMP extension notification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

Comment 3: Louis Dreyfus Agricultural Industries LLC has requested that the controlled fugitive emissions from the biodiesel plant be counted towards the determination of the PSD applicability for the source as New Source Performance Standard (NSPS), 40 CFR 60, Subpart VV applies to the biodiesel plant. The applicant has sent the controlled fugitive emissions calculation as per U. S. EPA Guidance Document "Protocol for Equipment Leak Emission Estimates, EPA 453/R-95-017, November 1995.

Response 3: The calculations have been revised as requested by Louis Dreyfus Agricultural LLC (see Addendum to TSD Appendix A pages 1-4). The permit Conditions D.4.1 and D.4.2, and Source Status table and 326 IAC 2-2 PSD Minor Limit table of the TSD have been revised as follows:

Permit

D.4.1 PSD Minor Limit for VOC [326 IAC 2-2]

(b) The following facilities' VOC emissions rates shall be limited as follows:

Process	Control	VOC (lbs/hour)	Hours of operation limit
Biodiesel manufacturing process Normal operation	Soy oil absorber followed by a water absorber	0.30	
Biodiesel manufacturing process upset operation	Soy oil absorber followed by a water absorber	29.4	24 hrs/yr
Biodiesel storage tanks and loading rack operation	None	1.40	
Glycerine storage tanks	None	0.0008	
Methanol storage tanks	None	0.38	
Methoxide (catalyst) storage tank	None	0.079	
Biodiesel wastewater	None	0.560	
Biodiesel fugitive emissions	LDR as required by 40 CFR 60, Subpart VV	~~3.605~~ **1.01**	

D.4.2 VOC BACT Requirements [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Permittee shall limit the volatile organic compound (VOC) emissions from the biodiesel manufacturing process as follows:

Facility	Control	Emission Limit
Biodiesel manufacturing process without methanol unloading	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 99% and a VOC emission rate of 0.30 lbs/hr
Biodiesel manufacturing process Upset operation	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 95% and a VOC emission rate of 29.4 lbs/hr

Facility	Control	Emission Limit
Biodiesel manufacturing process with methanol tank unloading	Soy oil absorber followed by a water absorber	Overall VOC control efficiency of 99% and a VOC emission rate of 0.63 lbs/hr
Fugitive emissions	Comply with the provisions of 40 CFR 60, Subpart VV	~~15.79~~ **4.43** tons/year

Technical Support Document

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

This Addendum to Technical Support Document becomes part of the Technical Support Document.

(1) **Source Status**

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	143
PM_{10}	103.6
SO_2	249
VOC	~~249.8~~ **238.4**
CO	85.1
NO_x	66.5

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(2)

326 IAC 2-2 PSD Minor Limit for VOC Emissions

(a) The amount of the purchased soybean oil shall be limited to less than 80 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The amount of soybean oil processed to manufacture biodiesel shall be limited to less than 80 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The following facilities' VOC emissions rates shall be limited as follows:

Process	Control	VOC (lbs/hour)	Hours of operation limit/yr
Soybean oil extractor system Normal operation	Mineral oil absorber	9.3	
DTDC Dryers and cooler Normal operation	DTDC Cyclones	32.8	
Purchased crude soybean oil	Super Stripper	35 ppmwt.	
Purchased refined bleached (RB Oil) soybean oil.	Analytical Testing of Incoming Oil	35 ppmwt.	
Biodiesel manufacturing process Normal operation	Soy oil absorber followed by a water absorber	0.30	
Biodiesel manufacturing process Upset operation	Soy oil absorber followed by a water absorber	29.4	24 hrs
Biodiesel manufacturing process with methanol tank unloading	Soy oil absorber followed by a water absorber	0.63	
Biodiesel storage tanks and loading rack operation	None	1.40	
Glycerine storage tanks	None	0.0008	
Biodiesel day tanks	Soy oil absorber followed by a water absorber	Included in biodiesel mfg process emissions	
Methanol storage tanks	None	0.38	
Methoxide (catalyst) storage tank	None	0.079	

Process	Control	VOC (lbs/hour)	Hours of operation limit/yr
Biodiesel wastewater	None	0.560	
Biodiesel fugitive emissions	LDR as required by 40 CFR 60, Subpart VV	~~3.605~~ **1.01**	
Boiler	None	1.19	
High pressure steam generator	None	0.045	
Diesel fire pumps	None	0.57	
Fuel oil tank	None	0.002	

Bunge North America ("Bunge") Comment:

Comment 1: Louis Dreyfus has filed an application to build a new soybean oil, soybean meal and biodiesel manufacturing plant in Claypool, Kosciusko County, Indiana (the "Dreyfus Facility"). The Indiana Department of Environmental Management (IDEM) has reviewed Dreyfus' application and issued preliminary findings in the form of a draft permit and several supporting documents that would allow construction and operation of the Dreyfus Facility.

Bunge is a leading oilseed processor and a leading U.S. exporter of soybeans and soybean-derived products (meals and oil) with eleven soybean processing facilities throughout the United States including one in Morristown, Indiana. Bunge files these comments to ensure that IDEM and the United States Environmental Protection Agency (USEPA) take consistent regulatory positions with regard to the permitting of oilseed processing facilities.

A. IDEM Appropriately Defines "Fugitive Emissions" in Finding that the Proposed Project Is Not Major for Purposes of Triggering PSD Review

1. **Bunge Concurs with IDEM's Approach to Fugitive Emissions at Soybean Processing Plants**

In its Technical Support Document (TSD) for the Draft Permit, IDEM states the volatile organic compound (VOC) emissions for the Dreyfus Facility are limited to 249.8 tons per year (tpy). (TSD at p. 12 of 28.) Because the VOC emissions are less than 250 tons, IDEM concludes *that* the PSD requirements do not apply. The Dreyfus Facility can be limited to 249.8 tpy VOC only if fugitive emissions are not included in calculating tpy. The TSD, when it included fugitive emissions, identified the facility's potential to emit as 3944 tpy VOC and 416 tpy for just hexane

alone. (TSD at p. 10 of 28.) Based on its experience in operating soybean processing facilities, Bunge is convinced that the Dreyfus facility cannot restrict its emissions to only 249.8 tpy VOC unless the Dreyfus Facility does not count fugitive VOC emissions. In the TSD, IDEM stated and Bunge agrees that "Fugitive emissions from the soybean extraction process are not counted toward a determination of PSD applicability." (TSD at p. 11 of 28). Bunge also appreciates that IDEM has previously taken the same position, excluding fugitive emissions from evaluating PSD applicability, with regard to Bunge's Morristown facility. IDEM's approach is consistent with the PSD regulations which only require consideration of fugitive emissions in making PSD applicability determinations when the source is in one of the specific categories listed in the regulation which do not include soybean processing facilities such as the Bunge Morristown facility and the Dreyfus Facility.1' See 326 IAC 2-2-1(gg6); 40 CFR 52 1(i)(1)(vii).

2. While Bunge agrees with IDEM's approach, Bunge is filing this comment because it is our understanding that in other situations USEPA has disagreed with IDEM's approach and taken the position that VOC emissions which IDEM is treating as fugitive for purposes of evaluating PSD applicability to the Dreyfus facility are not fugitive and, therefore, should be counted in making that applicability determination. Accordingly, Bunge is providing a copy of these comments to USEPA. In order for the oilseed processing industry to have clarity and consistency on an issue of critical importance to planning and permitting new or modified facilities, Bunge respectfully requests that IDEM get USEPA's position on the fugitive emission issue prior to final issuance of the Draft Permit. Bunge believes that USEPA should concur in writing with IDEM's position because IDEM's position is consistent with the PSD regulations. However, if USEPA still believes that emissions that IDEM considers fugitive at soybean processing facilities (such as the Dreyfus Facility proposed here) are not fugitive and should be counted in determining whether the Dreyfus Facility has triggered PSD, then USEPA should provide that written guidance and challenge issuance of the Draft Permit. Inaction by USEPA on the Dreyfus Facility Draft Permit will be treated by Bunge as agreement by USEPA that fugitive emissions should not be counted when evaluating PSD applicability at its soybean processing plants.

Bunge takes no position on IDEM's consideration of fugitive emissions in evaluating whether the biodiesel portion of the facility triggered PSD on its own.

Response 1: IDEM's position is consistent with the PSD regulations. IDEM 's characterization of fugitives is consistent with the U. S. EPA Region V guidance documents of October 15, 2002 and March 6, 2003, addressed to Minnesota Pollution Control Agency and Indiana Department of Environmental Management, respectively. IDEM's characterization of fugitive emissions is also consistent with the assumptions made by Alpha Gamma Technologies, Inc., a U. S. EPA contractor

in developing the National Emission Standards for Hazardous Air Pollutants for solvent extraction for vegetable oil production (Memorandum dated May 29, 1998: Vegetable Oil NESHAP Project File).

EPA Region 5 comments

Comment 1: According to the draft permit, this new greenfield source will have potential emissions after controls of 249.8 tpy of VOC, which is below the PSD threshold of 250 tpy. Since the primary source does not fall under one of the 28 listed source categories, fugitive emissions are not counted towards PSD applicability. (This fugitive emission exclusion has not been extended to the biodiesel plant, which does fall under one of the 28 listed source categories and is "nested" within this non-listed source).

Not included in the 249.8 tpy of VOC potential emissions calculated for this draft permit are an additional 132 tpy of VOC emissions that are considered as bound in product or byproduct. This approach of excluding such emissions from consideration towards PSD applicability is not consistent with the position EPA has taken with regard to emissions at other soybean processing plants (for example: Bunge, ADM, and Cargill).

In addition to these comments, EPA requests additional time to complete a more thorough analysis of this permit.

Response 1: The VOC emissions have been revised to 238.4 tons per year from 249.8 tons per year, because the controlled fugitive emissions from the biodiesel plant should have been calculated instead of the uncontrolled fugitive emissions. The VOC emissions for PSD purposes are 11.6 tons per year less than the PSD threshold of 250 tons per year.

132 tons per year of VOC emissions, which are considered as bound in product or byproduct is not included in determining the source total VOC emissions. A guidance letter from U. S. EPA Region 5 dated October 15, 2002, addressed to Minnesota Pollution Control Agency, states that VOCs which are determined to be emitted off site may be excluded from a facility's emissions. The VOCs bound in products will be termed as a source of secondary emissions, because VOC will be emitted at some other point as it is shipped to other places for trading or consumption. The potential emissions from these products, secondary emissions, will not impact the same general area as the proposed plant; therefore, the fugitive emissions are not included in facility's emissions (NSR Manual at A.16; see also 54 Fed. Reg. 27,286, 27,289 (June 28, 1989); *see 40 CFR 51.166(b) (18 and see also page 48 of In RE Knauf Fiberglass, GMBH, PSD Appeal Nos. 98-3 thro' 98-20 Feb 4, 1999)*). IDEM is not aware of any other guidance from U. S. EPA. regarding these fugitive emissions. IDEM has been consistent in excluding fugitive VOC emissions from the facility's emissions for determining VOC emissions for PSD purposes in all its soybean oil extraction permits issued to date.

Comment 2: The draft permit relies on a 0.28 lb/ton of beans emission factor to calculate fugitive emissions due to equipment failure, routine maintenance, and leaks to be 236.1 tons per year. Since we did not see a justification for the selection of this emission factor in the draft permit, this calculation is a concern to EPA as the

permit allows only 0.2 tons per year margin of error for VOC emission without exceeding the PSD threshold.

Response 2: The "general" loss factor for equipment failure, routine maintenance and general leaks does not have a documented source. By definition, this factor is estimated by taking total solvent usage minus other sources of emissions, which can be quantified.

The Vegetable Oil NESHAP Project File prepared by Alpha – Gamma Technologies, Inc. identifies the following estimates for fugitive VOC emissions for the oil extraction plant:

(1) Fugitive hexane emissions from crude vegetable oils may represent 5 to 15 percent of the total facility HAP emissions.

(2) Fugitive hexane emissions from crude meal may represent 10 to 40 percent of the total facility HAP emissions.

(3) Fugitive hexane emissions from wastewater may represent 1 to 5 percent of the total facility HAP emissions.

(4) Fugitive hexane emissions from equipment leaks may represent 1 to 25 percent of the total facility HAP emissions.

(5) Operational start-ups and shutdowns may represent 10 to 20 percent of the total facility HAP emissions

(6) Operational upset conditions may represent 1 to 20 percent of the total facility HAP emissions

The applicant determined the general loss factor for equipment failure, routine maintenance and general leaks based on practical experience within the soybean crush/extraction industry and the type/size of extractor proposed. This general loss factor is for estimating purposes only. That number can be higher or lower. The Permittee has to meet the overall solvent loss ratio of 0.134 gallons per ton of soybean received. This overall solvent loss ratio is approximately 40% less than the NESHAP limit of 0.2 gallons per ton of soybean received for new soybean plants. This overall solvent loss ratio gives the Permittee the flexibility to reduce the VOC emissions from all parts of the plant.

Comment 3: Condition D.3.4 allows Louis Dreyfus to emit more during the first year (i.e. a SLR of 0.20). It seems this allowance however will cause them to trip the PSD VOC emission threshold?

Response 3: During facility start-ups and shutdowns, liquid solvent is drained from the process equipment and ambient air is blown through the equipment to purge all solvent vapors. All oil extraction plants experience operational start-ups and shutdowns from time to time. In the first year, the oil extraction plants experience more start-ups and shutdowns resulting in more fugitive VOC losses. The first year is the learning curve for the plant personnel. Since these start-ups and shutdowns are fugitive emissions, these emissions will not cause this source to equal or exceed the PSD threshold. However, Louis Dreyfus has agreed to only take an extra 11

tons of hexane use in the first year, resulting in a solvent loss ratio of 0.136 gallons of hexane per ton of soybean received or a total of 643.7 tons per year of hexane use for the first year. The BACT analysis has been revised as follows:

For consistency and clarity all references to soybean is as received. The Office of Air Quality has revised the BACT and permit Condition D.3.4 for this plant as follows:

Technical Support Document (TSD)

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

This Addendum to Technical Support Document becomes part of the Technical Support Document.

Best Available Control Technology (BACT) Analysis

The Office of Air Quality has determined from the analysis that BACT for this plant is as follows:

(a) BACT for the soybean oil extractor, meal dryers, and meal cooler shall be as follows:

Facility	Control	VOC (Hexane) Emission Limit
Oil extractor	Mineral oil absorber	0.048 pounds per ton of soybean received and 9.3 lbs/hr
Meal dryers and cooler (vent to the same stack)	None	0.03 gals/ton of soybean received and 32.8 lbs of hexane/hr
Plant wide	First year	~~0.20~~ **0.136** gals/tons of soybean received
	After first year	0.134 gals/ton of soybean received

Appendix C of TSD – Page 12

(b) The overall solvent loss ratio of 0.134 gallons per ton of soybean ~~crushed~~ **received** from the whole plant is also part of the BACT.

First year solvent loss ratio is established as ~~0.2~~ ~~0~~**.136** gals/ton of soybean received.

This is a new plant and this is established to allow time to learn the operations of the plant.

Maximum annual soybean received	1,686,300 tons/yr

Permit

D.3.4 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT Requirements):

(a) The Permittee shall limit the volatile organic compound (VOC) emissions from the soybean oil extraction process as follows:

Facility	Control	Emission Limit
Oil extractor process	Mineral oil absorber system	0.048 pounds of VOC per ton of soybean received and 9.3 lbs/hr
Meal dryers and meal cooler	None	0.03 gals of VOC/ton of soybean and 32.8 lbs/hr
Overall solvent loss ratio	1st twelve months operation	~~0.20~~ **0.136** gal VOC/ton soybean ~~processed~~ **received**
Overall solvent loss ratio	After 1st twelve months	0.134 gal VOC/ton soybean ~~processed~~ **received**
Maximum annual soybean ~~processed~~ **received**		1,686,300 tons/yr

Upon further review, the OAQ has decided to make the following revisions to the permit.

Permit

The following section of the Boiler MACT, 40 CFR 63, Subpart DDDDD, which was left in inadvertently, has been deleted.

(a) There are no small gaseous fuel units in D.5 section.

~~§63.7506 (c) The affected boilers listed in paragraphs (c) (4) of this section are not subject to the initial notification requirements in §63.9(b) and are not subject to any requirements in this subpart or in subpart A of this part (*i.e.*, they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSM plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart, or any other requirements in subpart A of this part.~~

~~(4) New small gaseous fuel units.~~

(b) There is no continuous opacity monitoring system required for the main boiler.

§ 63.7555 (b) For each CEMS, you must keep records according to paragraphs (b)(1) through (5) of this section.

(1) Records described in §63.10(b)(2) (vi) through (xi).

~~(2) Monitoring data for continuous opacity monitoring system during a performance evaluation as required in §63.6(h)(7)(i) and (ii).~~

Table 10 § 63.8(c)(4)(i)	~~Continuous Monitoring System (CMS) Requirements.~~	~~Continuous opacity monitoring system must have a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period.~~	~~Yes.~~
§ 63.8(g)(1)-(4)	~~Data Reduction~~	~~Continuous opacity monitoring system 6-minute averages calculated over at least 36 evenly spaced data points; and continuous emissions monitoring system 1-hour averages computed over at least 4 equally spaced data points.~~	~~Yes.~~

Technical Support Document

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

This Addendum to Technical Support Document becomes part of the Technical Support Document.

The DTDC meal dryers and cooler are also subject to 40 CFR 64 for PM and PM_{10}.

CAM Requirements (40 CFR 64)

The DTDC dryers and cooler are pollutant-specific emissions units as defined in 40 CFR 64.1 for PM/PM_{10}:

(a) each with the potential to emit before controls equal to or greater than the major source threshold for PM/PM_{10},

(b) are subject to an emission limitation or standard for PM/PM_{10}, and

(c) uses control devices as defined in 40CFR Part 64.1 to comply with the emission limitations.

Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are applicable to the DTDC dryers and cooler.

The pollutant-specific emission units are not "large units" as described in 40 CFR 64.5. Therefore, the Permittee shall submit a CAM plan pursuant to 40 CFR 64 as part of the Part 70 renewal application.

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Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Part 70 Operating Permit.

Source Background and Description

Source Name:	Louis Dreyfus Agricultural Industries LLC
Source Location:	East of SR 15 between CR 700 S and CR 800 S, Claypool, Indiana 46510
County:	Kosciusko
SIC Code:	2075, 2079 & 2869
Permit Reviewer:	Dr. Trip Sinha
Operation Permit No.:	T085-21297-00102

The Office of Air Quality (OAQ) has reviewed an application from Louis Dreyfus Agricultural Industries LLC relating to the construction and operation of a soybean oil (Salad oil and Refined/Bleached OIL (RB OIL)), soybean meal, and biodiesel manufacturing plant. The particulate matter emissions from soybean unloading, handling, storage, meal and hull loading will be controlled by oil spray, cyclones, and several baghouses. Volatile Organic Compounds (VOC) from the soybean extractor vent will be controlled by a mineral oil absorber. The biodiesel reactor unit, the distillation unit, and the methanol tank unloading will be controlled by a soy oil absorber followed by a water absorber.

This Part 70 operating permit contains provisions intended to satisfy the requirements of the construction permit rules.

Emission Units and Pollution Control Equipment

The source consists of the following emission units and pollution control devices:

(a)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A030000	Truck Dump No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020000	Truck Dump No. 2	360	Grain Receiving Baghouse	Stack AF-1
A030100	Discharge Conveyor No. 1	360	Grain Receiving Baghouse	Stack AF-1
A020100	Discharge Conveyor No. 2	360	Grain Receiving Baghouse	Stack AF1
A040000	Bean Receiving Leg No. 1	360	Grain Receiving Baghouse	Stack AF-1

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
A050000	Bean Receiving Leg No. 2	360	Grain Receiving Baghouse	Stack AF-1
A170100	Screenings Tank Feed Conveyor	5	Grain Receiving Baghouse	Stack AF-1
A010000	Rail Collection Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A070000	Screener No. 1	360	Grain Receiving Baghouse	Stack AF-1
A060000	Screener No. 2	360	Grain Receiving Baghouse	Stack AF-1
A010090	Rail Scale Dump	330	Grain Receiving Baghouse	Stack AF-1
A010100	Rail Scale Discharge Conveyor	360	Grain Receiving Baghouse	Stack AF-1
A150100	Cross Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A120100	Cross Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A151000	Discharge Bin No 1 thru 3	360	Grain Receiving Baghouse	Stack AF-1
A121000	Discharge Bin No 4 thru 6	360	Grain Receiving Baghouse	Stack AF-1
A153000	Day Bin Leg	360	Grain Receiving Baghouse	Stack AF-1
A160100	Feed Day Tank Conveyor	360	Grain Receiving Baghouse	Stack AF-1
AF-1 A20000	Grain Receiving Baghouse	21,900 acfm @ 0.005 grain/acf outlet gr loading		Stack AF1
A160000	Day Bin Vent	192.5	Prep exhaust baghouse	Stack AF-3
A170000	Screenings Tank	5	Prep exhaust baghouse	Stack AF-3
A170300	Screenings Recycle Leg	5	Prep exhaust baghouse	Stack AF-3
A170400	Screenings Reclaim Conveyor	5	Prep exhaust baghouse	Stack AF-3
B011300	Bean Weigh Scale	192.5	Prep exhaust baghouse	Stack AF-3
B310000	Screenings Weight Belt	5	Prep exhaust baghouse	Stack AF-3
B310300	Destoner	5	Prep exhaust baghouse	Stack AF-3
B011200	VSC Feed Leg	192.5	Prep exhaust baghouse	Stack AF-3
B160300	VSC Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
B010100	Whole Bean Aspirator No 1	192.5	Prep exhaust baghouse	Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
B020100	Whole Bean Aspirator No 2	192.5	Prep exhaust baghouse	Stack AF-3
B010900	Whole Bean Aspirator Cyclone	192.5	Prep exhaust baghouse	Stack AF-3
B030800	Conditioned Bean Feed Conveyor	192.5	Prep exhaust baghouse	Stack AF-3
A152000	West Bin Cross Conveyor 1-3	360	Prep exhaust baghouse	Stack AF-3
A122000	East Bin Cross Conveyor 4-6	360	Prep exhaust baghouse	Stack AF-3
A130100	West Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
A100100	East Bin Feed Conveyor	360	Prep exhaust baghouse	Stack AF-3
B030900	Hull Collection Conveyor	0.02	Prep exhaust baghouse	Stack AF-3
E130200	Screening Refining Conveyor	9.6	Prep exhaust baghouse	Stack AF-3
E130000	Hull Screener No.1	9.6	Prep exhaust baghouse	Stack AF-3
E150000	Hull Screener No.2	9.6	Prep exhaust baghouse	Stack AF-3
E130100	Secondary Aspirator No 1	9.6	Prep exhaust baghouse	Stack AF-3
E150100	Secondary Aspirator No 2	9.6	Prep exhaust baghouse	Stack AF-3
E160000	Secondary Aspirator Cyclone	9.6	Prep exhaust baghouse	Stack AF-3
E070300	4 Hour Hull Tank	9.6	Prep exhaust baghouse	Stack AF-3
E070100	Pellet Mill / Conditioner	9.6	Prep exhaust baghouse	Stack AF-3
E080000	Pellet Cooler	9.6	Prep exhaust baghouse	Stack AF-3
E090000	Pellet Cooler Cyclone	9.6	Prep exhaust baghouse	Stack AF-3
E050200	Hull Hammer Mill Feeder	9.6	Prep exhaust baghouse	Stack AF-3
E050000	Hull Hammer Mill	9.6	Prep exhaust baghouse	Stack AF-3
E050100	Hull Hammer Mill Plenum	9.6	Prep exhaust baghouse	Stack AF-3
G140000	Hull Pellet Rail Loadout	9.6	Prep exhaust baghouse	Stack AF-3
G050100	Pelleted Hulls Leg	9.6	Prep exhaust baghouse	Stack AF-3
G050200	Pelleted Hulls Storage Conveyor	15	Prep exhaust baghouse	Stack AF-3
E070400	Hull Receiver Cyclone	125	Prep exhaust baghouse	Stack AF-3

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
AF-3 G100000	Prep exhaust baghouse	29,500 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-3
G060000	Pelleted Hulls Truck Loadout		Hull Bin Filter	
G080000	Ground Hulls Truck Loadout		Hull Bin Filter	

(b)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
G070300	Truck Meal Load out Feed Conveyor	300	Load out baghouse	Stack AF2
G070500	Truck Load out No. 1 Conveyor	330	Load out baghouse	Stack AF2
G060500	Truck Load out No. 2 Conveyor	330	Load out baghouse	Stack AF2
G150000	Truck Loader No.1	330	Load out baghouse	Stack AF2
G160000	Truck Loader No.2	330	Load out baghouse	Stack AF2
G060000	Pelleted Hull Load out Bin	148	Load out baghouse	Stack AF2
G070000	Meal Load out Bin	300	Load out baghouse	Stack AF2
G130000	Meal Bulk Weigh Scale (Rail)	330	Load out baghouse	Stack AF2
G170000	Rail Car Load out	330	Load out baghouse	Stack AF2
Stack AF2 G090000	Load out baghouse	38,000 acfm @ 0.005 grain/acf outlet grain loading		
C010600	Flake Collection Conveyor (9 flakers)	101.6	Flaker aspiration baghouse	Stack AF-4
C010000	Flaking Roll No 1	20.3	Flaker aspiration baghouse	Stack AF-4
C020000	Flaking Roll No 2	20.3	Flaker aspiration baghouse	Stack AF-4
C030000	Flaking Roll No 3	20.3	Flaker aspiration baghouse	Stack AF-4
C040000	Flaking Roll No 4	20.3	Flaker aspiration baghouse	Stack AF-4

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
C050000	Flaking Roll No 5	20.3	Flaker aspiration baghouse	Stack AF-4
C060000	Flaking Roll No 6	20.3	Flaker aspiration baghouse	Stack AF-4
C070000	Flaking Roll No 7	20.3	Flaker aspiration baghouse	Stack AF-4
C080000	Flaking Roll No 8	20.3	Flaker aspiration baghouse	Stack AF-4
C090000	Flaking Roll No 9	20.3	Flaker aspiration baghouse	Stack AF-4
AF-4 C110000	Flaker aspiration baghouse	24,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-4
B040000	Hulloosenator No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B0801000	Hulloosenator No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B130000	Hulloosenator No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B170000	Hulloosenator No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B050000	Cascade Dryer No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B090000	Cascade Dryer No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B140000	Cascade Dryer No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B180000	Cascade Dryer No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B210000	CCD Cyclone	192.5	Hot dehulling baghouse	Stack AF-5
B060000	Cracking Roll No.1	48.1	Hot dehulling baghouse	Stack AF-5
B100000	Cracking Roll No.2	48.1	Hot dehulling baghouse	Stack AF-5
B150000	Cracking Roll No.3	48.1	Hot dehulling baghouse	Stack AF-5
B190000	Cracking Roll No.4	48.1	Hot dehulling baghouse	Stack AF-5
B070000	Cascade Conditioner No. 1	48.1	Hot dehulling baghouse	Stack AF-5
B110000	Cascade Conditioner No. 2	48.1	Hot dehulling baghouse	Stack AF-5
B160000	Cascade Conditioner No. 3	48.1	Hot dehulling baghouse	Stack AF-5
B200000	Cascade Conditioner No. 4	48.1	Hot dehulling baghouse	Stack AF-5
B230000	CCC Cyclone	192.5	Hot dehulling baghouse	Stack AF-5

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
AF-5 B260000	Hot dehulling baghouse	60,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-5
E020300	Hammer Mill Mixing Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E010100	Meal L-Path Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E010300	Meal Hammer Mill Feed Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020200	Meal Hammer Mill Feeder No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030200	Meal Hammer Mill Feeder No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040200	Meal Hammer Mill Feeder No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020000	Meal Hammer Mill No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030000	Meal Hammer Mill No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040000	Meal Hammer Mill No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020100	Meal Hammer Mill Bin No. 1	74.0	Meal Grinding Baghouse	Stack AF-6
E030100	Meal Hammer Mill Bin No. 2	74.0	Meal Grinding Baghouse	Stack AF-6
E040100	Meal Hammer Mill Bin No. 3 (spare)	74.0	Meal Grinding Baghouse	Stack AF-6
E020300	Meal Hammer Mill Discharge Conveyor	148	Meal Grinding Baghouse	Stack AF-6
E020500	Meal Storage Discharge Conveyor	125	Meal Grinding Baghouse	Stack AF-6
E010390	Meal Leg	300	Meal Grinding Baghouse	Stack AF-6
G010000	Meal Bin No. 1	148	Meal Grinding Baghouse	Stack AF-6
G020000	Meal Bin No. 2	148	Meal Grinding Baghouse	Stack AF-6
G030000	Meal Bin No. 3	148	Meal Grinding Baghouse	Stack AF-6
G040000	Meal Bin No. 4	148	Meal Grinding Baghouse	Stack AF-6
AF-6 E110000	Mill Grinding Baghouse	22,000 acfm @ 0.005 grain/acf outlet grain loading		Stack AF-6
B010000	VSC No. 1	96.25	VSC Cyclone	Stack S-1

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
B020000	VSC No. 2	96.25	VSC Cyclone	Stack S-1
B010500	VSC Air Heater	192.5	VSC Cyclone	Stack S-1
B010400	VSC Discharge Conveyor	192.5	VSC Cyclone	Stack S-1
B010300	Conditioner Bean Loop Path	192.5	VSC Cyclone	Stack S-1
B010700	VSC Cyclone	192.5		Stack S-1
B120000	Jet Dryer No. 1	96.25	Jet Dryer Cyclone No. 1A &1B	Stack S-1
B030000	Jet Dryer No. 2	96.25	Jet Dryer Cyclone No. 2A &2B	Stack S-1
B120100	Jet Dryer Cyclone No. 1A	96.25		Stack S-1
B120200	Jet Dryer Cyclone No. 1B	96.25		Stack S-1
B030100	Jet Dryer Cyclone No. 2A	96.25		Stack S-1
B030200	Jet Dryer Cyclone No. 2B	96.25		Stack S-1

(c)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
	Soybean oil extractor	196.5	Mineral oil absorber	Stack S-4
	One (1) set of evaporators		Mineral oil absorber	Stack S-4
	One (1) Desolventizer/toaster		Mineral oil absorber	Stack S-4
	One (1) set of water separators		Mineral oil absorber	Stack S-4
VS030000	Main Vent Condenser		Mineral Oil Absorber	Stack S-4
	One (1) hexane storage tank	20,000 gallons	Mineral Oil Absorber	Stack S-4
	One (1) soybean oil storage tank	235,000 gallons		
	Mineral oil absorber			Stack S-4
EX020000-1	DTDC Dryer Deck No. 1	156	DTDC Dryer Cyclone No. 1	Stack S-2
EX020000-4	DTDC Cooler Deck	149.7	DTDC Cooler Cyclone No. 1	Stack S-2
EX020000-2	DTDC Dryer Deck No. 2	156	DTDC Dryer Cyclone No. 2	Stack S-2
EX020000-3	DTDC Dryer Deck No. 3	156	DTDC Dryer Cyclone No. 2	Stack S-2
EX020400	DTDC Dryer Cyclone No. 1	42,600 scfm		Stack S-2

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
EX020500	DTDC Dryer Cyclone No. 2	42,600 scfm		Stack S-2

(d)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
TR010000	1st loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR020000	2nd loop transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
TR030000	3rd transesterification reactor	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
VU010000	Vacuum group package	9132 gals/hr	Soy oil absorber and water absorber	Stack S-5
	Biodiesel Soy oil Absorber	156 gpm		Stack S-5
	Biodiesel Water Absorber	0.448 gpm		Stack S-5
BD010000	Biodiesel Day Tank #1	164,000 gals		
BD020000	Biodiesel Day Tank #2	164,000 gals		
BD030000	Biodiesel Storage Tank #1	164,000 gals		
BD040000	Biodiesel Storage Tank #2	164,000 gals		
BD050000	Biodiesel Storage Tank #3	164,000 gals		
BD060000	Biodiesel Storage Tank #4	164,000 gals		
GS010000	Glycerine Tank #1	40,900 gals		
GS020000	Glycerine Tank #2	40,900 gals		
LS010000	Methanol Storage Tank #1	19,400 gallons		
LS020000	Methanol Storage Tank #2	19,400 gallons		
LS030000	Methanol Storage Tank #3	19,400 gallons		
LS040000	Methanol Storage Tank #4	19,400 gallons		
LS050000	Methanol Storage Tank #5	19,400 gallons		
ES010000	Methoxide (catalyst) Storage	19,400 gallons		

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
ML010000	Biodiesel Loading Rack	1000 gallons per minute		

(e)

Unit ID	Description	Capacity (tons/hr)	Control	Discharging to Stack
SP010000 (B-1)	Main Boiler, natural gas fired and #2 fuel oil as back up fuel	220 MMBtu/hr	Low NOx burner and Flue gas recirculation	Stack S-3

Insignificant Activities

Description	Capacity (gallons)	Control
Natural gas fired high pressure steam generator	9 MMBtu/hr	None
Clay Bin	10,800	Clay Bin Filter
Hull Bin	13,900 cu. ft	Hull Bin Filter
Silica Bin	<10,800	Silica Bin Filter
Bleaching Earth Bins	<10800	Bleaching Earth Bins Filter
Salt Tank	<10,800	Filter
Filter Aid	<10,800	Filter
#2 fuel oil storage tank	29,500 gallons	None
Cooling tower	11,000 gpm	None
Three (3) Diesel Fire Pumps	575 BHP each	None
Paved and unpaved roads and parking lots with public access		None
Bean Storage Bin No. 1 thru 4	720 tons/hr	

Stack Summary

See Appendix B

Recommendation

The staff recommends to the Commissioner that the New Source Review and Part 70 Permit be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant in July, August, September, October, and

November 2005.

