



# 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](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: July 28, 2011

RE: MonoSol, LLC / 091 - 30236 - 00138

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, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204.

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

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

The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

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

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

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

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

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

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



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## New Source Review and Part 70 Operating Permit OFFICE OF AIR QUALITY

**MonoSol, LLC**  
**1609 Genesis Drive**  
**LaPorte, Indiana 46350**

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

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

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

Operation Permit No.: T091-30236-00138	
Issued by:  Chrystal A. Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: July 28, 2011  Expiration Date: July 28, 2016

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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 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]

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The Permittee owns and operates a stationary polyvinyl alcohol (PVOH) film manufacturing plant.

Source Address:	1609 Genesis Drive, LaPorte, Indiana 46350
General Source Phone Number:	(219) 762-3165
SIC Code:	3081
County Location:	LaPorte
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Minor Source, under PSD Major Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) film casting line, identified as Line 7, constructed in 2008 and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 255 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-008 and V-0013), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (b) One (1) film casting line, identified as Line 8, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 215 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-026 and V-028), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (c) One (1) film casting line, identified as Line 9, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr utilizing natural gas only, exhausting to stacks V-033 and V-035.
- (d) One (1) film casting line, identified as Line 10, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a

maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-034 and V-039.

- (e) One (1) film casting line, identified as Line 11, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-033 and V-035.
- (f) One (1) film casting line, identified as Line 12, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (g) One (1) film casting line, identified as Line 13, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (h) One (1) film casting line, identified as Line 14, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (i) One (1) film casting line, identified as Line 15, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (j) One (1) film casting line, identified as Line 16, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-047 and V-052.
- (k) One (1) film casting line, identified as Line 17, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000

gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.

- (l) One (1) film casting line, identified as Line 18, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.

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

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

- (a) Four (4) natural gas-fired boilers, identified as #2, #3, #4 and #5, #2 constructed in 2009 and #3, #4 and #5 approved in 2011 for construction, with a rated heat capacity of 9.00 MMBtu/hour, each. [326 IAC 6-2-4]
- (b) One (1) bulk resin storage silo (identified as Silo #1), approved in 2009 for construction, with a maximum storage capacity of 71,000 pounds and a maximum off loading rate of 32,000 pounds per hour, controlled by bin vent filters and exhausting at stacks V041 and V042. [326 IAC 6-3-2]

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

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

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-7-1]**

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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)]**

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

- 
- (a) This permit, T091-30236-00138, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

### **B.4 Term of Conditions [326 IAC 2-1.1-9.5]**

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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.5 Enforceability [326 IAC 2-7-7] [IC 13-17-12]**

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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.6 Severability [326 IAC 2-7-5(5)]**

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

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

### **B.8 Duty to Provide Information [326 IAC 2-7-5(6)(E)]**

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

- (a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:
  - (1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(34), 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) A "responsible official" is defined at 326 IAC 2-7-1(34).

B.10 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted 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

and

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

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;

- (3) Whether compliance was continuous or intermittent;
- (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
- (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

B.11 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

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- (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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
  - (2) The permitted facility was at the time being properly operated;
  - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
  - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Northern Regional Office 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  
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

- (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 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.13 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

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

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.
- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
- (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
  - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
  - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
  - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

**B.16** Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

- (a) All terms and conditions of permits established prior to T091-30236-00138 and issued pursuant to permitting programs approved into the state implementation plan have been either:
- (1) incorporated as originally stated,
  - (2) revised under 326 IAC 2-7-10.5, or
  - (3) deleted under 326 IAC 2-7-10.5.
- (b) Provided that all terms and conditions are accurately reflected in this combined permit, all previous registrations and permits are superseded by this combined new source review and part 70 operating permit.

**B.15** Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

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

**B.16** Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 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 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

**B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]**

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

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

Indiana Department of Environmental Management  
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

**B.19 Permit Revision Under Economic Incentives and Other Programs**

[326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

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

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

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

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

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

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

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

(4) The Permittee notifies the:

Indiana Department of Environmental Management  
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 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

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

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

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]  
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.
-

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

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

B.22 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management  
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Advanced Source Modification Approval [326 IAC 2-7-5(16)] [326 IAC 2-7-10.5]

- (a) The requirements to obtain a source modification approval under 326 IAC 2-7-10.5 or a permit modification under 326 IAC 2-7-12 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.
- (b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

B.26 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (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.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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

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

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

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

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

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

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

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

thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, 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. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

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

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- (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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the 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]**

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

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

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

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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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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- (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 2-7-5][326 IAC 2-7-6]**

**C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

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

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

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

no later than 180 days from the date on which this source commences operation.

The ERP does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

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

C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

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

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall 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 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]  
Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Quality  
100 North Senate Avenue  
MC 61-50 IGCN 1003  
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]  
(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this permit, 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.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]  
(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported 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 2-7-6(1) by a "responsible official" as defined by

326 IAC 2-7-1(34). 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.

#### **Stratospheric Ozone Protection**

**C.19 Compliance with 40 CFR 82 and 326 IAC 22-1**

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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) film casting line, identified as Line 7, constructed in 2008 and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 255 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-008 and V-0013), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters and exhausting at vents V-003 and V-004.
- (b) One (1) film casting line, identified as Line 8, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 215 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-026 and V-028), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters and exhausting at vents V-003 and V-004.
- (c) One (1) film casting line, identified as Line 9, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr utilizing natural gas only, exhausting to stacks V-033 and V-035.
- (d) One (1) film casting line, identified as Line 10, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-034 and V-039.
- (e) One (1) film casting line, identified as Line 11, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-033 and V-035.
- (f) One (1) film casting line, identified as Line 12, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying

ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.

- (g) One (1) film casting line, identified as Line 13, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (h) One (1) film casting line, identified as Line 14, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (i) One (1) film casting line, identified as Line 15, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (j) One (1) film casting line, identified as Line 16, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-047 and V-052.
- (k) One (1) film casting line, identified as Line 17, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.
- (l) One (1) film casting line, identified as Line 18, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.

(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 2-7-5(1)]

### D.1.1 Hazardous Air Pollutants (HAP) [326 IAC 2-4.1]

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Pursuant to 326 IAC 2-4.1, (Major Sources of Hazardous Air Pollutants (HAP)), the methanol content in the resin feed shall not exceed 3% methanol, by weight, with a 12-month rolling average of 1.25% or less methanol in the resin feed.

### D.1.2 Volatile Organic Compounds [326 IAC 8-1-6][326 IAC 2-2]

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- (a) The VOC emissions from the drying processes from the film casting lines identified as Line 7 through Line 18 shall not exceed 24.77 tons per twelve (12) consecutive month period, each, with compliance determined at the end of each month.
- (b) The VOC emissions from the film casting lines identified as Line 7 through Line 18 shall not exceed 245 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with the above limits, combined with the potential to emit VOC from other emission units at the source, shall limit each line to less than twenty-five (25) tons and the entire source to less than 250 tons per twelve (12) consecutive month period and render 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, respectively.

### D.1.3 Particulate Emission Limitations [326 IAC 6-3-2]

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Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the Weigh Hoppers shall not exceed 6.52 pounds per hour when operating at a process weight rate of two (2) tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

### D.1.4 Preventive Maintenance Plan

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A Preventive Maintenance Plan is required for these facilities and any associated control devices. 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.1.5 Volatile Organic Compounds (VOC)

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- (a) In order to demonstrate compliance with Conditions D.1.2(a), the source shall determine VOC emissions from each film cast line drying process on a monthly basis using the following equation:

$$\text{VOC Emissions per Film Cast Line Drying Process (tons/month)} = \text{PVOH Resin Usage (pounds/batch)} \times \text{PVOH Resin MeOH Content (\%)} \times 1 \text{ ton/2000 pounds} \times \text{Batch Time (batch/month)}$$

- (b) In order to demonstrate compliance with Condition D.1.2(b), the source shall determine VOC emissions from the film cast lines drying process on a monthly basis using the following equation:

VOC Emissions from the Film Cast Line Drying Process (tons/month) =  $\sum$  PVOH Resin Usage per line (pounds/batch) x PVOH Resin MeOH Content (%) x 1 ton /2000 pounds x Batch Time (batch/month)

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

**D.1.6 Record Keeping Requirement**

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- (a) To document compliance with Condition D.1.1, the Permittee shall maintain monthly records of VOC/methanol content of the resin used in the film casting lines identified as Lines 7 through 18.
- (b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required by this condition.

**D.1.7 Reporting Requirements**

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A quarterly summary of the information to document the compliance status with D.1.1 and D.1.2 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1(34).

**SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

- (a) Four (4) natural gas-fired boilers, identified as #2, #3, #4 and #5, #2 constructed in 2009 and #3, #4 and #5 approved in 2011 for construction, with a rated heat capacity of 9.00 MMBtu/hour, each. [326 IAC 6-2-4]
- (b) One (1) bulk resin storage silo (identified as Silo #1), approved in 2009 for construction, with a maximum storage capacity of 71,000 pounds and a maximum off loading rate of 32,000 pounds per hour, controlled by bin vent filters and exhausting at stacks V041 and V042. [326 IAC 6-3-2]

(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.2.1 Particulate Matter Limitation (PM) [326 IAC 6-2][326 IAC 6-3]**

- (a) Pursuant to 326 IAC 6-2-4 (Particulate Matter Emissions Limitations), particulate emissions from the natural gas-fired boilers shall not exceed the following:

Boiler	Year Approved for Constructed	Q (MMBtu/hr)	Pt (lb/MMBtu)
Boiler #2	2009	9.00	0.60
Boiler #3	2011	36.00	0.43
Boiler #4	2011	36.00	0.43
Boiler #5	2011	36.00	0.43

This limitation was calculated using the following equation:

$$Pt = 1.09/Q^{0.26}$$

Where Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.  
 Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

- (b) Pursuant to 326 IAC 6-3-2, the particulate emissions from the Resin Silo#1 shall not exceed 26.30 pounds per hour when operating at a process weight rate of sixteen (16) tons per hour. The pound per hour limitation was calculated with the following equation:

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

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
 P = process weight rate in tons per hour

**D.2.2 Preventive Maintenance Plan**

A Preventive Maintenance Plan is required for these facilities and any associated control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  
PART 70 OPERATING PERMIT  
CERTIFICATION**

Source Name: MonoSol, LLC  
Source Address: 1609 Genesis Drive, LaPorte, Indiana 46350  
Part 70 Permit No.: T091-30236-00138

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

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Affidavit (specify)
- Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

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

**PART 70 OPERATING PERMIT**  
**EMERGENCY OCCURRENCE REPORT**

Source Name: MonoSol, LLC  
Source Address: 1609 Genesis Drive, LaPorte, Indiana 46350  
Part 70 Permit No.: T091-30236-00138

**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
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , 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**

**Part 70 Quarterly Report**

Source Name: MonoSol, LLC  
 Source Address: 1609 Genesis Drive, LaPorte, Indiana 46350  
 Part 70 Permit No.: T091-30236-00138  
 Facility: Drying Process from Film Cast Lines 7 through 18  
 Parameter: VOC Emissions  
 Limit: 24.77 tons, each line, and 245 tons per twelve (12) consecutive month period  
 VOC Emissions per Film Cast Line Drying Process (tons/month) = PVOH Resin Usage (pounds/batch) x PVOH Resin MeOH Content (%) x 1 ton/2000 pounds x Batch Time (batch/hour) x Monthly Operating Hours (hours/month)

and

VOC Emissions from the Film Cast Line Drying Process (tons/month) =  $\sum$  PVOH Resin Usage per line (pounds/batch) x PVOH Resin MeOH Content (%) x 1 ton /2000 pounds x Batch Time (batch/hour) x Monthly Operating Hours (hours/month)

QUARTER :

YEAR:

Month	Line 7	Line 8	Line 9	Line 10	Line 11	Line 12	Line 13	Line 14	Line 15	Line 16	Line 17	Line 18	Total VOC Emissions from Film Cast Lines
Month 1													
Month 2													
Month 3													

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.  
 Deviation has been reported on:

Submitted by: \_\_\_\_\_  
 Title / Position: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Phone: \_\_\_\_\_

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

**Part 70 Quarterly Report**

Source Name: MonoSol, LLC  
Source Address: 1609 Genesis Drive, LaPorte, Indiana 46350  
Part 70 Permit No.: T091-30236-00138  
Facility: PVOH Resin Feed  
Parameter: Weight Percentage of Methanol  
Limit: Not to exceed 3% methanol, by weight, with a 12-month rolling average of 1.25% methanol in the resin feed.

QUARTER :

YEAR:

Month	Column 1	Column 2
	Maximum Methanol Content of Resin Feed	Average Methanol Content of Resin Feed
Month 1		
Month 2		
Month 3		

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.

Deviation has been reported on:

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF AIR QUALITY  
 COMPLIANCE AND ENFORCEMENT BRANCH  
 PART 70 OPERATING PERMIT  
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: MonoSol, LLC  
 Source Address: 1609 Genesis Drive, LaPorte, Indiana 46350  
 Part 70 Permit No.: T091-30236-00138

**Months:** \_\_\_\_\_ **to** \_\_\_\_\_ **Year:** \_\_\_\_\_

<p>This report shall be submitted quarterly based on a calendar year. 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".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement (specify permit condition #)</b>	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement (specify permit condition #)</b>	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Indiana Department of Environmental Management  
Office of Air Quality**

**Technical Support Document (TSD) for a New Source Review  
and Part 70 Operating Permit**

**Source Description and Location**

Source Name:	MonoSol, LLC
Source Location:	1609 Genesis Drive, LaPorte, Indiana 46350
County:	LaPorte
SIC Code:	3081
Operation Permit No.:	091-30236-00138
Permit Reviewer:	Anne-Marie C. Hart

The Office of Air Quality (OAQ) has reviewed a request from MonoSol, LLC, to transition from a Federally Enforceable State Operating Permit (FESOP) to a Part 70 (Title V) Operating Permit.

**Existing Approvals**

The source was issued FESOP No. 091-27326-00138 on May 6, 2009. The source has not received any other approvals.

**County Attainment Status**

The source is located in LaPorte County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Attainment effective July 19, 2007, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.

<sup>1</sup>Unclassifiable or attainment effective November 15, 1990, for the 1-hour standard which was revoked effective June 15, 2005.  
Unclassifiable or attainment effective April 5, 2005, for PM<sub>2.5</sub>.

- (a) **Ozone Standards**  
Volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to ozone. LaPorte County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM<sub>2.5</sub>**  
LaPorte County has been classified as attainment for PM<sub>2.5</sub>. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM<sub>10</sub> emissions as a surrogate for PM<sub>2.5</sub> emissions until 326 IAC 2-2 is revised.

- (c) Other Criteria Pollutants  
LaPorte County has been classified as attainment or unclassifiable in Indiana for other regulated criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

### Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

### Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Emissions (ton/yr)
PM	30.11
PM <sub>10</sub>	31.11
PM <sub>2.5</sub>	31.11
SO <sub>2</sub>	0.10
VOC	<100
CO	13.80
NO <sub>x</sub>	16.50
Single HAP	<10
Combination of HAP	<25

- (a) This existing source is not a major stationary source, under 326 IAC 2-2 (PSD) or 326 IAC 2-7 (Part 70), because no regulated pollutant is emitted at a rate of 100 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).
- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are limited to less than ten (10) tons per year for any single HAP and limited to less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is considered an area source under Section 112 of the Clean Air Act (CAA).
- (c) These emissions are based upon the Technical Support Document for FESOP 091-27326-00138, issued May 6, 2009.

### Description of Existing Units and New Source Review

The Office of Air Quality (OAQ) has reviewed a new source review and Part 70 operating permit application, submitted by MonoSol, LLC on February 17, 2011, relating to construction and operation of new emission units at the source, as well as the modification of existing film casting lines. Lines 12 through 18 are new emission units. The construction of Lines 12 through 18 increase potential emissions from the entire source such that MonoSol, LLC will transition from a Federally Enforceable State Operating Permit to a Title V Operating Permit. Lines 7 through 11 will be modified such that the natural gas drying ovens associated with the existing film casting lines, identified as Line 7 through Line 11, will have higher heat capacities.

The following is a list of the modified and existing emission units and pollution control devices:

- (a) One (1) film casting line, identified as Line 7, constructed in 2008 and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 255 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-008 and V-0013), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (b) One (1) film casting line, identified as Line 8, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 215 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-026 and V-028), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (c) One (1) film casting line, identified as Line 9, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr utilizing natural gas only, exhausting to stacks V-033 and V-035.
- (d) One (1) film casting line, identified as Line 10, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-034 and V-039.
- (e) One (1) film casting line, identified as Line 11, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-033 and V-035.

The following is a list of the existing insignificant activities:

- (a) Four (4) bulk organic liquid storage tanks, identified as Bulk Storage Tank 1, Bulk Storage Tank 2, Bulk Storage Tank 3, and Bulk Storage Tank 4, each with a maximum storage capacity of 4,600 gallons, storing glycerin and venting to the atmosphere. Bulk Storage Tank 1 and Bulk Storage Tank 2 were constructed in 2007. Bulk Storage Tank 3 and Bulk Storage Tank 4 are approved in 2009 for construction.
- (b) Cooling Tower with a maximum capacity of 405 gpm approved in 2009 for construction.
- (c) Eight (8) natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
- (d) One (1) bulk resin storage silo (identified as Silo #1), approved in 2009 for construction, with a maximum storage capacity of 71,000 pounds and a maximum off loading rate of

32,000 pounds per hour, controlled by bin vent filters and exhausting at stacks V041 and V042. [326 IAC 6-3]

The following unit description of an existing insignificant activity has been corrected:

- (a) One (1) natural gas fired boiler, previously identified as L9/10/11 Boiler now identified as Boiler #2, approved for construction in 2009, previously listed as having a maximum rated capacity of 6.3 MMBtu/hr, now with a maximum rated capacity of 9 MMBtu/hr. [326 IAC 6-2-4]

The following is a list of the proposed emission units and pollution control devices:

- (a) One (1) film casting line, identified as Line 12, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (b) One (1) film casting line, identified as Line 13, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (c) One (1) film casting line, identified as Line 14, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (d) One (1) film casting line, identified as Line 15, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (e) One (1) film casting line, identified as Line 16, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-047 and V-052.
- (f) One (1) film casting line, identified as Line 17, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.
- (g) One (1) film casting line, identified as Line 18, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run



Process / Emission Unit	Potential to Emit (ton/yr)							Worst-Case Individual HAP
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Total HAPs	
Film Cast Line 10	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 11	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 12	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 13	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 14	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 15	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 16	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 17	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Film Cast Line 18	0.05	0.20	0.02		2.17	2.58	21.44	21.39 Methanol
Bulk Resin Storage Silo	4.91	4.91	0.00		0.00	0.00	0.00	0.00
Insignificant Natural Gas-Fired Boilers	0.30	1.20	0.09	0.87	13.25	15.77	0.30	0.28 Hexane
Bulk Organic Liquid Storage Tanks	0.00	0.00	0.00	0.008	0.00	0.00	0.00	0.00
Cooling Towers	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Insignificant Natural Gas-Fired Heaters	0.07	0.27	0.02	0.19	2.94	3.50	0.066	0.063 Hexane
<b>Total for Modification</b>	31.18	34.28	0.27	<250	37.23	44.33	242.82	241.99 Methanol
Part 70 Major Source Threshold	NA	100	100	100	100	100	25	10
PSD Major Source Threshold	250	250	250	250	250	250	NA	NA

Note: Film Cast Line emissions include emissions from weigh hoppers (for Lines 7 and 8), mixer/ribbon blender, hold/run tanks, natural gas combustion from dryers, and emissions the PVOH drying process.

