



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

July 28, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Indiana Sugars, Inc / 089-19053-00490

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

Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires 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, **within eighteen (18) calendar days of the mailing of this notice**. 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:

- (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.

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
FN-REGIS.dot 9/16/03



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

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July 28, 2004

Mr. Galen Hathcock
Indiana Sugars, Inc.
911 Virginia Street
Gary, Indiana 46401

Re: Registered Operation Status,
089-19053-00490

Dear Mr. Hathcock:

The application from Indiana Sugars, Inc., received on May 3, 2004, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following sugar products and corn syrup blends manufacturing plant located at 911 Virginia Street, Gary Indiana 46401, is classified as registered:

- (a) Two (2) natural gas-fired boilers (identified as B1 and B2), each with a maximum heat input capacity of 4.18 MMBtu per hour. These units were constructed in 1982.
- (b) Grinding mill and product collection equipment consisting of:
 - (1) One (1) sugar mill (identified as Unit 1), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter which serves as a product collector and is integral to the process. The fabric filter exhausts at stack 1.
 - (2) One (1) sugar mill (identified as Unit 2), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter which serves as a product collector and is integral to the process. The fabric filter exhausts at stack 2.
 - (3) One (1) bulk transport system (identified as Unit 1A) used in conjunction with the sugar mill (identified as Unit 1), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter, which is integral to the process. The fabric filter exhausts at stack 1A.
 - (4) One (1) bulk transport system (identified as Unit 2A) used in conjunction with the sugar mill (identified as Unit 2), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter, which is integral to the process. The fabric filter exhausts at stack 2A.
 - (5) Bagging operations (identified as Unit 5), constructed in 1992, with a maximum throughput capacity of 15,000 tons per year of powdered sugar, equipped with a dust collector, which is integral to control, and exhausting at stack 5.

- (6) One (1) truck unloading system (identified as Unit 6), constructed in 2002, with a maximum throughput capacity of 40,000 pounds per hour of granulated sugar, equipped with a fabric filter, which is integral to control, and exhausting at stack 6.

The following conditions shall be applicable:

- (a) 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:
 - (1) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period 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.
- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the grinding mills and product collection equipment shall not exceed the pound per hour limit as shown in the table below:

Emission Unit	Maximum Throughput Rate		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the two (2) sugar Mills (Unit 1 and 2)	7,500	3.75	9.94
Each of the two bulk transport systems (Unit 1A and 2A)	7,500	3.75	9.94
Bagging operation (Unit 5)	15,000	7.50	15.8
Truck unloading system (Unit 6)	40,000	20	30.5

The pound per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The six (6) fabric filters shall be in operation at all times the grinding and product collection equipment is in operation, in order to comply with this limit.

- (c) Pursuant to 326 IAC 6-2-3(e) (Particulate Emission Limitations for Sources of Indirect Heating), the particulate emissions from the two (2) 4.18 MMBtu per hour boilers, which were existing and in operation before September 21, 1983 shall each not exceed 0.6 pounds of particulate per MMBtu heat input.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
 Office of Air Quality**

**100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Pursuant to Contract No. A305-0-00-36, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Sanobar Durrani, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7810 to speak directly to Ms. Durrani. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ERG/SD

cc: File - Lake County
Lake County Health Department
Air Compliance – Ramesh Tejuja
Northwest Regional Office
Permit Tracking
Compliance Data Section

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Indiana Sugars, Inc.
Address:	911 Virginia Street
City:	Gary, Indiana 46401
Authorized individual:	Galen Hathcock
Phone #:	(219) 886-9151
Registration #:	089-19053-00490

I hereby certify that Indiana Sugars, Inc. is still in operation and is in compliance with the requirements of Registration 089-19053-00490.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Indiana Sugars, Inc.
Initial Location:	911 Virginia Street, Gary, Indiana 46401
County:	Lake
SIC Code:	2062
Registration No.:	089-19053-00490
Permit Reviewer:	ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Indiana Sugars, Inc. relating to the operation of a stationary sugar products and corn syrup blends manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units.

