

Mr. Thomas Buck
Keiser & Keiser Contractors, Inc.
3425 O'Farrel Road
Lafayette, IN 47904

Re: **157-12074**
First Significant Revision to
FESOP 157-5448-03286

Dear Mr. Buck:

Keiser & Keiser Contractors, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) on December 11, 1996 for the two (2) stationary batch hot-mix asphalt plants. A First Administrative Amendment was issued on August 31, 1998. A letter requesting changes to this permit was received on March 22, 2000. 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 changing the fuel used at the one (1) aggregate dryer at plant 157-03286, with a capacity of 82.4 million British thermal units per hour, from propane only to waste oil with backup fuels of no. 2 and no. 4 distillate oils, propane, butane and natural gas.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

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.

Keiser & Keiser Contractors, Inc.
Lafayette, Indiana

Page 2 of 2
FESOP 157-5448-03286

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 CarrieAnn Ortolani, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments
CAO/MES

cc: File - Tippecanoe County
Air Compliance Section Inspector - Eric Courtright
Compliance Data Section - Mendy Jones
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

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

Keiser & Keiser Contractors, Inc.
3425 O'Farrel Road
Lafayette, Indiana 47904

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 and contains the conditions and provisions specified in 326 IAC 2-8 and 40 CFR Part 70.6 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) and IC 13-15 and IC 13-17 (prior to July 1, 1996, IC 13-1-1-4 and IC 13-7-10).

Operation Permit No.: F157-5448-03286	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: December 11, 1996

First Administrative Amendment, AAF 157-10038, issued on August 31, 1998

Significant Permit Revision No.: SPR 157-12074-03286	Pages affected: 3; 4; 5; 25 becomes 25a and 25b; 26; 27 becomes 27a, 27b and 27c; 32; and 32a is added.
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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SECTION A SOURCE SUMMARY

A.1 General Information

The Permittee owns and operates two (2) stationary batch hot-mix asphalt plants: Plant ID No. 157-03310 with a maximum operating capacity of 225 tons per hour and Plant ID No. 157-03286 with a maximum operating capacity of 200 tons per hour. Plant ID No. 157-03310 also produces cold mix asphalt.

Responsible Official: Thomas Buck
Source Address: 3425 O'Farrel Road, Lafayette, Indiana 47904
Mailing Address: 3425 O'Farrel Road, Lafayette, Indiana 47904
SIC Code: 2951
County Location: Tippecanoe
County Status: Attainment for all criteria pollutants
Source Status: Minor Source, PSD Rules;
Synthetic Minor Source, Part 70 Permit Program

A.2 Emission Units and Pollution Control Summary

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

Plant ID No. 157-03310

- (a) One (1) aggregate dryer with a maximum capacity of 225 tons per hour, having a burner with a maximum heat input rate of 75 million British thermal units per hour, exhausting through a baghouse at stack SV1a. The burner is fired by natural gas, including propane as a backup fuel.
- (b) One (1) baghouse with a total filter area of 11,677 square feet.

Plant ID No. 157-03286

- (a) One (1) aggregate dryer with a maximum capacity of 200 tons per hour, having a burner with a maximum heat input rate of 82.4 million British thermal units per hour, exhausting through a baghouse at stack SV1. The burner is fired by waste oil, with backup fuels of No. 2 and No. 4 distillate oils, propane, butane and natural gas.
- (b) One (1) baghouse with a total filter area of 6,720 square feet.

A.3 Insignificant Activities

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

Plant ID No. 157-03310

- (1) One (1) natural gas-fired combustion unit with a heat input equal to or less than 10 million British thermal units per hour (0.5 million British thermal units per hour).
- (2) One (1) natural gas-fired combustion unit with a heat input equal to or less than 10 million British thermal units per hour (1.2 million British thermal units per hour).

- (3) One (1) material conveying and handling operation.
- (4) Paved and unpaved roads and parking lots with public access.
- (5) Plant maintenance activities including grinding, sanding, and welding.
- (6) One (1) 30,000 gallon storage tank ID No. 20 for liquid asphalt AC-20.
- (7) One (1) 20,000 gallon storage tank ID No. 21 for liquid asphalt.
- (8) One (1) material storage and handling operation.

Plant ID No. 157-03286

- (1) One (1) liquid propane-fired combustion unit with heat input less than 6 million British thermal units per hour (0.8 million British thermal units per hour).
- (2) One (1) 35,000 gallon storage tank ID No. 15 for liquid asphalt AC-20.
- (3) One (1) 18,000 gallon storage tank ID No. 16 for liquid propane.
- (4) One (1) testing laboratory as defined in 326 IAC 2-7-1(20).
- (5) One (1) material storage and handling operation.
- (6) Paved and unpaved roads and parking lots with public access.
- (7) One (1) material conveying and handling operation.
- (8) Plant maintenance activities including grinding sanding, and welding.
- (9) One (1) above ground storage tank, identified as Tank K, constructed in 1970, storing waste oil, capacity: 20,000 gallons.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

SECTION D.2 FACILITY OPERATION CONDITIONS

Plant ID No. 157-03286

(1) One (1) aggregate dryer with a maximum capacity of 200 tons per hour, having a burner with a maximum heat input rate of 82.4 million British thermal units per hour, exhausting through a baghouse at stack SV1. The burner is fired by waste oil, with backup fuels of No. 2 and No. 4 distillate oils, propane, butane and natural gas.

(2) One (1) baghouse with a total filter area of 6,720 square feet.

(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.2.1 Particulate Matter (PM) [40 CFR 60.90, 60.91, 60.92 & 60.93] [326 IAC 6-3-2] [326 IAC 2-2]
Pursuant to the New Source Performance Standards, 326 IAC 12 (40 CFR 60.90 to 60.93, Subpart I), the particulate matter emissions from the aggregate dryer/mixer shall not exceed 0.04 grain per dry standard cubic foot, equivalent to 11.2 pounds per hour and 49.2 tons per year, and visible emissions from the plant shall not exceed twenty percent (20%) opacity. Compliance with these limits will also satisfy 326 IAC 6-3-2 and make 326 IAC 2-2 not applicable.
- D.2.2 Particulate Matter Less Than 10 Microns (PM-10)
That pursuant to the 326 IAC 2-8-4, emissions of particulate matter less than 10 microns from the aggregate dryer shall not exceed 9.17 pounds per hour (lb/hr) of filterable PM-10. Compliance with this limit will satisfy 326 IAC 2-8-4. Due to this limit, Part 70 Program rules do not apply.
- D.2.3 Nitrogen Oxides (NO_x) Emission Limitations [326 IAC 2-8-4]
Pursuant to 326 IAC 2-8-4(1), the total waste oil usage will be limited to no more than 3,637,750 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of butane is equal to using 1.31 gallons of waste oil, 1 gallon of propane is equal to using 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to using 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to using 6,289 gallons of waste oil. This limitation will result in NO_x emissions from the aggregate dryer of no more than 29.07 tons per year and total source NO_x emissions of less than 100 tons per year. Therefore, the Part 70 Permit Program rules, 326 IAC 2-7, do not apply.
- D.2.4 Sulfur Dioxide (SO₂) Emission Limitations [326 IAC 2-8-4]
Pursuant to 326 IAC 2-8-4(1), the total waste oil usage will be limited to no more than 1,850,467 gallons per consecutive twelve (12) month period and the sulfur content of the waste oil shall be limited to no more than 1.0%. For the purposes of this limit, 1 gallon of No. 2 or No. 4 distillate oil at a 0.5% sulfur content are each considered equal to using 0.664 gallon of waste oil. This limitation will result in SO₂ emissions from the aggregate dryer of less than 99.2 tons per year and total source SO₂ emissions of less than 100 tons per year. Therefore, the Part 70 Permit Program rules, 326 IAC 2-7, do not apply.
- D.2.5 Sulfur Dioxide (SO₂) Emission Limitations [326 IAC 7-1.1-2]
(a) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the aggregate dryer shall not exceed five tenths (0.5) pound per million British thermal units heat input, when operating on No. 2 or No. 4 distillate oil. In order to comply with this limit the sulfur content of the No. 2 distillate oil or No. 4 distillate oil shall not exceed 0.5 percent (0.5%).

- (b) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the aggregate dryer shall not exceed one and six-tenths (1.6) pounds per million British thermal units, when operating on waste oil. In order to comply with this limit the sulfur content of the waste oil shall not exceed 2.1 percent (2.1%).

D.2.6 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 this facility and its control device.

