NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a Significant Modification to a Part 70 Operating Permit

for Eli Lilly and Company, Lilly Technology Center in Marion County

Significant Source Modification No.: 097-43457-00072
Significant Permit Modification No.: 097-43468-00072

The Indiana Department of Environmental Management (IDEM) has received an application from Eli Lilly and Company, Lilly Technology Center, located at 1555 S. Harding St., Indianapolis, Indiana 46221 and 1297 S. White River Pkwy. E., Indianapolis, Indiana 46225, for a significant modification of its Part 70 Operating Permit issued on November 9, 2020. If approved by IDEM’s Office of Air Quality (OAQ), this proposed modification would allow Eli Lilly and Company, Lilly Technology Center to make certain changes at its existing source. Eli Lilly and Company, Lilly Technology Center has applied to add a research and development (R&D) portable spray dryer for the purposes of producing excipients for R&D purposes. Excipients are an inert ingredient (not pharmaceutically active) used in the formulation of pharmaceutical product.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g., changes that add or modify synthetic minor emission limits). IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM’s preliminary findings have been sent to:

Indianapolis Public Library Central Library Branch
40 E Saint Clair St
Indianapolis, IN 46204

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

A copy of the application and preliminary findings is also available via IDEM’s Virtual File Cabinet (VFC). To access VFC, please go to: https://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria.

How can you participate in this process?

The date that this notice is posted on IDEM’s website (https://www.in.gov/idem/public-notices/) marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the air pollution impact of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public
meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM’s mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit SSM 097-43457-00072 and SPM 097-43468-00072 in all correspondence.

Tamara Havics
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for Tamara Havics or (317) 232-8219
Or dial directly: (317) 232-8219
Fax: (317) 232-6749 attn: Tamara Havics
E-mail: THavics @idem.IN.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/public-participation/; and the Citizens’ Guide to IDEM on the Internet at: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM’s response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM’s decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above and will also be sent to the local library indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact Tamara Havics of my staff at the above address.

Ghassan Shalabi, Section Chief
Permits Branch
Office of Air Quality
Mr. Don Robin  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, IN 46285

Re: 097-43457-00072  
Significant Source Modification

Dear Mr. Robin:

Eli Lilly and Company, Lilly Technology Center was issued Part 70 Operating Permit Renewal No. T097-36207-00072 on January 1, 2017 for a stationary pharmaceutical manufacturing and research and development facility located at 1555 S. Harding St., Indianapolis, IN 46221 and 1297 S. White River Pkwy. E., Indianapolis, IN 46225. An application to modify the source was received on November 9, 2020. Pursuant to the provisions of 326 IAC 2-7-10.5, a Significant Source Modification is hereby approved as described in the attached Technical Support Document.

Pursuant to 326 IAC 2-7-10.5, the following emission unit is approved for construction at the source:

(a) One (1) research and development portable excipient spray dryer, identified as ESD-01, approved in 2021 for construction, with a maximum capacity of four (4) liters/hr of organic solvent, using a cyclone, filter sock and HEPA filter to capture excipient material (each is considered integral to the process), and venting to atmosphere through variable exhaust gas systems.

The following construction conditions are applicable to the proposed modification:

1. General Construction Conditions  
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. Effective Date of the Permit  
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

3. Commenced Construction  
Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(j), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Approval to Construct

6. Pursuant to 326 IAC 2-7-10.5(h)(2), this Significant Source Modification authorizes the construction of the new emission unit(s), when the Significant Source Modification has been issued.

Pursuant to 326 IAC 2-7-10.5(m), the emission units constructed under this approval shall not be placed into operation prior to revision of the source’s Part 70 Operating Permit to incorporate the required operation conditions.

Pursuant to 326 IAC 2-7-12, operation of the new emission unit(s) is not approved until the Significant Permit Modification has been issued. Operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification in accordance with 326 IAC 2-7-10.5(m)(2) and 326 IAC 2-7-12 (Permit Modification).

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. A copy of the application and permit is also available via IDEM’s Virtual File Cabinet (VFC). To access VFC, please go to: http://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/2358.htm; and the Citizens’ Guide to IDEM on the Internet at: https://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

If you have any questions regarding this matter, please contact Tamara Havics, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 232-8219 or (800) 451-6027, and ask for Tamara Havics or (317) 232-8219.

Sincerely,

Ghassan Shalabi, Section Chief
Permits Branch
Office of Air Quality

Attachments: Significant Source Modification and Technical Support Document

cc: File - Marion County
Marion County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch
Significant Source Modification to a Part 70 Source

Eli Lilly and Company, Lilly Technology Center
1555 S. Harding St., Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 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. This permit also addresses certain new source review requirements for new and/or existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions.

| Significant Source Modification No.: 097-43457-00072 |
| Master Agency Interest ID.: 11548 |

Issued by: Ghassan Shalabi, Section Chief Permits Branch Office of Air Quality

Issuance Date:
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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.4 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(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary pharmaceutical manufacturing and research and development facility.

Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
                 1297 S. White River Pkwy. E., Indianapolis, Indiana 46225

General Source Phone Number: (317) 276-2000 (Source Number)
                              (317) 276-1041 (Manager of Environmental)

SIC Code: 2833 (Medicinal Chemicals and Botanical Products)
           2834 (Pharmaceutical Preparations)

County Location: Marion Center Township

Source Location Status: Attainment for all criteria pollutants

Source Status: Part 70 Operating Permit Program
              Major Source, under PSD
              Minor Source under Emission Offset
              Minor Source, Section 112 of the Clean Air Act
              1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

Eli Lilly and Company has common ownership or control over two (2) plants in Indianapolis, Indiana, as listed below:

(a) Plant A, located at 1555 S. Harding St., Indianapolis, IN 46221, and

(b) Plant B, which includes Lilly-owned insignificant emission units and Lilly-operated activities within a leased space located within 1297 S. White River Pkwy E., Indianapolis, IN 46225.

Since the two (2) plants are all under the common ownership or control of Eli Lilly and Company, Plant B is a support facility to Plant A, and they are located on adjacent properties, they will both be considered part of the same major source, as defined by 326 IAC 2-7-1(22).

This determination was made under Administrative Amendment No. 097-42994-00072, issued on December 17, 2020.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

(a) One (1) Research and Development facility, constructed in 2016, identified as B302 High Bay Flex Space. The maximum uncontrolled emission rate of the high bay flex space is 17.6 lb of VOC per hour and 1.39 lb of particulate per hour. The B302 high bay flex space is controlled by a particulate filter and exhausts through the B302 Strobic Stack System.
(b) Manufacturing of bulk pharmaceutical products through fermentation, chemical synthesis and support processes occurs in the following B132/B133/B134/B138/B142 areas, identified as BHI area:
   • Fermentation
   • Isolation
   • Frontend
   • Backend (controlled by heat exchanger, identified as HE3322)
   • Buffer Makeup (controlled by scrubber, identified as SCBR5372)
   • Material Loading, Unloading, and Storage
   • Support Laboratories and Research Areas

(c) Manufacturing of bulk pharmaceutical products through chemical synthesis and support processes occurs in the following B130/B135/B136 areas, identified as B130 Complex:
   • Isolation
   • Frontend
   • Backend (controlled by heat exchanger, identified as HE750)
   • Buffer Makeup
   • Material Loading, Unloading, and Storage
   • Support Laboratories and Research Areas

(d) One (1) synthetic peptide manufacturing process, identified as TZP, located in B132 and B132B, with a maximum capacity of 110 dryer batches per year, approved in 2020 for construction and modification, and consisting of the following steps:

   (1) Storage Tanks, consisting of:
       (A) One (1) existing storage tank storing acetonitrile; and
       (B) Three (3) new tanks ranging from 125 gallons to 1,100 gallons to store new solvents (Methyl tertiary butyl ether (MTBE), isopropyl alcohol (IPA), and trifluoroacetic acid (TFA)).

   (2) Buffer make-up where pure or concentrated solvents are diluted with water and other inorganic solutions, consisting of:
       (A) No more than nine (9) existing 50 to 4,000 gallon mixing tanks;
       (B) No more than twelve (12) new 50 to 4,000 gallon mixing tanks; and
       (C) One (1) existing 20,000 gallon ACN make-up tank, identified as TK5371.

   (3) Dissolution where base biological ingredient in solid form is dissolved in a tank with a solution of acetonitrile (ACN) and water.

   (4) Purification of biosynthetic product through reverse phase chromatography

   (5) Drying and humidification of the final product

   (6) Two (2) existing waste tanks

   Various equipment described in (2) through (5) above are controlled by a new condenser system (pre-condenser followed by a cryogenic condenser with a backup unit).

(e) Building 333 area consisting of laboratories and fermentation of bulk pharmaceutical products.

(f) Emergency generator engines including the following:

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Name &amp; if Fire Pump</th>
<th>Nominal Capacity</th>
<th>Units</th>
<th>Fuel</th>
<th>CI or SI</th>
<th>Date/Year Installed or Mfd.</th>
<th>NSPS New; Meet 60.4204</th>
<th>RICE MACT</th>
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<td>2012</td>
<td>Yes; Yes</td>
<td>New</td>
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</table>
A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

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

(a) Emergency generator and fire pump engines including, but not limited to, those below:

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Name &amp; if Fire Pump</th>
<th>Nominal Capacity</th>
<th>Units</th>
<th>Fuel</th>
<th>CI or SI</th>
<th>Date/Year Installed or Mfd.</th>
<th>NSPS New; Meet 60.4204</th>
<th>RICE MACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B185</td>
<td>B185 Fire Pump #2A</td>
<td>327 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2019</td>
<td>Yes; N/A</td>
<td>New</td>
</tr>
<tr>
<td>B185</td>
<td>B185 Fire Pump #1A</td>
<td>327 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2018</td>
<td>Yes; N/A</td>
<td>New</td>
</tr>
<tr>
<td>B134</td>
<td>B134</td>
<td>166 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>1991</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B141</td>
<td>B141 A</td>
<td>1350 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>1999</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B141</td>
<td>B141 B</td>
<td>1350 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2001</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B151</td>
<td>B151</td>
<td>1200 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>Before 2002</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B180</td>
<td>B180</td>
<td>170 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2007 (mfd. 2000)</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 1</td>
<td>380 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>1997</td>
<td>No; N/A</td>
<td>Existing</td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 2</td>
<td>324 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2012</td>
<td>Yes; Yes</td>
<td>New</td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 3</td>
<td>755 HP</td>
<td>HP</td>
<td>No.2 oil (ULS)</td>
<td>CI</td>
<td>2016</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B358</td>
<td>B358</td>
<td>755 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2018</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B360</td>
<td>B360 Unit 1</td>
<td>145 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2011</td>
<td>Yes; Yes</td>
<td>New</td>
</tr>
<tr>
<td>B360</td>
<td>B360 Unit 2</td>
<td>176 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2017</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B401</td>
<td>B401</td>
<td>1528 HP</td>
<td>HP</td>
<td>No.2 oil (ULS)</td>
<td>CI</td>
<td>2015</td>
<td>Yes; No</td>
<td>New</td>
</tr>
</tbody>
</table>

(b) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour. [326 IAC 6-2-4]

(1) Eight (8) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Units 1-8, each with a maximum heat input capacity of 0.35 MMBtu/hr, no control.

(2) One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 9, with a maximum heat input capacity of 0.08 MMBtu/hr, no control.

(3) Two (2) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Unit 10 and Rooftop Unit 11, each with a maximum heat input capacity of 0.06 MMBtu/hr, no control.

(4) One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 12, with a maximum heat input capacity of 0.15 MMBtu/hr, no control.

(c) One (1) research and development portable excipient spray dryer system, identified as ESD-01, approved in 2021 for construction, with a maximum capacity of four (4) liters/hr of organic solvent, using a cyclone, filter sock and HEPA filter to capture excipient material (each is considered integral to the process), and venting to atmosphere through variable exhaust gas systems.
A.5 Other Insignificant Activities [326 IAC 2-7-1(21)]

This stationary source also includes the following insignificant activities:

(a) Combustion related activities including space heaters and a pizza oven fueled by natural gas with heat input equal to or less than ten million (10,000,000) Btu per hour;

(b) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 Btu/hour.

(c) Fuel dispensing activities including:

(1) A gasoline dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day filling storage tanks having a capacity equal to or less than ten thousand five hundred (10,500) gallons. Such vessels may be in a fixed location or on mobile equipment.

(2) A petroleum fuel, other than gasoline, dispensing facility, having a capacity less than or equal to ten thousand five hundred (10,500) gallons and dispensing three thousand five (3,500) hundred gallons per day or less. Such vessels may be in a fixed location or on mobile equipment.

(d) The following VOC and HAP storage containers:

(1) Storage tanks with capacity less than or equal to 1,000 gallons and annual through puts less than 12,000 gallons.

(2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(e) Equipment used exclusively for filling drums, pails, or other packaging containers with lubricating oils.

(f) Application of oils, greases, lubricants, or nonvolatile materials applied as temporary protective coatings.

(g) Machining where an aqueous cutting coolant continuously floods the machining interface.

(h) Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve (12) months, except if subject to 326 IAC 20-6.

(i) Cleaners and solvents characterized as follows:

(1) Having a vapor pressure equal to or less than 2 kPa; 15mm Hg; or 0.3 psi measured at 38 degrees C (100°F) or;

(2) Having a vapor pressure equal to or less than 0.7 kPa; 5mm Hg; or 0.1 psi measured at 38 degrees C (100°F);

the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
(j) Equipment related manufacturing activities not resulting in the emissions of HAPs, including brazing equipment, cutting torches, soldering equipment, and welding equipment.

(k) Structural steel fabrication activities including cutting two hundred thousand (200,000) linear feet or less of one (1) inch plate or equivalent, and using eighty (80) tons or less of welding consumables.

(l) Closed loop heating and cooling systems.

(m) Exposure chambers (towers or columns) for curing of ultraviolet inks and ultraviolet coatings where heat is the intended discharge. (e.g. printed medicine bar code)

(n) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.

(o) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.

(p) Use of water-based adhesives that are less than or equal to five percent (5%) by volume of VOCs excluding HAPs.

(q) Noncontact cooling tower systems with the following: forced and induced draft cooling tower system not regulated under a NESHAP.

(r) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(s) Heat exchanger cleaning and repair.

(t) Process vessel degassing and cleaning to prepare for internal repairs.

(u) Trimmers that do not produce fugitive emissions and that are equipped with a dust collection or trim material recovery device, such as a bag filter or cyclone.

(v) Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal.

(w) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

(x) Asbestos abatement projects regulated by 326 IAC 14-10.

(y) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.

(z) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks totes, drums, and fluid handling equipment.

(aa) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(bb) On-site fire and emergency response training approved by the department.

(cc) Purge double block and bleed valves.
(dd) Filter or coalescer media changeout.

(ee) Mold release agents using low volatile products (vapor pressure less than or equal to two kilo Pascals (2kPa) measured at thirty-eight degrees Centigrade (38°C).

(ff) Laboratories as defined in 326 IAC 2-7-1(21)(G).

(gg) Research and development activities as defined in 326 IAC 2-7-1(21)(H).

(hh) Any unit emitting greater than 1 pound per day but less than 5 pounds per day or 1 ton per year of a single HAP:

1. Loading and unloading of raw materials and wastes into tank trucks and/or rail cars. There are at least two of these installations.

2. Equipment cleaning.

(ii) Any unit emitting greater than 1 pound per day but less than 12.5 pounds per day or 2.5 tons per year of any combination of HAPs.

1. Optimization and testing of developmental fermentation processes in fermenters less than or equal to 6,000 liter nominal volume. This description applies to a minimum of ten fermenters.

2. Processing in development area portable tanks, less than 500 liters nominal volume. This description applies to a minimum of two tanks.

3. Hydrogenation equipment less than 50 gallons nominal volume located in developmental area. This description applies to a minimum of two installations.

(jj) Activities with emissions equal to or less than insignificant thresholds:

1. Optimization, testing, and manufacturing with fermenters. Emissions less than 5 pounds per hour and 25 pounds per day particulate matter and 3 pounds per hour and 15 pounds per day of VOC.

2. Testing of cartridge filters used as part of fermentation and sterile area operations. Emissions are less than 3 pounds per hour and 15 pounds per day of VOC.

3. Equipment cleaning. Emissions are less than 3 pounds per hour and 15 pounds per day of VOC.

4. Pilot plant equipment used in optimization of the purification of fermented products during research and development. Emissions are less than 3 pounds per hour and 15 pounds per day of VOC.

5. Printing operations for product identification. Emissions are less than 3 pounds per hour and 15 pounds per day of VOC.

6. Fluid bed dryers and other solids handling in dry products manufacturing. Emissions are less than 5 pounds per hour and 25 pounds per day particulate matter.

7. Process equipment or storage tanks which contain a VOC with a vapor pressure less than 0.1 mm Hg.
(8) Storage tanks for emergency generators, < 75 m³ in volume, which contain No. 2 diesel fuel.

(9) Injector pen assembly using polymerizing glues with emissions less than 1 lb/day of HAP and less than 3 lbs/hour or 15 lbs/day of VOC.

A.6 Part 70 Permit Applicability [326 IAC 2-7-2]

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]
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 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, T097-36207-00072, 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.3 Term of Conditions [326 IAC 2-1.1-9.5]
Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:
(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]
Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]
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.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]
(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 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(35), 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(35).

B.9 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. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 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 5
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(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) A Preventive Maintenance Plan (PMP) meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

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.

The Permittee shall implement the PMPs.

(b) Where no PMP was previously required, 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(35).

The Permittee shall implement the PMPs.

(c) 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(35).
(d) 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.11 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 no later than four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;
   - Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
   - Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
   - Facsimile Number: 317-233-6865
5. For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:
   - Indiana Department of Environmental Management
   - Compliance and Enforcement Branch, Office of Air Quality
   - 100 North Senate Avenue
   - MC 61-53 IGCN 1003
   - Indianapolis, Indiana 46204-2251
   - not later than 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(35).

(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)(8) 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.12  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) In addition to the nonapplicability determinations set forth in Sections D of this permit, the IDEM, OAQ have made the following determinations regarding this source:

(1) 40 CFR 63, Subpart I and 326 IAC 20-12 -- National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks This source is not subject to 40 CFR 63, Subpart I and 326 IAC 20-12, because the source is an area source of HAPs.
(2) **40 CFR 63, Subpart T -- National Emission Standards for Halogenated Solvent Cleaning**: This source is not subject to 40 CFR 63, Subpart T (National Emission Standards for Halogenated Solvent Cleaning) because the source does not use a solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethylene, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in a total concentration greater than five percent (5%) by weight as a cleaning and/or drying agent in an individual batch vapor, in-line vapor, in line cold and batch cold solvent cleaning machine.

(3) **40 CFR 60, Subpart K - Storage Vessels for Petroleum Liquids**: This source is not subject to 40 CFR Part 60, Subpart K and 326 IAC 12 because none of the storage tanks at the source constructed between June 11, 1973 and May 19, 1978 store petroleum liquids, as defined in 40 CFR 60.111.

(4) **40 CFR 60, Subpart Ka - Storage Vessels for Petroleum Liquids**: This source is not subject to 40 CFR Part 60, Subpart K and 326 IAC 12 because none of the storage tanks at the source constructed between May 19, 1978 and July 23, 1984 store petroleum liquids, as defined in 40 CFR 60.111.

(5) **40 CFR 60, Subpart Kb - Storage Vessels for Volatile Organic Liquids**: This source is not subject to 40 CFR Part 60, Subpart Kb and 326 IAC 12 because none of the storage tanks at the source constructed after July 23, 1984 with capacity greater than or equal to 75 m³ but less than 151 m³ stores a volatile organic liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa. No storage tank at the source of equal to or greater than 151 m³ capacity constructed after July 23, 1984 stores a volatile organic liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa.

(6) **40 CFR 60, Subparts VV, VVa, III, NNN and RRR - Synthetic organic chemical manufacturing**: This source is not subject to 40 CFR Part 60, Subparts VV, III, NNN, and RRR and 326 IAC 12 because the source is not engaged in the manufacture of synthetic organic chemicals as defined by those standards. The source does not produce, as an intermediate, final product, co-product, or byproduct, a chemical listed in 40 CFR 60.489 [Subpart VV and Subpart VVa], 40 CFR 60.617 [Subpart III], 40 CFR 60.667 [Subpart NNN], or 40 CFR 60.707 [Subpart RRR].

(7) **40 CFR 60, Appendix B, Performance Specification 16 - Predictive Emission Monitoring System**: This rule does not apply because the source does not operate any predictive emission monitoring systems (PEMS).

(8) **40 CFR 63, Sections 63.50 through 63.56 - Section 112(j)**: This source is not subject to 40 CFR Part 63, Sections 63.50 through 63.56, because the source is an area source of HAPs.

(9) **40 CFR 63, Subparts F and G - Synthetic Organic Chemical Manufacturing**: This source is not subject to 40 CFR Part 63, Subparts F and G (326 IAC 20-11), because the source is an area source of HAPs.

(10) **40 CFR 63, Subpart O - Ethylene Oxide Sterilizers**: This source is not subject to 40 CFR Part 63, Subpart O and 326 IAC 20-5 because the source does not utilize ethylene oxide in sterilization operations. [40 CFR 63.360]
(11) **40 CFR 63, Subpart Q - Industrial Process Cooling Towers:** This source is not subject to 40 CFR Part 63, Subpart Q and 326 IAC 20-4 because the source does not utilize chromium based water treatment compounds in its cooling towers. [40 CFR 63.400]

(12) **40 CFR 63, Subpart YY - Generic MACT categories:** This source is not subject to 40 CFR Part 63, Subpart YY and 326 IAC 20-44 because the source is not one of the source categories described in 40 CFR 63.1103. [40 CFR 63.1100]

(13) **40 CFR 63, Subpart MMM - Pesticide Active Ingredient Production:** This source is not subject to 40 CFR Part 63, Subpart MMM and 326 IAC 20-45, because the source is an area source of HAPs.

(14) **40 CFR 63, Subpart EEEEEE - Organic Liquid Distribution:** This source is not subject to 40 CFR Part 63, Subpart EEEEEE and 326 IAC 20-83, because the source is an area source of HAPs.

(15) **40 CFR 63, Subpart FFFFF - Miscellaneous Organic Chemical Production and Processes:** This source is not subject to 40 CFR Part 63, Subpart FFFFF or 326 IAC 200-44 because all the affected facilities at the source that would otherwise be subject to Subpart FFFFF were subject to 40 CFR 63, Subpart GGG while the source was a major source of HAPs. With the issuance of SPM 097-41707-00072, the source is not subject to this subpart, because it is an area source of HAPs.