- (a) Two (2) natural gas-fired boilers (identified as B1 and B2), each with a maximum heat input capacity of 4.18 MMBtu per hour. These units were constructed in 1982.
- (b) Grinding mill and product collection equipment consisting of:
 - (1) One (1) sugar mill (identified as Unit 1), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter which serves as a product collector and is integral to the process. The fabric filter exhausts at stack 1.
 - (2) One (1) sugar mill (identified as Unit 2), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter which serves as a product collector and is integral to the process. The fabric filter exhausts at stack 2.
 - (3) One (1) bulk transport system (identified as Unit 1A) used in conjunction with the sugar mill (identified as Unit 1), constructed in 1982, with a maximum throughput rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter, which is integral to the process. The fabric filter exhausts at stack 1A.
 - (4) One (1) bulk transport system (identified as Unit 2A) used in conjunction with the sugar mill (identified as Unit 2), constructed in 1982, with a maximum throughput

rate of 7,500 pounds per hour of granulated sugar and corn starch, equipped with a fabric filter, which is integral to the process. The fabric filter exhausts at stack 2A.

- (5) Bagging operations (identified as Unit 5), constructed in 1992, with a maximum throughput capacity of 15,000 pounds per hour of powdered sugar, equipped with a dust collector, which is integral to control, and exhausting at stack 5.
- (6) One (1) truck unloading system (identified as Unit 6), constructed in 2002, with a maximum throughput capacity of 40,000 pounds per hour of granulated sugar, equipped with a fabric filter, which is integral to control, and exhausting at stack 6.

Existing Approvals

No previous approvals have been issued to the source.

Air Pollution Control Justification as an Integral Part of the Process

- (a) The company has submitted the following justification such that the 2 (two) fabric filters be considered as an integral part of the product collectors – sugar mills (identified as Unit 1 and 2):

The sugar mills grind the granulated sugar to the desired size, mix in small quantities of starch and blow the powdered sugar product to the fabric filters, where material is collected and placed in storage. Each fabric filter itself receives the full product flow. The fabric filters are used to separate the product from the air stream.

IDEM, OAQ has evaluated the justifications and agreed that the fabric filter will be considered as an integral part of the product collectors – sugar mills (identified as Unit 1 and 2). Therefore, the permitting level will be determined using the potential to emit after the two (2) fabric filters. Operating conditions in the proposed permit will specify that these fabric filters shall operate at all times when the product collectors – sugar mills (identified as Unit 1 and 2) are in operation.

- (b) The company has submitted the following justification such that the dust collectors be considered as an integral part of the product collector -bulk transport systems (identified as Unit 1A and 2A):

The purpose of the bulk transport systems is to move powdered sugar from product collectors (identified as Unit 1 and 2) to storage tanks prior to packaging. The powdered sugar is pneumatically transferred into the bulk transport system dust collectors to separate the powdered sugar from the air stream so that the material can be transferred to the storage bins. The only way the material gets into the storage bins is to be captured by the bags and dropped into the bins. Thus, the primary purpose of the of the dust collector is for material transport, and not pollution control.

IDEM, OAQ has evaluated the justifications and agreed that the dust collectors will be considered as an integral part of the product collectors – bulk transport systems (identified as Unit 1A and 2A). Therefore, the permitting level will be determined using the potential to emit after the dust collectors. Operating conditions in the proposed permit will specify that these fabric filters shall operate at all times when the product collectors – bulk transport systems (identified as Unit 1A and 2A) are in operation.

