



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

September 2, 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: Brooks Construction Co., Inc. / SPR 003-19122-03112

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 according to IC 13-15-6-3, 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 and IC 13-15-6-1 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, **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
FNPER.dot 9/16/03



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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Mr. Timothy Sievers
Brooks Construction Company, Inc.
P.O. Box 9560
Fort Wayne, Indiana 46899

September 2, 2004

Re: 003-19122-03112
First Significant Revision to
FESOP 003-14035-03112

Dear Mr. Sievers:

Brooks Construction Company, Inc. was issued a permit on February 8, 2002 for a hot mix asphalt plant. A letter requesting changes to this permit was received on May 8, 2004. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The modification consists of adding No. 4 No. 5, No. 6 and waste-reclaimed oils as back up fuels to the existing 96.8 MMBtu per hour aggregate drum-mix dryer burner.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Alic Bent, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call at (973) 575-2555, ext. 3206 or dial (800) 451-6027, and ask for extension 3-6878.

Sincerely,

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

Attachments

AB/EVP

cc: File – Allen County
U.S. EPA, Region V
Air Compliance Section Inspector – Jennifer Dorn
Compliance Data Section
Administrative and Development
Technical Support and Modeling - Michelle Boner



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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

**Brooks Construction Company, Inc.
3930 Hardrock Road
Fort Wayne, Indiana 46809**

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

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 2-8 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.: F003-14035-03112	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: February 8, 2002 Expiration Date: February 8, 2007

First Significant Permit Revision 003-19122-03112	Pages Revised: 1, 5, 28 - 31, 34 and 42
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: September 2, 2004

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 A.1 through A.3 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 2-8-3(b)]

The Permittee owns and operates a stationary hot mix asphalt plant.

Authorized Individual:	Timothy L. Sievers, Plant Operations Superintendent
Source Address:	3930 Hardrock Road, Fort Wayne, Indiana 46809
Mailing Address:	P.O. Box 9560, Fort Wayne, Indiana 46899
SIC Code:	2951
County Location:	Allen
Source Location Status:	Nonattainment for ozone under the 8-hour standard Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) The drum-mix portion of this source, consisting of the following:
- (1) one (1) aggregate drum-mix dryer (ID #2), installed in 1992, with a maximum capacity of 400 tons per hour, equipped with one (1) natural gas fired, or landfill gas (LFG)/natural gas co-fired, aggregate dryer burner (ID #3), with a maximum rated capacity of 96.8 million British thermal units (MMBtu) per hour, using No. 2, No. 4, No. 5, No. 6 and waste-reclaimed oils as back-up fuels, with one (1) inertial knockout box and one (1) baghouse in series for particulate matter control, exhausting at one (1) stack identified as SV1-D;

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This modification to this stationary source does not have any insignificant activities, as defined in 326 IAC 2-7-1(21):

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

- (a) The drum-mix portion of this source, consisting of the following:
- (1) one (1) aggregate drum-mix dryer (ID #2), installed in 1992, with a maximum capacity of 400 tons per hour, equipped with one (1) natural gas fired, or landfill gas (LFG)/natural gas co-fired, aggregate dryer burner (ID #3), with a maximum rated capacity of 96.8 million British thermal units (MMBtu) per hour, using No. 2, No. 4, No. 5, No. 6 and waste-reclaimed oils as back-up fuels, with one (1) inertial knockout box and one (1) baghouse in series for particulate matter control, exhausting at one (1) stack identified as SV1-D;
 - (2) one (1) drag slat hot mix conveyor; three (3) feed conveyors; and one (1) screen; and
 - (3) cold-mix (emulsified) asphalt storage piles.
- (b) The batch-mix portion of this source, consisting of the following:
- (1) one (1) aggregate rotary dryer (ID #4), installed in 1989, with a maximum capacity of 220 tons per hour, equipped with one (1) natural gas fired aggregate dryer burner (ID #5), with a maximum rated capacity of 84.0 million British thermal units (MMBtu) per hour, using No. 2 oil as back-up fuel, with one (1) cyclone and one (1) baghouse in series for particulate matter control, exhausting at one (1) stack identified as SV1-B; and
 - (2) Asphalt batch tower, consisting of the following:
 - (A) one (1) hot elevator;
 - (B) one (1) screen;
 - (C) four (4) hot bins, each with a maximum holding capacity of 40 tons;
 - (D) one (1) aggregate hopper, with a maximum holding capacity of 6,000 pounds (lb);
 - (E) one (1) asphalt hopper, with a maximum holding capacity of 600 lb;
 - (F) one (1) pugmill, with a maximum holding capacity of 6,000 lb; and
 - (G) one (1) skip hoist with a maximum holding capacity of 6,000 lb.
- (c) General material conveying and handling operations, including:
- (1) cold feed system consisting of eight (8) bins with a total maximum holding capacity of 200 tons;
 - (2) storage silos consisting of five (5) bins with a total maximum storage capacity of 900 tons;
 - (3) one (1) recycled asphalt pavement (RAP) feed bin with a maximum holding capacity of 30 tons;
 - (4) one (1) RAP storage pile with a maximum storage capacity of 18,750 tons; and
 - (5) aggregate storage piles, with a total maximum storage capacity of 101,500 tons.

(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 2-8-4(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 facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart I.

D.1.2 Particulate Matter (PM) [326 IAC 12][40 CFR 60.90 to 60.93]

Pursuant to the New Source Performance Standards, 326 IAC 12 (40 CFR 60.90 to 60.93, Subpart I):

- (a) particulate matter emissions from the drum-mix and batch-mix asphalt plants shall not exceed 0.04 grains per dry standard cubic foot (gr/dscf), and
- (b) the visible emissions from each plant shall not exceed 20 percent opacity.

This particulate matter emission limitation is equivalent to 20.8 pounds per hour (lb/hr) based on an exhaust rate of 92,000 actual cubic feet per minute (acfm) and an exhaust temperature of 300 degrees Fahrenheit (EF) for the drum-mix plant, and 12.2 lb/hr based on an exhaust rate of 54,000 acfm and an exhaust temperature of 250EF for the batch-mix plant.

D.1.3 Particulate Matter (PM) and PM-10 [326 IAC 2-2][40 CFR 52.21][326 IAC 2-8-4]

The source shall comply as follows:

- (a) PM emissions from batch-mix and drum-mix aggregate mixing and drying shall be limited to 0.030 pounds of PM emitted per ton of asphalt produced, equivalent to less than 6.51 pounds per hour from the batch-mix aggregate dryer and less than 11.84 pounds per hour from the drum-mix aggregate dryer.
- (b) PM-10 emissions from batch-mix and drum-mix aggregate mixing and drying shall be limited to 0.023 pounds of PM10 emitted per ton of asphalt produced, equivalent to less than 5.15 pounds per hour from the batch-mix aggregate dryer and less than 9.36 pounds per hour from the drum-mix aggregate dryer. PM-10 includes filterable and condensable PM-10.

These limits are required to limit the source-wide potential to emit of PM and PM-10 to less than 250 and 100 tons per twelve (12) consecutive month period, respectively. Compliance with this condition makes the requirements of 326 IAC 2-2 and 40 CFR 52.21 (Prevention of Significant Deterioration, PSD), and 326 IAC 2-7 (Part 70) not applicable.

D.1.4 Fuel Usage Limitation [326 IAC 2-8-4] [326 IAC 2-2]

The source shall limit the consumption of fuel as follows:

- (a) The total input of No. 2 fuel oil and No. 2 fuel oil equivalents to the two (2) aggregate dryer burners (ID#3 and ID#5) combined shall be limited to less than 2,681,943 U.S. gallons per twelve (12) consecutive month period. These usage limits are required to limit the potential to emit nitrogen oxides (NO_x) and sulfur dioxide (SO₂) from the source to less than 100 tons per 12 consecutive month period, based on a maximum fuel oil sulfur content of 0.5% by weight.
- (b) For purposes of determining compliance with paragraph (a) of this condition, the following shall apply:
 - (1) each one (1) million cubic feet (MMcf) of natural gas burned shall be equivalent to 8.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.

- (2) each one (1) million cubic feet (MMcf) of landfill gas burned shall be equivalent to 88.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (3) every 1,000 gallon of No. 4 fuel oil burned shall be equivalent to 1,500 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (4) every 1,000 gallon of No. 5 fuel oil burned shall be equivalent to 1,951 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (5) every 1,000 gallon of No. 6 fuel oil burned shall be equivalent to 3,005 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (6) every 1,000 gallon of waste-reclaimed fuel oil burned shall be equivalent to 1,470 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.

Compliance with this condition makes the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the source.

D.1.5 Sulfur Dioxide (SO₂) [326 IAC 7-1.1] [326 IAC 7-2-1]

Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the 96.8 MMBtu per hour burner for the drum-mix dryer and the 84.0 MMBtu per hour burner for the batch-mix dryer each shall be limited to 0.5 pounds per MMBtu heat input when firing No. 2 fuel oil, and the 96.8 MMBtu per hour burner for the drum-mix dryer shall be limited 1.6 pounds per MMBtu heat input when firing No. 4, No. 5, No. 6 fuel oils and waste-reclaimed fuel oil. This is equivalent to the following maximum allowable sulfur contents of the following fuels: No. 2 distillate oil (0.5%), No. 4 residual oil (1.6%), No. 5 residual oil (1.6%), No. 6 residual oil (1.6%) and waste-reclaimed oil (1.5%). Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and control devices.

Compliance Determination Requirements

D.1.7 Particulate Matter (PM) and PM-10

In order to comply with Conditions D.1.2 and D.1.3, the baghouses for PM and PM-10 control shall be in operation at all times when the respective drum-mix dryer and burner and the batch-mix dryer and burner are in operation.

D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

During the period between 30 to 36 months after issuance of this permit, the Permittee shall perform the following to demonstrate compliance with Conditions D.1.2 and D.1.3 for both the drum-mix and batch-mix aggregate dryers:

- (a) PM and PM-10 testing utilizing methods per 40 CFR Part 60 Appendix A, Method 5 for PM and methods as approved by the Commissioner for PM-10. PM-10 includes filterable and condensable PM-10.

- (b) Opacity testing utilizing 40 CFR Part 60 Appendix A, Method 9, to demonstrate compliance with the opacity limitation of Condition D.1.2.

This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.

