Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Revision to a
Federally Enforceable State Operating Permit (FESOP)

for Praxair Surface Technologies in Marion County

Significant Permit Revision No.: 097-37221-00060

The Indiana Department of Environmental Management (IDEM) has received an application from Praxair Surface Technologies, located at 1500 Polco Street, Indianapolis, Indiana 46222, for a significant revision of its FESOP issued on April 1, 2014. If approved by IDEM's Office of Air Quality (OAQ), this proposed revision would allow Praxair Surface Technologies to make certain changes at its existing source. Praxair Surface Technologies has applied for the following changes:

1. Praxair is requesting to add a new specialty ingot manufacturing process in Building 1550. The new process will include a slurry blending process, which produces slurry that is subsequently spray dried using the existing powder spray drying equipment. As a result, the potential to emit for the spray drying process will not increase as a result of this change. After spray drying, the dried powder is pressed into cylinders and sintered in an electric kiln. After sintering, the ingots will go to final finishing, which consists of a new chop saw and lathe.

2. Praxair is requesting to replace an existing grit blaster (O1P1 EUG7) in Building 1415 with a newer grit blaster which has a higher maximum capacity. The existing grit blaster has a maximum capacity of 57 pounds per hour and the new blaster will have a maximum capacity of 81 pounds per hour.

3. Praxair is requesting to change the solvent used in one of the degreasers in Building 1415 from EnSolv to Novec 72DE. The new solvent will result in increased VOC emissions.

4. Praxair is requesting to add an additional spray dryer, identified as Powder 5 Spray Dryer 3 (EUP11B) and an associated integral dust collector (DC-046). The new spray dryer will have a maximum throughput of 100 pounds of powder per hour.

5. Praxair notified IDEM that the existing Powder 5 Spray Dryer 1 and Powder 5 Spray Dryer 2 will be modified to exhaust through separate stacks instead of a common stack. This change will not affect the unlimited or limited potential to emit for these two (2) dryers.

6. Praxair is requesting to add one (1) new furnace to the existing Operation 2 Process 4 that will be controlled by the existing water scrubber. The new furnace will not increase the maximum permitted throughput of 0.5 pounds per hour for the Operation 2 Process 4. Therefore, the addition of the new furnace will not increase the unlimited potential to emit HAPs.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g., changes that add or modify synthetic minor emission limits).

The potential to emit of any regulated air pollutants will continue to be limited to less than the Title V and PSD major threshold levels. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM's preliminary findings are available at:

Speedway Public Library
5633 W 25th St
Speedway, IN 46224-3899

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

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

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

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number 097-37221-00060 in all correspondence.

Comments should be sent to:

Brian Williams
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension (4-5375)
Or dial directly: (317) 234-5375
Fax: (317)-232-6749 attn: Brian Williams
E-mail: bwilliam@idem.in.gov

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

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

What will happen after IDEM makes a decision?

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

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

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Michael Bass
Praxair Surface Technologies, Inc.
1500 Polco Street
Indianapolis IN 46224

Re: 097-37221-00060
Significant Revision to
F097-33186-00060

Dear Mr. Bass:

Praxair Surface Technologies, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) No. F097-33186-00060 on April 1, 2014 for an existing manufacturer of metallic and nonmetallic powders for surface coating and polishing located at 1500 Polco Street, Indianapolis, Indiana 46222. On May 24, 2016, the Office of Air Quality (OAQ) received an application from the source requesting to construct and operate new emission units and modify existing emission units. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The following construction conditions are applicable to the proposed project:

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

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

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

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit.

All other conditions of the permit shall remain unchanged and in effect. Please find attached the entire FESOP as revised. The permit references the below listed attachments. Since these attachments

have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this revision:

Attachment A: 40 CFR 63, Subpart ZZZZ, National Emission Standards for Stationary Reciprocating Internal Combustion Engines
Attachment B: 40 CFR 63, Subpart WWWWWW, National Emission Standards for Area Source Standards for Plating and Polishing
Attachment C: 40 CFR 63, Subpart CCCCCCC, National Emission Standards for Area Sources: Paints and Allied Products Manufacturing
Attachment D: 40 CFR 63, Subpart VVVVVV, National Emission Standards for Chemical Manufacturing Area Sources
Attachment E: 40 CFR 60, Subpart Dc, New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units

Previously issued approvals for this source containing these attachments are available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the permit 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 Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Brian Williams of my staff at 317-234-5375 or 1-800-451-6027, and ask for extension 4-5375.

Sincerely,

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit

BW

cc: File - Marion County
Marion County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

DRAFT

Federally Enforceable State Operating Permit
OFFICE OF AIR QUALITY

Praxair Surface Technologies
1500 Polco Street,
1550 Polco Street,
1245 Main Street, and
1415 Main Street
Indianapolis, Indiana 46222

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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

Operation Permit No.: F097-33186-00060	
Issued by: Chrystal A. Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 1, 2014 Expiration Date: April 1, 2019

Administrative Amendment No.: 097-34910-00060, issued on October 7, 2014
Significant Permit Revision No.: 097-35157-00060, issued on March 25, 2015
Significant Permit Revision No.: 097-35433-00060, issued on May 7, 2015
Significant Permit Revision No.: 097-36948-00060, issued on June 21, 2016

Significant Permit Revision No.: 097-37221-00060	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date: April 1, 2019

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SECTION A SOURCE SUMM ARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary manufacturer of metallic and nonmettallic powders for surface coating and polishing.

Source Address:	1245 Main Street, Indianapolis, Indiana 46224 1415 Main Street, Indianapolis, Indiana 46224 1550 Polco Street Indianapolis, Indiana 46222 1500 Polco Street, Indianapolis, Indiana 46222
General Source Phone Number:	317-240-2533
SIC Code:	3479 (Coating, Engraving, and Allied Services, Not Elsewhere Classified)
County Location:	Marion, Wayne Township
Source Location Status:	Nonattainment for SO_2 standard Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 FESOP Source Definition [326 IAC 2-8-1] [326 IAC 2-7-1(22)]

(a) This metallic and non-metallic powder manufacturing and surface coating operation consists of four (4) separate buildings:

Building 1 is located at 1245 Main Street, Indianapolis, Indiana 46224;
Building 2 is located at 1415 Main Street, Indianapolis, Indiana 46224;
Building 3 is located at 1550 Polco Street Indianapolis, Indiana 46222; and
Building 4 is located at 1500 Polco Street, Indianapolis, Indiana 46222

In order to consider the plants as one single source, all three of the following criteria must be met:

(1) the plants must be under common ownership or common control;

(2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for another; and,

(3) the plants must be located on the same, contiguous or adjacent properties.

The four (4) buildings are contiguous or adjacent and have the same owner. Operations are classified under two (2) separate Standard Industrial Classification Codes (SIC). Although the SIC codes are different, all four (4) buildings provide various support relationships to one another. Since the operations are located on contiguous or adjacent properties, owned by the same company, and provide a support relationship, they will be considered one (1) source, as defined by 326 IAC 2-7-1(22). This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000.

(b) Additionally, Praxair, Inc. owns and operates Praxair Surface Technologies, Inc. (source 097-00060) and Praxair Distribution, Inc. (source 097-00189). IDEM, OAQ has examined whether the plants are part of the same major source. The plants are both owned by

Praxair, Inc. Therefore, the plants are under common ownership and common control, meeting the first part of the major source definition. Praxair Surface Technologies has the two-digit SIC Code 34 for the Major Group Fabricated Metal Products, Except Machinery and Transportation Equipment. Praxair Distribution has the two-digit SIC Code 51 for the Major Group Wholesale Trade-Nondurable Goods. The plants do not have the same two-digit SIC Code. A plant is a support facility to another plant if it dedicates 50% or more of its output to the other plant. Praxair Distribution sells gas in containers and dry ice. About 10-15% of its total output goes to Praxair Surface Technologies. This is less than 50% of its output, so Praxair Distribution does not qualify as a support facility. Praxair Surface Technologies does not send any of its output to Praxair Distribution. Since neither plant is a support facility and the plants do not have the same two-digit SIC Code, they do not meet the second part of the major source definition. The plants are located on contiguous properties since they share a common property boundary. The plants meet the third element of the major source definition.

The plants do not meet all three elements of the major source definition. Therefore, IDEM, OAQ finds that the Praxair Surface Technologies, Inc. (source 097-00060) and the Praxair Distribution, Inc. (source 097-00189) plants are not part of the same major source.

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

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

Location: 1245 Main Street

Metal Surface Coating Operations

(a) One (1) High Velocity Oxy Fuel coating gun, installed in 1991, identified as EU04A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by integral baffles, exhausting at Stack/Vent ID 04A.

(b) One (1) High Velocity Oxy Fuel coating gun, identified as EU19A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by an integral baghouse with HEPA filters with a control efficiency of 99.97%, identified as C19A, exhausting at Stack/Vent ID 19A. [40 CFR 63, Subpart WWWWWW]

(1) EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(c) Two (2) plasma surface coating stations, identified as EU03B, controlled by integral baffles, and EU05B, controlled by an integral baghouse with HEPA filters (baghouse control efficiency = 99.97%) identified as C05D, with a maximum capacity of 8.04 pounds of powder coating per hour, each, exhausting at Stack/Vent ID 03D, and 05D respectively, installed prior to 1982. [40 CFR 63, Subpart WWWWWW]

(1) EU03B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

(d) One (1) Alpha 100 physical vapor deposition coating station, identified as EU01T, uncontrolled, exhausting at Stack/Vent ID 01T.

(e) One (1) LSR1 Titanium tetrachloride coating station, identified as EU01R, controlled by a scrubber, exhausting at Stack/Vent ID 01R.

Location: 1415 Main Street

(a) Degreasing operations, including the following:

(1) Open Top Vapor Degreasers: [326 IAC 8-3-3]

Location	Type	Solvent
Building 1415	Tribomet Line Vapor Degreaser	n-propyl bromide
Building 1415	LPPS Vapor Degreaser (2013)	n-propyl bromide

(2) Conveyorized Vapor Degreasers approved in 2016 for modification to change solvents: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	1 Operation 1 Degreaser	Novec 72DE, with a maximum capacity of 500 gallons per year

(b) Operation 1, Process 1 (O1P1), controlled by integral dust collectors with HEPA filters, identified as DCC1-CV, DCC2-CV, and DCC4-CV with a control efficiency of 99.7%.

(c) Operation 2, Process 1 (O2P1), consisting of one (1) 10.6 gallon HCl tank and one (1) 10.6 gallon Turco4181L tank, with uncontrolled emissions.

(d) Operation 2, Process 2 (O2P2) with uncontrolled emissions.

(e) Operation 2, Process 4 (O2P4), approved in 2016 for modification to add one (1) new furnace, with emissions controlled by a water scrubber with a control efficiency of 90%.

(f) Roof top natural gas-fired units, including:

(1) Two (2) Carrier roof top units, identified as RTU-A2 and RTU-A3, rated at 0.360 MMBtu per hour, each;

(2) One (1) Carrier roof top unit, identified as RTU-F, rated at 0.115 MMBtu per hour;

(3) One (1) Carrier roof top unit, identified as RTU-C1, rated at 0.250 MMBtu per hour;

(4) Four (4) Carrier roof top units, identified as RTU-E1, RTU-B2, RTU-A5, RTU-A6, rated at 0.525 MMBtu per hour, each;

(5) One (1) Trane roof top unit, identified as RTU-00, rated at 0.587 MMBtu per hour;

(6) Two (2) York roof top units, identified as RTU-B1 and RTU-A-1, rated at 0.3 MMBtu per hour, each;

(7) One (1) York roof top unit, identified as RTU-A7, rated at 0.699 MMBtu per hour;

(8) One (1) Aaon roof top unit, identified as RTU-E1, rated at 0.18 MMBtu per hour, each;

(9) One (1) Aaon roof top unit, identified as RTU-D2, rated at 0.54 MMBtu per hour;

(10) One (1) Aaon roof top unit, identified as RTU-C1, rated at 0.27 MMBtu per hour;

(11) Two (2) Trane roof top units, identified as ACPR1-1 and ACPR1-2, rated at 0.117 MMBtu per hour, each;

(12) One (1) Carrier roof top unit, identified as ACPR4-1, rated at 0.133 MMBtu per hour; and

(13) One (1) Carrier roof top unit, identified as ACPR4-2, rated at 0.115 MMBtu per hour.

Location: 1550 Polco Street

(a) One (1) Polishing Operation, consisting of:

(1) Powder Handling, including:

(A) Lens Polish mixing tank loading, approved in 2015 for modification of the dust collector, controlled by a dust collector, identified as DC030, with a control efficiency of 99.5%;

(B) Suspension Room custom blend loading, identified as EUS-20, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%;

(C) Suspension Room powder packaging, identified as EUS-18, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%;

(D) Powder loading into premix tanks, identified as EUS-19, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%.

(2) Polish Mixing, including:

(A) One (1) Lens Polish mixing and filling operation, consisting of 4 mixing tanks, 9 holding tanks, a bottle filling line, and a pail filling line, controlled by a dust collector, identified as DC062, with a control efficiency of 99.5%. The filling process creates a bottleneck so that only two (2) mixing tanks can be run at one time;

(B) One (1) Suspension Room mixing operation, consisting of one (1) mixing tank, with a batch time of four (4) hours, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%.

CSP Department

(b) One (1) powder manufacturing process, identified as EU020, constructed in 2014, including: [40 CFR 63, Subpart VVVVVV]

(1) One (1) raw material handling operation, including a liquid pumping operation and solid scooping operation, with uncontrolled emissions;

(2) One (1) raw material mixing operation, in which raw materials are mixed inside of an enclosed 55-gallon drum, with uncontrolled emissions;

(3) One (1) Combustion Spray Pyrolysis (CSP) operation, including spray drying, a cyclonic collection system with a collection efficiency of 95%, and a system to convert the powder to an oxide form. The 5% not collected by the system is routed to the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(4) One (1) natural gas-fired burner associated with EU020, with a heat input capacity of 0.40 MMBtu per hour, controlled by the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(5) One (1) powder handling operation after CSP in which powder is conveyed to a hopper,

which feeds the material into a kiln, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(6) One (1) electrically-heated rotary kiln, in which powder is calcined, with uncontrolled emissions;

(7) One (1) powder handling operation after the kiln, in which powder is screened and conveyed to a hopper which feeds the milling process, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(8) One (1) enclosed mill, emitting only during loading and unloading powder handling operations, detailed in (7) and (9);

(9) One (1) powder handling operation after the mill, in which powder is screened and then conveyed to the blending hopper, with emissions controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(10) One (1) enclosed blender, used to homogenize the mixture;

(11) One (1) enclosed blender, permitted in 2014, used to homogenize the mixture. This blender will process small product batches and/or act as a backup blender for the existing enclosed blender; and

(12) One (1) final powder handling process, in which powder is screened and packaged, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%.