- (c) The company has submitted the following justification such that the fabric filter be considered as an integral part of the bagging operations (identified as Unit 5):

Powdered sugar collected by the fabric filter during bagging operations is routed back to sugar mill (identified as Unit 2). The value of the material is approximately \$0.30 per pound. The two powdered sugar systems have a combined capacity of 15,000 pounds per hour. The Permittee estimates that the quantity of material captured by the fabric filter used in conjunction with the bagging operation is one (1) percent of this throughput or equal to 150 pounds per hour. Therefore, the value of the material collected is equal to \$45.00 per hour or \$394,200 per year. Using the equations provided in the EPA Air Pollution Control Cost Manual – Sixth Edition (EPA/452/B-02-001), the cost of the fabric filter with an airflow rate of 21,000 cubic foot per minute (cfm) is approximately equal to \$10,000 to \$15,000. Based on these figures, the dollar amount saved from the collected material by this equipment is much more than the annual capital cost of the fabric filter.

IDEM, OAQ has evaluated the justifications and agreed that the the fabric filter will be considered as an integral part of the bagging operations (identified as Unit 5). Therefore, the permitting level will be determined using the potential to emit after the fabric filter. Operating conditions in the proposed permit will specify that the fabric filter shall operate at all times when the bagging operations (identified as Unit 6) is in operation.

- (d) The company has submitted the following justification such that the fabric filter be considered as an integral part of the truck unloading system (identified as Unit 6):

The material is directly transferred into storage bin instead of the fabric filter. However, due to the high flow rate through the truck unloading system, the fabric filter used in conjunction with this system is required to redirect the exhaust (consisting of granulated sugar and fine material) into the storage bin. The Permittee assumes that the storage bin retains at least 95 percent of the granulated sugar transferred, and the quantity of the captured by the filter is approximately equal to 2,000 pounds per hour. The value of the material is approximately \$0.30 per pound or \$600 per hour of operation. Using equations provided in the EPA Air Pollution Control Cost Manual – Sixth Edition (EPA/452/B-02-001), the cost of the fabric filter with a cloth area of 114 square feet is approximately \$10,000. Although the truck unloading system is not expected to operate continuously, the cost of the fabric filter would be recovered in 17 hours of operation. Based on these figures, the dollar amount saved from the collected material by this equipment is much more than the annual capital cost of the fabric filter.

IDEM, OAQ has evaluated the justifications and agreed that the fabric filter will be considered as an integral part of the truck unloading system (identified as Unit 6). Therefore, the permitting level will be determined using the potential to emit after the fabric filter. Operating conditions in the proposed permit will specify that the fabric filter shall operate at all times when the truck unloading system (identified as Unit 6) is in operation.

Enforcement Issue

IDEM is aware that the source did not apply for a Registration in a timely manner. IDEM is reviewing this matter and will take appropriate action.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
1	Product Collector (Unit 1)	30	0.833	4,500	140
2	Product Collector (Unit 2)	30	0.833	3,500	140

3	Product Collector (Unit 3)	15	0.33	380	140
4	Product Collector (Unit 4)	15	0.33	380	140
5	Product Collector (Unit 5)	15	0.50	2,112	Ambient
6	Product Collector (Unit 6)	35	0.50	1,000	Ambient

Recommendation

The staff recommends to the Commissioner that the operation 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.

An application for the purposes of this review was received on May 3, 2004, with additional information received on June 18, 2004.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 9).

Potential to Emit of the Source Before Controls

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, including 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	9.19
PM10	9.19
SO ₂	0.02
VOC	0.20
CO	3.08
NO _x	3.67

There are no HAP emissions generated from any of the operations at this source.

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants is less than 100 tons per year. However, the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM10 is greater than five (5) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (b) Fugitive Emissions
 Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM10	Attainment
SO ₂	Primary Nonattainment
NO ₂	Attainment
1-Hour Ozone	Severe Nonattainment
8-Hour Ozone	Moderate Nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone.
 - (1) On January 26, 1996 in 40 CFR 52.777(i), the U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NO_x threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Lake County has been designated as nonattainment in Indiana for the 1-hour ozone standard. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.
 - (2) VOC and NO_x emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for nonattainment new source review.
- (b) The part of Lake County in which this source is located has been classified as nonattainment in Indiana for SO₂. Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (c) Lake County has been classified as attainment or unclassifiable in Indiana for PM10, CO and Pb. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

Existing Source PSD , Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	9.19
PM10	9.19
SO ₂	0.02
VOC	0.20
CO	3.08
NO _x	3.67
Single HAP	0.00
Combination HAPs	0.00

- (a) This existing source is not a major stationary source because no attainment regulated 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.