(16) **40 CFR 63, Subpart PPPPP—Surface Coating of Plastic Parts and Products:** This source is not subject to 40 CFR Part 63, Subpart PPPPP and 326 IAC 20-81 because the plastic parts coating operations did not use 378 liters (100 gallons) per year of coatings that contain hazardous air pollutants while the source was a major source of HAPs. With the issuance of SPM 097-41707-00072, the source is not subject to this subpart, because it is an area source of HAPs.

(17) **40 CFR 63, Subpart VVVVVV - Chemical Manufacturing Area Sources:** This source is not subject to 40 CFR 63, Subpart VVVVVV (NESHAP for Chemical Manufacturing Area Sources), because the pharmaceutical manufacturing operations at the source do not use or produce any of the HAPs described in 40 CFR 63.11494(a)(2). All research and development emission units, such as the B302 Flex Bay Modules and portable excipient spray dryer, are exempt pursuant to 40 CFR 63.11494(c)(3), since they are considered research and development facilities.

(18) **326 IAC 6-5 - Fugitive Particulate Matter Emission Limitations:** This source does not have potential fugitive dust emissions greater than 25 tons per year, and is therefore, not subject to the requirements of this rule.

(19) **326 IAC 8-4 - Petroleum Sources:** This source does not operate any facilities subject to the requirements of 326 IAC 8-4. 326 IAC 8-4-6 is not applicable to this source because the source does not accept deliveries of gasoline by transports, as defined by 326 IAC 1-2-84.

(20) **326 IAC 8-6 - Organic Solvent Emissions Limitations:** The provisions of 326 IAC 8-6 are not applicable to this source because the source is subject to other rules in 326 IAC 8.
(21) **326 IAC 8-15: Standards for Consumer and Commercial Products:** All consumer and commercial products manufactured at the source are either exempt product types (prescription drug products) or not of a type listed in the regulation. Therefore, the source is not subject to the requirements of this rule.

(22) **326 IAC 10 - Nitrogen Oxide Rules:** This source does not contain any emission units identified in 326 IAC 10-4. Therefore, the source is not subject to the NOx emission control requirements of that rule.

(23) **326 IAC 11 - Emission Limitations for Specific Types of Operations:** This source does not contain any emission units described in 326 IAC 11. Therefore, the source is not subject to the requirements of those rules.

(24) **326 IAC 15 - Lead Rules:** This source does not contain any emission units described in 326 IAC 15. Therefore, the source is not subject to the requirements of those rules.

(25) **326 IAC 21 - Acid Deposition:** This source does not contain any emission units described in 326 IAC 21. Therefore, the source is not subject to the requirements of those rules.

(c) 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.

(d) 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.

(e) 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.

(f) 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).

(g) 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)]
(h) 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.13 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 T097-36207-00072 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 permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 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.15 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(35).

(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.16 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(42). 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(35).

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.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(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(35).

(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.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(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.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

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

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

(2) Any 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 5
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)(1) and (c)(1). 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) and (c)(1).

(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(37)) 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(35).

(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.20 Source Modification Requirement [326 IAC 2-7-10.5]
A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 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.22 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(35).

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

(b) 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 317-233-8590 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 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.
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 thirty percent (30%) 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(c).

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

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(35).

(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]

(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(35).

(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(35).

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
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 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, 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
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(35).

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

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

(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]

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

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) 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(11)][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(35).

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(b)(2), starting in 2005 and every three (3) years thereafter, the Permittee shall submit by July 1 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(33) ("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:
C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6][326 IAC 2-2][326 IAC 2-3]

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

(AA) All calibration and maintenance records.

(BB) All original strip chart recordings for continuous monitoring instrumentation.

(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.

(BB) The dates analyses were performed.

(CC) The company or entity that performed the analyses.

(DD) The analytical techniques or methods used.

(EE) The results of such analyses.

(FF) The operating conditions as existing at the time of sampling or measurement.

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

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

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(yy)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)][326 IAC 2-1.1-11][326 IAC 2-2][326 IAC 2-3]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). 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) 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.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

1. The annual emissions, in tons per year, from the project identified in (c)(1) in Section C - General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and
2. The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted no later than sixty (60) days after the end of the year and contain the following:

1. The name, address, and telephone number of the major stationary source.
2. The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.
3. The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).
4. Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part 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

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C - General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

**Stratospheric Ozone Protection**

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1 The permittee shall comply with all applicable provisions of 40 CFR Part 82.
SECTION D.1 RESERVED

SECTION D.2 RESERVED
SECTION D.3  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) Research and Development facility, constructed in 2016, identified as B302 High Bay Flex Space. The maximum uncontrolled emission rate of the high bay flex space is 17.6 lb of VOC per hour and 1.39 lb of particulate per hour. The B302 high bay flex space is controlled by a particulate filter and exhausts through the B302 Strobic Stack System.

(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.3.1 Volatile Organic Compounds [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the VOC emissions from the High Bay Flex Space shall not exceed 24.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of VOC in waste shipped offsite may be deducted from the reported monthly VOC emissions.

Compliance with this limit shall limit the potential to emit of VOC to less than twenty-five (25) tons per twelve (12) consecutive month period from the High Bay Flex Space and shall render the requirements of 326 IAC 8-1-6 not applicable to the High Bay Flex Space.

D.3.2 PSD (Prevention of Significant Deterioration) Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention Of Significant Deterioration (PSD) Requirements) not applicable, the VOC emissions from the High Bay Flex Space shall not exceed 35.2 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of VOC in waste shipped offsite may be deducted from the reported monthly VOC emissions.

Compliance with this limit plus the potential to emit from the B302 laboratories shall restrict the potential to emit of VOC to less than forty (40) tons per twelve (12) consecutive month period from B302 and shall render the requirements of 326 IAC 2-2 not applicable.

Compliance Determination Requirements [326 IAC 2-7-6]

D.3.3 Volatile Organic Compounds [326 IAC 2-7-6]

To determine compliance with the 326 IAC 8-1-6 avoidance limit and 326 IAC 2-2 PSD Minor Limit, emissions shall be calculated by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products," EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

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

D.3.4 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Conditions D.3.1 and D.3.2, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.3.1 and D.3.2. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
(1) The total VOC usage for each month.

(2) The VOC content and amount of each liquid waste deposited into tote from High Bay Flex Space each month.

(3) The total VOC emitted for each month.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.3.5 Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

A quarterly summary of the information to document the compliance status with Conditions D.3.1 and D.3.2 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no 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(35).
Emissions Unit Description:

(b) Manufacturing of bulk pharmaceutical products through fermentation, chemical synthesis and support processes occurs in the following B132/B133/B134/B138/B142 areas, identified as BHI area:
- Fermentation
- Isolation
- Frontend
- Backend (controlled by heat exchanger, identified as HE3322)
- Buffer Makeup (controlled by scrubber, identified as SCBR5372)
- Material Loading, Unloading, and Storage
- Support Laboratories and Research Areas

(d) One (1) synthetic peptide manufacturing process, identified as TZP, located in B132 and B132B, with a maximum capacity of 110 dryer batches per year, approved in 2020 for construction and modification, and consisting of the following steps:

1. Storage Tanks, consisting of:
   (A) One (1) existing storage tank storing acetonitrile; and
   (B) Three (3) new tanks ranging from 125 gallons to 1,100 gallons to store new solvents (Methyl tertiary butyl ether (MTBE), isopropyl alcohol (IPA), and trifluoroacetic acid (TFA)).

2. Buffer make-up where pure or concentrated solvents are diluted with water and other inorganic solutions, consisting of:
   (A) No more than nine (9) existing 50 to 4,000 gallon mixing tanks;
   (B) No more than twelve (12) new 50 to 4,000 gallon mixing tanks; and
   (C) One (1) existing 20,000 gallon ACN make-up tank, identified as TK5371.

3. Dissolution where base biological ingredient in solid form is dissolved in a tank with a solution of acetonitrile (ACN) and water.

4. Purification of biosynthetic product through reverse phase chromatography

5. Drying and humidification of the final product

6. Two (2) existing waste tanks

Various equipment described in (2) through (5) above are controlled by a new condenser system (pre-condenser followed by a cryogenic condenser with a backup unit).

(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.4.1 Synthesized Pharmaceutical Manufacturing Operations [326 IAC 8-5-3]

(a) Volatile organic compound manufacturing operations from all reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers, which have the potential to emit VOC greater than 15 pounds per day, shall be controlled by surface condensers or equivalent controls.

1. If surface condensers are used, the condenser outlet gas temperature must not exceed minus twenty-five degrees Celsius (-25 °C) when condensing VOC of vapor pressure greater than forty (40) kilo Pascals (5.8 pounds per square inch);
(2) If surface condensers are used, the condenser outlet gas temperature must not exceed minus fifteen degrees Celsius (-15 °C) when condensing VOC of vapor pressure greater than twenty (20) kilo Pascals (2.9 pounds per square inch);

(3) If surface condensers are used, the condenser outlet gas temperature must not exceed zero degrees Celsius (0 °C) when condensing VOC of vapor pressure greater than ten (10) kilo Pascals (1.5 pounds per square inch);

(4) If surface condensers are used, the condenser outlet gas temperature must not exceed ten degrees Celsius (10 °C) when condensing VOC of vapor pressure greater than seven (7) kilo Pascals (1 pound per square inch);

(5) If surface condensers are used, the condenser outlet gas temperature must not exceed twenty five degrees Celsius (25 °C) when condensing VOC of vapor pressure greater than three and a half (3.5) kilo Pascals (0.5 pound per square inch);

(6) The vapor pressures listed in (1) through (5) above shall be measured at twenty degrees Celsius (20 °C).

(7) If equivalent controls are used, the Volatile Organic Compound emissions must be reduced by at least as much as they would be by using a surface condenser which meets the requirements of (1) through (5) above.

(b) Pursuant to 326 IAC 8-5-3(b)(2), VOC emissions from all air dryers and production equipment exhaust systems which have the potential to emit VOC greater than 15 pounds per day shall be reduced:

(1) by at least ninety percent (90%) if emissions are one hundred fifty (150) kilograms per day (three hundred thirty (330) pounds per day) or more of VOC; or

(2) to fifteen (15) kilograms per day (thirty three (33) pounds per day) or less if emissions are less than one hundred fifty (150) kilograms per day (three hundred thirty (330) pounds per day) of VOC.

(c) Pursuant to 326 IAC 8-5-3(b)(3)(A), the Permittee shall provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck or railcar deliveries to storage tanks, which have the potential to emit VOC greater than 15 pounds per day and which have capacities greater than seven thousand five hundred (7,500) liters (two thousand (2,000) gallons) that store VOC with vapor pressures greater than twenty-eight (28) kiloPascals (four and one-tenth (4.1) pounds per square inch) at 20 degrees C.

(d) Pursuant to 326 IAC 8-5-3(b)(3)(B), the Permittee shall install a pressure / vacuum conservation vents set at plus or minus two-tenths (±0.2) kiloPascals on all storage tanks which have the potential to emit VOC greater than 15 pounds per day and that store VOC with vapor pressures greater than ten (10) kiloPascals (one and five-tenths (1.5) pounds per square inch) at 20 degrees C, unless a more effective control system is used.

(e) Pursuant to 326 IAC 8-5-3(b)(4), the Permittee shall enclose all centrifuges, rotary vacuum filters, and other filters which have the potential to emit VOC greater than 15 pounds per day and which have an exposed liquid surface, where the liquid contains VOC and exerts a total VOC vapor pressure of three and five-tenths (3.5) kiloPascals (five-tenths (0.5) pounds per square inch) or more at 20 degrees C.
(f) Pursuant to 326 IAC 8-5-3(b)(5), the Permittee shall install covers on all in process tanks which have the potential to emit VOC greater than 15 pounds per day and which contain a volatile organic compound at any time. These covers must remain closed, unless production, sampling, maintenance, or inspection procedures require operator access.

(g) Pursuant to 326 IAC 8-5-3(b)(6), the Permittee shall, for the emission units which have the potential to emit VOC greater than 15 pounds per day, repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off line for a period of time long enough to complete the repair.

(h) For the Peptide manufacturing process (TZP), the Permittee shall comply with Conditions D.4.1(a)(2), D.4.1(b)(2), and D.4.1(d) through D.4.1(g).

Compliance Determination [326 IAC 2 7 5(1)]

D.4.2 Volatile Organic Compounds (VOC)

Source emissions shall be calculated by mass balance, by appropriate unit operation emissions estimation procedures (e.g., Appendix B of “Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products,” EPA-450/2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner to determine compliance with D.4.1.

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

D.4.3 Synthesized Pharmaceutical Manufacturing Operations [326 IAC 8-5-3]

For emitting units, subject to Condition D.4.1, controlled by a surface condenser, the Permittee shall record the condenser outlet gas temperature for the batch when the emitting unit is emitting VOC.

D.4.4 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) The instrument employed for the measurement of temperature as required by Conditions D.4.1 and D.4.3 shall have a scale such that the expected normal reading shall be no less than five percent (5%) of full scale and be accurate within plus or minus 2.5°C.

(b) The Permittee may request that 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.

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

D.4.5 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Conditions D.4.1 and D.4.3, the Permittee is required to:

1. Keep an on-site log of emitting units subject to Condition D.4.1, the condensing VOC vapor pressure, the respective control device, and the applicable limitation.

2. Keep records of the batch temperature as per Condition D.4.3 for surface condensers subject to Condition D.4.1.

(b) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the record keeping required by this condition.
SECTION D.5  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Manufacturing of bulk pharmaceutical products through chemical synthesis and support processes occurs in the following B130/B135/B136 areas, identified as B130 Complex:
   • Isolation
   • Frontend
   • Backend (controlled by heat exchanger, identified as HE750)
   • Buffer Makeup
   • Material Loading, Unloading, and Storage
   • Support Laboratories and Research Areas

(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.5.1 Synthesized Pharmaceutical Manufacturing Operations [326 IAC 8-5-3]

(a) Volatile organic compound emissions from all reactors, distillation operations, filters, crystallizers, centrifuges, and vacuum dryers, which have the potential to emit VOC greater than 15 pounds per day, shall be controlled by surface condensers or equivalent controls.

(1) If surface condensers are used, the condenser outlet gas temperature must not exceed minus twenty five degrees Celsius (-25 °C) when condensing VOC of vapor pressure greater than forty (40) kilo Pascals (5.8 pounds per square inch);

(2) If surface condensers are used, the condenser outlet gas temperature must not exceed minus fifteen degrees Celsius (-15 °C) when condensing VOC of vapor pressure greater than twenty (20) kilo Pascals (2.9 pounds per square inch);

(3) If surface condensers are used, the condenser outlet gas temperature must not exceed zero degrees Celsius (0 °C) when condensing VOC of vapor pressure greater than ten (10) kilo Pascals (1.5 pounds per square inch);

(4) If surface condensers are used, the condenser outlet gas temperature must not exceed ten degrees Celsius (10 °C) when condensing VOC of vapor pressure greater than seven (7) kilo Pascals (1 pound per square inch);

(5) If surface condensers are used, the condenser outlet gas temperature must not exceed twenty five degrees Celsius (25 °C) when condensing VOC of vapor pressure greater than three and a half (3.5) kilo Pascals (0.5 pound per square inch);

(6) The vapor pressures listed in (1) through (5) above shall be measured at twenty degrees Celsius (20 °C).

(7) If equivalent controls are used, the Volatile Organic Compound emissions must be reduced by at least as much as they would be by using a surface condenser which meets the requirements of (1) through (5) above.

(b) Pursuant to 326 IAC 8-5-3(b)(2), VOC emissions from all air dryers and production equipment exhaust systems which have the potential to emit VOC greater than 15 pounds per day shall be reduced:
(1) by at least ninety percent (90%) if emissions are one hundred fifty (150) kilograms per day (three hundred thirty (330) pounds per day) or more of VOC; or

(2) to fifteen (15) kilograms per day (thirty three (33) pounds per day) or less if emissions are less than one hundred fifty (150) kilograms per day (three hundred thirty (330) pounds per day) of VOC.

(c) Pursuant to 326 IAC 8-5-3(b)(3)(A), the Permittee shall provide a vapor balance system or equivalent control that is at least 90% effective in reducing emissions from truck or railcar deliveries to storage tanks, which have the potential to emit VOC greater than 15 pounds per day and which have capacities greater than seven thousand five hundred (7,500) liters (two thousand (2,000) gallons) that store VOC with vapor pressures greater than twenty-eight (28) kiloPascals (four and one-tenth (4.1) pounds per square inch) at 20 degrees C.

(d) Pursuant to 326 IAC 8-5-3(b)(3)(B), the Permittee shall install a pressure / vacuum conservation vents set at plus or minus two-tenths (±0.2) kiloPascals on all storage tanks which have the potential to emit VOC greater than 15 pounds per day and that store VOC with vapor pressures greater than ten (10) kiloPascals (one and five-tenths (1.5) pounds per square inch) at 20 degrees C, unless a more effective control system is used.

(e) Pursuant to 326 IAC 8-5-3(b)(4), the Permittee shall enclose all centrifuges, rotary vacuum filters, and other filters which have the potential to emit VOC greater than 15 pounds per day and which have an exposed liquid surface, where the liquid contains VOC and exerts a total VOC vapor pressure of three and five-tenths (3.5) kiloPascals (five-tenths (0.5) pounds per square inch) or more at 20 degrees C.

(f) Pursuant to 326 IAC 8-5-3(b)(5), the Permittee shall install covers on all inprocess tanks which have the potential to emit VOC greater than 15 pounds per day and which contain a volatile organic compound at any time. These covers must remain closed, unless production, sampling, maintenance, or inspection procedures require operator access.

(g) Pursuant to 326 IAC 8-5-3(b)(6), the Permittee shall, for the emission units which have the potential to emit VOC greater than 15 pounds per day, repair all leaks from which a liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off line for a period of time long enough to complete the repair.

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

D.5.2 Synthesized Pharmaceutical Manufacturing Operations [326 IAC 8-5-3]

For emitting units, subject to Condition D.5.1, controlled by a surface condenser, the Permittee shall record the condenser outlet gas temperature for the batch when the emitting unit is emitting VOC.

D.5.3 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) The instrument employed for the measurement of temperature as required by Conditions D.5.1 and D.5.2 shall have a scale such that the expected normal reading shall be no less than five percent (5%) of full scale and be accurate within plus or minus 2.5°C.

(b) The Permittee may request that 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.
Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.5.4 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Conditions D.5.1 and D.5.2, the Permittee is required to:

1. Keep an on-site log of emitting units subject to Condition D.5.1 the condensing VOC vapor pressure, the respective control device, and the applicable limitation.

2. Keep records of the batch temperatures as per Condition D.5.2 for surface condensers subject to Condition D.5.1.

(b) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the record keeping required by this condition.
SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Specifically Regulated Insignificant Activities:

(c) One (1) research and development portable excipient spray dryer system, identified as ESD-01, approved in 2021 for construction, with a maximum capacity of four (4) liters/hr of organic solvent, using a cyclone, filter sock and HEPA filter to capture excipient material (each is considered integral to the process), and venting to atmosphere through variable exhaust gas systems.

(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.6.1 Volatile Organic Compounds (VOC) Limit [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the VOC emissions from the excipient spray dryer system shall not exceed 24 tons VOC per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of VOC in waste shipped off-site may be deducted from the reported monthly VOC emissions.

Compliance with this limit shall limit the potential to emit of VOC to less than twenty-five (25) tons per twelve (12) consecutive month period from the excipient spray dryer system and shall render the requirements of 326 IAC 8-1-6 not applicable to the excipient spray dryer system.

D.6.2 Hazardous Air Pollutants (HAP) Minor Limits [326 IAC 20][40 CFR 63]

In order to render the source as an area source of hazardous air pollutant (HAP) emissions under Section 112 of the Clean Air Act (CAA), the Permittee shall comply with the following:

The total HAP emissions excluding acetonitrile (ACN) from the excipient spray dryer system shall not exceed 2.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of HAP in waste shipped off-site may be deducted from the reported monthly HAP emissions.

Compliance with this limit, combined with the potential to emit HAP emissions from the other emissions units at the source, shall limit the source-wide potential to emit single HAP to less than ten (10) tons per twelve (12) consecutive month period and the source-wide potential to emit total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA).

D.6.3 Particulate Matter Limit [326 IAC 6.5-1]

Pursuant to 326 IAC 6.5-1-2(a), particulate matter (PM) emissions from the excipient spray dryer system shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf))

Compliance Determination Requirements [326 IAC 2-7-6]

D.6.4 VOC and HAP Determination

(a) To determine the compliance status with Condition D.6.1, the Permittee shall determine VOC emissions from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile
Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

(b) To determine the compliance status with Condition D.6.2, the Permittee shall determine the total HAP emissions excluding ACN from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

Note: The source wide requirements for ACN emissions are included in Section F.1.

D.6.5 Particulate Control

In order to assure compliance with Condition D.6.3, the integral control devices for particulate control shall be in operation and control emissions from the excipient spray dryer system at all times the excipient spray dryer system is in operation.

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

D.6.6 Record Keeping Requirements

(a) To document the compliance status with Conditions D.6.1 and D.6.2, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limit established in Conditions D.6.1 and D.6.2. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(1) The total VOC and total HAP usage excluding ACN for each month.

(2) The VOC and HAP excluding ACN content and amount of each liquid waste disposed from the portable spray dryer each month.

(3) The total VOC and total HAP excluding ACN emitted for each month.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.6.7 Reporting Requirements

A quarterly report of VOC and total HAP emissions excluding ACN and a quarterly summary of the information to document the compliance status with Conditions D.6.1 and D.6.2 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(35).
SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Entire Source

(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.7.1 Architectural and Industrial Maintenance (AIM) [326 IAC 8-14-1]

Pursuant to 326 IAC 8-14, any person who supplies, sells, offers for sale, or manufactures any AIM coating for use within the state of Indiana, as well as any person who applies or solicits the application of any AIM coating within the state of Indiana, shall comply with the applicable standards for Architectural and Industrial Maintenance (AIM) Coatings. 326 IAC 8-14 is not federally enforceable.

D.7.2 Application of Traffic Marking Materials [326 IAC 8-14-7(a)]

Except as provided in 326 IAC 8-14-3(d), during the ozone season (May 1 through September 30), no person may cause allow, or permit the application of traffic marking material that exceeds the following limits:

(a) For traffic marking material that is a liquid at the time of application, the VOC content limits listed in 326 IAC 8-14-3(b).

(b) For field-reacted traffic marking material, or for traffic marking material that is not measureable as a liquid at the time of application, a VOC emissions rate of three and six-tenths (3.6) kilograms per stripe-kilometer or twelve and two-tenths (12.2) pounds per stripe-mile.

