



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Michael R. Pence*  
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: February 21, 2013

RE: Futurex Inc / 167-32813-00156

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

## Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

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 from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures  
FNPER-AM.dot12/3/07



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- (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.

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Mark Eldridge  
Futurex Inc  
10000 S Carlisle St  
Terre Haute, IN, 47802

February 21, 2013

Re: 167-32813-00156  
First Administrative Amendment to  
R167-32305-00156

Dear Mark Eldridge:

Futurex Inc was issued a Registration No. R167-32305-00156 on November 16, 2012 for a stationary plastic sheet manufacturing plant located at 10000 S Carlisle St, Terre Haute, IN, 47802. On February 7, 2013, the Office of Air Quality (OAQ) received an application from the source requesting to correct the PTE calculations and emission unit descriptions for the eight (8) extrusion lines and the eleven (11) granulators, to more accurately represent the maximum capacities of each extrusion line and each granulator. The permit previously stated that each extrusion line and each granulator had a maximum capacity of 61.75 pounds of polystyrene per hour. However, because polystyrene, polyethylene and ABS are all used in each line, the maximum capacity for each line is actually 145 pounds per hour. The source is not modifying the extrusion lines or granulators with this revision; rather, this change is to correct an error in descriptive information.

Pursuant to 326 IAC 2-5.5-6(d)(2)(B), this change to the registration is considered an administrative amendment because the registration is amended to indicate changes in descriptive information concerning the source or emission units.

The uncontrolled/unlimited potential to emit (PTE) of the entire source after the revision to the maximum capacities of the eight (8) extrusion lines will continue to be within the threshold levels specified in 326 IAC 2-5.5-1(b)(1)(Registration). See Appendix A for the revised PTE of the source after the revision to the maximum capacities of the eight (8) extrusion lines. Note that the potential emissions from the eleven (11) granulators are considered negligible and will not change with this amendment.

## PTE of the Entire Source After Issuance of the Registration Administrative Amendment

The table below summarizes the potential to emit of the entire source after the issuance of this administrative amendment, reflecting all limits, of the emission units, using **bold** and ~~strikeouts~~ to show the changes:

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (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
9 Silos	-	-	-	-	-	-	-	-	-	-
5 Blenders	-	-	-	-	-	-	-	-	-	-
11 Granulators	-	-	-	-	-	-	-	-	-	-
9 Extruder & Reprocessing Extruder	0.14 <b>0.19</b>	0.14 <b>0.19</b>	0.14 <b>0.19</b>	-	-	0.17 <b>0.23</b>	-	-	-	-
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>	<del>24.59</del> <b>24.65</b>	<del>22.83</del> <b>22.89</b>	<del>22.33</del> <b>22.39</b>	<b>0.00</b>	<b>0.63</b>	<del>0.26</del> <b>0.32</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.

The table below summarizes the potential to emit of the entire source after issuance of this administrative amendment, reflecting all limits, of the emission units. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted).

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (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
9 Silos	-	-	-	-	-	-	-	-	-	-
5 Blenders	-	-	-	-	-	-	-	-	-	-
11 Granulators	-	-	-	-	-	-	-	-	-	-
9 Extruder & Reprocessing Extruder	0.19	0.19	0.19	-	-	0.23	-	-	-	-
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>24.65</b>	<b>22.89</b>	<b>22.39</b>	<b>0.00</b>	<b>0.63</b>	<b>0.32</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.										

IDEM, OAQ has decided to make the following changes to the registration as described below.

- (1) The descriptive information in Sections A.2 and D.1 have been updated to correct the maximum capacities for the extrusion lines and granulators.
- (2) Section D.1.1 has been revised to show the correct particulate matter limitations for this source. In Registration No. 167-32305-00156, it was incorrectly noted that this source is subject to the particulate limitation in 326 IAC 6-3-2 (Particulate Emissions Limitations for Manufacturing Sources). Pursuant to 326 IAC 6.5-1-1(a)(2), this source is actually subject to particulate limitations as specified in 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County) because this source is located in Vigo County and has potential PM emissions greater than ten (10) tons per year. Pursuant to 326 IAC 6-3-1(c)(3), the requirement of 326 IAC 6-3 shall not apply if a particulate matter limitation is established 326 IAC 6.5.

Pursuant 326 IAC 6.5-1-2(a), particulate matter emissions from each of the following emission units shall not exceed 0.07 gram per dry standard cubic meter (g/dscm) 0.03 grain per dry standard cubic foot (dscf):

Emission Unit
Extruder Line 51
Extruder Line 61
Extruder Line 62
Extruder Line 63
Extruder Line 64
Extruder Line 65
Extruder Line 71
Extruder Line 72
Extruder Line 73
Reprocessing Extruder Line
Cutting Operation ( vertical band saw)
Cutting Operation (18" vertical band saw)
Cutting Operation (18" vertical band saw)
Woodworking (miter saw)

Therefore, Section D.1.1 has been revised to include the particulate limitations required under 326 IAC 6.5 for these units.