Powder Manufacturing Area

(c) One (1) titanium powder process, approved in 2015 for construction, controlled by a rotoclone wet collector, identified as Rotoclone, with a control efficiency of 98.0%, exhausting to the atmosphere. The maximum capacity of this process has been considered confidential information. [40 CFR 63, Subpart CCCCCCC]

(d) One (1) specialty ingot manufacturing process, approved in 2016 for construction, consisting of the following:

(1) One (1) slurry blending process, with a maximum capacity of 1,093.30 pounds of raw materials per batch and a batch time of four (4) hours per batch, uncontrolled, and exhausting to the indoors. The slurry is then subsequently spray dried using existing spray drying equipment.

(2) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control during transfer of the powder from the spray dryer to the feed tank, identified as DC074, and exhausting to the indoors.

(3) One (1) feed tank.

(4) One (1) electric sintering kiln.

(5) One (1) final finishing machining lathe, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control, identified as DC075, and exhausting to the indoors.

(6) One (1) final finishing machining chop saw, with a maximum capacity of 275 pounds of specialty ingot per hour, uncontrolled, and exhausting to the indoors.

A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

Location: 1245 Main Street

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1245	Maintenance Parts Washer	Safety Kleen Premium Gold Solvent
Building 1245	[1] Manual Degreasing	MEK, IPA, ZeroTri Heavy-Duty Degreaser Aerosol

[1] Wipe cleaning is not subject to regulation

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Two (2) Empire Pro-Finish Glass Bead Cabinet Blasting units, identified as EU01GB and EU02GB, each with maximum glass bead cycling of 600 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01GB and C02GB, exhausting at Stack/Vent ID 01GB and 02GB.

(2) Eleven (11) aluminum oxide grit blasting unit, each with a maximum capacity shot cycling of 600 pounds per hour, identified as follows:

(A) Two (2) units identified as EU004G, and EU010G, each controlled by baghouses rated at 99.97 percent efficiency, identified as C004G and C010G;

(B) Two (2) units identified as EU001G and EU005G, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C001G and C005G respectively; and

(C) Seven (7) aluminum oxide grit blast units, identified as EU002G, EU008G, EU011G, EU014G, EU016G, EU018G, and EU019G each controlled by a baghouse rated at 99.0 percent efficiency, identified as C002G, C008G, C011G, C014G, C016G, C018G, and C019G, respectively.

(3) One (1) grit blaster, identified as EU012G, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as DC012G, exhausting to the indoors.

(4) One (1) aluminum oxide grit blast unit, identified as EU013G, with maximum capacity of 200 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C013G.

(5) Two (2) silicon carbide grit blast units, identified as EU007G and EU015G, each with maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C007G and C015G.

(6) One (1) PST steel shot peen shot blasting cabinet, installation date of 1994, including:

(A) Emission Unit ID EU01L, with a maximum capacity of 5.36 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01L, exhausting to S/V 01L

(7) Two (2) fine grit shot blasting cabinets, identified as EU01M and EU02M, each with a maximum capacity of 600 pounds per hour grit, each, controlled by baghouses rated at 99.0 percent efficiency, identified as C01M and C02M, respectively.

(8) One (1) grit reclassifier, identified as EU020G, approved in 2015 for construction, with a maximum capacity of 400 pounds of aluminum oxide per hour, controlled by dust collector rated at 99.0 percent efficiency, identified as DC020G, exhausting to the indoors.

Machining

(9) One (1) maintenance shop consisting of four (4) lathes, two (2) mills, and one (1) plasma cutter.

Grinding

(10) One (1) Brown and Sharp grinder, approved in 2015 for construction, with a maximum capacity of 3 pounds of metal per hour, controlled by a dust collector, rated at 99.0 percent efficiency, exhausting to the indoors.

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Metal Surface Coating Operations

(1) Seven (7) detonation surface coating stations, installed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, identified as follows: [40 CFR 63, Subpart WWWWWW]

(A) Five (5) Speedy Susan D guns, identified as EU01A, EU02A, EU16A, EU17A, and EU18A, each controlled by an integral baghouse with HEPA filters, identified as C01A, C02A, C16A, C17A, and C18A respectively, exhausting individually to Stack/Vent ID 01A, 02A, 16A, 17A, and 18A respectively;

(B) Two (2) D guns, identified as EU05A and EU06A, each controlled by an integral baghouse with HEPA filters, identified as C05A and C06A, exhausting to Stack/Vent ID 05A and 06A; and

(2) Two (2) plasma surface coating stations, identified as EU06B and EU10B, each controlled by an integral baghouse with HEPA filters, identified as C06D and C10D, each with a maximum capacity of 8.04 pounds of powder coating per hour, exhausting at Stack/Vent ID 06D and 10D, installed prior to 1982. [40 CFR 63, Subpart WWWWWW]

Electrolytic Stripping

(3) One (1) Electrolytic stripping operation, consisting of one (1) electrolytic stripping tank containing sodium hydroxide, soda ash, water, and tartaric acid, one (1) nitric acid stripping tank, one (1) immersion tank, and one (1) Kolene tank;

(4) One (1) Titanium Nitrate Cleaning operation consisting of one (1) phosphoric acid cleaning tank and one (1) sodium hydroxide tank.

Molydag

(5) One (1) Molydag application process, with a maximum Molydag throughput of 10 gallons per year, uncontrolled and exhausting indoors.

Natural Gas-Fired Units

(6) Two (2) natural gas-fired heaters for the Kolene tank, rated at 0.150 MMBtu per hour, each;

(7) One (1) natural gas-fired kiln for LSR1, rated at 0.15 MMBtu per hour.

Finishing

(8) Three (3) polishers and one (1) hone process, approved in 2015 for construction, controlled by dust by a dust collector, rated at 99.0 percent efficiency, identified as DC016A, exhausting to the indoors.

(9) One (1) downdraft table for handheld equipment, identified as Maxflo DD23, approved in 2015 for construction, located near the Empire aluminum oxide grit blasting unit, identified as EU10C.

Location: 1415 Main Street

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1415	Maintenance Parts Washer	Safety Kleen Premium Gold Solvent
Building 1415	Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen solvent

(2) Conveyorized Vapor Degreasers: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	2 Operation 2 Degreasers	Novec 72DE

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Three (3) Bader Grinders, identified as Bader Grinder #2, Bader Grinder #3, and Bader Grinder #4, each controlled by dust collectors with HEPA filters identified as C03C, C07B, and C08B, respectively. [40 CFR 63, Subpart WWWWWW]

(2) Eleven grit blasting units, installed in 1994 (unless otherwise indicated), as follows:

(A) Five (5) aluminum oxide grit blasting units, EU01C, EU04C, EU05C, EU07C, and EU09C, each with a maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C01C, C04C, C05C,

C07C, and C09C, respectively, exhausting at Stack/Vent IDs 01C, 04C, 05C, 07C, and 09C, respectively.

(B) One (1) Schmidt aluminum oxide grit blasting unit, EU03C, with a maximum capacity of 360 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C03C, exhausting at Stack/Vent ID 03C.

(C) Two (2) Zero aluminum oxide grit blasting units, EU06C and EU08C, each with a maximum capacity of 360 pounds per hour, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C06C and EU08C, exhausting at Stack/Vent ID 06C and 08C.

(D) One (1) Empire aluminum oxide grit blasting unit, with an installation date of 1996, identified as EU10C, with a maximum capacity of 360 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C10C, exhausting at Stack/Vent ID 10C.

(E) One (1) grit blasting unit, installed in 1998, with a maximum capacity of cycling 600 pounds of shot per hour, identified as EU12C, controlled by a baghouse rated at 99.0 percent efficiency, identified as C12C, exhausting at Stack/Vent ID 12C.

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

(A) O1P1-EUG1, O1P1-EUG2, O1P1-EUG5, and O1P1-EUG6, using aluminum oxide, each with maximum capacity of 173 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG1, O1P1-CG2, O1P1-CG5, and O1P1-CG6.

(B) O1P1-EUG3, using glass peen, with maximum capacity of 80.5 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG3

(C) O1P1-EUG4, using aluminum oxide, with a maximum capacity of 15 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG4.

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

Operation 2, Process 3:

(E) O2P3-EUG1, O2P3-EUG2, and O2P3-EUG3, using calcined alumina, each with maximum capacity of 221 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O2P3-CG1, O2P3-CG2, and O2P3-CG3.

Operation 2, Process 1:

(F) O2P1-EUG1 and O2P1-EUG2, using aluminum oxide, each with maximum capacity of 224 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG1/2.

(G) O2P1-EUG3 and O2P1-EUG4, using aluminum oxide, each with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG3/4.

(H) One (1) grit blaster, identified as O2P1-EUG5, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as O2P1-CG5 exhausting to the indoors.

Operation 1, Process 2:

(I) O1P2-EUG1 and O1P2-EUG3, using aluminum oxide, each with maximum capacity of 138 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P2-CG1 and O1P2-CG3.

(4) One (1) fine grit shot blasting cabinet, identified as EU01M, approved in 2015 for construction, with a maximum capacity of 600 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as C01M, exhausting to the indoors.

Machining

(5) One (1) maintenance shop consisting of one (1) lathe and one (1) mill.

Grinding

(6) Four (4) vented tables used for insignificant grinding, approved in 2015 for construction.

(c) Emission units or activities with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Plasma Coating Operations

(1) Nine (9) plasma surface coating stations, including:

(A) EU01B, EU02B, EU05B, EU06B, EU07B, EU08B, EU09B, installed in 1994; EU11B, installed in 2009; and EU12B, installed in 2013; each with a maximum capacity of 16.08 pounds of metal or ceramic powders per hour, each controlled by an integral baghouse with HEPA filters, identified as C01B, C02B, C05B, C06B, C07B, C08B, C09B, C11B, and C12B, respectively and exhausting to stack/vents ID 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B. [40 CFR 63, Subpart WWWWWW]

(i) EU08B is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(ii) Cubicle EU12B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

(2) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, with a maximum capacity of 44.09 pounds of coating per hour, controlled by a dust collector during cleanout, identified as C01S with a control efficiency of 99.97%, exhausting to Stack/Vent ID 01S. [40 CFR 63, Subpart WWWWWW]

Tribomet Operation

(3) Two (2) Tribomet lines, each including a series of 16 dip tanks, controlled by a composite mesh pad system with mist eliminator with a control efficiency of 99.5%. [40 CFR 63, Subpart WWWWWW]

Acid Stripping

(4) One (1) Nitric Acid Stripping Line, consisting of one (1) 55-gallon acid stripping tank, uncontrolled and exhausting outdoors; and

(5) One (1) Hydrochloric acid stripping line, uncontrolled and exhausting outdoors consisting of:

(A) one (1) hydrofluoric acid tank,

(B) two (2) hydrochloric acid tanks, and

(C) one (1) caustic tank.

DP Lubricant

(6) One (1) DP Lubricant application process, with a maximum lubricant usage of 55 gallons per year, uncontrolled and exhausting indoors.

(7) Operation 1, Process 3 (O1P3) with uncontrolled emissions.

Finishing

(8) One (1) downdraft table for handheld equipment, identified as DTH800, approved in 2015 for construction, located near operation 1, process 1 (O1P1).

Location: 1550 Polco Street

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1550	Parts Washer	Super Agitene 141

(b) Natural gas fired combustion sources with heat input equal to or less than ten (10) million Btu per hour, identified as follows:

Building Location	Combustion Emission Unit Description	Emission Unit ID	Capacity (MMBtu/hr)	Stack/Vent	Control
1550 Polco Street	Powder 4 Furnace	EU001	3	001	NA
1550 Polco Street	Powder 4 Furnace	EU002	3	002	NA
1550 Polco Street	Powder 4 Furnace	EU003	3	003	NA
1550 Polco Street	Powder 4 Furnace	EU004	3	004	NA
1550 Polco Street	Powder 4 Furnace	EU005	3	005	NA
1550 Polco Street	Powder 4 Furnace	EU006	3	006	NA
1550 Polco Street	Powder 5 Furnace	EU007	3	007	NA
1550 Polco Street	Powder 4 Furnace	EU008	3	008	NA
1550 Polco Street	Powder 4 Furnace	EU009	3	009	NA
1550 Polco Street	Powder 5 Spray Dryer 1	EUP-11	0.3	P-13B	DC001
1550 Polco Street	Powder 5 Spray Dryer 2	EUP-11A	0.3	P-13B	DC002
1550 Polco Street	Ajax Boiler, constructed in 1999	B-003	0.45	Stack 001	NA
1550 Polco Street	Ajax Boiler, constructed in 1999	B-004	0.45	Stack 002	NA
1550 Polco Street	Multi-Pulse Hot Water	B-002	0.15	Stack 003	NA

	Boiler, constructed in 1996				
1550 Polco Street	Lochinvar boiler, constructed in 1996	B-001	1.26	Stack 004	NA

(c) Insignificant Thresholds: Activities with emissions equal to or less than thresholds require listing only. Lead (Pb) = 0.6 ton/year or 3.29 lbs/day; Carbon Monoxide (CO) = 25 tpy; Sulfur Dioxide (SO2) = 10 tpy; Particulate Matter (PM) = 5 tpy; Particulate Matter 10 (PM10) = 5 tpy; Nitrogen Oxides (Nox) = 10 tpy; Volatile Organic Compounds (VOC) = 5 tpy, for sources using controls to comply with 326 IAC 8 or 10 tpy for all other sources:

Epoxy Kit Manufacturing

(1) Epoxy Kit Operations identified as Emission Unit ID EUS-12. Includes the manufacture of Epoxy Kits containing acetone at maximum capacity of 56.0 pounds per hour and the pouring of vermiculate to use in packaging at a maximum capacity of 50 pounds per hour. Vermiculate pouring is controlled by a dust collector with HEPA filters, identified as DC014. Installation date of 1985 and approved in 2015 for modification of the dust collector.

