INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: December 11, 2012

RE: Swift Fuels, LLC / 157-32248-05376

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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.dot12/03/07

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New Source Construction and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY

Swift Fuels, LLC
(Portable)

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 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.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F157-32248-05376	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 11, 2012 Expiration Date: December 11, 2017

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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 portable mesitylene production pilot plant.

Initial Source Address:		3150 S 460 E, Lafayette, Indiana 47905
General Source Phone Number:		(765) 464-8336
SIC Code:	2865	(Cyclic Organic Crudes and Intermediates)
County Location:	Tippe	canoe
Source Location Status:		Attainment for all criteria pollutants
Source Status:		Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

(a) One (1) acetone storage tank, identified as ST01, approved for construction in 2012, equipped with a pressure-vacuum vent for distribution, with a maximum tank volume of 10,000 gallons;

Note: There are no emissions from this tank because acetone is non-regulated VOC and non-HAP containing material.

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the

scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

A.3 FESOP Applicability [326 IAC 2-8-2]

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

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

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

B.2 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit 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.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and 326 IAC 2-8 when prior to the start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.

(c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

B.4 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F157-32248-05376, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

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

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

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

B.6 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

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

B.7 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.8 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

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

B.10 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.11 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

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

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.12 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

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

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

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

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.14 Emergency Provisions [326 IAC 2-8-12]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

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

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

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

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

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

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

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

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

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

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

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

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

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

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F157-32248-05376 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.17 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

(1) That this permit contains a material mistake.

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

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.18 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a

certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.19 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.20 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:

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

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

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

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

(b) Emission Trades [326 IAC 2-8-15(b)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.

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

B.21 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.22 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as

such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

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

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

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

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

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

B.23 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

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

B.25 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

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

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

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in any County except Lake, Porter, or the areas specified in (b)(1) through (7).

(b) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c):

(1) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, and Oak Park);

(2) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);

(3) Dubois County (Bainbridge Township - the City of Jasper);

(4) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);

(5) St. Joseph County (the area north of Kern Road and east of Pine Road);

(6) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and

(7) Vigo County (Indiana State University campus, 0.5 km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16.

(c) 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, when the source is located in any County.

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

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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

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

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

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

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

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

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

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

C.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.12 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

C.13 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

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

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

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

(1) monitoring results;

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

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

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

(e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

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

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.15 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the FESOP.

Records of required monitoring information include the following:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.16 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

(d) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Portable Source Requirement

C.17 Relocation of Portable Sources [326 IAC 2-14-4]

(a) This permit is approved for operation in all areas of Indiana except in severe nonattainment areas for ozone (at the time of this permit’s issuance these areas were Lake and Porter Counties). This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2, and Emission Offset requirements in 326 IAC 2-3. Prior to locating in any severe nonattainment area, the Permittee must submit a request and obtain a permit modification.

(b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:

(1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1

(2) A list of adjacent landowners that the Permittee will send written notice to not more than ten (10) days after submission of the request to relocate. IC 13-15-8

(3) The new location address of the portable source.

(4) Whether or not this portable source will be relocated to another source.

(5) If relocating to another source:

(A) Name, location address, and permit number of the source this portable source is relocating to.

(B) Whether or not the sources will be considered as one source. See Non Rule Policy (NRP) Air-005 and Air-006.

(6) If the sources will be considered as one source, whether or not the source to be relocated to has received the necessary approvals from IDEM to allow the relocation.

The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) A “Relocation Site Approval” letter shall be obtained prior to relocating.

(d) A valid operation permit consists of this document and any subsequent “Relocation Site Approval” letter specifying the current location of the portable plant.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) acetone storage tank, identified as ST01, approved for construction in 2012, equipped with a pressure-vacuum vent for distribution, with a maximum tank volume of 10,000 gallons;

Note: There are no emissions from this tank because acetone is non-regulated VOC and non-HAP containing material.

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Permittee shall control the VOC emissions from the mesitylene processing skid (EU01) using the Best Available Control Technology (BACT), which has been determined to be the following:

(a) The open flare CE01 shall operate at all times that the scrubber of the mesitylene processing skid (EU01) is in operation.

(b) The overall VOC control efficiency for the open flare (including the capture efficiency and destruction efficiency) shall be equal to or greater than 98%.

D.1.2 Volatile Organic Compounds (VOC) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and to render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the VOC emissions from the mesitylene processing skid (EU01), after control, shall not exceed 1.096 pounds per hour.

Compliance with these limits, combined with the potential to emit VOCs from all other emission units at this source, shall limit the source-wide total potential to emit of VOCs to less than 100 tons per 12 consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for the mesitylene processing skid (EU01) and open flare (CE01). Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.4 Volatile Organic Compounds (VOC) Control [326 IAC 8-1-2][326 IAC 2-8-4]

In order to comply with Conditions D.1.1 and D.1.2, the open flare (CE01) shall be in operation and control VOC emissions from the mesitylene processing skid (EU01) whenever the mesitylene processing skid (EU01) is in operation.

For the purpose of this condition, "operation of the flare" shall mean the presence of a pilot flame or equivalent. The flare shall be operated per manufacturer's specifications.

D.1.5 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1 and D.1.2, within 60 days after achieving the maximum capacity of the mesitylene processing skid (EU01) but not later than one hundred eighty (180) days after initial startup of the mesitylene processing skid (EU01), the Permittee shall conduct a one-time performance test to:

(a) Sample and determine the net heating value (Btu content) of the gas streams to the open flare (CE01).

Flares shall be used only with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted.

The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

K = Constant, 1.740 x 10^{-7} (1/ppm) (g mole/scm) (MJ/kcal), where the standard temperature for (g mole/scm) is 20°C

Where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90; and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 if published values are not available or cannot be calculated.

(b) Measure the volumetric flowrate and determine the actual exit velocity of the open flare (CE01).

(1) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(2) In order to follow flare best practices and achieve at least 98% control efficiency, nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in (b)(1), as follows:

(A) Less than 60 ft/sec, except as provided in (b)(2)(B) and (b)(2)(C).

(B) Equal to or greater than 60 ft/sec but less than 400 ft/sec, if the net heating value of the gas being combusted is greater than 1,000 Btu/scf.

(C) Less than the velocity, V_{max}, as determined by the method specified below, and less than 400 ft/sec.

The maximum permitted velocity, V_{max}, shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

Where:
V_{max} = Maximum permitted velocity, M/sec
28.8 = Constant
31.7 = Constant
H_T = The net heating value as determined in (a)

(c) Determine the open flare visible emissions. The observation period is 2 hours and shall be determined according to Reference Method 22.

The Permittee shall conduct the performance test utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

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

D.1.6 Flare Parametric Monitoring

To demonstrate compliance status with Conditions D.1.1 and D.1.2, the Permittee shall continuously monitor the presence of the flare pilot flame using a thermocouple, infrared monitor or any other equivalent device to detect the presence of a flame. For the purpose of this condition, continuous means no less than once per minute. If a condition exists which should result in a response step, the Permittee shall take a reasonable response step(s). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take a response step(s) shall be considered a deviation of this permit.

D.1.7 Visible Emissions Notations

(a) Visible emission notations of the open flare (CE01) stack exhaust (SV01) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.1.8 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.4 and D.1.6, the Permittee shall maintain records of the following:

(1) Date and time when the mesitylene processing skid (EU01) was venting to the flare and documentation that a flare pilot flame was present.

(2) Records to demonstrate the thermocouple, infrared monitor, or any other equivalent device continuously detects the presence of a pilot flame.

(b) To document the compliance status with Condition D.1.7, the Permittee shall maintain daily records of the visible emission notations of the open flare (CE01) stack SV01 exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(c) Pursuant to 316 IAC 8-9-1(b), when located in Clark or Floyd County, the Permittee shall maintain a record the following information for the fuel storage tanks:

(1) the tank identification number;

(2) the tank dimensions; and

(3) the tank capacity.

Pursuant to 326 IAC 8-9-6(a), these records shall be maintained for the life of the tank.

(d) Section C - General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

E.1.1 General Provisions Relating to New Source Performance Standards (NSPS) [40 CFR Part 60, Subpart A] [326 IAC 12-1]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR 60, Subpart VVa.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 New Source Performance Standards (NSPS) for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 [40 CFR Part 60, Subpart VVa] [326 IAC 12]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart VVa (included as Attachment A of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart VVa:

(a) 40 CFR 60.480a(a), (b), (c), (d), (f)
(b) 40 CFR 60.481a
(c) 40 CFR 60.486a(i)
(d) 40 CFR 60.487a
(e) 40 CFR 60.489a

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

E.2.1 General Provisions Relating to New Source Performance Standards (NSPS) [40 CFR Part 60, Subpart A] [326 IAC 12-1]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR 60, Subpart RRR.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 New Source Performance Standards (NSPS) for Equipment Leaks of VOC in the Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes [40 CFR Part 60, Subpart RRR] [326 IAC 12]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart RRR (included as Attachment A of this permit), which are incorporated by reference as 326 IAC 12, except as otherwise specified in 40 CFR Part 60, Subpart RRR:

(a) 40 CFR 60.700(a), (b)(2), and (c)(3)
(b) 40 CFR 60.701
(c) 40 CFR 60.705(i), (l)(5), and (n)
(d) 40 CFR 60.707

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Swift Fuels, LLC
Initial Source Address: 3150 S 460 E, Lafayette, Indiana 47905
FESOP Permit No.: F157-32248-05376

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

I certify that, based o n information and belief formed after reasonable inquiry, the statem ents and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Swift Fuels, LLC
Initial Source Address: 3150 S 460 E, Lafayette, Indiana 47905
FESOP Permit No.: F157-32248-05376

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Swift Fuels, LLC
Initial Source Address: 3150 S 460 E, Lafayette, Indiana 47905
FESOP Permit No.: F157-32248-05376

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Mail to: Permit Administration and Support Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Swift Fuels, LLC
3150 S 460 E
Lafayette, Indiana 47905

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that Swift Fuels, LLC 3150 S 460 E, Lafayette, Indiana 47905, completed construction of the fuel production pilot plant on _____in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on August 24, 2012 and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F157-32248-05376, Plant ID No. 157-05376 issued on _____.

5. **Permittee, please cross out the following statement if it does not apply:** Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature_____
Date_____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana

on this _____ day of _____, 20 _____. My Commission expires: _____.

Signature_____
Name_____ (typed or printed)

New Source Construction and Federally Enforceable State Operating Permit
OFFICE OF AIR QUALITY

Swift Fuels, LLC
(Portable)

Attachment A

Title 40: Protection of Environment

Part 60 - New Source Performance Standards (NSPS)

Subpart VVa

Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Source: 72 FR 64883, Nov. 16, 2007, unless otherwise noted.

§ 60.480a Applicability and designation of affected facility.

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

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

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486a(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 is exempt from §§60.482–1a through 60.482–11a.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§60.482–1a through 60.482–11a.

(4) Any affected facility that produces beverage alcohol is exempt from §§60.482–1a through 60.482–11a.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§60.482–1a through 60.482–11a.

(e) *Alternative means of compliance* —(1) *Option to comply with part 65.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §§60.485a(d), (e), and (f), and 60.486a(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Part 63, subpart H.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 63, subpart H, to satisfy the requirements of §§60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 63, subpart H, the requirements of §60.485a(d), (e), and (f), and §60.486a(i) and (j) still apply.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 63, subpart H must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 63, subpart H, except that provisions required to be met prior to implementing 40 CFR part 63 still apply. Owners and operators who choose to comply with 40 CFR part 63, subpart H, must comply with 40 CFR part 63, subpart A.

(f) *Stay of standards.* (1) Owners or operators that start a new, reconstructed, or modified affected source prior to November 16, 2007 are not required to comply with the requirements in this paragraph until EPA takes final action to require compliance and publishes a document in the Federal Register .

(i) The definition of "capital expenditure" in §60.481a of this subpart. While the definition of "capital expenditure" is stayed, owners or operators should use the definition found in §60.481 of subpart VV of this part.

(ii) [Reserved]

(2) Owners or operators are not required to comply with the requirements in this paragraph until EPA takes final action to require compliance and publishes a document in the Federal Register .

(i) The definition of "process unit" in §60.481a of this subpart. While the definition of "process unit" is stayed, owners or operators should use the following definition:

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

(ii) The method of allocation of shared storage vessels in §60.482–1a(g) of this subpart.

(iii) The standards for connectors in gas/vapor service and in light liquid service in §60.482–11a of this subpart.

[72 FR 64883, Nov. 16, 2007, as amended at 73 FR 31375, June 2, 2008]

§ 60.481a Definitions.

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

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where:

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$A = Y \times (B \div 100)$;

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable Value for B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids must be covered or closed when not being filled or emptied.

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

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, P.O. Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485a(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in §60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in §60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:

(1) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.

(2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.

(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in §60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

Effective Date Note: At 73 FR 31376, June 2, 2008, in §60.481a, the definitions of "capital expenditure" and "process unit" were stayed until further notice.

§ 60.482-1a Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1a through 60.482–10a or §60.480a(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485a.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, and 60.482–10a as provided in §60.484a.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, or 60.482–10a, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2a through 60.482–10a if it is identified as required in §60.486a(e)(5).

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§60.482–2a through 60.482–11a if it is identified as required in §60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

(i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.

(ii) When monitoring is conducted semiannually (*i.e.* , once every 2 quarters), monitoring events must be separated by at least 60 calendar days.

(iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.

(iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.

(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

Effective Date Note: At 73 FR 31376, June 2, 2008, in §60.482–1a, paragraph (g) was stayed until further notice.

§ 60.482-2a Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485a(b), except as provided in §60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482–1a(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482–1a(f).

(b)(1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.

(i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;

(ii) 2,000 ppm or greater for all other pumps.

(2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.

(i) Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section are met.

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10a; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section prior to the next required inspection.

