



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

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

TO: Interested Parties / Applicant

DATE: November 16, 2012

RE: Futurex, Inc. / 167-32305-00156

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

## Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures  
FN-REGIS.dot 1/2/08



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## REGISTRATION OFFICE OF AIR QUALITY

**Futurex, Inc.**  
**10000 S. Carlisle Street**  
**Terre Haute, IN 47802**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 167-32305-00156	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date:  November 16, 2012

## SECTION A

## SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

### A.1 General Information

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The Registrant owns and operates a stationary plastic sheet manufacturing plant.

Source Address:	10000 S. Carlisle Street, Terre Haute, IN 47802
General Source Phone Number:	(765) 592-1127
SIC Code:	3089 (Plastics Products, Not Elsewhere Classified)
County Location:	Parke County
County Location:	Vigo County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

### A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) Five (5) blenders, identified as blender 1 through blender 5, constructed in 1994, with a combined maximum capacity of 494 pounds of polyethylene pellets and colorant per hour, using no controls and exhausting inside the building.
- (b) Nine (9) electric extruders, each capable of using polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets, using no controls and exhausting inside the building consisting of:
  - (1) Line 51, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1996,
  - (5) Line 64, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2011,
  - (6) Line 65, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1994,
  - (7) Line 71, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2005,
  - (8) Line 72, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2008.

- (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.
- (c) One (1) reprocessing electric extruder line, with a maximum capacity of 800 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets per hour, using no controls and exhausting inside the building.
- (d) One (1) cutting operation using a cyclone for particulate control, exhausting inside the building, and consisting of:
  - (1) One (1) vertical band saw, identified as band saw 3, constructed in 1998, with maximum capacity of 164.67 pounds of polystyrene per hour.
  - (2) Two (2) 18" vertical band saws, identified as band saw 2 and band saw 3, constructed in 2009 and 2011, with maximum capacity of 164.67 pounds of polystyrene per hour, each.
- (e) One (1) woodworking operation, identified as miter saw, constructed in 2011, with a maximum capacity of 2,500 pounds of wood per hour, using no controls and exhausting inside the building.
- (f) One GMAW welder, constructed in 1994, with a maximum capacity of 247 lbs of E70S-6 electrodes per year, using no controls, and exhausting inside the building.
- (g) Eleven (11) granulators, using no controls and exhausting inside the building consisting of:
  - (1) Line 51, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2010,
  - (2) Line 61 maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (3) Line 62, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (4) Line 63, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1996.
  - (5) Line 64, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2012,
  - (6) Line 65, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2011,
  - (7) Line 71, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2008, and
  - (8) Line 72, with maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2009.
  - (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.
  - (10) Platform constructed in 1998.
  - (11) Vac forming constructed in 2007.

- (h) One (1) parts washer, constructed in 2002, that does not exceed 18 gallons per twelve (12) months.
- (i) Storage silos consisting of the following:
  - (1) Five (5) storage silos, identified as Silo 1 through Silo 5, with a maximum storage capacity of 220,000 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets each.
  - (2) Four (4) storage silos, identified as Silo 6 through Silo 9, with a maximum storage capacity of 80,000 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets each.
- (j) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million Btu per hour, including the following:
  - (1) Five (5) natural gas-fired heaters, with a maximum heat input capacity of 0.20 MMBtu/hr, each, using no controls and exhausting inside.
  - (2) One (1) natural gas-fired heater, with a maximum heat input capacity of 0.225 MMBtu/hr, using no controls and exhausting inside.
  - (3) One (1) natural gas-fired forced air furnace, with a maximum heat input capacity of 0.112 MMBtu/hr, using no controls and exhausting inside.
  - (4) One (1) natural gas-fired forced air furnace, with a maximum heat input capacity of 0.122 MMBtu/hr, using no controls and exhausting inside.
- (k) Paved roads and unpaved roads.

## SECTION B

## GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-1.1-1]

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Terms in this registration 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 2-1.1-1) shall prevail.

### B.2 Effective Date of Registration [IC 13-15-5-3]

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Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

### B.3 Registration Revocation [326 IAC 2-1.1-9]

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Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

### B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

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- (a) All terms and conditions of permits established prior to Registration No. 167-32305-00156 and issued pursuant to permitting programs approved into the state implementation plan have been either:
  - (1) incorporated as originally stated,
  - (2) revised, or
  - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

### B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

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Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

- (c) The notification 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.