Testing Requirements [326 IAC 2-8-4(3)]

D.2.7 Performance Testing [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

- (a) Between 540 days to 720 days of the issuance of this permit, the Permittee shall perform PM and PM₁₀ testing utilizing methods per 40 CFR 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner to demonstrate compliance with Condition D.2.1 and D.2.2. PM₁₀ includes filterable and condensible PM₁₀.
- (b) During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform PM and PM₁₀ testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM₁₀, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensible PM₁₀. Testing shall be conducted in accordance with Section C-Performance Testing.

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

D.2.8 Monitoring of Baghouse Operational Parameters

The baghouse shall be operated at all times when the aggregate dryer is in operation. The Permittee shall monitor the following parameters:

- (a) The total static pressure drop across the baghouse shall be measured and recorded once per shift while under normal operation. The pressure drop for this unit shall be maintained within the range of 7.0 inches to 10.0 inches of water. If the pressure drop falls outside of this range, corrective action must be taken immediately in accordance with the preventive maintenance Plan as submitted to IDEM on March 14, 1996.
- (b) The inlet temperature to the baghouse shall be maintained within a range of 200 to 350 degrees F to prevent overheating of the bags and to prevent low temperatures from mudding up the bags. In the event that the temperature is outside the range, corrective action shall be taken within 8 hours.

In the event that bag failure has occurred due to rupture, melting, etc., corrective action shall be taken. Dependent upon the severity of the excursion, corrective action shall not exceed 8 hours from the time of discovery. The baghouse shall shut down for visual inspection within 24 hours and bags shall be replaced as needed.

D.2.9 Daily Visible Emission Notations

Daily visible emission notations of the conveyors, material transfers, aggregate storage piles, unpaved roads, and the mixing and drying operation stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during the part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristic of normal visible emissions for that specific process. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when abnormal emission is observed.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.2.10 Sulfur Dioxide Emissions and Sulfur Content

Compliance 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) pounds per million British thermal units heat input, when operating on no. 2 or no. 4 distillate oil, and one and six-tenths (1.6) pounds per million British thermal units when operating on waste oil by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a 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 from the aggregate dryer, 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.

D.2.11 Operational Parameters and Quarterly Reporting

The Permittee shall maintain monthly records at the stationary source of fuel usage. Quarterly summaries to document compliance with operation conditions D.2.3 and D.2.4 shall be submitted, using the enclosed forms or their equivalents, within thirty (30) days after the end of the quarter being reported. These reports shall include the number of gallons of each fuel used.

D.2.12 Record Keeping Requirements

- (a) To document compliance with the percent sulfur content limitations in Condition D.2.4 and to document compliance with Condition D.2.5, the Permittee shall maintain records in accordance with (1) through (6) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage of each fuel used since last compliance determination period and equivalent sulfur dioxide emissions;
 - (3) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period, the natural gas fired boiler certification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34); and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

- (4) Fuel supplier certifications;
- (5) The name of the fuel supplier; and
- (6) A statement from the each fuel supplier that certifies the sulfur content of the fuels used.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

- (b) To document compliance with Condition D.2.9, the Permittee shall maintain records of visible emission notations of the baghouse stack exhaust once per shift.
- (c) To document compliance with Condition D.2.8, the Permittee shall maintain the following:
 - (1) Daily records of the following operational parameters during normal operation when venting to the atmosphere:
 - (A) Inlet and outlet differential static pressure;
 - (B) Cleaning cycle: frequency and differential pressure; and
 - (C) inlet temperature.
 - (2) Documentation of all response steps implemented, per event .
 - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
 - (4) Quality Assurance/Quality Control (QA/QC) procedures.
 - (5) Operator standard operating procedures (SOP).
 - (6) Manufacturer's specifications or its equivalent.
 - (7) Equipment "troubleshooting" contingency plan.
 - (8) Documentation of the dates vents are redirected.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.13 Used Oil Requirements

The waste oil burned in the aggregate 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.

D.2.14 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.90, Subpart I, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Actual start-up date (within 15 days after such date); and
- (c) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION
 FESOP Quarterly Report**

Source Name: Keiser & Keiser Contractors, Inc.
 Source Address: 3425 O'Farrel Road, Lafayette, IN 47904
 Mailing Address: 3425 O'Farrel Road, Lafayette, IN 47904
 FESOP No.: F 157-5448-03286
 Facility: One (1) aggregate dryer at Plant 03286 - Section D.2
 Parameter: Waste oil usage (NO_x emissions)
 Limit: 3,637,750 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of butane is equal to 1.31 gallons of waste oil, 1 gallon of propane is equal to 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to using 6,289 gallons of waste oil
 NO_x emissions to no more than 29.07 tons per year and total source NO_x emissions of less than 100 tons per year

YEAR: _____

Month	This Month			Previous 11 Months	12-Month Total
	Waste Oil usage (gallons)	Waste Oil equivalent of other fuels (ex. 1.31 x butane usage) (gallons)	Total Equivalent Waste Oil usage (gallons)	Waste Oil used + waste oil equivalent of other fuels used (gallons)	Waste Oil used + waste oil equivalent of other fuels used (gallons)

- 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: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION
 FESOP Quarterly Report**

Source Name: Keiser & Keiser Contractors, Inc.
 Source Address: 3425 O'Farrel Road, Lafayette, IN 47904
 Mailing Address: 3425 O'Farrel Road, Lafayette, IN 47904
 FESOP No.: F 157-5448-03286
 Facility: One (1) aggregate dryer at Plant 03286 - Section D.2
 Parameter: Waste oil usage (SO₂ emissions)
 Limit: 1,850,467 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of No. 2 or No. 4 distillate oil at a 0.5% sulfur content are each considered equal to using 0.664 gallon of waste oil.
 SO₂ emissions from the aggregate dryer of no more than 99.0 tons per year and total source SO₂ emissions of less than 100 tons per year.

YEAR: _____

Month	This Month			Previous 11 Months	12-Month Total
	Waste Oil usage (gallons)	Waste Oil equivalent of distillate fuel (0.664 x distillate oil usage) (gallons)	Total Equivalent Waste Oil usage (gallons)	Waste Oil used + waste oil equivalent of distillate oil used (gallons)	Waste Oil used + waste oil equivalent of distillate oil used (gallons)

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: _____

A certification is not required for this report.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Name:	Keiser & Keiser Contractors, Inc.
Source Location:	3425 O'Farrel Road, Lafayette, Indiana 47904
County:	Tippecanoe
Operation Permit No.:	F 157-5448-03286
Operation Permit Issuance Date:	December 11, 1996
Significant Permit Revision No.:	SPR 157-12074-03286
SIC Code:	2951
Permit Reviewer:	CarrieAnn Ortolani

On June 6, 2000, the Office of Air Management (OAM) had a notice published in the Journal & Courier, Lafayette, Indiana, stating that Keiser & Keiser Contractors, Inc. had applied for a Significant Permit Revision to their Federally Enforceable State Operating Permit (FESOP). The Significant Permit Revision is for the construction and operation of one (1) aggregate dryer with a baghouse as control and one (1) above ground storage tank. The notice also stated that OAM proposed to issue a Significant Permit Revision to the FESOP for this operation and provided information on how the public could review the proposed Significant Permit Revision to the FESOP and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Significant Permit Revision to a FESOP should be issued as proposed.

On July 5, 2000, Dean Logan of Rieth-Riley Construction Co., Inc., on behalf of Keiser & Keiser Contractors, Inc. submitted comments on the proposed FESOP. The comments are as follows (The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded**.):

Condition D.2.12(c) Record Keeping

Comment 1:

Item (1) - Since the differential pressure and inlet temperatures are recorded daily why is it necessary to record them weekly? The cleaning cycle frequency may be changed several times a day to maintain the pressure differential range of the permit. Why is it necessary to keep a weekly record since the corrective action plan has steps to correct any problem if the pressure drop goes outside of the range specified in the permit. The cleaning cycle function is to clean the dirty side of the bags. The frequency of the cleaning cycle has nothing to do with the ability of the baghouse as a filter agent to filter the dust out of the air passing through the bags. The cleaning cycle frequency just controls how often the dust is cleaned off the dirty side of the bags. My comment would be to remove all of the conditions of Item 1.

Response 1:

Condition D.2.8 requires that the differential pressure and the inlet temperatures are monitored daily. Thus, Condition D.2.12(c)(1) has been revised to reflect that daily records of the differential pressure and the inlet temperatures are required. IDEM, OAM, does not require any specific cleaning cycle. However, IDEM OAM does require a record of the cleaning cycle to show that the bags have been cleaned. Condition D.2.12(c) is revised as follows:

- (c) To document compliance with Condition D.2.8, the Permittee shall maintain the following:
- (1) ~~Weekly~~ **Daily** records of the following operational parameters during normal operation when venting to the atmosphere:
 - (A) Inlet and outlet differential static pressure;
 - (B) Cleaning cycle: frequency and differential pressure; and
 - (C) inlet temperature.
 - (2) Documentation of all response steps implemented, per event.
 - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
 - (4) Quality Assurance/Quality Control (QA/QC) procedures.
 - (5) Operator standard operating procedures (SOP).
 - (6) Manufacturer's specifications or its equivalent.
 - (7) Equipment "troubleshooting" contingency plan.
 - (8) Documentation of the dates vents are redirected.