A complete response to NOD1 was received on July 7, 2005. A complete response to NOD2 was received on September 9, 2005.

An application for the purposes of this review was received on May 18, 2005.

Emissions Calculations

Appendix A (Emissions Calculations)

Potential to Emit of the Source

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, inclulding air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM_{10}	4244
SO_2	249
VOC	3944
CO	85.1
NO_x	66.5

HAP's	Potential To Emit (tons/year)
Hexane	416
Methanol	20.9
TOTAL	437

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM_{10}, SO_2, and VOC are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

County Attainment Status

The source is located in Kosciusko County.

Pollutant	Status
$PM_{2.5}$	Attainment
PM_{10}	Attainment
SO_2	Attainment
NO_2	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Kosciusko County County has been designated as attainment or unclassifiable for the ozone standards. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) Kosciusko County has been classified as unclassifiable or attainment for $PM_{2.5}$. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for $PM_{2.5}$ emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for $PM_{2.5}$ emissions, it has directed states to regulate PM_{10} emissions as surrogate for $PM_{2.5}$ emissions. See the State Rule Applicability for the source section.

(c) Kosciusko County has been classified as attainment or unclassifiable for all other criteria pollutant. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(d) Fugitive Emissions
The biodiesel operation is one of the 28 listed source categories under 326 IAC 2-2, the fugitive VOC emissions from the biodiesel manufacturing process are counted toward determination of PSD applicability.

There is an applicable New Source Performance Standard, Subpart DD, which is applicable to the grain elevator that was in effect on August 7, 1980, therefore the fugitive PM and PM_{10} emissions from the elevator part only are counted toward determination of PSD applicability.

Fugitive emissions from the soybean extraction process are not counted toward determination of PSD applicability.

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	143
PM_{10}	103.6
SO_2	249
VOC	249.8
CO	85.1
NO_x	66.5

This new source is not a major stationary source under 326 IAC 2-2, because no regulated NSR pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories as specified in 326 IAC 2-2-1(gg)(1). The biodiesel plant is in one of the 28 listed source categories, but it is nested inside a soybean extraction plant. The biodiesel manufacturing process is not the primary activity, and none of the regulated NSR pollutant emitted from the biodiesel manufacturing process is equal to or greater than 100 tons per year. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, pursuant to which the source has to meet the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

CAM Requirements (40 CFR 64)

(a) The solvent extraction process involves a pollutant-specific emissions unit as defined in 40 CFR 64.1 for VOC:

(1) with the potential to emit before controls equal to or greater than the major source threshold for VOC,

(2) that is subject to an emission limitation for VOC, and uses a control device as defined in 40 CFR Part 64.1 to comply with the emission limitation.

The solvent extraction process is subject to NESHAP, 40 CFR 63, Subpart GGGG, which was proposed after November 15, 1990. Therefore, it is exempt from the requirements of 40 CFR Part 64, Compliance Assurance Monitoring.

(b) The biodiesel units involve a pollutant-specific emissions unit as defined in 40 CFR 64.1 for volatile organic compounds (VOC):

(1) with the potential to emit before controls equal to or greater than the major source threshold for VOC,

(2) that is subject to an emission limitation or standard for VOC, and

(3) uses a control device as defined in 40CFR Part 64.1 to comply with the emission limitation.

Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are applicable to the biodiesel process.

The pollutant-specific emission unit is not a “large unit” as described in 40 CFR 64.5. Therefore, the Permittee shall submit a CAM plan pursuant to 40 CFR 64 as part of the Part 70 renewal application.

(c) The hulloosenators, the hull hammer mill, the cascade dryers, the cascade crackers, the flakers, and the meal grinders are pollutant-specific emissions units as defined in 40 CFR 64.1 for PM/PM_{10}:

(1) each with the potential to emit before controls equal to or greater than the major source threshold for PM/PM_{10},

(2) are subject to an emission limitation or standard for PM/PM_{10}, and

(3) uses control devices as defined in 40CFR Part 64.1 to comply with the emission limitations.

Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are applicable to the hulloosenators, the hull hammer mill, the cascade dryers, the cascade crackers, the flakers, and the meal grinders.

The pollutant-specific emission units are not “large units” as described in 40 CFR 64.5. Therefore, the Permittee shall submit a CAM plan pursuant to 40 CFR 64 as part of the Part 70 renewal application.

326 IAC 12 and 40 CFR Part 60, Subpart Db (Standards of Performance for Industrial Commercial-Institutional Steam generating Units), and 326 IAC 7-1.1

The main boiler is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40b, Subpart Db), because it is being constructed after June 19, 1984 and it has a heat input capacity from fuels combusted in the steam generating unit of greater than 100 Million Btu per hour.

Non applicable portions of the NSPS will not be included in the permit.The main boiler is subject to the following portions of Subpart Db**.**

(a) 40 CFR 60.40b
(b) 40 CFR 60.41b
(c) 40 CFR 60.42b
(d) 40 CFR 60.43b
(e) 40 CFR 60.44b
(f) 40 CFR 60.45b
(g) 40 CFR 60.46b
(h) 40 CFR 60.47b
(i) 40 CFR 60.48b
(j) 40 CFR 60.49b

326 IAC 12 and 40 CFR Part 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam generating Units), and 326 IAC 7-1.1

The high pressure steam generator is not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40b, Subpart Dc); because it has a maximum design heat input capacity of less than 10 million Btu per hour.

326 IAC 12 and 40 CFR Part 60, Subpart DD (Standards of Performance for Grain Elevators)

The truck unloading station, rail car unloading station, and all grain handling operations of the grain storage elevator are subject to New Source Performance Standards, 326 IAC 12 and 40 CFR Subpart DD, because the grain storage elevator is located at a soybean extraction plant, which has a permanent storage capacity of more than 35,200 cubic meters or one million bushels.

326 IAC 12 and 40 CFR Part 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984)

(a) Pursuant to 40 CFR 60.116b(d), hexane storage tanks or soybean oil storage tanks are not subject to this rule, because they are subject to 40 CFR 63, Subpart GGGG.

(b) The five methanol tanks and one methanol/methoxide (catalyst) tank are not subject to this rule, because they have capacities equal to 19,400 gallons (less than 75 cubic meters).

(c) The two biodiesel day tanks, four biodiesel storage tanks, and two glycerine tanks are not subject to this rule, because each has a capacity greater than or equal to 151 cubic meters storing a liquid with a maximum true vapor pressure of 0.54, 0.54, and 0.01kPa, respectively, each of them less than 3.5 kilopascals (kPa).

(d) The fuel oil storage tank is not subject to this rule, because it has the capacity equal to 29,500 gallons, which is more than 75 cubic meters but less than 151 cubic meters with a maximum true vapor pressure less than 15 kPa.

326 IAC 12 and 40 CFR 60, Subpart VV (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry)

The biodiesel facility is a synthetic organic chemical manufacturing industry, because it produces glycerol, which is listed in 40 CFR 60.789 and the construction of the facility will commence after January 5, 1981. Therefore each pump, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or any other connector in VOC service are subject to the subpart.

Non applicable portions of the NSPS will not be included in the permit.The biodiesel manufacturing process is subject to the following portions of Subpart VV**.**

(a) 40 CFR 60.480
(b) 40 CFR 60.481
(c) 40 CFR 60.483.1
(d) 40 CFR 60.483.2
(e) 40 CFR 60.484
(f) 40 CFR 60.486
(g) 40 CFR 60.487
(h) 40 CFR 60.489

326 IAC 12 and 40 CFR 60, Subpart NNN (Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

The distillation unit is part of a process unit that produces glycerol, which is listed in 40 CFR 60.667 and the construction of the distillation unit will commence after December 30, 1983. The distillation unit does not discharge its vent stream into a recovery system, therefore, the distillation unit is subject to this rule.

The Total Resource Effectiveness (TRE) was calculated using the two equations in 40 CFR 60.664(f) with results of 472 and 156. Facilities with TRE greater than 8.0 are subject only to 40 CFR 60.662, 40 CFR 60.664(e), (f), and (g); and 40 CFR 665(h) and (l). Marcia Mia of U.S. EPA in an email to Erik Hardin, U.S. EPA, Region 5 stated that an amendment dated October 17, 2000 changed 40 CFR 60.664(d), (e), and (f) to 40 CFR 60.664(e), (f), and (g). Therefore, the corrected citation for 40 CFR 60.664(d), (e), and (f) should be 40 CFR 60.664(e), (f), and (g).

The Permittee has opted to comply with 40 CFR 60.662(a) by reducing the TOC (less methane and ethane) by 98 weight percent from the distillation unit. The Permittee has opted to comply with 40 CFR 60.662(a), therefore 40 CFR 60.664(e), (f), and (g); and 40 CFR 60.665(h) do not apply to the distillation unit.

326 IAC 12 and 40 CFR 60, Subpart RRR (Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

The reactor unit is part of a process unit that produces glycerol, which is listed in 40 CFR 60.707, and the construction of the reactor will commence after June 29, 1990. The reactor's vent flow rate is less than 0.011 scm/min (0.39 scfm), therefore, this unit is exempt from all provisions of this subpart except for the test method and procedure and the record-keeping and reporting requirements in 40 CFR 60.704(g) and 40 CFR 60.705 (h), (l)(4), and (o).

326 IAC 14 and 40 CFR 61 (National Emission Standards for Hazardous Air Pollutants)

The proposed facilities are not subject to Emission Standards for Hazardous Air Pollutants, 326 IAC 14, and 40 CFR 61 as none of the hazardous air pollutants covered under this rule will be emitted from these facilities.

326 IAC 20-60 and 40 CFR 63, Subpart GGGG (National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production)

The soybean oil extraction process is subject to the National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production (40 CFR Part 63, Subpart GGGG)**,** which is incorporated by reference as 326 IAC 20-60.

This is a new source, for the purposes of this NESHAP, because it is a vegetable oil production process as defined in Sec. 63.2872 and is being constructed after May 26, 2000.

Non applicable portions of the NESHAP will not be included in the permit.The soybean oil extraction process is subject to the following portions of Subpart GGGG**.**

(a) 40 CFR 63.2834
(b) 40 CFR 63.2840
(c) 40 CFR 63.2850
(d) 40 CFR 63.2851
(e) 40 CFR 63.2852
(f) 40 CFR 63.2853
(g) 40 CFR 63.2854
(h) 40 CFR 63.2855
(i) 40 CFR 63.2860
(j) 40 CFR 63.2861
(k) 40 CFR 63.2862
(l) 40 CFR 63.2863
(m) 40 CFR 63.2872

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise

specified in 40 CFR 63 Subpart GGGG.

40 CFR 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters)

The main boiler and the high pressure steam generator are subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD, because the main boiler and the high pressure steam generator are located at a major source for HAPs.

These boilers are new, for the purposes of this NESHAP, because these boilers are being constructed after January 13, 2003.

Non applicable portions of the NESHAP will not be included in the permit. The main boiler is subject to the following portions of Subpart DDDDD**.**

(a) 40 CFR 63.7490
(b) 40 CFR 63.7495
(c) 40 CFR 63.7499
(d) 40 CFR 63.7500
(e) 40 CFR 63.7505
(f) 40 CFR 63.7506
(g) 40 CFR 63.7510
(h) 40 CFR 63.7525
(i) 40 CFR 63.7530
(j) 40 CFR 63.7535
(k) 40 CFR 63.7540
(l) 40 CFR 63.7545
(m) 40 CFR 63.7550
(n) 40 CFR 63.7555
(o) 40 CFR 63.7560
(p) 40 CFR 63.7565
(q) 40 CFR 63.7570
(r) 40 CFR 63.7575

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the main boiler except when otherwise specified in 40 CFR 63 Subpart DDDDD.

The high pressure steam generator is in the small gaseous fuel category. Therefore, the high pressure steam generator is not subject to the initial notification requirements in 40 CFR 63.9(b) and is not subject to any requirements in this subpart or in 40 CFR 63, subpart A (*i.e.*, it is not subject to the emission limits, work practice standards, performance testing, monitoring, SSM plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart, or any other requirements in subpart A of this part).

State Rule Applicability

326 IAC 2-2 PSD Minor Limit for PM/PM_{10} Emissions

(a) The amount of soybeans processed shall be less than 1,686,300 tons per 12 consecutive month period with compliance determined at the end of each month.

(b) The PM and PM_{10} emissions rates for the following facilities shall be limited as follows:

Process	Control	PM Limit (lbs/hour)	PM_{10} Limit (lbs/hour)
Grain Receiving	Baghouse AF-1	0.939	0.939
Load out	Baghouse AF-2	1.64	1.64
Prep Area	Baghouse AF-3	1.26	1.26
Jet Dryer/VSC	VSC cyclone and Jet dryers cyclones	4.93	3.35
Hot Dehulling	Baghouse AF-5	2.56	2.56
Flaker Aspiration	Baghouse AF-4	1.03	1.03
Meal Grinding	Baghouse AF-6	0.945	0.945
DTDC Dryers and cooler	DTDC Cyclones	10.74	7.28
Clay Bin	Clay Bin Filter	0.032	0032
Hull Bin	Hull Bin Filter	0.107	0.107
Silica Bin	Silica Bin Filter	0.0322	0.0322
Bleaching Earth Bins	Bleaching Earth Bins Filter	0.0322	0.0322
Salt Tank	Filter	0.0322	0.0322
Filter Aid	Filter	0.0322	0.0322
Truck Receiving # 1 and 2 Fugitive		1.78	0.464
Rail Receiving Fugitive		0.576	0.140
Truck Loadout Pellets/Hulls #1 and 2 Fugitive		0.0545	0.0132
Truck Loadout Meal #1 and #2 fugitive		4.46	2.72
Rail Car Loadout Meal Fugitive		4.46	2.72
Rail car Loadout Pellets/Hulls Fugitive		0.0545	0.0132
Road Traffic Fugitive		4.14 tpy	1.88 tpy
Main Boiler		3.14	5.19

Process	Control	PM Limit (lbs/hour)	PM_{10} Limit (lbs/hour)
High Pressure Steam Generator		0.017	0.067
Fire Pumps		0.61	0.61
Cooling Tower		0.12	0.12
Bean Storage Bins #1-4		1.80	0.45

Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable for PM and PM_{10} emissions.

326 IAC 2-2 PSD Minor Limit for VOC Emissions

(a) The amount of the purchased soybean oil shall be limited to less than 80 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The amount of soybean oil processed to manufacture biodiesel shall be limited to less than 80 million gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The following facilities' VOC emissions rates shall be limited as follows:

Process	Control	VOC (lbs/hour)	Hours of operation limit/yr
Soybean oil extractor system Normal operation	Mineral oil absorber	9.3	
DTDC Dryers and cooler Normal operation	DTDC Cyclones	32.8	
Purchased crude soybean oil	Super Stripper	35 ppmwt.	
Purchased refined bleached (RB Oil) soybean oil.	Analytical Testing of Incoming Oil	35 ppmwt.	
Biodiesel manufacturing process Normal operation	Soy oil absorber followed by a water absorber	0.30	
Biodiesel manufacturing process Upset operation	Soy oil absorber followed by a water absorber	29.4	24 hrs

Process	Control	VOC (lbs/hour)	Hours of operation limit/yr
Biodiesel manufacturing process with methanol tank unloading	Soy oil absorber followed by a water absorber	0.63	
Biodiesel storage tanks and loading rack operation	None	1.40	
Glycerine storage tanks	None	0.0008	
Biodiesel day tanks	Soy oil absorber followed by a water absorber	Included in biodiesel mfg process emissions	
Methanol storage tanks	None	0.38	
Methoxide (catalyst) storage tank	None	0.079	
Biodiesel wastewater	None	0.560	
Biodiesel fugitive emissions	LDR as required by 40 CFR 60, Subpart VV	3.605	
Boiler	None	1.19	
High pressure steam generator	None	0.045	
Diesel fire pumps	None	0.57	
Fuel oil tank	None	0.002	

The soybean oil limit in Condition (b), the VOC emission limits from the biodiesel manufacturing process, the biodiesel manufacturing process with the methanol tank unloading, the biodiesel storage tanks and the loading rack operation, the glycerine storage tanks, the biodiesel day tanks, the methanol storage tanks, the methoxide (catalyst) storage tank, the biodiesel wastewater, the biodiesel fugitive emissions, and the limit on the hours of the biodiesel manufacturing process upset operation are required to limit the potential to emit of VOC from the biodiesel process to less than 100 tons per 12 consecutive month period with compliance determined at the end of each month.

The purchased soybean oil usage limit in (a), soybean oil usage limit in (b), VOC emission limits in (c), and hours of operations limits in (c), are required to limit the potential to emit of VOC from the entire source to less than 250 tons per 12 consecutive month period with compliance determined at the end of each month.

Compliance with the above limits will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

326 IAC 2-2 PSD Minor Limit for Sulfur Dioxide

The amount of distillate oil with a maximum sulfur content of 0.5%, combusted in the main boiler shall be less than 7,100,857 gallons per twelve consecutive month period. This will limit the total sulfur dioxide emissions from the source to less than 250 tons per year with compliance determined at the end of each month. Compliance with this limit will render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to this source.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the following processes shall not exceed the limitations specified in the following table:

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour was accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Or

Interpolation of the data for the process weight rate in excess of 60,000 pounds per hour was accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Process	Process Weight Rate (tons/hr)	PM Emission Limit (lbs/hr)
Load out	330	64.1
Jet Dryer/VSC	192.5	58.5
Hot Dehulling	192.5	58.5
Flaker Aspiration	182.9	57.5
Meal Grinding	148	55.3
DTDC Dryers and cooler	156	55.9
Clay Bin	20	30.5
Hull Bin	330	64.1
Silica Bin	20	30.5
Bleaching Earth	20	30.5
Filter Aid vents	20	30.5
Salt Tank	20	30.5
Cooling Tower	Less than 100 lbs/hr	0.551

326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating)

The particulate matter emissions from the main boiler are 0.005 and 0.014 pounds per million Btu when combusting natural gas and No. 2 fuel oil, respectively, which is less than the allowable emission rate of 0.265 pounds per MMBtu.

The particulate matter emissions from the high pressure steam generator are 0.005 pounds per million Btu when combusting natural gas, which is less than the allowable emission rate of 0.265 pounds per MMBtu.

Therefore, the main boiler and the high pressure steam generator are capable of complying with 326 IAC 6-2-4.

The allowable particulate emissions rate was calculated from the following equation:

$$Pt = (1.09/ Q^{0.26})$$

Where Pt = Max Allowable Particulate Emissions in lbs/MMBtu

Q = Total Source Operating Capacity of 229 MMBtu

326 IAC 6-4 (Fugitive Dust Emission)

This source is subject to 326 IAC 6-4, because it is a source of fugitive dust. Pursuant to this rule, fugitive particulate matter emissions shall not be visible crossing the property line.

326 IAC 8-1-6 (New facilities: general reduction requirements)

The facilities having uncontrolled VOC emissions of 25 tons per year, which are not otherwise regulated by other provisions of this article (326 IAC 8), shall reduce VOC emissions using best available control technology (BACT).

Best Available Control Technology (BACT) is an emission limit based on the maximum degree of pollution reduction, which the OAQ determines is achievable on a case-by-case basis taking into consideration energy, environmental, economic, and other cost factors.

Louis Dreyfus Agricultural Industries LLC shall apply BACT for VOC, because the oil extraction process and biodiesel process have the potential to emit VOC above 25 tons per year, each. BACT is determined on a case – by - case basis by reviewing controls on similar processes, BACT used by the OAQ and other states, and new technologies available.

The BACT analysis for VOC has been conducted in accordance with the U.S. EPA's "Top Down BACT Guidance". The RACT/BACT/LAER Clearinghouse and related state permits issued by other state agencies were reviewed for control technology information.

Best Available Control Technology (BACT) Analysis

The Office of Air Quality has determined from the analysis that BACT for this plant is as follows:

(a) BACT for the soybean oil extractor, meal dryers, and meal cooler shall be as follows:

Facility	Control	VOC (Hexane) Emission Limit
Oil extractor	Mineral oil absorber	0.048 pounds per ton of soybean received and 9.3 lbs/hr
Meal dryers and cooler (vent to same stack)	None	0.03 gals/ton of soybean received and 32.8 lbs of hexane/hr
Plantwide	First year	0.20 gals/ton soybean received
	After first year	0.134 gals/ton of soybean received

BACT for the fugitive hexane loss shall include an enhanced inspection, maintenance, and repair program. Within 60 days of achieving full production, but no later than 180 days after initial startup, the Permittee shall institute the following enhanced inspection, maintenance, and repair program for the solvent extraction portion of the installation.

Table 1

Equipment	Leak Standard
Pumps	500 ppm
Valves	500 ppm
Pressure relief Devices	500 ppm
Flanges, Connectors, and Seals	10,000 ppm

(1) The Permittee shall determine compliance with the standards in Table 1 by using the procedures of 40 CFR Part 60, Appendix A, Method 21. The instrument shall be calibrated before each day of its use by the procedures as specified in Method 21. A leak is defined as an instrument reading of 500 ppm above background or greater, except for flanges, and connectors where a leak is defined as 10,000 ppm above background.

(2) The Permittee shall immediately tag all detected leaks with a weatherproof, and readily visible, identification tag with a distinct number. Once a leaking component is detected, first-attempt repairs must be done within five days and be completed within 15 days of detecting the leaking components. If the repair can not be accomplished within 15 days, then the Permittee shall send a notice of inability to repair to the OAQ within 20 days of detecting the leak. The notice must be received by the Compliance Branch, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204 within 20 days after the leak was detected. At a minimum the notice shall include the following:

(A) Equipment, operator, and instrument identification number;

(B) Date of leak detection;

(C) Measured concentration (ppm) and background (ppm);

(D) Leak identification number associated with the corresponding tag; and

(E) Reason of inability to repair within 5 to 15 days of detection.

(3) The Permittee shall maintain records of the following to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) equipment inspected;

(B) date of inspection; and

(C) determination of whether a leak was detected.

(4) If a leak is detected, the Permittee shall record the following information to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) the equipment, operator, and instrument identification number;

(B) measured concentration;

(C) leak identification number associated with the corresponding tag;

(D) date of repair;

(E) reason for non-repair if unable to repair within 5 to 15 days of detection; and

(F) maintenance recheck if repaired-date, concentration, background.

(b) Biodiesel Process

One soy oil absorber followed by a water scrubber with combined VOC control efficiency of 99% and a VOC emission rate of 0.30 lbs/hr without methanol unloading, and a VOC emission rate of 0.63 lbs/hr with methanol unloading.

BACT for fugitive VOC emissions is determined as compliance with 40 CFR 60, Subpart VV.

326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations)

The sulfur dioxide PTE of the main boiler is more than 25 tons per year, therefore it is subject to rule 326 IAC 7-1.1-1. The sulfur dioxide emissions from the main boiler are less than 0.5 pounds per million BTU. Therefore, the main boiler is capable of complying with 326 IAC 7-1.1-2.

The high pressure steam generator does not have a sulfur dioxide PTE of 25 tons per year or more. Therefore, the high pressure steam generator is exempt from this rule.

326 IAC 2-4.1-1 (New Source Toxic Control)

The requirements of this rule do not apply to the solvent extraction process of the manufacturing plant, because the solvent extraction process is subject to 40 CFR 63, Subpart GGGG.

The requirements of this rule do not apply to the main boiler and the high pressure steam generator, because the main boiler and the high pressure steam generator are subject to 40 CFR 63, Subpart DDDDD.

The biodiesel process is not subject to the requirements of 326 IAC 2-4.1-1, because the potential to emit as defined in 326 IAC 2-7-1(29) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.

326 IAC 2-6 (Emission Reporting)

Since this source is required to have an operating permit under 326 IAC 2-7, this source is subject to 326 IAC 2-6 (Emission Reporting). In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2007 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in the

permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 20-60 (Solvent Extraction for Vegetable Oil Production)

The soybean oil extraction process is subject to 326 IAC 20-60 (Solvent Extraction for Vegetable Oil Production). 326 IAC 20-60 incorporates by reference 40 CFR 63 Subpart GGGG. The Permittee shall comply with the provisions of 40 CFR 63 Subpart GGGG as detailed in the Federal Rule Applicability section above.

Subpart GGGG was revised on November 1, 2004. However, pursuant to 326 IAC 1-1-3, the version of the rule referenced by 326 IAC 20-60 was the version in existence on April 12, 2001, which had been most recently amended on September 1, 2004. Therefore, the September 1, 2004 amendents to the federal rule are not approved into the 326 IAC, and therefore the soybean oil extraction process at this source is subject to both versions of the rule. However the requirements of 326 IAC 20-60 that are applicable to this source are the same as the requirements listed under the Federal Rule Applicability section above.

Testing Requirements

The following table shows the stack testing requirements for this source:

Time Frame	Emissions Point	Pollutant/ Parameter	Frequency of testing after initial testing
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Stacks AF-1 and AF-3,	PM, PM_{10} and Opacity	Once every five years
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Stacks AF-2, AF-4, AF-5, AF-6, S-1, and S-2	PM and PM_{10}	Once every five years
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Mineral oil absorber	VOC and Mineral oil flow rate	Once every five years
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	DTDS Meal dryers and cooler	VOC, PM and PM_{10}	Once every five years
Within 180 days after processing the purchased crude soybean oil in the super stripper	Super stripper	VOC	Once every five years
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Soy oil absorber	Establish soy oil flow rate	Once every five years

Time Frame	Emissions Point	Pollutant/ Parameter	Frequency of testing after initial testing
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Water absorber	VOC, and establish water flow rate	Once every five years
Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup	Main Boiler	Opacity and NOx	Once every five years
Within 180 days after initial processing of the purchased RB soybean oil, which will not be processed in the super stripper	purchased RB soybean oil	VOC	As needed

Note: PM_{10} includes filterable and condensable PM_{10}.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions. However, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occur IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a deviation in relation to a compliance monitoring condition will arise through a source failure to take the appropriate corrective actions within a specific time period.

Control	Parameter	Frequency	Range/Minimum Value	Excursions and Exceedances
Baghouses AF-1, AF-2, AF-3, AF-4, AF-5, AF-6	Visible emissions notations	Daily	Normal - Abnormal	Response steps
	Pressure drop	Daily	3” – 6” of water or a range established during the latest stack test	Response steps
VSC Cyclone, Jet dryers cyclones 1A, 1B, 2A, and 2B, DTDC cyclone 1 and 2	Visible emissions notations	Daily	Normal - Abnormal	Response steps
	High level indicator alarm		Above a set level as recommended by the manufacturer	Response steps
Mineral oil absorber	Mineral oil flow rate	Daily	Minimum flow rate as recommended by the manufacturer or the flow rate established during the latest stack test	Response steps

Control	Parameter	Frequency	Range/Minimum Value	Excursions and Exceedances
	3-hour average of mineral oil temperature	Continuous	Minimum temperature as recommended by the manufacturer or the minimum temperature established during the latest stack test	Response steps
Mineral oil Condenser	Coolant flow rate	Daily	Minimum flow rate as recommended by the manufacturer or the flow rate established during the latest stack test	Response steps
	Continuous temperature measurement to determine 3-hour average of coolant temperature	Continuous	Minimum temperature as recommended by the manufacturer or the minimum temperature established during the latest stack test	Response steps
Super stripper	Continuous temperature measurement to determine 3-hour average of mineral oil temperature	Continuous	Minimum temperature as recommended by the manufacturer or the minimum temperature established during the latest stack test	Response steps
Soy oil absorber	Soy oil flow rate	Daily	Minimum flow rate as recommended by the manufacturer or the flow rate established during the latest stack test	Response steps
	Continuous temperature measurement to determine 3-hour average of soy oil temperature	Continuous	Minimum temperature as recommended by the manufacturer or the minimum temperature established during the latest stack test	Response steps
Water absorber	Water flow rate	Daily	Minimum flow rate as recommended by the manufacturer or the flow rate established during the latest stack test	Response steps
	Continuous temperature measurement to determine 3-hour average of water temperature	Continuous	Minimum temperature as recommended by the manufacturer or the minimum temperature established during the latest stack test	Response steps

Air Quality Impacts from Minor Source – Modeling Study

Modeling Overview

IDEM, OAQ, has conducted a modeling analysis of the limited Potential to Emit (PTE) criteria pollutants and Hazardous Air Pollutants (HAPs) from this proposed source to:

(a) Estimate whether or not the limited PTE of the criteria pollutants will exceed the National Ambient Air Quality Standards (NAAQS), and

(b) Compare the limited PTE of the HAPs to the US EPA's 1996 National Air Toxics Assessment (NATA) / Cumulative Exposure Project (CEP) values for evaluating air toxics emissions.

Please note that the NATA/CEP values are not regulatory limits used by IDEM, OAQ; however, they provide a useful indication of a source's impact on public health.

Modeling Results – Criteria Pollutants

The modeling results indicate that the limited PTE of the criteria pollutants from this source will not exceed the National Ambient Air Quality Standards (NAAQS).

Modeling Results – Hazardous Air Pollutants

For n-hexane there was no t an appropriate NATA/CEP value to compare modeling results to; therefore, the results were compared to the non-cancer risk benchmark of 200 ug per cubic meter. IDEM, OAQ determined that the n-hexane emissions do not exceed 59.6 ug per cubic meter.

Conclusion

The construction and operation of this soybean extraction and biodiesel manufacturing plant shall be subject to the conditions of the attached proposed New Source Construction and Part 70 operation permit No. T085-21297-00102.