**B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]**

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Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

**B.7 Registrations [326 IAC 2-5.1-2(i)]**

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Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

**B.8 Preventive Maintenance Plan [326 IAC 1-6-3]**

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- (a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration 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 Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant 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 Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

**SECTION C**

**SOURCE OPERATION CONDITIONS**

Entire Source

**Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]**

**C.1 Opacity [326 IAC 5-1]**

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

**C.2 Fugitive Dust Emissions [326 IAC 6-4]**

The Registrant 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).

## SECTION D.1

## OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) Five (5) blenders, identified as blender 1 through blender 5, constructed in 1994, with a combined maximum capacity of 494 pounds of polyethylene pellets and colorant per hour, using no controls and exhausting inside the building.
- (b) Nine (9) electric extruders, each capable of using polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets, using no controls and exhausting inside the building consisting of:
  - (1) Line 51, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1996,
  - (5) Line 64, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2011,
  - (6) Line 65, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1994,
  - (7) Line 71, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2005,
  - (8) Line 72, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2008.
  - (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.
- (c) One (1) reprocessing electric extruder line, with a maximum capacity of 800 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets per hour, using no controls and exhausting inside the building.
- (d) One (1) cutting operation using a cyclone for particulate control, exhausting inside the building, and consisting of:
  - (1) One (1) vertical band saw, identified as band saw 3, constructed in 1998, with maximum capacity of 164.67 pounds of polystyrene per hour.
  - (2) Two (2) 18" vertical band saws, identified as band saw 2 and band saw 3, constructed in 2009 and 2011, with maximum capacity of 164.67 pounds of polystyrene per hour, each.
- (e) One (1) woodworking operation, identified as miter saw, constructed in 2011, with a maximum capacity of 2,500 pounds of wood per hour, using no controls and exhausting inside the building.

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

**Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]**

**D.1.1 Particulate [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the processes listed in the table below shall be limited by the following:

Emission Unit	Process Weight Rate		Allowable PM Limit (lbs/hr)
	(lbs/hr)	(tons/hr)	
Extruder Line 51	61.75	0.031	0.551
Extruder Line 61	61.75	0.031	0.551
Extruder Line 62	61.75	0.031	0.551
Extruder Line 63	61.75	0.031	0.551
Extruder Line 64	61.75	0.031	0.551
Extruder Line 65	61.75	0.031	0.551
Extruder Line 71	61.75	0.031	0.551
Extruder Line 72	61.75	0.031	0.551
Extruder Line 73	300	0.15	1.15
Reprocessing Extruder Line	800	0.40	2.22
Cutting Operation ( vertical band saw)	164.67	0.08	0.75
Cutting Operation (18" vertical band saw)	164.67	0.08	0.75
Cutting Operation (18" vertical band saw)	164.67	0.08	0.75
Woodworking (miter saw)	2,500	1.25	4.76

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

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

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

**Compliance Determination Requirements**

**D.1.2 Particulate Control**

In order to comply with Condition D.1.1, the cyclone shall be in operation and control emissions at all times the cutting operation is in operation.

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

**REGISTRATION  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	Futurex, Inc.
<b>Address:</b>	10000 S. Carlisle Street
<b>City:</b>	Terre Haute, IN 47802
<b>Phone Number:</b>	(765) 498-3900
<b>Registration No.:</b>	167-32305-00156

I hereby certify that Futurex, Inc. is :

- still in operation.
- no longer in operation.
- in compliance with the requirements of Registration No. 167-32305-00156.
- not in compliance with the requirements of Registration No. 167-32305-00156.

I hereby certify that Futurex, Inc. is :

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Phone Number:</b>
<b>Date:</b>

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance:</b>

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

Technical Support Document (TSD) for a Registration

<b>Source Description and Location</b>
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<b>Source Name:</b>	<b>Futurex, Inc.</b>
<b>Source Location:</b>	<b>10000 S. Carlisle Street, Terre Haute, IN 47802</b>
<b>County:</b>	<b>Vigo</b>
<b>SIC Code:</b>	<b>3089 (plastic Products, Not Elsewhere Classified)</b>
<b>Registration No.:</b>	<b>167-32305-00156</b>
<b>Permit Reviewer:</b>	<b>Bruce Farrar</b>

On September 12, 2012, the Office of Air Quality (OAQ) received an application from Futurex, Inc. related construction and operation of a new plastic sheet manufacturer.

<b>Existing Approvals</b>
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The source has been operating under Exemption No. 167-4804-0, issued on September 11, 1995. However, pursuant to 326 IAC 2-5.5-1(b)(1), the registrant was required to apply for a registration prior to construction of the new emission units when the PTE of any criteria pollutant was over 5 tons per year.