D.1.9 Sulfur Dioxide Emissions and Sulfur Content

Compliance with Condition D.1.5 shall be determined utilizing one of the following options:

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pound per million Btu heat input when firing No. 2 fuel oil and 1.6 pound per million Btu heat input when firing No. 4, No. 5, No. 6 and waste-reclaimed oils by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification;
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.1.10 Visible Emissions Notations

- (a) Visible emissions notations of the drum-mix and batch-mix aggregate dryer/burner baghouse stack exhausts, and the conveyors and transfer points, shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee will 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.

- (d) To document compliance with Condition D.1.12, the Permittee shall maintain records of the results of the inspections required under Condition D.1.12 and the dates the vents are redirected.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.15 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.4 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 "authorized individual" as defined by 326 IAC 2-1.1-1(1).

D.1.16 Used Oil Requirements [329 IAC 13]

The waste-reclaimed oil burned in the aggregate drum-mix dryer shall comply with the used oil requirements specified in 329 IAC 13 (Used Oil Management). Pursuant to 329 IAC 13-3-2 (Used Oil Specifications), used oil burned for energy recovery that is classified as off-specification used oil fuel shall comply with the provisions of 329 IAC 13-8 (Used Oil Burners Who Burn Off-specification Used Oil For Energy Recovery), including:

- (a) Receipt of an EPA identification number as outlined in 329 IAC 13-8-3 (Notification),
- (b) Compliance with the used oil storage requirements specified in 329 IAC 13-8-5 (Used Oil Storage), and
- (c) Maintaining records pursuant to 329 IAC 13-8-6 (Tracking).

The burning of mixtures of used oil and hazardous waste that is regulated under 329 IAC 3.1 is prohibited at this source.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Brooks Construction Company, Inc.
 Source Address: 3930 Hardrock Road, Fort Wayne, Indiana 46809
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: F003-14035-03112
 Facility: 96.8 MMBtu/hr drum-mix dryer burner & 84.0 MMBtu/hr batch-mix dryer burner
 Parameter: No. 2 fuel oil usage and equivalent (as surrogate for SO₂ and NO_x)
 Limit: (a) Total input of No. 2 fuel oil and No. 2 fuel oil equivalents to the two (2) aggregate dryer burners shall be limited to less than 2,681,943 U.S. gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
 (b) For purposes of determining compliance with paragraph (a) of this condition, the following shall apply:
 (1) each one (1) million cubic feet (MMcf) of natural gas burned shall be equivalent to 8.6 gallons of No. 2 oil.
 (2) each one (1) million cubic feet (MMcf) of landfill gas burned shall be equivalent to 88.6 gallons of No. 2 oil.
 (3) every 1,000 gallons of No. 4 oil burned shall be equivalent to 1,500 gallons of No. 2 oil.
 (4) every 1,000 gallons of No. 5 oil burned shall be equivalent to 1,951 gallons of No. 2 oil.
 (5) every 1,000 gallons of No. 6 oil burned shall be equivalent to 3,005 gallons of No. 2 oil.
 (6) every 1,000 gallons of Waste-Reclaimed oil burned shall be equivalent to 1,470 gallons of No. 2 oil.

YEAR: _____

Month	No. 2 Fuel Oil and Equivalent Usage This Month (gallons)		No. 2 Fuel Oil and Equivalent Usage Previous 11 Months (gallons)		12 Month Total No. 2 Fuel Oil and Equivalent Usage (gallons)
	No.2 Oil	Equiv.	No.2 Oil	Equiv.	
Month 1					
Month 2					
Month 3					

- 9 No deviation occurred in this quarter.
- 9 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**

**Technical Support Document (TSD) for a Significant Permit Revision to a Federally
Enforceable State Operating Permit**

Source Background and Description

Source Name:	Brooks Construction Company, Inc.
Source Location:	3930 Hardrock Road, Fort Wayne, IN 46809
County:	Allen
SIC Code:	2951
Operation Permit No.:	F003-14035-03112
Operation Permit Issuance Date:	February 8, 2002
Permit Revision No.:	SPR003-19122-03112
Permit Reviewer:	Alic Bent / EVP

The Office of Air Quality (OAQ) has reviewed a revision application from Brooks Construction Company, Inc. relating to the addition of alternate fuels to the existing 96.8 MMBtu per hour aggregate drum-mix dryer.

History

On May 8, 2004, Brooks Construction Company, Inc. submitted an application to the OAQ requesting to add Nos. 4, 5 and 6 fuel oils and Waste-Reclaimed Oil as alternate fuels to the already permitted natural gas, landfill gas and No. 2 fuel oil that are used to fuel the 96.8 MMBtu per hour aggregate drum-mix dryer. Brooks Construction Company, Inc. was issued a FESOP on February 8, 2002.

Existing Approvals

The source was issued a FESOP F003-14035-03112 on February 8, 2002.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Significant Permit Revision 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.

A complete application for the purposes of this review was received on May 8, 2004.

Emission Calculations

See Appendix A (pages 1 through 17) of this document for detailed emission calculations.

Potential to Emit of the Revision 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/yr)
PM	91.41
PM-10	72.84
SO ₂	637.13
VOC	2.86
CO	15.14
NO _x	166.57

HAPs	Potential to Emit (tons/yr)
Formaldehyde	0.101
Nickel	0.258
Others	Negl.
Total	0.359

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM, PM-10, SO₂ and NO_x from this modification are equal to or greater than 25 tons per year. Therefore, the FESOP is being revised through a Significant Permit Revision pursuant to 326 IAC 2-8-11.1.

The source has agreed to limit SO₂ and NO_x emissions to less than 100 tons per year. Therefore, the source will remain in compliance with 326 IAC 2-8.

Limited Potential to Emit of Entire Source

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units. Emission limits have been revised as follows:

Process/emission unit	Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Aggregate Dryers and Burners ⁽¹⁾	< 80.4 ⁽²⁾	< 63.5 ⁽²⁾	< 93.9	23.1	67.55	94.43	8.4 (single HAP)
Conveying and Handling	7.1	3.4	--	--	--	--	--
Unpaved Roads	161.3 ⁽³⁾	32.80 ⁽³⁾	--	--	--	--	--
Storage Piles	0.6	0.2	--	--	--	--	--
Cold Mix Storage	--	--	--	< 76.8 ⁽⁴⁾	--	--	--
Hot Oil Heaters (as insignificant activities)	0.2	0.1	6.1	0.1	1.0	1.8	Negligible
Total PTE	< 250	< 100	< 100	< 100	67.6	96.23	22.8 (total HAPs)

Notes:

- (1) Includes fuel usage limit of Condition D.1.4 for burner operations.
- (2) Based on Condition D.1.3.
- (3) Potential to emit after controls
- (4) Based on Condition D.3.1

County Attainment Status

The source is located in Allen County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Basic Non-Attainment
CO	Attainment
Lead	Unclassifiable

- (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. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph 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) Allen County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

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 other National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) applicable to this source.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-1.1-5 (Non-attainment NSR)

This modification is not subject to the requirements of this rule. The existing source was an existing minor PSD and non-attainment NSR source. As shown in the Potential to Emit of the Source including the Revision table on page 3 above, the allowable emissions of all regulated pollutants, except PM, are less than 100 tons per year after application of all federally enforceable emission limits. The allowable emissions of PM are less than 250 tons per year after application of all federally enforceable emission limits and This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2. Therefore the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-1.1-5 (Non-attainment NSR) do not apply.

326 IAC 2-6 (Emission Reporting)

Since this source is complying with 326 IAC 2-8 (FESOP) and is not required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program and PM emissions are limited to less than 250 tons per year, this source is not subject to 326 IAC 2-6 (Emission Reporting).

326 IAC 2-4.1-1 (New Source Toxics Control)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control) because no new or reconstructed facilities with a PTE of any single HAP at 10 tons per year or 25 tons per year of a combination of HAPs have been installed since July 27, 1997. Therefore, 326 IAC 2-4.1-1 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 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 2-8-4 (FESOP)

This source is subject to 326 IAC 2-8-4 (FESOP). Pursuant to this rule:

- (a) The input of No. 2 distillate fuel oil and No. 2 distillate fuel oil equivalents to the two (2) aggregate dryer burners (ID#3 and ID#5) combined shall be limited to less than 2,681,943 U.S. gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These input limits are required to limit the potential to emit sulfur dioxide (SO₂) from the source to less than 100 tons per 12 consecutive month period, based on a maximum fuel oil sulfur content of 0.5% by weight. Therefore, the requirements of 326 IAC 2-7 do not apply.

- (b) For purposes of determining compliance with paragraph (a) of this condition, the following shall apply:
- (1) each one (1) million cubic feet (MMcf) of natural gas burned shall be equivalent to 8.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
 - (2) each one (1) million cubic feet (MMcf) of landfill gas burned shall be equivalent to 88.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
 - (3) every 1,000 gallon of No. 4 fuel oil burned shall be equivalent to 1,500 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
 - (4) every 1,000 gallon of No. 5 fuel oil burned shall be equivalent to 1,951 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
 - (5) every 1,000 gallon of No. 6 fuel oil burned shall be equivalent to 3,005 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
 - (6) every 1,000 gallon of waste-reclaimed fuel oil burned shall be equivalent to 1,470 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.

Therefore, the requirements of 326 IAC 2-7 will not apply. This limit will also render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

State Rule Applicability – Individual Facilities

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The aggregate drum-mix dryer using No. 2 distillate fuel oil, No. 4 residual fuel oil, No. 5 residual fuel oil, No. 6 residual fuel oil and waste-reclaimed oil as back-up fuels are subject to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations). Pursuant to 326 IAC 7-1.1-2, sulfur dioxide emissions from the aggregate drum-mix dryer shall be limited to 0.5 pounds per million (MM)BTU heat input for distillate oil combustion, and shall be limited to 1.6 pounds per million BTU heat input for residual oil combustion. This is equivalent to the following maximum allowable sulfur contents of the following fuels: No. 2 distillate fuel oil (0.5%), No. 4 residual oil (1.6%), No. 5 residual fuel oil (1.6%), No. 6 residual fuel oil (1.6%), and waste-reclaimed oil (1.5%), (see Appendix A: Emission Calculations, page 13 of 17). All fuels used by the drum-mix dryer are in compliance with the aforementioned sulfur content limits, therefore the drum-mix dryer is in compliance with this rule.