- (b) These emissions are based on the potential to emit calculations for the source (See Appendix A).

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20 and 40 CFR Parts 61 and 63) applicable to this source.

State Rule Applicability – Entire Source

326 IAC 2-3 (Emission Offset)

This source is a minor source under 326 IAC 2-3, because the potential to emit of VOC and NOx is less than twenty-five (25) tons per year.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this sugar products and corn syrup blends manufacturing plant has potential to emit of HAP less than ten (10) tons per year of a single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

Indiana Sugars, Inc. was constructed in 1982 and is not in one (1) of the twenty-eight (28) categories. At the time the source was constructed, it was a minor source under PSD because the potential to emit of each criteria pollutant before controls was less than the PSD major source threshold of 250 tons per year. After each modification since its construction, the potential to emit of each criteria pollutants were calculated to be below the 250 tons per year PSD threshold. Therefore, the source is a minor source under PSD and is not subject to the requirements of 326 IAC 2-2.

326 IAC 2-6 (Emission Reporting)

This source is located in Lake County but is not required to operate under a Part 70 permit. Therefore, 326 IAC 2-6 does not apply.

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 Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) 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.

State Rule Applicability – Grinding and Product Collection Equipment

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the grinding mills and product collection equipment shall not exceed the pound per hour limit as shown in the table below:

Emission Unit	Maximum Throughput Rate		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the two (2) sugar Mills (Unit 1 and 2)	7,500	3.75	9.94
Each of the two bulk transport systems(Unit 1A and 2A)	7,500	3.75	9.94
Bagging operation (Unit 5)	15,000	7.50	15.8
Truck unloading system (Unit 6)	40,000	20	30.5

The pound per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The six (6) fabric filters shall be in operation at all times the grinding mills and product collection equipment are in operation, in order to comply with these limits.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

There are no potential emissions of VOC from the grinding mills and product collection equipment. Therefore, 326 IAC 8-1-6 does not apply.

State Rule Applicability - Two (2) Natural Gas Fired Boilers

326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-3(a), the particulate emissions from the two (2) 4.18 MMBtu per hour boilers, which were existing and in operation before September 21, 1983, shall not exceed the particulate emission rate calculated using the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

Where

- C = max ground level concentration (50 μ/m³)
- Pt = emission rate limit (lbs per MMBtu)
- Q = total source heat input capacity (MMBtu per hour)
- N = number of stacks = 2

a = plume rise factor = 0.67
h = stack height (ft) = 30 ft

The emission rate limit calculated using the equation above is:

$$Pt = \frac{50 \times 0.67 \times 30}{76.5 \times (8.36)^{0.75} \times (2)^{0.25}} = 2.25 \text{ lbs per MMBtu}$$

However, 326 IAC 6-2-3(e) states that boilers constructed after June 8, 1972 shall in no case exceed 0.6 pounds of particulate matter per MMBtu heat input. Since the 0.6 pounds particulate matter per MMBtu emission limit is less than the limit calculated using the equation, the 4.18 MMBtu per hour boilers shall each be limited to 0.6 pounds of particulate matter per MMBtu heat input.

Conclusion

The operation of this sugar products and corn syrup blends manufacturing plant shall be subject to the conditions of the Registration No.: 089-19053-00490.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Two (2) Boilers**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

Heat Input Capacity
(MMBtu/hour)

Potential Throughput
(MMCF/year)

8.37 (2 units only)

73.3

	Pollutant					
	* PM	* PM10	SO ₂	** NO _x	VOC	CO
Emission Factor (lb/MMCF)	7.6	7.6	0.6	100	5.5	84
Potential To Emit (tons/year)	0.28	0.28	0.02	3.67	0.20	3.08

*PM and PM10 emission factors are filterable and condensable PM and PM10 combined.