<b>County Attainment Status</b>
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The source is located in Vigo County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Attainment effective February 6, 2006, for the Terre Haute area, including Vigo County, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.
<sup>1</sup> Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM <sub>2.5</sub> .	

- (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. Vigo County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
  
- (b) **PM<sub>2.5</sub>**  
 Vigo County has been classified as attainment for PM<sub>2.5</sub>. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct PM<sub>2.5</sub> significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM<sub>2.5</sub> and SO<sub>2</sub> emissions were reviewed

pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

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

### **Fugitive Emissions**

The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

### **Background and Description of Emission Units and Pollution Control Equipment**

The Office of Air Quality (OAQ) has reviewed an application, submitted by Futurex, Inc. on September 12, 2012, relating to a registration that has unpermitted equipment.

The source consists of the following existing emission units:

- (a) Five (5) blenders, identified as blender 1 through blender 5, constructed in 1994, with a combined maximum capacity of 494 pounds of polyethylene pellets and colorant per hour, using no controls and exhausting inside the building.
- (b) Nine (9) electric extruders, each capable of using polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets, using no controls and exhausting inside the building consisting of:
- (1) Line 51, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1996,
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  - (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.

- (c) One (1) reprocessing electric extruder line, with a maximum capacity of 800 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets per hour, using no controls and exhausting inside the building.
- (d) One (1) cutting operation using a cyclone for particulate control, exhausting inside the building, and consisting of:
  - (1) One (1) vertical band saw, identified as band saw 3, constructed in 1998, with maximum capacity of 164.67 pounds of polystyrene per hour.
  - (2) Two (2) 18" vertical band saws, identified as band saw 2 and band saw 3, constructed in 2009 and 2011, with maximum capacity of 164.67 pounds of polystyrene per hour, each.
- (e) One (1) woodworking operation, identified as miter saw, constructed in 2011, with a maximum capacity of 2,500 pounds of wood per hour, using no controls and exhausting inside the building.
- (f) One GMAW welder, constructed in 1994, with a maximum capacity of 247 lbs of E70S-6 electrodes per year, using no controls, and exhausting inside the building.
- (g) Eleven (11) granulators, using no controls and exhausting inside the building consisting of:
  - (1) Line 51, with a maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2010,
  - (2) Line 61 maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 1995,
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  - (7) Line 71, with maximum capacity of 61.75 pounds of polystyrene pellets per hour and constructed in 2008, and
  - (8) Line 72, with maximum capacity of 61.75 pounds of polystyrene pellets per hour per hour and constructed in 2009.
  - (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.
  - (10) Platform constructed in 1998.
  - (11) Vac forming constructed in 2007.
- (h) One (1) parts washer, constructed in 2002, that does not exceed 18 gallons per twelve (12) months.
- (i) Storage silos consisting of the following:

- (1) Five (5) storage silos, identified as Silo 1 through Silo 5, with a maximum storage capacity of 220,000 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets each.
  - (2) Four (4) storage silos, identified as Silo 6 through Silo 9, with a maximum storage capacity of 80,000 lbs of polystyrene pellets, ABS (Acrylonitrile Butadiene Styrene) or High Density Polyethylene pellets each.
- (j) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million Btu per hour, including the following:
- (1) Five (5) natural gas-fired heaters, with a maximum heat input capacity of 0.20 MMBtu/hr, each, using no controls and exhausting inside.
  - (2) One (1) natural gas-fired heater, with a maximum heat input capacity of 0.225 MMBtu/hr, using no controls and exhausting inside.
  - (3) One (1) natural gas-fired forced air furnace, with a maximum heat input capacity of 0.112 MMBtu/hr, using no controls and exhausting inside.
  - (4) One (1) natural gas-fired forced air furnace, with a maximum heat input capacity of 0.122 MMBtu/hr, using no controls and exhausting inside.
- (k) Paved roads and unpaved roads.

**Enforcement Issues**

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

**Emission Calculations**

See Appendix A of this TSD for detailed emission calculations.