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-four (24) Specialty Powders Manufacturing operations, identified in the table below, approved in 2015 for modification to reroute baghouses and approved in 2016 for modification and construction of a new operation, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	Specialty Powders	166.67	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifier. DC048 controls the rest of the units.
EUS-2	Specialty Powders	166.67	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	83.335	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	Specialty Powders	429.3	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	312.5		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	-	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	312.5	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	Specialty Powders	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-10	Specialty Powders	300	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*	Specialty Powders	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	Specialty Powders	100	DC002 (Stack S002)	Powder 5 Spray Dryer 2
EUP-11B**	Specialty Powders	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
EUS-15A	Specialty Powders	341.66	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	341.66	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	-	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	341.66	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	341.66	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	770.96	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	-	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	8.33	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	21.606	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	429.3	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-12	Specialty Powders	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.
** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).

Specialty Powders Maintenance

(2) One (1) specialty powders crucible cutting operation, identified as CC019, and controlled by dust collector DC019.

(e) One (1) Sermatech Process, located in Specialty Powders (Building 1550), including a mixing operation to prepare water-based and solvent-based coatings, with water-based mixing controlled by two scrubbers, identified as Scrubber #1 and Scrubber #2; [40 CFR 63, Subpart CCCCCCC]

(f) One (1) IPA room supporting EUS-22 (Building 1550), with a maximum isopropyl alcohol usage of 0.67 pounds per hour, uncontrolled;

Location: 1500 Polco Street

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]:

Location	Type	Solvent
Building 1500	Mineral Spirit Wash	Mineral Spirits

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

(1) Building 1500: One machine shop, including two (2) large grinders, five (5) small grinders, six (6) lathes, four (4) milling machines, three (3) drill presses, one (1) belt grinder, one (1) saw, one (1) cut-off saw, one (1) cut-off saw with coolant, and one (1) wet saw with coolant;

(2) Building 1500: One Carpenter Shop, controlled by a dust collector, identified as Carpenter Shop Dust Collector, with a control efficiency of 99%.

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Spray Paint Operation

(1) One (1) maintenance spray paint booth using HVLP application, with a maximum capacity of 5 gallons per year, using fabric filters for particulate control.

(d) Emergency generators as follows: [40 CFR 63, Subpart ZZZZ]

Location	Manufacturer	Capacity (hp)	Fuel Type	Date Installed	Date Manufactured	Engine Type
Building 1500	Generac	207	Diesel	1999	1999	6 cylinder
Building 1500	BUDA	53	Propane	1966	1966	6 cylinder
1500 -Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

(e) Insignificant Thresholds: Activities with emissions equal to or less than thresholds require listing only. Lead (Pb) = 0.6 ton/year or 3.29 lbs/day; Carbon Monoxide (CO) = 25 tpy; Sulfur Dioxide (SO2) = 10 tpy; Particulate Matter (PM) = 5 tpy; Particulate Matter 10 (PM10) = 5 tpy; Nitrogen Oxides (Nox) = 10 tpy; Volatile Organic Compounds (VOC) = 5 tpy, for sources using controls to comply with 326 IAC 8 or 10 tpy for all other sources:

(1) One (1) insignificant Cleaver Brooks natural gas-fired boiler identified as Emission Unit ID EU004 with a maximum heat input capacity of 14.6 million Btu per hour using no add on pollution control equipment and exhausting to Stack/Vent ID 004. Located in the powerhouse and manufactured and installed in 1992. [40 CFR 60, Subpart Dc]

(2) Two (2) insignificant Cleaver Brooks natural gas-fired boilers, identified as Emission Unit IDs EU002 and EU003, each with a maximum heat input capacity of 8.369 million Btu per hour using no add on pollution control equipment and exhausting to Stack/Vent ID 002 and 003. Located in the power house and manufactured and installed in 1990.

Location: Source-wide

(a) Combustion source flame safety purging on startup.

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

(c) Cleaners and solvents the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months, characterized as follows:

(1) Having a vapor pressure equal to or less than 2.0 kPa; 15 mm Hg or 0.3 psi measured at 38.0 Celsius or;

(2) Having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg or 0.1 psi measured at 20.0 Celsius

(d) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment and welding equipment.

(e) Closed loop heating and cooling systems.

(f) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

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

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

(i) Water based adhesives that are less than or equal to 5 % by volume of VOCs excluding HAPs.

(j) Forced and induced draft cooling tower system not regulated under a NESHAP.

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

(l) Heat exchanger cleaning and repair.

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

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

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

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

(q) Blowdown for any of the following: sight glass, boiler; compressor; pumps; and cooling tower.

(r) Filter or coalescer media changeout.

(s) A laboratory as defined in 326 IAC 2-7-1(21)(G).

A.5 FESOP Applicability [326 IAC 2-8-2]

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

SECTION B GENERAL CONDITIONS

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

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

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

(a) This permit, F097-33186-00060, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

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

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

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

B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

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

B.5 Severability [326 IAC 2-8-4(4)]

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

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

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

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

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

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

(1) it contains a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1), and
(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

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

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

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 of each year to:

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

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

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

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

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

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

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

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

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

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

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

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

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

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

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

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F097-33186-00060 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

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

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

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

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

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

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

(1) That this permit contains a material mistake.

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

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

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

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

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

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

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

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

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

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

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

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

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

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

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

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

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

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

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

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

(4) The Permittee notifies the:

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

and

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

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

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

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

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

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

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

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

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

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

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

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

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

B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

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

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

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

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

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

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

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

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

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

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

C.1 Overall Source Limit [326 IAC 2-8]

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

(a) Pursuant to 326 IAC 2-8:

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

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

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

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

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

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

C.2 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

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

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

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

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

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

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

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

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

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

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

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

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

C.7 Performance Testing [326 IAC 3-6]

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

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

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

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

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

C.9 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

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

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

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

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

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

C.10 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

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

C.11 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

C.12 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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

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

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

(1) initial inspection and evaluation;

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

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

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

(1) monitoring results;

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

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

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

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

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

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

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

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

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

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

C.14 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

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

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

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

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

(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

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

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

C.15 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

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

(b) The address for report submittal is:

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

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

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

Stratospheric Ozone Protection

C.16 Compliance with 40 CFR 82 and 326 IAC 22-1

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: 1245 Main Street**

Metal Surface Coating Operations

(a) One (1) High Velocity Oxy Fuel coating gun, Installed in 1991, identified as EU04A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by integral baffles, exhausting at Stack/Vent ID 04A.

(b) One (1) High Velocity Oxy Fuel coating gun, identified as EU19A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by an integral baghouse with HEPA filters with a control efficiency of 99.97%, identified as C19A, exhausting at Stack/Vent ID 19A.

[40 CFR 63, Subpart WWWWWW]

(1) EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(c) Two (2) plasma surface coating stations, identified as EU03B, controlled by integral baffles, and EU05B, controlled by an integral baghouse with HEPA filters (baghouse control efficiency = 99.97%) identified as C05D, with a maximum capacity of 8.04 pounds of powder coating per hour, each, exhausting at Stack/Vent ID 03D, and 05D respectively, installed in prior to 1982. [40 CFR 63, Subpart WWWWWW]

(1) EU03B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Two (2) Empire Pro-Finish Glass Bead Cabinet Blasting units, identified as EU01GB and EU02GB, each with maximum glass bead cycling of 600 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01GB and C02GB, exhausting at Stack/Vent ID 01GB and 02GB.

(2) Eleven (11) aluminum oxide grit blasting units, each with a maximum capacity shot cycling of 600 pounds per hour, identified as follows:

(A) Two (2) units identified as EU004G, and EU010G, each controlled by baghouses rated at 99.97 percent efficiency, identified as C004G and C010G;

(B) Two (2) units identified as EU001G and EU005G, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C001G and C005G respectively; and

(C) Seven (7) aluminum oxide grit blast units, identified as EU002G, EU008G, EU011G, EU014G, EU016G, EU018G, and EU019G each controlled by a baghouse rated at 99.0 percent efficiency, identified as C002G, C008G, C011G, C014G, C016G, C018G, and C019G, respectively.

(3) One (1) grit blaster, identified as EU012G, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as DC012G, exhausting to the indoors.

(4) One (1) aluminum oxide grit blast unit, identified as EU013G, with maximum capacity of 200 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C013G.

(5) Two (2) silicon carbide grit blast units, identified as EU007G and EU015G, each with maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C007G and C015G.

(6) One (1) PST steel shot peen shot blasting cabinet, installation date of 1994, including:

(A) Emission Unit ID EU01L, with a maximum capacity of 5.36 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01L, exhausting to S/V 01L.

(7) Two (2) fine grit shot blasting cabinets, identified as EU01M and EU02M, each with a maximum capacity of 600 pounds per hour grit, each, controlled by baghouses rated at 99.0 percent efficiency, identified as C01M and C02M, respectively.

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Metal Surface Coating Operations

(1) Seven (7) detonation surface coating stations, installed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, identified as follows: [40 CFR 63, Subpart WWWWWW]

(A) Five (5) Speedy Susan D guns, identified as EU01A, EU02A, EU16A, EU17A, and EU18A, each controlled by an integral baghouse with HEPA filters, identified as C01A, C02A, C16A, C17A, and C18A respectively, exhausting individually to Stack/Vent ID 01A, 02A, 16A, 17A, and 18A respectively;

(B) Two (2) D guns, identified as EU05A and EU06A, each controlled by an integral baghouse with HEPA filters, identified as C05A and C06A, exhausting to Stack/Vent ID 05A and 06A; and

(2) Two (2) plasma surface coating stations, identified as EU06B and EU10B, each controlled by an integral baghouse with HEPA filters, identified as C06D and C10D, each with a maximum capacity of 8.04 pounds of powder coating per hour, exhausting at Stack/Vent ID 06D and 10D, installed prior to 1982. [40 CFR 63, Subpart WWWWWW]

Location: 1415 Main Street

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Three (3) Bader Grinders, identified as Bader Grinder #2, Bader Grinder #3, and Bader Grinder #4, each controlled by dust collectors with HEPA filters identified as C03C, C07B, and C08B, respectively. [40 CFR 63, Subpart WWWWWW]

(2) Eleven grit blasting units, installed in 1994 (unless otherwise indicated), as follows:

(A) Five (5) aluminum oxide grit blasting units, EU01C, EU04C, EU05C, EU07C, and EU09C, each with a maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C01C, C04C, C05C, C07C, and C09C, respectively, exhausting at Stack/Vent IDs 01C, 04C, 05C, 07C, and 09C, respectively.

(B) One (1) Schmidt aluminum oxide grit blasting unit, EU03C, with a maximum capacity of 360 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C03C, exhausting at Stack/Vent ID 03C.

(C) Two (2) Zero aluminum oxide grit blasting units, EU06C and EU08C, each with a maximum capacity of 360 pounds per hour, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C06C and EU08C, exhausting at Stack/Vent ID 06C and 08C.

(D) One (1) Empire aluminum oxide grit blasting unit, with an installation date of 1996, identified as EU10C, with a maximum capacity of 360 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C10C, exhausting at Stack/Vent ID 10C.

(E) One (1) grit blasting unit, installed in 1998, with a maximum capacity of cycling 600 pounds of shot per hour, identified as EU12C, controlled by a baghouse rated at 99.0 percent efficiency, identified as C12C, exhausting at Stack/Vent ID 12C.

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

(A) O1P1-EUG1, O1P1-EUG2, O1P1-EUG5, and O1P1-EUG6, using aluminum oxide, each with maximum capacity of 173 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG1, O1P1-CG2, O1P1-CG5, and O1P1-CG6.

(B) O1P1-EUG3, using glass peen, with maximum capacity of 80.5 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG3

(C) O1P1-EUG4, using aluminum oxide, with a maximum capacity of 15 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG4.

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

Operation 2, Process 3:

(E) O2P3-EUG1, O2P3-EUG2, and O2P3-EUG3, using calcined alumina, each with maximum capacity of 221 pounds per hour, controlled by baghouses with

HEPA filters, rated at 99.7 percent efficiency, identified as O2P3-CG1, O2P3-CG2, and O2P3-CG3.

Operation 2, Process 1:

(F) O2P1-EUG1 and O2P1-EUG2, using aluminum oxide, each with maximum capacity of 224 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG1/2.

(G) O2P1-EUG3 and O2P1-EUG4, using aluminum oxide, each with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG3/4.

(H) One (1) grit blaster, identified as O2P1-EUG5, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as O2P1-CG5 exhausting to the indoors.

Operation 1, Process 2:

(I) O1P2-EUG1 and O1P2-EUG3, using aluminum oxide, each with maximum capacity of 138 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P2-CG1 and O1P2-CG3.

(4) One (1) fine grit shot blasting cabinet, identified as EU01M, approved in 2015 for construction, with a maximum capacity of 600 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as C01M, exhausting to the indoors.

(c) Emission units or activities with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Plasma Coating Operations

(1) Nine (9) plasma surface coating stations, including:

(A) EU01B, EU02B, EU05B, EU06B, EU07B, EU08B, EU09B, installed in 1994; EU11B, installed in 2009; and EU12B, installed in 2013; each with a maximum capacity of 16.08 pounds of metal or ceramic powders per hour, each controlled by an integral baghouse with HEPA filters, identified as C01B, C02B, C05B, C06B, C07B, C08B, C09B, C11B, and C12B, respectively and exhausting to stack/vents ID 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B. [40 CFR 63, Subpart WWWWWW]

Location: 1550 Polco Street

CSP Department

(b) One (1) powder manufacturing process, identified as EU020, constructed in 2014, including: [40 CFR 63, Subpart VVVVVV]

(3) One (1) Combustion Spray Pyrolysis (CSP) operation, including spray drying, a cyclonic collection system with a collection efficiency of 95%, and a system to convert the powder to an oxide form. The 5% not collected by the system is routed to the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

Powder Manufacturing Area

(c) One (1) titanium powder process, approved in 2015 for construction, controlled by a rotoclone wet collector, identified as Rotoclone, with a control efficiency of 98.0%, exhausting to the atmosphere. The maximum capacity of this process has been considered confidential information. [40 CFR 63, Subpart CCCCCCC]

Insignificant Activities

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-four (24) Specialty Powders Manufacturing operations, identified in the table below, approved in 2015 for modification to reroute baghouses and approved in 2016 for modification and construction of a new operation, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	Specialty Powders	166.67	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifie DC048 controls the rest of the units.
EUS-2	Specialty Powders	166.67	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	83.335	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, a screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in elec furnace and placed into vacuum chamber to form a powde
EUS-3	Specialty Powders	429.3	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	312.5		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	-	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	312.5	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact n in Bay 5. DC012 controls powder handling in Bay 3 and Ba 4.
EUS-8B	Specialty Powders	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	Specialty Powders	300	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table and delumper. DC044 controls 2 blenders and 2 screeners and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.