(A) Monitor the pump within 5 days as specified in §60.485a(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm.

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.

(6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.

(ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.

(iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

(e) Any pump that is designated, as described in §60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing;

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485a(c); and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482–10a, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

§ 60.482-3a Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482–1a(c) and paragraphs (h), (i), and (j) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10a; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10a, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in §60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §60.485a(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

§ 60.482-4a Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485a(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482–9a.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485a(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10a is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9a.

§ 60.482-5a Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in §60.482–1a(c) and paragraph (c) of this section.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section.

(1) Gases displaced during filling of the sample container are not required to be collected or captured.

(2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482–10a.

(iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(A) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266;

(C) A facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR 61.343 through 40 CFR 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR part 261.

(c) In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

§ 60.482-6a Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482–1a(c) and paragraphs (d) and (e) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ 60.482-7a Standards: Valves in gas/vapor service and in light liquid service.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, §60.482–1a(c) and (f), and §§60.483–1a and 60.483–2a.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482–1a(c), and §§60.483–1a and 60.483–2a.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the existing valves in the process unit are monitored in accordance with §60.483–1a or §60.483–2a, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483–2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

(b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(c)(1)(i) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486a(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) of this section if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485a(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section, and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486a(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either:

(i) Becomes an affected facility through §60.14 or §60.15 and was constructed on or before January 5, 1981; or

(ii) Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482-8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §§60.482–2a(c)(2) and 60.482–7a(e).

§ 60.482-9a Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves and connectors will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10a.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

(f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

§ 60.482-10a Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485a(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485a(b); and

(ii) Conduct annual inspections according to the procedures in §60.485a(b).

(g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in §60.486a(c).

(4) For each inspection conducted in accordance with §60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

§ 60.482-11a Standards: Connectors in gas/vapor service and in light liquid service.

(a) The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

(b) Except as allowed in §60.482–1a(c), §60.482–10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in §60.485a(b) and, as applicable, §60.485a(c).

(2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.

(3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.

(i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).

(ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.

(iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.

(A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.

(B) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.

(C) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.

(iv) If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.

(v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.

(c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$\%C_L = C_L / C_t * 100$

Where:

$\%C_L$= Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

C_L= Number of connectors measured at 500 ppm or greater, by the method specified in §60.485a(b).

C_t= Total number of monitored connectors in the process unit or affected facility.

(d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.

(e) Any connector that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:

(1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and

(2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.

(f) *Inaccessible, ceramic, or ceramic-lined connectors* . (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;

(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

(g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

Effective Date Note: At 73 FR 31376, June 2, 2008, §60.482–11a was stayed until further notice.

§ 60.483-1a Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487a(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7a(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485a(b).

(2) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in §60.485a(h).

§ 60.483-2a Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d)a.

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7a.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7a but can again elect to use this section.

(5) The percent of valves leaking shall be determined as described in §60.485a(h).

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

(7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

§ 60.484a Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for demonstrating equivalence of the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.

(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register .

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the CAA.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

§ 60.485a Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§60.482–1a through 60.482–11a, 60.483a, and 60.484a as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A–7 of this part. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

(c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 of appendix A–7 of this part shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d)(1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 of appendix A–7 of this part shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$V_{max} = K_1 + K_2 H_T$

Where:

V_{max}= Maximum permitted velocity, m/sec (ft/sec).

H_T= Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1= 8.706 m/sec (metric units) = 28.56 ft/sec (English units).

K_2= 0.7084 m^4 /(MJ-sec) (metric units) = 0.087 ft^4 /(Btu-sec) (English units).

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740 × 10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674 × 10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units).

C_i= Concentration of sample component “i,” ppm

H_i= net heat of combustion of sample component “i” at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole.

(5) Method 18 of appendix A–6 of this part or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference-see §60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference-see §60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D of appendix A–7 of this part, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

(h) The owner or operator shall determine compliance with §60.483–1a or §60.483–2a as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$\%V_L = (V_L / V_T) * 100$

Where:

$\%V_L$= Percent leaking valves.

V_L= Number of valves found leaking.

V_T= The sum of the total number of valves monitored.

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with §60.482–7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

§ 60.486a Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a.

(i) Monitoring instrument identification.

(ii) Operator identification.

(iii) Equipment identification.

(iv) Date of monitoring.

(v) Instrument reading.

(b) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7a(c) and no leak has been detected during those 2 months.

(3) The identification on a connector may be removed after it has been monitored as specified in §60.482–11a(b)(3)(iv) and no leak has been detected during that monitoring.

(4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) Maximum instrument reading measured by Method 21 of appendix A–7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.

(5) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10a shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in §60.482–10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482–1a to 60.482–11a shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2a(e), 60.482–3a(i), and 60.482–7a(f).

(ii) The designation of equipment as subject to the requirements of §60.482–2a(e), §60.482–3a(i), or §60.482–7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4a.

(4)(i) The dates of each compliance test as required in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, and 60.482–7a(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

(7) The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.

(8) Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A–7 of this part and §60.485a(b).

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A–7 of this part.

(v) Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).

(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

(9) The connector monitoring schedule for each process unit as specified in §60.482–11a(b)(3)(v).

(10) Records of each release from a pressure relief device subject to §60.482–4a.

(f) The following information pertaining to all valves subject to the requirements of §60.482–7a(g) and (h), all pumps subject to the requirements of §60.482–2a(g), and all connectors subject to the requirements of §60.482–11a(e) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with §60.483–2a:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482–2a(d)(5) and 60.482–3a(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480a(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7(b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487a Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of §60.482–7a, excluding those valves designated for no detectable emissions under the provisions of §60.482–7a(f).

(3) Number of pumps subject to the requirements of §60.482–2a, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2a(e) and those pumps complying with §60.482–2a(f).

(4) Number of compressors subject to the requirements of §60.482–3a, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3a(i) and those compressors complying with §60.482–3a(h).

(5) Number of connectors subject to the requirements of §60.482–11a.

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486a:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in §60.482–7a(b) or §60.483–2a,

(ii) Number of valves for which leaks were not repaired as required in §60.482–7a(d)(1),

(iii) Number of pumps for which leaks were detected as described in §60.482–2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),

(iv) Number of pumps for which leaks were not repaired as required in §60.482–2a(c)(1) and (d)(6),

(v) Number of compressors for which leaks were detected as described in §60.482–3a(f),

(vi) Number of compressors for which leaks were not repaired as required in §60.482–3a(g)(1),

(vii) Number of connectors for which leaks were detected as described in §60.482–11a(b)

(viii) Number of connectors for which leaks were not repaired as required in §60.482–11a(d), and

(ix)–(x) [Reserved]

(xi) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§60.483–1a or 60.483–2a shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

§ 60.488a Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under §60.15: Pump seals, nuts and bolts, rupture disks, and packings.

(b) Under §60.15, the "fixed capital cost of new components" includes the fixed capital cost of all depreciable components (except components specified in §60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the "Applicability and designation of affected facility" section of the appropriate subpart.) For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489a List of chemicals produced by affected facilities.

Process units that produce, as intermediates or final products, chemicals listed in §60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006.

New Source Construction and Federally Enforceable State Operating Permit
OFFICE OF AIR QUALITY

Swift Fuels, LLC
(Portable)

Attachment B

Title 40: Protection of Environment

Part 60 - New Source Performance Standards (NSPS)

Subpart RRR

Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

Subpart RRR—Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

Source: 58 FR 45962, Aug. 31, 1993, unless otherwise noted.

§ 60.700 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in §60.707 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after June 29, 1990:

(1) Each reactor process not discharging its vent stream into a recovery system.

(2) Each combination of a reactor process and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any reactor process that is designed and operated as a batch operation is not an affected facility.

(2) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§60.702(c); 60.704 (d), (e), and (f); and 60.705 (g), (l)(1), (l)(6), and (t).

(3) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than 1 gigagram per year (1,100 tons per year) is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in §60.705 (i), (l)(5), and (n).

(4) Each affected facility operated with a vent stream flow rate less than 0.011 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in §60.704(g) and §70.705 (h), (l)(4), and (o).

(5) If the vent stream from an affected facility is routed to a distillation unit subject to subpart NNN and has no other releases to the air except for a pressure relief valve, the facility is exempt from all provisions of this subpart except for §60.705(r).

(6) Any reactor process operating as part of a process unit which produces beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(7) Any reactor process that is subject to the provisions of subpart DDD is not an affected facility.

(8) Each affected facility operated with a concentration of total organic compounds (TOC) (less methane and ethane) in the vent stream less than 300 ppmv as measured by Method 18 or a concentration of TOC in the vent stream less than 150 ppmv as measured by Method 25A is exempt from all provisions of this subpart except for the test method and procedure and the reporting and recordkeeping requirements in §60.704(h) and paragraphs (j), (l)(8), and (p) of §60.705.

(d) *Alternative means of compliance* —(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§60.702 through 60.705 and 60.708. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(2), (4), and (8) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

(Note: The intent of these standards is to minimize emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of TOC, measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.)

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.701 Definitions.

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

Batch operation means any noncontinuous reactor process that is not characterized by steady-state conditions and in which reactants are not added and products are not removed simultaneously.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

By compound means by individual stream components, not carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Combustion device means an individual unit of equipment, such as an incinerator, flare, boiler, or process heater, used for combustion of a vent stream discharged from the process vent.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a line.

Halogenated vent stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. If there is energy recovery, the energy recovery section and the combustion chambers are not of integral design. That is, the energy recovery section and the combustion section are not physically formed into one manufactured or assembled unit but are joined by ducts or connections carrying flue gas.

Primary fuel means the fuel fired through a burner or a number of similar burners. The primary fuel provides the principal heat input to the device, and the amount of fuel is sufficient to sustain operation without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in §60.707. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in §60.707 which is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

Reactor processes are unit operations in which one or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

Recovery device means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

Recovery system means an individual recovery device or series of such devices applied to the same vent stream.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge results from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Secondary fuel means a fuel fired through a burner other than a primary fuel burner. The secondary fuel may provide supplementary heat in addition to the heat provided by the primary fuel.

Total organic compounds or TOC means those compounds measured according to the procedures in §60.704(b)(4). For the purposes of measuring molar composition as required in §60.704(d)(2)(i) and §60.704(d)(2)(ii), hourly emission rate as required in §60.704(d)(5) and §60.704(e), and TOC concentration as required in §60.705(b)(4) and §60.705(f)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded.

Total resource effectiveness or TRE index value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with a vent stream from an affected reactor process facility, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equation given under §60.704(e).

Vent stream means any gas stream discharged directly from a reactor process to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks.

§ 60.702 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §60.8 and §60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of §60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

§ 60.703 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under §60.702(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange is encountered.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the incinerator at least once every 15 minutes for each affected facility, except as provided in paragraph (a)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the incinerator, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with §60.702(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the flare at least once every 15 minutes for each affected facility, except as provided in paragraph (b)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the flare, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with §60.702(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow diverted from being routed to the boiler or process heater at least once every 15 minutes for each affected facility, except as provided in paragraph (c)(1)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the boiler or process heater, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) design heat input capacity. Any vent stream introduced with primary fuel into a boiler or process heater is exempt from this requirement.

(d) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under §60.702(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity units, each equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under §60.702 with a control device other than an incinerator, boiler, process heater, or flare; or a recovery device other than an absorber, condenser, or carbon adsorber, shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

§ 60.704 Test methods and procedures.

(a) For the purpose of demonstrating compliance with §60.702, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under §60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under §60.702(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O_2(Cc) shall be computed using the following equation:

$$C_C = C_{TOC}\frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg TOC/hr.

E_o=Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \sum_{j=1}^{n} C_{ij} M_{ij} Q_i$$

$$E_i = K_2 \sum_{j=1}^{n} C_{oj} M_{ij} Q_o$$

where:

C_{ij}. C_{oj}=Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppm by volume.

M_{ij}, M_{oj}=Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/hr).

K_2=Constant, 2.494×10^{-6}(l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components "j", dry basis, ppm by volume.

n=Number of components in the sample.

(5) The requirement for an initial performance test is waived, in accordance with §60.8(b), for the following:

(i) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek compliance with §60.702(a).

(ii) When a vent stream is introduced into a boiler or process heater with the primary fuel.

(iii) The Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(6) For purposes of complying with the 98 weight-percent reduction in §60.702(a), if the vent stream entering a boiler or process heater with a design capacity less than 44 MW (150 million Btu/hour) is introduced with the combustion air or as secondary fuel, the weight-percent reduction of TOC (minus methane and ethane) across the combustion device shall be determined by comparing the TOC (minus methane and ethane) in all combusted vent streams, primary fuels, and secondary fuels with the TOC (minus methane and ethane) exiting the combustion device.

(c) When a flare is used to seek to comply with §60.702(b), the flare shall comply with the requirements of §60.18.

(d) The following test methods in appendix A to this part, except as provided under §60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under §60.702(b) and for determining the process vent stream TRE index value to determine compliance under §60.700(c)(2) and §60.702(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in §60.704 (d)(2) and (d)(3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this section, prior to the inlet of any control device, prior to any postreactor dilution of the stream with air, and prior to any postreactor introduction of halogenated compounds into the process vent stream. No traverse site selection method is needed for vents smaller than 4 inches in diameter.

(ii) If any gas stream other than the reactor vent stream is normally conducted through the final recovery device:

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor stream or stream from a nonaffected reactor process is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any vent stream and at the outlet of the final recovery device.

(C) This efficiency of the final recovery device shall be applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of any nonreactor stream or stream from a nonaffected reactor process to determine the concentration of TOC in the reactor process vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in §60.704(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \sum_{j=1}^{n} C_j H_j \quad 1 - B_{ws}$$

where:

H_T=Net heating value of the sample, MJ/scm, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of Q_s(vent stream flow rate).