Comment 2:

Item (2) - Document all response steps per event. My question is why duplicate the responses since the response to any incident would be recorded in the corrective action plan log as an on-going log book. My comment would be to remove this condition.

Response 2:

Condition C.12 of the FESOP requires that records are kept of all instances in which the action values were not met and of all corrective actions taken. Compliance with this requirement will satisfy the requirement of Condition D.2.12(c)(2). However, since Condition D.2.12(c)(2) specifically applies to the one (1) new aggregate dryer and the associated baghouse, the condition will remain in the permit for clarity. Only one (1) set of records of response steps is required to satisfy the requirements of Conditions C.12 and D.2.12(c)(2).

Comment 3:

Item (4) - Quality Assurance/Quality Control (QA/QC) procedures. What does this mean? If the corrective action plan already covers what to do if the baghouse malfunctions, why is this condition necessary?

Response 3:

The Quality Assurance/ Quality Control (QA/QC) procedures are the procedures followed when inspecting and monitoring the baghouse. A record of the procedures must be kept to show that the baghouse is monitored properly.

Comment 4:

Items (5) and (7) are all included in the corrective action plan. Why duplicate the record keeping? My comment would be to remove these conditions or make reference that these need to be included in the corrective action plan.

Response 4:

Operator standard operating procedures (SOP) and an equipment "troubleshooting" contingency plan are required by Conditions D.2.12(c)(5) and D.2.12(c)(7). Only one (1) set of standard operating procedures (SOP) and one (1) "troubleshooting" contingency plan are required for the one (1) new aggregate dryer and the associated baghouse to comply with Conditions D.2.12(c)(5) and D.2.12(c)(7).

Comment 5:

Item (8) - Since the stack for the plant is outside and does not move or redirect the exhaust gases, my comment would be to remove this condition.

Response 5:

This condition will remain in the permit in case the stack is ever redirected indoors. There is no record keeping required by this condition unless the stack is redirected.

Section D.2.13

Comment 6:

My question is this section limiting us to burning of "off-spec" oil as long as there are not any hazardous wastes, that are regulated in 329 IAC 3.1, in the waste oil?

Response 6:

Condition D.2.13 requires that any waste oil burned in the aggregate dryer complies with the used oil requirements specified in 329 IAC 13 (Used Oil Management). The burning of mixtures of used oil and hazardous waste that is regulated under 329 IAC 3.1 is prohibited.

Indiana Department of Environmental Management Office of Air Management

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

Source Background and Description

Source Name:	Keiser & Keiser Contractors, Inc.
Source Location:	3425 O'Farrel Road, Lafayette, Indiana 47904
County:	Tippecanoe
SIC Code:	2951
Operation Permit No.:	F 157-5448-03286
Operation Permit Issuance Date:	December 11, 1996
Significant Permit Revision No.:	SPR 157-12074-03286
Permit Reviewer:	CarrieAnn Ortolani/ MES

The Office of Air Management (OAM) has reviewed a revision application from Keiser & Keiser Contractors, Inc. relating to the construction and operation of the following emission units and pollution control devices:

- (a) One (1) aggregate dryer with a maximum capacity of 200 tons per hour, having a burner with a maximum heat input rate of 82.4 million British thermal units per hour, exhausting through a baghouse at stack SV1. The burner is fired by waste oil, with backup fuels of No. 2 and No. 4 distillate oils, propane, butane and natural gas.
- (b) One (1) above ground storage tank, identified as Tank K, constructed in 1970, storing waste oil, capacity: 20,000 gallons.

These emission units were previously existing and permitted at this source, but require approvals because of the change in primary fuel from propane to waste oil and the addition of backup fuels.

History

On March 22, 2000, Keiser & Keiser Contractors, Inc. submitted an application to the OAM requesting to change the primary fuel at the dryer burner for plant 157-03286 from propane to waste oil and to add backup fuels to the dryer burner. Keiser & Keiser Contractors, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) (F157-5448-03286) on December 11, 1996. An Administrative Amendment (AAF 157-10038) was issued on August 31, 1998.

Source Definition

This source consists of two (2) stationary batch hot-mix asphalt plants. These two (2) plants were determined to be a single source. The plant identification numbers are 157-03310 and 157-03286. Both plants are permitted under the FESOP, F157-5448-03286, issued on December 11, 1996. This modification is to plant 157-03286.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the FESOP 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.

An application for the purposes of this review was received on March 22, 2000. Additional information was received on April 27, 2000, via telephone.

Emission Calculations

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

Potential To Emit of Revision

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source 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.”

This table reflects the PTE before controls for this revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. The emissions in these tables are the net increase in the PTE before controls and limitations resulting from changing the types of fuels used.

Pollutant	Potential To Emit (tons/year)
PM	81.6
PM ₁₀	70.1
SO ₂	272
VOC	0.622
CO	18.0
NO _x	1.36

HAPs	Potential To Emit (tons/year)
Individual	0.00
TOTAL	0.00

Justification for Revision

The FESOP is being revised through a FESOP Significant Permit Revision. This revision is being performed pursuant to 326 IAC 2-8-11.1(f)(1)(E), “A significant permit revision is a modification that is not an administrative amendment under section 10 of this rule or subject to subsection (d) (Minor Permit Revision) and includes any modification with a potential to emit greater than or equal to

twenty-five (25) tons per year of sulfur dioxide (SO₂).”

County Attainment Status

The source is located in Tippecanoe County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Tippecanoe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Tippecanoe County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions
 Since this type of operation is not one of the 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 PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

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

Pollutant	Emissions (tons/year)
PM	249.0
PM ₁₀	99.0
SO ₂	0.24
VOC	3.84
CO	24.3
NO _x	99.0

- (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 more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon the limited emissions table in the Technical Support Document (TSD) to F157-5448-03286.

Potential to Emit of Revision After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this FESOP revision.

Process/facility	Potential to Emit (tons/year)						
	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs
Total Emissions at Plant 157-03310 (adjacent plant)	132	50.6	0.200	1.83	11.5	69.2	5.72
Conveying/handling, unpaved roadways, storage piles and insignificant heaters at Plant 157-03286	26.6	8.20	0.00	0.02	0.12	0.73	0.00
Mixer/dryer at Plant 157-03286 after Proposed Revision	49.2	40.2	99.2	1.92	12.3	29.1	5.08
Total Emissions	208	99.0	99.4	3.77	23.9	99.0	10.8
Part 70 Major Source Threshold	-	100	100	100	100	100	10 individual and 25 total
PSD Threshold Level	250	250	250	250	250	250	-

- (a) This revision to an existing minor stationary source is not major because the emission increase is less than the PSD threshold levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.
- (b) Since the potential to emit from the entire source is less than 250 tons per year of each criteria pollutant, the source is a minor source pursuant to 326 IAC 2-2, PSD.
- (c) This revision to the existing FESOP will **not** change the status of the stationary source because the emissions from the entire source will still be limited to less than the Part 70 major source thresholds.

Federal Rule Applicability

- (a) This hot mix asphalt plant was previously not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.90, Subpart I). Pursuant to 40 CFR 60.14, a change in fuels is considered a modification. Therefore, the one (1) aggregate dryer with a maximum capacity of 200 tons per hour, will be subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.90, Subpart I). Attached is a copy of the federal rule. Pursuant to NSPS, the following apply to this facility:
- (1) Performance tests required as specified in this Subpart and as outlined in Part 60.8.
 - (2) On or after the date on which the performance tests are completed, no owner or operator subject to the provisions of Subpart I shall discharge into the atmosphere from any affected facility any gases which:
 - (A) contain particulate matter in excess of 0.04 grains per dry standard cubic foot.
 - (B) exhibit 20 percent opacity, or greater.

According to the stack tests conducted on May 26, 1998, the total particulate concentration is less than 0.02 grains per dry standard cubic foot and the opacity is zero (0). Since the potential increase in PM emissions after controls is 0.037 pounds per hour, the aggregate dryer is expected to comply with this rule. Compliance will be determined by performance tests conducted after the change in fuels.

- (b) Since the tank used to store waste oil was constructed prior to June 11, 1973, the requirements of 326 IAC 12, 40 CFR 60.110, 60.110a, 60.110b, Subparts K, Ka and Kb are not applicable.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 326 IAC 20, and 40 CFR Part 61 and 40 CFR Part 63) applicable to this proposed revision.