326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)

Pursuant to this rule, the source shall submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate (pounds SO₂ per MMBtu), to the OAQ upon request.

Compliance Requirements

Permits issued under 326 IAC 2-8 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 occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. 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 in 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 violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no new compliance monitoring requirements applicable to the source as a result of this significant permit revision.

Changes to the Permit

Bolded language has been added and the language with a line through it has been deleted:

1. On April 15, 2004, the United States Environmental Protection Agency (U.S. EPA) named 23 Indiana counties and one partial county nonattainment for the new 8-hour ozone standard. The designations became effective on June 15, 2004. Allen County has been designated as nonattainment for the 8-hour ozone standard. The following has been added to A.1 General Information:

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a hot mix asphalt plant.

Authorized Individual: Timothy L. Sievers, Plant Operations Superintendent
Source Address: 3930 Hardrock Road, Fort Wayne, Indiana 46809
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
SIC Code: 2951
County Location: Allen
County Status: **Nonattainment for ozone under the 8-hour standard**
Attainment for all **other** criteria pollutants

2. Section A.2 has been updated to include the new back up fuels for the aggregate drum dryer.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) The drum-mix portion of this source, consisting of the following:
- (1) one (1) aggregate drum-mix dryer (ID #2), installed in 1992, with a maximum capacity of 400 tons per hour, equipped with one (1) natural gas fired, or landfill gas (LFG)/natural gas co-fired, aggregate dryer burner (ID #3), with a maximum rated capacity of 96.8 million British thermal units (MMBtu) per hour, using No. 2, **No. 4, No. 5, No. 6 and waste-reclaimed oils** as back-up fuels, with one (1) inertial knockout box and one (1) baghouse in series for particulate matter control, exhausting at one (1) stack identified as SV1-D;

3. Section D.1 has been revised to include the alternate fuels and associated requirements.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

- (a) The drum-mix portion of this source, consisting of the following:
- (1) one (1) aggregate drum-mix dryer (ID #2), installed in 1992, with a maximum capacity of 400 tons per hour, equipped with one (1) natural gas fired, or landfill gas (LFG)/natural gas co-fired, aggregate dryer burner (ID #3), with a maximum rated capacity of 96.8 million British thermal units (MMBtu) per hour, using No. 2, **No. 4, No. 5, No. 6 and waste-reclaimed oils** as back-up fuels, with one (1) inertial knockout box and one (1) baghouse in series for particulate matter control, exhausting at one (1) stack identified as SV1-D;

(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 2-8-4(1)]

D.1.4 Fuel Usage Limitation [326 IAC 2-8-4] [326 IAC 2-2]

The source shall limit the consumption of fuel as follows:

- (a) The total input of No. 2 fuel oil and No. 2 fuel oil equivalents to the two (2) aggregate dryer burners (ID#3 and ID#5) combined shall be limited to less than 2,681,943 U.S. gallons per twelve (12) consecutive month period **with compliance determined at the end of each month**. These usage limits are required to limit the potential to emit nitrogen oxides (NO_x) and sulfur dioxide (SO₂) from the source to less than 100 tons per 12 consecutive month period, based on a maximum fuel oil sulfur content of 0.5% by weight.
- (b) For purposes of determining compliance with paragraph (a) of this condition, the following shall apply:
- (1) each one (1) million cubic feet (MMcf) of natural gas burned shall be equivalent to 8.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.

- (2) each one (1) million cubic feet (MMcf) of landfill gas burned shall be equivalent to 88.6 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (3) every 1,000 gallon of No. 4 fuel oil burned shall be equivalent to 1,500 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (4) every 1,000 gallon of No. 5 fuel oil burned shall be equivalent to 1,951 gallons of No. 2 oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (5) every 1,000 gallon of No. 6 fuel oil burned shall be equivalent to 3,005 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.
- (6) every 1,000 gallon of waste-reclaimed fuel oil burned shall be equivalent to 1,470 gallons of No. 2 fuel oil, based on SO₂ emissions, such that the total gallons of No. 2 distillate fuel oil and No. 2 oil equivalent input does not exceed the limit specified.

Compliance with this condition makes the requirements of 326 IAC 2-7 and **326 IAC 2-2 (Prevention of Significant Deterioration (PSD))** not applicable to the source.

D.1.5 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the 96.8 MMBtu per hour burner for the drum-mix dryer and the 84.0 MMBtu per hour burner for the batch-mix dryer each shall be limited to 0.5 pounds per MMBtu heat input **when burning No. 2 fuel oil, and the 96.8 MMBtu per hour burner for the drum-mix dryer shall be limited to 1.6 pounds per million BTU heat input when firing No. 4, No. 5, No. 6 fuel and waste-reclaimed oils.** This is equivalent to a ~~maximum fuel oil sulfur content of five one hundredths percent (0.5%)~~ **the following maximum allowable sulfur contents of the following fuels: No. 2 distillate fuel oil (0.5%), No. 4 residual oil (1.6%), No. 5 residual fuel oil (1.6%), No. 6 residual fuel oil (1.6%), and waste-reclaimed oil (1.5%)** while ~~combusting No. 2 fuel oil in each burner.~~ Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

Compliance Determination Requirements

D.1.9 Sulfur Dioxide Emissions and Sulfur Content

Compliance with Condition D.1.5 shall be determined utilizing one of the following options:

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pound per million Btu heat input **when firing No. 2 fuel oil, and 1.6 pounds per million BTU heat input when firing No. 4, No. 5, No. 6 and waste-reclaimed oil** by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification;
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

- (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to any of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

4. The following condition has been added to the permit that defines the specifications for waste oil to be considered a fuel rather than a disposable waste.

D.1.16 Used Oil Requirements [326 IAC 13]

The waste-reclaimed oil burned in the aggregate drum-mix dryer shall comply with the used oil requirements specified in 329 IAC 13 (Used Oil Management). Pursuant to 329 IAC 13-3-2 (Used Oil Specifications), used oil burned for energy recovery that is classified as off-specification used oil fuel shall comply with the provisions of 329 IAC 13-8 (Used Oil Burners Who Burn Off-specification Used Oil For Energy Recovery), including:

- (a) **Receipt of an EPA identification number as outlined in 329 IAC 13-8-3 (Notification),**
- (b) **Compliance with the used oil storage requirements specified in 329 IAC 13-8-5 (Used Oil Storage), and**
- (c) **Maintaining records pursuant to 329 IAC 13-8-6 (Tracking).**

The burning of mixtures of used oil and hazardous waste that is regulated under 329 IAC 3.1 is prohibited at this source.

5. The alternate fuel equivalents have been added the reporting form for the annual No. 2 fuel oil usage limit.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Brooks Construction Company, Inc.
Source Address: 3930 Hardrock Road, Fort Wayne, Indiana 46809
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: F003-14035-03112
Facility: 96.8 MMBtu/hr drum-mix dryer burner & 84.0 MMBtu/hr batch-mix dryer burner
Parameter: No. 2 fuel oil usage and equivalent (as surrogate for SO₂ and NO_x)
Limit: (a) Total input of No. 2 fuel oil and No. 2 fuel oil equivalents to the two (2) aggregate dryer burners shall be limited to less than 2,681,943 U.S. gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
 (b) For purposes of determining compliance with paragraph (a) of this condition, the following shall apply:
 (1) each one (1) million cubic feet (MMcf) of natural gas burned shall be equivalent to 8.6 gallons of No. 2 oil.
 (2) each one (1) million cubic feet (MMcf) of landfill gas burned shall be equivalent to 88.6 gallons of No. 2 oil.
(3) every 1,000 gallon of No. 4 fuel oil burned shall be equivalent to 1,500 gallons of No. 2 fuel oil.
(4) every 1,000 gallon of No. 5 fuel oil burned shall be equivalent to 1,951 gallons of No. 2 oil.
(5) every 1,000 gallon of No. 6 fuel oil burned shall be equivalent to 3,005 gallons of No. 2 oil.
(6) every 1,000 gallon of waste-reclaimed fuel oil burned shall be equivalent to 1,470 gallons of No. 2 oil.

YEAR:

Month	No. 2 Fuel Oil and Equivalent Usage This Month (gallons)		No. 2 Fuel Oil and Equivalent Usage Previous 11 Months (gallons)		12 Month Total No. 2 Fuel Oil and Equivalent Usage (gallons)
	No.2 Oil	Equiv.	No.2 Oil	Equiv.	
Month 1					
Month 2					
Month 3					

Conclusion

The modification to the aggregate drum-mix dryer burner shall be subject to the conditions of the attached proposed Significant Permit Revision for a Federally Enforceable State Operating Permit No.: 003-19122-03112.

Company Name:	Brooks Construction Company, Inc.
Plant Location:	3930 Hardrock Rd., Fort Wayne, IN 46809
County:	Allen
Date:	26-May-04
Permit Reviewer:	Alic Bent/EVP

**** general facility information ****

This source has the capability to operate a 400 ton/hr drum mix dryer with a dryer burner rated at 96.8 MMBtu/hr and a 220 ton/hr batch dryer with a dryer burner rated at 84.0 MMBtu/hr.

**** hot oil heaters****

The following calculations determine the amount of emissions created by combustion of natural gas from hot oil heater, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.4 - Natural Gas Combustion, Tables 1.4-1, and 1.4-2.