Annual VOC Emissions Summary

	lbs/hr	tons/yr		lbs/ton of beans	Uncontrolled tons/yr
Point Sources (related to solvent)					
a) Vent Gas During Normal Operations					
from Normal Operations:	9.3	40.8		0.048	3014
from Upset Operations:	1765	21.2	62.0	0.025	182
b) Desolventized Meal Dryer & Cooler Exhaust					
from Normal Operations:	32.8	143.3		0.170	273
from Upset Operations:	595	7.1		0.008	9.4
c) Refinery (via DTDC & vents)	5.0	10.9	161.3	0.013	11
Subtotal Point Source Emission	**47.1** normal	**223.3**		**0.265**	**3489**
Fugitive Emissions (related to solvent)					
a) Plant Startup/Shutdown	4200	16.8		0.020	17
b) Sampling	0.76	3.3		0.004	3.3
c) General - equipment failure, leaks, etc.	53.9	236.1		0.280	236
d) Plant Upsets	1417	21.3		0.025	21
e) Meal Storage	0.33	1.5		0.002	1.5
f) Refinery	4.96	10.9		0.013	11
Subtotal Fugitive Source Emission	**60.0** normal	**289.8**		**0.344**	**290**
Bound In Product & Byproduct					
a) Desolventized meal					
from Normal Operations:	29.6 lbs/hr	129.2 tons/yr		0.153	
from Upset Operations:	185 lbs/hr	2.8 tons/yr		0.003	
Subtotal Bound Source Emission	**29.6** lbs/hr	**132.0** tons/yr		**0.157**	
Total VOC Emissions (related to solvent)	**136.7** lbs/hr normal	**645.0** tons/yr		**0.765** lbs/ton **0.137** gal/ton	**3779** tons/yr
minus Refinery point/fug. emissions		**10.9** tons/yr		**0.003** gal/ton	
		634.1 tons/yr		**0.134** gal/ton	
Total HAP Emissions (n-hexane)					
Weight fraction of n-hexane in the solvent			0.64		
Total n-hexane from solvent emissions	87.5 lbs/hr	412.83 tons/yr			
n-hexane from combustion	0.4 lbs/hr	1.77 tons/yr			
	87.9 lbs/hr	**414.6** tons/yr			
Total VOC Emissions					
Point VOC Sources & Potential VOC					
Subtotal Solvent	47.1 lbs/hr	223.3 tons/yr			
Biodiesel (methanol) Upset	19.2 lbs/hr	2.64 tons/yr			
Combustion	1.23 lbs/hr	5.60 tons/yr			
Fuel Oil Tank	0.002 lbs/hr	0.008 tons/yr			
Subtotal Point Source Emission	**67.5** lbs/hr	**231.5** tons/yr			
Biodiesel - Wastewater		2.45 tons/yr			
Biodiesel - General Fugitive		4.43 tons/yr			
Potential VOC Emissions for PSD purposes		**238.4** tons/yr			
Fugitive VOC Sources					
Subtotal Soybean Solvent	60.0 lbs/hr	289.8 tons/yr			
Biodiesel - Wastewater Fugitive	0.56 lbs/hr	2.45 tons/yr			
Biodiesel - General	3.61 lbs/hr	4.43 tons/yr			
Subtotal Fugitive Emission	64.1 lbs/hr	**296.7** tons/yr			
Bound VOC Sources	29.6 lbs/hr	**132.0** tons/yr			
Total VOC Emissions (Point + Fugitive + Bound)	**161.3** lbs/hr	**660.2** tons/yr			

BIODIESEL METHANOL ABSORBERS

Basis:				
Methanol MW:	32.0			
Total Operating Hours	8760			

Soy Oil Absorber for Methanol

Normal Operation		Total Normal Hours:	8445	
Inlet Loading	0.92	lb mol/hr	29.4	lb/hr
Outlet of Absorber	0.03	lb mol/hr	0.88	lb/hr
Absorber Removal Efficiency		97.0 %		
During MeOH Unloading		Total Unloading Hours:	291	
Inlet Loading	1.94	lb mol/hr	62.0	lb/hr
Outlet of Absorber	0.058	lb mol/hr	1.86	lb/hr
Absorber Removal Efficiency		97.0 %		
Upset Condition - 8 events per year, 3 hours each:		Total upset hours:	24	
Inlet Loading	18.3	lb mol/hr	587	lb/hr
Outlet of Absorber	1.83	lb mol/hr	58.7	lb/hr
Absorber Removal Efficiency		90.0 %		

Water Absorber for Methanol

Normal Operation				
Inlet Loading	0.028	lb mol/hr	0.88	lb/hr
Outlet of Absorber	0.0094	lb mol/hr	0.30	lb/hr
Absorber Removal Efficiency		66.0 %		
Combined Efficiency of Both Absorbers		99.0 %		
During Tank Unloading				
Inlet Loading	0.058	lb mol/hr	1.86	lb/hr
Outlet of Absorber	0.020	lb mol/hr	0.63	lb/hr
Absorber Removal Efficiency		66.0 %		
Combined Efficiency of Both Absorbers		99.0 %		
Upset Condition - 8 events per year, 3 hours each:		Total upset hours:	24	
Inlet Loading	1.83	lb mol/hr	58.7	lb/hr
Outlet of Absorber	0.92	lb mol/hr	29.4	lb/hr
Absorber Removal Efficiency		50.0 %		
Overall Efficiency		95.0 %		

TOTAL EMISSIONS		Uncontolled lbs/hr	Uncontolled tons/yr	Controlled lbs/hr	Controlled tons/yr
Point Source Methanol Emissions	Normal	29.4	123.96	0.30	1.26
	w/ MeOH Unloading	62	9.03	0.63	0.09
	Loading Rack	1.40	0.93	1.40	0.93
	Glycerine Tank	0.0008	0.0033	0.0008	0.0033
	Upset Conditions	587	7.05	29.4	0.35
	Total				**2.64**
Fugitive Methanol Emissions:					
	BD Wastewater	0.56	2.45	0.56	2.45
	General	3.61	15.79	3.61	4.43
	Total		**159.21**		**12.17**

BIODIESEL PLANT **VOC FUGITIVE EMISSIONS**

Estimated Number of Components for Various Biodiesel Processes: (above 10% VOC)

Process	Lines	Pumps	Sample/ Drains	Relief Valves	Agitator Seals	Valves	Methanol (VOCs)	Heavy Hydrocarbons	TOCs
1	5	0	4	2	1	16	0.153	0.847	1.000
2	5	2	2	1	1	12	0.230	0.001	0.231
3	2	1	2	0	0	6	0.295	0.702	0.997
4	2	7	7	2	1	35	0.328	0.451	0.779
5	3	0	1	2	1	9	0.342	0.465	0.807
6	2	1	1	0	0	5	0.433	0.112	0.545
7	5	0	4	2	0	14	0.659	0	0.659
8	4	0	3	0	0	10	0.750	0.250	1.000
9	1	0	0	0	0	1	0.871	0	0.871
10	4	0	3	0	0	9	0.999	0	0.999
11	10	0	2	2	0	26	1.000	0	1.000

Average Emission Factors (for TOCs):

in kg/hr	0.0017	0.0199	0.015	0.104	0.0199	0.00403
in lb/hr	0.00381	0.0446	0.0336	0.233	0.0446	0.00903

Source: Protocol for Equipment Leak Emission Estimates EPA-453/R-95-017

Estimated Potential Fugitive Emissions (VOCs)

E_{VOC} = No. of Comps X Emission Factor X E_{TOC} X Weight Fraction Methanol / Weight Fraction TOCs

Process							Subtotal
1	0.0029	0	0.0206	0.0713	0.0068	0.0221	0.124
2	0.0190	0.0888	0.0669	0.2320	0.0444	0.1079	0.559
3	0.0023	0.0132	0.0199	0	0	0.0160	0.051
4	0.0032	0.1314	0.0990	0.1962	0.0188	0.1330	0.582
5	0.0048	0	0.0142	0.1975	0.0189	0.0344	0.270
6	0.0061	0.0354	0.0267	0	0	0.0359	0.104
7	0.0190	0	0.1344	0.4659	0	0.1264	0.746
8	0.0114	0	0.0756	0	0	0.0677	0.155
9	0.0038	0	0	0	0	0.0090	0.013
10	0.0152	0	0.1008	0	0	0.0812	0.197
11	0.0381	0	0.0672	0.4659	0	0.2347	0.806
Subtotal	0.126	0.269	0.625	1.629	0.089	0.868	

	Total	**3.61**	lb/hr
Operating hours/yr: 8760		**15.79**	tons/yr

Estimated Control Efficiency by Component

	100%	45%	50%	90%	45%	61%
Notes:	a	b	c	d	b	b

a) Based on no open lines or open lines are equipped with cap, plug or secondary valve.
b) Based on quarterly monitoring
c) Based on closed loop sampling system (100% control), with half being uncontrolled drains.
d) Based on exhaust to closed vent system (normally provides 99% control).
Source: Protocol for Equipment Leak Emission Estimates EPA-453/R-95-017

Estimated Controlled Fugitive Emissions (VOCs)

CE_{VOC} = E_{VOC} X (100 -% control for component)/100

Component							Subtotal
E_{VOC}	0.126	0.269	0.625	1.629	0.089	0.868	0.000
CE_{VOC}	0.000	0.148	0.313	0.163	0.049	0.339	1.01
					Total		**1.01** lb/hr

Operating hours/yr: 8760 **4.43** tons/yr

Average LDAR Conrol Efficiency **72.0%**

Appendix A
Emission Summary

Category	Pollutant	Uncontrolled Potential Emissions (tons/year)					
		Emissions Generating Activity					
		Soybean Process	Extract Process	Comb. Process	Vehicle	Biodsl	**TOTAL**
Pollutants	PM	7292		8.2	20.00		7320
	PM10	4224		15.6	3.88		4244
	SO2			249.0			249
	NOx			66.5			66.5
	VOC		3779	5.6		159	3944
	CO			85.1			85.1

Category	Pollutant	Controlled Potential Emissions (tons/year)					
		Emissions Generating Activity					
		Soybean Process	Extract Process	Comb. Process	Vehicle	Biodsl	**TOTAL**
Pollutants	PM	114.9		8.2	20.00		143
	PM10	84.1		15.6	3.88		103.6
	SO2			249.0			249
	NOx			66.5			66.5
	VOC		513	5.6		**12.17**	531
	CO			85.1			85.1

Process	**VOC Emissions for PSD purposes (tons/year)**
Point Source	
Subtotal Solvent	223.3
Biodiesel (methanol)	2.65
Combustion	5.60
Fuel Oil Tank	0.008
Subtotal	**231.6**
Fugitive	
Biodiesel - Wastewater	2.45
Biodiesel - General Fugitive	**4.43**
Subtotal	**6.9**
Potential VOC Emissions for PSD purposes **Total**	**238.4**

APPENDIX A

Annual Particulate Matter Emissions Summary

Point Source Emissions

Filter/ Stack ID	Filter / Stack Description	Aspiration Rate (cfm)	Before Control				After Control						
			PM		PM-10		PM		PM-10		PM	PM-10	
			(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	gr/cf	gr/cf	ACE-PM
AF-1	Grain Receiving Filter	21,900	166.3	245.4	79.2	125.0	0.932	1.37	0.932	1.37	0.0050	0.0050	99.44
AF-2	Loadout Filter	38,000	204.5	265.3	121.0	151.3	1.64	2.12	1.64	2.12	0.0050	0.0050	99.20
AF-3	Prep Exhaust Filter	29,500	127.9	560.2	69.8	305.6	1.26	5.50	1.26	5.50	0.0050	0.0050	99.02
S-1	Jet Dryer/VSC Stack	39,000	61.6	269.8	22.3	97.8	4.93	21.6	3.35	14.7	0.0147	0.0100	92.00
AF-5	Hot Dehulling Filter	60,000	182.9	801.0	96.3	421.8	2.56	11.21	2.56	11.21	0.0050	0.0050	98.60
AF-4	Flaker Asp. Filter	24,000	78.8	345.3	47.5	208.1	1.025	4.49	1.025	4.49	0.0050	0.0050	98.70
AF-6	Meal Grinding Filter	22,000	525.0	2299.3	317.9	1392.6	0.945	4.14	0.945	4.14	0.0050	0.0050	99.82
S-2	DTDC Stack	85,200	565.2	2475.71	344.79	1510.2	10.74	47.0	7.28	31.9	0.0147	0.0100	98.10
	Clay Bin Filter	750	39.6	7.23	6.40	1.17	0.032	0.0059	0.0322	0.03216	0.0050	0.0050	99.92
	Hull Bin Filter	2,500	22.2	3.61	12.3	1.69	0.107	0.0173	0.107	0.0173	0.0050	0.0050	99.52
	Silica Vents	750	39.6	0.361	6.40	0.058	0.0322	0.00029	0.0322	0.000293	0.0050	0.0050	99.92
	Bleaching Earth Vents	750	39.6	0.723	6.40	0.117	0.0322	0.00059	0.0322	0.000587	0.0050	0.0050	99.92
	Salt Tank	750	39.6	0.950	6.40	0.154	0.0322	0.00077	0.0322	0.000772	0.0050	0.0050	99.92
	Filter Aid Vent Filters	750	39.6	0.0903	6.40	0.0146	0.0322	0.000073	0.0322	0.000073	0.0050	0.0050	99.92
	Bean Storage Bins 1-4	232,000	1.8	2.11	0.45	0.53	1.80	2.11	0.45	0.53	0.0009	0.0002	
			2134	**7277**	**1144**	**4216**	**26.1**	**99.6**	**19.7**	**76.0**			

Fugitive Emissions

Process	Before Control				After Control			
	PM		PM-10		PM		PM-10	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Truck Receiving #1, 2 (fugitive)	1.78	2.09	0.464	0.544	1.78	2.09	0.464	0.544
Rail Receiving (fugitive)	0.576	0.000	0.140	0.0000	0.576	0.000	0.140	0.0000
Truck Loadout Pellets/Hulls #1,2 (fugitive)	0.0545	0.00416	0.0132	0.00101	0.0545	0.00416	0.0132	0.00101
Truck Loadout Meal #1, 2 (fugitive)	4.46	5.25	2.72	3.20	4.46	5.25	2.72	3.20
Rail Car Loadout Meal (fugitive)	4.46	3.50	2.72	2.14	4.46	3.50	2.72	2.14
Rail Car Loadout Pellets/Hulls (fugitive)	0.0545	0.00277	0.0132	0.00067	0.0545	0.00277	0.0132	0.00067
Road Traffic	0.944	4.14	0.429	1.88	0.944	4.14	0.429	1.88
Cooling Towers	0.119	0.35	0.119	0.35	0.119	0.35	0.119	0.35
Total Fugitives	**12.4**	**15.3**	**6.6**	**8.1**	**12.4**	**15.3**	**6.6**	**8.1**

	Before Control				After Control			
	PM		PM-10		PM		PM-10	
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Total Point Source Particulate Emissions	2134.2	7277.0	1143.7	4216.1	26.1	99.6	19.7	76.0
Total Fugitive Particulate Emissions	12.4	15.3	6.6	8.1	12.4	15.3	6.6	8.11
Total Facility Particulate Emissions	**2147**	**7292**	**1150**	**4224**	**38.5**	**114.9**	**26.3**	**84.1**

Filter/Stack ID	Filter / Stack Description	Process	Notes	Rate		Emission Factors		Aspiration Rate (cfm)	Control Efficiency		Before Control				After Control				Emission Factor Source
											PM		PM-10		PM		PM-10		
				ton/hr	ton/yr	PM	PM-10		PM	PM-10	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
AF-1	Grain Receiving Filter	Truck Receiving #1, 2 (non fugitive)	a	720	1,686,300	0.0470	0.0123	6,000	99.44%		33.9	39.6	8.82	10.33					SCC 3-02-005-51 and -52
		Receiving Legs and Conveyors #1,2		720	1,686,300	0.061	0.034	5,000	99.44%		43.9	51.4	24.5	28.7					SCC 3-02-005-30
		Screeners #1,2		720	1,686,300	0.061	0.034	4,400	99.44%		43.9	51.4	24.5	28.7					SCC 3-02-005-30
		Rail Receiving (non fugitive)	a	360	0	0.0304	0.00741	3,000	99.44%		10.9	0.00	2.67	0.00					SCC 3-02-005-53
		Conveyors from Storage	b	360	1,686,300	0.061	0.034	1,000	99.44%		22.0	51.4	12.2	28.7					SCC 3-02-005-30
		Day Bin Leg	b	192.5	1,686,300	0.061	0.034	2,500	99.44%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		AF-1 Total						**21,900**	**99.39%**		**166.3**	**245.4**	**79.2**	**125.0**	**0.932**	**1.37**	**0.932**	**1.37**	
AF-2	Loadout Filter	Truck Loadout Pellets/Hulls #1,2 (non fugitive)	a	330	50,370	0.00314	0.000760	500	99.20%		1.03	0.0790	0.251	0.0191					SCC 3-02-008-03
		Truck Loadout Meal #1, 2 (non fugitive)	a	330	777,888	0.257	0.156	32,000	99.20%		84.6	99.8	51.6	60.9					SCC 3-02-007-91
		Rail Car Loadout Meal (non fugitive)		330	518,592	0.257	0.156	NA*	99.20%		84.6	66.5	51.6	40.6					SCC 3-02-008-03
		Rail Car Loadout Pellets/Hulls (non fugitive)	a	330	33,580	0.00314	0.000760	NA*	99.20%		1.03	0.0526	0.251	0.0128					SCC 3-02-007-91
		Meal Leg from Milling		148	1,296,480	0.061	0.034	500	99.20%		9.03	39.5	5.03	22.0					SCC 3-02-005-30
		Pellet Loadout Storage Vent Filters		9.6	83,950	0.025	0.0063	500	99.20%		0.240	1.05	0.0604	0.264					SCC 3-02-005-40
		Meal Loadout Storage Vents		148	1,296,480	0.025	0.0063	1,500	99.20%		3.70	16.2	0.932	4.08					SCC 3-02-005-40
		Rail Meal Loadout Scale		330	1,380,430	0.061	0.034	3,000	99.20%		20.1	42.1	11.2	23.5					SCC 3-02-005-30
		AF-2 Total						**38,000**	**99.20%**		**204.5**	**265.3**	**121.0**	**151.3**	**1.64**	**2.12**	**1.64**	**2.12**	
AF-3	Prep Exhaust Filter	Day Bin Vent	b	192.5	1,686,300	0.025	0.0063	500	99.00%		4.81	21.1	1.21	5.31					SCC 3-02-005-40
		Screenings Tank		5.0	43,800	0.025	0.0063	500	99.00%		0.125	0.548	0.032	0.138					SCC 3-02-005-40
		Screenings Leg		5.0	43,800	0.061	0.034	500	99.00%		0.305	1.34	0.170	0.745					SCC 3-02-005-30
		Bean Weight Belt	b	192.5	1,686,300	0.061	0.034	500	99.00%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		VSC Feed Leg	b	192.5	1,686,300	0.061	0.034	500	99.02%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		VSC Feed Conveyor	b	192.5	1,686,300	0.061	0.034	500	99.02%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		Whole Bean Aspiration	b	192.5	1,686,300	0.061	0.034	2,000	99.02%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		Jet Dryer Feed Conveyor	b	192.5	1,686,300	0.061	0.034	500	99.02%		11.7	51.4	6.55	28.7					SCC 3-02-005-30
		Hull Collection Conveyor	b	0.019	171	0.061	0.034	500	99.02%		0.00119	0.00520	0.000662	0.00290					SCC 3-02-005-30
		Hull Screener		9.6	83,950	0.061	0.034	NA*	99.02%		0.586	2.56	0.326	1.43					SCC 3-02-005-30
		Secondary Aspiration		9.6	83,950	0.061	0.034	3,000	99.02%		0.585	2.56	0.326	1.43					SCC 3-02-005-30
		4 Hour Hull Tank		9.6	83,950	0.025	0.0063	1,500	99.02%		0.240	1.05	0.0604	0.264					SCC 3-02-005-40
		Pellet Mill	e	9.6	83,950	1.5	0.75	NA*	99.02%		14.4	63.0	7.19	31.5					SCC 3-02-008-16
		Pellet Cooler	e	9.6	83,950	1.5	0.75	6,500	99.02%		14.4	63.0	7.19	31.5					SCC 3-02-008-16
		Hull Hammermill	e	9.6	83,950	3.4	2.1	8,000	99.02%		32.6	142.7	19.9	87.1					SCC 3-02-007-93
		Pellet Lift Leg and Conveyors		9.6	83,950	0.061	0.034	1,000	99.02%		0.585	2.56	0.326	1.43					SCC 3-02-005-30
		Screenings Weight Belt		5.0	43,800	0.061	0.034	500	99.02%		0.305	1.34	0.170	0.74					SCC 3-02-005-30
		Screenings Destoner		5.0	43,800	0.061	0.034	3,000	99.02%		0.305	1.34	0.1700	0.745					SCC 3-02-005-30
		AF-3 Total						**29,500**	**99.02%**		**127.9**	**560.2**	**69.8**	**305.6**	**1.26**	**5.50**	**1.26**	**5.50**	
S-1	Jet Dryer/VSC Stack	Jet Dryers A,B	b	192.5	1,686,300	0.22	0.055	24,000	92.00%	85.00%	42.4	185.5	10.6	46.4	3.39	14.84	1.59	6.96	SCC 3-02-005-27
		Vertical Seed Conditioner (VSC) A,B	b	192.5	1,686,300	0.10	0.061	15,000	92.00%	85.00%	19.3	84.3	11.7	51.4	1.54	6.7	1.76	7.71	SCC 3-02-007-87
		S-1 Total						**39,000**			**61.6**	**269.8**	**22.3**	**97.8**	**4.93**	**21.6**	**3.35**	**14.7**	
AF-5	Hot Dehulling Filter	Hulloosenator		192.5	1,686,300	0.36	0.22	NA*	98.60%		69.3	303.5	42.3	185.2					SCC 3-02-007-85
		Cascade Dryer (CCD) A-D		192.5	1,686,300	0.22	0.055	30,000	98.60%		42.4	185.5	10.6	46.4					SCC 3-02-005-27
		Crackers		192.5	1,686,300	0.36	0.2196	NA*	98.60%		69.3	303.5	42.3	185.2					SCC 3-02-007-85
		Cascade Conditioner (CCC) A-D		192.5	1,686,300	0.01	0.0061	30,000	98.60%		1.93	8.43	1.17	5.14					SCC 3-02-007-87
		AF-5 Total						**60,000**	**98.60%**		**182.9**	**801.0**	**96.3**	**421.8**	**2.56**	**11.21**	**2.56**	**11.21**	
AF-4	Flaker Asp. Filter	Flakers	e	182.9	1,602,350	0.37	0.23	NA*	98.70%		67.7	296.4	41.3	180.8					SCC 3-02-007-88
		Flake Collection Conveyor		182.9	1,602,350	0.061	0.034	24,000	98.70%		11.2	48.9	6.22	27.2					SCC 3-02-005-30
		AF-4 Total						**24,000**	**98.70%**		**78.8**	**345.3**	**47.5**	**208.1**	**1.025**	**4.49**	**1.025**	**4.49**	
AF-6	Meal Grinding Filter	Dried Cool Meal Conveyor		148	1,296,480	0.061	0.034	1,000	99.82%		9.03	39.5	5.03	22.0					SCC 3-02-005-30
		Meal Grinders A,B,C	e	148	1,296,480	3.4	2.1	14,000	99.82%		503.2	2,204.0	307.0	1344					SCC 3-02-007-93
		Meal Lift Leg to Storage		148	1,296,480	0.061	0.034	1,000	99.82%		9.03	39.5	5.03	22.0					SCC 3-02-005-30
		Meal Concrete Bin Vents		148	1,296,480	0.025	0.0063	6,000	99.82%		3.70	16.2	0.932	4.08					SCC 3-02-005-40
		AF-6 Total						**22,000**	**99.82%**		**525.0**	**2299.3**	**317.9**	**1392.6**	**0.945**	**4.14**	**0.945**	**4.14**	
S-2	DTDC Stack	Meal Dryers	e	156	1,366,560	1.8	1.1	83,900	98.10%	97.89%	280.8	1,229.9	171.3	750.2	5.34	23.4	3.61	15.8	SCC 3-02-007-89
		Meal Cooler	e	149.7	1,311,372	1.9	1.2	21,300	98.10%	97.89%	284.4	1,245.8	173.5	759.9	5.40	23.67	3.661	16.03	SCC 3-02-007-90
		S-2 Total						**85,200**			**565.2**	**2475.7**	**344.8**	**1510.2**	**10.74**	**47.0**	**7.28**	**31.9**	
	Clay Bin Filter	Kaolin Clay Storage Vent Filters	e	20	7,300	1.98	0.32	750	99.92%		39.6	7.23	6.40	1.17	0.0322	0.00587	0.0322	0.03216	SCC 3-05-038-13
	Hull Bin Filter	Hull Loadout Tank		9.6	83,950	0.025	0.0063	1,000	99.52%		0.240	1.05	0.0604	0.264					SCC 3-02-005-40
		Rail Pellet/Hull Loadout Scale		360	83,950	0.061	0.034	1,500	99.52%		22.0	2.56	12.2	1.43					SCC 3-02-005-30
		AF-7 Total						**2,500**	**99.47%**		**22.2**	**3.61**	**12.3**	**1.69**	**0.107**	**0.0173**	**0.107**	**0.0173**	
	Silica Vents	Silica Storage Vent Filters	e	20	365	1.98	0.32	750	99.92%		39.6	0.361	6.40	0.0584	0.0322	0.00029	0.03216	2.9E-04	SCC 3-05-038-13
	Bleaching Earth Vents	Bleaching Earth Vent Filters	e	20	730	1.98	0.32	750	99.92%		39.6	0.723	6.40	0.117	0.0322	0.00059	0.03216	5.9E-04	SCC 3-05-038-13
	Salt	Salt Tank	e	20	960	1.98	0.32	750	99.92%		39.6	0.950	6.40	0.154	0.0322	0.00077	0.03216	7.7E-04	SCC 3-05-038-13
	Filter Aid Vents	Filter Aid Vent Filters	e	20	91.3	1.98	0.32	750	99.92%		39.6	0.0903	6.40	0.0146	0.0322	7.3E-05	3.2E-02	7.3E-05	SCC 3-05-038-13
	Storage Bin Vent	Bean Storage Bins 1-4	b	720	1,686,300	0.0025	0.00063	232,000	0.0000	0.00%	1.80	2.11	0.454	0.531	1.80	2.11	0.454	0.531	SCC 3-02-005-40

Fugitive Sources

	Process	Notes	Rate		Emission Factors		Aspiration Rate (cfm)	Control Efficiency		Before Control				After Control/Operational Constraints				Emission Factor Source
										PM		PM-10		PM		PM-10		
			ton/hr	ton/yr	PM	PM-10		PM	PM-10	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
FE-1	Truck Receiving #1, 2 (fugitive)	d	720	1,686,300	0.00248	0.000645	NA	0.00%	0.00%	1.78	2.09	0.464	0.544	1.78	2.09	0.464	0.544	SCC 3-02-005-51 and -52
FE-2	Rail Receiving (fugitive)	d	360	0	0.00160	0.000390	NA	0.00%	0.00%	0.576	0.000	0.140	0.0000	0.576	0.000	0.140	0.0000	SCC 3-02-005-53
FE-3	Truck Loadout Pellets/Hulls #1,2 (fugitive)	d	330	50,370	0.000165	0.0000400	NA	0.00%	0.00%	0.0545	0.00416	0.0132	0.00101	0.0545	0.00416	0.0132	0.00101	SCC 3-02-008-03
FE-4	Truck Loadout Meal #1, 2 (fugitive)	d	330	777,888	0.0135	0.00824	NA	0.00%	0.00%	4.46	5.25	2.72	3.20	4.46	5.25	2.72	3.20	SCC 3-02-007-91
FE-5	Rail Car Loadout Meal (fugitive)	d	330	518,592	0.0135	0.00824	NA	0.00%	0.00%	4.46	3.50	2.72	2.14	4.46	3.50	2.72	2.14	SCC 3-02-008-03
FE-6	Rail Car Loadout Pellets/Hulls (fugitive)	d	330	33,580	0.000165	0.0000400	NA	0.00%	0.00%	0.0545	0.0028	0.0132	0.00067	0.0545	0.00277	0.0132	0.00067	SCC 3-02-007-91
FE-7	Road Traffic									0.944	4.14	0.429	1.88	0.944	4.14	0.429	1.88	AP 42 Table 13.2.1
FE-9	Cooling Towers									0.119	0.35	0.119	0.35	0.119	0.35	0.119	0.35	
	Total Fugitives									**12.4**	**15.3**	**6.6**	**8.1**	**12.4**	**15.3**	**6.6**	**8.1**	

NOTES: a) Capture efficiency at receiving/loadout is 95%. Emission factor was reduced 5%
b) This source utilizes oil suppression
c) Control is provided by a cyclone proceeding a baghouse filter
d) Fugitive emissions from Receiving and Loadout are due to 5% that is not captured. Emission Factor was reduced 95%
e) Emission factor adjusted to uncontrolled
NA* This emission unit is aspirated and controlled via an aspirated device down stream

Emission factors based SCC Codes that start with 3-02-005 were taken from table 9.1.1-1 in the April 2003, final draft of AP 42 section 9.9.1
Emission factors based SCC Codes that start with 3-02-007 were taken from table 9.11.1-1 in the November 1995, final draft of AP 42 section 9.9.1
Emission factors based SCC Codes that start with 3-02-008 were taken from table 9.1.1-2 in the April 2003, final draft of AP 42 section 9.9.1
Emission factors based SCC Codes that start with 3-05-038 were taken from table 11.19.2-4 in the August 2004, final draft of AP 42 section 11.19.2
PM-10 emission factors for SCC Codes starting with 3-02-007 were based on an assumption of PM-10/PM ratio of 0.61
For all emission factors that start with 3-02-007 the PM-10/PM ratio was assumed to be 0.61

Uncontrolled Emissions (Inlet Loading)

Truck Receiving #1, 2 (non fugitive)

PM Emission Factor	0.047	lb/ton	Source:	SCC 3-02-005-51 and -52
PM10 Emission Factor	0.012	lb/ton		SCC 3-02-005-51 and -52
PM10/PM ratio	0.261			
Hourly Loading Rate	720.0	tons/hr	*	Emission Factor was adjusted based on assumption of 90% delivery by hopper trucks and 10% delivery by straight trucks
Annual Loading Rate	1,686,300	tons/yr		
Aspiration Rate	6000	cfm	**	Emission factor was reduced to 95% due to assumption of 5% loss to fugitives

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 80% of the annual design capacity will be received by trucks.

Potential PM emissions from Truck Receiving #1, 2 (non fugitive)	=	Emission factor * process rate
Max Hourly	=	(0.047 lb/ton)*(720 tons/hr)
	=	33.9 lbs/hr
Max Yearly	=	(0.047 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	39.6 tons/yr
Potential PM10 emiss. from Truck Receiving #1, 2 (non fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(33.9 lbs/hr)*(0.261)
	=	8.82 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(39.6 tons/yr)*(0.261)
	=	10.33 tons/yr

Truck Receiving #1, 2 (fugitive)

PM Emission Factor	0.0025	lb/ton	Source:	SCC 3-02-005-51 and -52
PM10 Emission Factor	0.00065	lb/ton		SCC 3-02-005-51 and -52
PM10/PM ratio	0.261			
Hourly Loading Rate	720.0	tons/hr	*	Emission Factor was adjusted based on assumption of 90% delivery by hopper trucks and 10% delivery by straight trucks
Annual Loading Rate	1,686,300	tons/yr		
			**	Emission factor was adjusted to 5% based on assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 80% of the annual design capacity will be received by trucks.

Potential PM emissions from Truck Receiving #1, 2 (fugitive)	=	Emission factor * process rate
Max Hourly	=	(0.0025 lb/ton)*(720 tons/hr)
	=	1.78 lbs/hr
Max Yearly	=	(0.0025 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	2.09 tons/yr
Potential PM10 emiss. from Truck Receiving #1, 2 (fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(1.78 lbs/hr)*(0.261)
	=	0.464 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(2.09 tons/yr)*(0.261)
	=	0.544 tons/yr

Uncontrolled Emissions (Inlet Loading)

Receiving Legs and Conveyors #1,2

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	720.0	tons/hr	
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	5000	cfm	

Hourly throughput based on maximum capacity of transfer system, annual throughput is based on annual design capacity

Potential PM emissions from the Receiving Legs and Conveyors #1,2	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(720 tons/hr)
	=	43.9 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	51.4 tons/yr
Potential PM10 emiss. from the Receiving Legs and Conveyors #1,2	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(43.9 lbs/hr)*(0.557)
	=	24.5 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(51.4 tons/yr)*(0.557)
	=	28.7 tons/yr

Screeners #1,2

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	720.0	tons/hr	
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	4400	cfm	

Hourly throughput based on maximum capacity of transfer system, annual throughput is based on annual design capacity

Potential PM emissions from Screeners #1,2	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(720 tons/hr)
	=	43.9 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	51.4 tons/yr
Potential PM10 emiss. from Screeners #1,2	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(43.9 lbs/hr)*(0.557)
	=	24.5 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(51.4 tons/yr)*(0.557)
	=	28.7 tons/yr

Uncontrolled Emissions (Inlet Loading)

Rail Receiving (non fugitive)

PM Emission Factor	0.030	lb/ton	Source:	SCC 3-02-005-53
PM10 Emission Factor	0.0074	lb/ton		SCC 3-02-005-53
PM10/PM ratio	0.244			
Hourly Loading Rate	360.0	tons/hr	**	Emission factor was reduced to 95% due to
Annual Loading Rate	1,686,300	tons/yr		assumption of 5% loss to fugitives
Aspiration Rate	3000	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 20% of the annual design capacity will be received by trucks.

Potential PM emissions from Rail Receiving (non fugitive)	=	Emission factor * process rate
Max Hourly	=	(0.030 lb/ton)*(360 tons/hr)
	=	10.9 lbs/hr
Max Yearly	=	(0.030 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	25.63 tons/yr
Potential PM10 emiss. from Rail Receiving (non fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(10.9 lbs/hr)*(0.244)
	=	2.7 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(25.63 tons/yr)*(0.244)
	=	6.25 tons/yr

Rail Receiving (fugitive)

PM Emission Factor	0.0016	lb/ton	Source:	SCC 3-02-005-53
PM10 Emission Factor	0.00039	lb/ton		SCC 3-02-005-53
PM10/PM ratio	0.244			
Hourly Loading Rate	360.0	tons/hr	**	Emission factor was adjusted to 5% based on
Annual Loading Rate	0	tons/yr		assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 20% of the annual design capacity will be received by trucks.