D.7.3 Work Practices [326 IAC 8-14-3(e)]

The following work practices are required:

(a) All AIM coatings containers used to apply the contents therein to a surface directly from the container by:
   (A) pouring;
   (B) siphoning;
   (C) brushing;
   (D) rolling;
   (E) padding;
   (F) ragging; or
   (G) other means;
   shall be closed when not in use.

(b) Containers of any VOC-containing materials used for thinning and cleanup shall be closed when not in use.
Record Keeping and Reporting Requirements  [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.7.4 Record Keeping Requirements [326 IAC 8-14-7(b)]

<table>
<thead>
<tr>
<th>(a)</th>
<th>To document the compliance status with Condition D.7.2, any person subject to this rule who applies traffic marking material shall maintain the following records:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) Types and amounts of traffic marking materials purchased annually.</td>
</tr>
<tr>
<td></td>
<td>(2) The VOC content or emission rate of each type of traffic marking material applied in any of the following:</td>
</tr>
<tr>
<td></td>
<td>(A) Grams per liter.</td>
</tr>
<tr>
<td></td>
<td>(B) Pounds per gallon.</td>
</tr>
<tr>
<td></td>
<td>(C) Kilograms per stripe-kilometer.</td>
</tr>
<tr>
<td></td>
<td>(D) Pounds per stripe-mile.</td>
</tr>
<tr>
<td></td>
<td>(3) Monthly quantities of each type of traffic marking material applied.</td>
</tr>
<tr>
<td>(b)</td>
<td>The records required in D.7.4(a) shall be:</td>
</tr>
<tr>
<td></td>
<td>(1) kept for a period of three (3) years after the traffic marking material is applied;</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>(2) made available to the department within ninety days of the request.</td>
</tr>
<tr>
<td>(c)</td>
<td>Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.</td>
</tr>
</tbody>
</table>
SECTION D.8  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour. [326 IAC 6-2-4]

(1) Eight (8) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Units 1-8, each with a maximum heat input capacity of 0.35 MMBtu/hr, no control.

(2) One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 9, with a maximum heat input capacity of 0.08 MMBtu/hr, no control.

(3) Two (2) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Unit 10 and Rooftop Unit 11, each with a maximum heat input capacity of 0.06 MMBtu/hr, no control.

(4) One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 12, with a maximum heat input capacity of 0.15 MMBtu/hr, no control.

(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.8.1 Particulate Matter (PM) [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4(a) (Particulate Matter Emission Limitations for Sources of Indirect Heating for Specified Facilities), the PM emissions from the twelve (12) natural gas-fired rooftop HVAC units, constructed in 2015 shall not exceed 0.6 pounds of particulate matter per million Btu heat input, each.
SECTION E.1  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Emergency generator and fire pump engines including, but not limited to, those below:

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Name &amp; if Fire Pump</th>
<th>Nominal Capacity</th>
<th>Units</th>
<th>Fuel</th>
<th>CI or SI</th>
<th>Date/Year Installed or Mfd.</th>
<th>NSPS New; Meet 60.4204</th>
<th>RICE MACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 185</td>
<td>B185 Fire Pump #2A</td>
<td>327 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2019 Yes, N/A</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B 134</td>
<td>B 134</td>
<td>166 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>1991 No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B 314</td>
<td>B314 Unit 1</td>
<td>380 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>1997 No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B141</td>
<td>B141 A</td>
<td>1350 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>1999 No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B141</td>
<td>B141 B</td>
<td>1350 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2001 No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B151</td>
<td>B 151</td>
<td>1200 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>Before 2002 No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B141</td>
<td>B141 C</td>
<td>2923 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2006 No; N/A</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B 180</td>
<td>B 180</td>
<td>170 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2007 (mfd 2000) No; N/A</td>
<td>Existing</td>
<td></td>
</tr>
<tr>
<td>B141</td>
<td>B141 D</td>
<td>2923 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2012 Yes; Yes</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B 360</td>
<td>B 360 Unit 1</td>
<td>145 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2011 Yes; Yes</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B 314</td>
<td>B314 Unit 2</td>
<td>324 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2012 Yes; Yes</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B401</td>
<td>B401</td>
<td>1528 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>(ULS) CI</td>
<td>2015 Yes; No</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 3</td>
<td>755 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>(ULS) CI</td>
<td>2016 Yes; No</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B360</td>
<td>B360 Unit 2</td>
<td>176 HP</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2017 Yes, No</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B185</td>
<td>B185 Fire Pump #1A</td>
<td>327 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2018 Yes; N/A</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>B 358</td>
<td>B358</td>
<td>755 HP</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2018 Yes, No</td>
<td>New</td>
<td></td>
</tr>
</tbody>
</table>

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

National Emission Standards For Hazardous Air Pollutants [40 CFR 63]


(a) The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1-1 in accordance with the schedule in 40 CFR 63 Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment A to this permit), which are incorporated by reference as 326 IAC 20-82 for the affected source, as specified as follows:

(a) Existing Emergency Compression Ignition (CI) stationary RICE at an area source of HAPs shall meet the following requirements:

1. 40 CFR 63.6580
2. 40 CFR 63.6585
3. 40 CFR 63.6590(a)(1)(iii) and (iv)
4. 40 CFR 63.6595(a)(1), (b), and (c)
5. 40 CFR 63.6603(a)
6. 40 CFR 63.6605
7. 40 CFR 63.6625(e)(3), (f), (h), and (i)
8. 40 CFR 63.6640(a), (b), (e), (f)(1), (f)(2)(i), and (f)(4)
9. 40 CFR 63.6645(a)(5)
10. 40 CFR 63.6655(e), (e)(2 and 3), (f), and (f)(2)
11. 40 CFR 63.6660
12. 40 CFR 63.6665
13. 40 CFR 63.6670
14. 40 CFR 63.6675
15. Table 2d (item 4)
16. Table 6 (item 9)
17. Table 8

(b) New stationary RICE at an area source of HAPs shall meet the following requirements:

1. 40 CFR 63.6580
2. 40 CFR 63.6585
3. 40 CFR 63.6590(a)(2)(iii) and (c)(1)
4. 40 CFR 63.6595(a)(7)
5. 40 CFR 63.6665
6. 40 CFR 63.6670
7. 40 CFR 63.6675
SECTION E.2  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Emergency Generators and fire pumps including those below:

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Name &amp; if Fire Pump</th>
<th>Nominal Capacity</th>
<th>Units</th>
<th>Fuel</th>
<th>CI or SI</th>
<th>Date/Year Installed or Mfd.</th>
<th>NSPS New; Meet 60.4204</th>
<th>RICE MACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B141</td>
<td>B141 D</td>
<td>2923</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2012</td>
<td>Yes; Yes</td>
<td>New</td>
</tr>
<tr>
<td>B 360</td>
<td>B 360 Unit 1</td>
<td>145</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2011</td>
<td>Yes; Yes</td>
<td>New</td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 2</td>
<td>324</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2012</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B401</td>
<td>B401</td>
<td>1528</td>
<td>HP</td>
<td>No. 2 oil (ULS)</td>
<td>CI</td>
<td>2015</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B314</td>
<td>B314 Unit 3</td>
<td>755</td>
<td>HP</td>
<td>No. 2 oil (ULS)</td>
<td>CI</td>
<td>2016</td>
<td>Yes; No</td>
<td>New</td>
</tr>
<tr>
<td>B360</td>
<td>B360 Unit 2</td>
<td>176</td>
<td>HP</td>
<td>No.2 oil</td>
<td>CI</td>
<td>2017</td>
<td>Yes, No</td>
<td>New</td>
</tr>
<tr>
<td>B185</td>
<td>B185 Fire Pump #1A</td>
<td>327</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2018</td>
<td>Yes; N/A</td>
<td>New</td>
</tr>
<tr>
<td>B 185</td>
<td>B185 Fire Pump #2A</td>
<td>327</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2019</td>
<td>Yes, N/A</td>
<td>New</td>
</tr>
<tr>
<td>B 358</td>
<td>B358</td>
<td>755</td>
<td>HP</td>
<td>No. 2 oil</td>
<td>CI</td>
<td>2018</td>
<td>Yes, No</td>
<td>New</td>
</tr>
</tbody>
</table>

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

New Source Performance Standards [40 CFR Part 60]

E.2.1 General Provisions Relating to NSPS IIII [326 IAC 12][40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1. These provisions apply to the emergency Generators and fire pumps described in this section and all emergency Stationary Compression Ignition Internal Combustion Engines (CI ICE) manufactured after April 1, 2006, except fire pump engines, and to fire pump engines manufactured after July 1, 2006, and to all CI ICE reconstructed or modified after July 11, 2005, except when otherwise specified in 40 CFR Part 60, Subpart III.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to the Indiana Department of Environmental Management. The address has been modified to add the proper mail code and extended zip code as follows:

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

E.2.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12][40 CFR Part 60, Subpart III]

The Permittee who owns and operates stationary compression ignition (CI) internal combustion engines (ICE) constructed, manufactured, reconstructed, or modified after the relevant dates in
40 CFR Part 60, Subpart III, shall comply with the following provisions of 40 CFR Part 60, Subpart III (included as Attachment B in this permit). The source is subject to the following portions of Subpart III:

(I) 40 CFR 60.4200(a)(2)(i), (a)(2)(ii) and (a)(4)
(II) 40 CFR 60.4202
(III) 40 CFR 60.4205(b), (c), and (f)
(IV) 40 CFR 60.4206
(V) 40 CFR 60.4207(a) and (b)
(VI) 40 CFR 60.4208
(VII) 40 CFR 60.4209(a)
(VIII) 40 CFR 60.4211(a)
(IX) 40 CFR 60.4211(b)
(X) 40 CFR 60.4211(c)
(XI) 40 CFR 60.4211(e)
(XII) 40 CFR 60.4211(f)(1), (f)(2)(i), (f)(3)
(XIII) 40 CFR 60.4211(g)
(XIV) 40 CFR 60.4214(b)
(XV) 40 CFR 60.4218
(XVI) 40 CFR 60.4219
(XVII) 40 CFR 60 Subpart III Table 4
(XVIII) 40 CFR 60 Subpart III Table 5 for the Record Keeping requirements in §60.4214(b) only; and
(XIX) 40 CFR 60 Subpart III Table 8
SECTION E.3  RESERVED
SECTION E.4  RESERVED
SECTION E.5  RESERVED
SECTION E.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Entire Facility (as defined in 40 CFR 61.341)

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

National Emission Standards For Hazardous Air Pollutants [40 CFR 61]

E.6.1 General Provisions Relating to HAPs [326 IAC 14-1-1][40 CFR 61, Subpart A]

(a) Pursuant to 40 CFR Part 61, the Permittee shall comply with the provisions of 40 CFR Part 61, Subpart A - General Provisions, which are incorporated as 326 IAC 14-1-1, for the processes described in this section except when otherwise specified in 40 CFR 61, Subpart FF.

(b) Pursuant to 40 CFR 61.04, the Permittee shall submit all required notifications and reports to:

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

E.6.2 National Emission Standards for Benzene Waste Operations [40 CFR 61, Subpart FF]

The Permittee shall comply with the following provisions of 40 CFR 61, Subpart FF (included as Attachment F to the operating permit) National Emission Standards for Benzene Waste Operation:

(I) 40 CFR 61.340(a)
(II) 40 CFR 61.341
(III) 40 CFR 61.342(a)
(IV) 40 CFR 61.355
(V) 40 CFR 61.356
(VI) 40 CFR 61.357 (a) & (b)
SECTION F.1  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Entire Source

(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)]

F.1.1 Hazardous Air Pollutants (HAP) Minor Limits [326 IAC 20][40 CFR 63]

In order to render the source as an area source of hazardous air pollutant (HAP) emissions under Section 112 of the Clean Air Act (CAA), the Permittee shall comply with the following:

The total emissions of single HAP (acetonitrile (ACN)) from the entire source shall not exceed 9.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this ACN limit, combined with the potential to emit HAPs emissions from the other emissions units at the source, shall limit the source-wide potential to emit single HAP to less than ten (10) tons per twelve (12) consecutive month period and the source-wide potential to emit total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA).

Compliance Determination Requirements [326 IAC 2-7-6]

F.1.2 Single HAP (ACN) [326 IAC 2-7-6]

To determine compliance with Condition F.1.1, the Permittee shall determine the twelve (12) consecutive monthly acetonitrile (ACN) emissions as follows:

\[
\text{Total ACN emissions} = \sum ((\text{ACN emissions from Fugitive Components}) + (\text{ACN emissions from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service}) + (\text{ACN emissions from Components in Limited ACN Service}])
\]

Where:

Total ACN emissions = tons per twelve (12) consecutive month period.

Upon issuance of SPM No. 097-41707-00072, the Permittee shall calculate the ACN emissions since the issuance date of SPM No. 097-41707-00072 or twelve (12) months, whichever is less.

ACN Emissions from Fugitive Components, as outlined in Condition F.1.3.

ACN emissions from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service, as outlined in Condition F.1.4.

ACN emissions from Components in Limited ACN Service, as outlined in Condition F.1.5.

F.1.3 Single HAP (ACN) from Fugitive Components [326 IAC 2-7-6]

To determine compliance with Condition F.1.1, the Permittee shall determine the twelve (12) consecutive monthly ACN emissions from valves, pumps, agitators and connectors (fugitive components) from the following:
To determine the ACN emissions corresponding to the calculated total organic compounds (TOC) lb/hr values, the Permittee shall use the methodology for Synthetic Organic Chemical Manufacturing Industry (SOCMI) facilities contained in the EPA Guidance Document: “Emissions Estimation Protocol for Petroleum Refineries, Version 3, April 2015”.

The TOC (lb/hr) emission rate may be converted to an ACN emission rate by multiplying by the maximum concentration of ACN present in the equipment.

(b) The Permittee shall use the following data for each component type:

<table>
<thead>
<tr>
<th>Equipment/Component Type</th>
<th>Type of Service</th>
<th>SV (ppmv Reading)</th>
<th>Emissions Rate TOC (lb/hr)</th>
<th>Correlation Equation TOC (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>Gas</td>
<td>0</td>
<td>6.6E-07 * 2.205</td>
<td>1.37E-06</td>
</tr>
<tr>
<td>Valve</td>
<td>&gt; 0 &lt;100,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve</td>
<td>Pegged at 10,000</td>
<td></td>
<td>0.024 * 2.205</td>
<td>0.053</td>
</tr>
<tr>
<td>Valve</td>
<td>Pegged at 100,000</td>
<td></td>
<td>0.11 * 2.205</td>
<td>0.222</td>
</tr>
<tr>
<td>Valve</td>
<td>Light Liquid</td>
<td>0</td>
<td>4.9E-07 * 2.205</td>
<td>1.08E-06</td>
</tr>
<tr>
<td>Valve</td>
<td>&gt; 0 &lt;100,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve</td>
<td>Pegged at 10,000</td>
<td></td>
<td>0.036 * 2.205</td>
<td>0.079</td>
</tr>
<tr>
<td>Valve</td>
<td>Pegged at 100,000</td>
<td></td>
<td>0.15 * 2.205</td>
<td>0.304</td>
</tr>
<tr>
<td>Pump/Agitator</td>
<td>Light Liquid</td>
<td>0</td>
<td>7.5E-06 * 2.205</td>
<td>1.65E-05</td>
</tr>
<tr>
<td>Pump/Agitator</td>
<td>&gt; 0 &lt;100,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump/Agitator</td>
<td>Pegged at 10,000</td>
<td></td>
<td>0.14 * 2.205</td>
<td>0.309</td>
</tr>
<tr>
<td>Pump/Agitator</td>
<td>Pegged at 100,000</td>
<td></td>
<td>0.62 * 2.205</td>
<td>1.37</td>
</tr>
<tr>
<td>Connector</td>
<td>Gas</td>
<td>0</td>
<td>6.1E-07 * 2.205</td>
<td>1.34E-06</td>
</tr>
<tr>
<td>Connector</td>
<td>&gt; 0 &lt;100,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connector</td>
<td>Pegged at 10,000</td>
<td></td>
<td>0.044 * 2.205</td>
<td>0.097</td>
</tr>
<tr>
<td>Connector</td>
<td>Pegged at 100,000</td>
<td></td>
<td>0.22 * 2.205</td>
<td>0.485</td>
</tr>
</tbody>
</table>
Connector means flanged, screwed, or other joined fittings used to connect two pipelines or a pipeline and a piece of equipment.

<table>
<thead>
<tr>
<th>Type of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Gas means a piece of equipment that contains ACN gas or vapor at operating conditions (&gt;1% by weight ACN) and is in ACN service for greater than 300 hours in that calendar year, and contains a gas or vapor at operating temperatures.</td>
</tr>
<tr>
<td>- Light liquid means a piece of equipment that contains ACN liquid at operating conditions (&gt;1% by weight ACN) and is in ACN service for greater than 300 hours in that calendar year, the vapor pressure is greater than 0.3 kilopascals at 20°C, and the fluid is liquid at operating temperatures.</td>
</tr>
<tr>
<td>- Heavy liquid means that a piece of equipment in organic service that contains ACN and is not in gas or vapor ACN service or in light liquid ACN service.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screening Value (SV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- SV = the screening value, in parts per million per volume (ppmv), measured by the monitoring device using Method 21 of 40 CFR Part 60, Appendix A-7 (M21).</td>
</tr>
<tr>
<td>- For SV readings equal to 0 (zero) ppmv, use the applicable emissions rates (lb/hr).</td>
</tr>
<tr>
<td>- The pegged emission rate is the mass emission rate associated with a screening value that has pegged the meter on the monitoring device.</td>
</tr>
<tr>
<td>- For SV readings pegged at 10,000 ppmv, use the applicable emissions rates (lb/hr).</td>
</tr>
<tr>
<td>- For SV readings pegged at 100,000 ppmv, use the applicable emissions rates (lb/hr).</td>
</tr>
<tr>
<td>- For non-pegged SV readings, use the applicable Correlation Equations (lb/hr).</td>
</tr>
</tbody>
</table>

(c) Unsafe to Monitor Components (UTM), Difficult to Monitor Components (DTM), and Inaccessible Connectors

1) Unsafe to Monitor (UTM) Components:
   
   (i) A component is considered unsafe-to-monitor (UTM) when the Permittee determines that monitoring personnel would be exposed to an immediate danger as a consequence of conducting the monitoring.

   (ii) The Permittee shall have a written plan that requires monitoring of the UTM equipment as frequently as practicable during safe to monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable to the group of processes in which the equipment is located.

2) Difficult to Monitor (DTM) Components:

   (i) A component is considered difficult-to-monitor or "difficult-to-monitor" (DTM) when the Permittee determines the component cannot be monitored without elevating the monitoring personnel more than 2 meters above a permanent support structure or would require the erection of scaffold.
(ii) The Permittee shall have a written plan that requires monitoring of the DTM equipment at least once per calendar year or on the periodic monitoring schedule otherwise applicable to the group of processes in which the equipment is located, whichever is less frequent.

(3) Inaccessible Connectors:

Inaccessible connectors are buried, insulated in a manner that prevents access to the connector by a monitor probe, or obstructed by equipment or piping that prevents access to the connector by a monitor probe.

(4) ACN Emissions from UTM, DTM or Inaccessible Components

To determine the ACN emissions from UTM, DTM or Inaccessible Components, the Permittee shall use the following:

(i) UTM, DTM or Inaccessible Components that have a prior M21 reading shall use the last M21 reading of that component to calculate the lb/hr leak rate.

(ii) UTM, DTM or Inaccessible Connectors that do not have a prior M21 reading shall use the average lb/hr calculated leak rate for the process line where that UTM, DTM, or Inaccessible connector is located.

(iii) UTM, DTM or Inaccessible Valves that do not have a prior M21 reading shall use the applicable emission rate below:

<table>
<thead>
<tr>
<th>Component</th>
<th>Service</th>
<th>Emission Factor* (lb/hr/valve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valves</td>
<td>Gas</td>
<td>1.32E-02</td>
</tr>
<tr>
<td>Valves</td>
<td>Light liquid</td>
<td>8.88E-03</td>
</tr>
<tr>
<td>Valves</td>
<td>Heavy liquid</td>
<td>5.07E-04</td>
</tr>
</tbody>
</table>

*Emission factors are taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (November 1995), Table 2-1.

(d) Visual Audible Olfactory (VAO)

For VAO observations of leaks in which a M21 reading is not obtained before repair, use a SV reading of 10,000 ppmv with the appropriate lb/hr value from the “SOCMI Equipment Leak Rates” Table of the EPA Guidance Document: “Emissions Estimation Protocol for Petroleum Refineries, Version 3, April 2015”.


The modified trapezoid method assumes that the mass leak rate changes linearly between any two monitoring points, except for periods between leak detection and repair.

The modified trapezoid method uses the leak monitor reading from the time the leak is detected to the time it is repaired (i.e., re-screened).

The emission rate shall be determined for each component and each monitoring event before extrapolating the emissions to the intervening periods. It is invalid to average the
monitored screening values first and then to calculate the emission rate based on the average screening value.

(f) After repairs are made, the Permittee shall re-screen the repaired component via M21 to verify that the leak has been repaired and to provide a new starting emission rate for that component.

A component is considered "repaired" if one or more of the following conditions is met:

(A) The visual, audible, olfactory (VAO), or other indications of a leak to the atmosphere have been eliminated; or

(B) No bubbles are observed at potential leak sites during a leak check using soap solution; or

(C) The system will hold a test pressure; or

(D) A Method 21 reading of less than 500 ppmv is measured for the component.