K_1=Constant, 1.740×10^{-7}(l/ppm) (g-mole/scm) (MJ/kcal), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in §60.17 of this part) as indicated in §60.704(d)(2).

H_j=Net heat of combustion of compound j, kcal/g-mole, based on combustion at 25 °C and 760 mm Hg. The heats of combustion of vent stream components would be required to be determined using ASTM D2382–76 or 88 or D4809–

95 (incorporation by reference as specified in §60.17 of this part) if published values are not available or cannot be calculated.

B_{ws}=Water vapor content of the vent stream, proportion by volume.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \sum_{j=1}^{n} C_j M_j Q_s$$

where:

E_{TOC}=Emission rate of TOC in the sample, kg/hr.

K_2=Constant, 2.494×10^{-6}(l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm as measured by Method 18 as indicated in §60.704(d)(2).

M_j=Molecular weight of sample j, g/g-mole.

Q_s=Vent stream flow rate (dscm/min) at a temperature of 20 °C.

(6) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with §60.700(c)(2) and §60.702(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) of this section and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

(i) Where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal to 14.2 scm/min:

TRE=TRE index value.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of Q_s.

Y_s=$Q_s$for all vent stream categories listed in table 1 except for Category E vent streams where $Y_s=(Q_s)(H_T)/3.6$.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

Table 1—Total Resource Effectiveness Coefficients for Vent Streams Controlled by an Incinerator Subject to the New Source Performance Standards for Reactor Processes

	a	b	c	d	e	f
DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤3.5: Q_s= *Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤18.8	19.18370	0.27580	0.75762	−0.13064	0	0.01025
18.8<Q_s≤699	20.00563	0.27580	0.30387	−0.13064	0	0.01025
699<Q_s≤1,400	39.87022	0.29973	0.30387	−0.13064	0	0.01449
1,400<Q_s≤2,100	59.73481	0.31467	0.30387	−0.13064	0	0.01775
2,100<Q_s≤2,800	79.59941	0.32572	0.30387	−0.13064	0	0.02049
2,800<Q_s≤3,500	99.46400	0.33456	0.30387	−0.13064	0	0.02291
DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.5: Q_s= *Vent Stream Flow Rate (scm/min)*						
14.2<Q_s≤18.8	18.84466	0.26742	−0.20044	0	0	0.01025
18.8<Q_s≤699	19.66658	0.26742	−0.25332	0	0	0.01025
699<Q_s≤1,400	39.19213	0.29062	−0.25332	0	0	0.01449
1,400<Q_s≤2,100	58.71768	0.30511	−0.25332	0	0	0.01775
2,100<Q_s≤2,800	78.24323	0.31582	−0 25332	0	0	0.02049
2,800<Q_s≤3,500	97.76879	0.32439	−0.25332	0	0	0.02291
DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤0.48: Q_s= *Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,340	8.54245	0.10555	0.09030	−0.17109	0	0.01025
1,340<Q_s≤2,690	16.94386	0.11470	0.09030	−0.17109	0	0.01449
2,690<Q_s≤4,040	25.34528	0.12042	0.09030	−0.17109	0	0.01775
DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48<NET HEATING VALUE (MJ/scm)≤1.9: Q_s= *Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,340	9.25233	0.06105	0.31937	−0.16181	0	0.01025
1,340<Q_s≤2,690	18.36363	0.06635	0.31937	−0.16181	0	0.01449
2,690<Q_s≤4,040	27.47492	0.06965	0.31937	−0.16181	0	0.01775
DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9<NET HEATING VALUE (MJ/scm)≤3.6: Q_s= *Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,180	6.67868	0.06943	0.02582	0	0	0.01025
1,180<Q_s≤2,370	13.21633	0.07546	0.02582	0	0	0.01449
2,370<Q_s≤3,550	19.75398	0.07922	0.02582	0	0	0.01755

	a	b	c	d	e	f
DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.6: Y_s= *Dilution Flow Rate (scm/min)=(Q_s)* (H_T)/3.6						
14.2≤Y_s≤1,180	6.67868	0	0	−0.00707	0.02220	0.01025
1,180<Y_s≤2,370	13.21633	0	0	−0.00707	0.02412	0.01449
2,370<Y_s≤3,550	19.75398	0	0	−0.00707	0.02533	0.01755

(ii) For a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE=TRE index value.

Q_s=14.2 scm/min.

H_T=(FLOW)(HVAL)/14.2

where the following inputs are used:

FLOW=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.

HVAL=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in definition of Q_s.

Y_s=14.2 scm/min for all vent streams except for Category E vent streams, where Y_s=(14.2)(H_T)/3.6.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a\left(Q_s\right)+b\left(Q_s\right)^{0.8}+c\left(Q_s\right)\left(H_T\right)+d\left(E_{TOC}\right)+e\right]$$

where:

TRE=TRE index value.

E_{TOC}=Hourly emission rate of TOC reported in kg/hr.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (MJ/scm) where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of Q_s.

a, b, c, d, and e are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 2.

Table 2—Total Resource Effectiveness Coefficients for Vent Streams Controlled by a Flare Subject to the New Source Performance Standards for Reactor Processes

	a	b	c	d	e
H_T<11.2 MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
H_T≥11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08

(f) Each owner or operator of an affected facility seeking to comply with §60.700(c)(2) or §60.702(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change on the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by §60.704 in order to determine compliance with §60.702 (a) or (b). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §60.8 and §60.704 and shall comply with §60.703, §60.704 and §60.705. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(g) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with §60.700(c)(4) shall use Method 2, 2A, 2C, or 2D of appendix A to 40 CFR part 60, as appropriate, for determination of volumetric flow rate.

(h) Each owner or operator seeking to demonstrate that a reactor process vent stream has a TOC concentration for compliance with the low concentration exemption in §60.700(c)(8) shall conduct an initial test to measure TOC concentration.

(1) The sampling site shall be selected as specified in paragraph (d)(1)(i) of this section.

(2) Method 18 or Method 25A of part 60, appendix A shall be used to measure concentration.

(3) Where Method 18 is used to qualify for the low concentration exclusion in §60.700(c)(8), the procedures in §60.704(b)(4) (i) and (iv) shall be used to measure TOC concentration, and the procedures of §60.704(b)(3) shall be used to correct the TOC concentration to 3 percent oxygen. To qualify for the exclusion, the results must demonstrate that the concentration of TOC, corrected to 3 percent oxygen, is below 300 ppm by volume.

(4) Where Method 25A is used, the following procedures shall be used to calculate ppm by volume TOC concentration, corrected to 3 percent oxygen:

(i) Method 25A shall be used only if a single organic compound is greater than 50 percent of total TOC, by volume, in the reactor process vent stream. This compound shall be the principal organic compound.

(ii) The principal organic compound may be determined by either process knowledge or test data collected using an appropriate EPA Reference Method. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current reactor process vent stream conditions.

(iii) The principal organic compound shall be used as the calibration gas for Method 25A.

(iv) The span value for Method 25A shall be 300 ppmv.

(v) Use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A, corrected to 3 percent oxygen, is below 150 ppm by volume to qualify for the low concentration exclusion in §60.700(c)(8).

(vii) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (b)(3) of this section.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.705 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to §60.702 shall notify the Administrator of the specific provisions of §60.702 (§60.702 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by §60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of §60.702 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by §60.704 no later than 180 days from initial start-up.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under §60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used or where the reactor process vent stream is introduced as the primary fuel to any size boiler or process heater to comply with §60.702(a), a report containing performance test data need not be submitted, but a report containing the information in §60.705(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in §60.704(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in §60.704(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.702(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted); or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally; or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration [and within 15 minutes of completion of any cooling cycle(s)], and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally); or

(iv) As an alternative to §60.705(b)(4) (i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.703 (a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with §60.702(a), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance with §60.702(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the bed during the most recent performance test at which compliance with §60.702(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr) where the vent stream is introduced with the combustion air or as a secondary fuel.

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §60.702(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep records of the following:

(1) Up-to-date, readily accessible continuous records of the flow indication specified under §60.703(a)(2)(i), §60.703(b)(2)(i) and §60.703(c)(1)(i), as well as up-to-date, readily accessible records of all periods and the duration when the vent stream is diverted from the control device.

(2) Where a seal mechanism is used to comply with §60.703(a)(2)(ii), §60.703(b)(2)(ii), and §60.703(c)(1)(ii), a record of continuous flow is not required. In such cases, the owner or operator shall keep up-to-date, readily accessible records of all monthly visual inspections of the seals as well as readily accessible records of all periods and the duration when the seal mechanism is broken, the bypass line valve position has changed, the serial number of the broken car-seal has changed, or when the key for a lock-and-key type configuration has been checked out.

(e) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under §60.703(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.703(d), as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with §60.702(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent or 5 °C greater, whichever is less stringent, than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with §60.702(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or reactors;

(2) Any recalculation of the TRE index value performed pursuant to §60.704(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by §60.704(d).

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in §60.700(c)(4) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.011 scm/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in §60.700(c)(3) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the low concentration exemption in §60.700(c)(8) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the concentration of the vent stream of the affected facility.

(k) Each owner or operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in §60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of §60.700 (c)(2), (c)(3), or (c)(4) or §60.702 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §60.705 (c), (f), and (g).

(2) All periods and duration recorded under §60.705(d) when the vent stream is diverted from the control device to the atmosphere.

(3) All periods recorded under §60.705(f) in which the pilot flame of the flare was absent.

(4) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in §60.700(c)(4), including a measurement of the new vent stream flow rate, as recorded under §60.705(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and E_{TOC}. The performance test is subject to the requirements of §60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in §60.700(c), except for the total resource effectiveness index greater than 8.0 exemption in §60.700(c)(2), the facility must begin compliance with the requirements set forth in §60.702.

(5) Any change in equipment or process operation, as recorded under paragraph (i) of this section, that increases the design production capacity above the low capacity exemption level in §60.700(c)(3) and the new capacity resulting from the change for the reactor process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and E_{TOC}. The performance test is subject to the requirements of §60.8. The facility must begin compliance with the requirements set forth in §60.702 or §60.700(d). If the facility chooses to comply with §60.702, the facility may qualify for an exemption under §60.700(c)(2), (4), or (8).

(6) Any recalculation of the TRE index value, as recorded under §60.705(g).

(7) All periods recorded under §60.705(d) in which the seal mechanism is broken or the by-pass line valve position has changed. A record of the serial number of the car-seal or a record to show that the key to unlock the bypass line valve was checked out must be maintained to demonstrate the period, the duration, and frequency in which the bypass line was operated.

(8) Any change in equipment or process operation that increases the vent stream concentration above the low concentration exemption level in §60.700(c)(8), including a measurement of the new vent stream concentration, as recorded under §60.705(j). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. If the vent stream concentration is above 300 ppmv as measured using Method 18 or above 150 ppmv as measured using Method 25A, a performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and E_{TOC}. The performance test is subject to the requirements of §60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in §60.700(c), except for the TRE index greater than 8.0 exemption in §60.700(c)(2), the facility must begin compliance with the requirements set forth in §60.702.

(m) The requirements of §60.705(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with §60.705(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(3) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(4) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in §60.704.

(p) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(8) must submit to the Administrator an initial report including a concentration measurement using the test method specified in §60.704.

(q) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under §60.702 other than as provided under §60.703 (a), (b), (c), and (d).

(r) Each owner or operator whose reactor process vent stream is routed to a distillation unit subject to subpart NNN and who seeks to demonstrate compliance with §60.700(c)(5) shall submit to the Administrator a process design description as part of the initial report. This process design description must be retained for the life of the process. No other records or reports would be required unless process changes are made.

(s) Each owner or operator who seeks to demonstrate compliance with §60.702 (a) or (b) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system.

(t) Each owner or operator that seeks to demonstrate compliance with §60.700(c)(2) must maintain a record of the initial test for determining the total resource effectiveness index and the results of the initial total resource effectiveness index calculation.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.706 Reconstruction.

(a) For purposes of this subpart “fixed capital cost of the new components,” as used in §60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following June 29, 1990. For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(b) [Reserved]

§ 60.707 Chemicals affected by subpart RRR.