EUP-11*	Specialty Powders	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	Specialty Powders	100	DC002 (Stack S002)	Powder 5 Spray Dryer 2
EUP-11B**	Specialty Powders	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
EUS-15A	Specialty Powders	341.66	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	341.66	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	-	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	341.66	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	341.66	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	770.96	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	-	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	8.33	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	21.606	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	429.3	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.

** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).

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

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

D.1.1 PSD Minor Limits (PM)(PM10)(PM2.5) [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable, the emissions of PM, PM_{10}, and $PM_{2.5}$ from each of the grit blasting units, the surface coating units, the powders manufacturing operations, the one (1) Combustion Spray Pyrolysis (CSP) operation, and the titanium powder process shall not exceed the following limits specified in the table below:

Emission Unit	PM Limit (lbs/hr)	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
Grit Blasters			
EU001G	0.48	0.48	0.48
EU002G	0.48	0.48	0.48
EU004G	0.48	0.48	0.48
EU005G	0.48	0.48	0.48
EU007G	0.48	0.48	0.48
EU008G	0.48	0.48	0.48
EU010G	0.48	0.48	0.48
EU011G	0.48	0.48	0.48
EU012G	0.48	0.48	0.48
EU013G	0.48	0.48	0.48
EU014G	0.48	0.48	0.48
EU015G	0.48	0.48	0.48
EU016G	0.48	0.48	0.48
EU018G	0.48	0.48	0.48
EU019G	0.48	0.48	0.48
EU01GB	0.48	0.48	0.48
EU02GB	0.48	0.48	0.48
EU01L	0.48	0.48	0.48
EU01M – Building 1245	1.0	1.0	1.0
EU02M	0.48	0.48	0.48
EU01C	0.48	0.48	0.48
EU01M – Building 1415	0.48	0.48	0.48
EU03C	0.48	0.48	0.48
EU04C	0.48	0.48	0.48
EU05C	0.48	0.48	0.48
EU06C	0.48	0.48	0.48
EU08C	0.48	0.48	0.48
EU09C	0.48	0.48	0.48
EU10C	0.48	0.48	0.48
EU12C	0.48	0.48	0.48
EU07C	0.48	0.48	0.48
O1P1 EUG1	0.48	0.48	0.48
O1P1 EUG2	0.48	0.48	0.48
O1P1 EUG3	0.48	0.48	0.48
O1P1 EUG4	0.48	0.48	0.48
O1P1 EUG5	0.48	0.48	0.48
O1P1 EUG6	0.48	0.48	0.48
O1P1 EUG7 (approved in 2016 for construction)	0.48	0.48	0.48
O2P3 EUG1	0.48	0.48	0.48
O2P3 EUG2	0.48	0.48	0.48
O2P3 EUG3	0.48	0.48	0.48
O2P1 EUG1	0.48	0.48	0.48
O2P1 EUG2	0.48	0.48	0.48
O2P1 EUG3	0.48	0.48	0.48
O2P1 EUG4	0.48	0.48	0.48
O2P1 EUG5	0.48	0.48	0.48
O1P2 EUG1	0.48	0.48	0.48
O1P2 EUG3	0.48	0.48	0.48
Building 1415 Grinding			
Bader Grinder #2	0.1	0.1	0.1

Emission Unit	PM Limit (lbs/hr)	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
Bader Grinder #3	0.1	0.1	0.1
Bader Grinder #4	0.1	0.1	0.1
Building 1550- Praxair Powders (24 powder handling operations)			
EUS-1	0.48	0.48	0.48
EUS-2	0.48	0.48	0.48
EUS-7	0.48	0.48	0.48
EUP-3	0.48	0.48	0.48
EUS-3	0.48	0.48	0.48
EUS-5	0.48	0.48	0.48
EUS-8B	0.48	0.48	0.48
EUS-8A	0.48	0.48	0.48
EUS-10	0.48	0.48	0.48
EUP-11	0.48	0.48	0.48
EUP-11A	0.48	0.48	0.48
EUP-11B	0.48	0.48	0.48
EUS-15A	0.48	0.48	0.48
EUS-15B	0.48	0.48	0.48
EUS-15C	0.48	0.48	0.48
EUS-15D	0.48	0.48	0.48
EUS-4B	0.48	0.48	0.48
Scale	0.48	0.48	0.48
EUS-15F	0.48	0.48	0.48
EUS-15G	0.48	0.48	0.48
EUP-17	0.48	0.48	0.48
EUS-22	0.48	0.48	0.48
EUS-4A	0.48	0.48	0.48
High Purity Room Powder Handling	0.48	0.48	0.48
1245 Main Street & 1415 Main Street Surface Coating			
EU01A	0.52	0.52	0.52
EU02A	0.52	0.52	0.52
EU04A	0.52	0.52	0.52
EU05A	0.52	0.52	0.52
EU06A	0.52	0.52	0.52
EU16A	0.52	0.52	0.52
EU17A	0.52	0.52	0.52
EU18A	0.52	0.52	0.52
EU19A	0.52	0.52	0.52
EU03B	0.52	0.52	0.52
EU05B (plasma -1245 Main Street)	0.52	0.52	0.52
EU06B (plasma -1245 Main Street)	0.52	0.52	0.52
EU10B	0.52	0.52	0.52
EU01B	0.52	0.52	0.52
EU02B	0.52	0.52	0.52
EU05B (plasma -1415 Main Street)	0.52	0.52	0.52
EU06B (plasma -1415 Main Street)	0.52	0.52	0.52
EU07B	0.52	0.52	0.52
EU08B	0.52	0.52	0.52
EU09B	0.52	0.52	0.52
EU11B (approved in 2016 for construction)	0.52	0.52	0.52
EU12B	0.52	0.52	0.52
Building 1550- CSP			
CSP	2.28	2.28	2.28
Building 1550- Praxair Powders			
Titanium Powder Process	0.80	0.80	0.80

Compliance with these limits, combined with the PM, PM_{10}, and $PM_{2.5}$ emissions from all other emission units at the source, shall limit the source-wide potential to emit of PM, PM_{10}, and $PM_{2.5}$ to less than two hundred fifty (250) tons per year, each and shall render 326 IAC 2-2 (PSD) not applicable.

D.1.2 FESOP Limit (NOx) [326 IAC 2-8]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following:

The emissions of NOx from the one (1) powder manufacturing process, identified as EU020, including the one (1) Combustion Spray Pyrolysis (CSP) operation shall be limited to less than 13.70 pounds per hour.

Compliance with this limitation shall ensure that NOx emissions from the one (1) powder manufacturing process, identified as EU020, including the one (1) Combustion Spray Pyrolysis (CSP) operation is less than sixty (60) tons per twelve (12) consecutive month period.

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

D.1.3 FESOP Limit (PM10 and PM2.5) [326 IAC 2-8]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the emissions of PM_{10} and $PM_{2.5}$ from each of the grit blasting, three (3) grinding units, and titanium powder process shall not exceed the following limits specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr
Grit Blasters		
EU001G	0.28	0.28
EU002G	0.28	0.28
EU005G	0.28	0.28
EU008G	0.28	0.28
EU011G	0.28	0.28
EU012G	0.18	0.18
EU014G	0.28	0.28
EU016G	0.28	0.28
EU018G	0.28	0.28
EU019G	0.28	0.28
EU12C	0.28	0.28
EU004G	0.18	0.18
EU007G	0.18	0.18
EU010G	0.18	0.18
EU013G	0.18	0.18
EU015G	0.18	0.18
EU01GB	0.18	0.18
EU02GB	0.18	0.18
EU01L	0.18	0.18
EU01M – Building 1245	1.0	1.0
EU02M	0.18	0.18
EU01C	0.18	0.18
EU03C	0.18	0.18
EU04C	0.18	0.18
EU05C	0.18	0.18
EU06C	0.18	0.18
EU08C	0.18	0.18
EU09C	0.18	0.18
EU10C	0.18	0.18
EU07C	0.18	0.18
O1P1 EUG1	0.18	0.18

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr
O1P1 EUG2	0.18	0.18
O1P1 EUG3	0.18	0.18
O1P1 EUG4	0.18	0.18
O1P1 EUG5	0.18	0.18
O1P1 EUG6	0.18	0.18
O1P1 EUG7 (approved in 2016 for construction)	0.18	0.18
O2P3 EUG1	0.18	0.18
O2P3 EUG2	0.18	0.18
O2P3 EUG3	0.18	0.18
O2P1 EUG1	0.18	0.18
O2P1 EUG2	0.18	0.18
O2P1 EUG3	0.18	0.18
O2P1 EUG4	0.18	0.18
O2P1 EUG5	0.18	0.18
O1P2 EUG1	0.18	0.18
O1P2 EUG3	0.18	0.18
EU01M – Building 1415	0.18	0.18
Building 1415 Grinding		
Bader Grinder #2	0.10	0.10
Bader Grinder #3	0.10	0.10
Bader Grinder #4	0.10	0.10
Building 1550- Praxair Powders		
Titanium Powder Process	0.80	0.80

Compliance with these limits, combined with the potential to emit PM_{10} and $PM_{2.5}$ from all other emission units at this source, shall limit the source-wide total potential to emit of PM_{10} and $PM_{2.5}$ to less than 100 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.1.5 Emissions Control (PM, PM10, PM2.5, NOx)

(a) In order to comply with Conditions D.1.1 and D.1.3 the baghouses, baffles, dust collectors, dry filters and HEPA filtrations systems for particulate control shall be in operation and control emissions from each of the listed processes in this section at all times that any of these facilities are in operation.

(b) In order to comply with Condition D.1.2, the Selective Catalytic Reduction System, identified as SCR (CSP), controlling NOx emissions from the one (1) Combustion Spray Pyrolysis (CSP) operation shall operate at all times that the CSP is in operation.

(c) In order to comply with Conditions D.1.1 and D.1.3 the rotoclone wet collector for particulate control shall be in operation and control emissions from the titanium powder process at all times that the titanium process is in operation.

(d) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.6 Testing Requirements

(a) To demonstrate compliance with Condition D.1.2, the Permittee shall perform NOx emissions testing from the Selective Catalytic Reduction System used in conjunction with the CSP using the batch composition which would generate the highest NOx loading to the control equipment within sixty (60) days after achieving the maximum production rate, but not later than one hundred eighty (180) days after initial startup of the CSP operation, utilizing methods as approved by the Commissioner and shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

(b) The Permittee shall use the measured outlet emission rate (in lb/hr) and the production rate during testing to generate an emission factor (e.g., lbs NOx per tons of material processed) to determine that NOx emissions are less than sixty (60) tons per twelve (12) consecutive month period.

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

D.1.7 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the emission units identified in the table below at least once per day when any of the processes identified in the table below are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range the Permittee shall take a reasonable response. The normal range for each baghouse is a pressure drop between the values listed in the table below unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument(s) used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Emission Unit	Control ID	Pressure Drop Range (inches of H_2O)
Grit Blasters		
EU001G	C001G	1.0 - 6.0
EU002G	C002G	1.0 - 6.0
EU004G	C004G	1.0 - 6.0
EU005G	C005G	0.2 – 5.0
EU007G	C007G	1.0 - 6.0
EU008G	C008G	1.0 - 6.0
EU010G	C010G	1.0 - 6.0
EU011G	C011G	1.0 - 6.0
EU012G	C012G	1.0 - 6.0
EU013G	C013G	0.2 – 5.0
EU014G	C014G	1.0 - 6.0
EU015G	C015G	0.2 – 5.0
EU016G	C016G	1.0 - 6.0
EU018G	C018G	0.2 – 5.0
EU019G	C019G	1.0 - 6.0
EU01GB	C01GB	0.2 – 5.0
EU02GB	C02GB	0.2 – 5.0
EU01L	C01L	1.0 - 6.0
EU01M – Building 1245	C01M	0.2 - 5.0
EU02M	C02M	1.0 - 6.0
EU01C	C01C	1.0 - 6.0
EU01M – Building 1415	C01M	0.2 - 5.0