State Rule Applicability - Individual Facilities

326 IAC 2-8 (Federally Enforceable State Operating Permit)

- (a) Pursuant to F 157-5448-03286, issued on December 11, 1996, the PM_{10} from the aggregate dryer shall not exceed 9.17 pounds per hour. This limited the PM_{10} from the aggregate dryer to no more than 40.17 tons per year and the total source PM_{10} emissions to 99.0 tons per year. Since the potential to emit after control by the baghouse is 7.90 tons per year (1.80 pounds per hour), the aggregate dryer will continue to comply with this limitation.
- (b) Pursuant to F 157-5448-03286, issued on December 11, 1996, the total liquid propane gas usage was limited to 3,028,125 gallons per year, based on a fixed monthly limit. This limitation resulted in NO_x emissions from the aggregate dryer of no more than 29.07 tons per year, and total NO_x emissions of no more than 99.0 tons per year. Since the potential to emit NO_x is still 100 tons per year or more, a fuel usage limitation is still required. The limitation will be a limitation on the amount of waste oil used since waste oil will be the primary fuel. Since other fuels can also be used, equivalencies were developed to ensure that NO_x emissions do not exceed 29.07 tons per year from the total of all fuels used in each twelve (12) month period. The waste oil usage will be limited to no more than

3,637,750 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of butane is equal to 1.31 gallons of waste oil, 1 gallon of propane is equal to 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to 6,289 gallons of waste oil. This limitation will result in total source-wide NO_x emissions of less than 100 tons per year.

- (c) The potentials to emit SO₂ from combustion of waste oil, No. 2 distillate oil and No. 4 distillate oil are greater than 100 tons per year. In order to qualify for a FESOP, the source has accepted a waste oil limit of 1,850,467 gallons per consecutive twelve (12) month period and a sulfur content limit of 1.0% in the waste oil. For the purposes of this limit, 1 gallon of No. 2 or No. 4 distillate oil at 0.5% sulfur content are each considered equal to using 0.664 gallon of waste oil at 1.0% sulfur content. This will limit the potential to emit SO₂ from the one (1) aggregate dryer to less than 99.2 tons per year. This limitation will result in total source-wide SO₂ emissions of less than 100 tons per year.

326 IAC 6-3-2 (Process Operations) and 326 IAC 2-2 (Prevention of Significant Deterioration)

- (a) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the aggregate dryer shall not exceed 58.5 pounds per hour when operating at a process weight rate of 200 tons per hour. This limitation is based on the following equation:

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

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

- (b) Pursuant to F 157-5448-03286, issued on December 11, 1996, the particulate matter (PM) from the aggregate dryer shall not exceed 20.58 pounds per hour. This limitation will result in annual PM emissions of no more than 90.17 tons per year. Therefore, the PM from the entire source is limited to 249 tons per year and the requirements of 326 IAC 2-2 are not applicable.
- (c) The maximum potential to emit PM from the aggregate dryer after controls is increasing by 0.163 tons per year (0.037 pounds per hour) due to the change in the type of fuels used. After this change, the potential to emit PM after controls is 56.2 tons per year (12.8 pounds per hour). Therefore, the aggregate dryer will continue to comply with either of the limitations in (a) and (b).
- (d) Pursuant to 40 CFR Part 60.90, Subpart I, the PM shall not exceed 0.04 grains per dry standard cubic foot, which is equivalent to 11.2 pounds per hour and 49.2 tons per year. Therefore, compliance with this New Source Performance Standard (NSPS) will result in compliance with 326 IAC 6-3-2 and limit PM from the entire source to less than 250 tons per year.

326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations)

- (a) The requirements of 326 IAC 7-1 are applicable to the aggregate dryer when operating on No. 2 distillate oil because the potential to emit SO₂ is greater than 25 tons per year. Sulfur dioxide emissions shall be limited to five-tenths (0.5) pound per million British thermal units for distillate oil combustion. In order to comply with this limit, the sulfur content of the No. 2 distillate oil shall not exceed 0.5 percent (0.5%) (See TSD Appendix A).
- (b) The requirements of 326 IAC 7-1 are applicable to the aggregate dryer when operating on No. 4 distillate oil because the potential to emit SO₂ is greater than 25 tons per year. Sulfur

dioxide emissions shall be limited to five-tenths (0.5) pound per million British thermal units for distillate oil combustion. In order to comply with this limit, the sulfur content of the No. 4 distillate oil shall not exceed 0.5 percent (0.5%) (See TSD Appendix A).

- (c) The requirements of 326 IAC 7-1 are applicable to the aggregate dryer when operating on waste oil because the potential to emit SO₂ is greater than 25 tons per year. Sulfur dioxide emissions shall be limited to one and six-tenths (1.6) pounds per million British thermal units for waste oil combustion. In order to comply with this limit, the sulfur content of the waste oil shall not exceed 2.1 percent (2.1%) (See TSD Appendix A).

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, OAM, 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 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.

The compliance monitoring requirements applicable to this source are as follows:

The aggregate dryer has applicable compliance monitoring conditions already in the FESOP as specified below:

- (a) Daily visible emissions notations of the mixing and drying stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. 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. 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. 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. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.
- (b) The Permittee shall record the total static pressure drop across the baghouse controlling the aggregate dryer, at least once per shift while under normal operation. The pressure drop across the baghouse shall be maintained within the range of 7.0 to 10.0 inches of water. If the pressure drop falls outside of this range, corrective action must be taken immediately in accordance with the Preventive Maintenance Plan.
- (c) The inlet temperature of the baghouse shall be maintained within a range of 200 to 350

degrees F to prevent overheating of the bags and to prevent low temperatures from mudding up the bags. In the event that the temperature is outside this range, corrective action shall be taken within 8 hours.

- (d) In the event that bag failure has occurred due to rupture, melting, etc., corrective action shall be taken. Dependent upon the severity of the excursion, corrective action shall not exceed 8 hours from the time of discovery. The baghouse shall shut down for visual inspection within 24 hours and bags shall be replaced as needed.

These monitoring conditions are necessary because the baghouse for the mixing/drying process must operate properly to ensure compliance with 40 CFR Part 60.90, Subpart I, 326 IAC 6-3 (Process Operations) and 326 IAC 2-8 (FESOP).

Proposed Changes

The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language appears in bold):

A.2 Emission Units and Pollution Control Summary

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

Plant ID No. 157-03310

- (a) One (1) aggregate dryer with a maximum capacity of 225 tons per hour, having a burner with a maximum heat input rate of 75 million British thermal units per hour, exhausting through a baghouse at stack SV1a. The burner is fired by natural gas, including propane as a backup fuel.
- (b) One (1) baghouse with a total filter area of 11,677 square feet.

Plant ID No. 157-03286

- (a) One (1) aggregate dryer with a maximum capacity of 200 tons per hour, having a burner with a maximum heat input rate of 82.4 million British thermal units per hour, exhausting through a baghouse at stack SV1. The burner is fired by **waste oil, with backup fuels of No. 2 and No. 4 distillate oils**, propane, **butane and natural gas**. ~~and does not use a backup fuel.~~
- (b) One (1) baghouse with a total filter area of 6,720 square feet.

A.3 Insignificant Activities

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

Plant ID No. 157-03310

- (1) One (1) natural gas-fired combustion unit with a heat input equal to or less than 10 million British thermal units per hour per hour (0.5 million British thermal units per hour).
- (2) One (1) natural gas-fired combustion unit with a heat input equal to or less than 10 million British thermal units per hour (1.2 million British thermal units per hour).
- (3) One (1) material conveying and handling operation.

- (4) Paved and unpaved roads and parking lots with public access.
- (5) Plant maintenance activities including grinding, sanding, and welding.
- (6) One (1) 30,000 gallon storage tank ID No. 20 for liquid asphalt AC-20.
- (7) One (1) 20,000 gallon storage tank ID No. 21 for liquid asphalt.
- (8) One (1) material storage and handling operation.