This source is considered a minor source under PSD because the unrestricted potential to emit is limited to less than 250 tons per year as follows: the VOC emissions from the film cast lines shall not exceed 245 tons per twelve (12) consecutive month period.

**Federal Rule Applicability Determination**

**NSPS:**

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicable to this source.
  - (1) The natural gas-fired boilers are not subject to the requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc, because the boilers each have a rated heat capacity less than 10 MMBtu per hour.
  - (2) The bulk storage tanks are not subject to 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, because the maximum capacity of each storage tank is less than 75 m<sup>3</sup> (19,800 gallons).

**NESHAP:**

- (b) The four (4) boilers identified as #2, #3, #4 and #5 are subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD). The amended rule was published in the Federal Register (76 FR 15664) on March 21, 2011. This rule has been stayed and is undergoing reconsideration by EPA. Although the rule applies to the source based upon current applicabilities, the requirements are not being added to the permit until the reconsideration and stay are resolved by EPA.
- (c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each new or modified pollutant-specific emission unit that meets the following criteria:
  - (1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;
  - (2) is subject to an emission limitation or standard for that pollutant; and
  - (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each new or modified emission unit involved:

<b>CAM Applicability Analysis</b>							
<b>Emission Unit</b>	<b>Control Device Used</b>	<b>Emission Limitation (Y/N)</b>	<b>Uncontrolled PTE (ton/yr)</b>	<b>Controlled PTE (ton/yr)</b>	<b>Part 70 Major Source Threshold (ton/yr)</b>	<b>CAM Applicable (Y/N)</b>	<b>Large Unit (Y/N)</b>
Batch Mixing - PM <sub>10</sub>	N	Y	0.88	0.88	100	N	N
Film Cast Line 7 - PM <sub>10</sub>	N	Y	12.40	0.30	100	N	N
Film Cast Line 8 - PM <sub>10</sub>	N	Y	12.40	0.30	100	N	N
Film Cast Line 9 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N

CAM Applicability Analysis							
Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Film Cast Line 10 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 11 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 12 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 13 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 14 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 15 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 16 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 17 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Film Cast Line 18 - PM <sub>10</sub>	N	N	0.20	0.20	100	N	N
Bulk Resin Storage Silo - PM <sub>10</sub>	N	Y	4.91	0.049	100	N	N
Insignificant Natural Gas-Fired Boilers - PM <sub>10</sub>	N	Y	1.20	1.20	100	N	N
Cooling Towers - PM <sub>10</sub>	N	N	0.032	0.032	100	N	N
Insignificant Natural Gas-Fired Heaters - PM <sub>10</sub>	N	N	0.27	0.27	100	N	N
Film Cast Line 7 - SO <sub>2</sub>	N	N	0.01	0.01	100	N	N
Film Cast Line 8 - SO <sub>2</sub>	N	N	0.01	0.01	100	N	N
Film Cast Line 9 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 10 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 11 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 12 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 13 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 14 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 15 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 16 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N

CAM Applicability Analysis							
Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Film Cast Line 17 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 18 - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Insignificant Natural Gas-Fired Boilers - SO <sub>2</sub>	N	N	0.09	0.09	100	N	N
Insignificant Natural Gas-Fired Heaters - SO <sub>2</sub>	N	N	0.02	0.02	100	N	N
Film Cast Line 7 - NO <sub>x</sub>	N	N	1.72	1.72	100	N	N
Film Cast Line 8 - NO <sub>x</sub>	N	N	1.72	1.72	100	N	N
Film Cast Line 9 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 10 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 11 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 12 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 13 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 14 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 15 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 16 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 17 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Film Cast Line 18 - NO <sub>x</sub>	N	N	2.58	2.58	100	N	N
Insignificant Natural Gas-Fired Boilers - NO <sub>x</sub>	N	N	15.77	15.77	100	N	N
Insignificant Natural Gas-Fired Heaters - NO <sub>x</sub>	N	N	3.50	3.50	100	N	N
Film Cast Line 7 - VOC	N	Y	33.68	<245	100	N	N
Film Cast Line 8 - VOC	N	Y	33.38		100	N	N
Film Cast Line 9 - VOC	N	Y	51.47		100	N	N

CAM Applicability Analysis							
Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Film Cast Line 10 - VOC	N	Y	51.47		100	N	N
Film Cast Line 11 - VOC	N	Y	51.47		100	N	N
Film Cast Line 12 - VOC	N	Y	51.47		100	N	N
Film Cast Line 13 - VOC	N	Y	51.47		100	N	N
Film Cast Line 14 - VOC	N	Y	51.47		100	N	N
Film Cast Line 15 - VOC	N	Y	51.47		100	N	N
Film Cast Line 16 - VOC	N	Y	51.47		100	N	N
Film Cast Line 17 - VOC	N	Y	51.47		100	N	N
Film Cast Line 18 - VOC	N	Y	51.47		100	N	N
Insignificant Natural Gas-Fired Boilers - VOC	N	N	0.87	0.87	100	N	N
Insignificant Natural Gas-Fired Heaters - VOC	N	N	0.19	0.19	100	N	N
Bulk Organic Liquid Storage Tanks - VOC	N	N	0.01	0.01	100	N	N
Film Cast Line 7 - CO	N	N	1.44	1.44	100	N	N
Film Cast Line 8 - CO	N	N	1.44	1.44	100	N	N
Film Cast Line 9 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 10 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 11 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 12 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 13 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 14 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 15 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 16 - CO	N	N	2.17	2.17	100	N	N
Film Cast Line 17 - CO	N	N	2.17	2.17	100	N	N

<b>CAM Applicability Analysis</b>							
<b>Emission Unit</b>	<b>Control Device Used</b>	<b>Emission Limitation (Y/N)</b>	<b>Uncontrolled PTE (ton/yr)</b>	<b>Controlled PTE (ton/yr)</b>	<b>Part 70 Major Source Threshold (ton/yr)</b>	<b>CAM Applicable (Y/N)</b>	<b>Large Unit (Y/N)</b>
Film Cast Line 18 - CO	N	N	2.17	2.17	100	N	N
Insignificant Natural Gas-Fired Boilers - CO	N	N	13.25	13.25	100	N	N
Insignificant Natural Gas-Fired Heaters - CO	N	N	2.94	2.94	100	N	N

Note: Film Cast Line emissions include emissions from controlled weigh hoppers (for Lines 7 and 8), mixer/ribbon blender, hold/run tanks, natural gas combustion from dryers, and emissions from the PVOH drying process.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the new or modified units as part of this Part 70 Operating Permit.

**State Rule Applicability Determination**

**326 IAC 2-2 (PSD)**

PSD applicability is discussed under the Permit Level Determination – PSD section.

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

The operation of Film Cast Lines identified as Lines 7 through 18 will emit greater than ten (10) tons per year for a single HAP. Therefore, 326 IAC 2-4.1 will apply. MACT is determined to be a minimal methanol content in the resin as follows: Methanol content in the resin feed shall not exceed 3% methanol, by weight, with a 12-month rolling average of 1.25% or less methanol in the resin feed. A detailed MACT analysis is included as Appendix B.

**326 IAC 2-6 (Emission Reporting)**

Since this source is located in LaPorte County, and has a potential to emit VOC greater than or equal to twenty-five (25) tons per year, an emission statement covering the previous calendar year must be submitted by July 1 of each year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

**State Rule Applicability Determination - Film Casting Lines**

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

Pursuant to 326 IAC 6-3-2, particulate emissions from the Weigh Hoppers shall not exceed 6.52 pounds per hour when operating at a process weight rate of two (2) tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

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

The film cast lines have potential VOC emissions greater than twenty-five (25) tons per year per line and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48, or 326 IAC 20-56. The source shall limit the VOC emissions from each of the film cast lines, identified as Lines 7 through 18, as follows:

- (a) The VOC emissions from Lines 7 through 18 shall not exceed 24.77 tons per twelve (12) consecutive month period, each, with compliance determined at the end of each month.

**State Rule Applicability Determination - Batch Mixing**

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

The batch mixing operation has potential particulate emissions less than 0.551 pound per hour. Pursuant to 326 IAC 6-3-1(b)(14), the batch mixing operation is not subject to the requirements of 326 IAC 6-3-2.

**State Rule Applicability Determination - Boilers**

**326 IAC 6-2 (Particulate Emissions for Sources of Indirect Heating)**

Pursuant to 326 IAC 6-2-4 (Particulate Matter Emissions Limitations), particulate emissions from the natural gas-fired boilers shall not exceed the following:

Boiler	Year Approved for Constructed	Q (MMBtu/hr)	Pt (lb/MMBtu)
Boiler #2	2009	9.00	0.60
Boiler #3	2011	36.00	0.43
Boiler #4	2011	36.00	0.43
Boiler #5	2011	36.00	0.43

This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$
 Where Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.  
 Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

**326 IAC 7-1.1 (Sulfur Dioxide Emission Limitation)**

The natural gas-fired boilers do not have the potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. Therefore, the natural gas-fired boilers are not subject to the requirements of 326 IAC 7-1.1.

**State Rule Applicability Determination - Insignificant Activities**

**326 IAC 6-2 (Particulate Emissions for Sources of Indirect Heating)**

The insignificant natural gas-fired heaters are not considered sources of indirect heating. Therefore, the insignificant natural gas-fired heaters are not subject to the requirements of 326 IAC 6-2.

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

Pursuant to 326 IAC 6-3-2, the particulate emissions from the Resin Silo#1 shall not exceed 26.30 pounds per hour when operating at a process weight rate of sixteen (16) tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

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

Pursuant to 326 IAC 6-3-1(b)(11), the noncontact cooling towers located at the source are exempt from 326 IAC 6-3.