**Permit Level Determination – Registration**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM10*	PM2.5	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
9 Silos	-	-	-	-	-	-	-	-	-	-
5 Blenders	-	-	-	-	-	-	-	-	-	-
11 Granulators	-	-	-	-	-	-	-	-	-	-
9 Extruder & Reprocessing Extruder	0.14	0.14	0.14	-	-	0.17	-	-		

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM10*	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Cutting	4.56	4.56	4.56	-	-	-	-	-	-	-
woodworking (Pallets)	17.52	17.52	17.52	-	-	-	-	-	-	-
Parts Washer	-	-	-	-	-	0.06	-	-	-	-
Welding	6.42E-04	6.42E-04	6.42E-04	-	-	-	-	-	3.97E-03	3.93E-03 (Manganese)
Natural Gas Combustion	1.19E-02	0.05	0.05	3.75E-03	0.63	0.03	0.53	755	1.18E-02	1.13E-02 (Hexane)
Fugitive Emissions (paved and unpaved roads)	2.37	0.57	0.07	-	-	-	-	-	-	-
<b>Total PTE of Entire Source</b>	<b>24.59</b>	<b>22.83</b>	<b>22.33</b>	<b>0.00</b>	<b>0.63</b>	<b>0.26</b>	<b>0.53</b>	<b>755</b>	<b>0.02</b>	<b>0.01</b>
Registration Levels**	25	25	25	25	25	25	100	100,000	25	10

-. = negligible  
 \*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".  
 \*\*The 100,000 CO<sub>2</sub>e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of PM, PM10 and PM2.5 are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

**Federal Rule Applicability Determination**

New Source Performance Standards (NSPS)

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Halogenated Solvent Cleaning, 40 CFR 63.460, Subpart T (326 IAC 20-6), are not included in the permit, since this source does not use any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform.

- (c) The requirements of the National Emission Standards for Hazardous Air Pollutant Emissions NESHAP: Group IV Polymers and Resins, 40 CFR 63.1310, Subpart JJJ (326 IAC 20), are not included in the permit, since this source does not use a thermoplastic product process units (TPPU) and does not produce the polymers but uses the product in a pellet form.
- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Plastic Parts and Products, 40 CFR 63.4480, Subpart PPPP (326 IAC 20), are not included in the permit, since this source does not surface coat plastic parts.
- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): Reinforced Plastic Composites Production, 40 CFR 63.5780, Subpart WWWW (326 IAC 20), are not included in the permit, since this source does not produce reinforced plastic composites.
- (f) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR 63.11169, Subpart HHHHHH (6H) (326 IAC 20), are not included in the permit, since this source does use surface coating in any production.
- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

#### Compliance Assurance Monitoring (CAM)

- (h) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

<b>State Rule Applicability Determination</b>
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The following state rules are applicable to the source:

- (a) 326 IAC 2-5.5 (Registrations)  
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
  - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (2) 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.
- (e) 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.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)  
 The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.
- (g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)  
 Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

Blenders

- (h) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 326 IAC 6-3-2 does not apply to the blenders, because they have negligible particulate emissions.
- (i) 326 IAC 8-1 (Volatile Organic Compound Rule)  
 326 IAC 8-1 does not apply to the blenders, because they have no VOC emissions.

Electric Extruders (Line 51, 61 through Line 65 and Line 71 through Line 73)

- (j) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the particulate from the processes listed in the table below shall be limited by the following:

<b>Emission Unit</b>	<b>Process Weight Rate (lbs/hr)</b>	<b>Process Weight Rate (tons/hr)</b>	<b>Allowable PM Limit (lbs/hr)</b>
Line 51	61.75	0.03	0.551
Line 61	61.75	0.03	0.551
Line 62	61.75	0.03	0.551
Line 63	61.75	0.03	0.551
Line 64	61.75	0.03	0.551
Line 65	61.75	0.03	0.551
Line 71	61.75	0.03	0.551
Line 72	61.75	0.03	0.551
Line 73	300	0.15	1.15

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

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

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

Based on calculations, a control device is not needed to comply with this limit.

- (k) 326 IAC 8-1 (Volatile Organic Compound Rule)  
Pursuant to 326 IAC 8-1-1(b), the extruder Line 51, 61 through Line 65 and Line 71 through Line 73 each has potential VOC emission less than 15 lbs per day. Therefore, 326 IAC 8-1 does not apply to extruder lines Line 51, 61 through Line 65 and Line 71 through Line 73.

Reprocessing Electric Extruder Line

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the reprocessing electric extruder line shall not exceed 2.22 pounds per hour when operating at a process weight rate of 0.40 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

Based on calculations, a control device is not needed to comply with this limit.

- (m) 326 IAC 8-1 (Volatile Organic Compound Rule)  
Pursuant to 326 IAC 8-1-1(b), the reprocessing electric extruder line has potential VOC emission less than 15 lbs per day. Therefore, 326 IAC 8-1 does not apply to the reprocessing electric extruder line.