Emission Unit	Control ID	Pressure Drop Range (inches of H_2O)
EU03C	C03C	0.2 – 5.0
EU04C	C04C	1.0 - 6.0
EU05C	C05C	1.0 - 6.0
EU06C	C06C	1.0 - 6.0
EU08C	C08C	1.0 - 6.0
EU09C	C09C	1.0 - 6.0
EU10C	C10C	1.0 - 6.0
EU12C	C12C	1.0 - 6.0
EU07C	C07C	1.0 - 6.0
O1P1 EUG1	CG1	0.2 – 5.0
O1P1 EUG2	CG2	0.2 – 5.0
O1P1 EUG5	CG5	0.2 – 5.0
O1P1 EUG6	CG6	0.2 – 5.0
O1P1 EUG7 (approved in 2016 for construction)	CG7	0.2 – 5.0
O2P3 EUG1	CG1/2	0.2 – 5.0
O2P3 EUG2	CG1/2	0.2 – 5.0
O2P3 EUG3	CG3	0.2 – 5.0
O2P1 EUG1	CG1	0.2 – 5.0
O2P1 EUG2	CG2	0.2 – 5.0
O2P1 EUG3	CG3/4	0.2 – 5.0
O2P1 EUG4	CG3/4	0.2 – 5.0
O2P1 EUG5	CG5	0.2 – 5.0
O1P2 EUG1	CG1	0.2 – 5.0
O1P2 EUG3	CG3	0.2 – 5.0
Building 1415 Grinding		
Bader Grinder #2	C03B	1.0 - 6.0
Bader Grinder #3	C07B	1.0 - 6.0
Bader Grinder #4	C08B	1.0 - 6.0
Building 1550- Praxair Powders (21 powder handling operations)		
EUS-1	DC048	0.2 - 5.0
EUS-4A	DC054	0.2 - 5.0
	DC007	1.0 - 6.0
EUS-2	DC015	0.2 - 5.0
EUS-7	DC028, DC029	0.2 - 5.0
EUP-3	DC063	0.2 - 5.0
EUS-3	DC064, DC008	0.2 - 5.0
EUS-5	DC012, DC013	0.2 - 5.0
EUS-8B	DC040	0.2 - 5.0
EUS-8A	DC041	0.2 - 5.0
EUS-10	DC004, DC043, DC044, DC045	0.2 - 5.0
EUP-11	DC001 and DC002	0.2 - 5.0
EUP-11A	DC001 and DC002	0.2 - 5.0
EUP-11B (approved in 2016 for construction)	DC046	0.2 - 5.0
EUS-15A	DC026, DC057	0.2 - 5.0
EUS-15B	DC059	0.2 - 5.0
Scales	DC026, DC007	1.0 - 6.0
EUS-15F	DC058, DC024, Demisters 5,6,8	0.2 - 5.0
EUS-15G	DC021, DC057, Demister 4	0.2 - 5.0
EUP-17	DC035, DC061, Demister 3	0.2 - 5.0
EUS-22	DC005	0.2 - 5.0
High Purity Room Powder Handling	DC014	0.2 - 5.0
1245 Main Street & 1415 Main Street Surface Coating		
EU01A	C01A	1.0 - 6.0

Emission Unit	Control ID	Pressure Drop Range (inches of H_2O)
EU02A	C02A	1.0 - 6.0
EU05A	C05A	1.0 - 6.0
EU06A	C06A	1.0 - 6.0
EU16A	C16A	1.0 - 6.0
EU17A	C17A	1.0 - 6.0
EU18A	C18A	1.0 - 6.0
EU19A	C19A	0.2 - 5.0
EU05B (plasma -1245 Main Street)	C05D	1.0 - 6.0
EU06B(plasma -1245 Main Street)	C06D	1.0 - 6.0
EU10B	C10D	1.0 - 6.0
EU01B	C01B	0.2 – 5.0
EU02B	C02B	0.2 – 5.0
EU05B (plasma -1415 Main Street)	C05B	1.0 - 6.0
EU06B(plasma -1415 Main Street)	C06B	1.0 - 6.0
EU07B	C07B	1.0 - 6.0
EU08B	C08B	1.0 - 6.0
EU09B	C09B	0.2 - 5.0
EU11B	C11B	1.0 - 6.0
EU12B	C12B	0.2 – 5.0
Building 1550- CSP		
CSP	BAG (CSP)	1.0 - 6.0

D.1.8 Dust Collector and Baghouse Inspections

The Permittee shall perform inspections on the following control devices. The inspections shall be performed at least once per calendar quarter. All defective bags shall be replaced.

Emission Unit	Control
O1P1-EUG3	O1P1-CG3
O1P1-EUG4	O1P1-CG4
EUS-1	DC073
EUS-15C	DC011, DC068
EUS-15D	DC022, DC069
EUS-4B	DC023, DC070, DC071, DC072
EUS-4A	DC065, DC066, DC067

D.1.9 Baffle Monitoring

To monitor the performance of the baffles associated with the surface coating operations EU04A and EU03B, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer.

D.1.10 Selective Catalytic Reduction System Monitoring Requirements

(a) The Permittee shall record the pressure drop across the Selective Catalytic Reduction System used in conjunction with the CSP at least once per day when CSP is in operation. When for any one reading, the pressure drop across the Selective Catalytic Reduction System is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 6.0 and 14 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take a reasonable response shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

(b) A continuous monitoring system shall be calibrated, maintained, and operated on the Selective Catalytic Reduction System used in conjunction with the CSP for measuring operating temperature. For the purpose of this condition, continuous means no less than once per every fifteen (15) minutes. The output of this system shall be recorded as a 3-hour rolling average. From the date of issuance of this permit until the stack test results are available, the Permittee shall operate the Selective Catalytic Reduction System at or above the 3-hour rolling average minimum inlet temperature of 350°F.

(c) The Permittee shall determine the 3-hour minimum inlet temperature average from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.2.

(d) On and after the date the stack test results are available, the Permittee shall operate the Selective Catalytic Reduction System at or above the 3-hour rolling average minimum inlet temperature as observed during the compliant stack test. When for any one reading, the temperature is below the temperature established in most recent compliant stack test, the Permittee shall take reasonable response steps. Section C- Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A reading that is below the temperature as established in most recent compliant stack test is not a deviation from this permit. Failure to take response steps shall be considered a deviation from the permit.

(e) A continuous monitoring system shall be calibrated, maintained, and operated on the Selective Catalytic Reduction System used in conjunction with the CSP for measuring the ammonia injection rate. For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as a one-hour average.

(f) The Permittee shall determine the one-hour average injection rates from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.2.

(g) On and after the date the stack test results are available, the Permittee shall inject ammonia at or above the one-hour average injection rates as observed during the compliant stack test. When for any one reading the one-hour injection rate falls below the above mentioned one-hour injection rate, the Permittee shall take a response step. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the response steps required by this condition. A one-hour average that is outside the appropriate injection rate is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.1.11 Monitoring Requirements

Monthly inspections shall be performed of the coating emissions from the stacks that exhaust to the atmosphere (Stacks/Vents ID 04A, 19A, 03D, 05D, 01A, 02A, 16A, 17A, 18A, 05A, 06A, 06D, 10D, 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B) and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

D.1.12 Wet Collector Monitoring Requirements

(a) The Permittee shall record the pressure drop across the wet collector at least once per day when the titanium powder process is in operation. When for any one reading, the pressure drop across the wet collector is outside the normal range the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 5.0 and 12.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

(b) Daily inspections shall be performed to verify that the water level in the water reservoir of the wet collector meet the manufacturer's recommended level. To monitor the performance of the water reservoir, the water level of the reservoir shall be maintained weekly at a level where surface agitation indicates impact of the air flow. Water shall be kept free of solids and floating material that reduces the capture efficiency. To monitor the performance of the baffles, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer. If a condition exists which should result in a response, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

D.1.13 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit.

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit.

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.1.14 Wet Collector Detection

In the event that a wet collector malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8]

D.1.15 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.7, the Permittee shall maintain daily records of the pressure drop across the baghouses controlling the particulate emissions from the emission units identified in the table in Condition D.1.7. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.1.8, the Permittee shall maintain records of the results of the inspections required under Condition D.1.8.

(c) To document the compliance status with Condition D.1.9, the Permittee shall maintain a log of weekly inspections of the baffles associated with the surface coating operations EU04A and EU03B. The Permittee shall include in its weekly record when a baffle inspection is not taken and the reason for the lack of an inspection (e.g. the process did not operate that week).

(d) To document compliance with Condition D.1.10(a), the Permittee shall maintain daily records of pressure drop across the Selective Catalytic Reduction System used in conjunction with the CSP. The Permittee shall include in its daily record when a pressure drop is not taken and the reason for the lack of pressure drop or flow rate data (e.g. the process did not operate that day).

(e) To document the compliance status with Condition D.1.10(b), (c), and (d), the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour rolling average temperature used to demonstrate compliance during the most recent compliant stack test.

(f) To document the compliance status with Condition D.1.10(e), the Permittee shall maintain records of the one-hour average ammonia injection rate into the Selective Catalytic Reduction System used in conjunction with the CSP.

(g) To document the compliance status with Condition D.1.11, the Permittee shall maintain a log of monthly inspections of the stacks associated with the surface coating operations exhausting to the atmosphere (Stacks/Vents ID 04A, 19A, 03D, 05D, 01A, 02A, 16A, 17A, 18A, 05A, 06A, 06D, 10D, 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B).

(h) To document compliance with Condition D.1.12, the Permittee shall maintain daily records of pressure drop and weekly observations of the water level in the water reservoir for the wet collector controlling the titanium powder process. The Permittee shall include in its daily record when a pressure drop is not taken or water level inspection is not performed and the reason for the lack of pressure drop or water level data (e.g. the process did not operate that day).

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

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1245 Main Street

Insignificant Activities

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1245	Maintenance Parts Washer	Safety Kleen Premium Gold Solvent

Location: 1415 Main Street

Insignificant Activities

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1415	Maintenance Parts Washer	Safety Kleen Premium Gold Solvent
Building 1415	Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen solvent

Location: 1550 Polco Street

Insignificant Activities

(a) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]

Location	Type	Solvent
Building 1550	Parts Washer	Super Agitene 141

Location: 1500 Polco Street

Insignificant Activities

(f) Degreasing operations that do not exceed 145 gallons per twelve (12) months, except if subject to 326 IAC 20-6, including:

(1) Cold Cleaners: [326 IAC 8-3-2][326 IAC 8-3-8]:

Location	Type	Solvent
Building 1500	Mineral Spirit Wash	Mineral Spirits

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

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

D.2.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold cleaner degreaser control equipment and operating requirements):

(a) The Permittee shall ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.

(5) Provide a permanent, conspicuous label that lists the operating requirements in (a)(3), (a)(4), (a)(6), and (a)(7) of this condition.

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) The Permittee shall ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent used is insoluble in, and heavier than, water.

(C) A refrigerated chiller.

(D) Carbon adsorption.

(E) An alternative system of demonstrated equivalent or better control as those outlined in (b)(1)(A) through (D) of this condition that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:

(A) must be a solid, fluid stream; and

(B) shall be applied at a pressure that does not cause excessive splashing.

D.2.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), on and after January 1, 2015, the Permittee shall not operate a cold cleaner degreaser with a solvent that has a VOC composite partial vapor pressure than exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

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

D.2.3 Record Keeping Requirement [326 IAC 8-3-8]

(a) Pursuant to 326 IAC 8-3-8(c)(2), on and after January 1, 2015, the following records shall be maintained for each purchase of cold cleaner degreaser solvent:

(1) The name and address of the solvent supplier.

(2) The date of purchase (or invoice/bill dates of contract servicer indicating service date).

(3) The type of solvent purchased.

(4) The total volume of the solvent purchased.

(5) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(b) All records required by 326 IAC 8-3-8(c)(2) shall be:

(1) retained on-site or accessible electronically from the site for the most recent three (3) year period; and

(2) reasonably accessible for an additional two (2) year period.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1415 Main Street

(a) Degreasing operations, including the following:
(1) Open Top Vapor Degreasers: [326 IAC 8-3-3]

Location	Type	Solvent
Building 1415	Tribomet Line Vapor Degreaser	n-propyl bromide
Building 1415	LPPS Vapor Degreaser (started up in summer 2013)	n-propyl bromide

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

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

D.3.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-3]

Pursuant to 326 IAC 8-3-3 Open Top Vapor Degreaser Operations:

(a) The owner or operator of an open top vapor degreaser shall ensure the following control equipment and operating requirements are met:

(1) Equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone.

(2) Keep the cover closed at all times except when processing workloads through the degreaser.

(3) Minimize solvent carryout by:

(A) racking parts to allow complete drainage;

(B) moving parts in and out of the degreaser at less than three and three-tenths (3.3) meters per minute (eleven (11) feet per minute);

(C) degreasing the workload in the vapor zone at least thirty (30) seconds or until condensation ceases;

(D) tipping out any pools of solvent on the cleaned parts before removal; and

(E) allowing parts to dry within the degreaser for at least fifteen (15) seconds or until visually dry.

(4) Prohibit the entrance into the degreaser of porous or absorbent materials, such as cloth, leather, wood, or rope.

(5) Prohibit occupation of more than one-half (1/2) of the degreaser's open top area with the workload.

(6) Prohibit the loading of the degreaser in a manner that causes the vapor level to drop more than fifty percent (50%) of the vapor depth when the workload is removed.

(7) Prohibit solvent spraying above the vapor level.

(8) Repair solvent leaks immediately, or shut down the degreaser if leaks cannot be repaired immediately.

(9) Store waste solvent only in closed containers.

(10) Prohibit the disposal or transfer of waste solvent in a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(11) Prohibit the use of workplace fans near the degreaser opening.

(12) Prohibit visually detectable water in the solvent exiting the water separator.

(13) Provide the degreaser with a permanent, conspicuous label that lists the operating requirements in subdivisions (2) through (12).

(b) The owner or operator of an open top vapor degreaser subject to this subsection shall ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with the following switches:

(A) A condenser flow switch and thermostat that shuts off sump heat if condenser coolant stops circulating or becomes too warm.

(B) A spray safety switch that shuts off spray pump if the vapor level drops more than ten (10) centimeters (four (4) inches).

(2) Equip the degreaser with one (1) of the following control devices:

(A) A freeboard ratio of seventy-five hundredths (0.75) or greater and a powered cover if the degreaser opening is greater than one (1) square meter (ten and eight-tenths (10.8) square feet).

(B) A refrigerated chiller.

(C) An enclosed design in which the cover opens only when the article is actually entering or exiting the degreaser.

(D) A carbon adsorption system with ventilation that, with the cover open, achieves a ventilation rate of greater than or equal to fifteen (15) cubic meters per minute per square meter (fifty (50) cubic feet per minute per square foot) of air-to-vapor interface area and an average of less than twenty-five (25) parts per million of solvent is exhausted over one (1) complete adsorption cycle.

(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(3) Prohibit the loading of the degreaser to the point where the vapor level would drop more than ten (10) centimeters (four (4) inches) when the workload is removed.

(4) Prohibit the exhaust ventilation rate from exceeding twenty (20) cubic meters per minute per square meter (sixty-five (65) cubic feet per minute per square foot) of degreaser open area unless a greater ventilation rate is necessary to meet Occupational Safety and Health Administration requirements.

(5) Ensure that the label required under subsection (a)(13) includes the additional operating requirements listed in subdivisions (3) and (4).