(g) The following specific components are not to be included in the HAP emissions calculations:

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Specific Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps</td>
<td>- Canned Pumps</td>
</tr>
<tr>
<td></td>
<td>- Magnetic Drive Pumps</td>
</tr>
<tr>
<td></td>
<td>- Diaphragm Pumps</td>
</tr>
<tr>
<td></td>
<td>- Double mechanical seals and the use of a barrier fluid at a higher pressure than the process</td>
</tr>
<tr>
<td></td>
<td>- Double mechanical seals and venting the barrier fluid seal pot to a control device</td>
</tr>
<tr>
<td></td>
<td>- Pumps in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Peristaltic pumps</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Pumps drained and depressurized, not containing ACN)</td>
</tr>
<tr>
<td>Valves</td>
<td>- Use of bellows valves with bellows welded to both the bonnet and stem</td>
</tr>
<tr>
<td></td>
<td>- Use of diaphragm-type valves</td>
</tr>
<tr>
<td></td>
<td>- Use of seal-welded, magnetically actuated, packless, hermetically sealed control valves</td>
</tr>
<tr>
<td></td>
<td>- Valves in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Valves drained and depressurized, not containing ACN)</td>
</tr>
<tr>
<td>Connectors</td>
<td>- Connectors that are welded together around the circumference of the connection such that the flanges are no longer capable of being disassembled by simply removing the bolts.</td>
</tr>
<tr>
<td></td>
<td>- Connectors in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Connectors drained and depressurized, not containing ACN)</td>
</tr>
</tbody>
</table>
Either upon request by IDEM, OAQ, or when the total ACN emissions are equal to or greater than eight (8) tons per twelve (12) consecutive month period, the Permittee shall recalculate the ACN emissions for prior compliance periods as follows:

Where \( Mi = \) number of months since the SPM No. 097-41707-00072 was issued, with the month the SPM was issued then \( i=1 \).

\[ N = \text{number of months since issuance of SPM No. 097-41707-00072 or twelve (12) months, whichever is less.} \]

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Specific Component</th>
</tr>
</thead>
</table>
| Pumps and Agitators | For each month, when \( Mi \) is equal to or greater than 24:  
If a M21 reading occurred for a pump, or a VAO that resulted in a repair without an associated M21 reading occurred, during the current month, the Permittee shall recalculate the twelve (12) consecutive month emissions ending in each of the prior eleven (11) months.  
For each month, when \( Mi \) is less than 24:  
The Permittee shall recalculate the emissions for each \( N \) consecutive period ending in each of the prior \( Mi \) months. |
| Valves | For each month, when \( Mi \) is equal to or greater than 36:  
If a M21 reading occurred for a valve, or a VAO that resulted in a repair without an associated M21 reading occurred, during the current month, the Permittee shall recalculate the twelve (12) consecutive month emissions ending in each of the prior twenty three (23) months.  
For each month, when \( Mi \) is less than 36:  
The Permittee shall recalculate the emissions for each \( N \) consecutive period ending in each of the prior \( Mi \) months. |
| Connectors | For each month, when \( Mi \) is equal to or greater than 60:  
If a M21 reading occurred for a connector, or a VAO that resulted in a repair without an associated M21 reading occurred, during the current month, the Permittee shall recalculate the twelve (12) consecutive month emissions ending in each of the prior forty seven (47) months.  
For each month, when \( Mi \) is less than 60:  
The Permittee shall recalculate the emissions for each \( N \) consecutive period ending in each of the prior \( Mi \) months. |

F.1.4 Single HAP (ACN) from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service [326 IAC 2-7-6]

(a) To determine compliance with Condition F.1.1, the Permittee shall determine the twelve (12) consecutive monthly total ACN emissions from the following:

<table>
<thead>
<tr>
<th>Manufacturing Process Vents in the following:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) BHI area,</td>
<td></td>
</tr>
<tr>
<td>(B) Building 130 Complex, and</td>
<td></td>
</tr>
<tr>
<td>(C) Peptide manufacturing process (TZP).</td>
<td></td>
</tr>
<tr>
<td>Storage Tanks:</td>
<td></td>
</tr>
<tr>
<td>(1) TK508;</td>
<td></td>
</tr>
<tr>
<td>(2) TK512;</td>
<td></td>
</tr>
<tr>
<td>(3) TK513;</td>
<td></td>
</tr>
<tr>
<td>(4) TK5311;</td>
<td></td>
</tr>
<tr>
<td>(5) TK5341;</td>
<td></td>
</tr>
<tr>
<td>(6) TK5351;</td>
<td></td>
</tr>
<tr>
<td>(7) TK1961;</td>
<td></td>
</tr>
<tr>
<td>(8) TK384A; and</td>
<td></td>
</tr>
</tbody>
</table>
(b) Manufacturing Process Vents Emissions:

The Permittee shall determine the monthly acetonitrile (ACN) emissions from the Manufacturing Process Vents using the following equation:

\[
\text{ACN Actual Emissions (tons/month)} = \sum \text{(Number of monthly batches for each manufactured product \* (Controlled or Uncontrolled Emission Factor for each product as applicable))}
\]

The emission factors for each manufactured product shall be determined by the emission estimation techniques detailed in Attachment G of this permit.

(c) Storage Tanks Emissions:

The Permittee shall determine the monthly acetonitrile (ACN) emissions from the storage tanks mentioned above using the procedures in AP42, Fifth Edition, Volume 1, Chapter 7: Liquid Storage Tanks.

(d) (1) B302 Flex Space Modules, Pilot Plant Equipment Emissions, and Excipient Spray Dryer (ESD-01):

For each new unit, the Permittee shall determine the monthly acetonitrile (ACN) emissions by mass balance or methods included in Attachment G of this permit, until such time that the new module is validated.

A new unit shall be considered validated after it has been confirmed that its ACN emissions are emitted at less than a 2% emissions rate.

The Permittee shall determine the monthly acetonitrile (ACN) emissions from validated units by using the following equation:

\[
\text{ACN Actual emissions (ton/month)} = \text{ACN usage (gal/month)} \* \frac{\text{ACN content (lbs ACN/gal)}}{1 \text{ ton/2000 lbs}} \* 2%
\]

Where:

2% is the emission rate that is based on mass balance tests conducted by the Permittee.

(2) Laboratories Emissions

The Permittee shall determine the monthly acetonitrile (ACN) emissions from chemical usage in all laboratories including those in B130 Complex and the BHI area by using the following:

\[
\text{ACN Actual emissions (ton/month)} = \text{Chemical usage (gal/month)} \* \frac{\text{ACN content (lbs ACN/gal)}}{1 \text{ ton/2000 lbs}} \* 2%
\]

Where:
2% is the emission rate that is based on mass balance tests conducted by the Permittee.

(3) Acetonitrile (ACN) usage shall be determined through purchase records from chemical suppliers and acetonitrile (ACN) content will be determined by the safety data sheet or environmental data sheet for the chemical.

F.1.5 Single HAP (ACN) from Components in Limited ACN Service [326 IAC 2-7-6]

(a) Gas in limited ACN service means a piece of equipment or component that contains ACN gas or vapor at operating conditions (>1% by weight ACN) and is in ACN service for less than 300 hours in that calendar year.

(b) Light liquid in limited ACN service means a piece of equipment or component that contains ACN liquid at operating conditions (>1% by weight ACN) and is in ACN service for less than 300 hours in that calendar year and the vapor pressure is greater than 0.3 kilopascals at 20°C.

(c) To determine compliance with Condition F.1.1, the Permittee shall use the following equation to determine the ACN emissions from components that are in limited ACN service as mentioned above:

\[
\text{Limited ACN Service < 300 hours/year} = \sum \left[ \left( \text{No. of pumps} \times \text{EF}_p \times \% \text{by weight ACN} \times \text{actual hours of operation} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \right)
\right. \\
\left. + \left( \text{No. of valves} \times \text{EF}_v \times \% \text{by weight ACN} \times \text{actual hours of operation} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \right)
\right. \\
\left. \left. + \left( \text{No. of connectors} \times \text{EF}_c \times \% \text{by weight ACN} \times \text{actual hours of operation} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} \right) \right]\]

Where: Limited ACN Service < 300 hours/year = ACN emissions in tons per twelve (12) consecutive month period

No. of pumps = actual number of pumps that operated for less than 300 hours per calendar year

No. of valves = actual number of valves that operated less than 300 hours per calendar year

No. of connectors = actual number of connectors that operated for less than 300 hours per calendar year

% by weight ACN = actual % by weight ACN of the component or use 100% as default

\( \text{EF}_p = \text{Emissions factors for Pumps In Limited ACN service:} \)

<table>
<thead>
<tr>
<th>Component</th>
<th>Service</th>
<th>Emission Factor* (lb/hr/pump)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps</td>
<td>Light liquid</td>
<td>4.39E-02</td>
</tr>
<tr>
<td>Pumps</td>
<td>Heavy liquid</td>
<td>1.90E-02</td>
</tr>
</tbody>
</table>

*Emission factors are taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (November 1995), Table 2-1.

\( \text{EF}_v = \text{Emissions factors for Valves In Limited ACN service:} \)

<table>
<thead>
<tr>
<th>Component</th>
<th>Service</th>
<th>Emission Factor* (lb/hr/valve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valves</td>
<td>Gas</td>
<td>1.32E-02</td>
</tr>
</tbody>
</table>
Valves | Light liquid | 8.88E-03
---|---|---
Valves | Heavy liquid | 5.07E-04

*Emission factors are taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (November 1995), Table 2-1.

EFc = Emission factors for Connectors in Limited ACN service:

<table>
<thead>
<tr>
<th>Components</th>
<th>Service</th>
<th>Emission Factor* (lb/hr/connector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectors</td>
<td>Gas</td>
<td>4.03E-03</td>
</tr>
<tr>
<td></td>
<td>Light Liquid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heavy Liquid</td>
<td></td>
</tr>
</tbody>
</table>

*Emission factors are taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (November 1995), Table 2-1.

F.1.6 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions F.1.1 and F.1.4, no later than 180 days after the issuance of Part 70 Significant Permit Modification No. 097-41707-00072 or 180 days from the initial start up of the Peptide manufacturing process (TZP), whichever comes first, the Permittee shall perform acetonitrile (ACN) testing on the condenser located at the TZP, utilizing methods as approved by the Commissioner. Section C - Performance Testing contains the Permittee’s obligations with regard to the testing required by this condition.

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

F.1.7 Components Monitoring Requirements

(a) Scheduled Routine Monitoring and Method 21 Monitoring:

The Permittee shall develop a program to determine a schedule for routine monitoring of components for each pump, agitator, valve, and connector, using Method 21 of 40 CFR Part 60, Appendix A-7 (M21), as specified below:

(1) Pumps and Agitators Monitoring

(A) The Permittee shall monitor each pump and agitator via M21 at least once (1) per calendar year.

(2) Valves Monitoring

(A) The Permittee shall monitor each valve via M21 at least once per two (2) calendar years.

(B) The Permittee shall monitor at least forty percent (40%) of the valves in each calendar year.

(C) Valves designated as unsafe-to-monitor (UTM) will have a visual, auditory, or olfactory (VAO) observation performed at least once per two calendar years when an M21 reading has not been obtained in that same timeframe.

(3) Connectors Monitoring

(A) The Permittee shall monitor each connector via M21 at least once per four (4) calendar years.
(B) The Permittee shall monitor at least twenty percent (20%) of the connectors in each calendar year.

(C) Connectors designated as unsafe-to-monitor (UTM) or as inaccessible will have a visual, auditory, or olfactory (VAO) observation performed at least once per four calendar years when an M21 reading has not been obtained in that same timeframe.

(b) The following specific components are not required to be monitored as part of the M21 scheduled routine monitoring:

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Specific Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps</td>
<td>- Canned Pumps</td>
</tr>
<tr>
<td></td>
<td>- Magnetic Drive Pumps</td>
</tr>
<tr>
<td></td>
<td>- Diaphragm Pumps</td>
</tr>
<tr>
<td></td>
<td>- Double mechanical seals and the use of a barrier fluid at a higher pressure than the process</td>
</tr>
<tr>
<td></td>
<td>- Double mechanical seals and venting the barrier fluid seal pot to a control device</td>
</tr>
<tr>
<td></td>
<td>- Pumps in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Peristaltic pumps</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Pumps drained and depressurized, not containing ACN)</td>
</tr>
<tr>
<td>Valves</td>
<td>- Use of bellows valves with bellows welded to both the bonnet and stem</td>
</tr>
<tr>
<td></td>
<td>- Use of diaphragm-type valves</td>
</tr>
<tr>
<td></td>
<td>- Use of seal-welded, magnetically actuated, packless, hermetically sealed control valves</td>
</tr>
<tr>
<td></td>
<td>- Valves in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Valves drained and depressurized, not containing ACN)</td>
</tr>
<tr>
<td>Connectors</td>
<td>- Connectors that are welded together around the circumference of the connection such that the flanges are no longer capable of being disassembled by simply removing the bolts.</td>
</tr>
<tr>
<td></td>
<td>- Connectors in vacuum service</td>
</tr>
<tr>
<td></td>
<td>- Out of service (Connectors drained and depressurized, not containing ACN)</td>
</tr>
</tbody>
</table>

F.1.8 Work Practices

(a) A leaking component is one that can be detected through visual, audible, or olfactory means, or by method 21 monitoring at a concentration greater than or equal to 500 ppmv for valves and connectors, or 2000 ppmv for pumps and agitators. Leaking valves, connectors, compressor seals, agitator seals, and pump seals shall be tagged and replaced or repaired as soon as practicable, but not later than 15 calendar days from detection of the leak. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A leaking component that is taken out of service, is exempt from repair.

(b) Any VAO observation which results in a repair to a component shall be monitored using M21 prior to attempting the repair whenever a certified LDAR technician is on site and available to report to the area prior to the leak being repaired.

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

F.1.9 Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

(a) To document the compliance status with Conditions F.1.1, F.1.2, F.1.3, F.1.4 and F.1.5, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained from (1) through (4) shall be taken monthly as applicable and shall be complete and sufficient to establish compliance with the emission limits established in
Conditions F.1.1, F.1.2, F.1.3, F.1.4 and F.1.5. Records necessary to demonstrate compliance shall be available no later than thirty (30) days from the end of each quarterly compliance period.

(1) Records of the actual ACN emissions from Fugitive Components, as outlined in Condition F.1.3.

(2) Records of the actual ACN emissions from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service, as outlined in Condition F.1.4.

(3) Records of the actual ACN emissions from Components in Limited ACN Service, as outlined in Condition F.1.5.

(4) Records of the total ACN emissions as outlined in Condition F.1.2.

(b) To document the compliance status with Conditions F.1.2, F.1.3, F.1.4, F.1.5 and F.1.7, the Permittee shall maintain the following:

Records of the following by component type:

(1) Identification of the components and the number of components by type.

(2) Components that are considered difficult-to monitor (DTM), unsafe-to-monitor (UTM), or inaccessible connectors and components that are included in the VAO monitoring program.

(3) Written plans for monitoring of UTM and DTM components.

Records necessary to demonstrate compliance shall be available no later than thirty (30) days from the end of each quarterly compliance period.

(c) To document the compliance status with Conditions F.1.3, F.1.7, and F.1.8, the Permittee shall maintain records of the following:

Dates of M21 monitoring, dates of VAO inspections, components monitored, results of M21 readings, and results of VAO inspections.

Records necessary to demonstrate compliance shall be available no later than thirty (30) days from the end of each quarterly compliance period.

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

F.1.10 Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

A quarterly summary of the information to document the compliance status with Conditions F.1.2, F.1.3, F.1.4 and F.1.5 shall be submitted using the reporting forms located at the end of this permit, or its equivalent, no 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(35).
Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225
Part 70 Permit No.: T097-36207-00072

This certification or its equivalent 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: 
## EMERGENCY OCCURRENCE REPORT

**Source Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 S. Harding St., Indianapolis, Indiana 46221  
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225  
**Part 70 Permit No.:** T097-36207-00072

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), no later than four (4) daytime 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 no later than 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

<table>
<thead>
<tr>
<th>Facility/Equipment/Operation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Equipment:</td>
</tr>
<tr>
<td>Permit Condition or Operation Limitation in Permit:</td>
</tr>
<tr>
<td>Description of the Emergency:</td>
</tr>
<tr>
<td>Describe the cause of the Emergency:</td>
</tr>
<tr>
<td>Date/Time Emergency started:</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Date/Time Emergency was corrected:</td>
</tr>
<tr>
<td>Was the facility being properly operated at the time of the emergency?</td>
</tr>
<tr>
<td>Type of Pollutants Emitted: TSP, PM-10, SO₂, VOC, NOₓ, CO, Pb, other:</td>
</tr>
<tr>
<td>Estimated amount of pollutant(s) emitted during emergency:</td>
</tr>
<tr>
<td>Describe the steps taken to mitigate the problem:</td>
</tr>
<tr>
<td>Describe the corrective actions/response steps taken:</td>
</tr>
<tr>
<td>Describe the measures taken to minimize emissions:</td>
</tr>
</tbody>
</table>

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

Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225
Part 70 Permit No.: T097-36207-00072
Facility: Research and Development facility, B302
Parameter: VOC Emissions [326 IAC 8-1-6]
Limit: VOC emissions from the High Bay Flex Space shall not exceed 24.90 tons per
twelve (12) consecutive month period, with compliance determined at the end of
each month.

<table>
<thead>
<tr>
<th>QUARTER: ____________________</th>
<th>YEAR: ____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Column 1</td>
</tr>
<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
</tr>
<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
</tr>
</tbody>
</table>

- ☐ 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 
Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center  
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221  
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225  
Part 70 Permit No.: T097-36207-00072  
Facility: Research and Development facility, B302  
Parameter: VOC Emissions [326 IAC 2-2]  
Limit: VOC emissions from the High Bay Flex Space shall not exceed 35.2 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER:_____________________ YEAR:_____________________

<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1 (This Month Tons)</th>
<th>Column 2 (Previous 11 Months Tons)</th>
<th>Column 1 + Column 2 (12 Month Total Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

☐ No deviation occurred in this quarter.  
☐ Deviation/s occurred in this quarter.  
Deviation has been reported on: ___________________

Submitted by: ________________________________
Title / Position: ________________________________
Signature: ________________________________
Date: ________________________________
Phone: ________________________________
Indianapolis, Indiana

Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225
Part 70 Permit No.: T097-36207-00072
Facility: Research and development portable excipient spray dryer system, identified as ESD-01
Parameter: VOC Emissions
Limit: Shall not exceed 24 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Column 1</td>
</tr>
<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
</tr>
</tbody>
</table>

- 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

Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225
Part 70 Permit No.: T097-36207-00072
Facility: Research and development portable excipient spray dryer system, identified as
ESD-01
Parameter: Total HAP Emissions excluding ACN
Limit: Shall not exceed 2.5 tons per twelve (12) consecutive month period, with
compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
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</thead>
<tbody>
<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
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<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
</tr>
<tr>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
</tr>
</tbody>
</table>

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: ___________________

Submitted by: _____________________________________________________
Title / Position: ____________________________________________________
Signature: ________________________________________________________
Date: ____________________________________________________________
Phone: ___________________________________________________________
Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., and 1297 S. White River Pkwy. E., Indianapolis, IN 46225
Part 70 Permit No.: T097-36207-00072
Facility: Entire Source
Parameter: Acetonitrile (ACN) Emissions
Limit: The total emissions of acetonitrile (ACN) from the entire source shall not exceed 9.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

This quarterly report form consists of 2 pages

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
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</thead>
</table>

ACN emissions from Fugitive Components:

<table>
<thead>
<tr>
<th>Month</th>
<th>12 Consecutive Month Total (Tons)</th>
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<tbody>
<tr>
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</tbody>
</table>

ACN emissions from Components/Emmissions Sources that are not Fugitive and not in Limited ACN Service:

<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
<td>12 Month Total (Tons)</td>
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<tr>
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</tbody>
</table>

ACN emissions from Components in Limited ACN Service:

<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
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<tbody>
<tr>
<td></td>
<td>This Month (Tons)</td>
<td>Previous 11 Months (Tons)</td>
<td>12 Month Total (Tons)</td>
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</tbody>
</table>

☐ No deviation occurred in these time periods.
☐ Deviation/s occurred in this month/year.
  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  
Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center  
Source Address: 1555 S. Harding St., and 1297 S. White River Pkwy. E., Indianapolis, IN 46225  
Part 70 Permit No.: T097-36207-00072  
Facility: Entire Source  
Parameter: Acetonitrile (ACN) Emissions  
Limit: The total emissions of acetonitrile (ACN) from the entire source shall not exceed 9.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

This quarterly report form consists of 2 pages

<table>
<thead>
<tr>
<th>QUARTER: ____________________</th>
<th>YEAR: ____________________</th>
</tr>
</thead>
</table>

Total ACN emissions = \[ \sum (ACN \text{ emissions from Fugitive Components}) 
+ (ACN \text{ emissions from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service}) 
+ (ACN \text{ emissions from Components in Limited ACN Service}) \]

<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Reporting Month: ___________
Reporting Year: ______________

Year | Month | \( N \) | Emissions |
<table>
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<tbody>
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<td></td>
<td></td>
<td>( N = \text{ number of months since the issuance of SPM No. 097-41707-00072 or 12 months, whichever is less} )</td>
<td>(tons/( N ) consecutive month period)</td>
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</tbody>
</table>

☐ No deviation occurred in these time periods.  
☐ Deviation/s occurred in this month/year.  
Deviation has been reported on: ___________________ 

Submitted by: ____________________________________________
Title / Position: __________________________________________
Signature: ______________________________________________
Date: __________________________________________________
Phone: ________________________________________________
Source Name: Eli Lilly and Company, Lilly Technology Center  
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221  
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225  
Part 70 Permit No.: T097-36207-00072  

<table>
<thead>
<tr>
<th>Permit Requirement (specify permit condition #)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Deviation:</td>
<td>Duration of Deviation:</td>
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<tr>
<td>Number of Deviations:</td>
<td></td>
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<tr>
<td>Probable Cause of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
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</tbody>
</table>

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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

<table>
<thead>
<tr>
<th>Permit Requirement (specify permit condition #)</th>
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<td>Probable Cause of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
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<td>Probable Cause of Deviation:</td>
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<td>Response Steps Taken:</td>
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<td>Permit Requirement (specify permit condition #)</td>
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<td>Date of Deviation:</td>
<td>Duration of Deviation:</td>
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<td>Number of Deviations:</td>
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<tr>
<td>Probable Cause of Deviation:</td>
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<td>Response Steps Taken:</td>
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<td>Probable Cause of Deviation:</td>
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<tr>
<td>Probable Cause of Deviation:</td>
<td></td>
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<tr>
<td>Response Steps Taken:</td>
<td></td>
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</tbody>
</table>

Form Completed by: _____________________________

Title / Position: ______________________________

Date: _______________________________________

Phone: _______________________________
Source Description and Location

<table>
<thead>
<tr>
<th>Source Name:</th>
<th>Eli Lilly and Company, Lilly Technology Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Location:</td>
<td>1555 S. Harding St., Indianapolis, Indiana 46221</td>
</tr>
<tr>
<td></td>
<td>1297 S. White River Pkwy. E., Indianapolis, Indiana 46225</td>
</tr>
<tr>
<td>County:</td>
<td>Marion (Center Township)</td>
</tr>
<tr>
<td>SIC Code:</td>
<td>2833 (Medicinal Chemicals and Botanical Products)</td>
</tr>
<tr>
<td></td>
<td>2834 (Pharmaceutical Preparations)</td>
</tr>
<tr>
<td>Operation Permit No.:</td>
<td>T097-36207-00072</td>
</tr>
<tr>
<td>Operation Permit Issuance Date:</td>
<td>January 1, 2017</td>
</tr>
<tr>
<td>Significant Source Modification No.:</td>
<td>097-43457-00072</td>
</tr>
<tr>
<td>Significant Permit Modification No.:</td>
<td>097-43468-00072</td>
</tr>
<tr>
<td>Permit Reviewer:</td>
<td>Tamara Havics</td>
</tr>
</tbody>
</table>

Source Definition

Eli Lilly and Company has common ownership or control over two (2) plants in Indianapolis, Indiana, as listed below:

(a) Plant A, located at 1555 S. Harding St., Indianapolis, IN 46221, and

(b) Plant B, which includes Lilly-owned insignificant emission units and Lilly-operated activities within a leased space located within 1297 S. White River Pkwy E., Indianapolis, IN 46225.