Cutting operation

- (n) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the particulate from the processes listed in the table below shall be limited by the following:

Emission Unit	Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable PM Limit (lbs/hr)
18" vertical band saw	164.67	0.08	0.75
18" vertical band saw	100	0.05	0.75
vertical band saw	100	0.05	0.75

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

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

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

Based on calculations, the cyclone is not needed to comply with this limit. However, since the emission factor is based on collections from the cyclone, the cyclone shall be in operation at all times the cutting operation is in operation.

### Woodworking Operation

- (o) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the woodworking operation, identified as miter saw, shall not exceed 4.76 pounds per hour when operating at a process weight rate of 1.25 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

Based on calculations, a control device is not needed to comply with this limit.

### Parts Washer

- (p) Pursuant to 326 IAC 8-1-1(b) the parts washer is exempt from the requirements of 326 IAC 8-3 because the parts washer potential to emit VOC before add-on control is below fifteen (15) pounds per day.

### Granulators

- (q) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
326 IAC 6-3-2 does not apply to the granulators, because they have negligible particulate emissions.
- (r) 326 IAC 8-1 (Volatile Organic Compound Rule)  
326 IAC 8-1 does not apply to the granulators, because they have no VOC emissions.

### Storage Silos

- (s) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
326 IAC 6-3-2 does not apply to the storage silos, because they have negligible particulate emissions.

## 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 September 12, 2012.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 167-32305-00156. The staff recommends to the Commissioner that this Registration be approved.

## IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Bruce Farrar at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5401 or toll free at 1-800-451-6027 extension 4-5401.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>

- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem](http://www.in.gov/idem)

**Appendix A: Emissions Calculations  
Summary of Emissions**

**Company Name: Futurex, Inc.**  
**Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802**  
**Registration Number: 167-32305-00156**  
**Reviewer: Bruce Farrar**  
**Date: September 12, 2012**

Process/Emission Unit	Uncontrolled Potential Emissions (tons/yr)									
	PM	PM10	PM2.5	SO2	NOX	VOC	CO	GHGs as CO <sub>2</sub> e	Combined HAPs	Single HAP
Silos <sup>α</sup>	-	-	-	-	-	-	-	-	-	-
Blender <sup>β</sup>	-	-	-	-	-	-	-	-	-	-
Granulators <sup>γ</sup>	-	-	-	-	-	-	-	-	-	-
Extruder	0.14	0.14	0.14	-	-	0.17	-	-	-	-
Cutting	4.56	4.56	4.56	-	-	-	-	-	-	-
woodworking (Pallets)	17.52	17.52	17.52	-	-	-	-	-	-	-
Parts Washer	-	-	-	-	-	0.06	-	-	-	-
Welding	6.42E-04	6.42E-04	6.42E-04	-	-	-	-	-	3.97E-03	3.93E-03 Manganese
Natural Gas Combustion	1.19E-02	0.05	0.05	3.75E-03	0.63	0.03	0.53	755	1.18E-02	1.13E-02 Hexane
Fugitive Emissions (paved and unpaved roads)	2.37	0.57	0.07	-	-	-	-	-	-	-
<b>Total</b>	<b>24.59</b>	<b>22.83</b>	<b>22.33</b>	<b>0.00</b>	<b>0.63</b>	<b>0.26</b>	<b>0.53</b>	<b>755</b>	<b>0.02</b>	<b>0.01 Hexane</b>

α Silos emissions are negligible pursuant to AP 42 (6.6.3 Polystyrene) table 6.6.3-1 (item F, storage), (reformatted 1/95).

β Blenders have negligible emissions, pursuant to AP42-6.6.2 (Polyethylene Terephthalate), table 6.6.2-1 (item B, mix tanks), (reformatted 1/95).

γ Granulators have negligible emissions as provided by the source.

**Appendix A: Emissions Calculations  
Emissions From Extruding Operations**

**Company Name: Futurex, Inc.  
Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802  
Registration Number: 167-32305-00156  
Reviewer: Bruce Farrar  
Date: September 12, 2012**

Emission Unit	Maximum Capacity (lbs/hr)	PM Emission Factor (lbs/ton)	VOC Emission Factor (lbs/ton)	PM (Tons/Year)	VOC (Tons/Year)
Extruder (Line 51) Polyethylene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 61) polystyrene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 62) Polyethylene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 63) Polyethylene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 64) polystyrene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 65) polystyrene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 71) polystyrene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 72) polystyrene	61.75	0.04	0.05	0.01	0.01
Extruder (Line 73) Acrylonitrile butadiene styrene	300.00	0.04	0.05	0.03	0.03
Reprocessing Extruder Line polystyrene	800.00	0.04	0.05	0.07	0.09
<b>Total:</b>				0.14	0.17