Criteria Pollutant:	$\frac{1.4 \text{ MMBtu/hr}}{1000 \text{ MMBtu/MMcf}} \times 8,760 \text{ hr/yr} \times \frac{\text{Ef (lb/MMcf)}}{2,000 \text{ lb/ton}}$	= (ton/yr)
P M:	7.6 lb/MMcf =	0.05 ton/yr
P M-10:	7.6 lb/MMcf =	0.05 ton/yr
S O 2:	0.6 lb/MMcf =	0.00 ton/yr
N O x:	100.0 lb/MMcf =	0.61 ton/yr
V O C:	5.5 lb/MMcf =	0.03 ton/yr
C O:	84.0 lb/MMcf =	0.52 ton/yr

The following calculations determine the amount of emissions created by combustion of No. 2 oil with 0.5 % sulfur from hot oil heater, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	$\frac{1.4 \text{ MMBtu/hr}}{140 \text{ MMBtu/1,000 gal}} \times 8,760 \text{ hr/yr} \times \frac{\text{Ef (lb/1,000 gal)}}{2,000 \text{ lb/ton}}$	= (ton/yr)
P M:	2.0 lb/1,000 gal =	0.09 ton/yr
P M-10:	1.1 lb/1,000 gal =	0.05 ton/yr
S O 2:	70.0 lb/1,000 gal =	3.07 ton/yr
N O x:	20.0 lb/1,000 gal =	0.88 ton/yr
V O C:	0.34 lb/1,000 gal =	0.01 ton/yr
C O:	5.0 lb/1,000 gal =	0.22 ton/yr

Total maximum potential emissions from the hot oil heaters due to fuel combustion are the following:
The source has two (2) 1.4-mmBtu/hr heaters, so the above emission rates have been doubled:

Criteria Pollutant:	Worst Case Fuel
P M:	0.18 ton/yr #2 Fuel Oil
P M-10:	0.09 ton/yr #2 Fuel Oil
S O 2:	6.13 ton/yr #2 Fuel Oil
N O x:	1.75 ton/yr #2 Fuel Oil
V O C:	0.07 ton/yr Natural Gas
C O:	1.03 ton/yr Natural Gas

**** drum-mix aggregate dryer burner****

The following calculations determine the amount of emissions created by natural gas combustion, from the aggregate dryer burner, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.4 - Natural Gas Combustion, Tables 1.4-1, and 1.4-2.

Criteria Pollutant:	<u>96.8 MMBtu/hr * 8,760 hr/yr</u>	* Ef (lb/MMcf) = (ton/yr)
	1000 MMBtu/MMcf * 2,000 lb/ton	
P M:	7.6 lb/MMcf =	3.22 ton/yr
P M-10:	7.6 lb/MMcf =	3.22 ton/yr
S O 2:	0.6 lb/MMcf =	0.25 ton/yr
N O x:	100.0 lb/MMcf =	42.40 ton/yr
V O C:	5.5 lb/MMcf =	2.33 ton/yr
C O:	84.0 lb/MMcf =	35.61 ton/yr

The following calculations determine the amount of emissions created by landfill gas combustion, from the aggregate dryer burner, based on 8,760 hours of operation and information supplied by EMCON (Andover, MA).

Criteria Pollutant:	<u>96.8 MMBtu/hr * 8,760 hr/yr</u>	* Ef (lb/MMcf) = (ton/yr)
	504.5 MMBtu/MMcf * 2,000 lb/ton	
P M:	46.2 lb/MMcf =	38.83 ton/yr (35.27 ton/yr) *
P M-10:	46.2 lb/MMcf =	38.83 ton/yr (35.27 ton/yr) *
S O 2:	6.2 lb/MMcf =	5.21 ton/yr (4.71 ton/yr) *
N O x:	70.6 lb/MMcf =	59.33 ton/yr (57.64 ton/yr) *
V O C:	0.8 lb/MMcf =	0.67 ton/yr (0.84 ton/yr) *
C O:	17.7 lb/MMcf =	14.88 ton/yr (16.95 ton/yr) *

* The first value reflects total landfill gas combustion; however, this fuel, when used, must be co-fired with natural gas. The maximum landfill/natural gas ratio is 90% landfill gas/10% natural gas, which is reflected in parentheses.

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil @ 0.5 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	<u>96.8 MMBtu/hr * 8,760 hr/yr</u>	* Ef (lb/1,000 gal) = (ton/yr)
	140,000 Btu/gal * 2,000 lb/ton	
P M:	2.0 lb/1000 gal =	6.06 ton/yr
P M-10:	1.1 lb/1000 gal =	3.27 ton/yr
S O 2:	70.0 lb/1000 gal =	211.99 ton/yr
N O x:	20.0 lb/1000 gal =	60.57 ton/yr
V O C:	0.34 lb/1000 gal =	1.03 ton/yr
C O:	5.0 lb/1000 gal =	15.14 ton/yr

The following calculations determine the amount of emissions created by the combustion of #4 distillate fuel oil @ 0.7 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	<u>96.8 MMBtu/hr * 8,760 hr/yr</u>	* Ef (lb/1,000 gal) = (ton/yr)
	146,000 Btu/gal * 2,000 lb/ton	
P M:	7.0 lb/1000 gal =	21.20 ton/yr
P M-10:	6.0 lb/1000 gal =	18.23 ton/yr
S O 2:	105.0 lb/1000 gal =	317.99 ton/yr
N O x:	20.0 lb/1000 gal =	60.57 ton/yr
V O C:	0.20 lb/1000 gal =	0.61 ton/yr
C O:	5.0 lb/1000 gal =	15.14 ton/yr

The following calculations determine the amount of emissions created by the combustion of #5 residual fuel oil @ 0.9 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	$\frac{96.8 \text{ MMBtu/hr} * 8,760 \text{ hr/yr}}{155,837 \text{ Btu/gal} * 2,000 \text{ lb/ton}}$	* Ef (lb/1,000 gal) = (ton/yr)
P M:	11.2 lb/1000 gal =	33.98 ton/yr
P M-10:	9.7 lb/1000 gal =	29.22 ton/yr
S O 2:	136.6 lb/1000 gal =	413.66 ton/yr
N O x:	55.0 lb/1000 gal =	166.57 ton/yr
V O C:	0.28 lb/1000 gal =	0.85 ton/yr
C O:	5.0 lb/1000 gal =	15.14 ton/yr

The following calculations determine the amount of emissions created by the combustion of #6 residual fuel oil @ 1.3 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	$\frac{96.8 \text{ MMBtu/hr} * 8,760 \text{ hr/yr}}{155,837 \text{ Btu/gal} * 2,000 \text{ lb/ton}}$	* Ef (lb/1,000 gal) = (ton/yr)
P M:	15.5 lb/1000 gal =	47.05 ton/yr
P M-10:	13.4 lb/1000 gal =	40.46 ton/yr
S O 2:	210.4 lb/1000 gal =	637.13 ton/yr
N O x:	55.0 lb/1000 gal =	166.57 ton/yr
V O C:	0.28 lb/1000 gal =	0.85 ton/yr
C O:	5.0 lb/1000 gal =	15.14 ton/yr

The following calculations determine the amount of emissions created by the combustion of waste-reclaimed oil @ 0.7 % sulfur, 1 % ash, based on 8760 hours of use and US EPA's AP-42, 5th Edition, Section 1.11 - Waste Oil Combustion, Tables 1.11-1, 1.11-2, and 1.11-3.

Criteria Pollutant:	$\frac{96.8 \text{ MMBtu/hr} * 8760 \text{ hr/yr}}{138,000 \text{ Btu/gal} * 2000 \text{ lb/ton}}$	* Ef (lb/1000 gal) = (ton/yr)
P M:	32.0 lb/1000 gal =	91.41 ton/yr
P M-10:	25.5 lb/1000 gal =	72.84 ton/yr
S O 2:	102.9 lb/1000 gal =	293.94 ton/yr
N O x:	19.0 lb/1000 gal =	54.27 ton/yr
V O C:	1.00 lb/1000 gal =	2.86 ton/yr
C O:	5.0 lb/1000 gal =	14.28 ton/yr

The maximum potential emissions from the 96.8 mmBtu/hr aggregate dryer burner due to fuel combustion:

Criteria Pollutant:		Worst Case Fuel
P M:	91.41 ton/yr	Waste Reclaimed Oil
P M-10:	72.84 ton/yr	Waste Reclaimed Oil
S O 2:	637.13 ton/yr	No. 6 Fuel Oil
N O x:	166.57 ton/yr	No. 6 Fuel Oil
V O C:	2.86 ton/yr	Waste Reclaimed Oil
C O:	35.61 ton/yr	Natural Gas

**** batch mix aggregate dryer burner****

The following calculations determine the amount of emissions created by natural gas combustion, from the aggregate dryer burner, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.4 - Natural Gas Combustion, Tables 1.4-1, and 1.4-2.

Criteria Pollutant:	$\frac{84 \text{ MMBtu/hr} \times 8,760 \text{ hr/yr}}{1000 \text{ MMBtu/MMcf} \times 2,000 \text{ lb/ton}}$	* Ef (lb/MMcf) = (ton/yr)
P M:	7.6 lb/MMcf =	2.80 ton/yr
P M-10:	7.6 lb/MMcf =	2.80 ton/yr
S O 2:	0.6 lb/MMcf =	0.22 ton/yr
N O x:	100.0 lb/MMcf =	36.79 ton/yr
V O C:	5.5 lb/MMcf =	2.02 ton/yr
C O:	84.0 lb/MMcf =	30.91 ton/yr

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil @ 0.5 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-3, and 1.3-7.

Criteria Pollutant:	$\frac{84 \text{ MMBtu/hr} \times 8,760 \text{ hr/yr}}{140,000 \text{ Btu/gal} \times 2,000 \text{ lb/ton}}$	* Ef (lb/1,000 gal) = (ton/yr)
P M:	2.0 lb/1000 gal =	5.26 ton/yr
P M-10:	1.1 lb/1000 gal =	2.84 ton/yr
S O 2:	70.0 lb/1000 gal =	183.96 ton/yr
N O x:	20.0 lb/1000 gal =	52.56 ton/yr
V O C:	0.34 lb/1000 gal =	0.89 ton/yr
C O:	5.0 lb/1000 gal =	13.14 ton/yr

The maximum potential emissions from the 84.0 mmBtu/hr aggregate dryer burner due to fuel combustion:

Criteria Pollutant:		Worst Case Fuel
P M:	5.26 ton/yr	No. 2 Fuel Oil
P M-10:	2.84 ton/yr	No. 2 Fuel Oil
S O 2:	183.96 ton/yr	No. 2 Fuel Oil
N O x:	52.56 ton/yr	No. 2 Fuel Oil
V O C:	2.02 ton/yr	Natural Gas
C O:	30.91 ton/yr	Natural Gas

Total maximum potential emissions from the aggregate dryer burners due to fuel combustion are the following:

Criteria Pollutant:	
P M:	96.66 ton/yr
P M-10:	75.68 ton/yr
S O 2:	821.09 ton/yr
N O x:	219.13 ton/yr
V O C:	4.88 ton/yr
C O:	66.52 ton/yr

**** aggregate drying: batch-mix plant ****

The following calculations determine the amount of worst case emissions created by aggregate drying before controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Tables 11.1-1 and 11.1-8 for a batch mix dryer which has the capability of combusting either fuel oil or natural gas:

Pollutant:	Ef	lb/ton x	220	ton/hr x	8,760 hr/yr
			2,000	lb/ton	
Criteria Pollutant:					
	P M:	32	lb/ton =		30,835 ton/yr
	P M-10:	4.5	lb/ton =		4,336 ton/yr
	VOC:	7.6E-03	lb/ton =		7 ton/yr

The VOC emission factor represents the sum of the HAP emission factors from the dryer which were assumed to be VOC.