Plant ID No. 157-03286

- (1) One (1) liquid propane-fired combustion unit with heat input less than 6 million British thermal units per hour (0.8 million British thermal units per hour).
- (2) One (1) 35,000 gallon storage tank ID No. 15 for liquid asphalt AC-20.
- (3) One (1) 18,000 gallon storage tank ID No. 16 for liquid propane.
- (4) One (1) testing laboratory as defined in 326 IAC 2-7-1(20).
- (5) One (1) material storage and handling operation.
- (6) Paved and unpaved roads and parking lots with public access.
- (7) One (1) material conveying and handling operation.
- (8) Plant maintenance activities including grinding sanding, and welding.
- (9) **One (1) above ground storage tank, identified as Tank K, constructed in 1970, storing waste oil, capacity: 20,000 gallons.**

SECTION D.2 FACILITY OPERATION CONDITIONS

Plant ID No. 157-03286

- | |
|---|
| <ol style="list-style-type: none">(1) One (1) aggregate dryer with a maximum capacity of 200 tons per hour, having a burner with a maximum heat input rate of 82.4 million British thermal units per hour, exhausting through a baghouse at stack SV1. The burner is fired by waste oil, with backup fuels of No. 2 and No. 4 distillate oils, propane, butane and natural gas. and does not use a backup fuel.(2) One (1) baghouse with a total filter area of 6,720 ft². |
|---|

(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.2.1 Particulate Matter (PM) [40 CFR 60.90, 60.91, 60.92 & 60.93] [326 IAC 6-3-2] [326 IAC 2-2]
Pursuant to the New Source Performance Standards, 326 IAC 12 (40 CFR 60.90 to 60.93, Subpart I), the particulate matter emissions from the aggregate dryer/mixer shall not exceed 0.04 grain per dry standard cubic foot, equivalent to 11.2 pounds per hour and 49.2 tons per

year, and visible emissions from the plant shall not exceed twenty percent (20%) opacity. Compliance with these limits will also satisfy 326 IAC 6-3-2 and make 326 IAC 2-2 not applicable.

That pursuant to 326 IAC 6-3-2, particulate matter emissions from the aggregate dryer shall not exceed 20.58 pounds per hour (lb/hr) and that visible emissions from the aggregate dryer shall not exceed 40% opacity. Compliance with these limits will satisfy 326 IAC 5-1 and 326 IAC 6-3-2.

D.2.3 Nitrogen Oxides (NO_x) Emission Limitations [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4(1), the total waste oil usage will be limited to no more than 3,637,750 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of butane is equal to using 1.31 gallons of waste oil, 1 gallon of propane is equal to using 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to using 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to using 6,289 gallons of waste oil. This limitation will result in NO_x emissions from the aggregate dryer of no more than 29.07 tons per year and total source NO_x emissions of less than 100 tons per year. That pursuant to 326 IAC 2-8-4(1), the total usage of LPG shall be limited to 3,028,125 gallons per year based on a fixed monthly limit. This fuel usage limitation was taken voluntarily by the company. Due to this limit ~~Therefore, the Part 70 Permit Program rules, 326 IAC 2-7, do not apply.~~ Fuel consumption shall not exceed the following monthly limits:

Month	LPG Consumption (gal/m)
January	43,800
February	35,000
March	70,000
April	303,670
May	303,670
June	365,000
July	365,000
August	365,000
September	365,000
October	365,000
November	303,670
December	134,315

D.2.4 Sulfur Dioxide (SO₂) Emission Limitations [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4(1), the total waste oil usage will be limited to no more than 1,850,467 gallons per consecutive twelve (12) month period and the sulfur content of the waste oil shall be limited to no more than 1.0%. For the purposes of this limit, 1 gallon of No. 2 or No. 4 distillate oil at a 0.5% sulfur content are each considered equal to using 0.664 gallon of waste oil. This limitation will result in SO₂ emissions from the aggregate dryer of less than 99.2 tons per year and total source SO₂ emissions of less than 100 tons per year. Therefore, the Part 70 Permit Program rules, 326 IAC 2-7, do not apply.

D.2.5 Sulfur Dioxide (SO₂) Emission Limitations [326 IAC 7-1.1-2]

- (a) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the aggregate dryer shall not exceed five tenths (0.5) pound per million British thermal units heat input, when operating on No. 2 or No. 4 distillate oil. In order to comply with this limit the sulfur content of the No. 2 distillate oil or No. 4 distillate oil shall not exceed 0.5 percent (0.5%).
- (b) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the aggregate dryer shall not exceed one and six-tenths (1.6) pounds per million British

thermal units, when operating on waste oil. In order to comply with this limit the sulfur content of the waste oil shall not exceed 2.1 percent (2.1%).

D.2.6 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 this facility and its control device.

D.2.47 Performance Testing [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

- (a) Between 540 days to 720 days of the issuance of this permit, the Permittee shall perform PM and PM₁₀ testing utilizing methods per 40 CFR 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner to demonstrate compliance with Condition D.2.1 and D.2.2. ~~This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.~~ PM₁₀ includes filterable and condensable PM₁₀.
- (b) During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform PM and PM₁₀ testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM₁₀, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing.

Conditions D.2.5 and D.2.6 of the FESOP have been renumbered D.2.8 and D.2.9 in this revision.

D.2.10 Sulfur Dioxide Emissions and Sulfur Content

Compliance 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) pounds per million British thermal units heat input, when operating on No. 2 or No. 4 distillate oil, and one and six-tenths (1.6) pounds per million British thermal units when operating on waste oil by:
- (1) Providing vendor analysis of fuel delivered, if accompanied by a 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 from the aggregate dryer, 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.

D.2.711 Operational Parameters and Quarterly Reporting

The Permittee shall maintain monthly records at the stationary source of fuel usage. Quarterly summaries to document compliance with operation conditions ~~number D.2.3~~ **and D.2.4** shall be submitted, using the enclosed forms ~~or its~~ **their** equivalents, within thirty (30) days after the end of the quarter being reported. ~~This report~~ **These reports** shall include the number of gallons of **each** fuel used ~~and the fuel usage limit~~.

D.2.12 Record Keeping Requirements

(a) **To document compliance with the percent sulfur content limitations in Condition D.2.4 and to document compliance with Condition D.2.5, the Permittee shall maintain records in accordance with (1) through (6) below.**

- (1) **Calendar dates covered in the compliance determination period;**
- (2) **Actual fuel usage of each fuel used since last compliance determination period and equivalent sulfur dioxide emissions;**
- (3) **A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period, the natural gas fired boiler certification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34); and**

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

- (4) **Fuel supplier certifications;**
- (5) **The name of the fuel supplier; and**
- (6) **A statement from the each fuel supplier that certifies the sulfur content of the fuels used.**

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

(b) **To document compliance with Condition D.2.9, the Permittee shall maintain records of visible emission notations of the baghouse stack exhaust once per shift.**

(c) **To document compliance with Condition D.2.8, the Permittee shall maintain the following:**

- (1) **Weekly records of the following operational parameters during normal operation when venting to the atmosphere:**
 - (A) **Inlet and outlet differential static pressure;**
 - (B) **Cleaning cycle: frequency and differential pressure; and**

- (C) inlet temperature.
- (2) Documentation of all response steps implemented, per event .
- (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
- (4) Quality Assurance/Quality Control (QA/QC) procedures.
- (5) Operator standard operating procedures (SOP).
- (6) Manufacturer's specifications or its equivalent.
- (7) Equipment "troubleshooting" contingency plan.
- (8) Documentation of the dates vents are redirected.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.13 Used Oil Requirements

The waste oil burned in the aggregate 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.

D.2.14 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.90, Subpart I, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Actual start-up date (within 15 days after such date); and
- (c) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

**Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015**

**The application and enforcement of these standards have been delegated to the IDEM OAM.
The requirements of 40 CFR Part 60 are also federally enforceable.**

The following requirement from Condition D.2.8 of the FESOP was moved to the Emissions Limitations and Standards subsection of Section D.2.

~~D.2.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Condition B.13 of this permit, is required for this facility.~~

The report form attached to the FESOP has been removed, and two (2) report forms are added as follows:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
Report of Fixed Monthly Limits

Source Name: _____ Keiser & Keiser Contractors, Inc.
Source Address: _____ 3425 O'Farrel Road, Lafayette, IN 47904
Permit No.: _____ F157-5448-03286
Source/Facility: _____ Plant ID No. 157-03286
Pollutant: _____ Nitrogen Oxides

Month: _____ Year: _____

Month	Fuel Usage Limit (gal/month)	Actual Fuel Usage (gal/month)
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

9 _____ No deviation occurred in this month.