Potential PM emissions from Rail Receiving (fugitive)	=	Emission factor * process rate
Max Hourly	=	(0.0016 lb/ton)*(360 tons/hr)
	=	0.576 lbs/hr
Max Yearly	=	(0.0016 lb/ton)*(0 tons/yr)/(2000 lbs/ton)
	=	0.000 tons/yr
Potential PM10 emiss. from Rail Receiving (fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.576 lbs/hr)*(0.244)
	=	0.140 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.000 tons/yr)*(0.244)
	=	0.0000 tons/yr

Uncontrolled Emissions (Inlet Loading)

Conveyors from Storage

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.0340	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	360.0	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	1000	cfm	

Hourly throughput based on maximum capacity of transfer system, annual throughput is based on annual design capacity

Potential PM emissions from Conveyors from Storage	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(360 tons/hr)
	=	22.0 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	51.4 tons/yr
Potential PM10 emiss. from Conveyors from Storage	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(22.0 lbs/hr)*(0.557)
	=	12.2 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(51.4 tons/yr)*(0.557)
	=	28.7 tons/yr

Day Bin Leg

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.0340	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	2,500	cfm	

Hourly throughput is based on bean milling plant design rate, annual rate based on annual design capacity

Potential PM emissions from Day Bin Leg	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(192.5 tons/hr)
	=	11.7 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	51.4 tons/yr
Potential PM10 emiss. from Day Bin Leg	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(11.7 lbs/hr)*(0.557)
	=	6.55 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(51.4 tons/yr)*(0.557)
	=	28.7 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Grain Receiving Filter	=	(33.9 + 43.9 + 43.9 + 10.9 + 22.0 + 11.7) lbs/hr
Max Hourly	=	166.3 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Grain Receiving Filter	=	(39.6 + 51.4 + 51.4 + 0.00 + 51.4 + 51.4) ton/yr
Max Yearly	=	245.4 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Grain Receiving Filter	=	(8.82 + 24.5 + 24.5 + 2.67 + 12.2 + 6.55) lb/hr
Max Hourly	=	79.2 lb/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Grain Receiving Filter	=	(10.33 + 28.7 + 28.7 + 0.00 + 28.7 + 28.7) ton/yr
Max Yearly	=	125.0 tons/yr
Total Potential uncontrolled PM emissions from Receiving Operations excluding fugitive emissions	=	245.4 tons/yr
Max Yearly	=	245.4 tons/yr
Total Potential uncontrolled PM-10 emissions from Receiving Operations excluding fugitive emissions	=	125.0 tons/yr
Max Yearly	=	125.0 tons/yr
Total Potential uncontrolled PM emissions from Receiving Operations including fugitive emissions	=	(245.4 + 2.09 + 0.000) tons/yr
Max Yearly	=	247.5 tons/yr
Total Potential uncontrolled PM-10 emissions from Receiving Operations including fugitive emissions	=	(125.0 + 0.54 + 0.000) tons/yr
Max Yearly	=	125.5 tons/yr

Controlled Emissions

Total Potential controlled PM/PM-10 emissions from the Grain Receiving Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Grain Receiving Filter)*(1-Control Efficiency)
Max Hourly	=	(166.3 lbs/hr)*(1-0.9944)
	=	0.932 lbs/hr
Total Potential controlled PM/PM-10 emissions from the Grain Receiving Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Grain Receiving Filter)*(1-Control Efficiency)
Max Yearly	=	(245.4 tons/yr)*(1-0.9944)
	=	1.37 tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Controlled Emissions

Total Potential controlled PM emissions from Receiving Operations excluding fugitive emissions	=	1.37	tons/yr
Total Potential controlled PM emissions from Receiving Operations including fugitive emissions	=	(1.37 + 2.09 + 0.000) tons/yr	
Max Yearly	=	3.46	tons/yr
Total Potential controlled PM-10 emissions from Receiving Operations excluding fugitive emissions	=	1.37	tons/yr
Total Potential controlled PM-10 emissions from Receiving Operations including fugitive emissions	=	(1.37 + 0.544 + 0.0000) tons/yr	
Max Yearly	=	1.92	tons/yr

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2	=	$(55.0)*(P^{0.11}) - 40$	
	=	(55.0)*(720^0.11) - 40	
	=	73.4	lbs/hr
	=	(72.3 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)	
	=	321.6	tons/yr
Allowable grain loading	=	0.01	gr/dscf
Air Flow Rate	=	(6000 + 5000 + 4400 + 3000 + 1000 + 2500) cfm	
		21,900	cfm
Allowable PM emissions from 40 CFR 60.302 for truck unloading	=	(Grain Loading)*(Air Flow Rate)	
	=	(0.01 gr/dscf)*(21900 cfm)	
	=	219	gr/min
	=	(219 gr/min) / (7000 gr/lb) * (60 min/hr)	
	=	1.88	lbs/hr
	=	8.22	ton/yr
Maximum Grain Receiving Filter outlet grain loading	=	(0.932 lbs/hr)*(7000 grs/lb)*(1 hr/60 min)/(21900 cfm)	
	=	0.0050	grs/ft^3
State allowable PM emissions from the Receiving Operations	=	(Allowable PM emissions) + (Fugitive emissions from Receiving Operations)	
	=	(8.22 + 2.09 + 0.000) tons/yr	
	=	10.3	tons/yr

Uncontrolled Emissions (Inlet Loading)

Truck Loadout Pellets/Hulls #1,2 (non fugitive)

PM Emission Factor	0.0031	lb/ton	Source:	SCC 3-02-008-03
PM10 Emission Factor	0.00076	lb/ton		SCC 3-02-008-03
PM10/PM ratio	0.242			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was reduced to 95% due to
Annual Loading Rate	50,370	tons/yr		assumption of 5% loss to fugitives
Aspiration Rate	500	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 60% of the Pellets/Hulls are shipped via rail.

Potential PM emissions	=	Emission factor * process rate
from Truck Loadout Pellets/Hulls #1,2 (non fugitive)		
Max Hourly	=	(0.0031 lb/ton)*(330 tons/hr)
	=	1.03 lbs/hr
Max Yearly	=	(0.0031 lb/ton)*(50370 tons/yr)/(2000 lbs/ton)
	=	0.0790 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
from Truck Loadout Pellets/Hulls #1,2 (non fugitive)		
Max Hourly	=	(1.03 lbs/hr)*(0.242)
	=	0.251 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.0790 tons/yr)*(0.242)
	=	0.0191 tons/yr

Truck Loadout Pellets/Hulls #1,2 (fugitive)

PM Emission Factor	0.00017	lb/ton	Source:	SCC 3-02-008-03
PM10 Emission Factor	0.000040	lb/ton		SCC 3-02-008-03
PM10/PM ratio	0.2424			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was adjusted to 5% based
Annual Loading Rate	50,370	tons/yr		on assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 60% of the Pellets/Hulls are shipped via rail.

Potential PM emissions from	=	(Emission Factor) * (Process Rate)
Truck Loadout Pellets/Hulls #1,2 (fugitive)		
Max Hourly	=	(0.00017 lb/ton)*(330 tons/hr)
	=	0.0545 lbs/hr
Max Yearly	=	(0.00017 lb/ton)*(50370 tons/yr)/(2000 lbs/ton)
	=	0.00416 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
Truck Loadout Pellets/Hulls #1,2 (fugitive)		
Max Hourly	=	(0.0545 lbs/hr)*(0.2424)
	=	0.0132 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.00416 tons/yr)*(0.242)
	=	0.00101 tons/yr

Uncontrolled Emissions (Inlet Loading)

Truck Loadout Meal #1, 2 (non fugitive)

PM Emission Factor	0.257	lb/ton	Source:	SCC 3-02-007-91
PM10 Emission Factor	0.156	lb/ton		SCC 3-02-007-91
PM10/PM ratio	0.610			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was reduced to 95% due to
Annual Loading Rate	777,888	tons/yr		assumption of 5% loss to fugitives
Aspiration Rate	32,000	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 60% of the Meal is shipped via truck.

Potential PM emissions from Truck Loadout Meal #1, 2 (non fugitive)	=	(Emission Factor) * (Process Rate)
Max Hourly	=	(0.257 lb/ton)*(330 tons/hr)
	=	84.6 lbs/hr
Max Yearly	=	(0.257 lb/ton)*(777,888 tons/yr)/(2000 lbs/ton)
	=	99.8 tons/yr
Potential PM10 emiss. Truck Loadout Meal #1, 2 (non fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(84.6 lbs/hr)*(0.610)
	=	51.6 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(99.8 tons/yr)*(0.610)
	=	60.9 tons/yr

Truck Loadout Meal #1, 2 (fugitive)

PM Emission Factor	0.0135	lb/ton	Source:	SCC 3-02-007-91
PM10 Emission Factor	0.00824	lb/ton		SCC 3-02-007-91
PM10/PM ratio	0.61			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was adjusted to 5% based
Annual Loading Rate	777,888	tons/yr		on assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 60% of the Meal is shipped via truck.

Potential PM emissions from Truck Loadout Meal #1, 2 (fugitive)	=	Emission factor * process rate
Max Hourly	=	(0.0135 lb/ton)*(330 tons/hr)
	=	4.46 lbs/hr
Max Yearly	=	(0.0135 lb/ton)*(777,888 tons/yr)/(2000 lbs/ton)
	=	5.25 tons/yr
Potential PM10 emiss. from Truck Loadout Meal #1, 2 (fugitive)	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(4.46 lbs/hr)*(0.610)
	=	2.72 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(5.25 tons/yr)*(0.610)
	=	3.20 tons/yr

Uncontrolled Emissions (Inlet Loading)

Rail Car Loadout Meal (non fugitive)

PM Emission Factor	0.257	lb/ton	Source:	SCC 3-02-008-03
PM10 Emission Factor	0.156	lb/ton		SCC 3-02-008-03
PM10/PM ratio	0.610			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was reduced to 95% due to
Annual Loading Rate	518,592	tons/yr		assumption of 5% loss to fugitives
Aspiration Rate	NA*	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 40% of the Meal is shipped via rail.

Potential PM emissions	=	Emission factor * process rate
from Rail Car Loadout Meal (non fugitive)		
Max Hourly	=	(0.257 lb/ton)*(330 tons/hr)
	=	84.6 lbs/hr
Max Yearly	=	(0.257 lb/ton)*(518592 tons/yr)/(2000 lbs/ton)
	=	66.5 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
from Rail Car Loadout Meal (non fugitive)		
Max Hourly	=	(84.6 lbs/hr)*(0.61)
	=	51.6 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(66.5 tons/yr)*(0.61)
	=	40.6 tons/yr

Rail Car Loadout Meal (fugitive)

PM Emission Factor	0.0135	lb/ton	Source:	SCC 3-02-008-03
PM10 Emission Factor	0.00824	lb/ton		SCC 3-02-008-03
PM10/PM ratio	0.61			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was adjusted to 5% based on
Annual Loading Rate	518,592	tons/yr		assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 40% of the Meal is shipped via rail.

Potential PM emissions	=	Emission factor * process rate
from Rail Car Loadout Meal (fugitive)		
Max Hourly	=	(0.0135 lb/ton)*(330 tons/hr)
	=	4.46 lbs/hr
Max Yearly	=	(0.0135 lb/ton)*(518,592 tons/yr)/(2000 lbs/ton)
	=	3.50 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
from Rail Car Loadout Meal (fugitive)		
Max Hourly	=	(4.46 lbs/hr)*(0.610)
	=	2.72 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(3.50 tons/yr)*(0.610)
	=	2.14 tons/yr

Uncontrolled Emissions (Inlet Loading)

Rail Car Loadout Pellets/Hulls (non fugitive)

PM Emission Factor	0.0031	lb/ton	Source:	SCC 3-02-007-91
PM10 Emission Factor	0.00076	lb/ton		SCC 3-02-007-91
PM10/PM ratio	0.242			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was reduced to 95% due to
Annual Loading Rate	33,580	tons/yr		assumption of 5% loss to fugitives
Aspiration Rate	NA*	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 40% of the Pellets/Hulls are shipped via rail.

Potential PM emissions	=	Emission factor * process rate
from Rail Car Loadout Pellets/Hulls (non fugitive)		
Max Hourly	=	(0.0031 lb/ton)*(330 tons/hr)
	=	1.03 lbs/hr
Max Yearly	=	(0.0031 lb/ton)*(33580 tons/yr)/(2000 lbs/ton)
	=	0.0526 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
from Rail Car Loadout Pellets/Hulls (non fugitive)		
Max Hourly	=	(1.03 lbs/hr)*(0.242)
	=	0.251 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.0526 tons/yr)*(0.242)
	=	0.0128 tons/yr

Rail Car Loadout Pellets/Hulls (fugitive)

PM Emission Factor	0.000165	lb/ton	Source:	SCC 3-02-007-91
PM10 Emission Factor	0.000040	lb/ton		SCC 3-02-007-91
PM10/PM ratio	0.24			
Hourly Loading Rate	330.0	tons/hr	**	Emission factor was adjusted to 5% based on
Annual Loading Rate	33,580	tons/yr		assumption of 95% capture efficiency

Hourly throughput is based on maximum capacity of transfer system, annual throughput is based on assumption that 40% of the Pellets/Hulls are shipped via rail.

Potential PM emissions	=	Emission factor * process rate
from Rail Car Loadout Pellets/Hulls (fugitive)		
Max Hourly	=	(0.000165 lb/ton)*(330 tons/hr)
	=	0.0545 lbs/hr
Max Yearly	=	(0.000165 lb/ton)*(33,580.0 tons/yr)/(2000 lbs/ton)
	=	0.00277 tons/yr
Potential PM10 emiss.	=	(PM Emissions)*(PM10/PM factor)
from Rail Car Loadout Pellets/Hulls (fugitive)		
Max Hourly	=	(0.0545 lbs/hr)*(0.242)
	=	0.0132 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.00277 tons/yr)*(0.242)
	=	6.72E-04 tons/yr

Uncontrolled Emissions (Inlet Loading)

Meal Leg from Milling

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	148.0	tons/hr	
Annual Loading Rate	1,296,480	tons/yr	
Aspiration Rate	500	cfm	

Hourly throughput is based on maximum design capacity of Extraction Process, annual throughput is based on assumption of 8670 hours of operation a year.

Potential PM emissions from Meal Leg from Milling	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(148 tons/hr)
	=	9.03 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
	=	39.5 tons/yr
Potential PM10 emiss. from Meal Leg from Milling	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(9.03 lbs/hr)*(0.557)
	=	5.03 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(39.5 tons/yr)*(0.557)
	=	22.0 tons/yr

Pellet Loadout Storage Vent Filters

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	9.6	tons/hr	
Annual Loading Rate	83,950	tons/yr	
Aspiration Rate	500	cfm	

Hourly throughput is based on design rate of the pellet mill, annual rate is based on assumption that 100% of the hulls are pelletized. This is conservative, since potentially 0% of the Hulls could be ground into pellets depending on market demand.

Potential PM emissions from Pellet Loadout Storage Vent Filters	=	Emission factor * process rate
Max Hourly	=	(0.025 lb/ton)*(9.6 tons/hr)
	=	0.240 lbs/hr
Max Yearly	=	(0.025 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	1.05 tons/yr
Potential PM10 emiss. from Pellet Loadout Storage Vent Filters	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.240 lbs/hr)*(0.25)
	=	0.0604 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(1.05 tons/yr)*(0.25)
	=	0.264 tons/yr

Uncontrolled Emissions (Inlet Loading)

Meal Loadout Storage Vents

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.006	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	148.0	tons/hr	
Annual Loading Rate	1,296,480	tons/yr	
Aspiration Rate	1500	cfm	

Hourly throughput is based on maximum design rate of the extraction process, annual throughput is based on assumption of 8670 hours of operation.

Potential PM emissions from Meal Loadout Storage Vents	=	Emission factor * process rate
Max Hourly	=	(0.025 lb/ton)*(148 tons/hr)
	=	3.70 lbs/hr
Max Yearly	=	(0.025 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
	=	16.2 tons/yr
Potential PM10 emiss. from Meal Loadout Storage Vents	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(3.70 lbs/hr)*(0.25)
	=	0.932 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(16.2 tons/yr)*(0.25)
	=	4.08 tons/yr

Rail Meal Loadout Scale

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	330.0	tons/hr	
Annual Loading Rate	1,380,430	tons/yr	
Aspiration Rate	3000	cfm	

Hourly throughput is based on maximum design capacity of the transfer system, annual throughput is based on sum of meal and pellet/hull production capacity.

Potential PM emissions from Rail Meal Loadout Scale	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(330 tons/hr)
	=	20.1 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1380430 tons/yr)/(2000 lbs/ton)
	=	42.1 tons/yr
Potential PM10 emiss. from Rail Meal Loadout Scale	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(20.1 lbs/hr)*(0.557)
	=	11.2 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(42.1 tons/yr)*(0.557)
	=	23.5 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Loadout Filter	=	(1.03 + 84.6 + 84.6 + 1.03 + 9.03 + 0.240 + 3.70 + 20.1) lbs/hr
Max Hourly	=	204.5 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Loadout Filter	=	(0.0790 + 99.8 + 66.5 + 0.0526 + 39.5 + 1.05 + 16.2 + 42.1) tons/yr
Max Yearly	=	265.3 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Loadout Filter	=	(0.251 + 51.6 + 51.6 + 0.251 + 5.03 + 0.0604 + 0.932 + 11.2) lbs/hr
Max Hourly	=	121.0 lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Loadout Filter	=	(0.0191 + 60.9 + 40.6 + 0.0128 + 22.0 + 0.264 + 4.08 + 23.5) tons/yr
Max Yearly	=	151.3 tons/yr
Total Potential uncontrolled PM emissions from Loadout Operations excluding fugitive emissions	=	265.3 tons/yr
Max Yearly	=	265.3 tons/yr
Total Potential uncontrolled PM-10 emissions from Loadout Operations excluding fugitive emissions	=	151.3 tons/yr
Max Yearly	=	151.3 tons/yr
Total Potential uncontrolled PM emissions from Loadout Operations including fugitive emissions	=	(265.3 + 0.00416 + 5.25 + 3.50 + 0.00277) tons/yr
Max Yearly	=	274.1 tons/yr
Total Potential uncontrolled PM-10 emissions from Loadout Operations including fugitive emissions	=	(151.3 + 0.00101 + 3.20 + 2.14 + 0.00067) tons/yr
Max Yearly	=	156.7 tons/yr

Controlled Emissions

Total Potential controlled PM/PM-10 emissions from the Loadout Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Loadout Filter)*(1-Control Efficiency)
Max Hourly	=	(204.5 lbs/hr)*(1-0.992)
	=	1.64 lbs/hr
Total Potential controlled PM/PM-10 emissions from the Loadout Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Loadout Filter)*(1-Control Efficiency)
Max Yearly	=	(265.3 tons/yr)*(1-0.992)
	=	2.12 tons/yr

Note: Assumption that 100% of the PM emissions after control are PM-10

Total Potential controlled PM emissions from Loadout Operations excluding fugitive emissions	=	2.12 tons/yr
Total Potential controlled PM emissions from Loadout Operations including fugitive emissions	=	(2.12 + 0.00416 + 5.25 + 3.50 + 0.00277) tons/yr
Max Yearly	=	10.9 tons/yr
Total Potential controlled PM-10 emissions from Loadout Operations excluding fugitive emissions	=	2.12 tons/yr
Total Potential controlled PM-10 emissions from Loadout Operations including fugitive emissions	=	(2.12 + 0.00101 + 3.20 + 2.14 + 0.00067) tons/yr
Max Yearly	=	7.46 tons/yr

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2	=	$(55.0)*(P^{0.11}) - 40$
	=	(55.0)*(330^0.11) - 40
	=	64.1 lbs/hr
	=	(64.1 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	280.7 tons/yr
Air Flow Rate	=	(500 + 32,000 + 500 + 500 + 1,500 + 3,000) cfm
	=	38,000 cfm
Maximum Loadout Filter outlet grain loading	=	(1.64 lbs/hr)*(7000 grs/lb)*(1 hr/60 min)/(38,000 cfm)
	=	0.0050 grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Day Bin Vent

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	500	cfm	

Hourly and annual throughputs are based on maximum design capacity of milling operations.

Potential PM emissions from Day Bin Vent	=	Emission factor * process rate
Max Hourly	=	(0.025 lb/ton)*(192.5 tons/hr)
	=	4.81 lbs/hr
Max Yearly	=	(0.025 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	21.1 tons/yr
Potential PM10 emiss. from Day Bin Vent	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(4.81 lbs/hr)*(0.252)
	=	1.21 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(21.1 tons/yr)*(0.252)
	=	5.31 tons/yr

Screenings Tank

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	5.0	tons/hr	Loadings are based on assumption of 2.5%
Annual Loading Rate	43,800	tons/yr	of raw beans will be lost
Aspiration Rate	500	cfm	

Potential PM emissions from Screenings Tank	=	Emission factor * process rate
Max Hourly	=	(0.025 lb/ton)*(5.0 tons/hr)
	=	0.125 lbs/hr
Max Yearly	=	(0.025 lb/ton)*(43800 tons/yr)/(2000 lbs/ton)
	=	0.548 tons/yr
Potential PM10 emiss. from Screenings Tank	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.125 lbs/hr)*(0.252)
	=	0.0315 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.548 tons/yr)*(0.252)
	=	0.138 tons/yr

Uncontrolled Emissions (Inlet Loading)

Screenings Leg

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.0340	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	5.0	tons/hr	Loadings are based on assumption of 2.5%
Annual Loading Rate	43,800	tons/yr	of raw beans will be lost
Aspiration Rate	500	cfm	

Potential PM emissions from Screenings Leg	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(5.0 tons/hr)
	=	0.305 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(43800 tons/yr)/(2000 lbs/ton)
	=	1.34 tons/yr
Potential PM10 emiss. from Screenings Leg	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.305 lbs/hr)*(0.557)
	=	0.170 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(1.34 tons/yr)*(0.557)
	=	0.745 tons/yr

Bean Weight Belt

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.0340	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	500	cfm	

Hourly and annual throughputs are based on maximum design capacity of milling operations.

Potential PM emissions from Bean Weight Belt	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(192.5 tons/hr)
	=	11.7 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	51.4 tons/yr
Potential PM10 emiss. from Bean Weight Belt	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(11.7 lbs/hr)*(0.557)
	=	6.55 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(51.4 tons/yr)*(0.557)
	=	28.7 tons/yr

Uncontrolled Emissions (Inlet Loading)

VSC Feed Leg

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	500	cfm	

Potential PM emissions from VSC Feed Leg = Emission factor * process rate

Max Hourly = (0.061 lb/ton)*(192.5 tons/hr)
= 11.7 lbs/hr

Max Yearly = (0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
= 51.4 tons/yr

Potential PM10 emiss. from VSC Feed Leg = (PM Emissions)*(PM10/PM factor)

Max Hourly = (11.7 lbs/hr)*(0.557)
= 6.55 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (51.4 tons/yr)*(0.557)
= 28.7 tons/yr

VSC Feed Conveyor

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	500	cfm	

Potential PM emissions from VSC Feed Conveyor = Emission factor * process rate

Max Hourly = (0.061 lb/ton)*(192.5 tons/hr)
= 11.7 lbs/hr

Max Yearly = (0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
= 51.4 tons/yr

Potential PM10 emiss. from VSC Feed Conveyor = (PM Emissions)*(PM10/PM factor)

Max Hourly = (11.7 lbs/hr)*(0.557)
= 6.5 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (51.4 tons/yr)*(0.557)
= 28.7 tons/yr

Uncontrolled Emissions (Inlet Loading)

Whole Bean Aspiration

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	2000	cfm	

Potential PM emissions from Whole Bean Aspiration	=	Emission factor * process rate	
Max Hourly	=	(0.061 lb/ton)*(192.5 tons/hr)	
	=	11.7	lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)	
	=	51.4	tons/yr
Potential PM10 emiss. from Whole Bean Aspiration	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(11.7 lbs/hr)*(0.557)	
	=	6.55	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(51.4 tons/yr)*(0.557)	
	=	28.7	tons/yr

Jet Dryer Feed Conveyor

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	192.5	tons/hr	* This source utilizes oil suppression
Annual Loading Rate	1,686,300	tons/yr	
Aspiration Rate	500	cfm	

Potential PM emissions from Jet Dryer Feed Conveyor	=	Emission factor * process rate	
Max Hourly	=	(0.061 lb/ton)*(192.5 tons/hr)	
	=	11.7	lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)	
	=	51.4	tons/yr
Potential PM10 emiss. from Jet Dryer Feed Conveyor	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(11.7 lbs/hr)*(0.557)	
	=	6.55	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(51.4 tons/yr)*(0.557)	
	=	28.7	tons/yr

Uncontrolled Emissions (Inlet Loading)

Hull Collection Conveyor

PM Emission Factor	0.061	lb/ton	Source:	SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton		SCC 3-02-005-30
PM10/PM ratio	0.557			
Hourly Loading Rate	0.019	tons/hr		* This source utilizes oil suppression
Annual Loading Rate	171	tons/yr		
Aspiration Rate	500	cfm		

Potential PM emissions from Hull Collection Conveyor	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(0.019 tons/hr)
	=	0.00119 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(171 tons/yr)/(2000 lbs/ton)
	=	0.00520 tons/yr
Potential PM10 emiss. from Hull Collection Conveyor	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.00119 lbs/hr)*(0.557)
	=	0.000662 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.00520 tons/yr)*(0.557)
	=	0.00290 tons/yr

Hull Screener

PM Emission Factor	0.061	lb/ton	Source:	SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton		SCC 3-02-005-30
PM10/PM ratio	0.557			
Hourly Loading Rate	9.6	tons/hr		* The hull screeners are aspirated
Annual Loading Rate	83,950	tons/yr		through the Secondary Aspiration
Aspiration Rate	NA*	cfm		

Hourly and annual throughput is based on assumption that 5% of the raw beans are hulls.

Potential PM emissions from Hull Screener	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(9.6 tons/hr)
	=	0.586 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	2.56 tons/yr
Potential PM10 emiss. from Hull Screener	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.586 lbs/hr)*(0.557)
	=	0.326 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(2.56 tons/yr)*(0.557)
	=	1.43 tons/yr

Uncontrolled Emissions (Inlet Loading)

Secondary Aspiration

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	9.6	tons/hr	
Annual Loading Rate	83,950	tons/yr	
Aspiration Rate	3000	cfm	

Potential PM emissions from Secondary Aspiration	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(9.6 tons/hr)
	=	0.585 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	2.56 tons/yr
Potential PM10 emiss. from Secondary Aspiration	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.585 lbs/hr)*(0.557)
	=	0.326 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(2.56 tons/yr)*(0.557)
	=	1.43 tons/yr

4 Hour Hull Tank

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	9.6	tons/hr	
Annual Loading Rate	83,950	tons/yr	
Aspiration Rate	1500	cfm	

Potential PM emissions from 4 Hour Hull Tank	=	Emission factor * process rate
Max Hourly	=	(0.025 lb/ton)*(9.6 tons/hr)
	=	0.240 lbs/hr
Max Yearly	=	(0.025 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	1.05 tons/yr
Potential PM10 emiss. from 4 Hour Hull Tank	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.240 lbs/hr)*(0.252)
	=	0.0604 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(1.05 tons/yr)*(0.252)
	=	0.264 tons/yr

Uncontrolled Emissions (Inlet Loading)

Pellet Mill

PM Emission Factor	1.5	lb/ton	Source:	SCC 3-02-008-16
PM10 Emission Factor	0.75	lb/ton		SCC 3-02-008-16
PM10/PM ratio	0.500			
Hourly Loading Rate	9.6	tons/hr		* Emission Factor was adjusted to
Annual Loading Rate	83,950	tons/yr		uncontrolled based on assumption
Aspiration Rate	NA*	cfm		that cyclones provide 90% control

This source is aspirated through the Pellet Cooler.

Potential PM emissions from Pellet Mill	=	Emission factor * process rate
Max Hourly	=	(1.5 lb/ton)*(9.6 tons/hr)
	=	14.4 lbs/hr
Max Yearly	=	(1.5 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	63.0 tons/yr
Potential PM10 emiss. from Pellet Mill	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(14.4 lbs/hr)*(0.500)
	=	7.19 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(63.0 tons/yr)*(0.500)
	=	31.5 tons/yr

Pellet Cooler

PM Emission Factor	1.5	lb/ton	Source:	SCC 3-02-008-16
PM10 Emission Factor	0.75	lb/ton		SCC 3-02-008-16
PM10/PM ratio	0.500			
Hourly Loading Rate	9.6	tons/hr		* Emission Factor was adjusted to
Annual Loading Rate	83,950	tons/yr		uncontrolled based on assumption
Aspiration Rate	6500	cfm		that cyclones provide 90% control

Potential PM emissions from Pellet Cooler	=	Emission factor * process rate
Max Hourly	=	(1.5 lb/ton)*(9.6 tons/hr)
	=	14.4 lbs/hr
Max Yearly	=	(1.5 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	63.0 tons/yr
Potential PM10 emiss. from Pellet Cooler	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(14.4 lbs/hr)*(0.500)
	=	7.19 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(63.0 tons/yr)*(0.500)
	=	31.5 tons/yr

Uncontrolled Emissions (Inlet Loading)

Hull Hammermill

PM Emission Factor	3.4	lb/ton	Source:	SCC 3-02-007-93
PM10 Emission Factor	2.1	lb/ton		SCC 3-02-007-93
PM10/PM ratio	0.610			
Hourly Loading Rate	9.6	tons/hr	*	Emission Factor was adjusted to
Annual Loading Rate	83,950	tons/yr		uncontrolled based on assumption
Aspiration Rate	8000	cfm		that cyclones provide 90% control

Potential PM emissions from Hull Hammermill	=	Emission factor * process rate
Max Hourly	=	(3.4 lb/ton)*(9.6 tons/hr)
	=	32.6 lbs/hr
Max Yearly	=	(3.4 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	142.7 tons/yr
Potential PM10 emiss. from Hull Hammermill	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(32.6 lbs/hr)*(0.610)
	=	19.9 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(142.7 tons/yr)*(0.610)
	=	87.1 tons/yr

Pellet Lift Leg and Conveyors

PM Emission Factor	0.061	lb/ton	Source:	SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton		SCC 3-02-005-30
PM10/PM ratio	0.557			
Hourly Loading Rate	9.6	tons/hr		
Annual Loading Rate	83,950	tons/yr		
Aspiration Rate	1000	cfm		

Potential PM emissions from Pellet Lift Leg and Conveyors	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(9.6 tons/hr)
	=	0.585 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)
	=	2.56 tons/yr
Potential PM10 emiss. from Pellet Lift Leg and Conveyors	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(0.585 lbs/hr)*(0.557)
	=	0.326 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(2.56 tons/yr)*(0.557)
	=	1.43 tons/yr

Uncontrolled Emissions (Inlet Loading)

Screenings Weight Belt

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.0340	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	5.0	tons/hr	
Annual Loading Rate	43,800	tons/yr	
Aspiration Rate	500	cfm	

Potential PM emissions from Screenings Weight Belt = Emission factor * process rate

Max Hourly = (0.061 lb/ton)*(5.0 tons/hr)
= 0.305 lbs/hr

Max Yearly = (0.061 lb/ton)*(43800 tons/yr)/(2000 lbs/ton)
= 1.34 tons/yr

Potential PM10 emiss. from Screenings Weight Belt = (PM Emissions)*(PM10/PM factor)

Max Hourly = (0.31 lbs/hr)*(0.557)
= 0.170 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (1.34 tons/yr)*(0.557)
= 0.745 tons/yr

Uncontrolled Emissions (Inlet Loading)

Screenings Destoner

PM Emission Factor	0.061	lb/ton	Source: SCC 3-05-038-13
PM10 Emission Factor	0.0340	lb/ton	SCC 3-05-038-13
PM10/PM ratio	0.557		
Hourly Loading Rate	5.0	tons/hr	
Annual Loading Rate	43,800	tons/yr	
Aspiration Rate	3000	cfm	

Potential PM emissions from Screenings Destoner = Emission factor * process rate

Max Hourly = (0.061 lb/ton)*(5.0 tons/hr)
= 0.305 lbs/hr

Max Yearly = (0.061 lb/ton)*(43800 tons/yr)/(2000 lbs/ton)
= 1.34 tons/yr

Potential PM10 emiss. from Screenings Destoner = (PM Emissions)*(PM10/PM factor)

Max Hourly = (0.31 lbs/hr)*(0.557)
= 0.170 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (1.34 tons/yr)*(0.557)
= 0.745 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total potential uncontrolled PM emissions going into the inlet of the Prep Exhaust Filter = (4.81 + 0.125 + 0.305 + 11.7 + 11.7 + 11.7 + 11.7 + 11.7 + 0.00119 + 0.586 + 0.585 + 0.240 + 14.4 + 14.4 + 32.6 + 0.585 + 0.305) lbs/hr

Max Hourly = 127.9 lbs/hr

Total potential uncontrolled PM emissions going into the inlet of Prep Exhaust Filter = (21.1 + 0.548 + 1.34 + 51.4 + 51.4 + 51.4 + 51.4 + 51.4 + 0.00520 + 2.56 + 2.56 + 1.05 + 63.0 + 63.0 + 142.7 + 2.56 + 1.34) tons/yr

Max Yearly = 560.2 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total potential uncontrolled PM-10 emissions going into the inlet of the Prep Exhaust Filter	=	(1.21 + 0.0315 + 0.170 + 6.55 + 6.55 + 6.55 + 6.55 + 6.55 + 0.00066 + 0.326 + 0.326 + 0.0604 + 7.19 + 7.19 + 19.9 + 0.326 + 0.1700) lbs/hr
Max Hourly	=	69.8 lbs/hr
Total potential uncontrolled PM-10 emissions going into the inlet of Prep Exhaust Filter	=	(5.31 + 0.138 + 0.745 + 28.7 + 28.7 + 28.7 + 28.7 + 28.7 + 0.00290 + 1.43 + 1.43 + 0.264 + 31.5 + 31.5 + 87.1 + 1.4 + 0.74) tons/yr
Max Yearly	=	305.6 tons/yr

Controlled Emissions

Total potential controlled PM/PM-10 emissions from the Prep Exhaust Filter	=	Uncontrolled emissions * (1 - control efficiency)
Max Hourly	=	(127.9 lbs/hr) * (1 -0.9900)
	=	1.26 lbs/hr
Max Yearly	=	(560.2 tons/yr) * (1 -0.9900)
	=	5.50 tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Comparison with Permissible Limits

Air Flow Rate	=	(500 + 500 + 500 + 500 + 500 + 500 + 2000 + 500 + 500 + 3000 + 1500 + 6500 + 8000 + 1000 + 3000) cfm
	=	29,500 cfm
Maximum Prep Exhaust Filter outlet grain loadoing	=	(1.26 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (29500 cubic feet / min)
	=	0.0050 grs/ft^3
Allowable PM emissions from rule 326 IAC 6-3-2 from the Prep Exhaust Filter	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (192.5)^{0.11} - 40$
	=	58.1 lbs/hr
	=	(58.1 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	254.5 tons/yr

Uncontrolled Emissions (Inlet Loading)

Jet Dryers A,B

PM Emission Factor	0.22	lb/ton	Source:	SCC 3-02-005-27
PM10 Emission Factor	0.055	lb/ton		SCC 3-02-005-27
PM10/PM ratio	0.250			
Hourly Loading Rate	192.5	tons/hr		
Annual Loading Rate	1,686,300	tons/yr		
Aspiration Rate	24,000	cfm		

Hourly and annual throughputs are based on maximum design capacity of milling operations.