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1415 Main Street

(a) Degreasing operations, including the following:

(2) Conveyorized Vapor Degreasers approved in 2016 for modification to change solvents: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	1 Operation 1 Degreaser	Novec 72DE with a maximum capacity of 500 gallons per year
Building 1415	2 Operation 2 Degreasers	Novec 72DE

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

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

D.4.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-4]

Pursuant to 326 IAC 8-3-4 Conveyorized Degreaser Control Equipment and Operating Requirements:

(a) The owner or operator of a conveyorized degreaser shall ensure the following control equipment and operating requirements have been met:

(1) Minimize carryout emissions by:

(A) racking parts for optimal drainage; and

(B) maintaining the vertical conveyor speed at less than three and three-tenths (3.3) meters per minute (eleven (11) feet per minute).

(2) Store waste solvent only in closed containers.

(3) Prohibit the disposal or transfer of waste solvent in a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(4) Repair solvent leaks immediately, or shut down the degreaser if leaks cannot be repaired immediately.

(5) Prohibit the use of workplace fans near the degreaser opening.

(6) Prohibit visually detectable water in the solvent from exiting the water separator.

(7) Equip the degreaser with a permanent, conspicuous label that lists the operating requirements in subdivisions (1) through (6).

(b) The owner or operator of a conveyorized degreaser subject to this subsection shall ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser's entrances and exits with downtime covers that are closed when the degreaser is not operating;

(2) Equip the degreaser with the following switches:

(A) A condenser flow switch and thermostat that shuts off sump heat if condenser coolant stops circulating or becomes too warm.

(B) A spray safety switch that shuts off spray pump if the vapor level drops more than ten (10) centimeters (four (4) inches).

(C) A vapor level control thermostat that shuts off sump heat when vapor level rises more than ten (10) centimeters (four (4) inches).

(3) Equip the degreaser with entrances and exits that silhouette workloads in such a manner that the average clearance between the articles and the degreaser opening is either less than ten (10) centimeters (four (4) inches) or less than ten percent (10%) of the width of the opening.

(4) Equip the degreaser with a drying tunnel, rotating or tumbling basket, or other equipment that prevents cleaned articles from carrying out solvent liquid or vapor.

(5) Equip the degreaser with one (1) of the following control devices:

(A) A refrigerated chiller.

(B) A carbon adsorption system with ventilation that, with the downtime covers open, achieves a ventilation rate of greater than or equal to fifteen (15) cubic meters per minute per square meter (fifty (50) cubic feet per minute per square foot) of air-to-solvent interface area, and an average of less than twenty-five (25) parts per million of solvent is exhausted over one (1) complete adsorption cycle.

(C) An alternative system of demonstrated equivalent or better control as those outlined in clause (A) or (B) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(6) Prohibit the exhaust ventilation rate from exceeding twenty (20) cubic meters per minute per square meter (sixty-five (65) cubic feet per minute per square foot) of degreaser opening unless a greater ventilation rate is necessary to meet Occupational Safety and Health Administration requirements.

(7) Cover entrances and exits at all times except when processing workloads through the degreaser.

(8) Ensure that the label required under subsection (a)(7) includes the additional operating requirements listed in Indiana Administrative Code Page 34 subdivisions (6) and (7).

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Location: 1550 Polco Street

Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

(b) Natural gas fired combustion sources with heat input equal to or less than ten (10) million Btu per hour, identified as follows:

(1) The four (4) 1550 Polco Street Boilers, identified as B-003, B-004, B-002, and B-001, and the three (3) insignificant 1500 Polco Street Cleaver Brooks boilers, identified as EU002, EU003, and EU004

(2) The nine (9) Powder 4 and 5 natural gas-fired furnaces identified as EU001, EU002, EU003, EU004, EU005, EU006, EU007, EU008, EU009, and the one (1) natural gas-fired spray dryer, identified as EUP-11A;

Location: 1245 Main Street

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

(7) The one (1) natural gas-fired kiln for LSR1, and the two (2) natural gas-fired heaters for the Kolene tank;

Location: 1500 Polco Street

(d) The emergency generators as follows: [40 CFR 63, Subpart ZZZZ]

Location	Manufacturer	Capacity (hp)	Fuel Type	Date Installed	Date Manufactured	Engine Type
Building 1500	Generac	207	Diesel	1999	1999	6 cylinder
Building 1500	BUDA	53	Propane	1966	1966	6 cylinder
1500 -Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

Location: 1415 Main Street

(f) Nineteen (19) roof-top natural gas-fired units, including:

(1) Two (2) Carrier roof top units, identified as RTU-A2 and RTU-A3, rated at 0.360 MMBtu per hour, each;

(2) One (1) Carrier roof top unit, identified as RTU-F, rated at 0.115 MMBtu per hour;

(3) One (1) Carrier roof top unit, identified as RTU-C1, rated at 0.250 MMBtu per hour;

(4) Four (4) Carrier roof top units, identified as RTU-E1, RTU-B2, RTU-A5, RTU-A6, rated at 0.525 MMBtu per hour, each;

(5) One (1) Trane roof top unit, identified as RTU-00, rated at 0.587 MMBtu per hour;

(6) Two (2) York roof top units, identified as RTU-B1 and RTU-A-1, rated at 0.3 MMBtu per

hour, each;

(7) One (1) York roof top unit, identified as RTU-A7, rated at 0.699 MMBtu per hour;

(8) One (1) Aaon roof top unit, identified as RTU-E1, rated at 0.18 MMBtu per hour, each;

(9) One (1) Aaon roof top unit, identified as RTU-D2, rated at 0.54 MMBtu per hour;

(10) One (1) Aaon roof top unit, identified as RTU-C1, rated at 0.27 MMBtu per hour;

(11) Two (2) Trane roof top units, identified as ACPR1-1 and ACPR1-2, rated at 0.117 MMBtu per hour, each;

(12) One (1) Carrier roof top unit, identified as ACPR4-1, rated at 0.133 MMBtu per hour; and

(13) One (1) Carrier roof top unit, identified as ACPR4-2, rated at 0.115 MMBtu per hour.

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

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

D.5.1 Particulate Matter (PM) [326 IAC 6.5-1-2(b)]

Pursuant to 326 IAC 6.5-1-2(b)(3) (Particulate Matter Limitations Except Lake County), the particulate matter (PM) emission rate from each of the natural gas-fired boilers, including four (4) 1550 Polco Street Boilers, identified as B-003, B-004, B-002, and B-001, and the three (3) insignificant 1500 Polco Street Cleaver Brooks boilers, identified as EU002, EU003, and EU004 shall in no case exceed 0.01 grains per dry standard cubic foot (dscf).

D.5.2 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), the particulate matter (PM) emission rate from each of the natural gas-fired combustion units EU001, EU002, EU003, EU004, EU005, EU006, EU007, EU008, EU009, EUP-11A, the one (1) natural gas-fired kiln for LSR1, and the two (2) natural gas-fired heaters for the Kolene tank, the three (3) emergency generators (ONAN/Cummins, BUDA, Generac), the nineteen (19) roof-top natural gas-fired units (RTU-A2, RTU-A3, RTU-F, RTU-C1, RTU-E1, RTU-B2, RTU-A5, RTU-A6, RTU-00, RTU-B1, RTU-A-1, RTU-A7, RTU-E1, RTU-D2, RTU-C1, ACPR1-1, ACPR1-2, ACPR4-1, ACPR4-2) shall be limited to seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf).

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: 1415 Main Street**

(d) Operation 2, Process 2 (O2P2).

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

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

D.6.1 VOC Limit [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coatings applied at the surface coating operation (O2P2) shall be limited to:

(1) Three and five-tenths (3.5) pounds of VOCs per gallon of coating less water, for air dried or forced warm air dried coatings at temperatures up to 90°C, or for extreme performance coatings.

(2) Four and three-tenths (4.3) pounds of VOC per gallon, excluding water, for clear coatings.

(3) Three (3.0) pounds per gallon, excluding water, for all other coatings and coating application systems.

D.6.2 Volatile Organic Compounds (VOC) Limitations, Clean-up Requirements [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9(f), work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not limited to, the following:

(a) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(b) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(c) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(d) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(e) Minimize VOC emissions from the cleaning application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

D.6.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.6.4 Volatile Organic Compounds (VOC) [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content contained in Condition D.6.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ**,** reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

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

D.6.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.1*,* the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) and (2) shall be complete and sufficient to establish compliance with the VOC content limit established in Condition D.6.1. Records necessary to demonstrate compliance shall be available not later than thirty (30) days of the end of each compliance period.

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of coating material and solvent used on a daily basis.

(A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

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

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1245 Main Street

(a) One (1) High Velocity Oxy Fuel coating gun, Installed in 1991, identified as EU04A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by integral baffles, exhausting at Stack/Vent ID 04A.[326 IAC 8-2-9]

(b) One (1) High Velocity Oxy Fuel coating gun, identified as EU19A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by an integral baghouse with HEPA filters with a control efficiency of 99.97%, identified as C19A, exhausting at Stack/Vent ID 19A. [40 CFR 63, Subpart WWWWWW]

(1) EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(c) Two (2) plasma surface coating stations, identified as EU03B, controlled by integral baffles, and EU05B, controlled by an integral baghouse with HEPA filters (baghouse control efficiency = 99.97%) identified as C05D, with a maximum capacity of 8.04 pounds of powder coating per hour, each, exhausting at Stack/Vent ID 03D, and 05D respectively, installed in prior to 1982. [40 CFR 63, Subpart WWWWWW]

(1) EU03B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

(d) One (1) LSR1 Titanium tetrachloride coating station, identified as EU01R, controlled by a scrubber, exhausting at Stack/Vent ID 01R.

Insignificant Activities

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

(1) Seven (7) detonation surface coating stations, installed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, identified as follows: [40 CFR 63, Subpart WWWWWW]

(A) Five (5) Speedy Susan D guns, identified as EU01A, EU02A, EU16A, EU17A, and EU18A, each controlled by an integral baghouse with HEPA filters, identified as C01A, C02A, C16A, C17A, and C18A respectively, exhausting individually to Stack/Vent ID 01A, 02A, 16A, 17A, and 18A respectively;

(B) Two (2) D guns, identified as EU05A and EU06A, each controlled by an integral baghouse with HEPA filters, identified as C05A and C06A, exhausting to Stack/Vent ID 05A and 06A; and

(2) Two (2) plasma surface coating stations, identified as EU06B and EU10B, each controlled by an integral baghouse with HEPA filters, identified as C06D and C10D, each with a maximum capacity of 8.04 pounds of powder coating per hour, exhausting at Stack/Vent ID 06D and 10D, installed prior to 1982. [40 CFR 63, Subpart WWWWWW]

Location: 1415 Main Street

Insignificant Activities

(c) Emission units or activities with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

(1) Nine (9) plasma surface coating stations, including:

(A) EU01B, EU02B, EU05B, EU06B, EU07B, EU08B, EU09B, installed in 1994; EU11B, installed in 2009; and EU12B, installed in 2013; each with a maximum capacity of 16.08 pounds of metal or ceramic powders per hour, each controlled by an integral baghouse with HEPA filters, identified as C01B, C02B, C05B, C06B, C07B, C08B, C09B, C11B, and C12B, respectively and exhausting to stack/vents ID 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B. [40 CFR 63, Subpart WWWWWW]

Location: 1550 Polco Street

(b) One (1) powder manufacturing process, identified as EU020, constructed in 2014, including: [40 CFR 63, Subpart VVVVVV]

(3) One (1) Combustion Spray Pyrolysis (CSP) operation, including spray drying, a cyclonic collection system with a collection efficiency of 95%, and a system to convert the powder to an oxide form. The 5% not collected by the system is routed to the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

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

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

D.7.1 Particulate Emission Limitations [326 IAC 6.5-1-2(h)]

Pursuant to 326 IAC 6.5-1-2(h), each of the surface coating facilities at this source (EU04A, EU19A, EU03B, EU05B (plasma -1245 Main Street), EU01R, EU01A, EU02A, EU16A, EU17A, EU18A, EU05A, EU06A, EU06B (plasma - 1245 Main Street), EU10B, EU01B, EU02B, EU05B (plasma -1415 Main Street), EU06B (plasma -1415 Main Street), EU07B, EU08B, EU09B, EU11B, EU12B and the one (1) Combustion Spray Pyrolysis (CSP) operation), shall be controlled by dry particulate filters, waterwash, or an equivalent control device and the Permittee shall operate each control device in accordance with manufacturer's specifications.

D.7.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.7.3 Particulate Control

(a) In order to comply with Condition D.7.1, the baghouse(s), dust collectors, scrubbers, baffles, and dry filters for particulate control shall be in operation and control emissions from the listed processes at all times that any of these facilities are in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

D.7.4 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the emission units identified in the table below at least once per day when any of the processes are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range the Permittee shall take a reasonable response. The normal range for each baghouse is a pressure drop between the values listed in the table below unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take a reasonable response shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Emission Unit	Control ID	Pressure Drop Range (inches of H_2O)
1245 Main Street & 1415 Main Street Surface Coating		
EU01A	C01A	1.0 - 6.0
EU02A	C02A	1.0 - 6.0
EU05A	C05A	1.0 - 6.0
EU06A	C06A	1.0 - 6.0
EU16A	C16A	1.0 - 6.0
EU17A	C17A	1.0 - 6.0
EU18A	C18A	1.0 - 6.0
EU19A	C19A	0.2 - 5.0
EU05B (plasma -1245 Main Street)	C05D	1.0 - 6.0
EU06B(plasma -1245 Main Street)	C06D	1.0 - 6.0
EU10B	C10D	1.0 - 6.0
EU01B	C01B	0.2 – 5.0
EU02B	C02B	0.2 – 5.0
EU05B (plasma -1415 Main Street)	C05B	1.0 - 6.0
EU06B(plasma -1415 Main Street)	C06B	1.0 - 6.0
EU07B	C07B	1.0 - 6.0
EU08B	C08B	1.0 - 6.0
EU09B	C09B	0.2 - 5.0
EU11B	C11B	1.0 - 6.0
EU12B	C12B	0.2 – 5.0
Building 1550- CSP		
CSP	BAG (CSP)	1.0 - 6.0

D.7.5 Baffle Monitoring

To monitor the performance of the baffles associated with the surface coating operations EU04A and EU03B, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer.