9 _____ Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION
 FESOP Quarterly Report**

Source Name: Keiser & Keiser Contractors, Inc.
 Source Address: 3425 O'Farrel Road, Lafayette, IN 47904
 Mailing Address: 3425 O'Farrel Road, Lafayette, IN 47904
 FESOP No.: F 157-5448-03286
 Facility: One (1) aggregate dryer at Plant 03286 - Section D.2
 Parameter: Waste oil usage (NO_x emissions)
 Limit: 3,637,750 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of butane is equal to 1.31 gallons of waste oil, 1 gallon of propane is equal to 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to using 6,289 gallons of waste oil
 NO_x emissions to no more than 29.07 tons per year and total source NO_x emissions of less than 100 tons per year

YEAR: _____

Month	This Month			Previous 11 Months	12-Month Total
	Waste Oil usage (gallons)	Waste Oil equivalent of other fuels (ex. 1.31 x butane usage) (gallons)	Total Equivalent Waste Oil usage (gallons)	Waste Oil used + waste oil equivalent of other fuels used (gallons)	Waste Oil used + waste oil equivalent of other fuels used (gallons)

- 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: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION
 FESOP Quarterly Report**

Source Name: Keiser & Keiser Contractors, Inc.
 Source Address: 3425 O'Farrel Road, Lafayette, IN 47904
 Mailing Address: 3425 O'Farrel Road, Lafayette, IN 47904
 FESOP No.: F 157-5448-03286
 Facility: One (1) aggregate dryer at Plant 03286 - Section D.2
 Parameter: Waste oil usage (SO₂ emissions)
 Limit: 1,850,467 gallons per consecutive twelve (12) month period. For the purposes of this limit, 1 gallon of No. 2 or No. 4 distillate oil at a 0.5% sulfur content are each considered equal to using 0.664 gallon of waste oil.
 SO₂ emissions from the aggregate dryer of no more than 99.0 tons per year and total source SO₂ emissions of less than 100 tons per year.

YEAR: _____

Month	This Month			Previous 11 Months	12-Month Total
	Waste Oil usage (gallons)	Waste Oil equivalent of distillate fuel (0.664 x distillate oil usage) (gallons)	Total Equivalent Waste Oil usage (gallons)	Waste Oil used + waste oil equivalent of distillate oil used (gallons)	Waste Oil used + waste oil equivalent of distillate oil used (gallons)

- 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: _____

A certification is not required for this report.

Conclusion

The construction of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 157-12074-03286.

Appendix A: Emission Calculations

Company Name: Keiser & Keiser Contractors, Inc.
 Plant Location: 3425 O'Farrel Road, Lafayette, Indiana 47904
 County: Tippecanoe
 FESOP: F 157-5448-03286
 Significant FESOP Revision: SFR 157-12074-03286
 Date: March 22, 2000
 Permit Reviewer: CarrieAnn Ortolani/ MES

A. Potential Emissions from Aggregate Dryer at Plant 157-03286 after Revision

Dryer Burner (gas/<100MMBTU/uncontrolled)

The following calculations determine the amount of emissions created by natural gas combustion, based on 8760 hours of use, AP-42 Ch. 1.4, Tables 1.4-1, 1.4-2, 1.4-3

Pollutant:	<u>82.4 MMBtu/hr * 8760 hrs/yr</u>	* Ef (lbs/MMcf) = (tons/yr)
	1000 Btu/cf * 2000 lbs/ton	
	P M:	1.9 lbs/MMcf = <u>0.686 tons/yr</u>
	P M-10:	7.6 lbs/MMcf = <u>2.74 tons/yr</u>
	S O x:	0.6 lbs/MMcf = <u>0.217 tons/yr</u>
	N O x:	100.0 lbs/MMcf = <u>36.1 tons/yr</u>
	V O C:	5.5 lbs/MMcf = <u>1.99 tons/yr</u>
	C O:	84.0 lbs/MMcf = <u>30.3 tons/yr</u>

Dryer Burner (#2 & #1 oil/<100MMBTU/uncontrolled)

The following calculations determine the amount of emissions created by #2 & #1 distillate fuel oil @ 0.5 % sulfur, based on 8760 hours of use and AP-42, Tables 1.3-1, 1.3-2, 1.3-3

Pollutant:	<u>82.4 MMBtu/hr * 8760 hrs/yr * 1000</u>	* Ef (lbs/1000 gal) = (tons/yr)
	138000 Btu/gal * 2000 lbs/ton	
	P M:	2.0 lbs/1000 gal = <u>5.23 tons/yr</u>
	PM-10:	3.3 lbs/1000 gal = <u>8.63 tons/yr</u>
	S O x:	71.0 lbs/1000 gal = <u>186 tons/yr</u>
	N O x:	20.0 lbs/1000 gal = <u>52.3 tons/yr</u>
	V O C:	0.34 lbs/1000 gal = <u>0.889 tons/yr</u>
	C O:	5.0 lbs/1000 gal = <u>13.1 tons/yr</u>

If Rating >100 mmBtu/hr	
N O x:	24.0
V O C:	0.20

Dryer Burner (#4 oil/ <100MMBTU/uncontrolled)

The following calculations determine the amount of emissions created by #4 distillate fuel oil @ 0.5 % sulfur, based on 8760 hours of use and AP-42, Tables 1.3-1, 1.3-2, 1.3-3

Pollutant:	<u>82.4</u> MMBtu/hr * 8760 hrs/yr * 1000	* Ef (lbs/1000 gal) = (tons/yr)
	<u>138000</u> Btu/gal * 2000 lbs/ton	
P M:	2.0 lbs/1000 gal =	<u>5.23</u> tons/yr
PM-10:	3.3 lbs/1000 gal =	<u>8.63</u> tons/yr
S O x:	71.0 lbs/1000 gal =	<u>186</u> tons/yr
N O x:	20.0 lbs/1000 gal =	<u>52.3</u> tons/yr
V O C:	0.34 lbs/1000 gal =	<u>0.889</u> tons/yr
C O:	5.0 lbs/1000 gal =	<u>13.1</u> tons/yr

Dryer Burner (waste oil/atomizing burner)

The following calculations determine the amount of emissions created by waste fuel oil @ 1.000 % sulfur, based on 8760 hours of use and AP-42 Chapter 1.11

Pollutant:	<u>82.4</u> MMBtu/hr * 8760 hrs/yr * 1000	* Ef (lbs/1000 gal) = (tons/yr)	<u>0.500</u> % Ash
	<u>142000</u> Btu/gal * 2000 lbs/ton		<u>0.015</u> % Lead
P M:	33.0 lbs/1000 gal =	<u>83.9</u> tons/yr	
P M-10:	28.5 lbs/1000 gal =	<u>72.4</u> tons/yr	
S O x:	107.0 lbs/1000 gal =	<u>272</u> tons/yr	
N O x:	16.0 lbs/1000 gal =	<u>40.7</u> tons/yr	
V O C:	1.0 lbs/1000 gal =	<u>2.54</u> tons/yr	
C O:	2.10 lbs/1000 gal =	<u>5.34</u> tons/yr	

Dryer Burner (Propane)

The following calculations determine the amount of emissions created by propane @ 0.100 % sulfur, based on 8760 hours of use and AP42 (Supplement B 10/96), Table 1.5-1 (SCC 1-02-010-02)

Pollutant:	<u>82.4</u> MMBtu/hr * 8760 hrs/yr * 1000	* Ef (lbs/1000 gal) = (tons/yr)
	<u>94000</u> Btu/gal * 2000 lbs/ton	
P M:	0.6 lbs/1000 gal =	<u>2.30</u> tons/yr
P M-10:	0.6 lbs/1000 gal =	<u>2.30</u> tons/yr
S O x:	0.01 lbs/1000 gal =	<u>0.038</u> tons/yr
N O x:	19.0 lbs/1000 gal =	<u>73.0</u> tons/yr
V O C:	0.5 lbs/1000 gal =	<u>1.92</u> tons/yr
C O:	3.20 lbs/1000 gal =	<u>12.3</u> tons/yr

Dryer Burner (Butane)

The following calculations determine the amount of emissions created by butane combustion, based on 8760 hours of use, AP-42 Ch. 1.4, and EPA SCC #3-05-002-06:

Pollutant:	<u>82.4 MMBtu/hr * 8760 hrs/yr * 1000 * Ef (lb/1000 gal)</u>	= (tons/yr)
	102000 Btu/gal * 2000 lbs/ton	
P M:	0.6 lbs/1000 gal =	<u>2.12</u> tons/yr
P M-10:	0.6 lbs/1000 gal =	<u>2.12</u> tons/yr
S O x:	0.02 lbs/1000 gal =	<u>0.071</u> tons/yr
N O x:	21.0 lbs/1000 gal =	<u>74.3</u> tons/yr
V O C:	0.4 lbs/1000 gal =	<u>1.42</u> tons/yr
C O:	3.6 lbs/1000 gal =	<u>12.7</u> tons/yr

**** aggregate drying: batch-mix plant **
Not being modified**

The following calculations determine the amount of emissions created by aggregate drying, based on 8760 hours of use and EPA SCC #3-05-002-05:

P M:	32 lbs/ton x	<u>200</u>	tons/hr x	8760 hrs/yr =	<u>28032</u> tons/yr
		2000	lbs/ton		
P M-10:	4.5 lbs/ton x	<u>200</u>	tons/hr x	8760 hrs/yr =	<u>3942</u> tons/yr
		2000	lbs/ton		
Lead:	3.30000000E-06 lbs/ton x	<u>200</u>	tons/hr x	8760 hrs/yr =	<u>0.003</u> tons/yr
		2000	lbs/ton		
HAPs:	0.0058 lbs/ton x	<u>200</u>	tons/hr x	8760 hrs/yr =	<u>5.08</u> tons/yr
		2000	lbs/ton		

HAPs include benzene, ethylbenzene, formaldehyde, methyl chloroform, naphthalene, toluene, xylene; arsenic, cadmium, chromium, manganese, mercury, and nickel compounds.