Potential PM emissions from Jet Dryers A,B	=	Emission factor * process rate
Max Hourly	=	(0.22 lb/ton)*(192.5 tons/hr)
	=	42.4 lbs/hr
Max Yearly	=	(0.22 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	185.5 tons/yr
Potential PM10 emiss. from Jet Dryers A,B	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(42.4 lbs/hr)*(0.250)
	=	10.6 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(185.5 tons/yr)*(0.250)
	=	46.4 tons/yr

Vertical Seed Conditioner (VSC) A,B

PM Emission Factor	0.10	lb/ton	Source:	SCC 3-02-007-87
PM10 Emission Factor	0.061	lb/ton		SCC 3-02-007-87
PM10/PM ratio	0.610			
Hourly Loading Rate	192.5	tons/hr		
Annual Loading Rate	1,686,300	tons/yr		
Aspiration Rate	15,000	cfm		

Potential PM emissions from Vertical Seed Conditioner (VSC) A,B	=	Emission factor * process rate
Max Hourly	=	(0.10 lb/ton)*(192.5 tons/hr)
	=	19.3 lbs/hr
Max Yearly	=	(0.10 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	84.3 tons/yr
Potential PM10 emiss. from Vertical Seed Conditioner (VSC) A,B	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(19.3 lbs/hr)*(0.610)
	=	11.7 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(84.3 tons/yr)*(0.610)
	=	51.4 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Jet Dryer/VSC Stack	=	(42.4 + 19.3) lbs/hr
Max Hourly	=	61.6 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Jet Dryer/VSC Stack	=	(185.5 + 84.3) tons/yr
Max Yearly	=	269.8 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Jet Dryer/VSC Stack	=	(10.6 + 11.7) lbs/hr
Max Hourly	=	22.3 lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Jet Dryer/VSC Stack	=	(46.4 + 51.4) tons/yr
Max Yearly	=	97.8 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Jet Dryer/VSC Stack	=	(Total Potential uncontrolled PM emissions going to the inlet of the Jet Dryer/VSC Stack)*(1-Control Efficiency)
Max Hourly	=	(61.6 lbs/hr)*(1-Control Efficiency)
	=	4.93 lbs/hr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM emissions from the Jet Dryer/VSC Stack	=	(Total Potential uncontrolled PM emissions going to the inlet of the Jet Dryer/VSC Stack)*(1-Control Efficiency)
Max Yearly	=	(269.8 tons/yr)*(1-Control Efficiency)
	=	21.6 tons/yr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM-10 emissions from the Jet Dryer/VSC Stack	=	(Total Potential uncontrolled PM-10 emissions going to the inlet of the Jet Dryer/VSC Stack)*(1-Control Efficiency)
Max Hourly	=	(22.3 lbs/hr)*(1-Control Efficiency)
	=	3.35 lbs/hr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM-10 emissions from the Jet Dryer/VSC Stack	=	(Total Potential uncontrolled PM-10 emissions going to the inlet of the Jet Dryer/VSC Stack)*(1-Control Efficiency)
Max Yearly	=	(97.8 tons/yr)*(1-Control Efficiency)
	=	14.7 tons/yr

Note: Control Efficiencies are different for each source, see table for break down.

Comparison with Permissible Limits

Air Flow Rate	=	(24000 + 15000) cfm
	=	39,000 cfm
Maximum Jet Dryer/VSC Stackoutlet grain loading	=	(4.93 lbs/hr)*(7000 grs/lb)*(1 hr/60 min)/(39000 cfm)
	=	0.0147 grs/ft^3
Allowable PM emissions from rule 326 IAC 6-3-2 from the Jet Dryer/VSC Stack	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (192.5)^{0.11} - 40$
	=	58.1 lbs/hr
	=	(58.1 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	254.5 tons/yr

Uncontrolled Emissions (Inlet Loading)

Hulloosenator

PM Emission Factor	0.36	lb/ton	Source:	SCC 3-02-007-85
PM10 Emission Factor	0.22	lb/ton		SCC 3-02-007-85
PM10/PM ratio	0.610			
Hourly Loading Rate	192.5	tons/hr	Note:	Source is aspirated via the
Annual Loading Rate	1,686,300	tons/yr		Cascade Dryers
Aspiration Rate	NA*	cfm		

Hourly and annual throughputs are based on maximum design capacity of milling operations.

Potential PM emissions from Hulloosenator	=	Emission factor * process rate
Max Hourly	=	(0.36 lb/ton)*(192.5 tons/hr)
	=	69.3 lbs/hr
Max Yearly	=	(0.36 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	303.5 tons/yr
Potential PM10 emiss. from Hulloosenator	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(69.3 lbs/hr)*(0.610)
	=	42.3 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(303.5 tons/yr)*(0.610)
	=	185.2 tons/yr

Cascade Dryer (CCD) A-D

PM Emission Factor	0.22	lb/ton	Source:	SCC 3-02-005-27
PM10 Emission Factor	0.055	lb/ton		SCC 3-02-005-27
PM10/PM ratio	0.250			
Hourly Loading Rate	192.5	tons/hr		
Annual Loading Rate	1,686,300	tons/yr		
Aspiration Rate	30,000	cfm		

Potential PM emissions from Cascade Dryer (CCD) A-D	=	Emission factor * process rate
Max Hourly	=	(0.22 lb/ton)*(192.5 tons/hr)
	=	42.4 lbs/hr
Max Yearly	=	(0.22 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	185.5 tons/yr
Potential PM10 emiss. from Cascade Dryer (CCD) A-D	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(42.4 lbs/hr)*(0.250)
	=	10.6 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(185.5 tons/yr)*(0.250)
	=	46.4 tons/yr

Uncontrolled Emissions (Inlet Loading)

Crackers

PM Emission Factor	0.36	lb/ton	Source:	SCC 3-02-007-85
PM10 Emission Factor	0.22	lb/ton		SCC 3-02-007-85
PM10/PM ratio	0.610			
Hourly Loading Rate	192.5	tons/hr	Note:	This source is aspirated via the
Annual Loading Rate	1,686,300	tons/yr		Cascade Conditioners
Aspiration Rate	NA*	cfm		

Potential PM emissions from Crackers	=	Emission factor * process rate
Max Hourly	=	(0.36 lb/ton)*(192.5 tons/hr)
	=	69.3 lbs/hr
Max Yearly	=	(0.36 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	303.5 tons/yr
Potential PM10 emiss. from Crackers	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(69.3 lbs/hr)*(0.610)
	=	42.3 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(303.5 tons/yr)*(0.610)
	=	185.2 tons/yr

Cascade Conditioner (CCC) A-D

PM Emission Factor	0.010	lb/ton	Source:	SCC 3-02-007-87
PM10 Emission Factor	0.0061	lb/ton		SCC 3-02-007-87
PM10/PM ratio	0.61			
Hourly Loading Rate	192.5	tons/hr		
Annual Loading Rate	1,686,300	tons/yr		
Aspiration Rate	30,000	cfm		

Potential PM emissions from Cascade Conditioner (CCC) A-D	=	Emission factor * process rate
Max Hourly	=	(0.010 lb/ton)*(192.5 tons/hr)
	=	1.93 lbs/hr
Max Yearly	=	(0.010 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)
	=	8.43 tons/yr
Potential PM10 emiss. from Cascade Conditioner (CCC) A-D	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(1.93 lbs/hr)*(0.610)
	=	1.17 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(8.43 tons/yr)*(0.610)
	=	5.14 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Hot Dehulling Filter	=	(69.3 + 42.4 + 69.3 + 1.93) lbs/hr
Max Hourly	=	182.9 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Hot Dehulling Filter	=	(303.5 + 185.5 + 303.5 + 8.43) tons/yr
Max Yearly	=	801.0 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Hot Dehulling Filter	=	(42.3 + 10.6 + 42.3 + 1.17) lbs/hr
Max Hourly	=	96.3 lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Hot Dehulling Filter	=	(185.2 + 46.4 + 185.2 + 5.1) tons/yr
Max Yearly	=	421.8 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Hot Dehulling Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Hot Dehulling Filter)*(1-Control Efficiency)
Max Hourly	=	(182.9 lbs/hr)*(1-0.986)
	=	2.56 lbs/hr
Total Potential controlled PM emissions from the Hot Dehulling Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Hot Dehulling Filter)*(1-Control Efficiency)
Max Yearly	=	(801.0 tons/yr)*(1-0.986)
	=	11.21 tons/yr

Note: Assumption that 100% of the PM emissions after control are PM-10

Comparision with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Hot Dehulling Filter	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (192.5)^{0.11} - 40$
	=	58.1 lbs/hr
	=	(58.1 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	254.5 tons/yr
Air Flow Rate	=	(30000 + 30000) cfm
	=	60,000 cfm
Maximum Hot Dehulling Filter outlet grain loading	=	(2.56 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (60000 cubic feet / min)
	=	0.0050 grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Flakers

PM Emission Factor	0.37	lb/ton	Source:	SCC 3-02-007-88
PM10 Emission Factor	0.23	lb/ton		SCC 3-02-007-88
PM10/PM ratio	0.610			
Hourly Loading Rate	182.9	tons/hr	*	Emission Factor was adjusted to
Annual Loading Rate	1,602,350	tons/yr		uncontrolled based on assumption
Aspiration Rate	NA*	cfm		that cyclones provide 90% control

Hourly and annual throughput is based on maximum milling design rate - 5% loss due to hull removal
Note: Source is aspirated via the Flake Collection Conveyor

Potential PM emissions from Flakers	=	Emission factor * process rate
Max Hourly	=	(0.37 lb/ton)*(182.9 tons/hr)
	=	67.7 lbs/hr
Max Yearly	=	(0.37 lb/ton)*(1602350 tons/yr)/(2000 lbs/ton)
	=	296.4 tons/yr
Potential PM10 emiss. from Flakers	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(67.7 lbs/hr)*(0.610)
	=	41.3 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(296.4 tons/yr)*(0.610)
	=	180.8 tons/yr

Flake Collection Conveyor

PM Emission Factor	0.061	lb/ton	Source:	SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton		SCC 3-02-005-30
PM10/PM ratio	0.557			
Hourly Loading Rate	182.9	tons/hr		
Annual Loading Rate	1,602,350	tons/yr		
Aspiration Rate	24,000	cfm		

Potential PM emissions from Flake Collection Conveyor	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(182.9 tons/hr)
	=	11.2 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1602350 tons/yr)/(2000 lbs/ton)
	=	48.9 tons/yr
Potential PM10 emiss. from Flake Collection Conveyor	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(11.2 lbs/hr)*(0.557)
	=	6.22 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(48.9 tons/yr)*(0.557)
	=	27.2 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Flaker Asp. Filter	=	(67.7 + 11.2) lbs/hr
Max Hourly	=	78.8 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Flaker Asp. Filter	=	(296.4 + 48.9) tons/yr
Max Yearly	=	345.3 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Flaker Asp. Filter	=	(41.3 + 6.2) lbs/hr
Max Hourly	=	47.5 lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Flaker Asp. Filter	=	(180.8 + 27.2) tons/yr
Max Yearly	=	208.1 tons/yr

Controlled Emissions (Inlet Loading)

Total Potential controlled PM emissions from the Flaker Asp. Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Flaker Asp. Filter)*(1-Control Efficiency)
Max Hourly	=	(78.8 lbs/hr)*(1-0.987)
	=	1.025 lbs/hr
Total Potential controlled PM emissions from the Flaker Asp. Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Flaker Asp. Filter)*(1-Control Efficiency)
Max Yearly	=	(345.3 tons/yr)*(1-0.987)
	=	4.49 tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Flaker Asp. Filter	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (182.9)^{0.11} - 40$
	=	57.5 lbs/hr
	=	(57.5 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	252.1 tons/yr
Air Flow Rate	=	24000 cfm
Maximum Flaker Asp. Filter outlet grain loading	=	(1.025 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (24000 cubic feet / min)
	=	0.00498 grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Dried Cool Meal Conveyor

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	148.0	tons/hr	
Annual Loading Rate	1,296,480	tons/yr	
Aspiration Rate	1000	cfm	

Hourly and annual throughputs are based on maximum design capacity of extraction process

Potential PM emissions from Dried Cool Meal Conveyor	=	Emission factor * process rate
Max Hourly	=	(0.061 lb/ton)*(148.0 tons/hr)
	=	9.0 lbs/hr
Max Yearly	=	(0.061 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
	=	39.5 tons/yr
Potential PM10 emiss. from Dried Cool Meal Conveyor	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(9.0 lbs/hr)*(0.557)
	=	5.0 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(39.5 tons/yr)*(0.557)
	=	22.0 tons/yr

Meal Grinders A,B,C

PM Emission Factor	3.4	lb/ton	Source: SCC 3-02-007-93
PM10 Emission Factor	2.1	lb/ton	SCC 3-02-007-93
PM10/PM ratio	0.610		
Hourly Loading Rate	148.0	tons/hr	* Emission Factor was adjusted to
Annual Loading Rate	1,296,480	tons/yr	uncontrolled based on assumption
Aspiration Rate	14000	cfm	that cyclones provide 90% control

Potential PM emissions from Meal Grinders A,B,C	=	Emission factor * process rate
Max Hourly	=	(3.4 lb/ton)*(148.0 tons/hr)
	=	503.2 lbs/hr
Max Yearly	=	(3.4 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
	=	2,204.0 tons/yr
Potential PM10 emiss. from Meal Grinders A,B,C	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(503.2 lbs/hr)*(0.610)
	=	307.0 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(2,204.0 tons/yr)*(0.610)
	=	1344.4 tons/yr

Uncontrolled Emissions (Inlet Loading)

Meal Lift Leg to Storage

PM Emission Factor	0.061	lb/ton	Source: SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton	SCC 3-02-005-30
PM10/PM ratio	0.557		
Hourly Loading Rate	148.0	tons/hr	
Annual Loading Rate	1,296,480	tons/yr	
Aspiration Rate	1,000	cfm	

Potential PM emissions = Emission factor * process rate
from Meal Lift Leg to Storage
Max Hourly = (0.061 lb/ton)*(148.0 tons/hr)
= 9.03 lbs/hr

Max Yearly = (0.061 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
= 39.5 tons/yr

Potential PM10 emiss. = (PM Emissions)*(PM10/PM factor)
from Meal Lift Leg to Storage
Max Hourly = (9.03 lbs/hr)*(0.557)
= 5.03 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (39.5 tons/yr)*(0.557)
= 22.0 tons/yr

Meal Concrete Bin Vents

PM Emission Factor	0.025	lb/ton	Source: SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton	SCC 3-02-005-40
PM10/PM ratio	0.252		
Hourly Loading Rate	148.0	tons/hr	
Annual Loading Rate	1,296,480	tons/yr	
Aspiration Rate	6,000	cfm	

Potential PM emissions = Emission factor * process rate
from Meal Concrete Bin Vents
Max Hourly = (0.025 lb/ton)*(148.0 tons/hr)
= 3.70 lbs/hr

Max Yearly = (0.025 lb/ton)*(1296480 tons/yr)/(2000 lbs/ton)
= 16.2 tons/yr

Potential PM10 emiss. = (PM Emissions)*(PM10/PM factor)
from Meal Concrete Bin Vents
Max Hourly = (3.70 lbs/hr)*(0.252)
= 0.932 lbs/hr

Max Yearly = (PM Emissions)*(PM10/PM factor)
= (16.2 tons/yr)*(0.252)
= 4.08 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Meal Grinding Filter	=	(9.03 + 503.2 + 9.03 + 3.70) lbs/hr
Max Hourly	=	525.0 lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Meal Grinding Filter	=	(39.5 + 2,204.0 + 39.5 + 16.2) ton/yr
Max Yearly	=	2299.3 tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Meal Grinding Filter	=	(5.03 + 307.0 + 5.03 + 0.932) lbs/hr
Max Hourly	=	317.9 lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Meal Grinding Filter	=	(22.0 + 1,344.4 + 22.0 + 4.08) ton/yr
Max Yearly	=	1392.6 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Meal Grinding Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Meal Grinding Filter)*(1-Control Efficiency)
Max Hourly	=	(525.0 lbs/hr)*(1-0.9982)
	=	0.945 lbs/hr
Total Potential controlled PM emissions from the Meal Grinding Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Meal Grinding Filter)*(1-Control Efficiency)
Max Yearly	=	(2,299.3 tons/yr)*(1-0.9982)
	=	4.14 tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Comparision with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Meal Grinding Filter	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (148)^{0.11} - 40$
	=	55.3 lbs/hr
	=	(55.3 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	242.2 tons/yr
Air Flow Rate	=	(1000 + 14000 + 1000 + 6000) cfm
	=	22000 cfm
Maximum Meal Grinding Filter outlet grain loading	=	(0.945 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (22000 cubic feet / min)
	=	0.0050 grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Meal Dryers

PM Emission Factor	1.80	lb/ton	Source:	SCC 3-02-007-89
PM10 Emission Factor	1.098	lb/ton		SCC 3-02-007-89
PM10/PM ratio	0.610			
Hourly Loading Rate	156.0	tons/hr		* Emission Factor was adjusted to
Annual Loading Rate	1,366,560	tons/yr		uncontrolled based on assumption
Aspiration Rate	63,900	cfm		that cyclones provide 90% control

Annual and hourly throughput is based on maximum extraction process design - weight of oil extracted.

Potential PM emissions from Meal Dryers	=	Emission factor * process rate
Max Hourly	=	(1.80 lb/ton)*(156 tons/hr)
	=	280.8 lbs/hr
Max Yearly	=	(1.80 lb/ton)*(1366560 tons/yr)/(2000 lbs/ton)
	=	1,229.9 tons/yr
Potential PM10 emiss. from Meal Dryers	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(280.8 lbs/hr)*(0.610)
	=	171.3 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(1,229.9 tons/yr)*(0.610)
	=	750.2 tons/yr

Meal Cooler

PM Emission Factor	1.9	lb/ton	Source:	SCC 3-02-007-90
PM10 Emission Factor	1.16	lb/ton		SCC 3-02-007-90
PM10/PM ratio	0.610			
Hourly Loading Rate	149.7	tons/hr		* Emission Factor was adjusted to
Annual Loading Rate	1,311,372	tons/yr		uncontrolled based on assumption
Aspiration Rate	21,300	cfm		that cyclones provide 90% control

Hourly and annual throughputs are based input to meal dryers - loss due to evaporation of water

Potential PM emissions from Meal Cooler	=	Emission factor * process rate
Max Hourly	=	(1.90 lb/ton)*(149.7 tons/hr)
	=	284.43 lbs/hr
Max Yearly	=	(1.90 lb/ton)*(1311372 tons/yr)/(2000 lbs/ton)
	=	1,245.8 tons/yr
Potential PM10 emiss. from Meal Cooler	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(284.4 lbs/hr)*(0.610)
	=	173.50 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(1,245.8 tons/yr)*(0.610)
	=	759.9 tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions from the DTDC Stack		=	(280.80 + 284.43) lbs/hr
	Max Hourly	=	565.2 lbs/hr
Total Potential uncontrolled PM emissions from the DTDC Stack		=	(1,229.9 + 1,245.8) tons/yr
	Max Yearly	=	2475.7 tons/yr
Total Potential uncontrolled PM-10 emissions from the DTDC Stack		=	(171.3 + 173.5) lbs/hr
	Max Hourly	=	344.8 lbs/hr
Total Potential uncontrolled PM-10 emissions from the DTDC Stack		=	(750.2 + 759.9) ton/yr
	Max Yearly	=	1510.2 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the DTDC Stack		=	(Total Potential uncontrolled PM emissions from the DTDC Stack)*(1-Control Efficiency)
	Max Hourly	=	(565.2 lbs/hr)*(1-Control Efficiency)
		=	10.74 lbs/hr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM emissions from the DTDC Stack		=	(Total Potential uncontrolled PM emissions from the DTDC Stack)*(1-Control Efficiency)
	Max Yearly	=	(2,475.7 tons/yr)*(1-Control Efficiency)
		=	47.0 tons/yr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM-10 emissions from the DTDC Stack		=	(Total Potential uncontrolled PM-10 emissions from the DTDC Stack)*(1-Control Efficiency)
	Max Hourly	=	(344.8 lbs/hr)*(1-Control Efficiency)
		=	7.28 lbs/hr

Note: Control Efficiencies are different for each source, see table for break down.

Total Potential controlled PM-10 emissions from the DTDC Stack		=	(Total Potential uncontrolled PM-10 emissions from the DTDC Stack)*(1-Control Efficiency)
	Max Yearly	=	(1,510.2 tons/yr)*(1-Control Efficiency)
		=	31.9 tons/yr

Note: Control Efficiencies are different for each source, see table for break down.

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the DTDC Stack		=	$(55.0) * (P)^{0.11} - 40$
		=	$(55.0) * (156)^{0.11} - 40$
		=	55.9 lbs/hr
		=	(55.9 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
		=	244.6 tons/yr
	Air Flow Rate	=	(63900 + 21300) cfm
		=	85200 cfm
Maximum DTDC Stack outlet grain		=	(10.74 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (85200 cubic feet / min)
		=	0.0147 grs/ft^3

Potential Emissions (Inlet Loading)

Bean Storage Bins 1-4

PM Emission Factor	0.0025	lb/ton	Source:	SCC 3-02-005-40
PM10 Emission Factor	0.00063	lb/ton		SCC 3-02-005-40
PM10/PM ratio	0.252			
Hourly Loading Rate	720.0	tons/hr		* Emission Factor was adjusted to
Annual Loading Rate	1,686,300	tons/yr		reflect 90% control provided by
Aspiration Rate	232,000	cfm		oil suppression

Hourly throughputs are based on maximum transport system capacity, annual throughputs are based on design capacity
This source utilizes oil suppression

Total Potential PM emissions from the Bean Storage Bins 1-4	=	Emission factor * process rate	
Max Hourly	=	(0.0025 lb/ton)*(720 tons/hr)	
	=	1.80	lbs/hr
Max Yearly	=	(0.0025 lb/ton)*(1686300 tons/yr)/(2000 lbs/ton)	
	=	2.11	tons/yr
Total Potential PM-10 emissions from the Bean Storage Bins 1-4	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(1.80 lbs/hr)*(0.252)	
	=	0.454	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(2.11 tons/yr)*(0.252)	
	=	0.531	tons/yr

Actual Emissions

These sources will only be producing emissions three months a year when they are aspirated to control temperature
This will have no effect on the potential hourly emissions

Actual PM emissions from the Bean Storage Bins 1-4	=	(Total Potential PM emissions from the Bean Storage Bins 1-4)	
Max Hourly	=	(1.80 lbs/hr)*(1-0)	
	=	1.80	lbs/hr
Total Potential controlled PM emissions from the Bean Storage Bins 1-4	=	(Total Potential PM emissions from the Bean Storage Bins 1-4)	
Max Yearly	=	(2.11 tons/yr)*(1-9/12)	
	=	2.11	tons/yr
Total Potential controlled PM-10 emissions from the Bean Storage Bins 1-4	=	(Total Potential PM-10 emissions from the Bean Storage Bins 1-4)	
Max Hourly	=	(0.454 tons/yr)*(1-0)	
	=	0.454	lbs/hr
Total Potential controlled PM-10 emissions from the Bean Storage Bins 1-4	=	(Total Potential PM emissions from the Bean Storage Bins 1-4)	
Max Yearly	=	(0.531 tons/yr)*(1-9/12)	
	=	0.531	tons/yr

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Bean Storage Bins 1-4	=	$(55.0) * (P)^{0.11} - 40$	
	=	$(55.0) * (330)^{0.11} - 40$	
	=	73.4	lbs/hr
	=	(73.4 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)	
	=	321.6	tons/yr
Air Flow Rate	=	232,000	cfm
Maximum Bean Storage Bins 1-4 outlet grain loading	=	(1.80 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (232000 cubic feet / min)	
	=	0.0009	grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Kaolin Clay Storage Vent Filters

PM Emission Factor	1.98	lb/ton	Source:	SCC 3-05-038-13
PM10 Emission Factor	0.32	lb/ton		SCC 3-05-038-13
PM10/PM ratio	0.162			
Hourly Loading Rate	20.0	tons/hr	*	Emission Factor was adjusted to
Annual Loading Rate	7,300	tons/yr		uncontrolled based on assumption
Aspiration Rate	750	cfm		that filters provide 90.5% control

Hourly throughput based estimation of truck transfer rate, annual throughput based on annual usage assumption

Potential uncontrolled PM emissions from the Kaolin Clay Storage Vent Filters	=	Emission factor * process rate	
Max Hourly	=	(1.98 lb/ton)*(20.0 tons/hr)	
	=	39.6	lbs/hr
Max Yearly	=	(1.98 lb/ton)*(7300 tons/yr)/(2000 lbs/ton)	
	=	7.23	tons/yr
Potential uncontrolled PM-10 emissions from the Kaolin Clay Storage Vent Filters	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(39.6 lbs/hr)*(0.162)	
	=	6.40	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(7.23 tons/yr)*(0.162)	
	=	1.17	tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Clay Bin Filter	=	(Potential uncontrolled PM emissions from the Kaolin Clay Storage Vent Filters)*(1-Control Efficiency)	
Max Hourly	=	(39.6 lbs/hr)*(1-0.9992)	
	=	0.0322	lbs/hr
Total Potential controlled PM emissions from the Clay Bin Filter	=	(Potential uncontrolled PM emissions from the Kaolin Clay Storage Vent Filters)*(1-Control Efficiency)	
Max Yearly	=	(7.23 tons/yr)*(1-0.9992)	
	=	0.00587	tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Clay Bin Filter	=	$(4.10)*(20\ tons/hr)^{0.67}$	
	=	(4.10)*(20 tons/hr)^0.67	
	=	30.5	lbs/hr
	=	(30.5 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)	
	=	133.6	tons/yr
Air Flow Rate	=	750	cfm
Maximum Clay Bin Filter outlet grain loading	=	(0.0322 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (750 cubic feet / min)	
	=	0.0050	grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Hull Loadout Tank

PM Emission Factor	0.025	lb/ton	Source:	SCC 3-02-005-40
PM10 Emission Factor	0.0063	lb/ton		SCC 3-02-005-40
PM10/PM ratio	0.252			
Hourly Loading Rate	9.6	tons/hr		
Annual Loading Rate	83,950	tons/yr		
Aspiration Rate	1,000	cfm		

Hourly throughput based estimation of truck transfer rate, annual throughput based on annual usage assumption

Potential uncontrolled PM emissions from the Hull Loadout Tank	=	Emission factor * process rate	
Max Hourly	=	(0.025 lb/ton)*(9.6 tons/hr)	
	=	0.240	lbs/hr
Max Yearly	=	(0.025 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)	
	=	1.05	tons/yr
Potential uncontrolled PM-10 emissions from the Hull Loadout Tank	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(0.240 lbs/hr)*(0.252)	
	=	0.0604	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(1.05 tons/yr)*(0.252)	
	=	0.264	tons/yr

Rail Pellet/Hull Loadout Scale

PM Emission Factor	0.061	lb/ton	Source:	SCC 3-02-005-30
PM10 Emission Factor	0.034	lb/ton		SCC 3-02-005-30
PM10/PM ratio	0.557			
Hourly Loading Rate	360.0	tons/hr		
Annual Loading Rate	83,950	tons/yr		
Aspiration Rate	1,500	cfm		

Hourly throughput is based on maximum capacity of transfer system, annual emission based on hull/pellet production capacity

Potential PM emissions from Rail Pellet/Hull Loadout Scale	=	Emission factor * process rate	
Max Hourly	=	(0.061 lb/ton)*(360.0 tons/hr)	
	=	22.0	lbs/hr
Max Yearly	=	(0.061 lb/ton)*(83950 tons/yr)/(2000 lbs/ton)	
	=	2.56	tons/yr
Potential PM10 emiss. from Rail Pellet/Hull Loadout Scale	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(22.0 lbs/hr)*(0.557)	
	=	12.2	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(2.56 tons/yr)*(0.557)	
	=	1.43	tons/yr

Total Uncontrolled Emissions (Inlet Loading)

Total Potential uncontrolled PM emissions going to the inlet of the Hull Bin Filter	=	(0.240 + 22.0) lbs/hr	
Max Hourly	=	22.2	lbs/hr
Total Potential uncontrolled PM emissions going to the inlet of the Hull Bin Filter	=	(1.05 + 2.56) tons/yr	
Max Yearly	=	3.61	tons/yr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Hull Bin Filter	=	(0.060 + 12.2) lbs/hr	
Max Hourly	=	12.3	lbs/hr
Total Potential uncontrolled PM-10 emissions going to the inlet of the Hull Bin Filter	=	(0.264 + 1.43) tons/yr	
Max Yearly	=	1.69	tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Hull Bin Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Hull Bin Filter)*(1-Control Efficiency)
Max Hourly	=	(22.2 lbs/hr)*(1-0.9992)
	=	0.107 lbs/hr
Total Potential controlled PM emissions from the Hull Bin Filter	=	(Total Potential uncontrolled PM emissions going to the inlet of the Hull Bin Filter)*(1-Control Efficiency)
Max Yearly	=	(3.6 tons/yr)*(1-0.9992)
	=	0.0173 tons/yr

Note: Assumption that 100% of PM emissions after control are PM-10

Comparison with Permissible Limits

Air Flow Rate	=	(1000 + 1500) cfm
	=	2,500 cfm
Maximum outlet grain loading	=	(0.107 lbs/hr)*(7000 grs/lb)*(1 hr/60 min)/(2500 cfm)
	=	0.0050 grs/ft^3
Allowable PM emissions from rule 326 IAC 6-3-2 form the Hull Bin Filter	=	$(55.0) * (P)^{0.11} - 40$
	=	$(55.0) * (330)^{0.11} - 40$
	=	65.1 lbs/hr
	=	(64.1 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	285.1 tons/yr

Uncontrolled Emissions (Inlet Loading)

Silica Storage Vent Filters

PM Emission Factor	1.98	lb/ton	Source:	SCC 3-05-038-13
PM10 Emission Factor	0.32	lb/ton		SCC 3-05-038-13
PM10/PM ratio	0.162			
Hourly Loading Rate	20.0	tons/hr	*	Emission Factor was adjusted to
Annual Loading Rate	365	tons/yr		uncontrolled based on assumption
Aspiration Rate	750	cfm		that filters provide 90.5% control

Hourly throughput based estimation of truck transfer rate, annual throughput based on annual usage assumption

Potential uncontrolled PM emissions from the Silica Storage Vent Filters	=	Emission factor * process rate
Max Hourly	=	(1.98 lb/ton)*(20.0 tons/hr)
	=	39.6 lbs/hr
Max Yearly	=	(1.98 lb/ton)*(365 tons/yr)/(2000 lbs/ton)
	=	0.361 tons/yr
Potential uncontrolled PM-10 emissions from the Silica Storage Vent Filters	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(39.6 lbs/hr)*(0.162)
	=	6.40 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.361 tons/yr)*(0.162)
	=	0.0584 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Silica Vents	=	(Potential uncontrolled PM emissions from the Silica Storage Vent Filters)*(1-Control Efficiency)
Max Hourly	=	(39.6 lbs/hr)*(1-0.9992)
	=	0.0322 lbs/hr
Total Potential controlled PM emissions from the Silica Vents	=	(Potential uncontrolled PM emissions from the Silica Storage Vent Filters)*(1-Control Efficiency)
Max Yearly	=	(0.361 tons/yr)*(1-0.9992)
	=	0.000293 tons/yr