Since the two (2) plants are all under the common ownership or control of Eli Lilly and Company, Plant B is a support facility to Plant A, and they are located on adjacent properties, they will both be considered part of the same major source, as defined by 326 IAC 2-7-1(22).

This determination was made under Administrative Amendment No. 097-42994-00072, issued on December 17, 2020.

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. T097-36207-00072 on January 1, 2017. The source has since received the following approvals:

(a) Administrative Amendment No. 097-38592-00072, issued on June 14, 2017;

(b) Administrative Amendment No. 097-38850-00072, issued on October 24, 2017;

(c) Review Request No. 097-39633-00072, issued on April 3, 2018;

(d) Administrative Amendment No. 097-39822-00072, issued on May 17, 2018;

(e) Minor Source Modification No. 097-40459-00072, issued on October 18, 2018;

(f) Minor Permit Modification No. 097-40488-00072, issued on December 18, 2018; and

(g) Administrative Amendment No. 097-41422-00072, issued on July 18, 2019.
The source submitted an application for a Part 70 Operating Permit Renewal on March 30, 2021. At this time, the application is under review.

### County Attainment Status

The source is located in Marion County (Center Township).

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂</td>
<td>Attainment effective May 21, 2020, for the 2010 SO₂ standard for Center, Perry, and Wayne townships. Better than national standards for the remainder of the county.</td>
</tr>
<tr>
<td>CO</td>
<td>Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.</td>
</tr>
<tr>
<td>O₃</td>
<td>Unclassifiable or attainment effective January 16, 2018, for the 2015 8-hour ozone standard.</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective April 15, 2015, for the 2012 annual PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Unclassifiable effective November 15, 1990.</td>
</tr>
<tr>
<td>NO₂</td>
<td>Unclassifiable or attainment effective January 29, 2012, for the 2010 NO₂ standard.</td>
</tr>
<tr>
<td>Pb</td>
<td>Unclassifiable or attainment effective December 31, 2011, for the 2008 lead standard.</td>
</tr>
</tbody>
</table>

(a) **Ozone Standards**

Volatile organic compounds (VOC) and Nitrogen Oxides (NOₓ) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOₓ emissions are considered when evaluating the rule applicability relating to ozone. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) **PM₂.₅**

Marion County has been classified as attainment for PM₂.₅. Therefore, direct PM₂.₅, SO₂, and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) **Other Criteria Pollutants**

Marion County has been classified as attainment or unclassifiable in Indiana for all the other 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 source is classified as a chemical process plant (pharmaceutical manufacturing source), it is considered one (1) of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at [http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf](http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf)) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court’s decision. U.S. EPA’s guidance states that U.S. EPA will no longer require PSD or Title V permits for sources “previously classified as ‘Major’ based solely on greenhouse gas emissions.”

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

Source Status - Existing Source

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. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

<table>
<thead>
<tr>
<th>Source-Wide Emissions Prior to Modification (ton/year)</th>
<th>PM$^1$</th>
<th>PM$_{10}$$^1$</th>
<th>PM$_{2.5}$,$^2$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
<th>H$_2$S</th>
<th>Single HAP$^3$</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PTE of Entire Source Including Fugitives*</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>14.60</td>
<td>&lt;10</td>
<td>&lt;25</td>
<td></td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
<td>NA</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

1 Under the Part 70 Permit program (40 CFR 70), PM$_{10}$ and PM$_{2.5}$, not particulate matter (PM), are each considered as a “regulated air pollutant.”
2 PM$_{2.5}$ listed is direct PM$_{2.5}$.
3 Single highest source-wide HAP

*Fugitive HAP emissions are always included in the source-wide emissions.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant(s), VOC, is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
(b) This existing source is not a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(c) These emissions are based on the TSD of Significant Permit Modification No. 097-41707-00072, issued on May 17, 2021.

**Description of Proposed Modification**

The Office of Air Quality (OAQ) has reviewed an application, submitted by Eli Lilly and Company, Lilly Technology Center on November 9, 2020, relating to the addition of a research and development (R&D) portable spray dryer for the purposes of producing excipients for R&D purposes. Excipients are an inert ingredient (not pharmaceutically active) used in the formulation of pharmaceutical product.

The following is a list of the new emission units and pollution control device(s):

(a) One (1) research and development portable excipient spray dryer system, identified as ESD-01, approved in 2021 for construction, with a maximum capacity of four (4) liters/hr of organic solvent, using a cyclone, filter sock and HEPA filter to capture excipient material (each is considered integral to the process), and venting to atmosphere through variable exhaust gas systems.

As part of this permitting action, the following emission units are being removed from the permit:

(a) One (1) urea prills unloading operation supporting the BHI area, constructed in 1989, with a maximum capacity of 66 tons per hour, with a scrubber that is integral to the process. [326 IAC 6-3-2]

(b) One (1) urea prills unloading operation supporting the B130 Complex, constructed in 2001, approved in 2015 for modification to increase the maximum truck unloading rate, with a maximum capacity of 25 tons per hour, with a scrubber that is integral to the process. [326 IAC 6-3-2]

**“Integral Part of the Process” Determination**

Eli Lilly and Company, Lilly Technology Center has submitted information to justify why the cyclone, filter sock, and HEPA filter in series for the new electric, portable, spray dryer should be considered an integral part of the process. The lab scale dryer will be used for testing materials as potential excipients for R&D purposes. Excipients are an inert ingredient (not pharmaceutically active) used in the formulation of pharmaceutical product. IDEM, OAQ has evaluated the justifications provided by the source and the details of the IDEM integral evaluation are explained below.

The Permittee submitted the following information to justify why the cyclone, filter sock, and HEPA filter in series should be considered an integral part of the new spray dryer:

(a) **Primary Purpose of Equipment**

   **Cyclone**

   Spray drying is a method of producing a dry powder from a liquid or slurry by rapidly drying with a hot gas. The cyclone is used to separate and capture the dried product from the gas stream which dries the product. It is a common engineering application of cyclones to use them for product separation where air or gases are used to dry and/or transport solid materials. Since warm, moving air is required to dry the mix into a powder, a mechanical method such as a cyclone is necessary to separate the dry material from the gas stream. The excipient spray dryer system cannot operate in a normal manner to create a dry powder product without the cyclone. The cyclone is estimated to capture more than 98% of the material produced in the dryer.

   **Filter Sock and HEPA filter**
The filter sock and HEPA filter serve two purposes which are integral to the operation of the excipient spray dryer system. First, these two filters have been placed in series before the fan which pulls the process gas through the system in order to protect the fan from the buildup of dust which could impede the normal operation of the fan. Without the filters present, powder which passed through the cyclone could build up on the fan blades and result in inefficient operation of the fan or an imbalance in the fan which could burn out the motor of the fan.

Second, the filter sock and HEPA filter will be used in the research conducted with the excipient spray dryer system. The source will collect the material captured by these filters and analyze the material for various properties including mass and size distribution. This information enables the source to adjust spray dryer operational elements such as the ratio of liquid to solids in the slurry, droplet size, the gas stream temperature, and gas stream flow rate/velocity to optimize the process. The filter sock and HEPA filter achieve a minimum 99.95% control efficiency.

(b) Savings from Product Recovery

There is a significant cost savings from product recovery. All the product from the dryer is sent to the cyclone, and the cyclone is the sole method of recovering the product. The filter sock and HEPA filter save costs from pre-mature equipment failure and allow cost savings as a result of improvements from optimization research.

(c) Would Equipment be installed if No Air Quality Regulations?

The cyclone, filter sock and HEPA filter would be installed if no air quality regulations were in place based on the financial incentive to operate the cyclone, filter sock and HEPA filter to ensure the financial success of the business operation.

IDEM, OAQ has evaluated the information submitted and agrees that the controls should be considered an integral part of the excipient spray drying process. This determination is based on the fact that the cyclones are used for product recovery and the filter sock and HEPA filter provide cost savings. Therefore, the permitting level will be determined using the potential to emit after the controls for the excipient spray dryer system. Operating conditions in the proposed permit will specify that this control equipment shall operate at all times when the excipient spray dryer system is in operation.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70 Modification to an Existing Source

Pursuant to 326 IAC 2-1.1-1(12), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.
PTE Before Controls of the New Emission Units (ton/year)

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}^1$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
<th>CO</th>
<th>Single HAP$^2$</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D portable excipient spray dryer system ESD-01</td>
<td>Neg.</td>
<td>Neg.</td>
<td>Neg.</td>
<td>-</td>
<td>-</td>
<td>33.03</td>
<td>-</td>
<td>33.03</td>
<td>33.03</td>
</tr>
</tbody>
</table>

$^1$PM$_{2.5}$ listed is direct PM$_{2.5}$.
$^2$Single highest HAP = Acetonitrile (ACN).

The cyclone, filter sock and HEPA filter for the excipient dryer are considered integral.

Neg. = negligible

Appendix A of this TSD reflects the detailed potential emissions of the modification.

(a) Approval to Construct

Pursuant to 326 IAC 2-7-10.5(g)(4), a Significant Source Modification is required, because this modification has the potential to emit VOC at equal to or greater than twenty-five (25) tons per year.

Pursuant to 326 IAC 2-7-10.5(g)(6), a Significant Source Modification is required, because this modification has a potential to emit equal to or greater than ten (10) tons per year of a single HAP and twenty-five (25) tons per year of any combination of HAPs.

(b) Approval to Operate

Pursuant to 326 IAC 2-7-12(d)(1), this change to the permit is being made through a Significant Permit Modification because this modification does not qualify as a Minor Permit Modification or as an Administrative Amendment. The modification requires a case-by-case emission limitation determination.

Permit Level Determination – PSD Emissions Increase

(a) Actual to Potential (ATP) Applicability Test

Since this project only involves the construction of new emissions units and/or emissions units considered new for this evaluation, an Actual to Potential (ATP) applicability test, specified in 326 IAC 2-2-2(d)(4), is used to determine if the project results in a Significant Emissions Increase.

(b) Actual to Potential (ATP) Summary

The Emissions Increase of the project is the sum of the difference between the potential to emit (PTE) from each new emissions unit following completion of the project and the baseline actual emissions of these units before the project.

\[
ATP_{\text{new unit}} = PTE_{\text{new unit}} - \text{Baseline Emissions}_{\text{new unit}}
\]

See Appendix A of this Technical Support Document for detailed emission calculations.
## Project Emissions Increase (tons/year)

<table>
<thead>
<tr>
<th>Process/Emissions Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excipient Spray Dryer system ESD-01</td>
<td>0.000464</td>
<td>0.000464</td>
<td>0.000464</td>
<td>-</td>
<td>-</td>
<td>33.03</td>
<td>-</td>
</tr>
<tr>
<td>Project Emissions Increase</td>
<td>0.000464</td>
<td>0.000464</td>
<td>0.000464</td>
<td>-</td>
<td>-</td>
<td>33.03</td>
<td>-</td>
</tr>
<tr>
<td>Significant Levels</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

*PM$_{2.5}$ listed is direct PM$_{2.5}$.

Note: There is no increased utilization of any emissions unit due to this modification.

See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 2-2 (PSD) applicability determination for more information regarding the limits.

### (c) Conclusion

This modification to an existing major PSD stationary source is not major because the Emissions Increase of each PSD regulated pollutant is less than the PSD significant level (i.e., the modification does not cause a Significant Emissions Increase). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

### PTE of the Entire Source After Issuance of the Part 70 Modification

The table below summarizes the after issuance source-wide potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of the Part 70 source and permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

<table>
<thead>
<tr>
<th>Source-Wide Emissions After Issuance (ton/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$^1$, PM$<em>{10}$, PM$</em>{2.5}$, SO$_2$, NO$_X$, VOC, CO, H$_2$S, Single HAP$^3$, Total HAPs</td>
</tr>
<tr>
<td>Total PTE of Entire Source Including Fugitives$^*$</td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
</tr>
</tbody>
</table>

$^1$ Under the Part 70 Permit program (40 CFR 70), PM$_{10}$ and PM$_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

$^2$ PM$_{2.5}$ listed is direct PM$_{2.5}$.

$^3$ Single highest HAP = Acetonitrile (ACN).

The cyclone, filter sock and HEPA filter for the excipient dryer are considered integral.

*Fugitive HAP emissions are always included in the source-wide emissions.

The source opted to take limit(s) to render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA). See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 20 (Hazardous Air Pollutants) for more information regarding the limit(s).

(a) This existing major PSD stationary source will continue to be major under 326 IAC 2-2, because at least one pollutant, VOC, has emissions equal to or greater than the PSD major source threshold.

(b) This existing area source of HAP will continue to be an area source of HAP, as defined in 40 CFR 63.2, because HAP emissions will continue to be less than ten (10) tons per year for any single
HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

**Federal Rule Applicability Determination**

Due to the modification at this source, federal rule applicability has been reviewed as follows:

**New Source Performance Standards (NSPS):**

(a) The requirements of the New Source Performance Standards for Synthetic Organic Chemical Manufacturing Industry 40 CFR 60, Subpart III, NNN, or RRR, and 326 IAC 12, are not included in the permit for the excipient spray dryer system, because the facilities are not producing any of the SOCMI chemicals described in NSPS Subparts III, NNN, or RRR.

(b) There are no New Source Performance Standards (40 CFR Part 60) and 326 IAC 12 included in the permit for this proposed modification.

**National Emission Standards for Hazardous Air Pollutants (NESHAP):**

(a) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Pharmaceuticals Production, 40 CFR 63, Subpart GGG, and 326 IAC 20-57 are not included in the permit for the excipient spray dryer system, since it does not manufacture a pharmaceutical product, as defined in 40 CFR 63.1251. The source is also an area source of HAPs.

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Chemical Manufacturing Area Sources, 40 CFR 63, Subpart VVVVVV, are not included in the permit for the excipient spray dryer system, because it is a research and development facility specifically exempt under 40 CFR 63.11494(c)(3).

(c) There are no National Emission Standards for Hazardous Air Pollutants under 40 CFR 63, 326 IAC 14, and 326 IAC 20 included for this proposed modification.

**Compliance Assurance Monitoring (CAM):**

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each pollutant-specific emission unit that meets the following criteria:

1. has a potential to emit before controls equal to or greater than the major source threshold for the regulated pollutant involved;

2. is subject to an emission limitation or standard for that pollutant (or a surrogate thereof); and

3. uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

(b) Pursuant to 40 CFR 64.2(b)(1)(i), emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act are exempt from the requirements of CAM. Therefore, an evaluation was not conducted for any emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act.

**Inherent Process Equipment**

Pursuant to 40 CFR Part 64.1, the definition of inherent process equipment is "equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations. Equipment that must be operated at an efficiency higher than that achieved during normal process operations in order to comply with the applicable emission limitation or standard is
not inherent process equipment. For the purposes of this part, inherent process equipment is not considered subject to CAM.*

The excipient spray dryer system cyclone, filter sock and HEPA filter are determined to be necessary material recovery equipment. Therefore, the excipient spray dryer system cyclone, filter sock and HEPA filter each meet the criteria for inherent to the process for the purpose of determining CAM applicability and are not considered control devices. Therefore, the requirements of 40 CFR Part 64.2, CAM, do not apply to the excipient spray dryer system ESD-01.

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**State Rule Applicability - Entire Source**

Due to this modification, state rule applicability has been reviewed as follows:

**326 IAC 2-2 (PSD)**
PSD and Emission Offset applicability is discussed under the Permit Level Determination - PSD Emissions Increase of this document.

**326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**
The provisions of 326 IAC 2-4.1 apply to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.41, after July 27, 1997, unless the major source has been specifically regulated under or exempted from regulation under a NESHAP that was issued pursuant to Section 112(d), 112(h), or 112(j) of the Clean Air Act (CAA) and incorporated under 40 CFR 63. On and after June 29, 1998, 326 IAC 2-4.1 is intended to implement the requirements of Section 112(g)(2)(B) of the Clean Air Act (CAA).

The operation of this source will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

**326 IAC 2-7-6(5) (Annual Compliance Certification)**
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certifications that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

**326 IAC 5-1 (_opacity limitations)**
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1)

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

**326 IAC 6-5 (fugitive particulate matter emission limitations)**
This source is not subject to the requirements of 326 IAC 6-5, because the source has potential fugitive particulate emissions of less than twenty-five (25) tons per year.

**326 IAC 6.5 (particulate matter limitations except lake county)**
This source (located in Marion County) is located in one of the counties listed in 326 IAC 6.5, but is not one of the sources specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10. The source-wide PTE of PM is 10 tons per year or more. Therefore, this source is subject to the requirements of 326 IAC 6.5-1-2, because the source-wide actual emissions of PM can be 10 tons per year or more.

**326 IAC 6.8 (particulate matter limitations for lake county)**
Pursuant to 326 IAC 6.8-1-1(a), this source (located in Marion County) is not subject to the requirements of 326 IAC 6.8 because it is not located in Lake County.
In order to render the source as an area source of hazardous air pollutant (HAP) emissions under Section 112 of the Clean Air Act (CAA), the Permittee shall comply with the following:

(a) The total HAP emissions excluding acetonitrile (ACN) from the excipient spray dryer system shall not exceed 2.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of HAP in waste shipped offsite may be deducted from the reported monthly HAP emissions.

(b) The total emissions of single HAP (acetonitrile (ACN)) from the entire source shall not exceed 9.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit HAPs emissions from the other emissions units at the source, shall limit the source-wide potential to emit single HAP to less than ten (10) tons per twelve (12) consecutive month period and the source-wide potential to emit total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA).

State Rule Applicability – Individual Facilities

Due to this modification, state rule applicability has been reviewed as follows:

326 IAC 6.5-1 (Particulate Emission Limitations)
This source is subject to the requirements of 326 IAC 6.5-1-2. Therefore, pursuant to 6.5-1-2(a), PM emissions from the excipient spray dryer system shall not exceed seven hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)).

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
This spray dryer was constructed after January 1, 1980, and its unlimited VOC potential emissions are equal to or greater than twenty-five (25) tons per year and the excipient spray dryer system is not regulated by other rules in 326 IAC 8. The source has opted to limit the potential to emit VOC from the excipient spray dryer system to less than twenty-five (25) tons per twelve (12) consecutive month period in order to render the requirements of 326 IAC 8-1-6 not applicable. Therefore, the excipient spray dryer system is not subject to the requirements of 326 IAC 8-1-6.

In order to render the requirements of 326 IAC 8-1-6 not applicable, the VOC emissions from the excipient spray dryer system shall not exceed 24 tons VOC per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of VOC in waste shipped off-site may be deducted from the reported monthly VOC emissions.

326 IAC 8-5-3 (Synthesized Pharmaceutical Manufacturing)
The excipient spray dryer system is not subject to the requirements of 326 IAC 8-5-3, because the unit is not involved in manufacturing a pharmaceutical product by chemical synthesis. The excipients which will be produced in the excipient spray dryer system do not involve any chemical synthesis. Instead, inert materials will be mixed and dried, with no synthesis occurring.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to assure 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.

(a) The Compliance Determination Requirements applicable to this modification are as follows:

**VOC**

The Permittee shall determine VOC emissions from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

**HAPs**

1. The Permittee shall determine HAP emissions excluding ACN from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

2. For each new unit, the Permittee shall determine the monthly acetonitrile (ACN) emissions by mass balance or methods included in Attachment G of this permit, until such time that the new module is validated.

   A new unit shall be considered validated after it has been confirmed that its ACN emissions are emitted at less than a 2% emissions rate.

   The Permittee shall determine the monthly acetonitrile (ACN) emissions from validated units by using the following equation:

   \[
   \text{ACN Actual emissions (ton/month)} = \frac{\text{ACN usage (gal/month)} \times \text{ACN content (lbs ACN/gal)} \times 1\text{ ton/2000 lbs} \times 2\%}{2\%}
   \]

   Where:
   
   2% is the emission rate that is based on mass balance tests conducted by the Permittee.

(b) The Compliance Monitoring Requirements applicable to this proposed modification are as follows:

There are no new or modified compliance monitoring requirements included with this modification.

### Proposed Changes

As part of this permit approval, the permit may contain new or different permit conditions and some conditions from previously issued permits/approvals may have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes.

The following changes listed below are due to the proposed modification. Deleted language appears as strike-through text and new language appears as bold text (these changes may include Title I changes):
The new excipient spray dryer system ESD-01 description was added to Sections A.4 and D.6, and the urea prills unloading operations emission unit and respective limits/requirements were deleted in Section D.6. The source has removed the urea prills unloading operations.

The non-applicability statement in Condition B.12(b)(17) was revised to include all research and development emission units.

A new 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) avoidance limit was added for the excipient spray dryer system.

A new HAP minor limit was added for total HAP excluding ACN for the excipient spray dryer system.

A new 326 IAC 6.5-1 Particulate Matter limit was added for the excipient spray dryer system.

Compliance Determination and Record Keeping and Reporting requirements were added.

The new excipient spray dryer system ESD-01 was added to the source-wide Single HAP limit for ACN in Condition F.1.4(a) and the determination method in Condition F1.4(d).

Quarterly reporting forms were added for the 326 IAC 8-1-6 avoidance limit for VOC and the minor limit for total HAP excluding ACN.

---

A.4 Specifically Regulated Insignificant Activities

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

(c) One (1) research and development portable excipient spray dryer system, identified as ESD-01, approved in 2021 for construction, with a maximum capacity of four (4) liters/hr of organic solvent, using a cyclone, filter sock and HEPA filter to capture excipient material (each is considered integral to the process), and venting to atmosphere through variable exhaust gas systems.

(d) One (1) urea prills unloading operation supporting the BHI area, constructed in 1989, with a maximum capacity of 66 tons per hour, with a scrubber that is integral to the process.