**Notes:**

α. Emission Factor is from "Development of Emission Factors for Polyethylene Processing", JAWMA, Vol 46, June 1996. AP-42  
Assume PM = PM10 and PM2.5

PM emission factor = 19.58 lbs/1 million lbs = (19.58 lbs/1,000,000 lbs) \* (2,000 lbs/ 1 ton) = .04 lbs/ton

VOC emission factor = 25.0 lbs/1 million lbs = (25.0 lbs/1,000,000 lbs) \* (2,000 lbs/ 1 ton) = .05 lbs/ton

ABS MSDS states material is high-molecular-weight polymers not expected to be chemically active under recommended of use.

Trace amounts may be released under suggested processing temperature ranges. VOC percent is negligible.

Polystyrene MSDS states material is high molecular weight polymers not expected to be chemically active under recommended of use. Trace amounts of styrene monomer may be volatilized under normal and processing conditions. VOC is less than 0.5% by volume.

Polyethylene MSDS states material is high density Polyethylene and is a non-volatile by volume.

**Methodology:**

Potential PM/VOC Emissions (lbs/hr) = ((Maximum Capacity (lbs/hr)) \* (1ton/2000 lbs)) \* (Emission Factor (lbs/ton))

Potential PM/VOC Emissions (tons/yr)= (PM/VOC emissions (lbs/hr)) \* 8760 hrs/yr \* (1 ton/2000 lb)

HDPE PM and VOC emission factors is  $y = mt+c$ , where "t" is extrusion temperature (°F) and "y" is emission quantity in lbs per t = 380°F

$y = 0.04$  lbs/ton PM or  $0.05$  lbs/ton VOC

**Appendix A: Emissions Calculations  
Emissions From Cutting Operations**

**Company Name: Futurex, Inc.  
Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802  
Registration Number: 167-32305-00156  
Reviewer: Bruce Farrar  
Date: September 12, 2012**

<b>Emission Unit</b>	<b>PM Emission (lbs/hr)</b>	<b>PM emissions (tons/yr)</b>	<b>Controlled PM (lb/hr)</b>	<b>Controlled PM (ton/yr)</b>
Vertical Saws	1.04	4.56	0.42	1.82

**Notes:**

Information Provided by the Source: 4 lbs collected @ 72 hours.

PTE = (4.5 lbs / 72 hours / 60% efficiency of cyclone) = 1.04 lbs per hour of PM

Uncontrolled PM/PM10 emissions = amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation) / (control efficiency)

Cyclone Control Efficiency: 60%

One (1) 18" Vertical Band Saw installed in 2009

One (1) 18" Vertical Band Saw installed in 2011

One (1) Vertical Band Saw installed in 1998

**Methodology:**

Uncontrolled PM Emissions (lbs/hr) = 0.93 lbs

Uncontrolled Emissions (tons/yr) = Particulate Emission Rate (lb/hr)\* 8760 hr/yr \* 1 ton/2,000 lbs

Controlled PM Emissions (lbs/hr) = 0.93 lbs \* (1- control efficiency)

Controlled PM Emissions (tons/yr) = Controlled PM Emission (lb/hr)\* 8760 hr/yr \* 1 ton/2,000 lbs

**Appendix A: Emissions Calculations**  
**Emissions From Woodworking Operation**

**Company Name:** Futurex, Inc.  
**Address City IN Zip:** 10000 S. Carlisle Street, Terre Haute, IN 47802  
**Registration Number:** 167-32305-00156  
**Reviewer:** Bruce Farrar  
**Date:** September 12, 2012

<b>Emission Unit</b>	<b>PM Emission (lbs/hr)</b>	<b>PM emissions (tons/yr)</b>
Miter Saw	4	17.52

**Notes:**

Information Provided by the Source: 8 lbs collected @ 2 hours. Collections from drop box located behind the saw.

$PTE = (8 \text{ lbs} / 2 \text{ hours}) = 4.00 \text{ lbs per hour of PM}$

Uncontrolled PM/PM10 emissions = amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation)

One (1) Dewalt 12" Compound Miter Saw installed in 2011

**Methodology:**

Uncontrolled PM Emissions (lbs/hr) = 2 lbs

Uncontrolled Emissions (tons/yr) = Particulate Emission Rate (lb/hr)\* 8760 hr/yr \* 1 ton/2,000 lbs

**Appendix A: Emissions Calculations**  
**Emissions From Parts Washer**

**Company Name:** Futurex, Inc.  
**Address City IN Zip:** 10000 S. Carlisle Street, Terre Haute, IN 47802  
**Registration Number:** 167-32305-00156  
**Reviewer:** Bruce Farrar  
**Date:** September 12, 2012