Note: Assumption that 100% of PM after control are PM-10

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Silica Vents	=	$(4.10)*(20\ tons/hr)^{0.67}$	
	=	(4.10)*(20 tons/hr)^0.67	
	=	30.5	lbs/hr
	=	(30.5 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)	
	=	133.6	tons/yr
Air Flow Rate	=	750	cfm
Maximum Silica Vents outlet grain loading	=	(0.0322 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (750 cubic feet / min)	
	=	0.0050	grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Bleaching Earth Vent Filters

PM Emission Factor	1.98	lb/ton	Source:	SCC 3-05-038-13
PM10 Emission Factor	0.32	lb/ton		SCC 3-05-038-13
PM10/PM ratio	0.162			
Hourly Loading Rate	20.0	tons/hr	*	Emission Factor was adjusted to uncontrolled based on assumption that filters provide 90.5% control
Annual Loading Rate	730	tons/yr		
Aspiration Rate	750	cfm		

Hourly throughput based on estimation of truck transfer rate, annual throughput based on annual usage assumption

Potential uncontrolled PM emissions from the Bleaching Earth Vent Filters	=	Emission factor * process rate	
Max Hourly	=	(1.98 lb/ton)*(20.0 tons/hr)	
	=	39.6	lbs/hr
Max Yearly	=	(1.98 lb/ton)*(730 tons/yr)/(2000 lbs/ton)	
	=	0.723	tons/yr
Potential uncontrolled PM-10 emissions from the Bleaching Earth Vent Filters	=	(PM Emissions)*(PM10/PM factor)	
Max Hourly	=	(39.6 lbs/hr)*(0.162)	
	=	6.40	lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)	
	=	(0.723 tons/yr)*(0.162)	
	=	0.117	tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Bleaching Earth Vents	=	(Potential uncontrolled PM emissions from the Bleaching Earth Vent Filters)*(1-Control Efficiency)	
Max Hourly	=	(39.6 lbs/hr)*(1-0.9992)	
	=	0.0322	lbs/hr
Total Potential controlled PM emissions from the Bleaching Earth Vents	=	(Potential uncontrolled PM emissions from the Bleaching Earth Vent Filters)*(1-Control Efficiency)	
Max Yearly	=	(0.723 tons/yr)*(1-0.9992)	
	=	0.00059	tons/yr

Note: Assumption that 100% of PM after control is PM-10

Comparison with Permissible Limits

Allowable PM emissions from rule 326 IAC 6-3-2 for the Bleaching Earth Vents	=	$(4.10)*(20\ tons/hr)^{0.67}$	
	=	(4.10)*(20 tons/hr)^0.67	
	=	30.5	lbs/hr
	=	(30.5 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)	
	=	133.6	tons/yr
Air Flow Rate	=	750	cfm
Maximum Bleaching Earth Vents outlet grain loading	=	(0.0322 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (750 cubic feet / min)	
	=	0.0050	grs/ft^3

Uncontrolled Emissions (Inlet Loading)

Filter Aid Vent Filters

PM Emission Factor	1.98	lb/ton	Source:	SCC 3-05-038-13
PM10 Emission Factor	0.32	lb/ton		SCC 3-05-038-13
PM10/PM ratio	0.162			
Hourly Loading Rate	20.0	tons/hr	*	Emission Factor was adjusted to
Annual Loading Rate	91.3	tons/yr		uncontrolled based on assumption
Aspiration Rate	750	cfm		that filters provide 90.5% control

Hourly throughput based on estimation of truck transfer rate, annual throughput based on annual usage assumption

Potential uncontrolled PM emissions from the Filter Aid Vent Filters	=	Emission factor * process rate
Max Hourly	=	(1.98 lb/ton)*(20.0 tons/hr)
	=	39.6 lbs/hr
Max Yearly	=	(1.98 lb/ton)*(91.3 tons/yr)/(2000 lbs/ton)
	=	0.0903 tons/yr
Potential uncontrolled PM-10 emissions from the Filter Aid Vent Filters	=	(PM Emissions)*(PM10/PM factor)
Max Hourly	=	(39.6 lbs/hr)*(0.162)
	=	6.40 lbs/hr
Max Yearly	=	(PM Emissions)*(PM10/PM factor)
	=	(0.0903 tons/yr)*(0.162)
	=	0.0146 tons/yr

Controlled Emissions

Total Potential controlled PM emissions from the Filter Aid Vents	=	(Potential uncontrolled PM emissions from the Filter Aid Vent Filters)*(1-Control Efficiency)
Max Hourly	=	(39.6 lbs/hr)*(1-0.9992)
	=	0.0322 lbs/hr
Total Potential controlled PM emissions from the Filter Aid Vents	=	(Potential uncontrolled PM emissions from the Filter Aid Vent Filters)*(1-Control Efficiency)
Max Yearly	=	(0.090 tons/yr)*(1-0.9992)
	=	7.3E-05 tons/yr

Note: Assumption that 100% of PM after control is PM-10

Comparison with Permissible Limits

Allowable PM emissions from	=	$(4.10)*(20\ tons/hr)^{0.67}$
rule 326 IAC 6-3-2 for the	=	(4.10)*(20 tons/hr)^0.67
Filter Aid Vents	=	30.5 lbs/hr
	=	(30.5 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
	=	133.6 tons/yr
Air Flow Rate	=	750 cfm
Maximum Filter Aid Vents outlet grain loading	=	(0.0322 lbs/hr) * (7000 grs/lb) * (1 hr/60 min) / (750 cubic feet / min)
	=	0.0050 grs/ft^3

Recirculation Flowrate	=	11,000	gpm
Oper Hours	=	8,760	hrs/yr
Drift (loss)	=	0.005	%
	=	0.55	gpm
	=	33.0	gal/hr

Total Dissolved Solids (TDS)

Avg.	=	2,400	PPM
Max	=	3,600	PPM

Potential PM emissions

Max Hourly	=	Drift * PPM (Max) /10^6	
	=	0.12	lbs/hr
Max Yearly	=	Drift * PPM (Avg) /10^6 * Oper Hours /2000	
	=	0.35	tons/yr

General

Density lb/cu.ft.

	MW lb/lbmol	Spec Grav Rel to Air	Temperature (F) 70	80	100	120	130
Water	18.02	0.622	0.047	0.046	0.045	0.043	0.042
Hexane	86.17	2.975	0.226	0.222	0.214	0.207	0.203
Air	28.96	1.00	0.076	0.075	0.072	0.069	0.068

VOC Emissions

Point Sources (related to solvent)

a) Vent Gas During Normal Operations
includes vent gas from extractor, soya oil distillation, and hexane tanks
b) Desolventized Meal Dryer & Cooler Exhaust

Fugitive Emissions (related to solvent)

a) Plant Startup/Shutdown
b) Sampling
c) General - equipment failure, leaks, etc.
d) Plant Upsets
e) Meal Storage
f) Wastewater

Bound In Product & Byproduct

a) Desolventized meal
b) Extracted Soybean Oil

Other Point Sources

Biodiesel (methanol absorber)
Combustion (boiler)

Other Fugitive Sources

Biodiesel - general

SUBPART GGGG

Compliance Ratio

R = Actual HAP Loss / Allowable HAP LOSS

= f * Actual Solvent Loss / 0.64* sum ($Oilseed_i$ * SLF_i)

where:

f = weighted average volume fraction of HAP in solvent received (0.64 in baseline data)
= 0.64
Act. Solvent Loss = gallons of solvent loss during previous 12 months
$Oilseed_i$ = ton of each oilseed type "i" processed ir tons/day 365 days/yr 1686300 tons/yr
= 4620
SLF_i = solvent loss factor (gal/ton) for oilseed type (0.2 for soybeans)
from 40 CFR 63, Part GGG

Density of Hexane = 5.6 lbs/gal

Solvent Loss gal/ton	R*	VOC gal/yr	VOC tons/yr	HAP (n-hexane) tons/yr
0.132	1	222592	623.3	398.9
0.15	1.00	252945	708.2	453.3
0.16	1.00	269808	755.5	483.5
0.175	1.00	295103	826.3	528.8
0.2 MACT	1.00	337260	944.3	604.4

Note: * assuming 0.64 fraction for HAP

VENT CONDENSER

handles vent gas from extractor, and hexane receiving tanks

A) Normal Operating Conditions

Inlet to Vent Condenser (130 F)

	Weight (lb/hr)	Weight Percent	Volume (CFM)	Volume Percent
Water	810	4.0	318	15.3
Hexane	18456	91.0	1514	72.8
Air	1014	5.0	248	11.9
Total	20280	100.00	2080	100.0

Outlet of Vent Condenser/Inlet to Absorber (70 F)

	Weight (lb/hr)	Weight Percent	Volume (CFM)	Volume Percent
Water	18	1.0	6	2.3
Hexane	690	40.1	51	18.2
Air	1014	58.9	222	79.5
Total	1722	100.00	280	100.00

Hexane Removal Efficiency of Vent Condenser during normal operations

Efficiency = (Inlet Condenser - Outlet Condenser)/Inlet Condenser x 100
= 96.3 %

B) Upset Operating Conditions

Basis: 8 events per year with an average duration of 3 hours

Inlet to Vent Condenser (130 F)

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	1620	4.5	133
Hexane	30375	84.3	11922
Air	4056	11.3	990
Total	36051	100.0	13045

Outlet of Vent Condenser/Inlet to Absorber (120 F)

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	700	3.5	270
Hexane	15188	76.2	1225
Air	4056	20.3	973
Total	19944	100.0	2469

Hexane Removal Efficiency of Vent Condenser during upset operations

Efficiency = (Inlet Condenser - Outlet Condenser)/Inlet Condenser x 100
= 50.0 %

MINERAL OIL ABSORBER

A) Normal Operating Conditions

Inlet to Absorber (70 F) - from vent condenser

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	18	1.0	6
Hexane	690	40.1	51
Air	1014	58.9	222
Total	1722	100.0	280

Outlet of Absorber (80 F) Basis: 225 SCFM of air @ 25% LEL (3000 ppm hexane)

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	18	1.7	6.5
Hexane	9.3	0.9	0.7
Air	1014	97.4	227
Total	1041	100.0	234

Hexane Removal Efficiency of Absorber during normal operations

Absorber Efficiency = (Inlet Absorber - Outlet Absorber)/Inlet Absorber x 100
= 98.6 %
Combined Efficiency = (Inlet Condenser - Outlet Absorber)/Inlet Condenser x 100
(w/ vent condenser) = 99.95 %

B) Upset Operating Conditions Basis: 8 events per year with an average duration of 3 hours

Inlet to Absorber (120 F)

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	700	3.5	270
Hexane	15188	76.2	1225
Air	4056	20.3	973
Total	19944	100.0	2469

Outlet of Absorber (100 F) Basis: 900 SCFM of air @ 1000% LEL (120,000 ppm hexane)

	Weight (lb/hr)	Weight Percent	Volume (CFM)
Water	18	0.3	7
Hexane	1765	30.2	137
Air	4056	69.5	940
Total	5839	100.0	1084

Hexane Removal Efficiency of Absorber during upset operations

Absorber Efficiency = (Inlet Absorber - Outlet Absorber)/Inlet Absorber x 100
= 88.4 %
Combined Efficiency = (Inlet Condenser - Outlet Absorber)/Inlet Condenser x 100
= 94.2 %

MINERAL OIL ABSORBER (cont'd)

Mineral Oil Absorber Emissions

from Normal Operations:	=	**9.35**	lbs/hr X	8736	hrs/2000
	=	**40.8**	tons/yr		
from Upset Operations:	=	1765	lbs/hr X	24	hrs/2000
	=	**21.2**	tons/yr		

MEAL DRYERS & COOLER

				Temp (deg F)
Basis:	Dryers (21,600 + 20,480 + 19,480 acfm)	53,700	SCFM	168,135, 106
	Cooler (19,400 acfm)	17,900	SCFM	96

A) Normal Operating Conditions

Desolventized flakes to dryer	156	ton/hr	81.0 wt % of beans
	18	wt.. % H20	200 ppm Hexane in meal
			62.4 lbs/hr Hexane
Desolventized flakes from dryers	149	ton/hr	77.4 wt % of beans
	14	wt.. % H20	119 ppm Hexane in meal
			37.1 lbs/hr Hexane
Estimated VOC Emissions from dryers:			25.3 lbs/hr Hexane
Desolventized flakes from cooler	148	ton/hr	76.9 wt % of beans
	13	wt.. % H20	100 ppm Hexane in meal
			29.6 lbs/hr Hexane
Estimated VOC Emissions from cooler:			7.5 lbs/hr Hexane
Emissions for dryers/cooler for normal operation:			32.8 lbs/hr Hexane
(same stack)			33.8 ppm Hexane in air
Normal Flowrate @ 130 deg F			79700 acfm

B) Upset Operating Conditions Basis: 10 events per year with an average duration of 3 hours

Desolventized flakes to dryer	156	ton/hr	81.0 wt % of beans
	18	wt.. % H20	2500 ppm Hexane in meal
			780 lbs/hr Hexane
Desolventized flakes from cooler	148	ton/hr	76.9 wt % of beans
	13	wt.. % H20	625 ppm Hexane in meal
			185 lbs/hr Hexane
Emissions for upset operation:			595 lbs/hr Hexane
			624 ppm Hexane in air

Desolventized Meal Dryer & Cooler Emissions

from Normal Operations:	=	**32.8**	lbs/hr X	8736	hrs/2000
	=	**143.3**	tons/yr		
from Upset Operations:	=	595	lbs/hr X	24	hrs/2000
	=	**7.14**	tons/yr		

FUGITIVE EMISSIONS

A) Plant Startup/Shutdown

Startup Solvent Loss	=	8400	lbs or	1500	gals
Shutdown Solvent Loss	=	8400	lbs or	1500	gals
Startup Duration	=	2	hrs		
Shutdown Duration	=	2	hrs		
Total Duration	=	4	hrs		
Frequency	=	2	times/yr		
Average Emissions	=	4200	lbs/hr	for	8 hrs/yr
Annual Emissions	=	16.8	tons/yr		

B) Sampling

Samples:	3 / 8 hrs x	4	locations x	0.504	lbs/sample
Average Emission	=	0.756	lbs/hr		
Annual Emission	=	3.31	tons/yr		

C) General due to Equipment Failure, Routine Maintenance and Leaks

These losses occur throughout the year and there are no clearly predetermined conditions.

Based on experience at this type of facility:

General Emission Factor:		0.28	lbs/ton of beans		
Average Emission	=	0.28	lbs/ton of beans x	192.5	tons/hr
	=	53.9	lbs/hr		
Annual Emission	=	236.1	tons/yr		

D) Plant Upsets

Frequency	10	times/yr
Duration	3	hrs

When system losses normal vacuum (negative pressure) condition, VOCs are lost.

Air flow in flakes	=	192.5	tons/hr x(2000 lbs/ton / 60 min/hr / (75-15) lbs/cfm		
		106.9	cfm		

Assuming the amount of VOCs lost to the atmosphere is roughly equal to the air normally pulled in.

Vapor Losses	=	225	cfm -	106.9	cfm
	=	118	cfm		
Average Emission	=	118	cfm x 60 x	0.2	lbs/cu.ft.
	=	1417	lbs/hr		
Annual Emission	=	1417	/2000 x	30	hrs
	=	21.3	tons/hr		

FUGITIVE EMISSIONS (cont'd)

E) Meal Storage

Basis:	148	tons/hr	of meal	40 lbs/cu.ft.	density of meal
	7400	cu.ft./hr.	of meal		
	200	ppm	hexane conc. in displaced storage air		

Annual emission from meal storage = **1.47 tons/yr**
= **0.33 lbs/hr**

F) Residual Hexane in Refining/Biodiesel

See Item B) below = **10.9 tons/yr**

Bound In Product & Byproduct

A) Desolventized meal

During Normal Operating Conditions: 148 tons/hr

Average solvent content in meal	=	29.6 lbs/hr	100 ppm
Annual solvent content in meal	=	**129.2** tons/yr	8730 hrs/yr

During Upset Conditions:

Average solvent content in meal	=	185 lbs/hr	625 ppm
Annual solvent content in meal	=	**2.8** tons/yr	30 hrs/yr

B) Residual Hexane in Crude Soybean Oil (Intermediate Product)

Basis:	33.0	tons/hr of soybean oil	17.1 % of beans	
	0.93	specific gravity of oil		
	8499	gals/hour	204000 gpd	74,460,000 gal/yr
	35	ppm hexane in finished oil		

Provision to bring in amount of outside oil to reach: 160 MGY
70.9 tons/hr

Average solvent content in oil	=	4.96 lbs/hr
Annual solvent content in oil	=	**21.74** tons/yr

Best available engineering estimate is that 50% is returned to dryer with other materials that are added to the meal, and both fugitive and point source emissions are:
= **10.9** tons/yr

NOTE: Crude Oil is further refined and processed to make RB Oil, Salad Oil, and biodiesel which have negligible solvent content.

Crude Soybean Oil Storage Tank (included in above total)

Hexane lb-mol/1 Mgal	=	35 gal hex/86.17 lb/lb-mol hex*5.6 lb/gal		
	=	2.27 lb-mol		
SBO lb-mol/1 M gal	=	999,965 gal SBO/885 lb/lb-mol SBO*7.76 lb/gal		
	=	8768 lb-mol		
Hex Mole Fraction	=	0.000259		
The literature provides an activity coefficient of 0.6 for hexane in SBO				
Part Pres Hexane	=	0.000259 *100 mm Hg * 0.6		
	=	0.016 mm Hg		
Mixing Ratio	=	0.016 /760*10^6		
	=	**20 PPM**		
Feed to Storage Tanks	=	304 gpm		
Total Displacement	=	40.7 cfm	Air/N2	40.7 cfm
Hourly Hexane	=	0.0008 cfm		
	=	**0.011 lbs/hr**		
Annual Thruput	=	160.0 MGY		
Total Displacement	=	21,390,374 cu.ft./yr		
Annual Hexane	=	438 cu.ft./yr		Uncontrolled Emissions
	=	99 lb/yr	=	**0.05 tons/yr**

C) Wastewater (Sent to Evaporator which is vented/recycled to extractor)

Basis: 45 gpm @ 50 ppm

Hexane Volume = 50 gal Hex/1000000 gal WW*45 gpm
= 0.00225 gpm

Pot Uncontrolled Emis. = **0.76** lbs/hr **3.31** tons/yr

Annual VOC Emissions Summary

	lbs/hr	tons/yr		lbs/ton of beans	Uncontrolled tons/yr
Point Sources (related to solvent)					
a) Vent Gas During Normal Operations					
from Normal Operations:	9.3	40.8		0.048	3014
from Upset Operations:	1765	21.2	62.0	0.025	182
b) Desolventized Meal Dryer & Cooler Exhaust					
from Normal Operations:	32.8	143.3		0.170	273
from Upset Operations:	595	7.1		0.008	9.4
c) Refinery (via DTDC & vents)	5.0	10.9	161.3	0.013	11
Subtotal Point Source Emission	**47.1** normal	**223.3**		**0.265**	**3489**
Fugitive Emissions (related to solvent)					
a) Plant Startup/Shutdown	4200	16.8		0.020	17
b) Sampling	0.76	3.3		0.004	3.3
c) General - equipment failure, leaks, etc.	53.9	236.1		0.280	236
d) Plant Upsets	1417	21.3		0.025	21
e) Meal Storage	0.33	1.5		0.002	1.5
f) Refinery	4.96	10.9		0.013	11
Subtotal Fugitive Source Emission	**60.0** normal	**289.8**		**0.344**	**290**
Bound In Product & Byproduct					
a) Desolventized meal					
from Normal Operations:	29.6	129.2		0.153	
from Upset Operations:	185	2.8		0.003	
Subtotal Bound Source Emission	**29.6**	**132.0**		**0.157**	
Total VOC Emissions (related to solvent)	**136.7** lbs/hr normal	**645.0** tons/yr		**0.765** lbs/ton **0.137** gal/ton	**3779** tons/yr
minus Refinery point/fug. emissions		**10.9**		**0.003** gal/ton	
		634.1 tons/yr		**0.134** gal/ton	

Total HAP Emissions (n-hexane)

Weight fraction of n-hexane in the solvent			0.64
Total n-hexane from solvent emissions	87.5	412.83	
n-hexane from combustion	0.4	1.77	
	87.9 lbs/hr	**414.6** tons/yr	

Total VOC Emissions

Point VOC Sources & Potential VOC

Subtotal Solvent	47.1	223.3
Biodiesel (methanol)	19.2	2.65
Combustion	1.23	5.60
Fuel Oil Tank	0.002	0.008
Subtotal Point Source Emission	**67.5** lbs/hr	**231.5** tons/yr
Biodiesel - Wastewater		2.45
Biodiesel - General Fugitive		15.79
Potential VOC Emissions for PSD purposes		**249.8** tons/yr

Fugitive VOC Sources

Subtotal Soybean Solvent	60.0	289.8
Biodiesel - Wastewater Fugitive	0.56	2.45
Biodiesel - General	3.61	15.79
Subtotal Fugitive Emission	64.1 lbs/hr	**308.0** tons/yr
Bound VOC Sources	29.6 lbs/hr	**132.0** tons/yr
Total VOC Emissions (Point + Fugitive + Bound)	**161.3** lbs/hr	**671.5** tons/yr

COMBUSTION

Emission Summary

	PM	PM10	SO2	NOx	VOC	CO
Main Boiler (natural gas only)	1.79	7.18	0.57	34.69	5.20	79.36
Main Boiler (#2 fuel oil + natural gas)	7.97	15.19	248.8	52.30	3.23	56.17
Main Boiler (worse case fuel)	**7.97**	**15.19**	**248.8**	**52.30**	**5.20**	**79.36**
High Pressure Steam Generator (natural gas)	0.07	0.29	0.02	3.86	0.21	3.25
Fire Pumps (diesel fuel)	0.15	0.15	0.15	10.35	0.14	2.48
Total Maximum Combustion	**8.20**	**15.6**	**249.0**	**66.5**	**5.55**	**85.1**

Main Boiler and Steam Generator
Emission Calculations

EMISSION FACTORS

Boiler (>100)

		PM	PM10	SO2	NOx	VOC	CO	Hexane
Controlled - LNB, FGR	lb/10^6 scf	1.9	7.6	0.6	36.72	5.5	84	1.8
	lb/MMBtu	**0.00186**	**0.00745**	**0.000588**	**0.036**	**0.00539**	**0.0824**	**0.00176**
Small Boiler (<100) Uncontrolled	lb/10^6 scf	1.9	7.6	0.6	100	5.5	84	1.8
	lb/MMBtu	0.00186	0.00745	0.000588	0.098	0.00539	0.0824	0.00176

ESTIMATED EMISSIONS

Main Boiler 220 MMBtu/hr 8760 hrs/year
Fuel Usage - Nat. Gas 1889 MMcu.ft./yr

		PM	PM10	SO2	NOx	VOC	CO	Hexane
Controlled - LNB, FGR:	lbs/hr	0.41	1.64	0.129	7.9	1.19	18.1	0.39
	tons/yr	**1.79**	**7.18**	**0.57**	**34.69**	**5.20**	**79.36**	**1.70**

High Pressure Steam Gen. 9 MMBtu/hr 8760 hrs/year
Fuel Usage - Nat. Gas 77.3 MMcu.ft./yr

lbs/hr	0.0168	0.0671	0.00529	0.882	0.0485	0.741	0.0159
tons/yr	**0.073**	**0.294**	**0.023**	**3.865**	**0.213**	**3.246**	**0.070**

Total from Combustion in Boilers for 100% Nat Gas Fired

	PM	PM10	SO2	NOx	VOC	CO	Hexane
lbs/hr	**0.43**	**1.71**	**0.13**	**8.80**	**1.23**	**18.86**	**0.40**
tons/yr	**1.87**	**7.47**	**0.59**	**38.6**	**5.41**	**82.6**	**1.77**

COMBUSTION - NATURAL GAS

Basis:

Main Boiler	220	MMBtu/hr	HP Steam Gen.	9 MMBtu/hr
Hours of Operation	8760	hrs/year		

		Emission Factors		Estimated Emissions	
		lb/10^6 scf	lb/MMBtu	lbs/hr	tons/yr
Metals					
Arsenic		0.0002	1.96E-07	4.49E-05	1.97E-04
Barium		0.0044	4.31E-06	9.88E-04	4.33E-03
Beryllium	<	0.000012	1.18E-08	2.69E-06	1.18E-05
Cadmium		0.0011	1.08E-06	2.47E-04	1.08E-03
Chromium		0.0014	1.37E-06	3.14E-04	1.38E-03
Cobalt		0.000084	8.24E-08	1.89E-05	8.26E-05
Copper		0.00085	8.33E-07	1.91E-04	8.36E-04
Lead		0.0005	4.90E-07	1.12E-04	4.92E-04
Manganese		0.00038	3.73E-07	8.53E-05	3.74E-04
Mercury		0.00026	2.55E-07	5.84E-05	2.56E-04
Molybdenum		0.0011	1.08E-06	2.47E-04	1.08E-03
Nickel		0.0021	2.06E-06	4.71E-04	2.07E-03
Selenium	<	0.000024	2.35E-08	5.39E-06	2.36E-05
Vanadium		0.0023	2.25E-06	5.16E-04	2.26E-03
Zinc		0.029	2.84E-05	6.51E-03	2.85E-02

COMBUSTION - FUEL OIL NO. 2

Emission Factors

Boiler (>100)			Condensable	Particulate Filterable PM	Total PM10	SO2	NOx	VOC	CO
Wgt. % S =	0.5	lb/10^3 gal	1.30	2.00	3.30	78.5	10.0	0.20	5.00
		lb/MMBtu	**0.0093**	**0.014**	**0.0236**	**0.500**	**0.071**	**0.001**	**0.036**

Estimated Emissions

Main Boiler (Oil Fired Backup)	220	MMBtu/hr						8760	hrs/year
		lbs/hr	2.04	3.14	5.19	110.0	15.7	0.31	7.86
		tons/yr	**8.95**	**13.77**	**22.71**	**481.8**	**68.83**	**1.38**	**34.41**

Fuel Usage

MMBtu/hr x 1000 gal/140 MMBtu = 1571 gal/hr
8760 hrs/yr = **13,765,714** gal/yr

Total SO2 amount to be limited from the main boiler = (<250 tons/yr)-(Emissions from Firepumps)-(Emissions from Steam Gen.)
= (248.7 - 0.15 - 0.02) tons/yr
= 248.53 tons/yr SO2
Amount of #2 fuel oil equivalent = **7,100,857** gal/yr
Equivalent hours of burning #2 fuel oil = **4,519** hrs/yr

Assume burning natural gas for the remainder of the year = 8760 - 4519 hours
= **4,241** hrs/yr

Adjusted Emissions based on 7,100,857 gals/yr of fuel oil #2

		PM	PM10	SO2	NOx	VOC	CO
Main Boiler (limited #2 fuel oil)	**tons/yr**	**7.10**	**11.72**	**248.5**	**35.5**	**0.710**	**17.8**
Main Boiler (4,241 hours of natural gas)		**0.87**	**3.48**	**0.27**	**16.80**	**2.52**	**38.42**
Total Worse Case (#2 fuel oil + natural gas)		**7.97**	**15.19**	**248.8**	**52.3**	**3.23**	**56.2**

COMBUSTION - FUEL OIL NO. 2

Basis

Main Boiler	220 MMBtu/hr	High Pres. Steam Gen.	9	MMBtu/hr
Hours of Operation	8760 hrs/year			

	Emission Factor lb/10^12 Btu	Estimated Emissions lbs/hr	tons/yr
Metals			
Arsenic	4	9.16E-04	4.01E-03
Beryllium	3	6.87E-04	3.01E-03
Cadmium	3	6.87E-04	3.01E-03
Chromium	3	6.87E-04	3.01E-03
Copper	6	1.37E-03	6.02E-03
Lead	9	2.06E-03	9.03E-03
Manganese	6	1.37E-03	6.02E-03
Mercury	3	6.87E-04	3.01E-03
Nickel	3	6.87E-04	3.01E-03
Selenium	15	3.44E-03	1.50E-02
Zinc	4	9.16E-04	4.01E-03

COMBUSTION - Diesel Fire Pumps

EMISSION FACTORS

Diesel Engine @ 1760 rpm 575 BHP

		PM	PM-10	SO2	NOx	HC	CO
Uncontrolled	gr/HP-hr *	0.16	0.16	0.16	10.9	0.15	2.61
	lb/hr/pump	0.20	0.20	0.20	13.8	0.19	3.31

Note: * Emission factor based on vendor data (Clarke)

ESTIMATED EMISSIONS

Based on : 3 pumps running 500 hrs/year based on EPA Guidance

Note: Pumps will only be run during monthly tests of roughly 30 minutes or 6 hours per year.

		PM	PM-10	SO2	NOx	HC	CO
Totals	lbs/hr	0.61	0.61	0.61	41.42	0.57	9.92
	tons/yr	**0.15**	**0.15**	**0.15**	**10.35**	**0.14**	**2.48**

Vehicle Emissions Summary

	PM lb/hr	PM-10 lb/hr	PM tons/yr	PM-10 tons/yr
Truck Loading	4.537	0.880	19.87	3.854
Car Loading	0.036	0.006	0.16	0.028
Total	**4.57**	**0.89**	**20.03**	**3.88**

Annual fugitive particulate emissions from Trucks on paved roads = (VMT)*(E)

Calculate VMT:

		Annual Tonnage	Trips per Year	Trips per Day	Vehicle Weight (tons)	VMT per trip (miles/trip)	VMT per year (miles/yr)	Avg Vehicle Weight (tons)
Bean	Full	1,686,300	64858	178	40	0.314	20,391	
	Empty	---	64858	178	14	0.636	41,273	
Meal	Empty	---	49865	137	14	0.379	18,888	
	Full	1,296,480	49865	137	40	0.572	28,521	26.0
Hull/Pellet	Empty	---	1937	5.3	14	0.379	734	
	Full	50,370	1937	5.3	40	0.572	1,108	
Oil	Empty	---	12000	32.9	15	0.417	5,000	
(80 MM gal)	Full	300,000	12,000	32.9	40	0.534	6,409	
Totals		**3,333,150**		**352**			**122,324**	

Calculate E:

$$E = k[sL / 2]^{0.65} \times [W / 3] - C$$

Where
E = particulate emission factor (lb/VMT)
k = particle size multiplier (lb/VMT)
sL = road surface silt loading (g/m^2)
W = weight average (tons) of vehicles traveling the road
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear

k = 0.016 lb/VMT for PM-10
k = 0.082 lb/VMT for PM-30 = TSP = PM
Factors taken from AP 42 Table 13.2.1-1, 1-2 & 1-3
sL = 0.6 grams/m^2
W = 26.0 tons
C = 0.00047 lb/VMT for PM-10
C = 0.00047 lb/VMT for PM-30 = TSP = PM

E_{PM} = 0.325 lbs PM/VMT
E_{PM-10} = 0.063 lbs PM-10/VMT

Calculate Emissions:

Total fugitive PM = **VMT x E_{PM}**
= 39,743 lbs/yr
= **4.54 lbs/hr**
= **19.87 tons/yr**

Total fugitive PM-10 = **VMT x E_{PM-10}**
= 7,709 lbs/yr
= **0.88 lbs/hr**
= **3.85 tons/yr**

Annual fugitive particulate emissions from Cars on paved roads = (VMT)*(E)

Calculate VMT:

VMT = (Total number cars) * (Maximum car mileage onsite)*(365 days/yr)

Assume Total Number Cars = Number of Employess
Total Number Cars = 70

Maximum car mileage onsite = 0.5 miles

VMT = Total number of cars x Maximum car mileage onsite/day x 365 days/year
= 12775

Calculate E:

$$E = k[sL / 2]^{0.65} \times [W / 3] - C$$

Where
E = particulate emission factor (lb/VMT)
k = particle size multiplier (lb/VMT)
sL = road surface silt loading (g/m^2)
W = weight average (tons) of vehicles traveling the road
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear

k =	**0.016**	lb/VMT	for PM-10
k =	**0.082**	lb/VMT	for PM-30 = TSP = PM
	Factors taken from AP 42 Table 13.2.1-1, 1-2 & 1-3		
sL =	**0.6**	**grams/m^2**	
W =	**2.0**	**tons**	
C =	0.00047	lb/VMT	for PM-10
C =	0.00047	lb/VMT	for PM-30 = TSP = PM

E_{PM} = 0.0245 lbs PM/VMT
E_{PM-10} = 0.00441 lbs PM-10/VMT

Calculate Emissions:

Total fugitive PM	=	**VMT x E_{PM}**	
	=	313	lbs/yr
	=	**0.036**	**lbs/hr**
	=	**0.157**	**tons/yr**
Total fugitive PM-10	=	**VMT x E_{PM-10}**	
	=	56	lbs/yr
	=	**0.0064**	**lbs/hr**
	=	**0.0282**	**tons/yr**

BIODIESEL METHANOL ABSORBERS

Basis:
Methanol MW: 32.0
Total Operating Hours 8760

Soy Oil Absorber for Methanol

Normal Operation — Total Normal Hours: 8445

Inlet Loading	0.92 lb mol/hr	29.4 lb/hr
Outlet of Absorber	0.03 lb mol/hr	0.88 lb/hr
Absorber Removal Efficiency	97.0 %	

During MeOH Unloading — Total Unloading Hours: 291

Inlet Loading	1.94 lb mol/hr	62.0 lb/hr
Outlet of Absorber	0.058 lb mol/hr	1.86 lb/hr
Absorber Removal Efficiency	97.0 %	

Upset Condition - 8 events per year, 3 hours each: — Total upset hours: 24

Inlet Loading	18.3 lb mol/hr	587 lb/hr
Outlet of Absorber	1.83 lb mol/hr	58.7 lb/hr
Absorber Removal Efficiency	90.0 %	

Water Absorber for Methanol

Normal Operation

Inlet Loading	0.028 lb mol/hr	0.88 lb/hr
Outlet of Absorber	0.0094 lb mol/hr	0.30 lb/hr
Absorber Removal Efficiency	66.0 %	
Combined Efficiency of Both Absorbers	99.0 %	

During Tank Unloading

Inlet Loading	0.058 lb mol/hr	1.86 lb/hr
Outlet of Absorber	0.020 lb mol/hr	0.63 lb/hr
Absorber Removal Efficiency	66.0 %	
Combined Efficiency of Both Absorbers	99.0 %	

Upset Condition - 8 events per year, 3 hours each: — Total upset hours: 24

Inlet Loading	1.83 lb mol/hr	58.7 lb/hr
Outlet of Absorber	0.92 lb mol/hr	29.4 lb/hr
Absorber Removal Efficiency	50.0 %	
Overall Efficiency	95.0 %	

TOTAL EMISSIONS		Uncontolled lbs/hr	Uncontolled tons/yr	Controlled lbs/hr	Controlled tons/yr
Point Source Methanol Emissions	Normal	29.4	123.96	0.30	1.26
	w/ MeOH Unloading	62	9.03	0.63	0.09
	Loading Rack	1.40	0.93	1.40	0.93
	Glycerine Tank	0.0008	0.0033	0.0008	0.0033
	Upset Conditions	587	7.05	29.4	0.35
Fugitive Methanol Emissions:	BD Wastewater	0.56	2.45	0.56	2.45
	General	3.61	15.79	3.61	15.79
			159.21		**20.89**

BIODIESEL METHANOL ABSORBERS
NORMAL OPERATION

Density lb/cu.ft.