B.12 Permit Shield

In addition to the nonapplicability determinations set forth in Sections D of this permit, the IDEM, OAQ have made the following determinations regarding this source:

(17) 40 CFR 63, Subpart VVVVVV - Chemical Manufacturing Area Sources: This source is not subject to 40 CFR 63, Subpart VVVVVV (NESHAP for Chemical Manufacturing Area Sources), because the pharmaceutical manufacturing operations at the source do not use or produce any of the HAPs described in 40 CFR 63.11494(a)(2). All research and development emission units, such as the B302 Flex Bay Modules and portable excipient spray dryer, are exempt pursuant to The B302 Flex Bay is exempt from this NESHAP because it is considered a research and development facility (40 CFR 63.11494(c)(3)), since they are considered research and development facilities.
Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 Volatile Organic Compounds (VOC) Limit [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the VOC emissions from the excipient spray dryer system shall not exceed 24 tons VOC per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of VOC in waste shipped off-site may be deducted from the reported monthly VOC emissions.

Compliance with this limit shall limit the potential to emit of VOC to less than twenty-five (25) tons per twelve (12) consecutive month period from the excipient spray dryer system and shall render the requirements of 326 IAC 8-1-6 not applicable to the excipient spray dryer system.

D.6.1 Particulate Emission Limitation for Manufacturing Processes [326 IAC 6-3-2]

(a) BHI Area

Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations for Manufacturing Processes), the allowable particulate emission rate from the urea prills unloading operation located at the BHI area shall meet the particulate emission rate established by the equation below. The urea prills unloading operation shall not exceed 47.2 pounds per hour when operating at a process weight rate of 66 tons per hour.

The pounds per hour limitation was calculated with the following equation:

\[ E = 55.0 \cdot P^{0.11} - 40 \]

where \( E \) = rate of emission in pounds per hour; and \( P \) = process weight rate in tons per hour

A particulate scrubber is an integral part of the urea prill unloading process and will operate at all times urea prills are unloaded.
(b) Building 130 Complex

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the urea prills unloading operation located at the Building 130 Complex shall meet the particulate emission rate established by the equation below. The urea prills unloading operation shall not exceed 35.4 pounds per hour when operating at a process weight rate of 25 tons per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 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

A particulate scrubber is integral to the urea prill unloading operation located at the Building 130 Complex and will operate at all times urea prills are unloaded.

D.6.2 Hazardous Air Pollutants (HAP) Minor Limits [326 IAC 20][40 CFR 63]

In order to render the source as an area source of hazardous air pollutant (HAP) emissions under Section 112 of the Clean Air Act (CAA), the Permittee shall comply with the following:

The total HAP emissions excluding acetonitrile (ACN) from the excipient spray dryer system shall not exceed 2.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. The amount of HAP in waste shipped offsite may be deducted from the reported monthly HAP emissions.

Compliance with this limit, combined with the potential to emit HAP emissions from the other emissions units at the source, shall limit the source-wide potential to emit single HAP to less than ten (10) tons per twelve (12) consecutive month period and the source-wide potential to emit total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA).

D.6.3 Particulate Matter Limit [326 IAC 6.5-1]

Pursuant to 326 IAC 6.5-1-2(a), particulate matter (PM) emissions from the excipient spray dryer system shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf))

Compliance Determination Requirements [326 IAC 2-7-6]

D.6.4 VOC and HAP Determination

(a) To determine the compliance status with Condition D.6.1, the Permittee shall determine VOC emissions from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.

(b) To determine the compliance status with Condition D.6.2, the Permittee shall determine the total HAP emissions excluding ACN from the excipient spray dryer system by mass balance, by appropriate unit operation emission estimation procedures (e.g., Appendix B of "Control of Volatile Organic emissions from Manufacture of Synthesized Pharmaceutical Products, "EPA-450-2-78-029), or by other generally accepted methods (e.g., AP-42 emission factors), as approved by the Commissioner.
Note: The source wide requirements for ACN emissions are included in Section F.1.

D.6.5 Particulate Control

In order to assure compliance with Condition D.6.3, the integral control devices for particulate control shall be in operation and control emissions from the excipient spray dryer system at all times the excipient spray dryer system is in operation.

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

D.6.6 Record Keeping Requirements

(a) To document the compliance status with Conditions D.6.1 and D.6.2, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limit established in Conditions D.6.1 and D.6.2. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(1) The total VOC and total HAP usage excluding ACN for each month.

(2) The VOC and HAP excluding ACN content and amount of each liquid waste disposed from the portable spray dryer each month.

(3) The total VOC and total HAP excluding ACN emitted for each month.

(b) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the record keeping required by this condition.

D.6.7 Reporting Requirements

A quarterly report of VOC and total HAP emissions excluding ACN and a quarterly summary of the information to document the compliance status with Conditions D.6.1 and D.6.2 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(35).

SECTION F.1 EMISSIONS UNIT OPERATION CONDITIONS

F.1.4 Single HAP (ACN) from Components/Emissions Sources that are not Fugitive and not in Limited ACN Service [326 IAC 2-7-6]

(a) To determine compliance with Condition F.1.1, the Permittee shall determine the twelve (12) consecutive monthly total ACN emissions from the following:

<table>
<thead>
<tr>
<th>Manufacturing Process Vents in the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) BHI area,</td>
</tr>
<tr>
<td>(B) Building 130 Complex,</td>
</tr>
<tr>
<td>(C) Peptide manufacturing process (TZP).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage Tanks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) TK508;</td>
</tr>
<tr>
<td>(2) TK512;</td>
</tr>
<tr>
<td>(3) TK513;</td>
</tr>
<tr>
<td>(4) TK5311;</td>
</tr>
</tbody>
</table>
(5) TK5341;
(6) TK5351;
(7) TK1961;
(8) TK384A; and
(9) TK385A.

B302 Flex Space Modules, and Pilot Plant Equipment, and Excipient Spray Dryer (ESD-01)

Laboratories in B130 Complex and BHI area

(d) (1) B302 Flex Space Modules, and Pilot Plant Equipment Emissions, and Excipient Spray Dryer (ESD-01):

For each new unit B302 Flex Space module or process run in a pilot plant, the Permittee shall determine the monthly acetonitrile (ACN) emissions by mass balance or methods included in Attachment G of this permit, until such time that the new module is validated.

A new unit B302 Flex Space module or process run in a pilot plant shall be considered validated after it has been confirmed that its ACN emissions are emitted at less than a 2% emissions rate.

The Permittee shall determine the monthly acetonitrile (ACN) emissions from validated units B302 Flex Space modules or pilot plant equipment by using the following equation:

\[
\text{ACN Actual emissions (ton/month)} = \text{ACN usage (gal/month)} \times \text{ACN content (lbs ACN/gal)} \times \frac{1}{2000} \times 2\%
\]

Where:
2% is the emission rate that is based on mass balance tests conducted by the Permittee.
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Quarterly Report

Source Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 S. Harding St., Indianapolis, Indiana 46221
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225
Part 70 Permit No.: T097-36207-00072
Facility: Research and development portable excipient spray dryer system, identified as ESD-01
Parameter: VOC Emissions
Limit: Shall not exceed 24 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>QUARTER: ____________________</th>
<th>YEAR: ____________________</th>
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<tr>
<td>Month</td>
<td>Column 1</td>
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<td></td>
<td>This Month (Tons)</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
   Deviation has been reported on: _________________

Submitted by: ____________________________________________________
Title / Position: ___________________________________________________
Signature: _______________________________________________________
Date: __________________________________________________________
Phone: __________________________________________________________

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
Deviation has been reported on: _________________
## Quarterly Report

**Source Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 S. Harding St., Indianapolis, Indiana 46221  
1297 S. White River Pkwy. E., Indianapolis, Indiana 46225  
**Part 70 Permit No.:** T097-36207-00072  
**Facility:** Research and development portable excipient spray dryer system, identified as ESD-01  
**Parameter:** Total HAP Emissions excluding ACN  
**Limit:** Shall not exceed 2.5 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

### QUARTER: ____________________ YEAR: ____________________

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<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
</tr>
</thead>
<tbody>
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<td>Previous 11 Months (Tons)</td>
<td>12 Month Total (Tons)</td>
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<tr>
<td>This Month (Tons)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [ ] No deviation occurred in this quarter.  
- [x] Deviation/s occurred in this quarter.  
  Deviation has been reported on: _________________

Submitted by: ________________________________  
Title / Position: ________________________________  
Signature: ________________________________  
Date: ________________________________  
Phone: ________________________________  

...
Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on November 9, 2020. Additional information was received on May 18, 2021.

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 097-43457-00072. The operation of this proposed modification shall be subject to the conditions of the attached proposed Significant Permit Modification No. 097-43468-00072.

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Tamara Havics, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 232-8219 or (800) 451-6027, and ask for Tamara Havics or (317) 232-8219.

(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 Air Permits page on the Internet at: https://www.in.gov/idem/airpermit/2358.htm; and the Citizens' Guide to IDEM on the Internet at: https://www.in.gov/idem/6900.htm.
Appendix A: Emissions Calculations

Emission Summary

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225

Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Uncontrolled Potential to Emit Prior to Integral (ton/yr)

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
<th>CO</th>
<th>H2S</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI Area</td>
<td>&lt; 9.00</td>
<td>&lt; 9.00</td>
<td>&lt; 9.00</td>
<td>0.00</td>
<td>0.00</td>
<td>&lt; 40</td>
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<tr>
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<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
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<td>Diesel EG B141C</td>
<td>0.51</td>
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<td>0.29</td>
<td>0.30</td>
<td>9.50</td>
<td>0.52</td>
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<td>0.89</td>
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<td>TZP Production</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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Insignificant Activities

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<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
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<th>H2S</th>
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<td>Other insig activities (each)</td>
<td>&lt; 5lb/hr or 25 lb/day</td>
<td>&lt; 5lb/hr or 25 lb/day</td>
<td>&lt; 5lb/hr or 25 lb/day</td>
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<tr>
<td>Total Emissions</td>
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<td>&lt; 100</td>
<td>&lt; 100</td>
<td>3.36</td>
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Uncontrolled Potential to Emit After Integral (ton/yr)

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
<th>CO</th>
<th>H2S</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHI Area</td>
<td>&lt; 9.00</td>
<td>&lt; 9.00</td>
<td>&lt; 9.00</td>
<td>0.00</td>
<td>0.00</td>
<td>&lt; 40</td>
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<tr>
<td>B130 complex</td>
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<tr>
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<td>B302 Lab</td>
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<td>TZP Production</td>
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<td>-</td>
<td>-</td>
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</table>

Insignificant Activities

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
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<th>PM$_{2.5}$</th>
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## Emissions Summary

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

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* Shaded cells indicate where limits are included

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### Appendix A: Emissions Calculations

#### HAPs Emissions - Unlimited

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

#### Unlimited Potential to Emit (TPY) - HAPs

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<tr>
<td><strong>Total</strong></td>
<td>57.31</td>
<td>37.92</td>
<td>35.13</td>
<td>33.07</td>
<td>33.56</td>
<td>33.53</td>
<td>33.53</td>
<td>33.53</td>
<td>33.04</td>
<td>0.45</td>
<td>0.35</td>
<td>0.80</td>
<td>21.90</td>
<td></td>
<td>67.22</td>
</tr>
</tbody>
</table>

\(^1\)B302 Flex Bay Space values are projections because the facility has not begun emission related operations.  
\(^2\)Values provided are engineering estimates based upon mass balances for similar operations.  
\(^3\)The Total for each individual HAP except ACN includes the 2.5 ton/year limit for the Excipient Spray Dryer. The sum of the Total HAPs includes this 2.5 ton/year limit only once.
### Appendix A: Emissions Calculations

**Excipient Spray Dryer ESD-01**

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

#### VOC/HAP Potential to Emit (ton/yr)

<table>
<thead>
<tr>
<th>Capacity (liters/hour)</th>
<th>Maximum VOC/HAP content (%)</th>
<th>VOC/HAP density (kg/l)</th>
<th>VOC/HAP PTE (lb/hr)</th>
<th>VOC/HAP PTE (ton/yr)</th>
<th>326 IAC 8-1-6 Limited VOC (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>95%</td>
<td>0.9</td>
<td>7.54</td>
<td>33.03</td>
<td>24.0</td>
</tr>
</tbody>
</table>

**Assumptions and Methodology:**
- Capacity based on conservative assumption of maximum throughput of solvent through spray dryer
- Maximum VOC/HAP content is a conservative assumption of the maximum amount of VOC/HAP in solution
- VOC/HAP density based on density of range of solvents potentially used in spray dryer. Most solvents have approximately 0.8 kg/l density
- PTE (lb/hr) = Capacity (liters/hr) * Max VOC/HAP content * density (kg/liter) * 2.205 lb/kg
- PTE (ton/yr) = Capacity (liters/hr) * Max VOC/HAP content * density (kg/liter) * 2.205 lb/kg * 8760 hr/yr * ton/2000 lb

#### PM/PM10/PM2.5 Potential to Emit (ton/yr)

<table>
<thead>
<tr>
<th>Capacity (liters/hour)</th>
<th>Maximum solids content (kg/l)</th>
<th>Maximum solids processed (lb/hr)</th>
<th>Integral cyclone control efficiency</th>
<th>Integral filter sock/HEPA filter control efficiency</th>
<th>Combined integral control efficiency</th>
<th>PM/PM10/PM2.5 PTE (lb/hr)</th>
<th>PM/PM10/PM2.5 PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1.2</td>
<td>10.6</td>
<td>98%</td>
<td>99.95%</td>
<td>99.999%</td>
<td>0.000106</td>
<td>0.000464</td>
</tr>
</tbody>
</table>

**Assumptions and Methodology:**
- Capacity based on conservative assumption of maximum throughput of solvent through spray dryer
- Maximum solids content based solution containing 40% by volume solids and solids density of 3 kg/liter
- Maximum solids processed (lb/hr) = capacity (liters/hr) * max solids content (kg/liter) * 2.205 lb/kg
- Combined integral control efficiency = CE1 + CE2 - (CE1 * CE2)
- PTE (lb/hr) = Maximum solids processed (lb/hr) * (1 - combined integral control efficiency)
- PTE (ton/yr) = Capacity (liters/hr) * density (kg/liter) * 2.205 lb/kg * (1 - integral control efficiency) * 8760 hr/yr * ton/2000 lb
Appendix A: Emissions Calculations

Emission Summary

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

EU-EPTankLarge EU-EPTankSmall
Max Current: 5000 Amps Max Current: 1000 Amps
PTE Hours/Year: 8760 PTE Hours/Year: 8760

Uncontrolled Emission Factor: 0.12 grains/Amp-hr 0.12 grains/Amp-hr
750.86 lb/yr Cr 150.17 lb/yr Cr
584.02 lb/yr Ni 116.80 lb/yr Ni
0.38 ton/yr Cr 0.08 ton/yr Cr
0.29 ton/yr Ni 0.06 ton/yr Ni

Methodology:
lb/yr Cr (8760) = Emission Factor (grains/Amp-hr) * 8760 hr/yr * Max Current (Amps) / 7000 grains/lb
lb/yr Ni (8760) = lb/yr Cr (8760) * 0.7778
ton/yr Cr/Ni = lb/yr Cr/Ni (8760) / 2000 lbs/ton

Notes:
Based upon the metalurgical components for 316 Stainless Steel, other HAP emissions are ratios of those contents when those compounds are present in the wasted liquid. Present: Cr, Ni only. Ni at ratio of 0.7778 of Cr in 316 SS. 316 SS gives the most conservative ratio for Ni.

Emission Factor is from AP-42 Chapter 12, Table 12.20-1 (This is the electroplating emission factor from AP-42 since there is not a factor for Electropolishing)
## Appendix A: Emissions Calculations

### Summary of Emission from TZP Production

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

### Dryer Batches per year

<table>
<thead>
<tr>
<th>Process</th>
<th>Uncontrolled VOC PTE (tpy)</th>
<th>Single HAP (lbs ACN per Dryer Batch)</th>
<th>Single HAP PTE (Uncontrolled ACN) (tpy)</th>
<th>Single HAP (lbs MTBE per Dryer Batch)</th>
<th>Single HAP PTE (Uncontrolled MTBE) (tpy)</th>
<th>Uncontrolled Total HAP PTE (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer Make-up</td>
<td>0.71</td>
<td>0.04</td>
<td>0.04</td>
<td>0.00</td>
<td>0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Dissolution</td>
<td>5.85</td>
<td>0.32</td>
<td>0.32</td>
<td>0.23</td>
<td>0.01</td>
<td>0.33</td>
</tr>
<tr>
<td>Purification</td>
<td>145.33</td>
<td>7.99</td>
<td>7.82</td>
<td>0.45</td>
<td>0.02</td>
<td>7.85</td>
</tr>
<tr>
<td>Drying</td>
<td>63.44</td>
<td>3.49</td>
<td>0.00</td>
<td>63.13</td>
<td>3.47</td>
<td>3.47</td>
</tr>
<tr>
<td>Storage</td>
<td>1.49</td>
<td>1.10</td>
<td>0.39</td>
<td></td>
<td></td>
<td>1.49</td>
</tr>
<tr>
<td>Fugitive</td>
<td>2.33</td>
<td>1.41</td>
<td>0.46</td>
<td></td>
<td></td>
<td>1.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15.66</strong></td>
<td><strong>10.69</strong></td>
<td><strong>4.36</strong></td>
<td></td>
<td></td>
<td><strong>15.05</strong></td>
</tr>
</tbody>
</table>

**Note:**  
*More details regarding these calculations were submitted as part of the application for SSM No. 097-42180-00072  
**A condenser system periodically controls different units within the Buffer Make-up, Dissolution, Purification and Drying processes acetonitrile (ACN)  
Methyl tertiary butyl ether (MTBE)

### Methodology:

- **Uncontrolled VOC PTE (tpy) =** lbs VOC per Dryer Batch * Dryer Batches per year / 2000 lbs/ton  
- **Single HAP PTE (Uncontrolled ACN) (tpy) =** Single HAP (lbs ACN per Dryer Batch) * Dryer Batches per year / 2000 lbs/ton  
- **Single HAP PTE (Uncontrolled MTBE) (tpy) =** Single HAP (lbs MTBE per Dryer Batch) * Dryer Batches per year / 2000 lbs/ton  
- **Uncontrolled Total HAP PTE (tpy) =** Single HAP PTE (Uncontrolled ACN) (tpy) + Single HAP PTE (Uncontrolled MTBE) (tpy)
### Appendix A: Emissions Calculations

#### HAP Emissions from 130 BHI Process Vents

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1287 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

<table>
<thead>
<tr>
<th>Unit Operation</th>
<th>Crystal Batches</th>
<th>Steps</th>
<th>Potential ACN (lbs./crystals batch)</th>
<th>Potential ACN (Tons per Year)</th>
<th>Potential Methanol (lbs./crystals batch)</th>
<th>Potential Methanol (Tons per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B130 Reverse Phase</td>
<td>480</td>
<td>1</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL</td>
<td>7.14</td>
<td>1.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B130 Crystals</td>
<td></td>
<td>1</td>
<td>1.4</td>
<td>0.34</td>
<td>1.8</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHI Reverse Phase</td>
<td>360</td>
<td>1</td>
<td>0.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>0.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>9.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL</td>
<td>17.58</td>
<td>3.16</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>BHI Crystals</td>
<td></td>
<td>1</td>
<td>0.0</td>
<td></td>
<td></td>
<td>0.27</td>
</tr>
</tbody>
</table>

**Notes**
The emission factors are calculated using the methodologies in 40 CFR 63.1257(d). Lilly utilizes a chemical process modeling program, Aspen Batch Plus, to determine the emissions from process vents in the pharmaceutical manufacturing areas.
### Emissions Calculations

#### HAPs Emissions from Storage Tanks

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

#### B130 Storage Tanks

<table>
<thead>
<tr>
<th></th>
<th>ACN Potential lbs/year</th>
<th>ACN TPY</th>
<th>Methanol lbs/year</th>
<th>Methanol TPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Tanks (TK508 and TK512)</td>
<td>728</td>
<td>0.36</td>
<td>66</td>
<td>0.03</td>
</tr>
<tr>
<td>Bulk ACN Storage (TK513)</td>
<td>566</td>
<td>0.28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SHI Storage Tanks

<table>
<thead>
<tr>
<th></th>
<th>ACN Potential lbs/year</th>
<th>ACN TPY</th>
<th>Methanol lbs/year</th>
<th>Methanol TPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Tanks (TK5311 &amp; TK5312)</td>
<td>1104</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk ACN Storage (TK5351)</td>
<td>867</td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### LTC North Storage Tanks

<table>
<thead>
<tr>
<th></th>
<th>Methanol lbs/year</th>
<th>Methanol TPY</th>
<th>Hexane lbs/year</th>
<th>Chloroform lbs/year</th>
<th>m-Cresol lbs/year</th>
<th>m-Cresol TPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Tanks (TK1981 and TK384A)</td>
<td>8</td>
<td>0.00</td>
<td>9</td>
<td>0.00</td>
<td>3</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Company Name:
Eli Lilly and Company, Lilly Technology Center