Chemical	CAS No.[1]
Acetaldehyde	75–07–0
Acetic acid	64–19–7
Acetic anhydride	108–24–7
Acetone	67–64–1
Acetone cyanohydrin	75–86–5
Acetylene	74–86–2
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alcohols, C–11 or lower, mixtures	
Alcohols, C–12 or higher, mixtures	
Alcohols, C–12 or higher, unmixed	
Allyl chloride	107–05–1
Amylene	513–35–9
Amylenes, mixed	
Aniline	62–53–3
Benzene	71–43–2
Benzenesulfonic acid	98–11–3
Benzenesulfonic acid $C_{10–16}$-alkyl derivatives, sodium salts	68081–81–2
Benzyl chloride	100–44–7
Bisphenol A	80–05–7
Brometone	76–08–4
1,3-Butadiene	106–99–0
Butadiene and butene fractions	
n-Butane	106–97–8
1,4-Butanediol	110–63–4
Butanes, mixed	
1-Butene	106–98–9
2-Butene	25167–67–3
Butenes, mixed	
n-Butyl acetate	123–86–4
Butyl acrylate	141–32–2
n-Butyl alcohol	71–36–3
sec-Butyl alcohol	78–92–2

Chemical	CAS No.[1]
tert-Butyl alcohol	75–65–0
Butylbenzyl phthalate	85–68–7
tert-Butyl hydroperoxide	75–91–2
2-Butyne-1,4-diol	110–65–6
Butyraldehyde	123–72–8
Butyric anhydride	106–31–0
Caprolactam	105–60–2
Carbon disulfide	75–15–0
Carbon tetrachloride	56–23–5
Chloroacetic acid	79–11–8
Chlorobenzene	108–90–7
Chlorodifluoromethane	75–45–6
Chloroform	67–66–3
p-Chloronitrobenzene	100–00–5
Citric acid	77–92–9
Cumene	98–82–8
Cumene hydroperoxide	80–15–9
Cyanuric chloride	108–77–0
Cyclohexane	110–82–7
Cyclohexane, oxidized	68512–15–2
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Cyclohexanone oxime	100–64–1
Cyclohexene	110–83–8
Cyclopropane	75–19–4
Diacetone alcohol	123–42–2
1,4-Dichlorobutene	110–57–6
3,4-Dichloro-1-butene	64037–54–3
Dichlorodifluoromethane	75–71–8
Dichlorodimethylsilane	75–78–5
Dichlorofluoromethane	75–43–4
Diethanolamine	111–42–2
Diethylbenzene	25340–17–4
Diethylene glycol	111–46–6
Di-isodecyl phthalate	26761–40–0

Chemical	CAS No.[1]
Dimethyl terephthalate	120–61–6
2,4-(and 2,6)-dinitrotoluene	121–14–2
	606–20–2
Dioctyl phthalate	117–81–7
Dodecene	25378–22–7
Dodecylbenzene, nonlinear	
Dodecylbenzenesulfonic acid	27176–87–0
Dodecylbenzenesulfonic acid, sodium salt	25155–30–0
Epichlorohydrin	106–89–8
Ethanol	64–17–5
Ethanolamine	141–43–5
Ethyl acetate	141–78–6
Ethyl acrylate	140–88–5
Ethylbenzene	100–41–4
Ethyl chloride	75–00–3
Ethylene	74–85–1
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene glycol	107–21–1
Ethylene glycol monobutyl ether	111–76–2
Ethylene glycol monoethyl ether acetate	111–15–9
Ethylene glycol monomethyl ether	109–86–4
Ethylene oxide	75–21–8
2-Ethylhexyl alcohol	104–76–7
(2-Ethylhexyl) amine	104–75–6
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547–17–8
Formaldehyde	50–00–0
Glycerol	56–81–5
n-Heptane	142–82–5
Heptenes (mixed)	
Hexamethylene diamine	124–09–4
Hexamethylene diamine adipate	3323–53–3
Hexamethylenetetramine	100–97–0
Hexane	110–54–3
Isobutane	75–28–5

Chemical	CAS No.[1]
Isobutanol	78–83–1
Isobutylene	115–11–7
Isobutyraldehyde	78–84–2
Isopentane	78–78–4
Isoprene	78–79–5
Isopropanol	67–63–0
Ketene	463–51–4
Linear alcohols, ethoxylated, mixed	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed	
Linear alcohols, sulfated, sodium salt, mixed	
Linear alkylbenzene	123–01–3
Maleic anhydride	108–31–6
Mesityl oxide	141–79–7
Methanol	67–56–1
Methylamine	74–39–5
ar-Methylbenzenediamine	25376–45–8
Methyl chloride	74–87–3
Methylene chloride	75–09–2
Methyl ethyl ketone	78–93–3
Methyl isobutyl ketone	108–10–1
Methyl methacrylate	80–62–6
1-Methyl-2-pyrrolidone	872–50–4
Methyl tert-butyl ether	
Naphthalene	91–20–3
Nitrobenzene	98–95–3
1-Nonene	27215–95–8
Nonyl alcohol	143–08–8
Nonylphenol	25154–52–3
Nonylphenol, ethoxylated	9016–45–9
Octene	25377–83–7
Oil-soluble petroleum sulfonate, calcium salt	
Pentaerythritol	115–77–5
3-Pentenenitrile	4635–87–4
Pentenes, mixed	109–67–1
Perchloroethylene	127–18–4

Chemical	CAS No.[1]
Phenol	108–95–2
1-Phenylethyl hydroperoxide	3071–32–7
Phenylpropane	103–65–1
Phosgene	75–44–5
Phthalic anhydride	85–44–9
Propane	74–98–6
Propionaldehyde	123–38–6
Propyl alcohol	71–23–8
Propylene	115–07–1
Propylene glycol	57–55–6
Propylene oxide	75–56–9
Sorbitol	50–70–4
Styrene	100–42–5
Terephthalic acid	100–21–0
Tetraethyl lead	78–00–2
Tetrahydrofuran	109–99–9
Tetra (methyl-ethyl) lead	
Tetramethyl lead	75–74–1
Toluene	108–88–3
Toluene-2,4-diamine	95–80–7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471–62–5
1,1,1-Trichloroethane	71–55–6
1,1,2-Trichloroethane	79–00–5
Trichloroethylene	79–01–6
Trichlorofluoromethane	75–69–4
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol	112–27–6
Vinyl acetate	108–05–4
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4
m-Xylene	108–38–3
o-Xylene	95–47–6
p-Xylene	106–42–3
Xylenes (mixed)	1330–20–7

[1]CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995]

§ 60.708 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §60.703(e).

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	**Swift Fuels, LLC**
Initial Source Location:	**3150 S 460 E, Lafayette, IN 47905**
Source Location:	**Portable**
County:	**Tippecanoe**
SIC Code:	**2865 (Cyclic Organic Crudes and Intermediates)**
Operation Permit No.:	**F157-32248-05376**
Permit Reviewer:	**Sarah Street**

On August 24, 2012, the Office of Air Quality (OAQ) received an application from Swift Fuels, LLC related to the construction and operation of a new portable mesitylene production pilot plant. Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8), a petrochemical.

Swift Fuels, LLC, has applied for a portable source. The operation will be constructed on skids, and pursuant to 326 IAC 2-1.1-1(9), this source meets the definition of a portable source. This source in not approved to relocate in Lake or Porter County or in any area that is designated as extreme, severe, or serious nonattainment for any National Ambient Air Quality Standard.

Source Definition

The Swift Fuels, LLC plant (source number 157-05376) is a mesitylene production pilot plant that is leasing property on Newton Oil Company's petroleum bulk station site. Newton Oil does not have an air permit. Swift Fuels is also leasing some of Newton Oil's existing storage tanks. IDEM, OAQ has examined whether these plants should be considered one "major source" as defined at 326 IAC 2-7-1(22). In order for two or more plants to be considered one major source, they must meet all three of the following criteria:

(1) the plants must be under common ownership or common control;

(2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and,

(3) the plants must be located on contiguous or adjacent properties.

The mesitylene production pilot plant will be owned by Swift Fuels, LLC on land leased from Newton Oil Company, Inc. The two corporations have separate owners and neither corporation owns a portion of the other. There are no common corporate officers or directors shared by the two corporations. There will be no common ownership between the two plants.

IDEM's Nonrule Policy Document Air-005 applies to the definition of "major source" in 326 IAC 2-7-1(22). IDEM's Nonrule Policy Document Air-005 sets out two independent tests to determine if common control exists when there is no common ownership. The first test, the auxiliary activity test, determines whether one source performs an auxiliary activity which directly serves the purpose of the primary activity and whether the owner or operator of the primary activity has a major role in the day-to-day operations of the auxiliary activity. An auxiliary activity directly serves the purpose of a primary activity by supplying a necessary raw material to the primary activity or performing an integral part of the production process for the primary activity.

Day-to-day control of the auxiliary activity by the primary activity may be evidenced by several factors, including:

- Is a majority of the output of the auxiliary activity provided to the primary activity?

- Can the auxiliary activity contract to provide it products/services to a third-party without the consent of the primary activity?

- Can the primary activity assume control of the auxiliary activity under certain circumstances?

- Is the auxiliary activity required to complete periodic reports to the primary activity?

If one or a combination of these questions is answered affirmatively, common control may exist.

Neither plant will provide any activity, product or raw material to the other plant. The Swift Fuels plant will be on the same property as the existing Newton Oil Company property and will lease some of the existing storage tanks from Newton Oil. This is the extent of their relationship. Neither plant can assume control of the other and neither is required to submit periodic reports to the other. The first common control test is therefore not met.

The second common control test in the nonrule policy is the but/for test. This test focuses on whether the auxiliary activity would exist absent the needs of the primary activity. If all or a majority of the output of the auxiliary activity is consumed by the primary activity the but/for test is satisfied. Neither plant will supply any output to the other plant. If either plant were to shut down the other would be able to continue to operate. Therefore the second common control test is also not met. IDEM finds that the plants are not under common control. Since neither common ownership nor common control exists the first part of the definition of major source is not met.

The SIC Code Manual of 1987 sets out how to determine the proper SIC Code for each type of business. More information about SIC Codes is available at http://www.osha.gov/pls/imis/sic_manual.html on the Internet. The Swift Fuels mesitylene production pilot plant belongs to the two-digit Major Group 28, Chemicals and Allied Products, corresponding to the four-digit SIC Code 2865, Cyclic Organic Crudes and Intermediates, and Organic Dyes and Pigments. The Newton Oil Company petroleum bulk plant belongs to the two-digit Major Group 51 and has the four-digit SIC Code of 5171, Petroleum Bulk Stations and Terminals.

A plant is a support facility to another plant if it dedicates 50% or more of its output to another plant. Neither plant will provide any output to the other plant. Since the plants do not have a support relationship and do not have the same two-digit SIC Code, they do not meet the second part of the major source definition.

The mesitylene production pilot plant and the petroleum bulk station will be located on the same property. The plants therefore meet the third part of the major source definition.

Since the Swift Fuels mesitylene production pilot plant and the Newton Oil Company petroleum bulk station do not meet all three parts of the major source definition, IDEM, OAQ has determined that the two plants are not part of the same major source.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is initially located in Tippecanoe County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.
Unclassifiable or attainment effective April 5, 2005, for $PM_{2.5}$.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Tippecanoe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Tippecanoe County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Tippecanoe County has been classified as attainment or unclassifiable in Indiana for for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

This portable mesitylene production pilot plant manufactures mesitylene (the common name of 1,3,5-trimethylbenzene (CAS 108-67-8), which is a petrochemical), and is classified under the SIC Code 2865 (Cyclic Organic Crudes and Intermediates). This source is classified as a chemical process plant.

Since this source is classified as a chemical process plant, it is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Portable Source

(a) Initial Location
This is a portable source and its initial location is at 3150 S 460 E, Lafayette, IN 47905.

(b) PSD and Emission Offset Requirements
The emissions from this portable source were reviewed under the requirements of the Prevention of Significant Deterioration (PSD) 326 IAC 2-2 and Emission Offset 326 IAC 2-3.

(c) Relocation Locations
The Permittee is authorized to relocate the source to all areas of the state except for Lake and Porter counties (due to additional requirements for these counties) and severe ozone nonattainment counties.

Background and Description of New Source Construction

The Office of Air Quality (OAQ) has reviewed an application, submitted by Swift Fuels, LLC on August 24, 2012 relating to the construction and operation of a new portable mesitylene production pilot plant.

The following is a list of the new emission unit(s) and pollution control device(s):

(a) One (1) acetone storage tank, identified as ST01, approved for construction in 2012, equipped with a pressure-vacuum vent for distribution, with a maximum tank volume of 10,000 gallons;

Note: There are no emissions from this tank because acetone is non-regulated VOC and non-HAP containing material.

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the

design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – FESOP

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	0.008
PM10[(1)]	0.03
PM2.5	0.03
SO_2	0.003
NO_x	0.61
VOC	239.94
CO	8.17
GHGs as CO_2e	821

(1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

HAPs	Potential To Emit (tons/year)
Single HAPs	negligible
TOTAL HAPs	**0.008**

(a) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of VOCs is greater than one hundred (100) tons per year. The PTE of all other regulated criteria pollutants are each less than one hundred (100) tons per year. The source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a New Source Construction Permit (326 IAC 2-5.1-3) and) a Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8), because the source will limit emissions to less than the Title V major source threshold levels.

(b) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

(c) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year.

PTE of the Entire Source After Issuance of the FESOP

The table below summarizes the potential to emit of the entire source after issuance of this FESOP, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of FESOP (tons/year)									
	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Mesitylene processing skid	0.008	0.03	0.03	0.003	0.61	4.80***	1.78	689	0.008	negl.
Tanks	-	-	-	-	-	0.02	-	-	-	-
Total PTE of Entire Source	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**4.82**	**1.78**	**689**	**0.008**	negl.
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	100	100	100	100	100	100	100	100,000	NA	NA

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.
***Limited VOC emissions after control at 98% overall control efficiency.

(a) FESOP Status

This new source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold levels. In addition, this new source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), and render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the VOC emissions from the scrubber of the mesitylene processing skid (EU01), after control, shall not exceed 1.096 pounds per hour. This is the emission rate at 98% overall control efficiency of the open flare, which is considered BACT under 326 IAC 8-1-6.

Compliance with these limits, combined with the potential to emit VOCs from all other emission units at this source, shall limit the source-wide total potential to emit of VOCs to less than 100 tons per 12 consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(b) PSD Minor Source
This new source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit VOCs is limited to less than 100 tons per year (see FESOP Status in part (a) above), the potential to emit all other attainment regulated criteria pollutants are less than 100 tons per year, the potential to emit greenhouse gases (GHGs) is less than the PSD subject to regulation threshold of one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year, and this source is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

(c) Emission Offset Minor Source
Tippecanoe County is an attainment county. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit, pursuant to 40 CFR 60.110b(a), since each storage tank has a capacity less than or equal to 75 cubic meters (m^3).

(1) Storage Tank ST01 has a tank capacity of 37.9 cubic meters and it does not store VOC containing materials. This tanks stores acetone.
(2) Storage Tank ST02 has a tank capacity of 20.8 cubic meters.
(3) Storage Tank ST03 has a tank capacity of 37.9 cubic meters.

Pursuant to 40 CFR 60.111b (Definitions), the Day Tank and the Separation Tank do not meet the definition of *storage vessel* and are therefore not subject to this Subpart. The Day Tank and Separation Tank are not considered storage tanks but rather are process tanks. Pursuant to 40 CFR 60.111b, *process tank* means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. Pursuant to 40 CFR 60.111b, the definition of *storage vessel* for the applicability of this Subpart does not include *process tanks*; therefore the Day Tank and Separation Tank are not subject to NSPS Subpart Kb.