**326 IAC 7-1.1 (Sulfur Dioxide Emission Limitation)**

The insignificant natural gas-fired heaters do not have the potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. Therefore, the insignificant natural gas-fired heaters are not subject to the requirements of 326 IAC 7-1.1.

**326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)**

The bulk storage tanks are not located in Clark, Floyd, Lake or Porter County. Therefore, the bulk storage tanks are not subject to the requirements of 326 IAC 8-9.

<b>Compliance Determination and Monitoring Requirements</b>
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Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The film casting lines identified as Lines 7 through 18 have applicable compliance determination conditions as specified below:

- (a) In order to demonstrate compliance with the per-line VOC limit, the source shall determine VOC emissions from each film cast line drying process on a monthly basis using the following equation:

$$\text{VOC Emissions per Film Cast Line (tons/month)} = \text{PVOH Resin Usage (pounds/batch)} \times \text{PVOH Resin MeOH Content (\%)} \times 1 \text{ ton}/2000 \text{ pounds} \times \text{Batch Time (batch/month)}$$

- (b) In order to demonstrate compliance with the PSD minor limit, the source shall determine VOC emissions from the film cast lines drying process on a monthly basis using the following equation:

$$\text{VOC Emissions from the Film Cast Line Drying Process (tons/month)} = \sum \text{PVOH Resin Usage per line (pounds/batch)} \times \text{PVOH Resin MeOH Content (\%)} \times 1 \text{ ton} /2000 \text{ pounds} \times \text{Batch Time (batch/month)}$$

### Conclusion and Recommendation

This proposed Part 70 source shall be subject to the conditions of the attached proposed New Source Review and Part 70 Operating Permit No. 091-30238-00138. The staff recommends to the Commissioner that this New Source Review and Part 70 Operating Permit be approved.

### IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Anne-Marie C. Hart at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCM 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5400 or toll free at 1-800-451-6027 extension 4-5400.
- (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](http://www.idem.in.gov).

## Appendix A: Emission Calculations

### Summary

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

### Uncontrolled Potential Emissions (ton/year)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAP	Worst-Case Individual HAP	
Batch Mixing	0.88	0.88	0.00	0.00	0.00	0.00	0.00	0.00	
Mix Ribbon Blender	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.01	Methanol
Hold Run Tanks	0.00	0.00	0.00	0.00	0.93	0.00	0.53	0.53	Methanol
Film Cast Line Ovens	0.00	0.00	0.00	0.00	579.47	0.00	579.47	579.47	Methanol
Weigh Hoppers	24.53	24.53	0.00	0.00	0.00	0.00	0.00	0.00	
Dryer Combustion	0.57	2.26	0.18	29.78	1.64	25.02	0.56	0.54	Hexane
Cooling Tower	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
Boilers	0.30	1.20	0.09	15.77	0.87	13.25	0.30	0.28	Hexane
PVOH Resin Silo	4.91	4.91	0.00	0.00	0.00	0.00	0.00	0.00	
Bulk Storage Tanks	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
Insignificant Heaters	0.07	1.20	0.02	3.50	0.19	2.94	0.07	0.06	Hexane
<b>Total</b>	<b>31.29</b>	<b>35.02</b>	<b>0.29</b>	<b>49.06</b>	<b>583.15</b>	<b>41.21</b>	<b>580.94</b>	<b>580.01</b>	Methanol

### Limited/Controlled Potential Emissions (ton/year)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAP	Worst-Case Individual HAP	
Batch Mixing	0.88	0.88	0.00	0.00	0.00	0.00	0.00	0.00	
Mix Ribbon Blender	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.01	Methanol
Hold Run Tanks	0.00	0.00	0.00	0.00	0.93	0.00	0.53	0.53	Methanol
Film Cast Line Ovens	0.00	0.00	0.00	0.00	241.45	0.00	241.45	241.45	Methanol
Weigh Hoppers	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	
Dryer Combustion	0.57	2.26	0.18	29.78	1.64	25.02	0.56	0.54	Hexane
Cooling Tower	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
Boilers	0.30	1.20	0.09	15.77	0.87	13.25	0.30	0.28	Hexane
PVOH Resin Silo	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
Bulk Storage Tanks	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
Insignificant Heaters	0.07	0.27	0.02	3.50	0.07	2.94	0.07	0.06	Hexane
<b>Total</b>	<b>2.15</b>	<b>4.95</b>	<b>0.29</b>	<b>49.06</b>	<b>245.00</b>	<b>41.21</b>	<b>242.91</b>	<b>241.99</b>	Methanol

**Appendix A: Emissions Calculations**

**Batch Mixing**

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

**Emission Unit:** Batch Making

**Source description:** Preparation of batch slurry mixture (liquid and solids) that is pumped to casting line systems for drying.  
 Potential particulate emissions are due to addition of dry powder from 50 lb bags to liquid in a mixing tank.

**OPERATION/PRODUCTION RELATED INFORMATION**

<i>Parameter</i>	<i>value</i>	<i>units</i>	<i>Reference</i>
Solids additions to product slurry mixture	400	lbs	approx. eight 50lbs bags
Number of mixers	24	-	plant design
Maximum number of batches per day per mixer-line	5	batches/day	process design specification
Maximum number of batches - plant wide	43,800	batches/yr	calculated value

**EMISSION RELATED INFORMATION AND CALCULATION METHODOLOGY**

*PM/PM<sub>10</sub> emissions are caused by adding dry powder (manual bag dumping) to the mixing vessel. Liquid is already present in the mixing tank and the mixing impellers are engaged creating a vortex to which the solids are added, minimizing dust loss. Any dust loss will be to the interior of the manufacturing building. No dust attenuation is claimed, thus, potential PM/PM<sub>10</sub> emissions equal what dust escapes the mixers.*

<i>Pollutant</i>	<i>value</i>	<i>units</i>	<i>Reference</i>
PM/PM <sub>10</sub> - solids (dust) loss due to handling/dumping	0.001	wt. pct.	Amount of loss from dry materials being handled (IDEM factor used in TSD to Permit T163-22643-00015)
	0.01	wt. pct.	IDEM factor, plus order of magnitude to be conservative

**POTENTIAL EMISSION CALCULATIONS - calculated at 5 batches/day per each of 6 mixers, 365 days/yr).**

<b>Pollutant</b>	<b>Potential Emissions</b>	
	<b>lbs/batch</b>	<b>tpy</b>
PM/PM <sub>10</sub> - uncontrolled loss into the building	0.04	0.88

**Appendix A: Emissions Calculations****Mix Ribbon Blender and Hold/Run Tanks per Line**

Company Name: MonoSol LLC  
 Address City IN Zip: 1609 Genesis Drive, LaPorte, IN 46350  
 Permit Number: T091-30236-00138  
 Reviewer: Anne-Marie C. Hart  
 Date: March 8, 2011

Batch solution consumption rate: 5 hours  
 Max. potential cast line operation 8760 hours/yr  
 Max. number of batches per line 1752 batch/line-yr  
 Number of Lines 12 operating lines

pollutant:  
 VOC mixer: 4.60E-03 lb/batch  
 HAP (methanol) mixer: 0.0012 lb/batch  
 VOC - hold/run tank 8.80E-02 lb/batch  
 HAP (methanol) hold/run tank: 0.05 lb/batch

<b>Mixer emissions</b>	<b>Per Line</b>	<b>Total</b>
VOC:	9.20E-04 lb/hr	1.10E-02 lb/hr
	4.03E-03 ton/yr	4.84E-02 ton/yr
Methanol (HAP):	2.40E-04 lb/hr	2.88E-03 lb/hr
	1.05E-03 ton/yr	1.26E-02 ton/yr

<b>Hold/run tanks</b>	<b>Per Line</b>	<b>Total</b>
VOC:	0.02 lbs/hr	0.2112 lb/hr
	0.08 tons/yr	0.925056 ton/yr
Methanol (HAP):	0.01 lbs/hr	0.12 lb/hr
	0.04 tons/yr	0.5256 ton/yr

VOC emissions result from the liquid organic compounds contained in the batch material. The mixers mix and heat the liquid plasticizers. Emission rate of VOC and HAP were determined by the source using Ideal Gas Law principles. Material used for the calculation above represents the worse case scenario in terms of VOC/HAP emissions.

**METHODOLOGY**

PTE (tons/year) = Max. no. of batches per line per year \* Emission rate (lb/batch) \* 1 ton/2000 lbs  
 Total = Per Line Emissions x 12 operating lines

**Appendix A: Emissions Calculations  
Mix Ribbon Blender and Hold/Run Tanks per Line**

Company Name: MonoSol LLC  
 Address City IN Zip: 1609 Genesis Drive, LaPorte, IN 46350  
 Permit Number: T091-30236-00138  
 Reviewer: Anne-Marie C. Hart  
 Date: March 8, 2011

Maximum Throughput, Per Hopper (lb/hr)	Number of Hoppers	Total PM Emission Factor (lb/1000 lb)	Total PM Emission Factor (lb/ton)	Control Efficiency
4000	4	0.0035	0.007	99%

Total Controlled PM Emissions (lb/hr)	Total Controlled PM Emissions (tons/yr)	Total Uncontrolled PM Emissions (lb/hr)	Total Uncontrolled PM Emissions (tons/yr)
0.056	0.25	5.60	<b>24.53</b>

Total Uncontrolled PM Emissions (tons/yr) are multiplied by 2. There are 2 hoppers included in Line 7 and 2 hoppers included in Line 8.  
 Assume all PM emissions are equal to PM<sub>10</sub>.  
 Control = Fabric filters with 99 % efficiency  
 Emission Factor (lb/ton) = Emission Factor (lb/1000 lb) / 1000 x 2000 (lb/ton)  
 Emission factor is from AP-42, Chapter 11.26 (Talc Processing), Table 11.26-1 SCC 3-05-089-85 (November, 1995).