**** aggregate drying: drum-mix plant ****

The following calculations determine the amount of worst case emissions created by aggregate drying before controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Tables 11.1-3 and 11.1-8 for a drum mix dryer which has the capability of combusting either fuel oil or natural gas:

Pollutant:	Ef	lb/ton x	400	ton/hr x	8,760 hr/yr
			2,000	lb/ton	
Criteria Pollutant:					
	P M:	28	lb/ton =		49,056 ton/yr
	P M-10:	6.5	lb/ton =		11,388 ton/yr
	VOC:	8.7E-03	lb/ton =		15 ton/yr

The VOC emission factor represents the sum of the HAP emission factors from the dryer which were assumed to be VOC.

Total maximum potential to emit from the aggregate drying (2 dryers combined) are the following:

Criteria Pollutant:		
	P M:	79,891 ton/yr
	P M-10:	15,724 ton/yr
	V O C:	23 ton/yr

**** conveying / handling ****

The following calculations determine the amount of emissions created by material handling, based on 8,760 hours of use and AP-42, Section 13.2.4, Equation 1. The emission factors for calculating PM/PM10 emissions are calculated as follows:

PM/PM10 Emissions:

$$E = k \cdot (0.0032) \cdot \left(\frac{U}{5} \right)^{1.3} \cdot \left(\frac{M}{2} \right)^{1.4}$$

$$= 2.62E-03 \text{ lb PM/ton}$$

$$= 1.24E-03 \text{ lb PM-10/ton}$$

where k = 0.74 (particle size multiplier for <30um)
0.35 (particle size multiplier for <10um)

U = 12 mph mean wind speed
M = 4.2 material moisture content (%)

$$\frac{620 \text{ ton/hr} \times 8,760 \text{ hr/yr} \times \text{Ef (lb/ton of material)}}{2,000 \text{ lb/ton}} = (\text{ton/yr})$$

Total PM Emissions: 7.10 tons/yr
Total PM10 Emissions: 3.36 tons/yr

**** unpaved roads ****

The following calculations determine the amount of emissions created by vehicle traffic on unpaved roads, based on 8,760 hours of use and AP-42, Section 13.2.2.2.

I. Front End Loader

$$74 \text{ trip/hr} \times 0.076 \text{ mile/trip} \times 2 \text{ (round trip)} \times 8,760 \text{ hr/yr} = 98,532 \text{ mile/yr}$$

$$E_f = k \cdot \left[\frac{s}{12} \right]^a \cdot \left[\frac{W}{3} \right]^b \cdot \left[\frac{M_{dry}}{0.2} \right]^c \cdot \left[\frac{365-p}{365} \right] \cdot \left(\frac{S}{15} \right)$$

$$= 6.57 \text{ lb PM/mile}$$

$$= 1.33 \text{ lb PM-10/mile}$$

where k = 10 (particle size multiplier, PM30) (k= 2.6 for PM10)
s = 4.8 mean % silt content of unpaved plant roads
a = 0.8 Constant for PM30/PM-10
W = 36 tons, average vehicle weight
b = 0.5 Constant for PM30 (b = 0.4 for PM10)
Mdry = 0.2 surface material moisture content, % (default 0.2 (dry conditions) when using rainfall parameter)
c = 0.4 Constant for PM30 (c = 0.3 for PM10)
p = 125 number of days with at least 0.01 in of precipitation per year
S = 9 mph speed limit

$$\text{PM : } \frac{6.57 \text{ lb/mi} \times 98532.48 \text{ mi/yr}}{2000 \text{ lb/ton}} = 323.49 \text{ tons/yr}$$

$$\text{PM-10 : } \frac{1.33 \text{ lb/mi} \times 98532.48 \text{ mi/yr}}{2000 \text{ lb/ton}} = 65.60 \text{ tons/yr}$$

**** storage ****

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

Material	Silt Content (wt %)	Pile Size (acres)	Storage Capacity (tons)	P M Emissions tons/yr	P M-10 Emissions tons/yr
Sand	1.1	1.033	67,500	0.24	0.08
Stone	1.0	1.263	33,000	0.27	0.09
Slag	1.0	0.115	1,000	0.02	0.01
RAP	0.8	0.430	18,750	0.07	0.03
Total				0.60	0.21

Sample Calculation:

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 1.27 \text{ lb/acre/day}$$

where s = 1.1 % silt

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = \frac{E_f \cdot sc \cdot (20 \text{ cuft/ton}) \cdot (365 \text{ day/yr})}{(2,000 \text{ lb/ton}) \cdot (43,560 \text{ sqft/acre}) \cdot (30 \text{ ft for sand, 12 ft for stone and slag, \& 20 ft for RAP})}$$

where sc = 67,500 tons storage capacity

PM = 0.24 tons/yr P M-10: 35% of PM = 0.08 tons/yr

****cold mix VOC storage emissions ****

The following calculations determine the amount of VOC emissions created by the application of emulsified asphalt with 1.5% fuel oil in emulsified asphalt mix, based on 8,760 hours of operation.

VOC Emission Factor = 0.105% weight flash-off of cold mix

Potential Throughput (tons/yr) = 3,504,000 tons/yr stockpile mix

Potential VOC Emissions (tons/yr) = Potential Throughput (tons/yr) * wt percent flash-off

Potential VOC Emissions = 3,679 tons/yr

* Weight percent flash-off is based on a 7.0 weight percent of emulsified asphalt mix in stockpile mix.

**** summary of source emissions before controls ****

Criteria Pollutants:

P M:	79,996 ton/yr
P M-10:	15,804 ton/yr
S O 2:	827 ton/yr
N O x:	221 ton/yr
C O:	68 ton/yr
V O C:	3,707 ton/yr (includes volatile organic HAPs from aggregate drying operation)

**** source emissions after limitations and controls ****

In order to qualify for the FESOP program, this source must limit PM-10, SO₂, NO_x, and VOC emissions to less than 100 tons per year.
* Emissions of PM and PM-10 from aggregate drying operations are controlled with a 99.9% control efficiency.

**** source usage limitations ****

Fuel Usage Limitations:

Total Fuel at Drum-Mix & Batch Plant Aggregate Dryer Burners - NO_x Emissions:

Natural Gas Firing

79.19 PTE NO _x (tpy) *	2,000 lbs/ton =	158,380.80 lbs NO _x /yr	
158,380.80 lbs NO _x /yr /	100.00 lbs NO _x /MMcf =	1,583.81 MMcf/yr (potential)	
1,583.81 MMcf/yr *	98.25 tons/yr /	79.19 tons/yr =	0.0 MMcf/yr FESOP limit (no limit necessary)

No. 2 Oil Firing

113.13 PTE NO _x (tpy) *	2,000 lbs/ton =	226,258.29 lbs NO _x /yr	
226,258.29 lbs NO _x /yr /	20.00 lbs NO _x /kgal =	11,312.91 kgal/yr (potential)	
11,312.91 kgal/yr *	98.25 tons/yr /	113.13 tons/yr =	9,824.8 kgal/yr FESOP limit

*Landfill Gas Firing at the Drum Mix Burner (Plus Potential Natural Gas Usage in Batch Plant Burner)**

57.64 PTE NO _x (tpy) *	2,000 lbs/ton =	115,278.27 lbs NO _x /yr	
115,278.27 lbs NO _x /yr /	70.60 lbs NO _x /MMcf =	1,632.84 MMcf/yr (potential)	
1,632.84 MMcf/yr *	63.21 tons/yr /	57.64 tons/yr =	0.0 MMcf/yr FESOP limit (no limit necessary)

* This results in greater NO_x emissions than limited No. 2 oil use at the batch plant.

No. 4 Oil Firing

60.57 PTE NO _x (tpy) *	2,000 lbs/ton =	121,138.29 lbs NO _x /yr	
121,138.29 lbs NO _x /yr /	20.00 lbs NO _x /kgal =	6,056.91 kgal/yr (potential)	
6,056.91 kgal/yr *	98.25 tons/yr /	60.57 tons/yr =	6,056.9 kgal/yr FESOP limit

No. 5 Oil Firing

138.00 PTE NO _x (tpy) *	2,000 lbs/ton =	276,000.00 lbs NO _x /yr	
276,000.00 lbs NO _x /yr /	55.00 lbs NO _x /kgal =	5,018.18 kgal/yr (potential)	
5,018.18 kgal/yr *	98.25 tons/yr /	138.00 tons/yr =	3,572.7 kgal/yr FESOP limit

No. 6 Oil Firing

166.57 PTE NO _x (tpy) *	2,000 lbs/ton =	333,130.29 lbs NO _x /yr	
333,130.29 lbs NO _x /yr /	55.00 lbs NO _x /kgal =	6,056.91 kgal/yr (potential)	
6,056.91 kgal/yr *	98.25 tons/yr /	166.57 tons/yr =	3,572.7 kgal/yr FESOP limit

Waste Reclaimed Oil Firing

54.27 PTE NO _x (tpy) *	2,000 lbs/ton =	108,547.83 lbs NO _x /yr	
108,547.83 lbs NO _x /yr /	19.00 lbs NO _x /kgal =	5,713.04 kgal/yr (potential)	
5,713.04 kgal/yr *	98.25 tons/yr /	54.27 tons/yr =	5,713.0 kgal/yr FESOP limit

Total Fuel at Drum-Mix & Batch Plant Aggregate Dryer Burners - SO2 Emissions:

Natural Gas Firing

0.48 PTE SO2 (tpy) *	2,000 lbs/ton =	950.28 lbs SO2/yr	
950.28 lbs SO2/yr /	0.60 lbs SO2/MMcf =	1,583.81 MMcf/yr (potential)	
1,583.81 MMcf/yr *	93.87 tons/yr /	0.48 tons/yr =	0.0 MMcf/yr FESOP Limit (no limit necessary)