Material	Usage Rate (gals/yr)	Density (lbs/gal)	VOC Content (%)	Potential Emissions (tons/yr)
Mineral Spirit	18	6.44	100%	0.06

**Notes:**

Usage per year = 18 gallons/year, as provided by the source  
Density is 6.44 lbs/gal, as taken from the MSDS  
Zep Dyna Brute Parts Cleaner installed in 2002

**Methodology:**

Potential VOC emissions (tons/yr) = Usage rate (gals/yr) x Density (lbs/gal) x VOC Content (%) x 1 ton/2000 lbs

**Appendix A: Emissions Calculations  
Welding and Thermal Cutting**

**Company Name:** Futurex, Inc.  
**Address City IN Zip:** 10000 S. Carlisle Street, Terre Haute, IN 47802  
**Permit Number:** 167-32305-00156  
**Reviewer:** Bruce Farrar  
**Date:** September 12, 2012

Source	Electrode Type	PM <sub>10</sub> Emission Factor <sup>1</sup> (lb/1,000 lb Electrode Consumed )	Electrodes Consumed per year (lb)	Maximum Electrodes Consumed per day (lb)	Annual Emissions
					(ton/yr)
Total					
GMAW	E70S-6	5	247	0.7	0.001

HAP Emission Factors

Source	HAP Emission Factor <sup>1</sup> (lb/10,000 lb Electrode Consumed )						Percent Control Efficiency <sup>3</sup>	Electrodes Consumed per year (lb)
	Cr	Cr(VI)	Co	Mn	Ni	Pb		
GMAW	1.00	0.00	1.00	318.00	1.00	0.00	0%	247

HAP Emissions

Source	Annual Emissions (ton/yr)					
	Cr	Cr(VI)	Co	Mn	Ni	Pb
GMAW	1.2E-05	0.0E+00	1.2E-05	3.9E-03	1.2E-05	0.0E+00

**Methodology**

<sup>1</sup>AP-42 Emission Factor, Section 12.19, Table 12.19-1 (PM-PM10) and 12.19-2 (HAPs).

Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100**

**Company Name: Futurex, Inc.  
Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802  
Permit Number: 167-32305-00156  
Reviewer: Bruce Farrar  
Date: September 12, 2012**

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr	Unit Description
1.5	1020	12.5	Five (5) Heaters @ 0.20 MMBtu/hr, each One (1) Heater @ 0.112 MMBtu/hr One (1) Heater @ 0.225 MMBtu/hr One (1) Heater @ 0.12 MMBtu/hr

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	1.19E-02	0.05	0.05	0.00	0.63	0.03	0.53

\*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 #1-02-006-02, 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

See page 7 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**HAPs Emissions**

**Company Name:** Futurex, Inc.  
**Address City IN Zip:** 10000 S. Carlisle Street, Terre Haute, IN 47802  
**Permit Number:** 167-32305-00156  
**Reviewer:** Bruce Farrar  
**Date:** September 12, 2012

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.314E-05	7.508E-06	4.692E-04	1.126E-02	2.127E-05

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.128E-06	6.882E-06	8.759E-06	2.377E-06	1.314E-05

Methodology is the same as page 6.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

See Page 8 for Greenhouse Gas calculations.

**Appendix A: Emissions Calculations  
 Natural Gas Combustion Only  
 MM BTU/HR <100  
 Greenhouse Gas Emissions**

**Company Name:** Futurex, Inc.  
**Address City IN Zip:** 10000 S. Carlisle Street, Terre Haute, IN 47802  
**Permit Number:** 167-32305-00156  
**Reviewer:** Bruce Farrar  
**Date:** September 12, 2012

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	751	0.0	0.0
Summed Potential Emissions in tons/yr	751		
CO2e Total in tons/yr	755		

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A: Emission Calculations  
Fugitive Dust Emissions - Unpaved Roads**

**Company Name: Futurex, Inc.  
Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802  
Permit Number: 167-32305-00156  
Reviewer: Bruce Farrar  
Date: September 12, 2012**

**Unpaved Roads at Industrial Site**

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	8.0	1.0	8.0	40.0	320.0	600	0.114	0.9	331.8
Vehicle (leaving plant) (one-way trip)	8.0	1.0	8.0	40.0	320.0	600	0.114	0.9	331.8
<b>Totals</b>			<b>16.0</b>		<b>640.0</b>			<b>1.8</b>	<b>663.6</b>