(b) This source is subject to the New Source Performance Standards for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 (40 CFR 60, Subpart VVa), because this source is a synthetic organic chemical manufacturing plant that produces Isobutylene (CAS No. 115-11-7) and Acetone (CAS 67-64-1) as intermediate or final products, which are each specfically listed in 40 CFR 60.489. However, this source is an affected facility that has a design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in 40 CFR 60.489; therefore, pursuant to 40 CFR 60.480a(d)(1) and (2), this source is subject only to the recordkeeping requirements of this subpart, as required in 40 CFR 60.486a(i).

The facilities subject to this rule include the following:

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

Pursuant to 40 CFR 40.481a, *Process unit* means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in §60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.480a(a), (b), (c), (d), (f)
(2) 40 CFR 60.481a
(3) 40 CFR 60.486a(i)
(4) 40 CFR 60.487a
(5) 40 CFR 60.489a

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the source except as otherwise specified in 40 CFR 60, Subpart VVa.

Note: There is no testing requirement required by this NSPS for this source.

(c) The requirements of the New Source Performance Standard for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes, 40 CFR 60, Subpart III (3I) (326 IAC 12) are not included in the permit for the mesitylene processing skid (EU01) because this process does not include an air oxidation reactor, as defined in 40 CFR 60.611. Pursuant to 40 CFR 60.611, *Air Oxidation Reactor* means any device or process vessel in which one or more organic reactants are combined with air, or a combination of air and oxygen, to produce one or more organic compounds. The mesitylene processing skid is a closed system and will not involve oxidation of organic materials using air or oxygen; therefore the reactor is not an air oxidation unit and this subpart does not apply.

(d) The requirements of the New Source Performance Standard for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations , 40 CFR 60, Subpart NNN (326 IAC 12) are not included in the permit, since this mesitylene processing skid (EU01) does not include a distillation unit as defined in 40 CFR 60.661. Pursuant to 40 CFR 60.661, *Distillation unit* means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system. There are no distillation processes in the mesitylene processing skid.

(e) This source is subject to the New Source Performance Standard for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes (40 CFR 60, Subpart RRR) because of the following:

(1) Pursuant to 40 CFR 60.701 (definitions), the process in the mesitylene processing skid meets the definition of a reactor process. *Reactor processes* are unit operations in which one or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

(2) Pursuant to 40 CFR 60.700(b), the affected facility will be constructed after June 29, 1990.

(3) Pursuant to 40 CFR 60.700(a), the provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in 40 CFR 60.707. The primary product of this process is mesitylene (1,3,5 trimethylbenzene), which is not listed in 40 CFR 60.707. However, the 40 CFR 60.700(a) also specifies that (in addition to products) byproducts, coproducts, and intermediates must also be considered. Other compounds that will coexist with the mesitylene product include acetone (unreacted raw material), cyclopropane, mesityl oxide, and other compounds which are listed as chemicals in 40 CFR 60.707.

Therefore, the requirements for NSPS Subpart RRR are included in the permit for the mesitylene processing skid (EU01).

The facilities subject to this rule include the following:

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

The exact design capacity and chemical composition is submitted to IDEM OAQ as confidential business information; however, since mesitylene is not considered a chemical under 40 CFR 60.707, the design capacity of the chemicals listed is less than 1,100 tons per year. Pursuant to 40 CFR 60.700(c)(3), each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than 1 gigagram per year (1,100 tons per year) is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in 40 CFR 60.705 (i), (l)(5), and (n).

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.700(a), (b)(2), and (c)(3)
(2) 40 CFR 60.701
(3) 40 CFR 60.705(i), (l)(5), and (n)
(4) 40 CFR 60.707

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the source except as otherwise specified in 40 CFR 60, Subpart RRR.

Note: There is no testing requirement required by this NSPS for this source.

(f) The requirements of New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (60.2000 through 60.2265) (326 IAC 12), are not included in this permit for the following reasons:

(1) The open flare CE01 will not burn solid waste as defined in 40 CFR 60.2265.

(2) The open flare CE01 is not condisidered a commercial and industrial solid waste incineration (CISWI) unit as defined by 40 CFR 60.2265.

(g) The requirements of the New Source Performance Standards for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004 or for Which Modification or Reconstruction is commenced on or After June 16, 2006, 40 CFR 60, Subpart EEEE (60.2280 through 60, 2891), are not included in this permit for the following reasons:

(1) The open flare CE01 will not burn municipal solid waste or institutional waste as defined in 40 CFR 60.2977.

(2) The open flare CE01 is not considered an other solid waste incineration (OSWI) unit as defined in 40 CFR 60.2977.

(h) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(i) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry, 40 CFR 63, Subpart F (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.100(b)(1) and (3), since this source is not a major source of HAPs emissions and the primary product, mesitylene, is not specifically listed in Table 1 to Subpart F. Some of the by-products, intermediates, and wastes from this process (Acetone and Isobutylene) are specifically listed in Table 1 to Subpart F; however, pursuant to 40 CFR 63.101, by-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products for the purposes of this subpart.

(j) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater, 40 CFR 63, Subpart G (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.110(a), because this source is not subject to 40 CFR 63 Subpart F.

(k) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Organic Hazardous Air Pollutants for Equipment Leaks, 40 CFR 63, Subpart H (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.160(a), because this source is not subject to the provisions of a specific subpart in 40 CFR Part 63 that references Subpart H.

(l) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation

for Equipment Leaks, 40 CFR 63, Subpart I (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.190(b), because this source is not a major source of HAPs and this source is not specifically listed in 40 CFR 63.190(b)(1) through (b)(6).

(m) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Hazardous Waste Combustors, 40 CFR 63, Subpart EEE (63.1200 through 63.1214) (326 IAC 20-28), are not included in the permit for the open flare CE01 because the gases combustin in open flare CE01 are not considered a "hazardous waste" as defined in 40 CFR 63.1201 and 40 CFR 261.3.

(n) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Chemical Manufacturing Area Sources, 40 CFR 63, Subpart VVVVVV (6V) (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.11494(a), because while this source is an area source of HAPs, this source does not operate a CMPU that uses as feedstocks, generates as byproducts, or produces as products any of the hazardous air pollutants (HAP) listed in Table 1 to Subpart VVVVVV.

(o) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Chemical Preparations Industry, 40 CFR 63, Subpart BBBBBBB (7B) (326 IAC 20), are not included in the permit, pursuant to 40 CFR 63.11579, because while this source is an area source of HAPs, this source does not own or operate a chemical preparations facility (as defined in 40 CFR 63.11588) that has at least one chemical preparations operation in target HAP service (as defined in 40 CFR 63.11588).

(p) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

(q) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination - Entire Source

The following state rules are applicable to the source:

(a) 326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

(c) 326 IAC 2-3 (Emission Offset)
Emission Offset applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

(d) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
This source is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the new units is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(e) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, or in any area that is designated as extreme, severe, or serious nonattainment for any National Ambient Air Quality Standard, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

(f) 326 IAC 5-1 (Opacity Limitations)
This new portable source is authorized to relocate to all areas of the state except for Lake and Porter counties, or in any area that is designated as extreme, severe, or serious nonattainment for any National Ambient Air Quality Standard. Therefore, pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(1) Opacity shall not exceed an average of fort y percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4,when the source is located in any County except Lake, Porter, or the areas specified in (2)(A) through (G).

(2) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c):

(A) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, and Oak Park);

(B) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);

(C) Dubois County (Bainbridge Township - the City of Jasper);

(D) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);

(E) St. Joseph County (the area north of Kern Road and east of Pine Road);

(F) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and

(G) Vigo County (Indiana State University campus, 0.5km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16.

(3) 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, when the source is located in any County.

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

(h) 326 IAC 6.8 (PM Limitations for Lake County)
This existing portable source is authorized to relocate to all areas of the state except for Lake, Porter, and/or LaPorte County counties. Therefore, the requirements of 326 IAC 6.8 do not apply

and are not included in the permit.

(j) 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
This existing portable source is authorized to relocate to all areas of the state except for Lake, Porter, and/or LaPorte County counties. Additionally, the PTE VOC emissions from the entire source are limited to less than one hundred (100) tons per year, under 326 IAC 2-8. Therefore, the requirements of 326 IAC 8-7 do not apply and are not included in the permit.

(k) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(l) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

State Rule Applicability Determination - Individual Facilities

Processing Skid EU1 with Open Flare Control

(a) 326 IAC 4-2-2 (Incinerators)
Pursuant to the definitions in 326 IAC 1-2-34, the open flare does not meet the definition of an incinerator: an engineered apparatus that burns waste substances with controls on combustion factors including, but not limited to, temperature, retention time, and air. Therefore, the open flare is not subject to the requirements of this rule.

(b) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The open flare combustion (EU02) is not subject to 326 IAC 6-2, because, pursuant to 326 IAC 1-2-19, this emission unit does not meet the definition of an indirect heating unit.

(c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The open flare combustion (EU02) is exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight.

(d) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
Pursuant to 326 IAC 7-1.1-1, open flare combustion (EU02) is not subject to the requirements of 326 IAC 7-1.1, since it has unlimited sulfur dioxide (SO_2) emissions less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

(e) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The mesitylene processing skid (EU01) is subject to the requirements of 326 IAC 8-1-6, since this operation will be constructed after January 1, 1980, has potential VOC emissions of greater than twenty-five (25) tons per year, and is not regulated by other rules in 326 IAC 8. Therefore, the Permittee is required to control VOC emissions from the mesitylene processing skid (EU01) pursuant to the provisions of 326 IAC 8-1-6 (BACT).

According to the BACT analysis contained in Appendix B, IDEM, OAQ has determined that the following requirements represent BACT for the mesitylene processing skid (EU01):

(1) The open flare CE01 shall operate at all times that the scrubber of the mesitylene processing skid (EU01) is in operation.

(2) The overall VOC control efficiency for the open flare (including the capture efficiency and destruction efficiency) shall be equal to or greater than 98%.

(f) 326 IAC 8-18 (VOC Rules; Synthetic Organic Chemical Manufacturing Industry Air Oxidation, Distillation, and Reactor Processes)

This source is not subject to the requirements of 326 IAC 8-18, because, even though this source has a vent stream originating from a reactor process (which is defined in 40 CFR 60.701, pursuant to 326 IAC 8-18-1(b) that produces one (1) or more of the chemicals as a product, coproduct, byproduct, or intermediate listed in 326 IAC 8-18-1(a)(2)(A), this portable source is not authorized to locate in Lake or Porter County. Further, pursuant to 326 IAC 8-18-4(b), the exemptions that apply in 40 CFR 60.700(c) (see Federal Rule Applicability section above) also apply to an owner or operator otherwise subject to this rule. So, even if this source were to relocate to Lake or Porter County, the exemption applicability under 40 CFR Subpart RRR for this reactor process applies under 326 IAC 8-18. Therefore, the requirements of this rule are not included in the permit for the mesitylene processing skid (EU01). Note that this source does not have an air oxidation unit process or a distillation operation, as defined in 40 CFR 60.611 and 40 CFR 60.661, respectively (see Federal Rule Applicability section above).

(g) 326 IAC 8-19 (VOC Rules; Control of Volatile Organic Compound Emissions from Process Vents in Batch Operations)
This source is not subject to the requirements of 326 IAC 8-19, because, even though this source has a batch process train associated with the SIC code 2865 and has the potential to emit VOCs greater that 100 tons per year from process vents from batch operations, this portable source is not authorized to locate in Lake or Porter County. Pursuant to 326 IAC 8-19-1(a)(1), this source is not subject to the requirements of this rule.

(h) 326 IAC 8
There are no other VOC Rules applicable to the mesitylene processing skid EU1.

Acetone Storage Tank (ST01)

(i) Pursuant to 40 CFR 51.100, acetone is excluded from the definition of Volatile Organic Compounds (VOC) because this material has been determined to have negligible photochemical reactivity. Further, acetone is not considered a Hazardous Air Pollutant, pursuant to 40 CFR 61.01. Therefore, there are no state rules applicable to the acetone storage tank (ST01).

Tanks (ST02, ST03, Day Tank and Separation Tank)

(j) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
Each storage tank (ST02, ST03, Day Tank and Separation Tank) has a storage capacity less than thirty-nine thousand (39,000) gallons; therefore, each tank is not subject to the requirements of 326 IAC 8-4-3. Further, pursuant to 40 CFR 60.111b (NSPS Subpart Kb, Definitions), *petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal; *petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery. No tank at this source stores petroleum liquid; therefore the requirements of this rule are not included in the permit.

(k) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
Since this is a portable source that may locate to Clark or Floyd County, this source shall be subject to the requirements of this rule when located in Clark or Floyd County. This portable source is not authorized to relocate to Lake or Porter County.

Pursuant to 316 IAC 8-9-1(b), when located in Clark or Floyd County, each stationary vessel with a capacity of less than thirty-nine thousand (39,000) gallons is subject to the following reporting and record keeping provisions of 326 IAC 8-9-6(a) and (b) and is exempt from all other provisions of 326 IAC 8-9.

Pursuant to 326 IAC 8-9-6(b), the Permittee shall maintain a record and submit to IDEM, OAQ a report containing the following information for the fuel storage tanks:

(1) the tank identification number;

(2) the tank dimensions; and

(3) the tank capacity.