Emissions before controls (combustion plus production) are as follows:

natural gas		#2 oil		#4 oil	
P M:	28033 tons/yr	P M:	28037 tons/yr	P M:	28037 tons/yr
P M-10:	3945 tons/yr	P M-10:	3951 tons/yr	P M-10:	3951 tons/yr
S O x:	0.217 tons/yr	S O x:	186 tons/yr	S O x:	186 tons/yr
N O x:	36.1 tons/yr	N O x:	52.3 tons/yr	N O x:	52.3 tons/yr
V O C:	1.99 tons/yr	V O C:	0.889 tons/yr	V O C:	0.889 tons/yr
C O:	30.3 tons/yr	C O:	13.1 tons/yr	C O:	13.1 tons/yr
Lead:	0.003 tons/yr	Lead:	0.003 tons/yr	Lead:	0.003 tons/yr
HAPs:	5.08 tons/yr	HAPs:	5.08 tons/yr	HAPs:	5.08 tons/yr

waste oil		propane		butane	
P M:	28116 tons/yr	P M:	28034 tons/yr	P M:	28034 tons/yr
P M-10:	4014 tons/yr	P M-10:	3944 tons/yr	P M-10:	3944 tons/yr
S O x:	272 tons/yr	S O x:	0.038 tons/yr	S O x:	0.071 tons/yr
N O x:	40.7 tons/yr	N O x:	73.0 tons/yr	N O x:	74.3 tons/yr
V O C:	2.54 tons/yr	V O C:	1.92 tons/yr	V O C:	1.42 tons/yr
C O:	5.34 tons/yr	C O:	12.3 tons/yr	C O:	12.7 tons/yr
Lead:	0.003 tons/yr	Lead:	0.003 tons/yr	Lead:	0.003 tons/yr
HAPs:	5.08 tons/yr	HAPs:	5.08 tons/yr	HAPs:	5.08 tons/yr

B. Dryer Emissions after Controls including process emissions

dryer combustion: gas		
P M:	28033 tons/yr x	0.0020 emitted after controls =
P M-10:	3945 tons/yr x	0.0020 emitted after controls =
		56.1 tons/yr
		7.89 tons/yr
dryer combustion: #2 oil		
P M:	28037 tons/yr x	0.0020 emitted after controls =
P M-10:	3951 tons/yr x	0.0020 emitted after controls =
		56.1 tons/yr
		7.90 tons/yr
dryer combustion: #4 oil		
P M:	28037 tons/yr x	0.0020 emitted after controls =
P M-10:	3951 tons/yr x	0.0020 emitted after controls =
		56.1 tons/yr
		7.90 tons/yr
dryer combustion: waste oil		
P M:	28116 tons/yr x	0.0020 emitted after controls =
P M-10:	4014 tons/yr x	0.0020 emitted after controls =
		56.2 tons/yr
		8.03 tons/yr
dryer combustion: Propane		
P M:	28034 tons/yr x	0.0020 emitted after controls =
P M-10:	3944 tons/yr x	0.0020 emitted after controls =
		56.1 tons/yr
		7.89 tons/yr
dryer combustion: Butane		
P M:	28034 tons/yr x	0.0020 emitted after controls =
P M-10:	3944 tons/yr x	0.0020 emitted after controls =
		56.1 tons/yr
		7.89 tons/yr

C. Allowable Emissions

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

$$\begin{array}{r}
 \frac{0.04 \text{ grains}}{\text{dscf}} * \frac{47000.000 \text{ acfm}}{\text{year}} * \frac{525600 \text{ minutes}}{\text{year}} * \frac{1}{7000 \text{ grains}} * \frac{1 \text{ ton}}{2000 \text{ lbs}} * \frac{460 + \frac{528}{275} \text{ Temp}}{100} * \frac{100 - 3\% \text{ moisture}}{100} = 56.2 \text{ tons/yr}
 \end{array}$$

To meet NSPS Subpart I, the following value must be < amount calculated above
Although, this shows noncompliance, stack tests conducted at this stack on May 26, 1998 show that the stack emissions are actually less than 0.02 gr/dscf. Therefore, the AP-42 emission factors and/or the estimated control efficiency are over conservative and the mixer/dryer will comply with this rule. The limited emissions are 0.04 gr/dscf, equivalent to 11.2 lbs/hr and 49.2 tons per year. Compliance after the fuel change will be determined with a stack test.

B. The following calculations determine the maximum sulfur content of no. 2 distillate oil allowable by 326 IAC 7:

limit:	0.5 lbs/MMBtu		
	0.5 lbs/MMBtu x	<u>138000 Btu/gal=</u>	<u>69.0 lbs/1000gal</u>
	69 lbs/1000gal /	<u>142.0 lb/1000 gal =</u>	<u>0.5</u>
		<u>0.5 % to comply with 326 IAC 7</u>	

C. The following calculations determine the maximum sulfur content of distillate #4 fuel oil allowable by 326-IAC 7:

limit:	0.5 lbs/MMBtu		
	0.5 lbs/MMBtu x	<u>138000 Btu/gal=</u>	<u>69 lbs/1000gal</u>
	69 lbs/1000gal /	<u>142.0 lbs/1000 gal =</u>	<u>0.5</u>
		<u>0.5 % to comply with 326 IAC 7</u>	

D. The following calculations determine the maximum sulfur content of residual waste fuel oil allowable by 326-IAC 7:

limit:	1.6 lbs/MMBtu		
	1.6 lbs/MMBtu x	<u>142000 Btu/gal=</u>	<u>227.2 lbs/1000gal</u>
	227.2 lbs/1000gal /	<u>107.0 lbs/1000 gal =</u>	<u>2.1</u>
		(check burner type)	
		<u>2.1 % to comply with 326 IAC 7</u>	

D. Limited Potential Emissions from the Aggregate Dryer

FUEL USAGE LIMITATION: BASED ON NOx

FUEL USAGE LIMITATION FOR BURNER & HEATER (Natural Gas)

$$\begin{array}{rclclcl}
 36.1 \frac{\text{tons NOx}}{\text{year}} & * & 2000 \frac{\text{lbs}}{\text{ton}} & = & 72182 \frac{\text{lbs NOx}}{\text{year}} \\
 72182 \frac{\text{lbs NOx}}{\text{year}} & / & 100.0 \frac{\text{lbs NOx}}{\text{MMcf}} & = & 721.8 \frac{\text{MMcf}}{\text{year}} \\
 721.8 \frac{\text{MMcf}}{\text{year}} & * & \frac{29.1 \text{ tons/yr}}{36.1 \text{ tons/yr}} & = & 581.4 \frac{\text{MMcf}}{\text{year}} \text{ FESOP Limit}
 \end{array}$$

FUEL USAGE LIMITATION FOR BURNER & HEATER (No. 2 distillate oil)

$$\begin{array}{rclclcl}
 52.3 \frac{\text{tons NOx}}{\text{year}} & * & 2000 \frac{\text{lbs}}{\text{ton}} & = & 104612 \frac{\text{lbs NOx}}{\text{year}} \\
 104612 \frac{\text{lbs NOx}}{\text{year}} & / & \frac{20.0 \text{ lbs NOx}}{1000 \text{ gal}} & = & 5230609 \frac{\text{gal}}{\text{year}} \\
 5230609 \frac{\text{gal}}{\text{year}} & * & \frac{29.1 \text{ tons/yr}}{52.3 \text{ tons/yr}} & = & 2907000 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}
 \end{array}$$

FUEL USAGE LIMITATION FOR BURNER & HEATER (No. 4 distillate oil)

$$\begin{array}{rclclcl}
 52.3 \frac{\text{tons NOx}}{\text{year}} & * & 2000 \frac{\text{lbs}}{\text{ton}} & = & 104612 \frac{\text{lbs NOx}}{\text{year}} \\
 104612 \frac{\text{lbs NOx}}{\text{year}} & / & \frac{20.0 \text{ lbs NOx}}{1000 \text{ gal}} & = & 5230609 \frac{\text{gal}}{\text{year}} \\
 5230609 \frac{\text{gal}}{\text{year}} & * & \frac{29.1 \text{ tons/yr}}{52.3 \text{ tons/yr}} & = & 2907000 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}
 \end{array}$$