Average Vehicle Weight Per Trip = 

40.0
------

 tons/trip  
Average Miles Per Trip = 

0.11
------

 miles/trip

Unmitigated Emission Factor, Ef =  $k \cdot [(s/12)^a] \cdot [(W/3)^b]$  (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	40.0	40.0	40.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext =  $E \cdot [(365 - P)/365]$  (Equation 2 from AP-42 13.2.2)

Mitigated Emission Factor, Eext =  $E \cdot [(365 - P)/365]$

where P = 

125
-----

 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	8.28	2.11	0.21	lb/mile
Mitigated Emission Factor, Eext =	5.44	1.39	0.14	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	1.37	0.35	0.03	0.90	0.23	0.02
Vehicle (leaving plant) (one-way trip)	1.37	0.35	0.03	0.90	0.23	0.02
<b>Totals</b>	<b>2.75</b>	<b>0.70</b>	<b>0.07</b>	<b>1.81</b>	<b>0.46</b>	<b>0.05</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)  
 PTE = Potential to Emit

**Appendix A: Emission Calculations**  
**Fugitive Dust Emissions - Paved Roads**

Company Name: **Futurex, Inc.**  
 Address City IN Zip: **10000 S. Carlisle Street, Terre Haute, IN 47802**  
 Permit Number: **167-32305-00156**  
 Reviewer: **Bruce Farrar**  
 Date: **September 12, 2012**

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	8.0	1.0	8.0	40.0	320.0	400	0.076	0.6	221.2
Vehicle (leaving plant) (one-way trip)	8.0	1.0	8.0	40.0	320.0	400	0.076	0.6	221.2
Front Loader	1.0	12.0	12.0	3.5	42.0	120	0.023	0.3	99.5
<b>Totals</b>			<b>28.0</b>		<b>682.0</b>			<b>1.5</b>	<b>542.0</b>

Average Vehicle Weight Per Trip =  $\frac{24.4}{0.05}$  tons/trip  
 Average Miles Per Trip =  $\frac{0.05}{0.05}$  miles/trip

Unmitigated Emission Factor, Ef =  $[k * (sL)^{0.91} * (W)^{1.02}]$  (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	24.4	24.4	24.4	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m <sup>2</sup> = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext =  $E * [1 - (p/4N)]$  (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext =  $Ef * [1 - (p/4N)]$   
 where p =  $\frac{125}{365}$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
 N =  $\frac{365}{365}$  days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.258	0.452	0.1108	lb/mile
Mitigated Emission Factor, Eext =	2.065	0.413	0.1014	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.25	0.05	0.01	0.23	0.05	0.01
Vehicle (leaving plant) (one-way trip)	0.25	0.05	0.01	0.23	0.05	0.01
Loader	0.11	0.02	0.01	0.10	0.02	0.01
<b>Totals</b>	<b>0.61</b>	<b>0.12</b>	<b>0.03</b>	<b>0.56</b>	<b>0.11</b>	<b>0.03</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
 Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Unmitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
 Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] \* [1 - Dust Control Efficiency]

**Abbreviations**

PM = Particulate Matter  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)  
 PTE = Potential to Emit



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
**Governor**

*Thomas W. Easterly*  
**Commissioner**

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

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

**TO:** Mark Eldridge  
Futurex Inc  
10000 S Carlisle St  
Terre Haute IN 47802

**DATE:** November 16, 2012

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

**SUBJECT:** Final Decision  
Registration  
167-32305-00156

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:  
Brent Thompson, Responsible Official  
Alic Bent, August Mack Environmental  
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at [jbrush@idem.IN.gov](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07

# Mail Code 61-53

IDEM Staff	DPABST 11/16/2012 Futurex Inc 167-32305-00156 (Final)		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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2		Brent Thompson President Futurex Inc 70 N Main St Bloomingdale IN 47832 (RO CAATS)									
3		Vigo County Board of Commissioners County Annex, 121 Oak Street Terre Haute IN 47807 (Local Official)									
4		Terre Haute City Council and Mayors Office 17 Harding Ave Terre Haute IN 47807 (Local Official)									
5		Vigo County Health Department 147 Oak Street Terre Haute IN 47807 (Health Department)									
6		J.P. Roehm PO Box 303 Clinton IN 47842 (Affected Party)									
7		Mr. Alic Bent August Mack Environmental, Inc. 1302 N Meridian St, Suite 300 Indianapolis IN 46202 (Consultant)									
8		Deb Reeves Vigo County Air Pollution Control 121 Oak Terre Haute IN 47807 (Local Official)									
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