	MW lb/lbmol	Spec Grav Rel to Air	Density (lbs/cfm) @ Temperature (deg F) 60	70	77	90	100
Water	18.02	0.622	0.048	0.047	0.047	0.046	0.045
Methanol	32.04	1.106	0.086	0.084	0.083	0.081	0.080
Air	28.96	1.00	0.077	0.076	0.075	0.073	0.072

Condenser Discharge @ 25 deg C (77 deg F)

	lb mol/hr	lbs/hr		cfm	PPM
Air/N2	4.48	129.7	57.9	28.82	
MeOH	0.90	28.9	12.9	5.80	166852
Water	0.02	0.4	0.2	0.14	
Totals		159.0	71.0	34.8	

Inlet to Soy Oil Absorber @ 25 deg C (77 deg F) with Biodiesel Vent from Day Tanks

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	7.62	220.8	98.6	49.06	
MeOH	0.92	29.4	13.1	5.90	107151
Water	0.02	0.4	0.2	0.14	
Totals		250.6	111.9	55.1	

Outlet of Soy Oil Absorber/Inlet to Water Absorber @ 100 deg F 97% Efficiency

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	7.62	220.8	98.6	51.16	
MeOH	0.028	0.88	0.39	0.18	3587
Water	0.02	0.4	0.2	0.15	
Totals		222.1	99.1	51.5	

Discharge from Water Scrubber @ 90 deg F 66% Efficiency

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	7.62	220.8	98.6	50.24	
MeOH	0.009	0.30	0.13	0.06	1202
Water	0.15	2.7	1.2	1.00	
Totals		223.8	99.9	51.3	

Combined Overall Efficiency 99.0%

BIODIESEL METHANOL ABSORBERS
NORMAL OPERATION

Density lb/cu.ft.

	MW lb/lbmol	Spec Grav Rel to Air	Density (lbs/cfm) @ Temperature (deg F) 60	70	77	90	100
Water	18.02	0.622	0.048	0.047	0.047	0.046	0.045
Methanol	32.04	1.106	0.086	0.084	0.083	0.081	0.080
Air	28.96	1.00	0.077	0.076	0.075	0.073	0.072

Condenser Discharge @ 25 deg C (77 deg F) with MeOH Unloading (less consumption)

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	7.75	224.5	100.2	49.88	
MeOH	1.39	44.4	19.8	8.91	151001
Water	0.04	0.7	0.3	0.24	
Totals		269.5	120.3	59.0	

Inlet to Soy Oil Absorber @ 25 deg C (77 deg F) with BD Vents

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	10.90	315.6	140.9	70.12	
MeOH	1.94	62.1	27.7	12.48	150642
Water	0.04	0.7	0.3	0.24	
Totals		378.4	168.9	82.8	

Outlet of Soy Oil Absorber/Inlet to Water Absorber @ 100 deg F 97.0% Efficiency

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	10.90	315.57	140.9	73.12	
MeOH	0.06	1.86	0.83	0.39	5293
Water	0.04	0.67	0.3	0.25	
Totals		318.1		73.8	

Discharge from Water Scrubber @ 90 deg F 66% Efficiency

	lb mol/hr	lbs/hr	kg/hr	cfm	PPM
Air/N2	10.90	315.6	140.9	71.81	
MeOH	0.020	0.63	0.28	0.13	1747
Water	0.230	7.37	3.3	2.70	
Totals		323.6	144.5	74.6	

Combined Overall Efficiency 99.0%

STORAGE TANKS AND LOADOUT

Methanol/Catalyst Storage Tanks

Results from EPA Tanks 4.0 Program

	No. of Tanks	Total Thruput MG	Per Tank Thruput MG	Per Tank Uncontrolled Emissions lbs/hr	Per Tank Uncontrolled Emissions tons/yr	Total Uncontrolled Emissions lbs/hr	Total Uncontrolled Emissions tons/yr
Methanol	5	8.88	1.78	0.075	0.33	0.38	1.65
Catalyst	1	1.27	1.27	0.079	0.35	0.079	0.35

Flowrate of Displaced Vapors sent to the scrubbers is equivalent to 200 gpm.

Total Flow rate:	26.74	cfm	Air/N2	23.2 cfm
Vapor Pressure of MeOH @ 70 deg F:	100	mm Hg		
Mixing Ratio of MeOH:	**131579**	**PPM**	3.52 cfm	
MeOH Mass rate	17.75	lbs/hr	7.92 kg/hr	

Biodiesel Storage Tanks (4) and Loadout (Loading Rack)

EPA Tank Program not used since it does not address mixture of methanol and biodiesel.
The literature does provide an activity coefficient of 1.7 for methanol in biodiesel (ref below).
Distribution of Methanol and Catalysts between Biodiesel and Glycerin Phases; Chiu, Goff and Galen J. Suppes, AIChE Journal, vol 51 No. 4 (April 2005).

Residual MeOH:	=	0.10 % by wgt.		
Mole Fraction :	=	0.1 lb MeOH/100 lb BD * 1 lb-mol/32 lb MeOH *296 lb-BD/lb-mol BD		
	=	0.0093		
Part Pres MeOH	=	0.0093 *100 mm Hg * 1.7		
	=	1.57 mm Hg		0.21 kPa
Mixing Ratio	=	1.57 /760*10^6		
	=	**2069 PPM**		
Max Loading Rate	=	1000 gpm		
Total Displacement	=	134 cfm		
Hourly MeOH	=	17 cu.ft./hour		
	=	**1.40 lbs/hr** for loading rack		
Annual Thruput	=	80.0 MGY		
	=	152 gpm		
Total Displacement	=	10695187 cu.ft./yr		
Annual MeOH	=	22129 cu.ft./yr		Uncontrolled Emissions
	=	**0.21** lb/hr	=	**0.93 tons/yr** each

Storage tanks will be vented to day tanks and loadout will be directly discharged.

Since prior contents of tankers could have been diesel fuel, the EPA Tanks Program was also evaluated.
The results showed only 244 lbs per year of emissions for loadout, which is less than the estimate above.

Biodiesel Day Tanks (2) Similar to Storage tanks, but at 104 deg F

Part Pres MeOH	=	0.0093 *260 mm Hg * 1.7		
	=	4.09 mm Hg		0.54 kPa
Mixing Ratio	=	4.09 /760*10^6		
	=	**5380 PPM**		
Feed to Day Tanks	=	152 gpm		
Total Displacement	=	20.3 cfm	Air/N2	20.2 cfm
Hourly MeOH	=	0.11 cfm		
	=	**0.52 lbs/hr** for day tanks		
Annual Thruput	=	80.0 MGY		
Total Displacement	=	10,695,187 cu.ft./yr		
Annual MeOH	=	57536 cu.ft./yr		Uncontrolled Emissions
	=	4578 lb/yr	=	**2.29 tons/yr** Vented to Scrubbers

Glycerine Storage

The literature does provide an activity coefficient of 0.4 for methanol in glycerine (ref above).

Residual MeOH:	=	0.10 % by wgt.		
Mole Fraction :	=	0.1 lb MeOH/100 lb Glyc * 1 lb-mol/32 lb MeOH *(0.90*92.1 lb-Glyc/lb-mol Glyc+0.10*18 lb-H20/lb-mol H20)		
	=	0.0026		
Part Pres MeOH	=	0.0026 *100 mm Hg * 0.4		
	=	0.11 mm Hg		0.01 kPa
Mixing Ratio	=	0.11 /760*10^6		
	=	**139 PPM**		
Feed to Storage	=	9 gpm		
Total Displacement	=	1.1 cfm	Air/N2	1.1 cfm
Hourly MeOH	=	0.0002 cfm		
	=	**0.0008 lbs/hr**		
Annual Thruput	=	4.5 MGY		
Total Displacement	=	601,604 cu.ft./yr		
Annual MeOH	=	84 cu.ft./yr		
	=	7 lb/yr	=	**0.003** tons/yr

BIODIESEL PLANT
VOC FUGITIVE EMISSIONS

Estimated Number of Components for Various Biodiesel Processes:
(above 10% VOC)

Process	Lines	Pumps	Sample/ Drains	Relief Valves	Agitator Seals	Valves	Weight Fraction Methanol (VOCs)	Weight Fraction Heavy Hydrocarbons	Weight Fraction TOCs
1	5	0	4	2	1	16	0.153	0.847	1.000
2	5	2	2	1	1	12	0.230	0.001	0.231
3	2	1	2	0	0	6	0.295	0.702	0.997
4	2	7	7	2	1	35	0.328	0.451	0.779
5	3	0	1	2	1	9	0.342	0.465	0.807
6	2	1	1	0	0	5	0.433	0.112	0.545
7	5	0	4	2	0	14	0.659	0	0.659
8	4	0	3	0	0	10	0.750	0.250	1.000
9	1	0	0	0	0	1	0.871	0	0.871
10	4	0	3	0	0	9	0.999	0	0.999
11	10	0	2	2	0	26	1.000	0	1.000

Average Emission Factors (for TOCs):

in kg/hr	0.0017	0.0199	0.015	0.104	0.0199	0.00403
in lb/hr	0.00381	0.0446	0.0336	0.233	0.0446	0.00903

Source: Protocol for Equipment Leak Emission Estimates EPA-453/R-95-017

Estimated Potential Fugitive Emissions (VOCs)

E_{VOC} = No. of Comps X Emission Factor X E_{TOC} X Weight Fraction Methanol / Weight Fraction TOCs

Process							Subtotal	
1	0.0029	0	0.0206	0.0713	0.0068	0.0221	0.124	
2	0.0190	0.0888	0.0669	0.2320	0.0444	0.1079	0.559	
3	0.0023	0.0132	0.0199	0	0	0.0160	0.051	
4	0.0032	0.1314	0.0990	0.1962	0.0188	0.1330	0.582	
5	0.0048	0	0.0142	0.1975	0.0189	0.0344	0.270	
6	0.0061	0.0354	0.0267	0	0	0.0359	0.104	
7	0.0190	0	0.1344	0.4659	0	0.1264	0.746	
8	0.0114	0	0.0756	0	0	0.0677	0.155	
9	0.0038	0	0	0	0	0.0090	0.013	
10	0.0152	0	0.1008	0	0	0.0812	0.197	
11	0.0381	0	0.0672	0.4659	0	0.2347	0.806	
Subtotal	0.126	0.269	0.625	1.629	0.089	0.868		
					Total		**3.61**	lb/hr
Operating hours/yr:			8760				**15.79**	tons/yr

LIQUID FLOW RATES

Soy Oil Absorber for Methanol

Oil Mass flowrate:	31,250 kg/hr	70,000 lb/hr
Density of Oil	7.50 lb/gal	
Flowrate of Oil Media	9333 gal/hr	156 gpm
Min. Oil Flowrate		78 gpm

Water Absorber for Methanol

Normal Operation

Water Mass flowrate:	100 kg/hr	224 lb/hr
Density of Water	8.34 lb/gal	
Flowrate of Water Media	26.9 gal/hr	0.448 gpm
Min. Water Flowrate		0.22 gpm

Wastewater

Wastewater Mass flowrate:	250 kg/hr	560 lb/hr
Density of Water	8.34 lb/gal	
Flowrate of Water Media	67.1 gal/hr	1.119 gpm
MeOH Content:	0.10 % by wgt.	
	0.560 lbs/hr	
	2.45 tons/year	

TRE INDEX

VACUUM PUMP -

Estimate Emissions attributable to distillation unit.

Air/N2	20	kg/hr
MeOH	25	kg/hr

% of Total Vent Emissions 14.2 %

	Mass Rate kg/hr	Controlled Pump Discharge Flowrate @ 20 deg C scfm
Air/N2	20	9.82
MeOH	0.040	0.018
Water	0.47	0.37

Total Distillation Flow (Qs)	10.21	scfm	
Heat Value of Methanol	4927	btu/kg	
Ht	0.323	btu/scf	
Percent Removal	**99.8**	%	includes condenser

Calculate TRE Index

For Design Category B for Non-halogenated process vent steams, if 0< net heating value<13

From 40 CFR 60.664(f)(1) Subpart NNN

TRE = (1/ETOC)*[a+b(Qs)+c(Qs)^0.88+d(Qs)(Ht)+e(Qs)^0.88+f(Ys)^0.51

where:

ETOC	0.040	kg/hr	a	18.83268
Qs	10.21	scfm	b	0.00659
Ht	0.323	btu/scf	c	0.008647
Ys	10.21		d	-0.003976
			e	0
			f	0.003803

= **472**

From 40 CFR 60.664(f)(2) Subpart NNN

TRE' = (1/ETOC)*[a(Qs)+b(Qs)^0.8+c(Qs)(Ht)+d(ETOC)+e]

where:

ETOC	0.040	kg/hr	a	0.14
Qs	10.21	scfm	b	0.0367
Ht	0.323	btu/scf	c	-0.000448
			d	-0.0051
			e	4.59

= **156**

Appendix A
Emission Summary

Category	Pollutant	Uncontrolled Potential Emissions (tons/year)					
		Emissions Generating Activity					
		Soybean Process	Extract Process	Comb. Process	Vehicle	Biodsl	**TOTAL**
Pollutants	PM	7292		8.2	20.00		7320
	PM10	4224		15.6	3.88		4244
	SO2			249.0			249
	NOx			66.5			66.5
	VOC		3779	5.6		159	3944
	CO			85.1			85.1

Category	Pollutant	Controlled Potential Emissions (tons/year)					
		Emissions Generating Activity					
		Soybean Process	Extract Process	Comb. Process	Vehicle	Biodsl	**TOTAL**
Pollutants	PM	114.9		8.2	20.00		143
	PM10	84.1		15.6	3.88		103.6
	SO2			249.0			249
	NOx			66.5			66.5
	VOC		513	5.6		20.89	540
	CO			85.1			85.1

Process	**VOC Emissions for PSD purposes (tons/year)**
Point Source	
Subtotal Solvent	223.3
Biodiesel (methanol)	2.65
Combustion	5.60
Fuel Oil Tank	0.008
Subtotal	**231.6**
Fugitive	
Biodiesel - Wastewater	2.45
Biodiesel - General Fugitive	15.79
Subtotal	**18.2**
Potential VOC Emissions for PSD purposes **Total**	**249.8**

Appendix B

Stack / Vent Information

Stack / Vent ID (S/V)	Stack Diameter (feet)	Stack Height (feet)	Maximum Outlet Gas Flow Rate (acfm)	Outlet Gas Temp. (^{o}F)
AF-1	2.33	190	21,900	70
AF-2	3.83	85	28,000	70
AF-3	3.83	125	27,500	90
AF-4	3.00	45	16,000	120
AF-5	5.17	125	70,000	125
AF-6	2.33	125	22,000	70
S-1	5.00	125	70,000	125
S-2	5.17	125	71,000	130
S-3	4.33	125	62,200	300
S-4	0.50	125	234	80
S-5	0.33	50	34	70

APPENDIX C

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ANALYSIS

Louis Dreyfus Agricultural Industries LLC

Louis Dreyfus is proposing a soybean meal, soybean oil and a biodiesel manufacturing plant in Claypool, Indiana. The plant will include grain handling and process equipment, oil extraction and refining processes, and additional processes to produce biodiesel.

BACT Definition and Applicability

Federal guidance on BACT requires an evaluation that follows a "top down" process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility.

The five basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially "available" control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emission unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies, and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate The Most Effective Controls And Document The Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous

Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

VOC BACT CONTROLS

(a) Main vent stream from DT solvent extraction process

The DT system is the industry standard for desolventizing soybean meal. Wet flakes from the extractor are conveyed to the DT. The flakes entering the DT contain approximately 33% hexane by weight. The desolventized flakes going into the DT dryer contain approximately 0.04% hexane by weight.

Step 1: Identify Potential Control Technologies

(1) Thermal Oxidation

The destruction of organic compounds usually requires temperatures ranging from 1200^{0}F to 2200^{0}F, depending on their chemical composition and the desired destruction efficiency. When complete combustion is achieved, carbon dioxide and water vapor result as products. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency. Normally, natural gas is used to fuel the combustion chamber and maintain the required temperatures, but fuel oil is substituted in some cases. Concentrated VOC streams having high heat contents require less supplementary fuel than dilute VOC streams. In some cases, the VOC streams have high enough heat content to be self sustaining.

Thermal incinerators can have design efficiencies up to 99.99% and above, depending on system requirements and characteristics of the contaminated stream. The typical design conditions needed to meet 98% or greater control or a 20 parts per million by volume (ppmv) compound exit concentration are: 870°C (1600°F) combustion temperature, 0.75 second residence time, and proper mixing.

(2) Catalytic Oxidation:

Catalytic incinerators operate very similar to thermal incinerators, with the primary difference being that the gas, after passing through the flame area, passes through a catalyst bed. The catalyst has the effect of increasing the oxidation reaction rate, enabling conversion at lower reaction temperatures than in thermal incinerator units. Catalysts, therefore, also allow for smaller incinerator size.

Waste gas is heated by auxiliary burners to approximately 320°C to 430°C (600°F to 800°F) before entering the catalyst bed. The maximum design exhaust temperature of the catalyst is typically 540° - 675°C (1000° - 1250°F). Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency.

VOC destruction efficiency is dependent upon VOC composition and concentration, operating temperature, oxygen concentration, catalyst characteristics, and space velocity. Space velocity is commonly defined as the volumetric flow of gas entering the catalyst bed chamber divided by the volume of the catalyst bed.

Higher destruction efficiencies of 98 - 99 percent are achievable.

(3) Recuperative Thermal incineration:

The individual and point source filtered air streams enter the incinerator and are preheated by a gas-to-gas heat exchange. The resulting preheated stream is then further heated to the incineration temperature, causing combustion of the VOCs. The resulting "hot exhaust gas" is passed back through the gas-to-gas heat exchanger to preheat the incoming pollutant gas stream and then is vented to the stack.

Thermal incineration is recommended for emission streams containing a minimum of 20 ppm of combustible VOCs but less than 25% of the lower explosive limit (LEL) of the pollutant. If higher concentrations due to upset conditions are present, additional air (dilution air) may be required to eliminate the explosive hazard.

Thermal incinerators do not efficiently adjust to highly variable process exhaust flow rates due to poor mixing and varying residence times. Varying concentrations may also cause wide fluctuation of the combustion chamber temperature, adversely affecting the destruction efficiency.

For vent streams with VOC concentration below approximately 2000 ppmv, reaction rates decrease, maximum VOC destruction efficiency decreases.

Studies based on actual field test data, show that commercial incinerators should generally be run at 870°C (1600°F) with a nominal residence time of 0.75 seconds to ensure 98% destruction of non-halogenated organics (EPA, 1992).

Recuperative incinerators usually are more economical than straight thermal incinerators because they recover about 70% of the waste heat from the exhaust gases. This heat can be used to preheat incoming air, and oftentimes, sufficient waste heat will be available for process heating, or to generate steam or hot water.

(4) Regenerative Thermal Oxidizer (RTO)

RTOs use a high-density media such as a ceramic-packed bed still hot from a previous cycle to preheat an incoming VOC-laden waste gas stream. The preheated, partially oxidized gases then enter a combustion chamber where they are heated by auxiliary fuel (natural gas) combustion to a final oxidation temperature typically between 760^0C to 820^0C (1400^0F to 1500^0F) and maintained at this temperature to achieve maximum VOC destruction, however, temperatures of up to 1100^0C (2000^0F) may be achieved, if required, for very high control efficiencies of certain toxic VOC. The purified, hot gases exit this chamber and are directed to one or more different ceramic-packed beds cooled by an earlier cycle. Heat from the purified gases is absorbed by these beds before the gases are exhausted to the atmosphere. The reheated packed bed then begins a new cycle by heating a new incoming waste gas stream.

Regenerative incineration is applicable over the same range of concentrations as recuperative thermal incineration and has the same LEL requirements.

VOC destruction efficiency depends upon design criteria (i.e., chamber temperature, residence time, inlet VOC concentration, compound type, and degree of mixing) (EPA, 1992). Typical regenerative incinerator design efficiencies range from 95 to 99% for RTO systems.

Regenerative incinerators can and have been used effectively at inlet loadings as low as 100 ppmv or less. As with thermal and recuperative incinerators, for safety considerations, the maximum concentration of the organics in the waste gas must be substantially below the lower flammable level (lower explosive limit, or LEL) of the specific compound being controlled. As a rule, a safety factor of four (i.e., 25% of the LEL) is used (EPA, 1991; AWMA, 1992). The waste gas may be diluted with ambient air, if necessary, to lower the concentration.

Reclamation Controls

(5) Condensation

Condensation is the separation of VOCs from an emission stream through a phase change, by either increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. When condensers are used for air pollution control, they usually operate at the pressure of the emission stream, and typically require a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream.
The emission stream enters a heat exchanger, usually of shell-and-tube design, and encounters the cold surface of the tube carrying the refrigerant. The emission stream temperature drops to the dew point of its VOC constituents. The VOC liquefies and drops out of the emission stream. The "cleaned" emission stream is then vented to the stack while the condensed solvent is collected for reuse or disposal.

Condensation systems are recommended for emission streams containing between 5,000 and 10,000 ppm. Condensation is affected significantly by the number and nature of the constituents in the emission stream. The greater the variance of components, the greater the range of temperatures that must be maintained to achieve condensation. The emission streams of interest will nearly always be below the 5,000 ppm recommended for starting the condensation.

Condensation has at least been used by one source named Avoca, Inc. in North Carolina, and has achieved a VOC control efficiency of 96% by having two condensers in series one water cooled condenser followed by a nitrogen cooled condenser.

(6) Cryogenic Condensation

A cryogenic VOC control system uses liquid nitrogen as a cooling agent to reduce the temperature of the condenser to as low as -160^{0}F. According to BOC Gases, the manufacturer of the patented Kryoclean system, the system is designed for low flow rates (<1,000 acfm), high inlet VOC concentrations and low moisture content.

(7) Absorption

Absorption is a surface phenomenon where components of a gas phase mixture (pollutants) are selectively transferred to a relatively nonvolatile liquid, usually water. Sometimes, organic liquids, such as mineral oil or non-volatile

hydrocarbons, are suitable absorption solvents. The choice of solvent depends on cost and the solubility of the pollutant in the solvent. As a part of its analysis of BACT for the solvent extraction process, Louis Dreyfus will consider a mineral oil scrubber to control VOC emissions from the main vent stream from the solvent extraction process to absorb the pollutant (hexane) following its absorption in mineral oil.

Absorption is only economical for emission streams with higher concentrations. Absorption is used successfully and economically at the main vent stream from the solvent extraction process.

(8) Carbon Adsorption

Carbon adsorption is the predominant method for adsorption of VOC streams. Carbon adsorption systems were applied rather widely to the main vent stream from solvent extraction plants built in the 1940s and early 1950s. As a general rule, the vent gases were cooled as far as practical before entering the carbon adsorption system to minimize the thermal loading on the carbon. The carbon adsorption systems were conservatively designed to have a very low pressure drop so that a vent blower was not required in the system. These systems, when operating as designed, efficiently removed hexane from the main vent stream. However, the carbon fouled rapidly with sulfur (which occurs naturally in soybeans), and the efficiency of the units was often suspect. In the early 1950s, mineral oil absorbers replaced carbon adsorbers on the main vent stream. This was primarily for greater safety, but also because this system offered additional hexane recovery due to increased hours of operation at the design conditions.

(9) Carbon Adsorption/Oxidation

In some cases, a combination of control technologies results in the most efficient and cost effective VOC control method. Presently, a combination of carbon adsorption and oxidation (incinerator) has had good results on low concentration emission streams.

Carbon Adsorption/Oxidation combines a carbon adsorption system and a recuperative thermal incineration system for capture and incineration of VOCs. This system concentrates the VOC stream by using carbon adsorption by removing low concentration VOCs from large gas flows to the carbon bed and then much lower gas flow is used to regenerate the carbon. The gas stream coming from the regeneration process contains much higher concentrations of VOCs, which are then sent to a thermal incinerator for a more efficient destruction.

The carbon adsorption system is usually configured as a rotating wheel. During rotation, most of the wheel is utilized for adsorbing VOCs while approximately 10% of the wheel is being regenerated using high temperature air. The low concentration emission stream passes through the carbon adsorption system where up to 95% of the VOCs which were present in the low concentration emission stream are captured for oxidation. High temperature air from the gas – to - gas heat exchanger flows counter current to the flow of the emission stream desorbing the carbon wheel. This desorbing air, now laden with a high concentration of VOCs is destroyed at up to 98% efficiency. That is 98% of the 95% of VOCs captured from the low concentration emission stream which are destroyed. The system concentrates and reduces the airflow of the emission stream, thereby decreasing the size and fuel requirement of the thermal incinerator. Substantial operational savings may be realized with this type of

system. The capital cost is significantly higher than that of either a carbon adsorption system or a recuperative thermal incinerator alone. Considering the relatively low concentration present in the emission streams, a carbon adsorption/oxidation system was studied to determine its economic viability.

(10) Innovative Technologies

Review of the literature indicates that other technologies may destroy VOC pollutants.

Superheated CO (solvent less extraction) - still in "pilot" stage

Microwave Technology (solvent less) - still in "pilot" stage

Other more "proven technology" would consist of.

Vacuum Assisted Desolventization System "VADS" (see http://www.krupp-elastomertechnik.com)

Fluidized bed adsorption

Step 2: Eliminate Technically Infeasible Options

(1) Incineration is not used to reduce emissions in the extraction plants in the oilseed industry. The vent gases that would be ducted to the control device cover a wide range of flow volumes and solvent concentrations. Variations in flows and solvent concentrations greatly hamper safe and efficient operation. Exposure of the entire extraction plant to the ignition source (a flash back in the duct system to the incinerator) is considered an unjustifiable risk. The National Fire Protection Association (NFPA) standards for extraction plants require that any flame operation (e.g., incineration) be located at least 100 feet away from the processing area.

(2) Cryogenic condensation is a relatively new technology for VOC control and has not been used in the soybean processing industry. It is a potential crossover technology.

(3) Carbon Adsorber - The normal flow and concentration variations during upset and startup/shutdown would overheat the carbon beds and in many cases, catch fire. Therefore, mineral oil systems that are efficient have replaced all the carbon adsorbers in soybean extraction plants. Mineral oil absorption currently represents state of the art in the industry and is universally recommended for all plants. The problems associated with carbon adsorbers fall into three groups:

(A) Sulfur plugging of the carbon and the resultant reduction in capacity

(B) Overheating and fires in carbon beds

(C) Limited capacity

Sulfur has always been present in the main vent stream. Even at low levels the sulfur compounds are adsorbed more readily with the activated carbon, thereby reducing the solvent absorption capacity. The sulfur plugging requires more frequent replacement of the carbon. Applying such a system to the vent stream exiting the mineral oil absorption system results in a higher proportion of sulfur to hexane and a shorter carbon life. Carbon adsorbers can overheat for several

reasons. Among these are poor conditioning of the carbon (which can create dead spots where cooling by the carrier media can not occur rapidly enough), over-drying of the carbon bed during desorption, and overloading of the absorber during surges caused by process upsets. The adsorption of volatile organic compounds (such as hexane) on activated carbon generates heat equivalent to the latent heat of vaporization for the compound being adsorbed. Under the conditions listed above, the heat generated by adsorption can accumulate in the bed, causing the temperature to rise to the point where ignition will occur. Good design and control can eliminate overheating of the carbon bed, but when the equipment or control fails (as they invariably will), overheating will occur. Carbon adsorbers do not fail to a safe mode. Failure of the adsorption systems components will lead to overheating. This makes the carbon adsorbers a potential source of ignition. While fires caused by overheating are usually contained by the adsorber vessel, the vessel is directly connected to the process by duct-work which allows a flame path back to the process, creating an unacceptable risk of explosion. The most likely time for fire to occur in the adsorber is during process upsets when solvent vapor will fill the duct connecting the process to the adsorber. Under these conditions a flame front could flow back into the process from the adsorber. Design efforts for the last half century have been directed toward removing ignition sources from the process in order to prevent this last scenario, which would lead to catastrophic fire and explosion. Although process tanks, vessels, and equipment are normally maintained in the Upper Explosive Limit (UEL) of 70,000 ppm, conditions can exist during which portions of the process are between the explosive range of 12,000 ppm to 70,000 ppm. Such conditions often exist during startups, shutdowns, and upsets. During shutdowns, equipment is purged as quickly as possible to minimize the time spent in the explosive range. Similarly, the time spent in the explosive range during startups is kept as brief as possible to minimize the risk of an ignition and ensuing fire. It is therefore illogical and unacceptable to introduce the fire hazards of ignition from a hot carbon bed during these times.

(4) Carbon Adsorption/Oxidation - Safety concerns raised for carbon adsorption and thermal incineration would exist for this technology as discussed previously.

(5) Vacuum Assisted Desolventization System "VADS" and Fluidized bed adsorption have not been applied in this industry or similar source categories.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

Technology	Control Efficiency
Condensation	98%
Mineral Oil System (MOS)	99.5%

Step 4: Evaluate The Most Effective Controls And Document The Results

The following company's BACT determination from the RBLC, permits issued by Indiana and other states were evaluated to determine the BACT for this plant.

Company	Date	BACT determined	Comments
Boon Valley Corp Eagle Grove, Iowa	Nov-83	Extractor – Mineral Oil Absorber 0.07 lb of Hexane/ton	
Owensboro Grain, Owensboro, Kentucky	Feb-81	Extractor – Mineral Oil Absorber Overall limit on Hexane emissions from the plant-2.9 lb/ton	
Cargill Inc. Savage, Minnesota	Dec-86	Extractor – Mineral Oil Absorber Overall limit on Hexane emissions - 2.9 lb/ton (24 hr) 2.0 lb/ ton(30 day) Fugitive emissions limit - 2.0 lb/ ton	
Central Soya, Morristown, Indiana	July-95	Extractor - Mineral Oil Absorber - 0.2 lb of Hexane/ton	
Consolidated Grain & Barge Company, Mt. Vernon, Indiana	April-97	Extractor - Mineral Oil Absorber - 0.16 lb of Hexane/ton Overall limit on Hexane emissions - 0.25 gal/ton first year, then 0.24 gal/ton of soybean	The company shall continue to minimize hexane emissions losses by training the operators, and supervisors of the plant. At the end of each calendar year, the company shall send a report of the progress made in minimizing the hexane emissions from the plant to IDEM.