**Appendix A: Emissions Calculations**  
**Film Cast Lines**

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

**PVOH Resin MeOH content**                    **3.00%**  
**Limited PVOH Resin MeOH content**    **1.25%**

Unit ID	PVOH Resin Usage		Unlimited VOC Emissions		Unlimited Methanol Emissions		Limited VOC Emissions		Limited Methanol Emissions	
	lb/hr	lb/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
L7	255	2233800	7.65	33.51	7.65	33.51	3.19	13.96	3.19	13.96
L8	255	2233800	7.65	33.51	7.65	33.51	3.19	13.96	3.19	13.96
L9	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L10	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L11	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L12	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L13	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L14	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L15	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L16	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L17	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
L18	390	3416400	11.70	51.25	11.70	51.25	4.88	21.35	4.88	21.35
<b>Total</b>			<b>132.3</b>	<b>579.474</b>	<b>132.3</b>	<b>579.474</b>	<b>55.13</b>	<b>241.45</b>	<b>55.13</b>	<b>241.45</b>

VOC emissions result from the drying of the PVOH film solution and volatization of the free methanol contained in the solution.

**METHODOLOGY**

PTE of VOC/Methanol (lb/hr) = PVOH Resin Usage (lb/hr) x PVOH Resin MeOH content (%)

PTE of VOC/Methanol (ton/yr) = Emissions (lb/hr) x 8760 (hr/yr) x 1 ton/2000 pounds

**Appendix A: Emissions Calculations**

**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Film Cast Line Drying Ovens**  
**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

Unit ID	Number of Identical Units	Heat Input per Oven (MMBtu/hr)	Heat Input Capacity MMBtu/hr	HHV	
				MMBtu	Potential Throughput
				mmscf	MMCF/yr
L7	2	2.00	4.00	1000	35.04
L8	2	2.00	4.00	1000	35.04
L9	2	3.00	6.00	1000	52.56
L10	2	3.00	6.00	1000	52.56
L11	2	3.00	6.00	1000	52.56
L12	2	3.00	6.00	1000	52.56
L13	2	3.00	6.00	1000	52.56
L14	2	3.00	6.00	1000	52.56
L15	2	3.00	6.00	1000	52.56
L16	2	3.00	6.00	1000	52.56
L17	2	3.00	6.00	1000	52.56
L18	2	3.00	6.00	1000	52.56
<b>Total</b>			<b>64.0</b>		<b>595.7</b>

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.57	2.26	0.18	29.78	1.64	25.02

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.  
 \*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.  
 MMBtu = 1,000,000 Btu  
 MMCF = 1,000,000 Cubic Feet of Gas  
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03  
 Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu  
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

2

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	6.255E-04	3.574E-04	2.234E-02	5.361E-01	1.013E-03

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.489E-04	3.276E-04	4.170E-04	1.132E-04	6.255E-04
	<b>Total</b>				<b>5.621E-01</b>

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.  
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations**

**Natural Gas Combustion Only**

**Boilers 1 - 4**

**Company Name: MonoSol LLC**  
**Address City IN Zip: 1609 Genesis Drive, LaPorte, IN 46350**  
**Permit Number: T091-27326-00138**  
**Reviewer: Anne-Marie C. Hart**  
**Date: March 8, 2011**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
9.00	78.84
9.00	78.84
9.00	78.84
9.00	78.84
<b>36.00</b>	<b>315.36</b>

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.30	1.20	0.09	15.77	0.87	13.25

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.311E-04	1.892E-04	1.183E-02	2.838E-01	5.361E-04

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.884E-05	1.734E-04	2.208E-04	5.992E-05	3.311E-04

**Total 2.976E-01**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
Insignificant Heaters**

**Company Name: MonoSol LLC**  
**Address City IN Zip: 1609 Genesis Drive, LaPorte, IN 46350**  
**Permit Number: T091-27326-00138**  
**Reviewer: Anne-Marie C. Hart**  
**Date: March 8, 2011**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

8.0

70.1

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.07	0.27	0.02	3.50	0.19	2.94

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	7.358E-05	4.205E-05	2.628E-03	6.307E-02	1.191E-04

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.752E-05	3.854E-05	4.906E-05	1.332E-05	7.358E-05

**Total 6.613E-02**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.  
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations**

**Cooling Towers 1 and 2**

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

**Emission Unit:** Non-Contact Water Cooling Tower  
**Source description:** Potential emissions due to release of dissolved solids in total drift from water recirculation stream.

**OPERATION/PRODUCTION RELATED INFORMATION PER COOLING TOWER**

<i>Parameter</i>	<i>value</i>	<i>units</i>	<i>Reference</i>
Type of cooling tower	Counter-current, blow-through		
Total circulating flow rate	405	gal/min	equipment design specification
	24,300	gal/hr	
Cooling tower drift (pct of recirculation flow)	0.001	percent	worse case - vendor claims zero drift
Total cooling tower drift	0.24	gal/hr	calculated value
	2.0	lbs/hr	calc value (density = 8.345 lbs/gal)

**EMISSION RELATED INFORMATION AND CALCULATION METHODOLOGY**

*PM/PM<sub>10</sub> emissions calculated based on the total dissolved solids (TDS) content of recirculating water and resulting drift. Calculation method taken from AP-42, Section 13.4.*

<i>Pollutant</i>	<i>value</i>	<i>units</i>	<i>Reference</i>
TDS content of water used in cooling tower	1,800	ppm	max TDS expected from water source after being concentrated at 5 cycles

**POTENTIAL EMISSION CALCULATIONS - calculated at 8,760 hrs/yr**

<b>Pollutant</b>	<b>Total Potential Emissions</b>	
	<b>lbs/hr</b>	<b>tpy</b>
PM/PM <sub>10</sub>	0.011	0.048

= 24,300 gal/hr water flow x 0.001 gal water drift/100 gal water reirculated; = 0.24 gal/hr water drift x 8.345 lbs/gal water; = 2.0 lbs/hr water drift  
 = 2.0 lbs/hr water drift x 1,800 lbs TDS per 1,000,000 lbs water; = 0.004 lb/hr PM/PM10 (TDS in water represents the PM/PM10)

Alternatively --

= 0.24 gal/hr water drift x 3.785 L/gal x 1,800 mg/L TDS x 1 lb/454,000 mg; = 0.004 lb/hr PM/PM10

Note: The source has three (3) identical cooling towers. Total Potential Emissions are the emissions for one (1) tower multiplied by 3.

**Appendix A: Emission Calculations****PM/PM10 Emissions****PVOH Resin Silo**

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

Emission Unit	Max. Throughput Rate (lbs/hour)	* Emission Factor (lb/ton)	Controlled PTE of PM/PM10 (lbs/hour)	Controlled PTE of PM/PM10 (tons/year)	Control Efficiency %	Uncontrolled PTE of PM/PM10 (tons/year)	Uncontrolled PTE of PM/PM10 per silo (lbs/hour)
PVOH Resin Silo	32000	0.0007	0.011	0.049	99%	4.91	1.12

**TOTAL**

Assume all PM emissions are equal to PM10.

Control = Bin vent filters with 99 % efficiency

\* There are no emission factors available for PVOH resin handling. Therefore, worst case emission factor from AP-42, Chapter 11.26 (Talc Processing),

Table 11.26-1 SCC 3-05-089-85 (November 1995) was used by assuming only 10% of PM/PM10 was emitted during truck to silo off load rate.

\*\* Particulate emission limit was determined using the Process Weight Rule (326 IAC 6-3-2).

**METHODOLOGY**

Controlled PTE of PM/PM10 (lbs/hour) = Max. Throughput Rate of Resin (lbs/hour) \* Emission Factor (lb/ton) \* 1 ton/2000 lbs

Controlled PTE of PM/PM10 (tons/year) = Max.Throughput Rate of Resin (lbs/hour) \* Emission Factor (lb/ton) \* 1 ton/2000 lbs \* 8760 hours/year \* 1 ton/2000 lbs

Uncontrolled PTE of PM/PM10 (tons/year) =Controlled PTE of PM/PM10 (tons/year) \* 1/(1 - Control Efficiency %)

Uncontrolled PTE of PM/PM10 (lbs/hour) = Max. Throughput Rate of Resin (lbs/hour) \* Emission Factor (lb/ton) \* 1 ton/2000 lbs \* 1/(1 - Control Efficiency %)

**Appendix A: Emission Calculations  
Tank VOC Emissions - Maximum PTE**

**Company Name:** MonoSol LLC  
**Address City IN Zip:** 1609 Genesis Drive, LaPorte, IN 46350  
**Permit Number:** T091-30236-00138  
**Reviewer:** Anne-Marie C. Hart  
**Date:** March 8, 2011

Tank Number	Product Stored	Losses (Pounds per Year)		Total VOC Lbs/yr
		Working	Breathing	
1	Glycerine	0.69	3.57	4.26
2	Glycerine	0.69	3.57	4.26
3	Glycerine	0.69	3.57	4.26
4	Glycerine	0.69	3.57	4.26
5	Glycerine	0.0342	0.0034	0.0376
6	Glycerine	0.0342	0.0034	0.0376
7	Glycerine	0.0342	0.0034	0.0376
8	Glycerine	0.0342	0.0034	0.0376
<b>Total VOC lbs/yr</b>		<b>2.90</b>	<b>14.29</b>	<b>17.19</b>
			<b>Tons/yr:</b>	<b>8.60E-03</b>

Note: All storage tank emissions estimated using EPA's TANKS 4.0.9d software program.