### Source Address:
1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225

### Operating Permit Number:
T097-36207-00072

### SSM and SPM Permit No.:
097-43457-00072 & 097-43468-00072

### Permit Reviewer:
Tamara Havics

<table>
<thead>
<tr>
<th>VOC Emissions from LDAR Emissions</th>
<th>Current Required Monitoring Frequency &amp; Type</th>
<th>Emissions Determination Method</th>
<th>Type</th>
<th>Screening Value</th>
<th>Correlation Equation</th>
<th>lbs emitted/yr/component</th>
<th>Total emissions screening value (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VOC Gas Vapor and Light Liquid Connectors</strong></td>
<td>8791</td>
<td>4 years M21</td>
<td>None</td>
<td>Connector</td>
<td>20</td>
<td>0.83</td>
<td>5.28</td>
</tr>
<tr>
<td><strong>VOC Gas Vapor and Light Liquid Connectors</strong></td>
<td>1076</td>
<td>None</td>
<td>None</td>
<td>Connector</td>
<td>20</td>
<td>0.83</td>
<td>0.45</td>
</tr>
<tr>
<td><strong>VOC Liquid Leakless Design</strong></td>
<td>21</td>
<td>None</td>
<td>None</td>
<td>LL Valve</td>
<td>20</td>
<td>0.83</td>
<td>0.45</td>
</tr>
<tr>
<td><strong>VOC Liquid Leakless Design</strong></td>
<td>29</td>
<td>Quarterly M21</td>
<td>None</td>
<td>LL Valve</td>
<td>20</td>
<td>0.83</td>
<td>0.06</td>
</tr>
<tr>
<td><strong>VOC Liquid Leakless Design</strong></td>
<td>1296</td>
<td>2 years M21</td>
<td>None</td>
<td>LL Valve</td>
<td>20</td>
<td>0.83</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>PMCT Gas Vapor and Light Liquid Connectors</strong></td>
<td>27</td>
<td>Quarterly M21, weekly visual</td>
<td>LL Pumps</td>
<td>20</td>
<td>0.83</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td><strong>PMCT Gas Vapor and Light Liquid Connectors</strong></td>
<td>3263</td>
<td>4 years M21</td>
<td>Semi-Annual Visual and M21 for observed leaks and repairs</td>
<td>Connector</td>
<td>20</td>
<td>0.83</td>
<td>1.36</td>
</tr>
<tr>
<td><strong>PMCT Gas Vapor and Light Liquid Connectors</strong></td>
<td>842</td>
<td>2 years M21</td>
<td>Semi-Annual Visual and M21 for observed leaks and repairs</td>
<td>LL Valve</td>
<td>20</td>
<td>0.83</td>
<td>0.57</td>
</tr>
<tr>
<td><strong>EPABB Connectors</strong></td>
<td>16</td>
<td>Weekly visual</td>
<td>None</td>
<td>20</td>
<td>0.83</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td><strong>EPABB Light Liquid Pump Leakless Design</strong></td>
<td>8</td>
<td>Weekly visual, 1 year M21</td>
<td>None</td>
<td>20</td>
<td>0.83</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td><strong>EPABB Light Liquid Pump Leakless Design</strong></td>
<td>12</td>
<td>Weekly visual, monthly M21</td>
<td>None</td>
<td>20</td>
<td>0.83</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td><strong>EPABB Valves</strong></td>
<td>643</td>
<td>Weekly visual</td>
<td>None</td>
<td>20</td>
<td>0.83</td>
<td>0.63</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
The component counts are from 01-Jul-2018 to 31-Dec-2018.
The VOC components are not used in the ACN PTE calculations as the ACN components are accounted for in the PMACT component counts.
The correlation equation used to calculate fugitive emissions is from the "Emissions Estimation Protocol for Petroleum Refineries."
### Emissions Calculations

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:**  
1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics  
**Date:** 3/31/2019

#### HAP Emissions from Chemical Usage

<table>
<thead>
<tr>
<th>Substance</th>
<th>Usage (tons/yr)</th>
<th>Emission Factor</th>
<th>Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>30.19</td>
<td>0.02 tons per ton</td>
<td>0.60</td>
</tr>
<tr>
<td>Methanol</td>
<td>7.47</td>
<td>0.02 tons per ton</td>
<td>0.15</td>
</tr>
<tr>
<td>Methyl tert-butyl ether</td>
<td>1.60</td>
<td>0.02 tons per ton</td>
<td>0.03</td>
</tr>
<tr>
<td>Hexane</td>
<td>0.52</td>
<td>0.02 tons per ton</td>
<td>0.01</td>
</tr>
<tr>
<td>Dimethyl formamide</td>
<td>1.29</td>
<td>0.02 tons per ton</td>
<td>0.03</td>
</tr>
<tr>
<td>Toluene</td>
<td>0.33</td>
<td>0.02 tons per ton</td>
<td>0.01</td>
</tr>
<tr>
<td>Total</td>
<td>46.21</td>
<td></td>
<td>1.57</td>
</tr>
</tbody>
</table>

#### Notes:

Emission factor is from Lilly emissions study "DETERMINATION OF EMISSION FACTOR FOR CHEMICAL USAGE THROUGH MASS-BALANCE ANALYSIS 8/9/2019"
Appendix A: Emissions Calculations

Total HAP Emissions from Emergency Generators

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43468-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Emission Calculations

**<600 hp Emissions**

Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Engine Name</th>
<th>HP</th>
<th>Install Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>B185</td>
<td>FP 1A</td>
<td>327</td>
</tr>
<tr>
<td>B185</td>
<td>FP 2A</td>
<td>327</td>
</tr>
<tr>
<td>B134</td>
<td>B134</td>
<td>166</td>
</tr>
<tr>
<td>B134</td>
<td>B141 A</td>
<td>1350</td>
</tr>
<tr>
<td>B141</td>
<td>B141 B</td>
<td>1350</td>
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<tr>
<td>B141</td>
<td>B141 C</td>
<td>2923</td>
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<td>B151</td>
<td>B151</td>
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<td>380</td>
</tr>
<tr>
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<td>B314-2</td>
<td>324</td>
</tr>
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<td>B314</td>
<td>B314-3</td>
<td>755</td>
</tr>
<tr>
<td>B358</td>
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<td>755</td>
</tr>
<tr>
<td>B360</td>
<td>B360-1</td>
<td>145</td>
</tr>
<tr>
<td>B360</td>
<td>B360-2</td>
<td>176</td>
</tr>
<tr>
<td>B401</td>
<td>B401</td>
<td>1528</td>
</tr>
</tbody>
</table>

PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>1,3-Butadiene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>0.0033</td>
<td>0.0014</td>
<td>0.0010</td>
<td>0.0001</td>
<td>0.0042</td>
<td>0.0027</td>
<td>0.0003</td>
<td>0.0006</td>
</tr>
</tbody>
</table>

**PM and NOx emission factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2**

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr**

**Total PAH Emissions (tons/yr)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Emission in tons/yr</td>
<td>584.38</td>
<td>584.39</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Emission of Total HAPs (tons/yr) 1.37E-02**

**Methodology**

Emissions are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2.

**CO2 emissions calculated based on output rating (hp)**

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>Maximum Hours Operated per Year</th>
<th>Potential Throughput (hp-hr/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;600 HP Engines</td>
<td>176</td>
<td>15.62</td>
</tr>
<tr>
<td>600-1000 HP Engines</td>
<td>1,100</td>
<td>3,514</td>
</tr>
<tr>
<td>&gt;1000 HP Engines</td>
<td>6,392,000</td>
<td>20,157</td>
</tr>
</tbody>
</table>

**Sulfur Content (S) of Fuel (% by weight)**

<table>
<thead>
<tr>
<th>Source Address</th>
<th>Sulfur Content (S)</th>
<th>0.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>1297 S. White River Pkwy. E., Indianapolis, IN 46225</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

**Green House Gas Emissions (GHG)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Emission in tons/yr</td>
<td>584.38</td>
<td>584.39</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Emission of Total CO2 (tons/yr) 1.37E-02**

**Methodology**

Emissions are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2.

**CO2 emissions calculated based on output rating (hp)**

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>Maximum Hours Operated per Year</th>
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</thead>
<tbody>
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</tbody>
</table>

**Potential Emission of Total CO2 (tons/yr) 1.37E-02**

**Methodology**

Emissions are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2.

**CO2 emissions calculated based on output rating (hp)**

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
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<th>Potential Throughput (hp-hr/yr)</th>
</tr>
</thead>
<tbody>
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<td></td>
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**Green House Gas Emissions (GHG)**

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<td>584.39</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Emission of Total CO2 (tons/yr) 1.37E-02**
The following are HVAC Units at B401 on the LTC Campus. Since they are seasonal units, actual emissions are considerably less than PTE. PTE has been based upon 8760 hrs of operation per year. All other buildings on the campus utilize steam heating from the Indianapolis Steam Loop through Citizens and Covanta. From Permit Section A.4(b):

Eight (8) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Units 1-8, each with a maximum heat input capacity of 0.35 MMBtu/hr, no control.

One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 9, with a maximum heat input capacity of 0.08 MMBtu/hr, no control.

Two (2) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Unit 10 and Rooftop Unit 11, each with a maximum heat input capacity of 0.06 MMBtu/hr, no control.

One (1) natural gas-fired rooftop HVAC unit, approved in 2016 for construction, identified as Rooftop Unit 12, with a maximum heat input capacity of 0.15 MMBtu/hr, no control.

**Methodology**

All emission factors are based on normal firing.

MMBu = 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/1.020 MMBtu

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

---

**Appendix A: Emissions Calculations**

**Total HAP Emissions from Natural Gas Combustion**

**Company Name:** Eli Lilly and Company, Lilly Technology Center

**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221

1297 S. White River Pkwy. E., Indianapolis, IN 46225

**Operating Permit Number:** T097-36207-00072

**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072

**Permit Reviewer:** Tamara Havics

---

The following are HVAC Units at B401 on the LTC Campus. Since they are seasonal units, actual emissions are considerably less than PTE. PTE has been based upon 8760 hrs of operation per year. All other buildings on the campus utilize steam heating from the Indianapolis Steam Loop through Citizens and Covanta. From Permit Section A.4(b):

Eight (8) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Units 1-8, each with a maximum heat input capacity of 0.35 MMBtu/hr, no control.

One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 9, with a maximum heat input capacity of 0.08 MMBtu/hr, no control.

Two (2) natural gas-fired rooftop HVAC units, approved in 2015 for construction, identified as Rooftop Unit 10 and Rooftop Unit 11, each with a maximum heat input capacity of 0.06 MMBtu/hr, no control.

One (1) natural gas-fired rooftop HVAC unit, approved in 2015 for construction, identified as Rooftop Unit 12, with a maximum heat input capacity of 0.15 MMBtu/hr, no control.

**Total Heat Input:**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>1.9</td>
<td>7.6</td>
<td>7.6</td>
<td>0.6</td>
<td>100</td>
<td>5.5</td>
<td>84</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
<td>1.4</td>
<td>0.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

*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

---

**HAPs - Organics**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Hexane</th>
<th>Toluene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMcf</td>
<td>2.1E-03</td>
<td>1.2E-03</td>
<td>7.5E-02</td>
<td>1.8E+00</td>
<td>3.4E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>2.841E-05</td>
<td>1.623E-05</td>
<td>1.014E-03</td>
<td>2.435E-02</td>
<td>4.599E-05</td>
</tr>
</tbody>
</table>

**HAPs - Metals**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Lead</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMcf</td>
<td>5.0E-04</td>
<td>1.1E-03</td>
<td>1.4E-03</td>
<td>3.8E-04</td>
<td>2.1E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>6.763E-06</td>
<td>1.488E-05</td>
<td>1.894E-05</td>
<td>5.140E-06</td>
<td>2.841E-05</td>
</tr>
</tbody>
</table>

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
B333 Fermentation

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Potential to emit Hydrogen Sulfide from Fermenters

A sulfur-containing compound (SCC) is added to the fermenters as part of the fermentation nutrients. The compound is metabolized in the fermentation; with the result that hydrogen sulfide (H2S) is emitted from the fermenters. More SCC is added than is expected to be metabolized. Data taken in 2004 and 2010, on two different products, which differ only slightly, showed that about 35.5% of the sulfur added to the fermentation is emitted as H2S.

Number of Fermenters: 2

Batch cycle time (start to start): 34 hours
# lot/year potential = 8760 hr X 1 batch X 2 fermenters = 515 lots yr

Moles of SCC used per batch: 1.74
S atom per molecule: 1

Mole-equivalents sulfur per batch = \( \frac{1 \text{ atom}}{\text{mole}} \times \frac{1.74 \text{ moles}}{\text{mole}} = \frac{1.74 \text{ mole-equivalents Sulfur}}{\text{Batch}} \)

Conversion of SCC to H2S: 0.355 moles H2S/mole SCC used (35.5 % conversion, highest measured batch)
Molecular weight H2S = 34 lbs/lb mole

If all SCC were to be emitted stoichiometrically as H2S, the potential emissions will be:

H2S Emissions (Stoichiometric) = \( \frac{515 \text{ lots}}{\text{yr}} \times \frac{1.74 \text{ moles SCC}}{\text{lot}} \times \frac{0.4 \text{ mole eqvl S}}{\text{mole SCC}} \times \frac{34 \text{ lbs H2S}}{1 \text{ ton H2S}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \)

H2S emissions (tons per year) = 5.41 tpy
Appendix A: Emissions Calculations

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225

Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

MW of Cysteine
Amount of Cysteine added per Lot 175.6 #/mol 136 kg or 299.8 pounds
Molecular Formula of L-Cysteine Hydrochloride Monohydrate C3H7NO2S

number of moles of cysteine added per lot 1.71 pound mols

Mass of each component of cysteine added per lot Contribution to MW

<table>
<thead>
<tr>
<th>Component</th>
<th>MW</th>
<th>stoichiometry</th>
<th>Mass (pounds)</th>
<th>Contribution to MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>12.0107</td>
<td>3</td>
<td>61.51</td>
<td>36.03</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1.00794</td>
<td>7</td>
<td>12.04</td>
<td>7.06</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>14.0067</td>
<td>1</td>
<td>23.91</td>
<td>14.01</td>
</tr>
<tr>
<td>Oxygen</td>
<td>15.999</td>
<td>2</td>
<td>54.62</td>
<td>32.00</td>
</tr>
<tr>
<td>Sulfur</td>
<td>32.065</td>
<td>1</td>
<td>54.74</td>
<td>32.07</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1.00794</td>
<td>1</td>
<td>1.38</td>
<td>1.01</td>
</tr>
<tr>
<td>Chloride</td>
<td>35.453</td>
<td>1</td>
<td>48.51</td>
<td>35.45</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1.00794</td>
<td>2</td>
<td>2.76</td>
<td>2.02</td>
</tr>
<tr>
<td>Oxygen</td>
<td>15.999</td>
<td>1</td>
<td>21.89</td>
<td>16.00</td>
</tr>
</tbody>
</table>

TOTAL MASS of Cysteine 281.4 pounds 175.6 MW

If the TOTAL amount of sulfur in the cysteine is 54.74 pounds than the most amount of hydrogen sulfide produced is:

<table>
<thead>
<tr>
<th>Component</th>
<th>MW</th>
<th>stoichiometry</th>
<th>wt. %</th>
<th>Contribution to MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen</td>
<td>1.00794</td>
<td>2</td>
<td>2.02</td>
<td>5.91%</td>
</tr>
<tr>
<td>Sulfur</td>
<td>32.065</td>
<td>1</td>
<td>32.07</td>
<td>94.09%</td>
</tr>
</tbody>
</table>

MW of Hydrogen Sulfide 34.1

Total amount of H2S is then 54.7 pounds sulfur divided by 94.09% equals 58.18 pounds of Hydrogen Sulfide potential produced per lot.

Total Number of Lots CAPABLE of being produced based on worst case 12 month run time, 316 lots per year 316

Total worst-case amount of hydrogen sulfide emitted in a year would be 18384.85 pounds or 9.19 tons per year
### Appendix A: Emission Calculations

**Large Reciprocating Internal Combustion Engines - Diesel Fuel**

**Output Rating (>600 HP)**

**Maximum Input Rate (>4.2 MMBtu/hr)**

**B141C**

<table>
<thead>
<tr>
<th>Company Name:</th>
<th>Eli Lilly and Company, Lilly Technology Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Address:</td>
<td>1555 South Harding Street, Indianapolis, IN 46221</td>
</tr>
<tr>
<td>Operating Permit Number:</td>
<td>T097-36207-00072</td>
</tr>
<tr>
<td>SSM and SPM Permit No.:</td>
<td>097-43457-00072 &amp; 097-43468-00072</td>
</tr>
<tr>
<td>Permit Reviewer:</td>
<td>Tamara Havics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>2923.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Hours Operated per Year</td>
<td>500</td>
</tr>
<tr>
<td>Potential Throughput (hp-hr/yr)</td>
<td>1,461,500</td>
</tr>
<tr>
<td>Sulfur Content (S) of Fuel (% by weight)</td>
<td>0.050</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>7.00E-04</td>
<td>4.01E-04</td>
<td>4.01E-04</td>
<td>4.05E-04</td>
<td>1.30E-02</td>
<td>7.05E-04</td>
<td>5.50E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.51</td>
<td>0.29</td>
<td>0.29</td>
<td>0.30</td>
<td>9.50</td>
<td>0.52</td>
<td>4.02</td>
</tr>
</tbody>
</table>

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-1 and Table 3.4-2). The PM10 emission factor is the sum of filterable PM10 and condensable particulate. The PM2.5 emission factor is the sum of filterable particulate less than 3 um and condensable particulate.

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr**

### Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
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<th>Toluene</th>
<th>Xylene</th>
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<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>5.43E-06</td>
<td>1.97E-06</td>
<td>1.35E-06</td>
<td>5.52E-07</td>
<td>1.76E-07</td>
<td>5.52E-08</td>
<td>1.48E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>3.97E-03</td>
<td>1.44E-03</td>
<td>9.87E-04</td>
<td>4.04E-04</td>
<td>1.29E-04</td>
<td>4.03E-05</td>
<td>1.08E-03</td>
</tr>
</tbody>
</table>

****PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

#### Methodology

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4

**Methodology**

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Appendix A: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)
B141D

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

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<tr>
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</tr>
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</tbody>
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<table>
<thead>
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<th>PM*</th>
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<th>PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>7.00E-04</td>
<td>4.01E-04</td>
<td>4.01E-04</td>
<td>1.21E-03</td>
<td>1.30E-02</td>
<td>7.05E-04</td>
<td>5.50E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.51</td>
<td>0.29</td>
<td>0.29</td>
<td>0.89</td>
<td>9.50</td>
<td>0.52</td>
<td>4.02</td>
</tr>
</tbody>
</table>

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-1 and Table 3.4-2). The PM10 emission factor is the sum of filterable PM10 and condensable particulate. The PM2.5 emission factor is the sum of filterable particulate less than 3 um and condensable particulate.

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>5.43E-06</td>
<td>1.97E-06</td>
<td>1.35E-06</td>
<td>5.52E-07</td>
<td>1.76E-07</td>
<td>5.52E-08</td>
<td>1.48E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>3.97E-03</td>
<td>1.44E-03</td>
<td>9.87E-04</td>
<td>4.04E-04</td>
<td>1.29E-04</td>
<td>4.03E-05</td>
<td>1.08E-03</td>
</tr>
</tbody>
</table>

***PAH = Polynuclear Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-3).

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4

Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

Potential Emission of Total HAPs (tons/yr) 8.05E-03
## Appendix A: Emissions Calculations

### Potential to Emit VOC from the Laboratories

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>47273</td>
<td>13.85%</td>
<td>60799.17</td>
<td>8420.68</td>
<td>52378.484</td>
<td>30.40</td>
<td>4.21</td>
<td>26.19</td>
</tr>
</tbody>
</table>

### Methodology

- **Organic Liquid Used (OLT) (lbs/yr) =** Total Organic Waste (OW<sub>T</sub>) (lbs/yr) / (1 - Worst Case Estimate for Evaporation (%))
- **Organic Liquid Evaporated (OLE) (lbs/yr) =** Organic Liquid Used (OLT) (lbs/yr) * Worst Case Estimate for Evaporation (%)
- **Total Organic Waste (OW<sub>T</sub>) (lbs/yr) =** Max. Total Hazardous Waste Generated (HW<sub>T</sub>) (gal/yr) * Maximum Volume Fraction Organic Content of Hazardous Waste (%) * Density (lb/gal)
- **Organic Liquid Used (OLT) (tons/yr) =** Organic Liquid Used (OLT) (lbs/yr) / 2000 lbs
- **Organic Liquid Evaporated (OLE) (tons/yr) =** Organic Liquid Evaporated (OLE) (lbs/yr) / 2000 lbs
- **Total Organic Waste (OW<sub>T</sub>) (tons/yr) =** Total Organic Waste (OW<sub>T</sub>) (lbs/yr) / 2000 lbs
### Appendix A: Emissions Calculations

**Potential to Emit Particulate and VOC from the High Bay Flex Space**

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** T097-36207-00072  
**SSM and SPM Permit No.:** 097-43457-00072 & 097-43468-00072  
**Permit Reviewer:** Tamara Havics

#### Batch Process Emissions

<table>
<thead>
<tr>
<th>Worst Case VOC Emission Rate (kg/hr)</th>
<th>Worst Case Batch Drying time (hrs/day)</th>
<th>Uncontrolled PTE VOC (lbs/yr)</th>
<th>Uncontrolled PTE VOC (tons/yr)</th>
<th>Particulate filter collection PM Control Efficiency (%)</th>
<th>Worst Case (highest year) Particulate, Collected on HEPA filter (lbs/hr)</th>
<th>Uncontrolled Potential to Emit PM/PM10/PM2.5 (lbs/yr)</th>
<th>Uncontrolled Potential to Emit PM/PM10/PM2.5 (tons/yr)</th>
<th>Controlled Potential to Emit PM/PM10/PM2.5 (lbs/yr)</th>
<th>Controlled Potential to Emit PM/PM10/PM2.5 (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>12</td>
<td>77088</td>
<td>38.544</td>
<td>99.9%</td>
<td>1.3925</td>
<td>12210.51</td>
<td>6.11</td>
<td>12.21</td>
<td>0.0061</td>
</tr>
</tbody>
</table>

**Methodology**

Uncontrolled PTE VOC (lbs/yr) = Worst Case VOC Emission Rate (kg/hr) * 2.2 lbs/kg * Worst Case Batch Drying time (hrs/day) * 365 days/year  
Uncontrolled PTE VOC (tons/yr) = Uncontrolled PTE VOC (lbs/yr) / 2000 lbs  
Uncontrolled Potential to Emit PM/PM10/PM2.5 (lbs/yr) = Worst Case Particulate Collected (lbs/hr) * 8760 hours  
Uncontrolled Potential to Emit PM/PM10/PM2.5 (tons/yr) = Uncontrolled Potential to Emit PM/PM10/PM2.5 (lbs/yr) / 2000 lbs  
Controlled Potential to Emit PM/PM10/PM2.5 (lbs/yr) = Uncontrolled Potential to Emit PM/PM10/PM2.5 (lbs/yr) * (1 - filter collection PM Control Efficiency (%))  
Controlled Potential to Emit PM/PM10/PM2.5 (tons/yr) = Controlled Potential to Emit PM/PM10/PM2.5 considering (lbs/yr) / 2000 lbs

#### Cleaning Activities Emissions

<table>
<thead>
<tr>
<th>Max. Solvent Used (gal/day)</th>
<th>Density (lb/gal)</th>
<th>Uncontrolled PTE VOC (lbs/yr)</th>
<th>Uncontrolled PTE VOC (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>8</td>
<td>14600</td>
<td>7.3</td>
</tr>
</tbody>
</table>

**Methodology**

Uncontrolled PTE VOC (lbs/yr) = Max. Solvent Used (gal/day) * Density (lb/gal) * 365 days/yr  
Uncontrolled PTE VOC (tons/yr) = Uncontrolled PTE VOC (lbs/yr) / 2000 lbs
Appendix A: Emission Calculations

Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B134</td>
<td>166</td>
</tr>
<tr>
<td>B314 unit 1</td>
<td>380</td>
</tr>
<tr>
<td>B360 unit 1</td>
<td>145</td>
</tr>
<tr>
<td>B314 unit 2</td>
<td>324</td>
</tr>
<tr>
<td>B314 unit 3</td>
<td>755</td>
</tr>
<tr>
<td>B360 unit 2</td>
<td>176</td>
</tr>
<tr>
<td>B185 FP#1A</td>
<td>327</td>
</tr>
<tr>
<td>Total</td>
<td>2273</td>
</tr>
</tbody>
</table>

Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt;*</th>
<th>direct PM&lt;sub&gt;2.5&lt;/sub&gt;*</th>
<th>SO&lt;sub&gt;2&lt;/sub&gt;</th>
<th>NO&lt;sub&gt;x&lt;/sub&gt;</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0021</td>
<td>0.0310</td>
<td>0.0025</td>
<td>0.0067</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>1.25</td>
<td>1.25</td>
<td>1.25</td>
<td>1.16</td>
<td>17.62</td>
<td>1.43</td>
<td>3.80</td>
</tr>
</tbody>
</table>

*PM and PM2.5 emission factors are assumed to be equivalent to PM<sub>10</sub> emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM<sub>10</sub> which is condensable.

Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>1,3-Butadiene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>6.53E-06</td>
<td>2.86E-06</td>
<td>2.00E-06</td>
<td>2.74E-07</td>
<td>8.26E-06</td>
<td>5.37E-06</td>
<td>6.48E-07</td>
<td>1.18E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>3.71E-03</td>
<td>1.63E-03</td>
<td>1.13E-03</td>
<td>1.56E-04</td>
<td>4.69E-03</td>
<td>3.05E-03</td>
<td>3.68E-04</td>
<td>6.88E-04</td>
</tr>
</tbody>
</table>

***PAH = Polycyclic Organic Matter (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr) 1.54E-02

Methodology

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4.

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
### Appendix A: Emission Calculations

**Large Reciprocating Internal Combustion Engines - Diesel Fuel**

**Output Rating (>600 HP)**

**Maximum Input Rate (>4.2 MMBtu/hr)**

| Company Name: | Eli Lilly and Company, Lilly Technology Center |
| Source Address: | 1555 South Harding Street, Indianapolis, IN 46221 |
| | 1297 S. White River Pkwy. E., Indianapolis, IN 46225 |
| Operating Permit Number: | T097-36207-00072 |
| SSM and SPM Permit No.: | 097-43457-00072 & 097-43468-00072 |
| Permit Reviewer: | Tamara Havics |

#### B. Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B141A</td>
<td>1350</td>
</tr>
<tr>
<td>B141B</td>
<td>1350</td>
</tr>
<tr>
<td>B151</td>
<td>1200</td>
</tr>
<tr>
<td>B401</td>
<td>1528</td>
</tr>
<tr>
<td>Total</td>
<td>5428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>7.00E-04</td>
<td>4.01E-04</td>
<td>4.01E-04</td>
<td>4.05E-04</td>
<td>1.30E-02</td>
<td>7.05E-04</td>
<td>5.50E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.95</td>
<td>0.54</td>
<td>0.54</td>
<td>0.55</td>
<td>17.64</td>
<td>0.96</td>
<td>7.46</td>
</tr>
</tbody>
</table>

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MBTUs and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

#### Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAHs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>5.43E-06</td>
<td>1.97E-06</td>
<td>1.35E-06</td>
<td>5.52E-07</td>
<td>1.76E-07</td>
<td>5.52E-08</td>
<td>1.48E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>7.37E-03</td>
<td>2.67E-03</td>
<td>1.83E-03</td>
<td>7.49E-04</td>
<td>2.39E-04</td>
<td>7.49E-05</td>
<td>2.01E-03</td>
</tr>
</tbody>
</table>

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

#### Methodology

Potential Emission of Total HAPs (tons/yr)

1.50E-02
### Appendix A: Emission Calculations

**Large Reciprocating Internal Combustion Engines - Diesel Fuel**

**Output Rating (>600 HP)**

**Maximum Input Rate (>4.2 MMBtu/hr)**

**Emission Calculations for EmGen B358**

<table>
<thead>
<tr>
<th><strong>Company Name:</strong></th>
<th>Eli Lilly and Company, Lilly Technology Center</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source Address:</strong></td>
<td>1555 South Harding Street, Indianapolis, IN 46221</td>
</tr>
<tr>
<td></td>
<td>1297 S. White River Pkwy. E., Indianapolis, IN 46225</td>
</tr>
<tr>
<td><strong>Operating Permit Number:</strong></td>
<td>T097-36207-00072</td>
</tr>
<tr>
<td><strong>SSM and SPM Permit No.:</strong></td>
<td>097-43457-00072 &amp; 097-43468-00072</td>
</tr>
<tr>
<td><strong>Permit Reviewer:</strong></td>
<td>Tamara Havics</td>
</tr>
</tbody>
</table>

Emissions calculated based on output rating (hp)

- **Output Horsepower Rating (hp):** 755.0
- **Maximum Hours Operated per Year:** 500
- **Potential Throughput (hp-hr/yr):** 377,500
- **Sulfur Content (S) of Fuel (% by weight):** 0.0015 (15 ppm)

<table>
<thead>
<tr>
<th><strong>Pollutant</strong></th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>7.00E-04</td>
<td>4.01E-04</td>
<td>4.01E-04</td>
<td>1.21E-05</td>
<td>1.30E-02</td>
<td>7.05E-04</td>
<td>5.50E-03</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.13</td>
<td>0.08</td>
<td>0.08</td>
<td>0.00</td>
<td>2.45</td>
<td>0.13</td>
<td>1.04</td>
</tr>
</tbody>
</table>

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

**NOx emission factor:**

- **uncontrolled = 0.024 lb/hp-hr,**
- **controlled by ignition timing retard = 0.013 lb/hp-hr**

#### Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th><strong>Pollutant</strong></th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>5.43E-06</td>
<td>1.97E-06</td>
<td>1.35E-06</td>
<td>5.52E-07</td>
<td>1.76E-07</td>
<td>5.52E-08</td>
<td>1.48E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>1.03E-03</td>
<td>3.71E-04</td>
<td>2.55E-04</td>
<td>1.04E-04</td>
<td>3.33E-05</td>
<td>1.04E-05</td>
<td>2.80E-04</td>
</tr>
</tbody>
</table>

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Appendix A: Emission Calculations

Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<600 HP)
Maximum Input Rate (<4.2 MMBtu/hr)

B 80

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225

Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/hp-hr</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM*</td>
<td>0.0022</td>
<td>0.21</td>
</tr>
<tr>
<td>PM10*</td>
<td>0.0022</td>
<td>0.21</td>
</tr>
<tr>
<td>direct PM2.5*</td>
<td>0.0022</td>
<td>0.21</td>
</tr>
<tr>
<td>SO2</td>
<td>0.00205</td>
<td>0.20</td>
</tr>
<tr>
<td>NOx</td>
<td>0.0310</td>
<td>3.02</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0025</td>
<td>0.25</td>
</tr>
<tr>
<td>CO</td>
<td>0.00668</td>
<td>0.65</td>
</tr>
</tbody>
</table>

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/hp-hr</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>6.53E-06</td>
<td>6.37E-04</td>
</tr>
<tr>
<td>Toluene</td>
<td>2.86E-06</td>
<td>2.79E-04</td>
</tr>
<tr>
<td>Xylene</td>
<td>2.00E-06</td>
<td>1.95E-04</td>
</tr>
<tr>
<td>1,3-Butadiene</td>
<td>2.74E-07</td>
<td>2.67E-05</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>8.26E-06</td>
<td>8.05E-04</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>5.37E-06</td>
<td>5.23E-04</td>
</tr>
<tr>
<td>Acrolein</td>
<td>6.48E-07</td>
<td>6.31E-05</td>
</tr>
<tr>
<td>Total PAH HAPs***</td>
<td>1.18E-06</td>
<td>1.15E-04</td>
</tr>
</tbody>
</table>

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology

Potential Emission of Total HAPs (tons/yr) = 2.64E-03
Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)
Fire Pump B185 #2A

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/hp-hr</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM*</td>
<td>0.0022</td>
<td>0.18</td>
</tr>
<tr>
<td>PM10*</td>
<td>0.0022</td>
<td>0.18</td>
</tr>
<tr>
<td>direct PM2.5*</td>
<td>0.0022</td>
<td>0.18</td>
</tr>
<tr>
<td>SO2</td>
<td>0.00205</td>
<td>2.53</td>
</tr>
<tr>
<td>NOx</td>
<td>0.0310</td>
<td>0.21</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0025</td>
<td>0.21</td>
</tr>
<tr>
<td>CO</td>
<td>0.00668</td>
<td>0.55</td>
</tr>
</tbody>
</table>

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/hp-hr****</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>6.53E-06</td>
<td>5.34E-04</td>
</tr>
<tr>
<td>Toluene</td>
<td>2.86E-06</td>
<td>2.34E-04</td>
</tr>
<tr>
<td>Xylene</td>
<td>2.00E-06</td>
<td>1.63E-04</td>
</tr>
<tr>
<td>1,3-Butadiene</td>
<td>2.74E-07</td>
<td>2.24E-05</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>8.28E-06</td>
<td>6.75E-04</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>5.37E-06</td>
<td>4.39E-04</td>
</tr>
<tr>
<td>Acrolein</td>
<td>6.48E-07</td>
<td>5.29E-05</td>
</tr>
<tr>
<td>Total PAH HAPs***</td>
<td>1.18E-06</td>
<td>9.61E-05</td>
</tr>
</tbody>
</table>

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.3-1 and 3.3-2.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Potential Emission of Total HAPs (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.22E-03</td>
</tr>
</tbody>
</table>
Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)
B 180

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No. : 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Emissions calculated based on output rating (hp)

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>170.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Hours Operated per Year</td>
<td>500</td>
</tr>
<tr>
<td>Potential Throughput (hp-hr/yr)</td>
<td>85,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.00205</td>
<td>0.0310</td>
<td>0.0025</td>
<td>0.00668</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>1.32</td>
<td>0.11</td>
<td>0.28</td>
</tr>
</tbody>
</table>

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>1,3-Butadiene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>6.53E-06</td>
<td>2.86E-06</td>
<td>2.00E-06</td>
<td>2.74E-07</td>
<td>8.26E-06</td>
<td>5.37E-06</td>
<td>6.48E-07</td>
<td>1.18E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>2.78E-04</td>
<td>1.22E-04</td>
<td>8.48E-05</td>
<td>1.16E-05</td>
<td>3.51E-04</td>
<td>2.28E-04</td>
<td>2.75E-05</td>
<td>5.00E-05</td>
</tr>
</tbody>
</table>

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.3-1 and 3.3-2.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
POTENTIAL EMISSION (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
## Appendix A: Emissions Calculations
### Natural Gas Combustion Only
#### MM BTU/HR <100
##### Rooftop HVAC Units

**Company Name:** Eli Lilly and Company, Lilly Technology Center  
**Source Address:** 1555 South Harding Street, Indianapolis, IN 46221  
1297 S. White River Pkwy. E., Indianapolis, IN 46225  
**Operating Permit Number:** TO97-36207-00072 & TO97-43468-00072  
**SSM and SPM Permit No.** T097-36207-00072 & TO97-43468-00072  
**Permit Reviewer:** Tamara Havics

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>Number of Units</th>
<th>Heat Input Capacity (MMBtu/hr)</th>
<th>Total Capacity (MMBtu/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooftop Units 1-8</td>
<td>8</td>
<td>0.35</td>
<td>2.8</td>
</tr>
<tr>
<td>Rooftop Unit 9</td>
<td>1</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>Rooftop Units 10-11</td>
<td>2</td>
<td>0.06</td>
<td>0.12</td>
</tr>
<tr>
<td>Rooftop Unit 12</td>
<td>1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.15</td>
<td></td>
</tr>
</tbody>
</table>

**HHV**

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMCF</th>
<th>PM</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.9</td>
<td>7.6</td>
<td>7.6</td>
<td>0.6</td>
<td>0.6</td>
<td>5.5</td>
<td>84</td>
</tr>
</tbody>
</table>

**Potential Emission in tons/yr**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission</td>
<td>0.03</td>
<td>0.10</td>
<td>0.10</td>
<td>0.01</td>
<td>1.35</td>
<td>0.07</td>
<td>1.14</td>
</tr>
</tbody>
</table>

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 emission factor is filterable and condensable PM2.5 combined.

**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 #1-02-008-02, 1-01-008-02, 1-03-008-02, and 1-03-008-03
- Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
- Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

### HAPS Calculations

**HAPs - Organics**

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMCF</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Hexane</th>
<th>Toluene</th>
<th>Total - Organics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.1E-03</td>
<td>1.2E-03</td>
<td>7.5E-02</td>
<td>1.8E+00</td>
<td>3.4E-03</td>
<td>2.5E-02</td>
</tr>
</tbody>
</table>

**Potential Emission in tons/yr**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Hexane</th>
<th>Toluene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission</td>
<td>2.8E-05</td>
<td>1.6E-05</td>
<td>1.0E-03</td>
<td>2.4E-02</td>
<td>4.6E-05</td>
</tr>
</tbody>
</table>

**HAPs - Metals**

<table>
<thead>
<tr>
<th>Emission Factor in lb/MMCF</th>
<th>Lead</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
<th>Total - Metals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.0E-04</td>
<td>1.1E-03</td>
<td>1.4E-03</td>
<td>3.8E-04</td>
<td>2.1E-03</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Emission in tons/yr**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Lead</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission</td>
<td>6.8E-06</td>
<td>1.5E-05</td>
<td>1.9E-05</td>
<td>5.1E-06</td>
<td>2.8E-05</td>
</tr>
</tbody>
</table>

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
Injector Pen Lines

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Injector Pen Manufacturing Lines

Potential emissions for Line A
Current glue usage: 10 liters/month (average from 2010)
Glue specific gravity: 1.094
Glue Contents: glue is a polymerizing acrylate formulation with no solvents, although with regard to HAP, the MSDS lists "trace" amount of toluene (less than 1%)

Current Emissions:

<table>
<thead>
<tr>
<th>10 liter</th>
<th>1 gallon</th>
<th>8.34 lbs</th>
<th>1.094 sp. Gr. glue</th>
<th>12 month</th>
<th>1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>month</td>
<td>3.785 liter</td>
<td>gallon</td>
<td>12 month</td>
<td>1 year</td>
<td></td>
</tr>
</tbody>
</table>

Potential from line A: 0.8 lbs/day glue used

Potential HAP emission from line A: 0.008 lbs/day, based on total evaporation of trace toluene.

Potential VOC emissions (tons/yr) = 0.36 lbs/day X day/24hrs X 8760hrs/yr X 1ton/2000 lbs = 0.066 tpy
Potential HAP emissions (tons/yr) = 0.066 tpy

Potential emissions for Line B
Current glue usage: 37.5 liters/week (average from 2010)
Glue specific gravity: 1.094
Glue Contents: glue is a polymerizing acrylate formulation with no solvents, although with regard to HAP, the MSDS lists acrylic acid (CAS 79-10-7) at 1 to 5% content. According to the glue supplier, volatilization of about 0.7% of the quantity of glue is expected on polymerization.

Current Emissions:

<table>
<thead>
<tr>
<th>37.5 liter</th>
<th>1 gallon</th>
<th>8.34 pounds</th>
<th>1.094 sp. Glue</th>
<th>1 week</th>
</tr>
</thead>
<tbody>
<tr>
<td>week</td>
<td>3.785 liter</td>
<td>gallon</td>
<td>1 week</td>
<td></td>
</tr>
</tbody>
</table>

VOC emissions: 13 lbs * 0.70% = 0.09 lbs/day

HAP emissions: 13 lbs * 0.70% = 0.09 lbs/day

Note that when VOC is emitted at 0.7% of total glue usage, this is less than the total HAP content; thus the VOC value was used.

Current manufacturing capacity usage: approximately 25% of capacity. The manufacturing line runs 24 hours/day and 7 days/week but has experience difficulties which have limited its production.

Potential emission from line B: 0.09 lbs/day

Potential HAP emission from line B: 0.066 lbs/day.

Potential VOC emissions (tons/yr) = 0.36 lbs/day X day/24hrs X 8760hrs/yr X 1ton/2000 lbs = 0.066 tpy
Potential HAP emissions (tons/yr) = 0.066 tpy

Total VOC for lines A and B = 0.6 + 0.066 = 0.667 tons per year
Total HAP for lines A and B = 0.066 + 0.066 = 0.132 tons per year
## Appendix A: Emission Calculations

### VOC Emissions

**Gasoline Dispensing Facility**

<table>
<thead>
<tr>
<th>Company Name:</th>
<th>Eli Lilly and Company, Lilly Technology Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Address:</td>
<td>1555 South Harding Street, Indianapolis, IN 46221</td>
</tr>
<tr>
<td></td>
<td>1297 S. White River Pkwy. E., Indianapolis, IN 46225</td>
</tr>
<tr>
<td>Operating Permit Number:</td>
<td>T097-36207-00072</td>
</tr>
<tr>
<td>SSM and SPM Permit No.:</td>
<td>097-43457-00072 &amp; 097-43468-00072</td>
</tr>
<tr>
<td>Permit Reviewer:</td>
<td>Tamara Havics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Used</th>
<th>Max. Throughput (gal/day)</th>
<th>*Emission Factor (lb/10^3 gal)</th>
<th>Potential To Emit of VOC (lbs/day)</th>
<th>PTE VOC (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>gasoline</td>
<td>1300</td>
<td>11.5</td>
<td>15.0</td>
<td>2.7</td>
</tr>
</tbody>
</table>

* Emission factor is from AP-42, Chapter 5, Table 5.2-7 Splash Filling (January, 1995) based on gasoline evaporative emissions

**METHODOLOGY**

VOC Emissions (lbs/day) = Max. throughput (gallons/day) * Emission rate (lbs/1000 gallons)
PTE VOC (tons/year) = Max. throughput (gallons/day) * Emission rate (lbs/1000 gallons) * 1 ton/2000 lbs * 365 days/year
Appendix A: Emission Calculations

VOC Emissions
Degreasing Units

Company Name: Eli Lilly and Company, Lilly Technology Center
Source Address: 1555 South Harding Street, Indianapolis, IN 46221
1297 S. White River Pkwy. E., Indianapolis, IN 46225
Operating Permit Number: T097-36207-00072
SSM and SPM Permit No.: 097-43457-00072 & 097-43468-00072
Permit Reviewer: Tamara Havics

Evaporation rate - lb/min
U wind speed 1.5 m/s
MW Molecular weight 215 (g/mole)
A Evaporative surface 1 (ft²)
VP Vapor Pressure (mmHg) 1.00 (mmHg) from Crystal Clean 142 MSDS
T Liquid Temperature (K) 294.25 K (273.15 K +21.1°C)
R universal gas constant 82.05 atm*cm³/g-mole-K
P density 7.34 lb/gal

Evaporative Loss Rate Equation

\[
QR = \frac{0.284 \times U^{0.78} \times MW^{2/3} \times A \times VP}{82.05 \times T}
\]

<table>
<thead>
<tr>
<th>Solvent Degreaser Dimension and Emission Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (ft)</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Moldel 1678 (80 gal)</td>
</tr>
<tr>
<td>Moldel 1648 (40 gal)</td>
</tr>
<tr>
<td>Moldel 1658 (60 gal)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Surface Area of Liquid Stream (1/2 diameter liquid stream and a 1 foot long flow path) = \( \pi \times 0.13 \times 1 = 0.13 \)

Methodology

\[ \text{lbVOC /day} = (\text{Surface Area + SA of liq. Stream}) \times QR (\text{lb/day - sqft surface area}) \]
\[ \text{tons VOC /yr} = \text{lbVOC /day} \times 365 \times 1/2000 \times 1/12000 \times 1/12000 \]
May 21, 2021

Don Robin
Eli Lilly & Co Lilly Tech Ctr
Lilly Corporate Center
Indianapolis IN 46285

Re: Public Notice
Eli Lilly and Company, Lilly Technology Center
Permit Level: Title V Significant Source Mod.
(Minor PSD/EO) (120)
& Title V Significant Permit Modification
Permit Number: 097-43457-00072 & 097-43468-00072

Dear Don Robin:

Enclosed is the Notice of 30-Day Period for Public Comment for your draft air permit.

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. The Notice of 30-Day Period for Public Comment has also been sent to the OAQ Permits Branch Interested Parties List and, if applicable, your Consultant/Agent and/or Responsible Official/Authorized Individual.

The preliminary findings, including the draft permit, technical support document, emission calculations, and other supporting documents, are available electronically at:

IDEM's online searchable database: http://www.in.gov/apps/idem/caats/. Choose Search Option by Permit Number, then enter permit 43457

and

IDEM’s Virtual File Cabinet (VFC): https://www.IN.gov/idem. Enter VFC in the search box, then search for permit documents using a variety of criteria, such as Program area, date range, permit #, Agency Interest Number, or Source ID.

The Public Notice period will begin the date the Notice is published on the IDEM Official Public Notice website. Publication has been requested and is expected within 2-3 business days. You may check the exact Public Notice begins and ends date here: https://www.in.gov/idem/public-notices/

Please note that as of April 17, 2019, IDEM is no longer required to publish the notice in a newspaper.

OAQ has submitted the draft permit package to the Indianapolis Public Library - Central Library, 40 E Saint Clair St, Indianapolis IN 46204. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.
Please review the draft permit documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Tamara Havics, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 2-8219 or dial (317) 23 2-8219.

Sincerely,

L. Pogost

L. Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter access via website 8/10/2020
May 21, 2021

To: Indianapolis Public Library - Central Library 40 E Saint Clair St Indianapolis IN 46204

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

Subject: Important Information to Display Regarding a Public Notice for an Air Permit

Applicant Name: Eli Lilly and Company, Lilly Technology Center
Permit Number: 097-43457-00072 & 097-43468-00072

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. Please make this information readily available until you receive a copy of the final package.

If you have any questions concerning this public review process, please contact Joanne Smiddle-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library updated 4/2019
Notice of Public Comment

May 21, 2021
Eli Lilly and Company, Lilly Technology Center
097-43457-00072 & 097-43468-00072

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has posted on IDEM’s Public Notice website at https://www.in.gov/idem/public-notices/.

The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana’s Air Permitting Program.

Please Note: If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Joanne Smiddie-Brush with the Air Permits Administration Section at 1-800-451-6027, ext. 3-0185 or via e-mail at JBRUSH@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.
### Mail Code 61-53

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<td>Matt Mosier Office of Sustainability City-County Bldg/200 E Washington St. Rm# 2460 Indianapolis IN 46204 (Local Official)</td>
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