D.7.6 Scrubber Monitoring Requirements

The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber at least once per day when the one (1) LSR1 Titanium tetrachloride coating station, identified as EU01R, is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. When for any one reading, the flow rate of the scrubber is less than the normal minimum the Permittee shall take reasonable response. The normal minimum flow rate for this unit is 0.5 gallons per minute unless a different minimum value is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.7.7 Monitoring Requirements

Monthly inspections shall be performed of the coating emissions from the stacks that exhaust to the atmosphere (Stacks/Vents ID 04A, 19A, 03D, 05D, 01R, 01A, 02A, 16A, 17A, 18A, 05A, 06A, 06D, 10D, 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B) and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take a reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. Failure to take a reasonable response shall be considered a deviation from this permit.

D.7.8 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit.

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit.

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.7.9 Scrubber Detection

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.7.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.4, the Permittee shall maintain daily records of the pressure drop across the baghouses controlling the particulate emissions from the surface coating processes EU19A, EU05B (plasma - 1245 Main Street), EU01A, EU02A, EU16A, EU17A, EU18A, EU05A, EU06A, EU06B (plasma - 1245 Main Street), EU10B, EU01B, EU02B, EU05B (plasma -1415 Main Street), EU06B (plasma -1415 Main Street), EU07B, EU08B, EU09B, EU11B, EU12B and the one (1) Combustion Spray Pyrolysis (CSP) operation) The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.7.5, the Permittee shall maintain a log of weekly inspections of the baffles associated with the surface coating operations EU04A and EU03B. The Permittee shall include in its weekly record when a baffle inspection is not taken and the reason for the lack of an inspection (e.g. the process did not operate that week).

(c) To document compliance with Condition D.7.6, the Permittee shall maintain daily records of pressure drop and flow rate for the scrubber controlling the one (1) LSR1 Titanium tetrachloride coating station, identified as EU01R. The Permittee shall include in its daily record when a pressure drop or flow rate is not taken and the reason for the lack of pressure drop or flow rate data (e.g. the process did not operate that day).

(d) To document the compliance status with Condition D.7.7, the Permittee shall maintain a log of monthly inspections of the stacks associated with the surface coating operations exhausting to the atmosphere (Stacks/Vents ID 04A, 19A, 03D, 05D, 01R, 01A, 02A, 16A, 17A, 18A, 05A, 06A, 06D, 10D, 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B).

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

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: 1245 Main Street**

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Two (2) Empire Pro-Finish Glass Bead Cabinet Blasting units, identified as EU01GB and EU02GB, each with maximum glass bead cycling of 600 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01GB and C02GB, exhausting at Stack/Vent ID 01GB and 02GB.

(2) Eleven (11) aluminum oxide grit blasting unit, each with a maximum capacity shot cycling of 600 pounds per hour, identified as follows:

(A) Two (2) units identified as EU004G, and EU010G, each controlled by baghouses rated at 99.97 percent efficiency, identified as C004G and C010G;

(B) Two (2) units identified as EU001G and EU005G, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C001G and C005G respectively; and

(C) Seven (7) aluminum oxide grit blast units, identified as EU002G, EU008G, EU011G, EU014G, EU016G, EU018G, and EU019G each controlled by a baghouse rated at 99.0 percent efficiency, identified as C002G, C008G, C011G, C014G, C016G, C018G, and C019G, respectively.

(3) One (1) grit blaster, identified as EU012G, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as DC012G, exhausting to the indoors.

(4) One (1) aluminum oxide grit blast unit, identified as EU013G, with maximum capacity of 200 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C013G.

(5) Two (2) silicon carbide grit blast units, identified as EU007G and EU015G, each with maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C007G and C015G.

(6) One (1) PST steel shot peen shot blasting cabinet, installation date of 1994, including:

(A) Emission Unit ID EU01L, with a maximum capacity of 5.36 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C01L, exhausting to S/V 01L

(7) Two (2) fine grit shot blasting cabinets, identified as EU01M and EU02M, each with a maximum capacity of 600 pounds per hour grit, each, controlled by baghouses rated at 99.0 percent efficiency, identified as C01M and C02M, respectively.

(8) One (1) grit reclassifier, identified as EU020G, approved in 2015 for construction, with a maximum capacity of 400 pounds of aluminum oxide per hour, controlled by dust

collector rated at 99.0 percent efficiency, identified as DC020G, exhausting to the indoors.

Machining

(9) One (1) maintenance shop consisting of four (4) lathes, two (2) mills, and one (1) plasma cutter.

Grinding

(10) One (1) Brown and Sharp grinder, approved in 2015 for construction, with a maximum capacity of 3 pounds of metal per hour, controlled by a dust collector, rated at 99.0 percent efficiency, exhausting to the indoors.

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Finishing

(8) Three (3) polishers and one (1) hone process, approved in 2015 for construction, controlled by dust by a dust collector, rated at 99.0 percent efficiency, identified as DC016A, exhausting to the indoors.

(9) One (1) downdraft table for handheld equipment, identified as Maxflo DD23, approved in 2015 for construction, located near the Empire aluminum oxide grit blasting unit, identified as EU10C.

Location: 1415 Main Street

(b) Operation 1, Process 1 (O1P1), controlled by dust collectors with HEPA filters, identified as DCC1-CV, DCC2-CV, and DCC4-CV with a control efficiency of 99.7%.

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Three (3) Bader Grinders, identified as Bader Grinder #2, Bader Grinder #3, and Bader Grinder #4, each controlled by dust collectors with HEPA filters identified as C03C, C07B, and C08B, respectively. [40 CFR 63, Subpart WWWWWW]

(2) Eleven grit blasting units, installed in 1994 (unless otherwise indicated), as follows:

(A) Five (5) aluminum oxide grit blasting units, EU01C, EU04C, EU05C, EU07C, and EU09C, each with a maximum capacity of 360 pounds per hour, controlled by baghouses rated at 99.0 percent efficiency, identified as C01C, C04C, C05C, C07C, and C09C, respectively, exhausting at Stack/Vent IDs 01C, 04C, 05C, 07C, and 09C, respectively.

(B) One (1) Schmidt aluminum oxide grit blasting unit, EU03C, with a maximum capacity of 360 pounds per hour, controlled by a baghouse rated at 99.0 percent efficiency, identified as C03C, exhausting at Stack/Vent ID 03C.

(C) Two (2) Zero aluminum oxide grit blasting unit, EU06C and EU08C, each with a maximum capacity of 360 pounds per hour, each controlled by a baghouse rated at 99.0 percent efficiency, identified as C06C and EU08C, exhausting at Stack/Vent ID 06C and 08C.

(D) One (1) Empire aluminum oxide grit blasting unit, with an installation date of 1996, identified as EU10C, with a maximum capacity of 360 pounds per hour, controlled by an integral baghouse rated at 99.0 percent efficiency, identified as C10C, exhausting at Stack/Vent ID 10C.

(E) One (1) grit blasting units, installed in 1998, with a maximum capacity of cycling 600 pounds of shot per hour, identified as EU12C, each controlled by a baghouse rated at 99.0 percent efficiency, identified as and C12C, exhausting at Stack/Vent ID 12C.

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

(A) O1P1-EUG1, O1P1-EUG2, O1P1-EUG5, and O1P1-EUG6, using aluminum oxide, each with maximum capacity of 173 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG1, O1P1-CG2, O1P1-CG5, and O1P1-CG6.

(B) O1P1-EUG3, using glass peen, with maximum capacity of 80.5 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG3

(C) O1P1-EUG4, using aluminum oxide, with a maximum capacity of 15 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG4.

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

Operation 2, Process 3:

(E) O2P3-EUG1, O2P3-EUG2, and O2P3-EUG3, using calcined alumina, each with maximum capacity of 221 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O2P3-CG1, O2P3-CG2, and O2P3-CG3.

Operation 2, Process 1:

(F) O2P1-EUG1 and O2P1-EUG2, using aluminum oxide, each with maximum capacity of 224 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG1/2.

(G) O2P1-EUG3 and O2P1-EUG4, using aluminum oxide, each with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O2P1-CG3/4.

(H) One (1) grit blaster, identified as O2P1-EUG5, approved in 2015 for construction, with a maximum capacity of 50 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as O2P1-CG5 exhausting to the indoors.

Operation 1, Process 2:

(H) O1P2-EUG1 and O1P2-EUG3, using aluminum oxide, each with maximum capacity of 138 pounds per hour, controlled by baghouses with HEPA filters, rated at 99.7 percent efficiency, identified as O1P2-CG1 and O1P2-CG3.

(4) One (1) fine grit shot blasting cabinet, identified as EU01M, approved in 2015 for construction, with a maximum capacity of 600 pounds of aluminum oxide per hour, controlled by a dust collector, rated at 99.0 percent efficiency, identified as C01M, exhausting to the indoors.

Machining

(5) One (1) maintenance shop consisting of 1 lathe and 1 mill.

Grinding

(6) Four (4) vented tables used for insignificant grinding, approved in 2015 for construction.

(c) Emission units or activities with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Plasma Coating Operations

(2) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, with a maximum capacity of 44.09 pounds of coating per hour, controlled by a dust collector during cleanout, identified as C01S with a control efficiency of 99.97%, exhausting to Stack/Vent ID 01S. [40 CFR 63, Subpart WWWWWW]

(8) One (1) downdraft table for handheld equipment, identified as DTH800, approved in 2015 for construction, located near operation 1, process 1 (O1P1).

Location: 1550 Polco Street

(a) One (1) Polishing Operations, consisting of:

(1) Powder Handling, including:

(A) Lens Polish mixing tank loading, approved in 2015 for modification of the dust collector, controlled by a dust collector, identified as DC030, with a control efficiency of 99.5%;

(B) Suspension Room custom blend loading, identified as EUS-20, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%;

(C) Suspension Room powder packaging, identified as EUS-18, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%;

(D) Powder loading into premix tanks, identified as EUS-19, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%.

(2) Polish Mixing, including:

(A) One (1) Lens Polish mixing and filling operation, consisting of 4 mixing tanks, 9 holding tanks, a bottle filling line, and a pail filling line, controlled by a dust collector, identified as DC062, with a control efficiency of 99.5%. The filling

process creates a bottleneck so that only two (2) mixing tanks can be run at one time;

(B) One (1) Suspension Room mixing operation, consisting of one (1) mixing tank, with a batch time of four (4) hours, controlled by a dust collector, identified as DC032, with a control efficiency of 99.5%.

CSP Department

(b) One (1) powder manufacturing process, identified as EU020, constructed in 2014, including: [40 CFR 63, Subpart VVVVVV]

(1) One (1) raw material handling operation, including a liquid pumping operation and solid scooping operation, with uncontrolled emissions;

(2) One (1) raw material mixing operation, in which raw materials are mixed inside of an enclosed 55-gallon drum, with uncontrolled emissions;

(3) One (1) Combustion Spray Pyrolysis (CSP) operation, including spray drying, a cyclonic collection system with a collection efficiency of 95%, and a system to convert the powder to an oxide form. The 5% not collected by the system is routed to the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(4) One (1) natural gas-fired burner associated with EU020, with a heat input capacity of 0.40 MMBtu per hour, controlled by the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(5) One (1) powder handling operation after CSP in which powder is conveyed to a hopper, which feeds the material into a kiln, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(6) One (1) electrically-heated rotary kiln, in which powder is calcined, with uncontrolled emissions;

(7) One (1) powder handling operation after the kiln, in which powder is screened and conveyed to a hopper which feeds the milling process, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(8) One (1) enclosed mill, emitting only during loading and unloading powder handling operations, detailed in (7) and (9);

(9) One (1) powder handling operation after the mill, in which powder is screened and then conveyed to the blending hopper, with emissions controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(10) One (1) enclosed blender, used to homogenize the mixture;

(11) One (1) enclosed blender, permitted in 2014, used to homogenize the mixture. This blender will process small product batches and/or act as a backup blender for the existing enclosed blender; and

(12) One (1) final powder handling process, in which powder is screened and packaged, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%.

Powder Manufacturing Area

(c) One (1) titanium powder process, approved in 2015 for construction, controlled by a rotoclone wet collector, identified as Rotoclone, with a control efficiency of 98.0%, exhausting to the atmosphere. The maximum capacity of this process has been considered confidential information. [40 CFR 63, Subpart CCCCCCC]

(d) One (1) specialty ingot manufacturing process, approved in 2016 for construction, consisting of the following:

(1) One (1) slurry blending process, with a maximum capacity of 1,093.30 pounds of raw materials per batch and a batch time of four (4) hours per batch, uncontrolled, and exhausting to the indoors. The slurry is then subsequently spray dried using existing spray drying equipment.

(2) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control during transfer of the powder from the spray dryer to the feed tank, identified as DC074, and exhausting to the indoors.

(3) One (1) feed tank.

(4) One (1) electric sintering kiln.

(5) One (1) final finishing machining lathe, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control, identified as DC075, and exhausting to the indoors.

(6) One (1) final finishing machining chop saw, with a maximum capacity of 275 pounds of specialty ingot per hour, uncontrolled, and exhausting to the indoors.

Insignificant Activities

(e) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-four (24) Specialty Powders Manufacturing operations, identified in the table below, approved in 2015 for modification to reroute baghouses and approved in 2016 for modification and construction of a new operation, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	Specialty Powders	166.67	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifie DC048 controls the rest of the units.
EUS-2	Specialty Powders	166.67	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	83.335	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, a screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in elec furnace and placed into vacuum chamber to form a powde
EUS-3	Specialty	429.3	DC064,	Bay 2 vacuum Powder 2 powder handling. DC064 controls

	Powders		DC063	powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	312.5		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	-	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	312.5	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	Specialty Powders	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	Specialty Powders	300	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*	Specialty Powders	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	Specialty Powders	100	DC002 (Stack S002)	Powder 5 Spray Dryer 2
EUP-11B**	Specialty Powders	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
EUS-15A	Specialty Powders	341.66	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	341.66	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	-	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	341.66	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	341.66	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	770.96	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	-	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.

EUP-17	Specialty Powders	8.33	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	21.606	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	429.3	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.
** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).

Specialty Powders Maintenance

(2) One (1) specialty powders crucible cutting operation, identified as CC019, and controlled by dust collector DC019.