**Indiana Department of Environmental Management  
Office of Air Quality**

**APPENDIX B  
MACT ANALYSIS**

**Source Description and Location**

Source Name:	MonoSol, LLC
Source Location:	1609 Genesis Drive, LaPorte, Indiana 46350
County:	LaPorte
SIC Code:	3081
Operation Permit No.:	091-30236-00138
Permit Reviewer:	Anne-Marie C. Hart

**Background Information**

The Office of Air Quality (OAQ) has performed a maximum achievable control technology (MACT) review relating to the operation of a polyvinyl alcohol (PVOH) film manufacturing source at MonoSol, LLC, in LaPorte, Indiana.

MonoSol, LLC submitted an application on February 17, 2011, to modify existing units and to construct and operate new film casting lines, identified as Lines 7 through 18. The proposed units have potential methanol emissions greater than ten (10) tons per year. Therefore, the operation of the new and modified film casting lines is subject to the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)).

A case-by-case MACT analysis is required when potential emissions of a hazardous air pollutant (HAP) indicate that a process is a major source of HAP and USEPA has not promulgated a specific NESHAP for that process. In general, a MACT analysis is similar to a BACT analysis. IDEM, OAQ conducts MACT analyses in accordance with the "Guidelines for MACT Determinations under Section 112(j) Requirements." These guidelines offer a step-by-step process for making a MACT determination consistent with the above two principles. The process can be summarized as follows:

- Step 1: Identify the MACT-affected emissions unit;
- Step 2: Make a MACT floor finding;
- Step 3: List all available/reasonable applicable control technologies;
- Step 4: Eliminate control technologies that are not technically feasible and not cost effective;
- Step 5: Determine efficiency of applicable control technologies
- Step 6: Identify the maximum emission reduction control technology

The following information resources are available and may be consulted in searching for varied control alternatives for the analyzed emission sources:

- (a) On-line USEPA RACT/BACT/LAER Clearinghouse (RBLC) System;
- (b) USEPA/State/Local Air Quality Permits;
- (c) Federal/State/Local Permit Engineers;

- (d) Control Technology Vendors; and
- (e) Inspection/Performance Test Reports.

<b>MACT Analysis</b>
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Step One: Identify the MACT-affected emissions unit

The following units are considered the MACT-affected emissions units:

- (a) One (1) film casting line, identified as Line 7, constructed in 2008 and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 255 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-008 and V-0013), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (b) One (1) film casting line, identified as Line 8, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 215 pounds of polyvinyl alcohol resin per hour, three (3) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 2.0 MMBtu/hr (venting to stacks V-026 and V-028), and two (2) weigh hoppers each with a maximum throughput rate of 4,000 pounds per hour, controlled by fabric filters.
- (c) One (1) film casting line, identified as Line 9, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr utilizing natural gas only, exhausting to stacks V-033 and V-035.
- (d) One (1) film casting line, identified as Line 10, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-034 and V-039.
- (e) One (1) film casting line, identified as Line 11, approved in 2009 for construction and approved in 2011 for modification, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr, exhausting to stacks V-033 and V-035.
- (f) One (1) bulk resin storage silo (identified as Silo #1), approved for construction in 2009, with a maximum storage capacity of 71,000 pounds and a maximum off loading rate of

32,000 pounds per hour, controlled by bin vent filters and exhausting at stacks V041 and V042.

- (g) One (1) film casting line, identified as Line 12, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (h) One (1) film casting line, identified as Line 13, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-046 and V-048.
- (i) One (1) film casting line, identified as Line 14, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (j) One (1) film casting line, identified as Line 15, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-069 and V-074.
- (k) One (1) film casting line, identified as Line 16, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-047 and V-052.
- (l) One (1) film casting line, identified as Line 17, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.
- (m) One (1) film casting line, identified as Line 18, approved in 2011 for construction, consisting of one (1) mixer ribbon blender with a maximum storage capacity of 1,000 gallons and a maximum throughput rate of 390 pounds of polyvinyl alcohol resin per hour, four (4) hold/run tanks with a maximum capacity of 1,300 gallons each, one (1) mini

run tank with a capacity of less than 250 gallons, two (2) natural gas-fired drying ovens each with a maximum rated capacity of 3.0 MMBtu/hr; exhausting to stacks V-068 and V-070.

#### Step Two: Make a MACT floor finding

A MACT floor refers to the level of emission control that is achieved in practice by the best controlled similar source. There are no water-soluble film production facilities in the RBLC database. EPA has not made a MACT determination for this type of facility. There are no known facilities in the United States that produce this type of film or have a similar process.

The MACT floor is proposed to be no add-on controls to reduce methanol emissions. The only United States plants using this technology are the MonoSol facilities in Portage and LaPorte, Indiana and neither facility has add-on controls for methanol. Potential VOC and methanol emissions for the MonoSol LaPorte FESOP were calculated based on no add-on controls and the use of resins with up to 3% VOC/HAP.

#### Step Three: List All Available/Reasonable Applicable Control Technologies

The four control technologies that will be considered in the technical and economically feasible analysis are:

- (1) Refrigerated Condenser
- (2) Carbon adsorption
- (3) Catalytic oxidation with 70% heat recovery
- (4) Thermal oxidation with 70% heat recovery, and
- (5) Limiting the HAP content of the feed materials

#### Step Four: Eliminate Control Technologies that are Not Technically Feasible and Not Cost Effective

The test for technical feasibility of any control option is whether it is both available and applicable to reducing VOC (methanol) emissions from the film casting lines. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

- (a) Refrigerated Condenser - Refrigerated condensers are used as air pollution control devices for treating emission streams with high VOC concentrations, usually greater than 5,000 ppm and can achieve a control efficiency above 90%. Typical applications involve gasoline bulk terminals and gasoline storage. The waste streams from the film casting lines have VOC concentrations between 80 and 130 ppm. Therefore, a refrigerated condenser is not considered as MACT for controlling methanol emissions from the film casting lines.
- (b) Carbon Adsorption - Carbon adsorption is a well known method for removing VOCs from exhaust streams. The VOC emissions at MonoSol are 100% methanol (HAP). Methanol is difficult to control by carbon adsorption because it has a low affinity for carbon. The affinity coefficient of carbon for methanol is 0.4 (Activated Carbon Adsorption by Roop Chand Basal and M. Goyal, CRC, 2005). This is low compared to most organics; toluene, for example, has an affinity coefficient of 1.25. To capture methanol, the

required carbon in the carbon adsorption unit would need to be more than three times that needed to control the equivalent amount of toluene. In addition, the relatively low VOC concentration of 80 to 130 ppm would require an even larger amount of carbon to effectively control the methanol from the MonoSol process. Carbon adsorption, therefore, is not considered as MACT for controlling methanol emissions from the film casting lines.

- (c) Catalytic Oxidation - In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes oxidation of the VOC without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and it can achieve a destruction efficiency of 98%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb-shaped ceramic. This control option is technically feasible and available for the film casting lines and will be considered further in the economic analysis.
- (d) Thermal Oxidation – An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and the VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

Of all the VOC control technologies evaluated, the reduction efficiency of thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NO<sub>x</sub> emissions will be generated from the combustion of natural gas used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%. This control option is technically feasible and available for the film casting lines and will be considered further in the economic analysis.

Although no similar sources or sources with similar operations were identified as using any type of add-on control device, MonoSol, LLC, explored using thermal oxidation with 95% control efficiency or catalytic oxidation with 95% control efficiency. The cost analysis is broken out using the following scenarios:

- 1) Lines 7 and 8 are each equipped with an oxidizer. Lines 10 and 16 are each equipped with an oxidizer. Lines 9 and 11, 12 and 13, 14 and 15, 17 and 18 are paired with a shared exhaust and each pair equipped with an oxidizer, for a total of eight (8) control devices;
- 2) Lines 7 through 11 are equipped with one (1) large oxidizer to control all five (5) lines existing lines with Lines 12-18 remaining uncontrolled.

<b>Estimated Capital and Operating Costs: Recuperative Thermal Oxidation System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 7 and 8</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	20,400 acfm
<b>Purchased Equipment Costs (PE)</b>		
	Thermal Oxidizer System (OAQPS Budgetary Pricing)	
	Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	\$391,108
	Sales Taxes (3% of Equipment)	\$11,733
	Freight (5% of Equipment)	\$19,555
	<b>Total Purchased Equipment Cost (PE)</b>	<b>\$422,396</b>
<b>Direct Installation Costs (DI)</b>		
	Foundations & Supports (0.08 PE)	\$33,792
	Erection & Handling (0.14 PE)	\$59,135
	Electrical (0.04 PE)	\$16,896
	Piping (0.02 PE)	\$8,448
	Insulation + Painting (0.02 PE)	\$8,448
	<b>Total Direct Installation Costs</b>	<b>\$126,719</b>
	<b>Total Direct Costs (DC)</b>	<b>\$549,115</b>
Indirect Capital Costs (IC)		
	Engineering & Supervision (0.1PE)	\$42,240
	Construction & Field Expenses (0.05 PE)	\$21,120
	Contractor Fees (0.10 PE)	\$42,240
	Start Up + Performance Costs (0.03 PE)	\$12,672
	Overall Contingencies (0.03 PE)	\$12,672
	IC Total	\$130,944
	Total Capital Investment (TCI) = Sum (DC + IC) =	\$680,060
	Capital Recovery	\$127,773
<b>Operation and Maintenance (O &amp; M)</b>		
<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
	Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)	\$12,593
Maintenance		
	Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)	\$24,090
	Natural Gas Requirement	\$14,250
	Electricity	\$13,536
	<b>Total Direct Annualized Costs (DA)</b>	<b>\$64,469</b>
<b>Indirect Annual Costs (IA)</b>		

Overhead (60% of maintenance parts and labor costs)		\$22,010
Admin., Property Tax, Insurance (4% of TCI)		\$27,202
	Indirect Annual Total	\$49,212
	O & M Total	<b>\$113,681</b>
	<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>	<b>\$241,454</b>
Baseline VOC/Methanol Emissions Line 7 and Line 8 (per line)		13.96
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		13.29
	<b>Cost Effectiveness, \$/Ton VOC (Methanol) Removed</b>	<b>\$18,168</b>