Company	Date	BACT determined	Comments
ConAgra Soybean Processing Company	August, 98	Extractor -Mineral Oil Absorber - 0.078 lb of Hexane/ton Overall limit on Hexane emissions - 0.20 gal/ton first year, then 0.16 gal/ton of soybean BACT includes a leak detection and repair plan.	The company shall continue to minimize hexane emissions losses by training the operators, and supervisors of the plant. At the end of each calendar year, the company shall send a report of the progress made in minimizing the hexane emissions from the plant to IDEM.
Southern Soya Corp. Estill, South Carolina	Oct-95	Overall limit on Hexane emissions - 2 lbs/ton or 0.357 gals/ton	
Archer Daniel Midland Valdosta, Georgia	Apr-96	Overall limit on Hexane emissions - 2.93 lbs/ton or 0.523 gals/ton	
Archer Daniel Midland North Kansas City, Missouri	Oct-97	Overall limit on Hexane emissions - 0.25 gals/ton BACT includes a leak detection plan.	
Cargill Inc. Sioux City Iowa	May-99	Overall limit on Hexane emissions - 0.19 gal/ton 890 tons /year limit on Hexane uses	
Archer Daniel Midland North Kansas City, Missouri	Oct-97	Overall limit on Hexane emissions - 0.25 gals/ton BACT includes a leak detection plan.	
Avoca Inc., Merry Hill, North Carolina	Sept 2004	98% Combined control efficiency for chilled water cooled condenser and liquid nitrogen-cooled condenser, and a 5% by wt, maximum concentration for n-hexane in solvent	

Company	Date	BACT determined	Comments
Zeeland Farm Services Zeeland, Michigan	May, 2003	Overall solvent loss 0.15 gal/ton based on a 12-month rolling time period 0.25 gal/ton of soybeans based on three-month rolling time period. Extractor Main vent – 6.1 pounds/hour, 25.3 tons based on a 12-month rolling time period	
Cargill Inc., Cargill Oilseeds Division, Shelby County, Ohio	November, 2003	Overall solvent loss 0.146 gallon per ton	

The majority of the hexane emissions from the DT are recovered for reuse within the process by the first stage rising film evaporator, the DT condenser, and the vent condenser. The non-condensable gases from the discharge of the condenser contain approximately 47% hexane by weight. The non-condensable gases are vented to a MOS. The MOS recovers the hexane for reuse and controls the VOC emissions.

Louis Dreyfus is proposing the BACT as follows:

(a) Extractor – Controlled by a condenser and a mineral oil absorber – 0.048 lbs/ton of soybean received and a VOC emissions rate of 9.3 lbs/hr.

(b) A solvent loss ratio of 0.134 gallons per ton of soybean crushed, which is lower than any solvent loss ratio obtained from the RBLC. The BACT also includes the leak detection and repair program.

(c) Maximum annual soybean received — 1,685,300 tons/yr

(d) BACT for the fugitive hexane loss shall include an enhanced inspection, maintenance, and repair program. Within 60 days of achieving full production, but no later than 180 days after initial startup, the Permittee shall institute the following enhanced inspection, maintenance, and repair program for the solvent extraction portion of the installation:

Table 1

	Leak Standard
Pumps	500 ppm
Valves	500 ppm
Pressure relief Devices	500 ppm

	Leak Standard
Flanges, Connectors, and Seals	10,000 ppm

(1) The Permittee shall determine compliance with the standards in Table 1 by using the procedures of 40 CFR Part 60, Appendix A, Method 21. The instrument shall be calibrated before each day of its use by the procedures as specified in Method 21. A leak is defined as an instrument reading of 500 ppm above background or greater, except for flanges, and connectors where a leak is defined as 10,000 ppm above the background.

(2) The Permittee shall immediately tag all detected leaks with a weatherproof and readily visible identification tag with a distinct number. Once a leaking component is detected, first-attempt repairs must be done within five days and be completed within 15 days of detecting the leaking components. If the repair can not be accomplished within 15 days, then the Permittee shall send a notice of inability to repair to the OAQ within 20 days of detecting the leak. The notice must be received by the Compliance Branch, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204 within 20 days after the leak was detected. At a minimum the notice shall include the following:

(A) equipment, operator, and instrument identification number;

(B) date of leak detection;

(C) measured concentration (ppm) and background (ppm);

(D) leak identification number associated with the corresponding tag; and

(E) reason of inability to repair within 5 to 15 days of detection.

(3) The Permittee shall maintain records of the following to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) quipment inspected;

(B) date of inspection; and

(C) determination of whether a leak was detected.

(4) If a leak is detected, the Permittee shall record the following information to verify compliance with the enhanced inspection, maintenance, and repair program:

(A) the equipment, operator, and instrument identification number;

(B) measured concentration;

(C) leak identification number associated with the corresponding tag;

(D) date of repair;

(E) reason for non-repair if unable to repair within 5 to 15 days of detection; and

(F) maintenance recheck if repaired-date, concentration, background.

Step 5: Select BACT

For the soybean processing system utilizing DT technology, BACT has been determined to be followings:

(a) A combined condenser and mineral oil scrubber (MOS) system for the extractor vent system with a VOC emission rate of 0.048 pounds per ton of soybean received and a maximum VOC emissions rate of 9.3 pounds per hour

(b) The overall solvent loss ratio of 0.134 gallons per ton of soybean crushed from the whole plant is also part of the BACT.

First year solvent loss ratio is established as 0.2 gals/ton of soybean crushed.

This is a new plant and this is established to allow time to learn the operations of the plant.

Maximum annual soybean received 1,686,300 tons/yr

(c) BACT for the fugitive hexane loss shall include an enhanced inspection, maintenance, and repair program. Within 60 days of achieving full production, but no later than 180 days after initial startup, the Permittee shall institute the following enhanced inspection, maintenance, and repair program for the solvent extraction portion of the installation:

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(F) maintenance recheck if repaired-date, concentration, background.

(b) DT Dryers and Cooler

Step 1: Identify Potential Control Technologies

(1) Thermal Oxidation

The destruction of organic compounds usually requires temperatures ranging from 1200^{0}F to 2200^{0}F, depending on their chemical composition and the desired destruction efficiency. When complete combustion is achieved, carbon dioxide and water vapor result as products. Turbulent mixing and combustion chamber

retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency. Normally, natural gas is used to fuel the combustion chamber and maintain the required temperatures, but fuel oil is substituted in some cases. Concentrated VOC streams having high heat contents require less supplementary fuel than dilute VOC streams. In some cases, the VOC streams have high enough heat content to be self sustaining.

Typical thermal incinerator design efficiencies range up to 99.99% and above, depending on system requirements and characteristics of the contaminated stream. The typical design conditions needed to meet 98% or greater control or a 20 parts per million by volume (ppmv) compound exit concentration are: 870°C (1600°F) combustion temperature, 0.75 second residence time, and proper mixing.

(2) Catalytic Oxidation:

Catalytic incinerators operate very similar to thermal incinerators, with the primary difference being that the gas, after passing through the flame area, passes through a catalyst bed. The catalyst has the effect of increasing the oxidation reaction rate, enabling conversion at lower reaction temperatures than in thermal incinerator units. Catalysts, therefore, also allow for smaller incinerator size.

Waste gas is heated by auxiliary burners to approximately 320°C to 430°C (600°F to 800°F) before entering the catalyst bed. The maximum design exhaust temperature of the catalyst is typically 540° - 675°C (1000° - 1250°F). Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency.

VOC destruction efficiency is dependent upon VOC composition and concentration, operating temperature, oxygen concentration, catalyst characteristics, and space velocity. Space velocity is commonly defined as the volumetric flow of gas entering the catalyst bed chamber divided by the volume of the catalyst bed.

Higher destruction efficiencies of 98 - 99 percent are achievable.

(3) Recuperative Thermal incineration:

The individual and point source filtered air streams enter the incinerator and preheated by a gas-to-gas heat exchange. The resulting preheated stream is then further heated to the incineration temperature, causing combustion of the VOCs. The resulting "hot exhaust gas" is passed back through the gas-to -gas heat exchanger to preheat the incoming pollutant gas stream and then is vented to the stack.

Thermal incineration is recommended for emission streams containing a minimum of 20 ppm of combustible VOCs but less than 25% of the lower explosive limit (LEL) of the pollutant. If higher concentrations due to upset conditions are present, additional air (dilution air) may be required to eliminate the explosive hazard.

Thermal incinerators do not efficiently adjust to highly variable process exhaust flow rates due to poor mixing and varying residence times. Varying

concentrations may also cause wide fluctuation of the combustion chamber temperature, adversely affecting the destruction efficiency.

For streams with VOC concentration below approximately 2000 ppmv, reaction rates decrease, maximum VOC destruction efficiency decreases.

Studies based on actual field test data, show that commercial incinerators should generally be run at 870°C (1600°F) with a nominal residence time of 0.75 seconds to ensure 98% destruction of non-halogenated organics.

Recuperative incinerators usually are more economical than straight thermal incinerators because they recover about 70% of the waste heat from the exhaust gases. This heat can be used to preheat incoming air, and oftentimes, sufficient waste heat will be available for process heating, or to generate steam or hot water.

(4) Regenerative Thermal Oxidizer (RTO)

RTOs use a high-density media such as a ceramic-packed bed still hot from a previous cycle to preheat an incoming VOC-laden waste gas stream. The preheated, partially oxidized gases then enter a combustion chamber where they are heated by auxiliary fuel (natural gas) combustion to a final oxidation temperature typically between 760^0C to 820^0C (1400^0F to 1500^0F) and maintained at this temperature to achieve maximum VOC destruction, however, temperatures of up to 1100^0C (2000^0F) may be achieved, if required, for very high control efficiencies of certain toxic VOC. The purified, hot gases exit this chamber and are directed to one or more different ceramic-packed beds cooled by an earlier cycle. Heat from the purified gases is absorbed by these beds before the gases are exhausted to the atmosphere. The reheated packed bed then begins a new cycle by heating a new incoming waste gas stream.

Regenerative incineration is applicable over the same range of concentrations as recuperative thermal incineration and has the same LEL requirements.

VOC destruction efficiency depends upon design criteria (i.e., chamber temperature, residence time, inlet VOC concentration, compound type, and degree of mixing). Typical regenerative incinerator design efficiencies range from 95 to 99% for RTO systems.

Regenerative incinerators can and have been used effectively at inlet loadings as low as 100 ppmv or less. As with thermal and recuperative incinerators, for safety considerations, the maximum concentration of the organics in the waste gas must be substantially below the lower flammable level (lower explosive limit, or LEL) of the specific compound being controlled. As a rule, a safety factor of four (i.e., 25% of the LEL) is used. The waste gas may be diluted with ambient air, if necessary, to lower the concentration.

Reclamation Controls

(5) Condensation

Condensation is the separation of VOCs from an emission stream through a phase change, by either increasing the system pressure or, more commonly,

lowering the system temperature below the dew point of the VOC vapor. When condensers are used for air pollution control, they usually operate at the pressure of the emission stream, and typically require a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream. The emission stream enters a heat exchanger, usually of shell-and-tube design, and encounters the cold surface of the tube carrying the refrigerant. The emission stream temperature drops to the dew point of its VOC constituents. The VOC liquefies and drops out of the emission stream. The "cleaned" emission stream is then vented to the stack while the condensed solvent is collected for reuse or disposal.

Condensation systems are recommended for emission streams containing between 5,000 and 10,000 ppm. Condensation is affected significantly by the number and nature of the constituents in the emission stream. The greater the variance of components, greater the range of temperatures that must be maintained to achieve condensation. The emission streams of interest will nearly always be below the 5,000 ppm recommended for starting the condensation.

(6) Cryogenic Condensation

A cryogenic VOC control system uses liquid nitrogen as a cooling agent to reduce the temperature of the condenser to as low as -160^{0}F. According to BOC Gases, the manufacturer of the patented Kryoclean system, the system is designed for low flow rates (<1,000 acfm), high inlet VOC concentrations and low moisture content.

(7) Absorption

Absorption is a surface phenomenon where components of a gas phase mixture (pollutants) are selectively transferred to a relatively nonvolatile liquid, usually water. Sometimes, organic liquids, such as mineral oil or non-volatile hydrocarbons, are suitable absorption solvents. The choice of solvent depends on cost and the solubility of the pollutant in the solvent. As a part of its analysis of BACT for the solvent extraction process, Louis Dreyfus will consider a mineral oil scrubber to control VOC emissions from the main vent stream from the solvent extraction process to absorb the pollutant (hexane) following its absorption in mineral oil.

Absorption is only economical for emission streams with higher concentrations. Absorption is used successfully and economically at the main vent stream from the solvent extraction process.

(8) Carbon Adsorption

Carbon adsorption is the predominant method for adsorption of VOC streams. Carbon adsorption systems were applied rather widely to the main vent stream from solvent extraction plants built in the 1940s and early 1950s. As a general rule, the vent gases were cooled as far as practical before entering the carbon adsorption system to minimize the thermal loading on the carbon. The carbon adsorption systems were conservatively designed to have a very low pressure drop so that a vent blower was not required in the system. These systems, when operating as designed, efficiently removed hexane from the main vent stream. However, the carbon fouled rapidly with sulfur (which occurs naturally in soybeans), and the efficiency of the units was often suspect. In the early 1950s, mineral oil absorbers replaced carbon units on the main vent stream. This was

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Fluidized bed adsorption

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Catalytic incineration is not used on the DT dryer exhaust at any existing soybean processing facility. Although it is a potential crossover technology, significant concerns about catalytic incineration include technical and safety issues. Catalytic incinerators are susceptible to plugging and catalyst fouling. The amount of PM_{10} (0.33 lb/hour) in the exhaust gas during normal operation is likely to cause plugging of the inlet screens or catalyst bed in the incinerator. The exhaust from the dryer will also contain small amounts of oil in an aerosol form. This oil is likely to cause fouling of the catalyst bed. Also, soybeans naturally contain sulfur compounds. These sulfur compounds in the exhaust are likely to cause fouling of the catalyst bed. The particulate matter may be reduced by a high efficiency filtration system. The aerosol oil and sulfur compounds cannot be similarly removed.

Regenerative incineration is not used on the DT dryer exhaust at any existing soybean processing facility. Although it is a potential crossover technology, significant technical and safety concerns prohibit its use as an add-on control at a soybean extraction facility. The packing material in the regeneration system is susceptible to plugging by particulate material. The amount of PM_{10} (0.33 lb/hour) in the exhaust gas during normal operation is likely to cause plugging of the inlet screens or packing in the incinerator. Carbonization of the packing due to the aerosol oil is likely to cause degradation of the packing, loss of heat transfer, and possibly a reduction of control efficiency.

Recuperative incineration is not used on the DT dryer exhaust at any existing soybean processing facility. Although it is a potential crossover technology, significant technical and safety concerns prohibit its use as add-on control at a soybean extraction facility. The particulate loading and sulfur compounds in the dryer exhaust are not likely to cause operational problems with a recuperative incinerator. The aerosol oils may cause carbonization of the incinerator chamber that could result in a loss of control efficiency.

NFPA 36 requires that all ignition sources be located in excess of 100 feet from the extraction process due to the flammability of hexane. Additionally, NFPA 36 requires that all potential ignition sources be equipped with approved devices to prevent flashbacks into the process area. The inherent presence of fugitive hexane vapors at processing plants could lead to catastrophic results.

In addition to potential explosions or fires due to fugitive hexane, normal shutdown procedures, process upsets, and malfunctions may result in near LEL conditions in the dryer exhaust. Normal shutdown procedures require purging the hexane out of the process units. As each system is purged, the concentration is reduced from greater than 100% of the UEL through the explosive range to less than 10% of the LEL. This presents a significant safety issue for the use of an incinerator on the dryer exhaust.

The combination of technical and safety concerns make thermal and catalytic incineration technically infeasible for this process.

(2) Condensers are commonly used in soybean extraction facilities for hexane recovery. These systems are very efficient and have a long history of safe operation. However, no existing facility has a condenser on the DT dryer or cooler vent.

Condensers are designed for high inlet hexane concentrations. No manufacturer makes a condenser for the low inlet concentration of the DT dryers and cooler.

Therefore, a condenser is not technically feasible for dryers and cooler.

(3) A cryogenic VOC control system uses liquid nitrogen as a cooling agent to reduce the temperature of the condenser to as low as -160°F. The evaporated nitrogen is used for other processes at the facility, such as a blanketing agent for VOC storage tanks or as a process gas. The VOCs are condensed and are reused, recycled or disposed.

According to BOC Gases, the manufacturer of the patented Kryoclean system, the system is designed for low flow rates (<1,000 acfm), high inlet VOC concentrations and low moisture content. BOC Gases stated that the Kryoclean system is not technically feasible for this source due to the low concentration, high flow rate, and high moisture content of the exhaust gas.

(4) Absorption is only economical for emission streams in higher concentrations.

MOS are commonly used in soybean extraction facilities for control of hexane emissions from the main DT vent. These systems are very efficient and have a long history of safe operation. However, no existing facility has a MOS on the DT dryer vent.

The MOS is designed for low flow rates (<1,000 acfm) and high inlet hexane concentrations. No manufacturer makes a MOS for the flow rate (8,500 acfm) and low inlet concentration of the DT dryer.

Therefore, MOS is not technically feasible for this source.

(5) Carbon adsorption is a common technique for control of VOC emissions.

Carbon adsorption is not used on the DT dyer exhaust at any existing soybean processing facility. Although it is a potential crossover technology, significant technical and safety concerns prohibit its use as an add-on control at a soybean extraction facility.

Carbon adsorbers are susceptible to plugging and fouling. The amount of PM10 in the exhaust gas during normal operation is likely to cause plugging of the inlet screens or carbon bed. The exhaust from the dryers and cooler will also contain small amounts of oil in an aerosol form. This oil is likely to cause fouling of the carbon bed. Also, soybeans naturally contain sulfur compounds. These sulfur compounds will cause fouling of the carbon bed.

Although the particulate matter concentration can be reduced by a high efficiency filtration system, the aerosol oils and sulfur compounds cannot be similarly removed.

The adsorption of hexane onto carbon is an exothermic reaction. Increases in the concentration of the inlet stream will cause additional heat to build up in the

carbon bed. Under optimum conditions, the air movement through the bed will remove the heat via convection. However, if channeling occurs in the carbon bed, or if the increase in concentration is too large (as in an upset condition), the bed can overheat to the point of auto-ignition. Carbon bed fires have historically occurred in the soybean processing industry.

Carbon systems do not fail in a safe mode. If an internal fire occurs, the carbon bed provides additional fuel to the ongoing fire.

The combination of technical and safety concerns make carbon adsorption technically infeasible for the DT meal dryers and cooler.

(6) Carbon Adsorption/Oxidation - Safety concerns raised for carbon adsorption and thermal incineration would exist for this technology as discussed previously.

(7) Fluidized bed adsorption has not been applied in this industry or similar source category.

(8) No other emerging technology has been proposed for dryers and cooler.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

There are no technically feasible add-on control systems.

Step 4: Evaluate The Most Effective Controls And Document The Results

The following company's BACT determination from the RBLC, permits issued by Indiana and other states were evaluated to determine the BACT for this plant.

Company	Date	BACT determined	Comments
Boon Valley Corp Eagle Grove, Iowa	Nov-83	Dryer- 0.25 lb of Hexane/ton Cooler- 0.20 lb of Hexane/ton	
Owensboro Grain, Owensboro, Kentucky	Feb-81	Overall limit on Hexane emissions from the plant- 2.9 lb/ton	
Cargill Inc. Savage, Minnesota	Dec-86	Overall limit on Hexane emissions - 2.9 lb/ton (24 hr) 2.0 lb/ ton(30 day) Fugitive emissions limit - 2.0 lb/ ton	
Central Soya, Morristown, Indiana	July-95	Dryer- 0.16 lb of Hexane/ton Cooler-0.16 lb of Hexane/ton	

Company	Date	BACT determined	Comments
Consolidated Grain & Barge Company, Mt. Vernon, Indiana	April-97	Dryer- 0.33 lb of Hexane/ton Cooler-0.06 lb of Hexane/ton Overall limit on Hexane emissions - 0.25 gal/ton first year, then 0.24 gal/ton of soybean	The company shall continue to minimize hexane emissions losses by training the operators, and supervisors of the plant. At the end of each calendar year, the company shall send a report of the progress made in minimizing the hexane emissions from the plant to IDEM.
ConAgra Soybean Processing Company	August, 98	Dryer- 0.228 lb of Hexane/ton Cooler- 0.083 lb of Hexane/ton Overall limit on Hexane emissions - 0.20 gal/ton first year, then 0.16 gal/ton of soybean	The company shall continue to minimize hexane emissions losses by training the operators, and supervisors of the plant. At the end of each calendar year, the company shall send a report of the progress made in minimizing the hexane emissions from the plant to IDEM.
Southern Soya Corp. Estill, South Carolina	Oct-95	Overall limit on Hexane emissions - 2 lbs/ton or 0.357 gals/ton	
Archer Daniel Midland Valdosta, Georgia	Apr-96	Overall limit on Hexane emissions - 2.93 lbs/ton or 0.523 gals/ton	
Archer Daniel Midland North Kansas City, Missouri	Oct-97	Overall limit on Hexane emissions - 0.25 gals/ton BACT includes a leak detection plan.	
Cargill Inc. Sioux City Iowa	May-99	Overall limit on Hexane emissions - 0.19 gal/ton 890 tons /year limit on Hexane uses	
Archer Daniel Midland North Kansas City, Missouri	Oct-97	Overall limit on Hexane emissions - 0.25 gals/ton	
Avoca Inc., Merry Hill, North Carolina	Sept 2004	VOC (Hexane) 197 tons per year	

Company	Date	BACT determined	Comments
Zeeland Farm Services Zeeland, Michigan	May, 2003	Overall solvent 0.15 gal/ton based on a 12-month rolling time period 0.25 gal/ton of soybeans based on three-month rolling time period. Both dryer cyclones – 12.5 pounds/hr and 51.9 tons per year based on a 12-month rolling time period.	

Louis Dreyfus has proposed the following BACT for the dryers and cooler.

Dryers and cooler (Same stack) – 0.03 gals/ton and 32.8 lbs of hexane/hr

Step 5: Select BACT

Based on the above information, BACT is the following:

Dryers and cooler (Same stack) – 0.03 gals/ton and 32.8 lbs of hexane/hr

(c) Biodiesel reactor, vacuum pump, and distillation column

Step 1: Identify Potential Control Technologies

(1) Thermal Oxidation

The destruction of organic compounds usually requires temperatures ranging from 1200^{0}F to 2200^{0}F, depending on their chemical composition and the desired destruction efficiency. When complete combustion is achieved, carbon dioxide and water vapor result as products. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency. Normally, natural gas is used to fuel the combustion chamber and maintain the required temperatures, but fuel oil is substituted in some cases. Concentrated VOC streams having high heat contents require less supplementary fuel than dilute VOC streams. In some cases, the VOC streams have high enough heat content to be self sustaining.

Thermal incinerators can have design efficiencies up to 99.99% and above, depending on system requirements and characteristics of the contaminated stream. The typical design conditions needed to meet 98% or greater control or a 20 parts per million by volume (ppmv) compound exit concentration are: 870°C (1600°F) combustion temperature, 0.75 second residence time, and proper mixing.

(2) Catalytic Oxidation:

Catalytic incinerators operate very similar to thermal incinerators, with the primary difference being that the gas, after passing through the flame area, passes through a catalyst bed. The catalyst has the effect of increasing the oxidation reaction rate, enabling conversion at lower reaction temperatures than

in thermal incinerator units. Catalysts, therefore, also allow for smaller incinerator size.

Waste gas is heated by auxiliary burners to approximately 320°C to 430°C (600°F to 800°F) before entering the catalyst bed. The maximum design exhaust temperature of the catalyst is typically 540° - 675°C (1000° - 1250°F). Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 second are necessary to obtain high destruction efficiency.

VOC destruction efficiency is dependent upon VOC composition and concentration, operating temperature, oxygen concentration, catalyst characteristics, and space velocity. Space velocity is commonly defined as the volumetric flow of gas entering the catalyst bed chamber divided by the volume of the catalyst bed.

Higher destruction efficiencies of 98 - 99 percent are achievable.

(3) Recuperative Thermal incineration:

The individual and point source filtered air streams enter the incinerator and preheated by a gas-to-gas heat exchange. The resulting preheated stream is then further heated to the incineration temperature, causing combustion of the VOCs. The resulting "hot exhaust gas" is passed back through the gas-to -gas heat exchanger to preheat the incoming pollutant gas stream and then is vented to the stack.

Thermal incineration is recommended for emission streams containing a minimum of 20 ppm of combustible VOCs but less than 25% of the lower explosive limit (LEL) of the pollutant. If higher concentrations due to upset conditions are present, additional air (dilution air) may be required to eliminate the explosive hazard.

Thermal incinerators do not efficiently adjust to highly variable process exhaust flow rates due to poor mixing and varying residence times. Varying concentrations may also cause wide fluctuation of the combustion chamber temperature, adversely affecting the destruction efficiency.

For streams with VOC concentration below approximately 2000 ppmv, reaction rates decrease, maximum VOC destruction efficiency decreases.

Studies based on actual field test data, show that commercial incinerators should generally be run at 870°C (1600°F) with a nominal residence time of 0.75 seconds to ensure 98% destruction of non-halogenated organics.

Recuperative incinerators usually are more economical than straight thermal incinerators because they recover about 70% of the waste heat from the exhaust gases. This heat can be used to preheat incoming air, and oftentimes, sufficient waste heat will be available for process heating, or to generate steam or hot water.

(4) Regenerative Thermal Oxidizer (RTO)

RTOs use a high-density media such as a ceramic-packed bed still hot from a previous cycle to preheat an incoming VOC-laden waste gas stream. The

preheated, partially oxidized gases then enter a combustion chamber where they are heated by auxiliary fuel (natural gas) combustion to a final oxidation temperature typically between 760^{0}C to 820^{0}C (1400^{0}F to 1500^{0}F) and maintained at this temperature to achieve maximum VOC destruction, however, temperatures of up to 1100^{0}C (2000^{0}F) may be achieved, if required, for very high control efficiencies of certain toxic VOC. The purified, hot gases exit this chamber and are directed to one or more different ceramic-packed beds cooled by an earlier cycle. Heat from the purified gases is absorbed by these beds before the gases are exhausted to the atmosphere. The reheated packed bed then begins a new cycle by heating a new incoming waste gas stream.

Regenerative incineration is applicable over the same range of concentrations as recuperative thermal incineration and has the same LEL requirements.

VOC destruction efficiency depends upon design criteria (i.e., chamber temperature, residence time, inlet VOC concentration, compound type, and degree of mixing). Typical regenerative incinerator design efficiencies range from 95 to 99% for RTO systems.

Regenerative incinerators can and have been used effectively at inlet loadings as low as 100 ppmv or less. As with thermal and recuperative incinerators, for safety considerations, the maximum concentration of the organics in the waste gas must be substantially below the lower flammable level (lower explosive limit, or LEL) of the specific compound being controlled. As a rule, a safety factor of four (i.e., 25% of the LEL) is used. The waste gas may be diluted with ambient air, if necessary, to lower the concentration.

Reclamation Controls

(5) Condensation

Condensation is the separation of VOCs from an emission stream through a phase change, by either increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. When condensers are used for air pollution control, they usually operate at the pressure of the emission stream, and typically require a refrigeration unit to obtain the temperature necessary to condense the VOCs from the emission stream.
The emission stream enters a heat exchanger, usually of shell-and-tube design, and encounters the cold surface of the tube carrying the refrigerant. The emission stream temperature drops to the dew point of its VOC constituents. The VOC liquefies and drops out of the emission stream. The "cleaned" emission stream is then vented to the stack while the condensed solvent is collected for reuse or disposal.

Condensation systems are recommended for emission streams containing between 5,000 and 10,000 ppm. Condensation is affected significantly by the number and nature of the constituents in the emission stream. The greater the variance of components, greater the range of temperatures that must be maintained to achieve condensation. The emission streams of interest will nearly always be below the 5,000 ppm recommended for starting the condensation.

(6) Cryogenic Condensation

A cryogenic VOC control system uses liquid nitrogen as a cooling agent to reduce the temperature of the condenser to as low as -160^{0}F. According to BOC Gases, the manufacturer of the patented Kryoclean system, the system is designed for low flow rates (<1,000 acfm), high inlet VOC concentrations and low moisture content.

(7) Absorption

Absorption is a surface phenomenon where components of a gas phase mixture (pollutants) are selectively transferred to a relatively nonvolatile liquid, usually water. Sometimes, organic liquids, such as mineral oil or non-volatile hydrocarbons, are suitable absorption solvents. The choice of solvent depends on cost and the solubility of the pollutant in the solvent.

(8) Carbon Adsorption

Carbon adsorption is the predominant method for adsorption of VOC streams. As a general rule, the vent gases were cooled as far as practical before entering the carbon adsorption system to minimize the thermal loading on the carbon. The carbon adsorption systems are conservatively designed to have a very low pressure drop so that a vent blower is not required in the system. These systems, when operating as designed, efficiently remove VOC from the stream.

(9) Carbon Adsorption/Oxidation

In some cases, a combination of control technologies results in the most efficient and cost effective VOC control method. Presently, a combination of carbon adsorption and oxidation (incinerator) has had good results on low concentration emission streams.

Carbon Adsorption/Oxidation combines a carbon adsorption system and a recuperative thermal incineration system for capture and incineration of VOCs. This system concentrates the VOC stream by using carbon adsorption by removing low concentration VOCs from large gas flows to the carbon bed and then much lower gas flow is used to regenerate the carbon. The gas stream coming from the regeneration process contains much higher concentrations of VOCs, which are then sent to a thermal incinerator for a more efficient destruction.

The carbon adsorption system is usually configured as a rotating wheel. During rotation, most of the wheel is utilized for adsorbing VOCs while approximately 10% of the wheel is being regenerated using high temperature air. The low concentration emission stream passes through the carbon adsorption system where up to 95% of the VOCs which were present in the low concentration emission stream are captured for oxidation. High temperature air from the gas – to - gas heat exchanger flows counter current to the flow of the emission stream desorbing the carbon wheel. This desorbing air, now laden with a high concentration of VOCs is destroyed at up to 98% efficiency. That is 98% of the 95% of VOCs captured from the low concentration emission stream which are destroyed. The system concentrates and reduces the airflow of the emission stream, thereby decreasing the size and fuel requirement of the thermal incinerator. Substantial operational savings may be realized with this type of system. The capital cost is significantly higher than that of either a carbon adsorption system or a recuperative thermal incinerator alone. Considering the

relatively low concentration present in the emission streams, a carbon adsorption/oxidation system was studied to determine its economic viability.

(10) Flare

A flare is used to control VOCs from the biodiesel process streams. The flare's VOC control efficiency is approximately 98%.

Step 2: Eliminate Technically Infeasible Options

(1) Thermal Incineration is not used to reduce emissions in biodiesel plants in the oilseed industry.

Catalytic incineration is not used to reduce emissions in biodiesel plants in the oilseed industry.

Regenerative incineration is not used to reduce emissions in biodiesel plants in the oilseed industry.

Recuperative incineration is not used to reduce emissions in biodiesel plants in the oilseed industry.

(2) Condensers can be used for the biodiesel process, but its efficiency has not been established for a biodiesel process. The condenser can be used in combination with other add on control devices.

(3) Carbon adsorption is a common technique for control of VOC emissions.

Carbon adsorption is not used to control VOC emissions from a biodiesel process.

(4) Carbon Adsorption/Oxidation is not used to control VOC emissions from a biodiesel process.

Step 3: Rank The Remaining Control Technologies By Control Effectiveness

There are only two technically feasible add-on control systems.

(1) Scrubber – 99% VOC control efficiency

(2) Flare – 98% VOC control efficiency

Step 4: Evaluate The Most Effective Controls And Document The Results

The following company's BACT determination from the RBLC, permits issued by other states was evaluated to determine the BACT for this plant.

Company	Date	BACT determined	Comments
Soymor, Albert Lea, Minnesota	September, 2004	Vacuum Pump - Flare with 98% VOC control efficiency Nitrogen Blanket – Scrubber – VOC emissions of 0.0045 lbs/hr	25 million biodiesel Plant

Company	Date	BACT determined	Comments
Wolf Lake Terminals Hammond, Indiana	Permit not issued yet. Control Efficiency not known.	It is not subject to BACT, but control device is chilled water condenser	5 million biodiesel Plant, Batch Process
Minnesota Soybean Processors Brewster, Minnesota	May, 2004	No controls	30 million biodiesel Plant

Louis Dreyfus has proposed the following as BACT for biodiesel VOC emissions:

One soy oil absorber followed by a water scrubber with a combined VOC control efficiency of 99% and a VOC emission rate of 0.30 lbs/hr without methanol unloading and 0.63 lbs/hr with methanol unloading.

Step 5: Select BACT

Based on the above information, BACT is the following:

One soy oil absorber followed by a water scrubber with combined VOC control efficiency of 99% and a VOC emission rate of 0.30 lbs/hr without methanol unloading and 0.63 lbs/hr with methanol unloading.

(d) Biodiesel load out, Glycerin tanks, and Biodiesel storage tanks - Uncontrolled VOC emissions from these emission units are less than 25 tons per year each. Therefore, the requirements of 326 IAC 8-1-6 do not apply to these emission units.