No. 2 Oil Firing

395.95 PTE SO2 (tpy) *	2,000 lbs/ton =	791,904.00 lbs SO2/yr	
791,904.00 lbs SO2/yr /	70.00 lbs SO2/kgal =	11,312.91 kgal/yr (potential)	
11,312.91 kgal/yr *	93.87 tons/yr /	395.95 tons/yr =	2,681.9 kgal/yr FESOP Limit

No. 4 Oil Firing

317.99 PTE SO2 (tpy) *	2,000 lbs/ton =	635,976.00 lbs SO2/yr	
635,976.00 lbs SO2/yr /	105.00 lbs SO2/kgal =	6,056.91 kgal/yr (potential)	
6,056.91 kgal/yr *	93.87 tons/yr /	317.99 tons/yr =	1,788.0 kgal/yr FESOP Limit

No. 5 Oil Firing

413.66 PTE SO2 (tpy) *	2,000 lbs/ton =	827,313.92 lbs SO2/yr	
827,313.92 lbs SO2/yr /	136.60 lbs SO2/kgal =	6,056.47 kgal/yr (potential)	
6,056.47 kgal/yr *	93.87 tons/yr /	413.66 tons/yr =	1,374.3 kgal/yr FESOP Limit

No. 6 Oil Firing

637.13 PTE SO2 (tpy) *	2,000 lbs/ton =	1,274,253.63 lbs SO2/yr	
1,274,253.63 lbs SO2/yr /	210.40 lbs SO2/kgal =	6,056.34 kgal/yr (potential)	
6,056.34 kgal/yr *	93.87 tons/yr /	637.13 tons/yr =	892.3 kgal/yr FESOP Limit

Reclaimed Waste Oil Firing

293.94 PTE SO2 (tpy) *	2,000 lbs/ton =	587,872.17 lbs SO2/yr	
587,872.17 lbs SO2/yr /	102.90 lbs SO2/kgal =	5,713.04 kgal/yr (potential)	
5,713.04 kgal/yr *	93.87 tons/yr /	293.94 tons/yr =	1,824.5 kgal/yr FESOP Limit

Fuel Equivalence:

Most restrictive No. 2 oil usage = 2,681.9 kgal/yr
 Most restrictive natural gas usage = 1,583.8 MMcf/yr (THIS IS THE POTENTIAL GAS USAGE - NO LIMIT NECESSARY)
 Most restrictive landfill gas usage = 1,632.8 MMcf/yr (THIS IS THE POTENTIAL GAS USAGE - NO LIMIT NECESSARY)

Fuel equivalence is therefore determined from the limiting pollutant, SO₂, as follows:

$\frac{0.6 \text{ lb/MMcf}}{70.0 \text{ lb/1000 gal}} =$	8.57	gallons per million cubic feet (MMcf) natural gas (i.e., every 1 MMcf natural gas burned is equivalent to 8.6 gallons of oil burned, based on SO ₂ emissions)
$\frac{6.2 \text{ lb/MMcf}}{70.0 \text{ lb/1000 gal}} =$	88.6	gallons per million cubic feet (MMcf) landfill gas (i.e., every 1 MMcf landfill gas burned is equivalent to 88.6 gallons of oil burned, based on SO ₂ emissions)
$\frac{105.0 \text{ lb/1000 gal}}{70.0 \text{ lb/1000 gal}} =$	1.500	every 1000 gallon of No. 4 fuel oil burned is equivalent to 1,500 gallons of No. 2 fuel oil, based on SO ₂ emissions
$\frac{136.6 \text{ lb/1000 gal}}{70.0 \text{ lb/1000 gal}} =$	1.951	every 1000 gallon of No. 5 fuel oil burned is equivalent to 1,951 gallons of No. 2 fuel oil, based on SO ₂ emissions
$\frac{210.4 \text{ lb/1000 gal}}{70.0 \text{ lb/1000 gal}} =$	3.005	every 1000 gallon of No. 6 fuel oil burned is equivalent to 3,005 gallons of No. 2 fuel oil, based on SO ₂ emissions
$\frac{102.9 \text{ lb/1000 gal}}{70.0 \text{ lb/1000 gal}} =$	1.470	every 1000 gallon of waste-reclaimed fuel oil burned is equivalent to 1,470 gallons of No. 2 fuel oil, based on SO ₂ emissions

Applying the equivalency ratios, the amount of equivalent fuels that could be burned are:

2,681.9 kgal/yr /	8.6 gallon/MMcf =	312,893.3 MMcf/year equivalent as natural gas
2,681.9 kgal/yr /	88.6 gallon/MMcf =	30,280.0 MMcf/year equivalent as landfill gas
2,681.9 kgal/yr /	1.5 gallon/MMcf =	1,788.0 kgal/year equivalent as No. 4 fuel oil
2,681.9 kgal/yr /	2.0 gallon/MMcf =	1,374.4 kgal/year equivalent as No. 5 fuel oil
2,681.9 kgal/yr /	3.0 gallon/MMcf =	892.4 kgal/year equivalent as No. 6 fuel oil
2,681.9 kgal/yr /	1.5 gallon/MMcf =	1,824.5 kgal/year equivalent as waste-reclaimed oil

These equivalent fuel usage amounts exceed the respective potential total natural gas and landfill gas usages in the two dryer burners. Since the potential fuel usages cannot be exceeded, the source-wide potential to emit NO_x remains below 100 tpy (including other facilities) under each equivalent fuel use scenario, and a separate NO_x limit is not created.

**** emissions after fuel usage limitations ****

Batch-Mix - Natural Gas: $\frac{84.0 \text{ MMBtu/hr} * 8,760 \text{ hr/yr}}{1000 \text{ Btu/cf} * 2,000 \text{ lb/ton}}$ * Ef (lb/MMcf) = (ton/yr)

P M:	7.6 lb/MMcf =	2.80 ton/yr
P M-10:	7.6 lb/MMcf =	2.80 ton/yr
S O 2:	0.6 lb/MMcf =	0.22 ton/yr
N O x:	100.0 lb/MMcf =	36.79 ton/yr
V O C:	5.5 lb/MMcf =	2.02 ton/yr
C O:	84.0 lb/MMcf =	30.91 ton/yr

Drum-Mix - Natural Gas: $\frac{96.8 \text{ MMBtu/hr} * 8,760 \text{ hr/yr}}{1000 \text{ Btu/cf} * 2,000 \text{ lb/ton}}$ * Ef (lb/MMcf) = (ton/yr)

P M:	7.6 lb/MMcf =	3.22 ton/yr
P M-10:	7.6 lb/MMcf =	3.22 ton/yr
S O 2:	0.6 lb/MMcf =	0.25 ton/yr
N O x:	100.0 lb/MMcf =	42.40 ton/yr
V O C:	5.5 lb/MMcf =	2.33 ton/yr
C O:	84.0 lb/MMcf =	35.61 ton/yr

Drum-Mix - Landfill Gas: $\frac{96.8 \text{ MMBtu/hr} * 8,760 \text{ hr/yr}}{504.5 \text{ Btu/cf} * 2,000 \text{ lb/ton}}$ * Ef (lb/MMcf) = (ton/yr)

P M:	46.2 lb/MMcf =	38.83 ton/yr	(35.27 ton/yr) *
P M-10:	46.2 lb/MMcf =	38.83 ton/yr	(35.27 ton/yr) *
S O 2:	6.2 lb/MMcf =	5.21 ton/yr	(4.71 ton/yr) *
N O x:	70.6 lb/MMcf =	59.33 ton/yr	(57.64 ton/yr) *
V O C:	0.8 lb/MMcf =	0.67 ton/yr	(0.84 ton/yr) *
C O:	17.7 lb/MMcf =	14.88 ton/yr	(16.95 ton/yr) *

* The first value reflects total landfill gas combustion; however, this fuel, when used, must be co-fired with natural gas. The maximum landfill/natural gas ratio is 90% landfill gas/10% natural gas, which is reflected in parentheses.

No. 2 Distillate Oil: < $\frac{2,681,943 \text{ gal/yr}}{2,000 \text{ lb/ton}}$ * Ef (lb/1,000 gal) = (ton/yr)

P M:	2.0 lb/1000 gal =	2.68 ton/yr
P M-10:	1.1 lb/1000 gal =	1.45 ton/yr
S O 2:	70.0 lb/1000 gal = <	93.87 ton/yr
N O x:	20.0 lb/1000 gal =	26.82 ton/yr
V O C:	0.34 lb/1000 gal =	0.46 ton/yr
C O:	5.0 lb/1000 gal =	6.70 ton/yr

No. 4 Fuel Oil $\frac{1,787,962 \text{ gal/yr}}{2,000 \text{ lb/ton}}$ * Ef (lb/1,000 gal) = (ton/yr)

P M:	7.0 lb/1000 gal =	9.39 ton/yr
P M-10:	6.0 lb/1000 gal =	8.07 ton/yr
S O 2:	105.0 lb/1000 gal =	93.87 ton/yr
N O x:	20.0 lb/1000 gal =	26.82 ton/yr
V O C:	0.20 lb/1000 gal =	0.27 ton/yr
C O:	5.0 lb/1000 gal =	6.70 ton/yr

No. 5 Fuel Oil $\frac{1,374,449 \text{ gal/yr}}{2,000 \text{ lb/ton}}$ * Ef (lb/1,000 gal) = (ton/yr)

P M:	11.2 lb/1000 gal =	15.05 ton/yr
P M-10:	9.7 lb/1000 gal =	12.94 ton/yr
S O 2:	136.6 lb/1000 gal =	93.87 ton/yr
N O x:	55.0 lb/1000 gal =	73.75 ton/yr
V O C:	0.34 lb/1000 gal =	0.46 ton/yr
C O:	5.0 lb/1000 gal =	6.70 ton/yr

No. 6 Fuel Oil $\frac{892,366 \text{ gal/yr}}{2,000 \text{ lb/ton}}$ * Ef (lb/1,000 gal) = (ton/yr)

P M:	15.5 lb/1000 gal =	20.83 ton/yr
P M-10:	13.4 lb/1000 gal =	17.92 ton/yr
S O 2:	210.4 lb/1000 gal =	93.87 ton/yr
N O x:	55.0 lb/1000 gal =	73.75 ton/yr
V O C:	0.28 lb/1000 gal =	0.38 ton/yr
C O:	5.0 lb/1000 gal =	6.70 ton/yr