<b>Estimated Capital and Operating Costs: Catalytic Oxidizer System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 7 and 8</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	20,400 acfm
<b>Purchased Equipment Costs (PE)</b>		
Thermal Oxidizer System (OAQPS Budgetary Pricing)		
Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		\$361,191
Sales Taxes (3% of Equipment)		\$10,836
Freight (5% of Equipment)		\$18,060
<b>Total Purchased Equipment Cost (PE)</b>		<b>\$390,090</b>
<b>Direct Installation Costs (DI)</b>		
Foundations & Supports (0.08 PE)		\$31,210
Erection & Handling (0.14 PE)		\$54,615
Electrical (0.04 PE)		\$15,305
Piping (0.02 PE)		\$7,800
Insulation + Painting (0.02 PE)		\$7,800
<b>Total Direct Installation Costs</b>		<b>\$116,730</b>
<b>Total Direct Costs (DC)</b>		<b>\$506,820</b>
Indirect Capital Costs (IC)		
Engineering & Supervision (0.1PE)		\$39,010
Construction & Field Expenses (0.05 PE)		\$19,505
Contractor Fees (0.10 PE)		\$39,010
Start Up + Performance Costs (0.03 PE)		\$11,705
Overall Contingencies (0.03 PE)		\$11,705
IC Total		\$120,935
Total Capital Investment (TCI) = Sum (DC + IC) =		\$627,755
Capital Recovery		\$150,089
<b>Operation and Maintenance (O &amp; M)</b>		

<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)		\$12,593
Maintenance		
Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)		\$24,090
Natural Gas Requirement		\$14,250
Electricity		\$14,961
Catalyst Replacement		\$4,238
<b>Total Direct Annualized Costs (DA)</b>		<b>\$70,132</b>
<b>Indirect Annual Costs (IA)</b>		
Overhead (60% of maintenance parts and labor costs)		\$22,010
Admin., Property Tax, Insurance (4% of TCI)		\$25,110
Indirect Annual Total		\$47,120
O & M Total		<b>\$117,252</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$267,341</b>
Baseline VOC/Methanol Emissions Line 7 and Line 8 (per line)		13.96
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		13.29
<b>Cost Effectiveness,\$/Ton VOC (Methanol) Removed</b>		<b>\$20,116</b>

<b>Estimated Capital and Operating Costs: Recuperative Thermal Oxidation System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 10 and 16</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	7,264 scfm
<b>Purchased Equipment Costs (PE)</b>		
Thermal Oxidizer System (OAQPS Budgetary Pricing)		
Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		\$416,816
Sales Taxes (3% of Equipment)		\$12,505
Freight (5% of Equipment)		\$20,841
<b>Total Purchased Equipment Cost (PE)</b>		<b>\$450,162</b>
<b>Direct Installation Costs (DI)</b>		
Foundations & Supports (0.08 PE)		\$36,013
Erection & Handling (0.14 PE)		\$63,025
Electrical (0.04 PE)		\$18,010
Piping (0.02 PE)		\$9,005
Insulation + Painting (0.02 PE)		\$9,005

<b>Total Direct Installation Costs</b>		<b>\$135,058</b>
<b>Total Direct Costs (DC)</b>		<b>\$585,220</b>
Indirect Capital Costs (IC)		
Engineering & Supervision (0.1PE)		\$45,020
Construction & Field Expenses (0.05 PE)		\$22,510
Contractor Fees (0.10 PE)		\$45,020
Start Up + Performance Costs (0.03 PE)		\$13,505
Overall Contingencies (0.03 PE)		\$13,505
IC Total		\$139,560
Total Capital Investment (TCI) = Sum (DC + IC) =		\$724,780
Capital Recovery		\$137,238
<b>Operation and Maintenance (O &amp; M)</b>		
<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)		\$12,593
Maintenance		
Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)		\$24,090
Natural Gas Requirement		\$18,383
Electricity		\$17,462
<b>Total Direct Annualized Costs (DA)</b>		<b>\$72,528</b>
<b>Indirect Annual Costs (IA)</b>		
Overhead (60% of maintenance parts and labor costs)		\$22,010
Admin., Property Tax, Insurance (4% of TCI)		\$28,990
Indirect Annual Total		\$51,000
O & M Total		<b>\$123,528</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$260,766</b>
Baseline VOC/Methanol Emissions		21.35
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		20.28
<b>Cost Effectiveness,\$/Ton VOC (Methanol) Removed</b>		<b>\$12,860</b>

<b>Estimated Capital and Operating Costs: Catalytic Oxidizer System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 10 and 16</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	7,264 scfm
<b>Purchased Equipment Costs (PE)</b>		
	Thermal Oxidizer System (OAQPS Budgetary Pricing)	
	Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	\$415,777
	Sales Taxes (3% of Equipment)	\$12,473
	Freight (5% of Equipment)	\$20,790
	<b>Total Purchased Equipment Cost (PE)</b>	<b>\$449,040</b>
<b>Direct Installation Costs (DI)</b>		
	Foundations & Supports (0.08 PE)	\$35,923
	Erection & Handling (0.14 PE)	\$62,866
	Electrical (0.04 PE)	\$17,962
	Piping (0.02 PE)	\$8,981
	Insulation + Painting (0.02 PE)	\$8,981
	<b>Total Direct Installation Costs</b>	<b>\$134,713</b>
	<b>Total Direct Costs (DC)</b>	<b>\$583,753</b>
Indirect Capital Costs (IC)		
	Engineering & Supervision (0.1PE)	\$44,904
	Construction & Field Expenses (0.05 PE)	\$22,452
	Contractor Fees (0.10 PE)	\$44,904
	Start Up + Performance Costs (0.03 PE)	\$13,471
	Overall Contingencies (0.03 PE)	\$13,471
	IC Total	\$139,202
	Total Capital Investment (TCI) = Sum (DC + IC) =	\$588,242
	Capital Recovery	\$172,512
<b>Operation and Maintenance (O &amp; M)</b>		
<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
	Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)	\$12,593
Maintenance		
	Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)	\$24,090
	Natural Gas Requirement	\$18,383
	Electricity	\$19,300
	Catalyst Replacement	\$5,467

<b>Total Direct Annualized Costs (DA)</b>		<b>\$79,833</b>
<b>Indirect Annual Costs (IA)</b>		
Overhead (60% of maintenance parts and labor costs)		\$22,010
Admin., Property Tax, Insurance (4% of TCI)		\$17,961
Indirect Annual Total		\$39,971
O & M Total		<b>\$119,804</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$292,316</b>
Baseline VOC/Methanol Emissions Per Line		21.35
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		20.28
<b>Cost Effectiveness, \$/Ton VOC (Methanol) Removed</b>		<b>\$14,414</b>

<b>Estimated Capital and Operating Costs: Recuperative Thermal Oxidation System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Paired Lines 9 and 11; 12 and 13; 14 and 15; and 17 and 18</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	14,528 scfm
<b>Purchased Equipment Costs (PE)</b>		
Thermal Oxidizer System (OAQPS Budgetary Pricing)		\$535,335
Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		
Sales Taxes (3% of Equipment)		\$16,060
Freight (5% of Equipment)		\$26,770
<b>Total Purchased Equipment Cost (PE)</b>		<b>\$578,165</b>
<b>Direct Installation Costs (DI)</b>		
Foundations & Supports (0.08 PE)		\$46,253
Erection & Handling (0.14 PE)		\$80,943
Electrical (0.04 PE)		\$23,127
Piping (0.02 PE)		\$11,563
Insulation + Painting (0.02 PE)		\$11,563
<b>Total Direct Installation Costs</b>		<b>\$173,395</b>
<b>Total Direct Costs (DC)</b>		<b>\$751,560</b>
Indirect Capital Costs (IC)		
Engineering & Supervision (0.1PE)		\$57,817
Construction & Field Expenses (0.05 PE)		\$28,908
Contractor Fees (0.10 PE)		\$57,817
Start Up + Performance Costs (0.03 PE)		\$17,345
Overall Contingencies (0.03 PE)		\$17,345
IC Total		\$179,232
Total Capital Investment (TCI) = Sum (DC + IC) =		<b>\$930,792</b>

		Capital Recovery	\$163,204
<b>Operation and Maintenance (O &amp; M)</b>			
<b>Direct ANNUAL COSTS (DA)</b>			
Direct Operating Costs			
Operating Labor			
Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)			\$12,593
Maintenance			
Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)			\$24,090
Natural Gas Requirement			\$36,766
Electricity			\$34,923
<b>Total Direct Annualized Costs (DA)</b>			<b>\$72,528</b>
<b>Indirect Annual Costs (IA)</b>			
Overhead (60% of maintenance parts and labor costs)			\$22,010
Admin., Property Tax, Insurance (4% of TCI)			\$37,232
Indirect Annual Total			\$59,245
O & M Total			<b>\$131,773</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>			<b>\$294,977</b>
Baseline VOC/Methanol Emissions			42.70
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)			40.57
<b>Cost Effectiveness, \$/Ton VOC (Methanol) Removed (per pairing)</b>			<b>\$7,271</b>

<b>Estimated Capital and Operating Costs: Catalytic Oxidizer System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Paired Lines 9 and 11; 12 and 13; 14 and 15; and 17 and 18</b>			
<b>CAPITAL COSTS</b>			
Direct Capital Costs (DC)			
		Gas Flow:	14,528 scfm
<b>Purchased Equipment Costs (PE)</b>			
	Thermal Oxidizer System (OAQPS Budgetary Pricing)		\$701,355
	Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		
	Sales Taxes (3% of Equipment)		\$21,041
	Freight (5% of Equipment)		\$35,070
<b>Total Purchased Equipment Cost (PE)</b>			<b>\$757,466</b>
<b>Direct Installation Costs (DI)</b>			
	Foundations & Supports (0.08 PE)		\$60,600
	Erection & Handling (0.14 PE)		\$106,045
	Electrical (0.04 PE)		\$30,300
	Piping (0.02 PE)		\$15,150