Pursuant to 326 IAC 2-5.5-6, the registration is hereby amended as follows, with deleted language as ~~strikeouts~~ and new language **bolded**:

A.2 Emission Units and Pollution Control Equipment Summary

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

...

- (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 ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1996,
  - (5) Line 64, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 2011,
  - (6) Line 65, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1994,
  - (7) Line 71, with a maximum capacity of ~~64.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour per hour and constructed in 2005,

- (8) Line 72, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** 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.
- ...
- (g) Eleven (11) granulators, using no controls and exhausting inside the building consisting of:
  - (1) Line 51, with a maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 2010,
  - (2) Line 61 with a maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 1995,
  - (3) Line 62, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 1995,
  - (4) Line 63, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 1996.
  - (5) Line 64, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 2012,
  - (6) Line 65, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 2011,
  - (7) Line 71, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 2008, and
  - (8) Line 72, with maximum capacity of ~~61.75~~ **145** pounds of polystyrene pellets per hour, **polyethylene and ABS** and constructed in 2009.
  - (9) Line 73, with a maximum capacity of 300 pounds of ABS (Acrylonitrile Butadiene Styrene), approved for construction in 2012.
  - ...

**SECTION D.1**

**OPERATION CONDITIONS**

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

...

(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~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 2010;
- (2) Line 61, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1995,
- (3) Line 62, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1995,
- (4) Line 63, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1996,
- (5) Line 64, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 2011,
- (6) Line 65, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour and constructed in 1994,
- (7) Line 71, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** per hour per hour and constructed in 2005,
- (8) Line 72, with a maximum capacity of ~~61.75~~ **145.0** pounds of polystyrene pellets, **polyethylene and ABS** 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.

...

(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:

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

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

**D.1.1 Particulate Matter [326 IAC 6.5]**

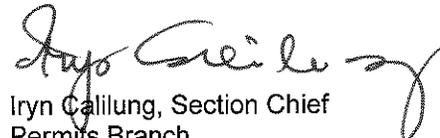
Pursuant 326 IAC 6.5-1-2(a), particulate matter emissions from each of the following emission units shall not exceed 0.03 grain per dry standard cubic foot (dscf):

Emission Unit	
Extruder Line 51	
Extruder Line 61	
Extruder Line 62	
Extruder Line 63	
Extruder Line 64	
Extruder Line 65	
Extruder Line 71	
Extruder Line 72	
Extruder Line 73	
Reprocessing Extruder Line	
Cutting Operation ( vertical band saw)	
Cutting Operation (18" vertical band saw)	
Cutting Operation (18" vertical band saw)	
Woodworking (miter saw)	

The source shall continue to operate according to 326 IAC 2-5.5 (Registrations). Please find enclosed the amended registration and Appendix A. A copy of the registration is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Nida Habeeb, at (800) 451-6027, press 0 and ask for Nida Habeeb or extension 4-8531, or dial (317) 234-8531.

Sincerely,



Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

IC/NH

Attachment: Revised Registration  
Appendix A - Updated Emissions Calculations

cc: File - Vigo County  
Vigo County Health Department  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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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	
Original Signed by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: November 16, 2012

Administrative Amendment No. 167-32813-00156	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date:  February 21, 2013

## 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

---

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 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1996,
  - (5) Line 64, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 2011,
  - (6) Line 65, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1994,
  - (7) Line 71, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour per hour and constructed in 2005,
  - (8) Line 72, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS 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 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 2010,
  - (2) Line 61, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 1995,
  - (3) Line 62, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 1995,
  - (4) Line 63, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 1996.
  - (5) Line 64, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 2012,
  - (6) Line 65, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 2011,
  - (7) Line 71, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS and constructed in 2008, and
  - (8) Line 72, with maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS 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 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 2010;
  - (2) Line 61, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1995,
  - (3) Line 62, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1995,
  - (4) Line 63, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1996,
  - (5) Line 64, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 2011,
  - (6) Line 65, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour and constructed in 1994,
  - (7) Line 71, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS per hour per hour and constructed in 2005,
  - (8) Line 72, with a maximum capacity of 145.0 pounds of polystyrene pellets, polyethylene and ABS 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 Matter [326 IAC 6.5]