Waste-Reclaimed Fuel oil $\frac{1,824,451 \text{ gal/yr}}{2,000 \text{ lb/ton}}$ * Ef (lb/1,000 gal) = (ton/yr)

P M:	32.0 lb/1000 gal =	29.19 ton/yr
P M-10:	25.5 lb/1000 gal =	34.19 ton/yr
S O 2:	102.9 lb/1000 gal =	93.87 ton/yr
N O x:	19.0 lb/1000 gal =	25.48 ton/yr
V O C:	1.00 lb/1000 gal =	1.34 ton/yr
C O:	5.0 lb/1000 gal =	6.70 ton/yr

The maximum limited potential to emit due to all sources of fuel combustion are the following:

Criteria Pollutant:		Worst Case Fuel
P M:	38.06 ton/yr	Landfill Gas/Natural Gas
P M-10:	38.06 ton/yr	Landfill Gas/Natural Gas
S O 2: <	93.87 ton/yr	No. 2 Fuel Oil
N O x:	94.43 ton/yr	Landfill Gas/Natural Gas
V O C:	4.36 ton/yr	Natural Gas
C O:	66.52 ton/yr	Natural Gas

****cold mix VOC storage limitations ****

The following calculations determine the amount of VOC emissions created by the application of liquid binder for cold mix stockpiles, based on the source's use of emulsified asphalt with solvent as the liquid binder type. Emulsified asphalt with solvent is defined with the following properties:

Maximum weight % of VOC solvent in binder	15.0%
Weight % VOC solvent in binder that evaporates	46.4%
Volume of diluent allowed =	7% (per 326 IAC 8-5-2)

In order to qualify for the FESOP program, this source must limit VOC emissions to less than 100 tons per year. Deducting the VOC emitted from other activities, VOC solvent usage as diluent in the liquid binder used in the production of cold mix asphalt from the plant shall be limited to less than **76.83** tons of VOC emitted per twelve (12) consecutive month period. This is equivalent to limiting the usage of emulsified asphalt with solvent liquid binder to less than **165.59** tons of VOC solvent per 12 consecutive month period, based on 46.4 percent (%) by weight of the VOC solvent in the liquid blend evaporating.

**** source emissions after controls ****

hot oil heater:		nonfugitive	
P M:	0.18 ton/yr x	100.00%	emitted after controls = 0.18 ton/yr
P M-10:	0.09 ton/yr x	100.00%	emitted after controls = 0.09 ton/yr
aggregate drying:		nonfugitive	
P M:	79,929 ton/yr x	0.10%	emitted after controls = 80.37 ton/yr *
P M-10:	15,762 ton/yr x	0.52%	* emitted after controls = 63.53 ton/yr *
conveying & handling:		fugitive	
P M:	7.10 ton/yr x	50%	emitted after controls = 3.55 ton/yr
P M-10:	3.36 ton/yr x	50%	emitted after controls = 1.68 ton/yr
unpaved roads:		fugitive	
P M:	323.49 ton/yr x	50%	emitted after controls = 161.74 ton/yr
P M-10:	65.60 ton/yr x	50%	emitted after controls = 32.80 ton/yr
storage piles:		fugitive	
P M:	0.60 ton/yr x	50%	emitted after controls = 0.30 ton/yr
P M-10:	0.21 ton/yr x	50%	emitted after controls = 0.11 ton/yr
cold mix VOC storage:		fugitive	
VOC:	76.83 ton/yr x	100.00%	emitted after controls = 76.83 ton/yr

**** summary of source emissions after limitations/controls ****

Criteria Pollutant:	Non-Fugitive	Fugitive	Total
PM:	80.55 ton/yr	165.60 ton/yr	246.15 ton/yr
PM-10:	63.63 ton/yr	34.59 ton/yr	98.21 ton/yr
S O 2: <	100.00 ton/yr	0.00 ton/yr	100.00 ton/yr
N O x:	96.18 ton/yr	0.00 ton/yr	96.18 ton/yr
V O C:	23.17 ton/yr	76.83 ton/yr	100.00 ton/yr
C O:	67.55 ton/yr	0.00 ton/yr	67.55 ton/yr

**** miscellaneous ****

326 IAC 7 Compliance Calculations:

The following calculations determine the maximum sulfur content of distillate fuel oil allowable by 326 IAC 7:

$$140,000 \text{ Btu/gal} \times \frac{0.5 \text{ lb/MMBtu}}{142 \text{ lb/1000 gal}} = 0.5\%$$

Sulfur content must be less than or equal to 0.5 % to comply with 326 IAC 7.

The following calculations determine the maximum sulfur content of residual oil (No. 4 Oil) allowable by 326 IAC 7:

$$146,000 \text{ Btu/gal} \times \frac{1.6 \text{ lb/MMBtu}}{150 \text{ lb/1000 gal}} = 1.6\%$$

Sulfur content must be less than or equal to 1.6 % to comply with 326 IAC 7.

The following calculations determine the maximum sulfur content of residual oil (No. 5 Oil) allowable by 326 IAC 7:

$$155,837 \text{ Btu/gal} \times \frac{1.6 \text{ lb/MMBtu}}{157 \text{ lb/1000 gal}} = 1.6\%$$

Sulfur content must be less than or equal to 1.6 % to comply with 326 IAC 7.

The following calculations determine the maximum sulfur content of residual oil (No. 6 Oil) allowable by 326 IAC 7:

$$155,837 \text{ Btu/gal} \times \frac{1.6 \text{ lb/MMBtu}}{157 \text{ lb/1000 gal}} = 1.6\%$$

Sulfur content must be less than or equal to 1.6 % to comply with 326 IAC 7.

The following calculations determine the maximum sulfur content of Waste-Reclaimed Oil allowable by 326 IAC 7:

$$138,000 \text{ Btu/gal} \times \frac{1.6 \text{ lb/MMBtu}}{147 \text{ lb/1000 gal}} = 1.5\%$$

Sulfur content must be less than or equal to 1.5 % to comply with 326 IAC 7.

326 IAC 6-3-2 Compliance Calculations:

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rate in excess of 30 ton/hr:

220 Tons per Hour Drum-Mix Plant:

$$\text{limit} = 55 * (220 ^{0.11}) - 40 = 59.55 \text{ lb/hr or } 260.82 \text{ ton/yr}$$

440 Tons per Hour Batch Plant:

$$\text{limit} = 55 * (400 ^{0.11}) - 40 = 66.31 \text{ lb/hr or } 290.45 \text{ ton/yr}$$

Since these emission limits each exceed the respective Subpart I allowable PM emission limits (see below), the requirements of 326 IAC 6-3-2 shall not apply, pursuant to 326 IAC 6-3-1(b). The source shall comply with the PM limits pursuant to 40 CFR 60, Subpart I, as the more stringent limits. Additionally, as presented below, PM emitted from the aggregate drying at source shall be limited such that the source-wide PTE PM is less than 250 tons per year and therefore, the requirements of 326 IAC 2-2 (PSD) shall not apply. Compliance with this requirement shall also result in compliance with the limits of Subpart I.

40 CFR Part 60.90, Subpart I (Standards of Performance for Hot Mix Asphalt Plants) Compliance Calculations:

The following calculations determine compliance with NSPS, which limits stack emissions from asphalt plants to 0.04 gr/dscf:

*** SV1B: Batch Dryer ***

$$\frac{30.84 \text{ ton/year}}{35,640 \text{ dscf/min}} \times \frac{2,000 \text{ lb/ton}}{525,600 \text{ min/year}} \times \frac{7,000 \text{ gr/lb}}{1} = 0.023 \text{ gr/dscf} \quad (\text{will comply})$$

Allowable particulate emissions under NSPS (0.04 gr/dscf) equate 53.52 tons per year, or: 12.22 lb/hr

*** SV1D: Drum-mix Dryer ***

$$\frac{49.06 \text{ ton/year}}{60,720 \text{ dscf/min}} \times \frac{2,000 \text{ lb/ton}}{525,600 \text{ min/year}} \times \frac{7,000 \text{ gr/lb}}{1} = 0.022 \text{ gr/dscf} \quad (\text{will comply})$$

Allowable particulate emissions under NSPS (0.04 gr/dscf) equate 91.18 tons per year, or: 20.82 lb/hr

Note:

$$\text{SCFM} = \frac{54,000 \text{ acfm} \times (460 + 68) \times (1 - 0.05)}{460 + 300} = 35,640 \text{ scfm (assumed 5\% moisture)}$$

$$\text{SCFM} = \frac{92,000 \text{ acfm} \times (460 + 68) \times (1 - 0.05)}{460 + 300} = 60,720 \text{ scfm (assumed 5\% moisture)}$$

PSD PM Emission Limit for Drum-Mix & Batch Plant Aggregate Dryers:

Source-wide emissions of PM must be less than 250 tons per year such that the requirements of 326 IAC 2-2 (PSD) are not applicable. Therefore, PM from the 2 aggregate dryers shall be limited as follows:

$$250 \text{ tons PM/yr} - 169.63 \text{ tons PM from other sources} = < 80.37 \text{ ton/yr} = < 18.35 \text{ lbs/hr}$$

Total PM from aggregate dryers controlled to: 80.37 tons/yr < 80.37 ton/yr (will comply)

Allowable PM emissions for PSD non-applicability are apportioned to the two aggregate drying facilities as follows:

Batch Plant Aggregate Dryer:

$$220 \text{ tons/hr} / 620 \text{ tons/hr (total)} \times 80.37 \text{ tons/yr} = 28.52 \text{ tons/yr}$$

Using the AP-42 emission factor of 32 lb PM/ton, the potential PM emission rate = 30835.20 tons/yr

To comply with the allowable limit of 28.52 tons/yr, the emission factor for compliance = 0.030 lb PM/ton, and the control efficiency needed for compliance = 99.9% , and the equivalent pounds/hour at 8760 hours year = 6.51 lb/hr

Drum-Mix Plant Aggregate Dryer:

$$400 \text{ tons/hr} / 620 \text{ tons/hr (total)} \times 80.37 \text{ tons/yr} = 51.85 \text{ tons/yr}$$

Using the AP-42 emission factor of 28 lb PM/ton, the potential PM emission rate = 49056.00 tons/yr

To comply with the allowable limit of 51.85 tons/yr, the emission factor for compliance = 0.030 lb PM/ton, and the control efficiency needed for compliance = 99.9% , and the equivalent pounds/hour at 8760 hours year = 11.84 lb/hr