Pursuant to 326 IAC 8-9-6(a), these records shall be maintained for the life of the tank.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance determination and monitoring requirements applicable to this source are as follows:

Emission Unit/Control	Operating Parameters	Frequency
Open Flare for VOC	Presence of pilot flame	Continuous
	Visible emissions	Once per day

(b) The testing requirements applicable to this source are as follows:

Testing Requirements				
Emission Unit	**Control Device**	**Pollutant**	**Timeframe for Testing**	**Frequency of Testing**
EU01 processing skid	CE01 open flare	VOC	Within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up	One time*

* This testing is required in order to verify the compliance status with the 316 IAC 8-1-6 (BACT), 326 IAC 2-8 (FESOP), and 326 IAC 2-2 (PSD minor) limits and to determine the open flare meets the requirements necessary to achieve at least 98% control efficiency for VOC emissions.

The testing will be conducted as follows:

(a) Sample and determine the net heating value (Btu content) of the gas streams to the open flare (CE01).

Flares shall be used only with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted.

The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

K = Constant, 1.740×10^{-7} (1/ppm) (g mole/scm) (MJ/kcal), where the standard temperature for (g mole/scm) is 20°C

Where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard

temperature for determining the volume corresponding to one mole is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90; and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 if published values are not available or cannot be calculated.

(b) Measure the volumetric flowrate and determine the actual exit velocity of the open flare (CE01).

(1) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(2) In order to follow flare best practices and achieve at least 98% control efficiency, nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in (b)(1), as follows:

(A) Less than 60 ft/sec, except as provided in (b)(2)(B) and (b)(2)(C).

(B) Equal to or greater than 60 ft/sec but less than 400 ft/sec, if the net heating value of the gas being combusted is greater than 1,000 Btu/scf.

(C) Less than the velocity, V_{max}, as determined by the method specified below, and less than 400 ft/sec.

The maximum permitted velocity, V_{max}, shall be determined by the following equation:

$$Log_{10}(V_{max}) = (H_T + 28.8)/31.7$$

Where:
V_{max} = Maximum permitted velocity, M/sec
28.8 = Constant
31.7 = Constant
H_T = The net heating value as determined in (a)

(c) Determine the open flare visible emissions. The observation period is 2 hours and shall be determined according to Reference Method 22.

Conclusion and Recommendation

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 August 24, 2012. Additional information was received on August 30, 2012, September 18, 2012, and on September 21, 2012.

The construction and operation of this source shall be subject to the conditions of the attached proposed New Source Construction and FESOP No. 157-32248-05376. The staff recommends to the Commissioner that this New Source Construction and FESOP be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Sarah Street at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8427 or toll free at 1-800-451-6027 extension 2-8427.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

Appendix A: Emissions Calculations
Summary of Emissions

Company Name: Swift Fuels, LLC
Initial Address City IN Zip: 3150 S 460 E, Lafayette, IN 47905
Address: Portable
Permit Number: F157-32248-05376
Plt ID: 157-05376
Reviewer: Sarah Street

Uncontrolled Potential to Emit (tons/year)										
Emission Unit	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**GHGs as CO2e**	**Total HAPs**	**Worst Single HAP**
Processing Skid EU01 (controlled by Open Flare CE01)	0.008	0.03	0.03	0.003	0.61	239.94	8.17	821	0.008	negligible
Tanks	-	-	-	-	-	0.02	-	-	-	-
Total Emissions	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**239.96**	**8.17**	**821**	**0.008**	**negligible**

Limited Potential to Emit (tons/year)										
Emission Unit	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC(1)**	**CO**	**GHGs as CO2e**	**Total HAPs**	**Worst Single HAP**
Processing Skid EU01 (controlled by Open Flare CE01)	0.008	0.033	0.033	0.003	0.614	4.80	8.17	821	0.008	negligible
Tanks	-	-	-	-	-	0.02	-	-	-	-
Total Emissions	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**4.82**	**8.17**	**821**	**0.008**	**negligible**

Notes:
(1) VOC limits required under 326 IAC 8-1-6 BACT for the Processing Skid controlled by Open Flare CE01
and FESOP and PSD Minor limits = 1.096 lb/hr (equivalent to 4.80 tons per year, assuming 98% VOC control efficiency)

Controlled Potential to Emit (tons/year)										
Emission Unit	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC(1)**	**CO(2)**	**GHGs as CO2e(2)**	**Total HAPs**	**Worst Single HAP**
Processing Skid EU01 (controlled by Open Flare CE01)	0.008	0.03	0.03	0.003	0.61	4.80	0.41	689	0.008	negligible
Tanks	-	-	-	-	-	0.02	-	-	-	-
Total Emissions	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**4.82**	**0.41**	**689**	**0.008**	**negligible**

Notes:
(1) 98% VOC control efficiency required under 326 IAC 8-1-6 BACT for the Processing Skid controlled by Open Flare CE01
(2) Open flare also controls CO and CH4 (a GHG), however, it will be considered voluntary, since there is no requirement to control these pollutants for this source.

Appendix A: Emissions Calculations
Open Flare Combusting Waste Gas and Natural Gas

Company Name: Swift Fuels, LLC
Initial Address City IN Zip: 3150 S 460 E, Lafayette, IN 47905
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Reviewer: Sarah Street

Total Scrubber of Processing Skid EU01 Emissions (to Open Flare CE01)

See details below for calculations from waste gas contribution and combustion contribution

	Uncontrolled Potential to Emit (tons/yr)									
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Worst Single HAP
Waste Gas	0	0	0	0	0	218.04	6.53	154	0	0
Combustion	0.008	0.03	0.03	0.003	0.61	21.90	1.65	667	0.008	negligible
Total	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**239.94**	**8.17**	**821**	**0.008**	**negligible**

	Controlled Potential to Emit (tons/yr)									
	PM	PM10	PM2.5	SO2	NOx	VOC[1]	CO[2]	GHGs as CO2e[3]	Total HAPs	Worst Single HAP
Waste Gas	0	0	0	0	0	4.36	0.33	23	0	0
Combustion	0.008	0.03	0.03	0.003	0.61	0.44	0.08	666	0.008	negligible
Total	**0.008**	**0.03**	**0.03**	**0.003**	**0.61**	**4.80**	**0.41**	**689**	**0.008**	**negligible**

(1) Flare VOC destruction efficiency = 98% required by 326 IAC 8-1-6 BACT
1.096 lb/hr equivalent for 98% VOC destruction efficiency
(2) Flare CO destruction efficiency = 95% estimated by source
(3) Flare CH4 destruction efficiency = 95% estimated by source; see below for detailed GHGs as CO2e calculations

Methodology for Controlled Potential to Emit
Controlled VOC Emissions (ton/yr) = (100% - Flare VOC destruction efficiency (%)) x Uncontrolled VOC Emissions (tons/yr)
Controlled CO Emissions (ton/yr) = (100% - Flare CO destruction efficiency (%)) x Uncontrolled CO Emissions (tons/yr)
See below for methodology for controlled GHGs as CO2e emissions

Incoming Waste Gas Contribution to Open Flare

These are assumptions used to determine the uncontrolled potential to emit.

Maximum waste gas flow	368	SCFH	Estimate from source*
Maximum natural gas flow	100	SCFH	Estimate from source*
Total potential gas flow	468	SCFH	Waste gas flow + natural gas flow
Mass rate waste gas stream	50	lb/hr	Estimate from source*
Mass rate VOC in waste gas stream	44.78	lb/hr	Sum of VOC compounds in waste gas stream. Detailed waste gas stream composition in IDEM, OAQ confidential file
Mass rate of natural gas	5.0	lb/hr	Assume natural gas density is 0.05 lb/scf
Mass rate total VOC to flare	49.78	lb/hr	(Mass rate VOC in waste gas stream) + (Mass rate of natural gas). Assumes 100% VOC in natural gas contribution.
Heat content of waste gas	18,255	btu/lb	Calculated by source. Based on waste gas composition, submitted in IDEM, OAQ confidential file'
Heating value of waste gas	2,483	btu/scf	Calculated by source. Based on waste gas composition, submitted in IDEM, OAQ confidential file'

	Uncontrolled Potential to Emit (Waste Gas Contribution to Open Flare)						
	PM	PM10	direct PM2.5	SO2	NOx	VOC[1]	CO[2]
Potential Emissions in lb/hr	0	0	0	0	0	49.78	1.49
Potential Emission in tons/yr	0	0	0	0	0	218.04	6.53

*The source has estimated potential emissions using a mass balance approach based on chemical models of the proposed process, using ChemCAD software
(1) VOC emissions based on composition of waste gas, included in IDEM, OAQ confidential file
(2) CO emissions based on composition of waste gas, included in IDEM, OAQ confidential file
Note that the waste gas is composed mostly of VOCs (including isobutylene), CO, CO2, CH4, and non-regulated material. The detailed waste composition has been submitted to IDEM, OAQ as confidential information.
There are no HAPs in the waste gas stream.
Methodology
VOC Emissions (tons/yr) = Mass rate of total VOC to flare (lb/hr) x (8,760 hrs/yr)/(2,000 lb/ton)
CO Emission (tons/yr) = Potential Emissions (lb/hr) x (8,760 hrs/yr)/(2,000 lb/ton)

	Uncontrolled Greenhouse Gas		
	CO2	CH4	N2O
Potential Emission in tons/yr[1]	16.34	6.54	0
Summed Potential Emissions in tons/yr	23		
CO2e Total in tons/yr	154		

Controlled CO2e emission (95% CH4 destroyed in flare)

23

(1) GHG Emissions based on composition of waste gas, included in IDEM confidential file
Methodology
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Uncontrolled CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
Controlled CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + (100% - CH4 destruction efficiency (95%)) x CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

See combustion contribution to open flare on following page

Appendix A: Emissions Calculations
Open Flare Combusting Waste Gas and Natural Gas

Company Name: Swift Fuels, LLC
Initial Address City IN Zip: 3150 S 460 E, Lafayette, IN 47905
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Permit Number: F157-32248-05376
Plt ID: 157-05376
Reviewer: Sarah Street

Combustion Contribution to Open Flare

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
1.02	1,020	8.7

	Uncontrolled Potential to Emit (Combustion Contribution to Open Flare)						
	PM*	PM10*	direct PM2.5*	SO2	NO_x[1]	VOC[2]	CO[3]
Emission Factor (in lb/MMCF, or otherwise noted)	1.9	7.6	7.6	0.6	0.138 lb/MMBtu	5.0 lb/hr	0.3700 lb/MMBtu
Potential Emission in tons/yr	0.01	0.03	0.03	0.003	0.61	21.90	1.65

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
(1) Emission Factors for NOx from TCEQ Emission Inventory Guidelines, TECHNICAL SUPPLEMENT 4: FLARES. Note the emission factor presented is for a high Btu/unassisted flare, which will emit more NOx than the AP-42 emission factor in Chapter 13.5 (0.068 lb/MMBtu) estimates for flares.
(2) Swift Fuels has estimated VOC emission factors using a mass balance based on chemical models of the proposed process, using ChemCAD software. This assumes natural gas portion is 100% VOC, as worst-case scenario.
(3) Emission Factor for CO from AP-42, Chapter 13.5 - Industrial Flares, Table 13.5-1 (AP-42, 01/95).
Total Heat Input Capacity of Waste Gas and Natural Gas (MMBtu/hr) = Heating value of waste gas (btu/scf) x Max. waste gas flow (scfh) x 1/1,000,000 (MMBtu/Btu) +
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03, unless otherwise noted.
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) [PM, PM10, PM2.5, SO2] = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Emission (tons/yr) [NOx, CO] = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu)/2,000 lb/ton x 8,760 hr/yr
Emission (tons/yr) [VOC] = Potential Emissions (lb/hr) x (8,760 hrs/yr)/(2,000 lb/ton)

	Uncontrolled HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	9.160E-06	5.234E-06	3.271E-04	7.851E-03	1.483E-05

	Uncontrolled HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.181E-06	4.798E-06	6.106E-06	1.657E-06	9.160E-06

	Uncontrolled Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in kg/Mmbtu	67.74	0.003	0.0006
Potential Emission in tons/yr	664	0.03	0.01
Summed Potential Emissions in tons/yr	664		
CO2e Total in tons/yr	667		

Controlled CO2e emission (95% CH4 destroyed in flare)

666

Methodology
Emission (tons/yr) [HAPs] = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.
Emission Factors from 40 CFR Part 98, Table C-1 and Table C-2, assume isobutylene (highest VOC content in waste gas stream). Assuming isobutylene presents worst-case scenario for CO2, CH4, and N20.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Heat Input Capacity (MMbtu/hr) x 2.20462 lb/kg x Emission Factor (kg/MMBtu) x (8,760 hrs/yr)/(2,000 lb/ton)
Uncontrolled CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
Controlled CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + (100% - CH4 destruction efficiency (95%)) x CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
VOC Emissions from Tanks

Company Name: Swift Fuels, LLC
Initial Address City IN Zip: 3150 S 460 E, Lafayette, IN 47905
Address: Portable
Permit Number: F157-32248-05376
Plt ID: 157-05376
Reviewer: Sarah Street

Tank ID	Potential VOC Emissions (lb/year)	Potential VOC Emissions (ton/year)
ST01	0	0
ST02	negligible	negligible
ST03*	40.56	0.02
Day Tank	0	0
EU01 Separation Tank	0	0
	Total	**0.02**

*ST03 components	Potential VOC Emissions (lb/year)	Potential VOC Emissions (ton/year)
1,3,5-trimethylbenzene (mesitylene)	20.23	0.010
mesityl oxide	20.33	0.010

No HAPs components in ST03

Potential emissions determined using EPA Tanks 4.0.9d

Notes:

ST01: Acetone storage tank. Acetone is not considered a VOC or HAP, therefore ST01 does not emit VOC or HAPs emissions.

ST02 (water phase tank): Contains wash water with other hydrophilic process byproducts including acetone and acetic acid. The acetic acid will be neutralized into acetate salt. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAP. The source has provided emissions estimates from EPA Tanks Version 4.0.9d for this tank, which has been submitted as confidential business information.