Pursuant 326 IAC 6.5-1-2(a), particulate matter emissions from each of the following emission units shall not exceed 0.03 grain per dry standard cubic foot (dscf):

<b>Emission Unit</b>
Extruder Line 51
Extruder Line 61
Extruder Line 62
Extruder Line 63
Extruder Line 64
Extruder Line 65
Extruder Line 71
Extruder Line 72
Extruder Line 73
Reprocessing Extruder Line
Cutting Operation ( vertical band saw)
Cutting Operation (18" vertical band saw)
Cutting Operation (18" vertical band saw)
Woodworking (miter saw)

**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 that 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>

## Appendix A: Emissions Calculations

## Summary of Emissions

Company Name: Futurex, Inc.  
Address City IN Zip: 10000 S. Carlisle Street, Terre Haute, IN 47802  
Registration AA: 167-32813-00156  
Reviewer: Nida Habeeb  
Date: February 11, 2013

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	0.19	0.19	0.19	-	-	0.23	-	-	-	-
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>24.65</b>	<b>22.89</b>	<b>22.39</b>	<b>0.00</b>	<b>0.63</b>	<b>0.32</b>	<b>0.53</b>	<b>755</b>	<b>0.02</b>	<b>0.01 Hexane</b>

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

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

<sup>γ</sup> 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 AA: 167-32305-00156  
Reviewer: Nida Habeeb  
Date: February 11, 2013**

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	145.00	0.04	0.05	0.01	0.01
Extruder (Line 61) polystyrene	145.00	0.04	0.05	0.01	0.02
Extruder (Line 62) Polyethylene	145.00	0.04	0.05	0.01	0.02
Extruder (Line 63) Polyethylene	145.00	0.04	0.05	0.01	0.02
Extruder (Line 64) polystyrene	145.00	0.04	0.05	0.01	0.01
Extruder (Line 65) polystyrene	145.00	0.04	0.05	0.01	0.01
Extruder (Line 71) polystyrene	145.00	0.04	0.05	0.01	0.01
Extruder (Line 72) polystyrene	145.00	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>				0.19	0.23

**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 million  $t = 380^{\circ}\text{F}$

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

$c = -77.6$  for VOC and  $-34.0$  for PM

Particulates =  $(380 * 0.141) - 34.0 = 19.58$  lbs per million lbs of Polystyrene and ABS.

VOC =  $(380 * 0.27) - 77.6 = 25.0$  lbs per million lbs of Polystyrene and ABS.

**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 AA: 167-32305-00156**  
**Reviewer: Nida Habeeb**  
**Date: February 11, 2013**

<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 AA:** 167-32305-00156  
**Reviewer:** Nida Habeeb  
**Date:** February 11, 2013

<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 lbs / 2 hours) = 4.00 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 AA:** 167-32305-00156  
**Reviewer:** Nida Habeeb  
**Date:** February 11, 2013

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  
**Registration AA:** 167-32305-00156  
**Reviewer:** Nida Habeeb  
**Date:** February 11, 2013

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  
Registration AA: 167-32305-00156  
Reviewer: Nida Habeeb  
Date: February 11, 2013**

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr	Unit Description 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
1.5	1020	12.5	

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx 100 **see below	VOC	CO 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

Emission Factor in lb/MMcf	HAPs - Organics				
	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

Emission Factor in lb/MMcf	HAPs - Metals				
	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

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

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2 120,000	CH4 2.3	N2O 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**

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  
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  
Registration AA: 167-32305-00156  
Reviewer: Nida Habeeb  
Date: February 11, 2013**

**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 =  tons/trip  
Average Miles Per Trip =  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 =  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  
**Registration AA:** 167-32305-00156  
**Reviewer:** Nida Habeeb  
**Date:** February 11, 2013

**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 =  $\frac{24.4}{0.05}$  miles/trip

Unmitigated Emission Factor,  $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$  (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,  $E_{ext} = E * [1 - (p/4N)]$  (Equation 2 from AP-42 13.2.1)

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	2.258	0.452	0.1108	lb/mile
Mitigated Emission Factor, $E_{ext} =$	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 = Particle Matter (<2.5 um)
- PTE = Potential to Emit



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Michael R. Pence*  
**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:** February 21, 2013

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

**SUBJECT:** Final Decision  
Registration Admendment  
167-32813-00156

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  
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 2/21/2013 Futurex Inc 167-32813-00156 (Final)		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

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2		Brent Thompson President Futurex Inc 10000 S Carlisle St Terre Haute IN 47802 (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		Vigo Co Public Library 1 Library Square Terre Haute IN 47807-3609 (Library)										
7		J.P. Roehm PO Box 303 Clinton IN 47842 (Affected Party)										
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