FESOP PM10 Emission Limit for Drum-Mix & Batch Plant Aggregate Dryers:

Source-wide emissions of PM10 must be less than 100 tons per year for FESOP applicability. Therefore, PM10 from the 2 aggregate dryers shall be limited as follows:

$$100 \text{ tons PM10/yr} - 36.47 \text{ tons PM10 from other sources} = < 63.53 \text{ ton/yr} = < 14.51 \text{ lbs/hr}$$

$$\text{Total PM10 from aggregate dryers controlled to } 63.53 \text{ tons/yr} < 63.53 \text{ ton/yr} \quad (\text{will comply})$$

Allowable PM10 emissions for FESOP compliance are apportioned to the two aggregate drying facilities as follows:

Batch Plant Aggregate Dryer:

$$220 \text{ tons/hr} / 620 \text{ tons/hr (total)} * 63.53 \text{ tons/yr} = 22.54 \text{ tons/yr}$$

Using the AP-42 emission factor of 4.5 lb PM10/ton, the potential PM emission rate = 4336.20 tons/yr

To comply with the allowable limit of 22.54 tons/yr, the emission factor for compliance = 0.023 lb PM10/ton, and the control efficiency needed for compliance = 99.5% , and the equivalent pounds/hour at 8760 hours year = 5.15 lb/hr

Drum-Mix Plant Aggregate Dryer:

$$400 \text{ tons/hr} / 620 \text{ tons/hr (total)} * 63.53 \text{ tons/yr} = 40.99 \text{ tons/yr}$$

Using the AP-42 emission factor of 6.5 lb PM10/ton, the potential PM emission rate = 11388.00 tons/yr

To comply with the allowable limit of 40.99 tons/yr, the emission factor for compliance = 0.023 lb PM10/ton, and the control efficiency needed for compliance = 99.6% , and the equivalent pounds/hour at 8760 hours year = 9.36 lb/hr

Hazardous Air Pollutants (HAPs)

**** aggregate dryer burner****

The following calculations determine the amount of HAP emissions created by the combustion of distillate fuel oil before & after controls @ 0.5% sulfur, from the aggregate dryer burner, based on 8760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Table 1.3-10.

Hazardous Air Pollutants (HAPs): $\frac{180.8 \text{ MMBtu/hr} * 8760 \text{ hr/yr}}{2,000 \text{ lb/ton}} * \text{Ef (lb/10}^{12} \text{ Btu)} = (\text{ton/yr})$

		Potential To Emit	Limited Emissions
Arsenic:	4 lb/10 ¹² Btu =	3.17E-03 ton/yr	3.17E-06 ton/yr
Beryllium:	3 lb/10 ¹² Btu =	2.38E-03 ton/yr	2.38E-06 ton/yr
Cadmium:	3 lb/10 ¹² Btu =	2.38E-03 ton/yr	2.38E-06 ton/yr
Chromium:	3 lb/10 ¹² Btu =	2.38E-03 ton/yr	2.38E-06 ton/yr
Lead:	9 lb/10 ¹² Btu =	7.13E-03 ton/yr	7.13E-06 ton/yr
Manganese:	6 lb/10 ¹² Btu =	4.75E-03 ton/yr	4.75E-06 ton/yr
Mercury:	3 lb/10 ¹² Btu =	2.38E-03 ton/yr	2.38E-06 ton/yr
Nickel:	3 lb/10 ¹² Btu =	2.38E-03 ton/yr	2.38E-06 ton/yr
Total HAPs =		2.69E-02 ton/yr	2.69E-05 ton/yr

The following calculations determine the amount of HAP emissions created by the combustion of landfill gas before & after controls. The emission factor is taken from SMF003-8363-03112, issued September 3, 1997:

		Potential To Emit	Limited Emissions
Total HAPs:	14.1 lb/MMcf = *	11.85 ton/yr	11.85 ton/yr

At a maximum usage of 90% LFG to 10% natural gas (see next page):

Total HAPs:*	10.69 ton/yr	10.69 ton/yr
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* Based on SMF003-8363-03112, issued September 3, 1997. The maximum uncontrolled single HAP emission rate is: 8.49 tons per year for hydrogen chloride (HCl).

**** aggregate drying: batch-mix plant ****

The following calculations determine the amount of HAP emissions created by aggregate drying before & after controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Table 11.1-9 for a batch mix dryer which can be fired with either fuel oil or natural gas. HAP emission factors are the same for oil & gas.

Potential:

Pollutant:	Ef	lb/ton x	220	ton/hr x	8760 hr/yr
			2000	lb/ton	

Hazardous Air Pollutants (HAPs):			Potential To Emit	Limited Emissions
Acetaldehyde:	3.2E-04	lb/ton =	0.31 ton/yr	0.31 ton/yr
Benzene:	2.8E-04	lb/ton =	0.27 ton/yr	0.27 ton/yr
Ethylbenzene:	2.2E-03	lb/ton =	2.12 ton/yr	2.12 ton/yr
Formaldehyde:	7.4E-04	lb/ton =	0.71 ton/yr	0.71 ton/yr
PAH (total) HAPs:*	1.1E-04	lb/ton =	0.11 ton/yr	0.11 ton/yr
Quinone:	2.7E-04	lb/ton =	0.26 ton/yr	0.26 ton/yr
Toluene:	1.0E-03	lb/ton =	0.96 ton/yr	0.96 ton/yr
Xylene:	2.7E-03	lb/ton =	2.60 ton/yr	2.60 ton/yr
Total HAPs =			7.34 ton/yr	7.34 ton/yr

* See AP-42, Section 11.1, Table 11.1-9 for complete listing of PAH HAPs.

**** aggregate drying: drum-mix plant ****

The following calculations determine the amount of HAP emissions created by aggregate drying before & after controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Table 11.1-10 for a drum mix dryer which can be fired with either fuel oil or natural gas. HAP emission factors for oil & gas are the same, except where individual factors are expressed.

Potential:

Pollutant:	Ef	lb/ton x	400	ton/hr x	8760 hr/yr
			2000	lb/ton	

Hazardous Air Pollutants (HAPs):			Potential To Emit	Limited Emissions
Benzene:	3.9E-04	lb/ton =	0.68 ton/yr	0.68 ton/yr
Ethylbenzene:	2.4E-04	lb/ton =	0.42 ton/yr	0.42 ton/yr
Formaldehyde:	3.1E-03	lb/ton =	5.43 ton/yr	5.43 ton/yr
Hexane:	9.2E-04	lb/ton =	1.61 ton/yr	1.61 ton/yr
Isooctane:	4.0E-05	lb/ton =	0.07 ton/yr	0.07 ton/yr
Methylchloroform:	4.8E-05	lb/ton =	0.08 ton/yr	0.08 ton/yr
PAH (total) HAPs (fuel oil):*	8.8E-04	lb/ton =	1.54 ton/yr	1.54 ton/yr
PAH (total) HAPs (nat. gas):*	1.9E-04	lb/ton =	0.33 ton/yr	0.33 ton/yr
Toluene (fuel oil):	2.9E-03	lb/ton =	5.08 ton/yr	5.08 ton/yr
Toluene (nat. gas):	1.5E-04	lb/ton =	0.26 ton/yr	0.26 ton/yr
Xylene:	2.0E-04	lb/ton =	0.35 ton/yr	0.35 ton/yr
Total HAPs Fuel Oil =			15.27 ton/yr	15.27 ton/yr
Total HAPs Nat. Gas =			9.25 ton/yr	9.25 ton/yr

* See AP-42, Section 11.1, Table 11.1-9 for complete listing of PAH HAPs.

**** summary of source HAP emissions potential to emit ****

Hazardous Air Pollutants (HAPs):

	LFG	Nat. Gas	Fuel Oil	
Acetaldehyde:	---	0.308	0.308	ton/yr
Arsenic:	---	---	0.003	ton/yr
Benzene:	---	0.953	0.953	ton/yr
Beryllium:	---	---	0.002	ton/yr
Cadmium:	---	---	0.002	ton/yr
Chromium:	---	---	0.002	ton/yr
Ethylbenzene:	---	2.540	2.540	ton/yr
Formaldehyde:	---	6.144	6.144	ton/yr
Hexane:	---	1.612	1.612	ton/yr
Isoocatane:	---	0.070	0.070	ton/yr
Lead:	---	---	0.007	ton/yr
Manganese:	---	---	0.005	ton/yr
Mercury:	---	---	0.002	ton/yr
Methylchloroform:	---	0.084	0.084	ton/yr
Nickel:	---	---	0.002	ton/yr
PAH (total) HAPs	---	0.439	1.648	ton/yr
Quinone	---	0.260	0.260	ton/yr
Toluene:	---	1.226	6.044	ton/yr
Xylene:	---	2.952	2.952	ton/yr
Hydrogen Chloride:	8.490	---	---	ton/yr
Other:	2.202	---	---	ton/yr
Total:	10.692	16.590	22.643	ton/yr

**** summary of source HAP limited emissions ****

Hazardous Air Pollutants (HAPs):

	LFG	Nat. Gas	Fuel Oil	
Acetaldehyde:	---	0.308	0.308	ton/yr
Arsenic:	---	---	0.003	ton/yr
Benzene:	---	0.953	0.953	ton/yr
Beryllium:	---	---	0.002	ton/yr
Cadmium:	---	---	0.002	ton/yr
Chromium:	---	---	0.002	ton/yr
Ethylbenzene:	---	2.540	2.540	ton/yr
Formaldehyde:	---	6.144	6.144	ton/yr
Hexane:	---	1.612	1.612	ton/yr
Isoocatane:	---	0.070	0.070	ton/yr
Lead:	---	---	0.007	ton/yr
Manganese:	---	---	0.005	ton/yr
Mercury:	---	---	0.002	ton/yr
Methylchloroform:	---	0.084	0.084	ton/yr
Nickel:	---	---	0.002	ton/yr
PAH (total) HAPs	---	0.439	1.648	ton/yr
Quinone	---	0.260	0.260	ton/yr
Toluene:	---	1.226	6.044	ton/yr
Xylene:	---	2.952	2.952	ton/yr
Hydrogen Chloride:	8.490	---	---	ton/yr
Other:	2.202	---	---	ton/yr
Total:	10.692	16.590	22.643	ton/yr