ST03 (organic phase tank): The source has provided emissions estimates from EPA Tanks Version 4.0.9d for this tank, which has been submitted as confidential business information.

Day Tank: There are no separate emissions from the Day Tank, because this Day Tank is vented back to the process EU01.

EU01 Separation Tank: There are no separate emissions from the EU1 Separation Tank. Emissions from EU01 are accounted for in the waste gas stream to the open flare

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Determination

Technical Support Document (TSD) for a New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	**Swift Fuels, LLC**
Initial Source Location:	**3150 S 460 E, Lafayette, IN 47905**
Source Location:	**Portable**
County:	**Tippecanoe**
SIC Code:	**2865 (Cyclic Organic Crudes and Intermediates)**
Operation Permit No.:	**F157-32248-05376**
Permit Reviewer:	**Sarah Street**

Background Information

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for Swift Fuels, LLC, a new portable mesitylene production pilot plant. Pursuant to the provisions of 326 IAC 8-1-6, Best Available Control Technology analyses for VOC were performed for the following units:

Note: the emission unit list numbering for these facilities corresponds to the numbering in the TSD.

(b) One (1) mesitylene processing skid, identified as EU01, approved for construction in 2012, processing acetone from tank ST01 at a maximum rate of 1.00 gallon of acetone per minute (or 525,600 gallons per year), producing a maximum of 319,208 gallons of mesitylene product per year.

Note: Mesitylene is the common name of 1,3,5-trimethylbenzene (CAS 108-67-8). It is a colorless liquid with sweet aromatic odor. It is used as a solvent for resins, gums, and nitrocellulose and used as intermediates for the manufacturing of other chemical compounds. It is used in manufacturing lacquers, paints, and varnishes. Swift Fuels, LLC will ship the final mesitylene product offsite for further processing, to be used as a fuel product.

The mesitylene processing skid, identified as EU01, consists of the following:

(1) One (1) catalyst bed reactor, approved for construction in 2012, a closed system where vaporized, heated, and pressurized acetone is fed and then altered to produce the desired product along with other byproducts;

Note: The acetone is heated by an electrically heated Dowtherm heat transfer fluid. No catalyst material is added to the system; rather, the catalyst is always contained in the reactor and only acetone is added to the reactor.

(2) One (1) scrubber, approved for construction in 2012, where the resulting mixture from the catalyst bed reactor is condensed and fed, with the outputs from the scrubber going to the following two (2) streams, listed in (A) through (B):

(A) Liquid Phase - Tanks

(i) Separation tank

The liquid is removed from the bottom of the scrubber and fed to one (1) separation tank, approved for construction in 2012, with no control, and venting to the atmosphere.

The mixture is then separated into two phases, and fed to the following two (2) tanks:

(ii) Wash water storage tank, identified as ST02

The hydrophilic phase (primarily water, acetone, and acetic acid) is drawn from the bottom of the separation tank and fed to one (1) wash water storage tank, identified as ST02, approved for construction in 2012, with a maximum tank volume of 5,500 gallons, with a maximum throughput of 655,156 gallons per year, with no control, and venting to the atmosphere.

Note: Tank ST02 holds wash water to be hauled offsite. Because this tank will be mostly water with some acetone (not a regulated VOC or HAP pollutant), and acetate salts (solid dissolved in water), ST02 will not emit significant amounts of VOC or HAPs.

(iii) Organics receiver tank, identified as Day Tank

The hydrophobic phase (containing mesitylene as well as undesired byproducts) is removed from the top of the separation tank and fed to one (1) organics receiver tank, identified as Day Tank, approved for construction in 2012, with no control, and venting back to the EU01 processing skid.

(iv) Product storage tank, identified as ST03

The desired product (mesitylene) is periodically pumped from the Day Tank to one (1) product storage tank, identified as ST03, approved for construction in 2012, with a maximum tank volume of 10,000 gallons, and with a maximum annual throughput of 319,208 gallons of mesitylene per year, with no control, and venting to the atmosphere. Final product is stored in tank ST03 until it can be shipped offsite.

Note: There are no separate emissions from the Day Tank, because this Day Tank is vented directly back to the processing skid EU01 or fed as final product to the bulk storage tank ST03.

(B) Gas Stream - Open Flare Control

A stream of non-condensable waste gases removed from the top of the scrubber and sent to one (1) open flare control unit for VOC control, identified as CE01, approved for construction in 2012, exhausting to stack SV01.

The flare uses a maximum of 50 pounds per hour of non-condensable (waste gas) stream and a maximum of 100 scf/hr of natural gas as supplemental fuel, identified as EU02.

(3) Closed-loop heat exchange equipment;

(4) Compressors;

(5) Piping;

(6) Instrumentation to convert raw material into product;

Under 40 CFR Subpart VVa, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 60.489 is less than 1,102 tons per year.

Under 40 CFR Subpart RRR, the mesitylene processing skid (EU01) is an affected facility, and the design capacity of the chemicals listed in NSPS subpart 40 CFR 60.707 is less than 1,100 tons per year.

Requirement for VOC BACT

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8.

Based on the calculations (see Appendix A - Emission Calculations) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), the mesitylene processing skid (EU01) is subject to the requirements of 326 IAC 8-1-6, since this operation has potential VOC emissions of greater than twenty-five (25) tons per year and is not regulated by other rules in 326 IAC 8. The main source of VOC emissions is from the non-condensable waste gas stream coming off the top of the EU01 scrubber; the VOC emissions from the liquid stream removed from the EU01 scrubber are accounted for in the ST03 bulk storage tank; the uncontrolled VOC emissions from this ST03 tank are 0.02 tons per year VOCs.

Therefore, since the potential emissions from the waste gas stream from the scrubber of the mesitylene processing skid are greater than twenty-five (25) tons per year and not regulated by other 326 IAC 8 rules, the Permittee is required to control VOC emissions from the scrubber of the mesitylene processing skid (EU01) pursuant to the provisions of 326 IAC 8-1-6 (BACT).

BACT Description

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.

A summary of the BACT for the mesitylene processing skid (EU01) is provided below. This BACT determination is based on the following information:

(1) The BACT analysis information submitted by Swift Fuels, LLC on September 18, 2012;

(2) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;

(3) State and local air quality permits; and

(4) EPA air pollution control training documents, guidance documents, and other reports, including, but not limited to the following:

(A) Clean Air Technology Center (CATC) Technical Bulletins (TB) and Air Pollution Technology Fact Sheets (FS). These documents are currently located on the internet at: http://www.epa.gov/ttn/catc/products.html

(B) EPA Air Pollution Control Cost Manual, Sixth Edition, EPA-452-B-02-001, January 2002, United States Environmental Protection Agency. This document is currently located on the internet at: http://www.epa.gov/ttn/catc/dir1/c_allchs.pdf

(C) Air Pollution Training Institute (APTI) Online Course entitled: Basic Concepts in Environmental Sciences, Module 6: Air Pollutants and Control Techniques, Volatile Organic Compounds, Control Techniques. This information is currently located on the internet at: http://www.epa.gov/apti/bces/module6/voc/control/control.htm

(D) Sources and Control of Volatile Organic Air Pollutants, Student Manual, Air Pollution Training Institute (APTI) Course 482, Third Edition, November 2002, United States Environmental Protection Agency. This training course is available on the internet at: http://www.epa.gov/apti/index.html; and

(E) Flare Efficiency Study, EPA-600/2-83-052, United States Environmental Protection Agency, July 1983. This document is currently located on the internet at: http://www.epa.gov/ttn/chief/ap42/ch13/related/ref_01c13s05_jan1995.pdf

VOC BACT Analysis

Step 1 − Identify All Potentially Available Control Options

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling VOC emissions from the new portable mesitylene production pilot plant:

(1) Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream applications. Flares have primarily been used in petroleum

production, petroleum refineries, and chemical plants to control waste gas streams containing low molecular weight VOC with high heating values. A properly operated flare can achieve 98+% VOC control efficiency when controlling emission streams with heat contents greater than 300 British thermal units per standard cubic foot (Btu/scf). If the waste gas stream has a heat content less than 300 Btu/scf, auxiliary fuel must be introduced in sufficient quantity to make up the difference. The VOC destruction efficiency of a flare depends upon the waste gas characteristics (density, flammability, heating value, and VOC component autoignition temperatures) and the combustion zone conditions (temperature, residence time, mixing, and available oxygen). While flares can provide efficient VOC control, other pollutants such as nitrogen oxides (NOx) and carbon monoxide (CO) are formed from the combustion process. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). Flares can be elevated flares, steam-assisted flares, air-assisted flares, non-assisted flares, pressure-assisted flares, and enclosed ground flares. Enclosed flares generally have less capacity than open flares and are used to combust continuous, constant flow vent streams; they are typically used at landfills to destroy landfill gas.

(2) Regenerative Thermal Oxidizer (RTO)

Thermal oxidation is the process of oxidizing VOC in a waste gas stream by raising the temperature above the VOC's autoignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. These systems employ a large thermal mass to collect the heat and return it to the incoming fume. Each oxidizer is supplied with several large “cells” which are filled with ceramic packing. The cells are alternated from heat-up to cool-down cycles for fume preheating by a series of dampers and ducts on the outlet side of the system. These units can achieve high removal efficiencies (95-98%) at relatively low temperatures (1400-1500°F) because of the thorough mixing in the ceramic packing sections. These systems are more maintenance-intensive than recuperative types because of the mechanical system that performs the alternating of cells. Thermal oxidizers operating costs are relatively high, since they typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrates, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. In addition, thermal oxidizers are also not generally cost-effective for low-concentration, high-flow organic vapor streams.

(3) Condensation Systems

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. Emissions sources that have low flow rates of high concentration VOCs (up to 100%) such as tank vents are ideal applications for refrigerated and cryogenic condensers. The condensed liquid is returned to the process and non-condensable liquids (with low levels of VOCs) are vented to the atmosphere. A condenser normally provides VOC control efficiency of 90% up to 98%. Condensation units are typically utilized at sources where there is a significant cost benefit to recovering the organic liquid for reuse, where the recovered organic liquids do not contain multiple organic compounds or water that require separation, and where the heat content of gas stream will not overload the refrigeration system. In addition, condensation units are typically used only on gas streams that have little or no particulate contamination, which can cause fouling within the condensation equipment and reduced heat transfer efficiency. Some industrial applications where refrigerated condensers are used include the dry cleaning industry, degreasers using VOC or halogenated solvents, transfer of volatile organic liquid or petroleum products, and vapors from storage vessels.

(4) Wet Scrubber:
A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent.

However, other solvents may be used dependent upon the components of the waste stream. Wet scrubber systems can achieve 70-99% VOC control efficiency, depending on the VOC solubility in the scrubbing fluid, the VOC-scrubbing fluid temperature, the scrubbing fluid contacting time and surface area, the scrubbing fluid to VOC ratio, the VOC concentration in the gas stream, and whether the scrubbing fluid contains a VOC oxidizing agent.

Step 2 − Eliminate Technically Infeasible Control Options

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Regenerative Thermal Oxidizer (RTO) or Wet Scrubber is not technically feasible for this source for the following reasons:

(1) Based on the information reviewed for this BACT determination, a Regenerative Thermal Oxidizer (RTO) would not be technically feasible to use in the proposed process due to the small size of the gas stream that must be controlled.

(2) Based on the information reviewed for this BACT determination, the use of a wet scrubber for control would not be technically feasible. Wet scrubbers are often used to capture acid gasses and inorganic VOCs that are soluble in aqueous solutions. This type of control is technologically infeasible for this process because the waste gas stream will contain primarily organic VOCs. The largest component of the organic VOCs is isobutylene, which is insoluble in water.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

IDEM, OAQ has ranked the technically feasible control technologies and combinations of control technologies as follows:

Control Technology	Control Efficiency (%)
Flare[(1)]	98+%
Condenser[(2)]	90% - 98%

Notes: (1) There is a plant in Indiana that operates a flare at 99% control efficiency; see Step 4 below for details on this control device.
(2) Swift Fuels, LLC has considered the use of a condenser to compress and condense the process stream, which would capture some of the VOCs. However, while the use of a condenser is technically feasible, Swift Fuels, LLC has indicated that there are VOCs in the processing skid (EU01) gas stream that cannot be condensed with the proposed condensing system, which would be vented directly to the atmosphere. Under this scenario, the emissions would be greater than if the process stream were sent to a flare. Swift Fuels, LLC has indicated that the control efficiency with the use of a condenser would be approximately 86.4%.

IDEM, OAQ is aware that the above-mentioned control technologies may periodically achieve control efficiencies that exceed the listed values under certain operating conditions. However, one factor to consider when evaluating BACT is that the BACT limit must be achievable on a consistent basis under normal operational conditions. BACT limitations should not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that can be lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While IDEM, OAQ recognizes that a greater control efficiency may be achievable as an average during compliance testing, IDEM, OAQ allows sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Step 4 – Evaluate the Most Effective Controls and Document Results

The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database was reviewed to identify control requirements and limitations for facilities that are similar to the mesitylene production pilot plant at this source (SIC code of 2865). In addition, the search was expanded to IDEM's database and other sources with SIC code starting with 28. Below is a brief summary of search results obtained from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database for processes similar to the mesitylene production pilot plant at this source.

(1) The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database search results are based on the following criteria:

- (A) SIC Code 2865 (Cyclic Organic Crudes and Intermediates);
- (B) SIC Codes beginning with 28 (Chemicals and Allied Products), including, but not limited to the following:
  - (i) 2869 (Industrial Organic Chemicals);
  - (ii) 2821 (Plastics Materials and Resins);
  - (iii) 2861 (Gum and Wood Chemicals)
  - (iv) 2879 (Agricultural Chemicals)
- (C) NAICS Code 325110 (Petrochemical Manufacturing)
- (D) Process Type Code 64.999 (Other SOCMI Processes);
- (E) Process Type Code 64.003 (Processes Vents - emissions from air oxidation, distillation, and other reaction vessels); and
- (F) Process Type Code 49.999 (Other Organic Evaporative Loss Sources).