	Insulation + Painting (0.02 PE)	\$15,150
<b>Total Direct Installation Costs</b>		<b>\$227,245</b>
<b>Total Direct Costs (DC)</b>		<b>\$984,711</b>
Indirect Capital Costs (IC)		
	Engineering & Supervision (0.1PE)	\$75,750
	Construction & Field Expenses (0.05 PE)	\$37,873
	Contractor Fees (0.10 PE)	\$75,750
	Start Up + Performance Costs (0.03 PE)	\$22,725
	Overall Contingencies (0.03 PE)	\$22,725
IC Total		\$234,823
Total Capital Investment (TCI) = Sum (DC + IC) =		\$1,219,534
Capital Recovery		\$251,760
<b>Operation and Maintenance (O &amp; M)</b>		
<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
	Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)	\$12,593
Maintenance		
	Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)	\$24,090
	Natural Gas Requirement	\$36,766
	Electricity	\$38,599
	Catalyst Replacement	\$10,933
<b>Total Direct Annualized Costs (DA)</b>		<b>\$88,241</b>
<b>Indirect Annual Costs (IA)</b>		
	Overhead (60% of maintenance parts and labor costs)	\$22,010
	Admin., Property Tax, Insurance (4% of TCI)	\$48,781
Indirect Annual Total		\$70,791
O & M Total		<b>\$159,032</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$410,792</b>
Baseline VOC/Methanol Emissions Per Line		21.35
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		20.28
<b>Cost Effectiveness, \$/Ton VOC (Methanol) Removed</b>		<b>\$20,256</b>

<b>Estimated Capital and Operating Costs: Recuperative Thermal Oxidation System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 7 through 11</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	33,054 scfm
<b>Purchased Equipment Costs (PE)</b>		
	Thermal Oxidizer System (OAQPS Budgetary Pricing)	
	Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	\$842,918
	Sales Taxes (3% of Equipment)	\$25,290
	Freight (5% of Equipment)	\$42,145
	<b>Total Purchased Equipment Cost (PE)</b>	<b>\$910,353</b>
<b>Direct Installation Costs (DI)</b>		
	Foundations & Supports (0.08 PE)	\$72,830
	Erection & Handling (0.14 PE)	\$127,449
	Electrical (0.04 PE)	\$36,414
	Piping (0.02 PE)	\$18,207
	Insulation + Painting (0.02 PE)	\$18,207
	<b>Total Direct Installation Costs</b>	<b>\$273,107</b>
	<b>Total Direct Costs (DC)</b>	<b>\$1,183,460</b>
Indirect Capital Costs (IC)		
	Engineering & Supervision (0.1PE)	\$91,035
	Construction & Field Expenses (0.05 PE)	\$45,517
	Contractor Fees (0.10 PE)	\$91,035
	Start Up + Performance Costs (0.03 PE)	\$27,311
	Overall Contingencies (0.03 PE)	\$27,311
	IC Total	\$282,209
	Total Capital Investment (TCI) = Sum (DC + IC) =	\$1,465,669
	Capital Recovery	\$411,160
<b>Operation and Maintenance (O &amp; M)</b>		
<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
	Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)	\$50,370
Maintenance		
	Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)	\$96,360
	Natural Gas Requirement	\$83,649
	Electricity	\$79,457
	<b>Total Direct Annualized Costs (DA)</b>	<b>\$309,836</b>
<b>Indirect Annual Costs (IA)</b>		
	Overhead (60%)	\$91,038

of maintenance parts and labor costs		
Admin., Property Tax, Insurance (4% of TCI)		\$58,627
	Indirect Annual Total	\$59,245
	O & M Total	<b>\$459,501</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$870,661</b>
Baseline VOC/Methanol Emissions		91.97
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		87.37
	<b>Cost Effectiveness, \$/Ton VOC (Methanol) Removed</b>	<b>\$9,965</b>

<b>Estimated Capital and Operating Costs: Catalytic Oxidizer System (with 70% Heat Recovery) for 95% Control of VOC/Methanol from Lines 7-11</b>		
<b>CAPITAL COSTS</b>		
Direct Capital Costs (DC)		
	Gas Flow:	33,054 scfm
<b>Purchased Equipment Costs (PE)</b>		
Thermal Oxidizer System (OAQPS Budgetary Pricing)		
Oxidizer system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		\$1,034,543
Sales Taxes (3% of Equipment)		\$31,036
Freight (5% of Equipment)		\$51,727
<b>Total Purchased Equipment Cost (PE)</b>		<b>\$1,117,306</b>
<b>Direct Installation Costs (DI)</b>		
Foundations & Supports (0.08 PE)		\$89,384
Erection & Handling (0.14 PE)		\$156,422
Electrical (0.04 PE)		\$44,692
Piping (0.02 PE)		\$22,346
Insulation + Painting (0.02 PE)		\$22,346
<b>Total Direct Installation Costs</b>		<b>\$335,190</b>
<b>Total Direct Costs (DC)</b>		<b>\$1,452,496</b>
Indirect Capital Costs (IC)		
Engineering & Supervision (0.1PE)		\$111,730
Construction & Field Expenses (0.05 PE)		\$55,865
Contractor Fees (0.10 PE)		\$111,730
Start Up + Performance Costs (0.03 PE)		\$33,520
Overall Contingencies (0.03 PE)		\$33,520
IC Total		\$346,365
Total Capital Investment (TCI) = Sum (DC + IC) =		\$1,798,861
Capital Recovery		\$594,588
<b>Operation and Maintenance (O &amp; M)</b>		

<b>Direct ANNUAL COSTS (DA)</b>		
Direct Operating Costs		
Operating Labor		
Operator (1 hr/day, 365 days/yr, \$20/hr) + Supervisor (15% of Operator)		\$50,370
Maintenance		
Labor (1hr/day, 365 days/yr, \$20/hr) + Materials (100% of Labor)		\$96,360
Natural Gas Requirement		\$83,649
Electricity		\$87,821
Catalyst Replacement		\$24,875
<b>Total Direct Annualized Costs (DA)</b>		<b>\$343,075</b>
<b>Indirect Annual Costs (IA)</b>		
Overhead (60% of maintenance parts and labor costs)		\$88,038
Admin., Property Tax, Insurance (4% of TCL)		\$71,954
Indirect Annual Total		\$160,000
O & M Total		<b>\$503,075</b>
<b>Total Annual Capital and O &amp; M Costs (including Capital Recovery)</b>		<b>\$1,097,663</b>
Baseline VOC/Methanol Emissions Per Line		91.97
Annual VOC/Methanol removal assuming 95% Removal Efficiency (tons)		87.37
<b>Cost Effectiveness,\$/Ton VOC (Methanol) Removed</b>		<b>\$12,563</b>

**Note:** - Cost Factors are based on OAQPS Control Cost Manual (Ch. 3, 5th Ed., Dec 1995)

As demonstrated above, the cost to control VOC/Methanol emissions from the film casting lines is prohibitive. Therefore, this level of control has been determined to be not representative of MACT.

Step Five: Determine Efficiency of Applicable Control Technologies

No control device has been determined as MACT based on the analysis above.

Methanol limits on the process feed materials - Pursuant to Federally Enforceable State Operating Permit (FESOP) 091-27326-00138, the existing film casting lines, Lines 7 and 8, limit potential HAP emissions by minimizing the HAP content of the resin. This option is available and cost-effective for the existing and proposed film casting lines.

Step Six: Identify the Maximum Emission Reduction Control Technology

The methanol reduction is based on the methanol content of the resin considered in the MACT floor and used to calculate the methanol emissions for MonoSol's FESOP for the LaPorte Plant compared to the minimum 12-month average of the methanol content that can be guaranteed by the suppliers of the resins. The reduction of the methanol/VOC content from 3% to 1% represents a methanol reduction of 66.7%

MACT is determined to be a minimal methanol content in the resin as follows: Methanol content in the resin feed shall not exceed 3% methanol, by weight, with a 12-month rolling average of 1.25% or less methanol in the resin feed.



# 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](http://www.idem.IN.gov)

## SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Melanie Kroczek  
MonoSol, LLC  
1701 County Line Rd  
Portage, IN 46368

DATE: July 28, 2011

FROM: Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

SUBJECT: Final Decision  
Title V  
091 - 30236 - 00138

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:  
Tim Boyle, Director of Global Ops  
Jeffrey Slayback Environmental Quality Management  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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July 28, 2011

TO: LaPorte Co Public Library LaPorte Branch

From: Matthew Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

**Applicant Name: MonoSol, LLC**  
**Permit Number: 091 - 30236 - 00138**

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	LPOGOST 7/28/2011 MonoSol, LLC 091 - 30236 - 00138 final)		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	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		

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2		Tim Boyle Director of Global Ops MonoSol, LLC 1701 County Line Rd Portage IN 46368 (RO CAATS)										
3		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)										
4		LaPorte Co Public Library LaPorte Branch, 904 Indiana Ave. LaPorte IN 46350-4307 (Library)										
5		LaPorte City Council/ Mayors Ofc. 801 Michigan Avenue LaPorte IN 46350 (Local Official)										
6		LaPorte County Commissioners 555 Michigan Avenue # 202 LaPorte IN 46350 (Local Official)										
7		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)										
8		Jeffrey Slayback Environmental Quality Management, Inc. 1800 Carillon Boulevard Cincinnati OH 45240 (Consultant)										
9		LaPorte County Health Department County Complex, 4th Floor, 809 State St. LaPorte IN 46350-3329 (Health Department)										
10		Mr. Dick Paulen Barnes & Thornburg 121 W Franklin Street Elkhart IN 46216 (Affected Party)										
11		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party)										
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