FUEL USAGE LIMITATION FOR BURNER & HEATER (Waste Oil)

$$\begin{aligned}
 & 40.7 \frac{\text{tons NOx}}{\text{year}} \quad * \quad 2000 \frac{\text{lbs}}{\text{ton}} \quad = \quad 81332 \frac{\text{lbs NOx}}{\text{year}} \\
 & 81332 \frac{\text{lbs NOx}}{\text{year}} \quad / \quad 16.0 \frac{\text{lbs NOx}}{1000 \text{ gal}} \quad = \quad 5083268 \frac{\text{gal}}{\text{year}} \\
 & 5083268 \frac{\text{gal}}{\text{year}} \quad * \quad \frac{29.1 \text{ tons/yr}}{40.7 \text{ tons/yr}} \quad = \quad 3633750 \frac{\text{gal}}{\text{year}} \quad \text{FESOP Limit}
 \end{aligned}$$

FUEL USAGE LIMITATION FOR BURNER & HEATER (Propane)

$$\begin{aligned}
 & 73.0 \frac{\text{tons NOx}}{\text{year}} \quad * \quad 2000 \frac{\text{lbs}}{\text{ton}} \quad = \quad 145901 \frac{\text{lbs NOx}}{\text{year}} \\
 & 145901 \frac{\text{lbs NOx}}{\text{year}} \quad / \quad 19.0 \frac{\text{lbs NOx}}{1000 \text{ gal}} \quad = \quad 7678979 \frac{\text{gal}}{\text{year}} \\
 & 7678979 \frac{\text{gal}}{\text{year}} \quad * \quad \frac{29.1 \text{ tons/yr}}{73.0 \text{ tons/yr}} \quad = \quad 3060000 \frac{\text{gal}}{\text{year}} \quad \text{FESOP Limit}
 \end{aligned}$$

FUEL USAGE LIMITATION FOR BURNER & HEATER (Butane)

$$\begin{aligned}
 & 74.3 \frac{\text{tons NOx}}{\text{year}} \quad * \quad 2000 \frac{\text{lbs}}{\text{ton}} \quad = \quad 148611 \frac{\text{lbs NOx}}{\text{year}} \\
 & 148611 \frac{\text{lbs NOx}}{\text{year}} \quad / \quad 21.0 \frac{\text{lbs}}{1000 \text{ gal}} \quad = \quad 7076706 \frac{\text{gal}}{\text{year}} \\
 & 7076706 \frac{\text{gal}}{\text{year}} \quad * \quad \frac{29.1 \text{ tons/yr}}{74.3 \text{ tons/yr}} \quad = \quad 2771429 \frac{\text{gal}}{\text{year}} \quad \text{FESOP Limit}
 \end{aligned}$$

Equivalencies for NOx

NOx emissions from 3,637,750 gallons of waste oil equals the NOx emissions from 2,771,429 gallons of butane, 3,060,000 gallons of propane, 2,907,000 gallons of No. 2 or No. 4 distillate oil, or 581.4 million cubic feet of natural gas.

Therefore, the fuel usage limit will be written as a limit of 3,637,750 gallons of waste oil per consecutive twelve month period, where 1 gallon of butane is equal to 1.31 gallons of waste oil, 1 gallon of propane is equal to 1.19 gallons of waste oil, 1 gallon of No. 2 or No. 4 distillate oil is equal to 1.25 gallons of waste oil, and 1 million cubic feet of natural gas is equal to 6,289 gallons of waste oil.

FUEL USAGE LIMITATION: BASED ON SO2

FUEL USAGE LIMITATION FOR BURNER & HEATER (Natural Gas)

No fuel usage limitation is required for SO2 if Natural Gas is the only fuel used in a year.

Since usage of Natural Gas can only add 0.217 tons of SO2 per year to the SO2 emissions, Natural Gas usage will not be considered in limiting SO2.

FUEL USAGE LIMITATION FOR BURNER & HEATER (#2 Oil)

$$\frac{186 \text{ tons SO2}}{\text{year}} \times \frac{2000 \text{ lbs}}{\text{ton}} = 371373 \frac{\text{lbs SO2}}{\text{year}}$$

$$\frac{371373 \text{ lbs SO2}}{\text{year}} \div \frac{71.0 \text{ lbs}}{1000 \text{ gal}} = 5230609 \frac{\text{gal}}{\text{year}}$$

$$\frac{5230609 \text{ gal}}{\text{year}} \times \frac{99.0 \text{ tons/yr}}{186 \text{ tons/yr}} = 2788732 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}$$

FUEL USAGE LIMITATION FOR BURNER (#4 Oil)

$$\frac{186 \text{ tons SO2}}{\text{year}} \times \frac{2000 \text{ lbs}}{\text{ton}} = 371373 \frac{\text{lbs SO2}}{\text{year}}$$

$$\frac{371373 \text{ lbs SO2}}{\text{year}} \div \frac{71.0 \text{ lbs}}{1000 \text{ gal}} = 5230609 \frac{\text{gal}}{\text{year}}$$

$$\frac{5230609 \text{ gal}}{\text{year}} \times \frac{99.0 \text{ tons/yr}}{186 \text{ tons/yr}} = 2788732 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}$$

FUEL USAGE LIMITATION FOR BURNER (Waste Oil)

$$\frac{272 \text{ tons SO2}}{\text{year}} \times \frac{2000 \text{ lbs}}{\text{ton}} = 544000 \frac{\text{lbs SO2}}{\text{year}}$$

$$\frac{544000 \text{ lbs SO2}}{\text{year}} \div \frac{107.0 \text{ lbs}}{1000 \text{ gal}} = 5084112 \frac{\text{gal}}{\text{year}}$$

$$\frac{5084112 \text{ gal}}{\text{year}} \times \frac{99.0 \text{ tons/yr}}{272 \text{ tons/yr}} = 1850467 \frac{\text{gal}}{\text{year}} \text{ FESOP Limit}$$

FUEL USAGE LIMITATION FOR BURNER (Propane)

No fuel usage limitation is required for SO2 if Propane is the only fuel used in a year.

Since usage of Propane can only add 0.038 tons of SO2 per year to the SO2 emissions, Propane usage will not be considered in limiting SO2.

FUEL USAGE LIMITATION FOR BURNER (Butane)

No fuel usage limitation is required for SO2 if Butane is the only fuel used in a year.

Since usage of Butane can only add 0.07 tons of SO2 per year to the SO2 emissions, Butane usage will not be considered in limiting SO2.

Equivalencies for SO2

SO2 emissions from 1,850,467 gallons of waste oil equals the SO2 emissions from 2,788,732 gallons of No. 2 or No. 4 distillate oil.

Therefore, the fuel usage limit will be written as a limit of 1,850,467 gallons of waste oil per consecutive twelve month period, where 1 gallon of No. 2 or No. 4 distillate oil each equal 0.664 gallon of waste oil.

E. Total Emissions from the Aggregate Dryer at Plant 157-03286

	Before Modification			After Modification			Change in emissions		
	PTE Before controls (tons/yr)	PTE after controls (tons/yr)	PTE after limitations (tons/yr)	PTE Before controls (tons/yr)	PTE after controls (tons/yr)	PTE after limitations (tons/yr)	Before Controls (tons/yr)	After Controls (tons/yr)	After Limitations (tons/yr)
P M:	28034	56.1	90.17	28116	56.2	49.2	81.6	0.163	-41.0
P M-10:	3944	7.89	40.17	4014	8.03	40.17	70.1	0.140	0.00
S O x:	0.038	0.038	0.038	272	272	99.2	272	272	99.2
N O x:	73.0	73.0	29.07	74.3	74.3	29.07	1.36	1.36	0.00
V O C:	1.92	1.92	1.92	2.54	2.54	1.92	0.622	0.622	0.00
C O:	12.3	12.3	12.3	30.3	30.3	12.3	18.0	18.0	0.00
Lead:	0.003	0.003	0.003	0.003	0.003	0.003	0.00	0.00	0.00
HAPs:	5.08	5.08	5.08	5.08	5.08	5.08	0.00	0.00	0.00

F. Total Emissions from the Entire Source

	Before Modification		Change in emissions		After Modification	After Modification
	PTE Before controls (tons/yr)	PTE after limitations (tons/yr)	Before Controls (tons/yr)	After Limitations (tons/yr)	Before Controls (tons/yr)	After Limitations (tons/yr)
P M:	59734	249	81.6	-41.0	59816	208
P M-10:	8448	99	70.1	0.00	8518	99
S O x:	0.240	0.24	271.9	99.16	272	99
N O x:	145.0	99	1.4	0.00	146	99
V O C:	3.84	3.84	0.6	0.00	4.46	3.84
C O:	24.3	24.3	18.0	0.00	42.3	24.3
HAPs:	10.80	10.8	0.0	0.00	10.8	10.8