(2) Indiana Department of Environmental Management (IDEM) air quality permits under SIC Codes including, but not limited to the following:

- (i) 2865 (Cyclic Organic Crudes and Intermediates);
- (ii) 2869 (Industrial Organic Chemicals);
- (iii) 2821 (Plastics Materials and Resins);
- (iv) 2833 (Medicinals and Botanicals);
- (v) 2834 (Pharmaceutical Preparations);

The identified sources are presented below in descending order; the highest control efficiency is presented first:

Plant	RBLC ID or Permit #	Date Issued and State	Facility	BACT Determination
INEOS USA LLC[1]	T089-22011-00076	3/20/2006 (IN)	Chemical Plant manufacturing polybutene (SIC 2821)	Flare, 99% control efficiency (Indiana State Rule 326 IAC 8-1-6 BACT)
Swift Fuels, LLC[2]	*F157-32248-05376*	-	*Scrubber of the mesitylene processing skid EU01 (SIC 2865)*	*Flare, 98% control efficiency (Indiana State Rule 326 IAC 8-1-6 BACT)*
Sabina Petrochemicals LLC[3]	TX-0575	8/20/2010 (TX)	High and Low Pressure Flares (controlling vent gas with natural gas as supplemental fuel) (SIC 2869)	98% control efficiency; VOC Emissions < 0.32 ton/yr (LAER)
Rohm and Haas Texas Inc.[4]	TX-0487	3/24/2005 (TX)	N5/6 Flare (controlling process vent emissions) (SIC 2821)	98% destruction removal efficiency (DRE); VOC Emissions < 2.13 lb/hr VOC Emissions < 3.20 tons/yr (BACT - PSD)

Plant	RBLC ID or Permit #	Date Issued and State	Facility	BACT Determination
Ohio River Clean Fuels, LLC(5)	OH-0317	11/20/2008 (OH)	High Pressure Flare (controlling Syngas from Gasifiers) (SIC 2869)	98% control efficiency; VOC Emissions < 157 lb/hr VOC Emissions < 7.07 ton/yr (BACT - PSD)
Exxon Mobil Chemical Baytown Chemical Plant(6)	TX-0474	6/10/2005 (TX)	Syngas Unit (SGU) (SIC 2869)	Flare 98% destruction efficiency
Ethanol Plants in Indiana(7)	-	(IN)	Fuel grade ethanol production plants (SIC code 2869)	Indiana State rule 326 IAC 8-5-6 requires either a thermal oxidizer, a wet scrubber, or enclosed flare - each must have a 98% VOC control efficiency
Citgo Refining and Chemicals Company LP(8)	TX-0478	4/20/2005 (TX)	Flare - Coke Drum Blowdown (controlling a process stream from the coker unit) (SIC 2869)	No control efficiency specified; VOC Emissions < 27.9 lb/hr VOC Emissions < 8.5 tons/yr (BACT - PSD)
Enterprise Products Operating LP(9)	TX-0514	1/24/2006 (TX)	Flare - Normal Operation (controlling vent gases)	No control efficiency specified; VOC Emissions < 468.1 lb/hr VOC Emissions < 93.2 tons/yr (BACT - PSD)
Union Carbide Corp(10)	TX-0449	4/3/2004 (TX)	Large Flare (SIC 2869)	Flare must meets heating value and velocity requirements; No control efficiency specified; VOC Emissions < 48.78 lb/hr VOC Emissions < 5.22 ton/yr (BACT - PSD)
Bio-Alternative, LLC(11)	F171-29714-00029	3/18/2011 (IN)	Biodiesel production (SIC 2869)	Condenser with scrubber; 98% control efficiency

Notes:

(1) INEOS USA INC (SIC code 2821) operates a chemical plant used to manufacture polybutene from a butane/butene mixture by a catalytic polymerization reaction using aluminum chloride as a catalyst. Note that the VOC destruction efficiency of the flare was set at 99% because the manufacturer has certified that the flare will achieve a 99% or greater destruction efficiency. The source is required to operate the flare according to manufacturer specifications; there is no stack test result on file that demonstrates the 99% VOC destruction efficiency for this facility.

(2) Swift Fuels, LLC (SIC code 2865) is a portable mesitylene production pilot plant, producing mesitylene (a petrochemical), a product shipped off-site for further processing to be used as a fuel product.

(3) Sabina Petrochemicals LLC (SIC code 2869) consists of a butadiene extraction unit and an indirect alkylation unit. Butadiene is used in the production of rubber and plastics. Alkylate is used as a fuel additive for high octane gasoline blending.

(4) Rohm and Haas Texas Inc. (SIC code 2821) produces acetone cyanohydrin (ACH) and hydrogen cyanide (HCN). This source has three process units: the HCN process, the ammonia recovery process, and the ACH process.

(5) Ohio River Clean Fuels, LLC (SIC code 2869) uses a flare to control the gasifier (which includes gasification of crushed coal/biomass in a pressure vessel); hot syngas exits from the top of gasifier.

(6) Exxon Mobil Chemical Baytown Chemical Plant (SIC code 2869) manufactures crude syngas using two de-asphalter rock (DAR) gasification trains.

(7) There are several sources in Indiana with the SIC code of 2869; however, most were not used for comparison because they are ethanol plants and the State of Indiana has a specific rule (326 IAC 8-5-6) that requires VOC emissions from ethanol plants to be controlled by an add-on control with an overall control efficiency of at least 98%.

(8) Citgo Refining and Chemicals Company LP is classified under SIC code 2869. No other source information is available in RBLC.

(9) Enterprise Products Operating LP operates several units which process liquid petroleum gases to produce high-grade products and certain synthetic organic chemicals. The processes include fractionization, reaction, separation, and distillation. North Plant Flare (EPN 45) is used to control routine emissions from the production of methyl tert-butyl ether (MTBE) and related gasoline additive products. Vent gases include C3-, butanes, butenes, and some nitrogen and CO2. South Plant (Main) Flare (FL-1) is used as a control device for a number of units; vent gases include C3-, butanes, butenes, and some nitrogen and CO2.

(10) Union Carbide Corp (SIC code 2869), uses a flare to control emissions from two low pressure polyethylene (LPPE) units.

(11) Bio-Alternative LLC (SIC code 2869) uses a condenser and scrubber under BACT requirements. Note that use of a scrubber has been determined to be technically infeasible for Swift Fuels, LLC.

There is only one other source (Holland Colours Americas, Inc.) in Indiana classified under SIC code of 2865; however, this source is not subject to the requirements of 326 IAC 8-1-6 (BACT) and was therefore not used for comparison.

None of the sources listed above have the same SIC code as Swift Fuels, LLC.

To evaluate to economic impact of utilizing an open flare versus an enclosed flare for BACT, Swift Fuels, LLC submitted an annualized cost estimate for each technically feasible pollution control method: an open flare and an enclosed flare (both achieving a minimum VOC control efficiency of 98%). The annualized costs are site specific and include: (1) The capital costs of purchasing and installing the control device; and (2) The costs of operating, inspecting, and maintaining the control device. The table below summarizes to economic impact analysis:

	Open Flare	**Enclosed Flare**
Total Annualized Costs (using capital costs only)*	$4,401	$37,411
Incremental Annualized Cost	$33,010	
Potential Emissions Before Control (tons/year)	239.94	239.94
Potential Emissions After Control (tons/year)	4.80	4.80
Cost Effectiveness ($/ton)**	$18.72	$159.10
Incremental cost effectiveness	Infinite***	

Notes:

* Assume the annualized costs for labor, indirect costs, and recovery credits are equal for the open flare and enclosed flare. Therefore, the annualized costs compare capital costs only between the two types of flares. Cost for each flare was provided to Swift Fuels, LLC by Flare Industries and submitted to IDEM OAQ on October 18, 2012.

**This is consistent with the EPA Air Pollution Control Technology Fact Sheet for Flares (EPA-452/F-03-019), http://www.epa.gov/ttn/catc/dir1/fflare.pdf. Accessed 10/19/2012.

The cost effectiveness is calculated as follows:

$$\text{Cost Effectiveness } \left(\frac{\$}{\text{ton}}\right) = \frac{A}{Eb-Ea}$$

Where:

A = Total annualized cost for the control technology ($);
Eb = Potential emissions before control (tons/year); and
Ea = Potential emissions after control (tons/year).

*** Because the control efficiency is the same for the open flare and enclosed flare, there is no incremental reduction in VOC emissions. Incremental cost effectiveness would be infinite because the denominator (incremental reduction in VOC emissions) is zero.

Since the control efficiency of the open flare and enclosed flare are the same (98%), Swift Fuels, LLC has elected to use an open flare as BACT due to the incremental annualized costs when comparing the economic impact of open flare versus enclosed flare. Note that the open flare proposed by Swift Fuels, LLC is a non-assisted open flare.

Step 5 – Select BACT

Swift Fuels, LLC has proposed to use a flare to control the VOC emissions from the scrubber of the mesitylene processing skid (EU01) which is the most stringent BACT requirement; therefore, an economic, energy, or environmental impact analysis is not required. There is one facility (INEOS USA LLC) in Indiana with a 326 IAC 8-1-6 (BACT) requirement to operate the flare at a 99% VOC destruction efficiency; however, the control efficiency level was set at 99% per the manufacturer's certification. INEOS USA LLC is required to operate the flare according to manufacturer specifications; there is no stack test result on file that demonstrates the 99% VOC destruction efficiency for this facility. The analysis in Step 4 above indicates there are four facilities operating flares for VOC destruction, and the control efficiency required for these facilities is 98%. Further, the ethanol plants in Indiana are required to operate a control with 98% VOC destruction efficiency. In addition, IDEM issued a permit to BW Washington Car Shop (F027-29701-00006) on January 10, 2012, with flare at 98% control efficiency as BACT. Therefore, the proposed flare for Swift Fuels, LLC will be required to operate with a 98% VOC destruction efficiency, and this is considered the most stringent BACT requirement.

A flare would be the most effective control, since it can be used to control almost any VOC stream, can typically handle large fluctuations in VOC concentration, flow rate, heating value, and inert species content, and it is appropriate for continuous, batch, and variable flow vent stream applications. Swift Fuels, LLC has indicated that a flare will provide the most control over VOC emissions from the source's process.

Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the mesitylene production processes at this source:

(a) The open flare CE01 shall operate at all times that the scrubber of the mesitylene processing skid (EU01) is in operation.

(b) The overall VOC control efficiency for the open flare (including the capture efficiency and destruction efficiency) shall be equal to or greater than 98%.

This is equivalent to the VOC emissions from the scrubber of the mesitylene processing skid (EU01), after control, of 1.096 pounds per hour.

VOC = (239.94 tons/yr)*(1-0.98)*(2000 lbs/1 ton)*(1 yr/8760 hr) = 1.096 lb/hr

IDEM Contact

(a) Questions regarding this BACT Analysis can be directed to Sarah Street at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8427 or toll free at 1-800-451-6027 extension 2-8427.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Don Bower
Swift Fuels LLC
1291 Cumberland Ave. Ste B
West Lafayette, IN 47906

DATE: December 11, 2012

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
FESOP
157-32248-05376

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Chris DAcosta, Responsible Official
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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(317) 232-8603
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www.idem.IN.gov

TO: Tippecanoe County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: **Swift Fuels, LLC**
Permit Number: **157-32248-05376**

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	DPABST 12/11/2012 Swift Fuels LLC 157-32248-05376(Final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Don Bower Swift Fuels LLC 1291 Cumberland Ave. Ste B West Lafayette IN 47906 (Source CAATS) (CONFIRM DELIVERY)									
2		Chris DAcosta CEO Swift Fuels LLC 1291 Cumberland Ave, Ste B West Lafayette IN 47906 *(RO CAATS)*									
3		Tippecanoe County Commissioners 20 N 3rd St, County Office Building Lafayette IN 47901 *(Local Official)*									
4		Tippecanoe County Health Department 20 N. 3rd St Lafayette IN 47901-1211 *(Health Department)*									
5		Tippecanoe County Public Library 627 South Street Lafayette IN 47901-1470 *(Library)*									
6		Ms. Dorothy Whicker 2700 Bonny Lane Lafayette IN 47904 *(Affected Party)*									
7		Ms. Geneva Werner 3212 Longlois Drive Lafayette IN 47904-1718 *(Affected Party)*									
8		Mrs. Phyllis Owens 3600 Cypress Lane Lafayette IN 47905 *(Affected Party)*									
9		Mr. Jerry White 1901 King Eider Ct West Lafayette IN 47906 *(Affected Party)*									
10		Ms. Rose Filley 5839 Lookout Drive West Lafayette IN 47906 *(Affected Party)*									
11		Mr. William Cramer 128 Seminole Drive West Lafayette IN 47906 *(Affected Party)*									
12		Mr. Robert Kelley 2555 S 30th Street Lafayette IN 44909 *(Affected Party)*									
13		West Lafayette City Council and Mayors Office 609 W. Navajo West Lafayette IN 47906 (Local Official)									
14		Stoddard Development, LLC PO Box 204 Decatur IN 62525 *(Affected Party)*									
15		Houghton International, Inc. PO Box 930 Valley Forge PA 19482 *(Affected Party)*									

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

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Mail Code 61-53

IDEM Staff	DPABST 12/11/2012 Swift Fuels LLC 157-32248-05376 (Final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		B Three Partners, LLC - Series 8 1400 W Ogden Ave Naperville IL 60563 (Affected Party)									
2		Norfolk & Western Railway Co. 110 Franklin Road SE Roanoke VA 24042 *(Affected Party)*									
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11											
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13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

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