**Emission factor for NO_x (Uncontrolled) = 100 lb/MMCF.

METHODOLOGY

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

Potential Throughput (MMCF/year) = Heat Input Capacity (MMBtu/hour) * 8760 hours/year * 1 MMCF/1000 MMBtu

Potential To Emit (tons/year) = Potential Throughput (MMCF/year) * Emission Factor (lb/MMCF) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Two (2) Boilers**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

HAPs - Organics

Emission Factor (lb/MMCF)	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential To Emit (tons/year)	7.70E-05	4.40E-05	2.75E-03	6.60E-02	1.25E-04

HAPs - Metals

Emission Factor (lb/MMCF)	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential To Emit (tons/year)	1.83E-05	4.03E-05	5.13E-05	1.39E-05	7.70E-05

TOTAL HAPs (tons/year) = 6.92E-02

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors as provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Sugar Mill # 1 (identified as Unit 1)**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Fabric Filter				
Outlet grain loading (grains/acf) =	0.02	3.38	0.77	338
Air flow rate (acfm) =	4500			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control I

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Transport System (identified as Unit 1A) used with Sugar Mill # 1**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Fabric Filter				
Outlet grain loading (grains/acf) =	0.02	0.29	0.07	28.5
Air flow rate (acfm) =	380			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Grain Loading (gr/acf) * Air Flow Rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control Efficiency %)

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Sugar Mill # 2 (identified as Unit 2)**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Fabric Filter				
Outlet grain loading (grains/acf) =	0.02	2.63	0.60	263
Air flow rate (acfm) =	3500			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control I

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Transport System (identified as Unit 2A) used with Sugar Mill # 2**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Fabric Filter				
Outlet grain loading (grains/acf) =	0.02	0.29	0.07	28.5
Air flow rate (acfm) =	380			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control Efficiency)

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Sugar-Product Bagging (identified as Unit 5)**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Dust Collector				
Outlet grain loading (grains/acf) =	0.02	1.59	0.36	159
Air flow rate (acfm) =	2112			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control I

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Bulk Receiving Area (identified as Unit 6)**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT OF PM/PM10

		After Control		Before Control
		(ton/year)	(lbs/hour)	(ton/year)
* Equipment = Fabric Filter				
Outlet grain loading (grains/acf) =	0.02	0.75	0.17	75
Air flow rate (acfm) =	1000			
Control Efficiency (%) =	99%			

Assume all PM emissions are equal to PM10.

* Fabric filter is considered integral to the process

METHODOLOGY

PTE After Control:

PTE PM/PM10 (lbs/hour) = Grain Loading (gr/acf) * Air Flow Rate (acf/min) * 60 min/hour * 1 lb/7000grains

PTE PM/PM10 (ton/year) = Grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs

PTE Before Control:

PTE PM/PM10 (ton/year) = Grain loading (gr/acf) * Air flow rate (acf/min) * 60 minute/hour * 1lb/7000 grains * 8760 hours/year * 1ton/2000 lbs * 1/(1-Control Efficiency %)

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: Indiana Sugars, Inc.
Address: 911 Virginia Street, Gary, Indiana 46401
Permit: 089-19053
Plt ID: 089-00490
Reviewer: ERG/SD
Date: May 13th, 2004

POTENTIAL TO EMIT IN TONS PER YEAR

Emission Unit	PM	PM10	SO₂	NO_x	VOC	CO	HAPs
Two NG Fired Boilers	0.28	0.28	0.02	3.67	0.20	3.08	6.92E-02
Sugar Mill # 1	3.38	3.38					
Transport System Unit 1A	0.29	0.29					
Sugar Mill # 2	2.63	2.63					
Transport System Unit 2A	0.29	0.29					
Bagging Area Unit 5	1.59	1.59					
Bulk Receiving Area Unit 6	0.75	0.75					
	9.19	9.19	0.02	3.67	0.20	3.08	0.07