(e) One (1) Sermatech Process, located in Specialty Powders (Building 1550), including a mixing operation to prepare water-based and solvent-based coatings, with water-based mixing controlled by two scrubbers, identified as Scrubber #1 and Scrubber #2;[40 CFR 63, Subpart CCCCCCC]

Location: 1500 Polco Street

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

(1) Building 1500: One machine shop, including two (2) large grinders, five (5) small grinders, six (6) lathes, four (4) milling machines, three (3) drill presses, one (1) belt grinder, one (1) saw, one (1) cut-off saw, one (1) cut-off saw with coolant, and one (1) wet saw with coolant;

(2) Building 1500: One Carpenter Shop, controlled by a dust collector, identified as Carpenter Shop Dust Collector, with a control efficiency of 99%.

Location: Source-wide

Insignificant Activities

(d) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment and welding equipment.

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

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

D.8.1 Particulate Emission Limitations [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a), particulate emissions from each of the following emission units shall not exceed the grain per dry standard cubic foot (dscf) limit listed in the table below:

Emission Unit	PM Limit (grain/dscf)
Location: 1245 Main Street	
EU01GB	0.03
EU02GB	0.03
EU004G	0.03
EU010G	0.03
EU001G	0.03
EU005G	0.03
EU002G	0.03
EU008G	0.03
EU011G	0.03
EU012G	0.03
EU014G	0.03
EU016G	0.03
EU018G	0.03
EU019G	0.03
EU013G	0.03
EU007G	0.03
EU015G	0.03
EU01L	0.03
EU01M	0.03
EU02M	0.03
EU020G	0.03
1245 maintenance shop	0.03
Brown and Sharp Grinder	0.03
Polishers and Hone Process	0.03
Downdraft Table	0.03
Location: 1415 Main Street	
O1P1	0.03
Bader Grinder #2	0.03
Bader Grinder #3	0.03
Bader Grinder #4	0.03
EU01C	0.03
EU04C	0.03
EU05C	0.03
EU07C	0.03
EU09C	0.03
EU03C	0.03
EU06C	0.03
EU08C	0.03
EU10C	0.03
EU12C	0.03
O1P1 EUG1	0.03
O1P1 EUG2	0.03
O1P1 EUG3	0.03
O1P1 EUG4	0.03
O1P1 EUG5	0.03
O1P1 EUG6	0.03
O1P1 EUG7 (approved in 2016 for construction)	0.03
O2P3 EUG1	0.03
O2P3 EUG2	0.03
O2P3 EUG3	0.03
O2P1 EUG1	0.03
O2P1 EUG2	0.03

Emission Unit	PM Limit (grain/dscf)
O2P1 EUG3	0.03
O2P1 EUG4	0.03
O2P1 EUG5	0.03
O1P2 EUG1	0.03
O1P2 EUG3	0.03
EU01M	0.03
1415 maintenance shop	0.03
EU01S	0.03
Four (4) vented tables	0.03
Downdraft Table	0.03
Location: 1550 Polco Street	
Lens Polish mixing tank	0.03
EUS-20	0.03
EUS-18	0.03
EUS-19	0.03
Lens Polish mixing and filling operation	0.03
Suspension Room mixing	0.03
EU020	0.03
CSP	0.03
Titanium Powder Process	0.03
Specialty Ingot - Material Transfer Point (approved in 2016 for construction)	0.03
Specialty Ingot - Final Finishing Machining Lathe (approved in 2016 for construction)	0.03
Specialty Ingot - Final Finishing Machining Chop Saw (approved in 2016 for construction)	0.03
EUS-1	0.03
EUS-2	0.03
EUS-7	0.03
EUP-3	0.03
EUS-3	0.03
EUS-5	0.03
EUS-8B	0.03
EUS-8A	0.03
EUS-10	0.03
EUP-11	0.03
EUP-11A	0.03
EUP-11B (approved in 2016 for construction)	0.03
EUS-15A	0.03
EUS-15B	0.03
EUS-15C	0.03
EUS-15D	0.03
EUS-4B	0.03
EUS-15F	0.03
EUS-15G	0.03
EUP-17	0.03
EUS-22	0.03
EUS-4A	0.03
High Purity Room Powder Handling	0.03
Scales	0.03
CC019	0.03
Sermatech Process	0.03
Location: 1500 Polco Street	
Machine shop	0.03
Carpenter Shop	0.03
Source-wide	
Brazing, soldering, etc.	0.03

D.8.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.8.3 Particulate Control

(a) In order to comply with Condition D.8.1, the baghouse(s), dust collectors, scrubbers, dry filters, and baffles for particulate control shall be in operation and control emissions from the listed processes at all times that any of these facilities are in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

D.8.4 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses, and dust collectors used in conjunction with the emission units identified in the table below at least once per day when any of the processes identified in the table below are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range the Permittee shall take reasonable response. The normal range for each baghouse is a pressure drop between the values listed in the table below unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument(s) used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Emission Unit	Control ID	Pressure Drop Range (inches of H2O)
Location: 1245 Main Street		
EU01GB	C01GB	0.2 – 5.0
EU02GB	C02GB	0.2 – 5.0
EU004G	C004G	1.0 - 6.0
EU010G	C010G	1.0 - 6.0
EU001G	C001G	1.0 - 6.0
EU005G	C005G	0.2 – 5.0
EU002G	C002G	1.0 - 6.0
EU008G	C008G	1.0 - 6.0
EU011G	C011G	1.0 - 6.0
EU012G	C012G	1.0 - 6.0
EU014G	C014G	1.0 - 6.0
EU016G	C016G	1.0 - 6.0
EU018G	C018G	0.2 – 5.0
EU019G	C019G	1.0 - 6.0
EU013G	C013G	0.2 – 5.0
EU007G	C007G	1.0 - 6.0
EU015G	C015G	0.2 – 5.0
EU01L	C01L	1.0 - 6.0
EU01M	C01M	0.2 - 5.0
EU02M	C02M	1.0 - 6.0

Emission Unit	Control ID	Pressure Drop Range (inches of H2O)
Location: 1415 Main Street		
O1P1	DCC1-CV, DCC2-CV, DCC4-CV	0.2 - 5.0
Bader Grinder #2	C03B	1.0 - 6.0
Bader Grinder #3	C07B	1.0 - 6.0
Bader Grinder #4	C08B	1.0 - 6.0
EU01C	C01C	1.0 - 6.0
EU04C	C04C	1.0 - 6.0
EU05C	C01C	1.0 - 6.0
EU07C	C07C	1.0 - 6.0
EU09C	C09C	1.0 - 6.0
EU03C	C03C	0.2 – 5.0
EU06C	C06C	1.0 - 6.0
EU08C	C08C	1.0 - 6.0
EU10C	C10C	1.0 - 6.0
EU12C	C12C	1.0 - 6.0
O1P1 EUG1	CG1	0.2 – 5.0
O1P1 EUG2	CG2	0.2 – 5.0
O1P1 EUG5	CG5	0.2 – 5.0
O1P1 EUG6	CG6	0.2 – 5.0
O1P1 EUG7 (approved in 2016 for construction)	CG7	0.2 – 5.0
O2P3 EUG1	CG1/2	0.2 – 5.0
O2P3 EUG2	CG1/2	0.2 – 5.0
O2P3 EUG3	CG3	0.2 – 5.0
O2P1 EUG1	CG1	0.2 – 5.0
O2P1 EUG2	CG2	0.2 – 5.0
O2P1 EUG3	CG3/4	0.2 – 5.0
O2P1 EUG4	CG3/4	0.2 – 5.0
O2P1 EUG5	CG5	0.2 – 5.0
O1P2 EUG1	CG1	0.2 – 5.0
O1P2 EUG3	CG3	0.2 – 5.0
EU01M	C01M	0.2 - 5.0
EU01S	C01S	1.0 - 6.0
Location: 1550 Polco Street		
Lens Polish mixing tank	DC030	0.2 - 5.0
EUS-20	DC032	0.2 - 5.0
EUS-18	DC032	0.2 - 5.0
EUS-19	DC032	0.2 - 5.0
Lens Polish mixing and filling operation	DC062	1.0 - 6.0
Suspension Room mixing	DC032	0.2 - 5.0
EU020	BAG (CSP), DC-033	0.2 - 5.0
CSP	BAG (CSP)	1.0 - 6.0
Specialty Ingot - Material Transfer Point (approved in 2016 for construction)	DC074	0.2 - 5.0
Specialty Ingot - Final Finishing Machining Lathe (approved in 2016 for construction)	DC075	0.2 - 5.0
EUS-2	DC015	0.2 - 5.0
EUS-7	DC028, DC029	0.2 - 5.0
EUP-3	DC063	0.2 - 5.0
EUS-3	DC064, DC008	0.2 - 5.0
EUS-5	DC012, DC013	0.2 - 5.0
EUS-8B	DC040	0.2 - 5.0
EUS-8A	DC041	0.2 - 5.0
EUS-10	DC004, DC043, DC044, DC045	0.2 - 5.0

Emission Unit	Control ID	Pressure Drop Range (inches of H2O)
EUP-11	DC001 and DC002	0.2 - 5.0
EUP-11A	DC001 and DC002	0.2 - 5.0
EUP-11B (approved in 2016 for construction)	DC046	0.2 - 5.0
EUS-15A	DC026, DC057	0.2 - 5.0
EUS-15B	DC059	0.2 - 5.0
EUS-15F	DC058, DC024, Demisters 5,6,8	0.2 - 5.0
EUS-15G	DC021, DC057, Demister 4	0.2 - 5.0
EUP-17	DC035, DC061, Demister 3	0.2 - 5.0
EUS-22	DC005	0.2 - 5.0
High Purity Room Powder Handling	DC014	0.2 - 5.0
Scales	DC026, DC007	1.0 - 6.0
CC019	DC019	0.2 - 5.0
Sermatech Process	Scrubber #1 and Scrubber #2	1.0 - 6.0
Building 1550- Praxair Powders (21 powder handling operations)		
EUS-1	DC048	0.2 - 5.0
EUS-4A	DC007	1.0 - 6.0
	DC054	0.2 - 5.0

D.8.5 Dust Collector and Baghouse Inspections

The Permittee shall perform inspections on the following control devices. The inspections shall be performed at least once per calendar quarter. All defective bags shall be replaced.

Emission Unit	Control
O1P1-EUG3	O1P1-CG3
O1P1-EUG4	O1P1-CG4
EUS-1	DC073
EUS-15C	DC011, DC068
EUS-15D	DC022, DC069
EUS-4B	DC023, DC070, DC071, DC072
EUS-4A	DC065, DC066, DC067

D.8.6 Scrubber and Wet Collector Monitoring Requirements

(a) The Permittee shall monitor and record the pressure drop of the scrubbers at least once per day when the one (1) Sermatech Process is in operation. When for any one reading, the pressure drop across the scrubbers is outside the normal range the Permittee shall take reasonable response. The normal range for each scrubber is a pressure drop between 4.0 and 20.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

(b) The Permittee shall monitor and record the pressure drop and the flow rate of the wet collector at least once per day when the titanium powder process is in operation. When for any one reading, the pressure drop across the wet collector is outside the normal range the Permittee shall take reasonable response. The normal range for this unit is a pressure drop between 5.0 and 12.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard

to the reasonable response steps required by this condition. When for any one reading, the flow rate of the wet collector is less than the normal minimum the Permittee shall take reasonable response. The normal minimum flow rate for this unit is 0.5 gallons per minute unless a different minimum value is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.8.7 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouses pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.8.8 Scrubber and Wet Collector Detection

In the event that a scrubber or wet collector malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.8.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.8.4, the Permittee shall maintain daily records of the pressure drop across the baghouses and dust collectors controlling the particulate emissions from the emission units identified in the table in Condition D.8.4. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.8.5, the Permittee shall maintain records of the results of the inspections required under Condition D.8.5.

(c) To document the compliance status with Condition D.8.6(a), the Permittee shall maintain daily records of pressure drop for the scrubbers controlling the one (1) Sermatech Process. The Permittee shall include in its daily record when a pressure drop is not

taken and the reason for the lack of pressure drop data (e.g. the process did not operate that day).

(d) To document compliance with Condition D.8.6(b), the Permittee shall maintain daily records of pressure drop and flow rate for the wet collector controlling the titanium powder process. The Permittee shall include in its daily record when a pressure drop or flow rate is not taken and the reason for the lack of pressure drop or flow rate data (e.g. the process did not operate that day).

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

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1500 Polco Street

(i) Emergency generators as follows: [40 CFR 63, Subpart ZZZZ]

Location	Manufacturer	Capacity (hp)	Fuel Type	Date Installed	Date Manufactured	Engine Type
Building 1500	Generac	207	Diesel	1999	1999	6 cylinder
Building 1500	BUDA	53	Propane	1966	1966	6 cylinder
1500 - Power House	ONAN/ Cummins	168	Diesel	1975	1975	6 cylinder

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

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ] [326 IAC 2-8-4(1)]

E.1.1 General Provisions Relating to NESHAPs [326 IAC 20] [40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the generators described in this section except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

E.1.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ)

Pursuant to 40 CFR 63, the Permittee shall comply with the provisions of National Emission Standards for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) which are incorporated by reference as 326 IAC 20. The provisions of 40 CFR 63, Subpart ZZZZ are shown in their entirety in Attachment A to this operating permit.

Applicable portions of the NESHAP are the following:

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

SECTION E.2EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: Building 1245**
Metal Surface Coating Operations

(b) One (1) High Velocity Oxy Fuel coating gun, identified as EU19A, with a maximum capacity of 16.08 pounds of coating per hour, controlled by an integral baghouse with HEPA filters with a control efficiency of 99.97%, identified as C19A, exhausting at Stack/Vent ID 19A. [40 CFR 63, Subpart WWWWWW]

(1) EU19A is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(c) Two (2) plasma surface coating stations, identified as EU03B, controlled by integral baffles, and EU05B, controlled by an integral baghouse with HEPA filters (baghouse control efficiency = 99.97%) identified as C05D, with a maximum capacity of 8.04 pounds of powder coating per hour, each, exhausting at Stack/Vent ID 03D, and 05D respectively, installed in prior to 1982. [40 CFR 63, Subpart WWWWWW]

(1) EU03B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

Insignificant Activities

(c) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Metal Surface Coating Operations

(1) Seven (7) detonation surface coating stations, installed prior to 1988, each with a maximum capacity of 32.16 pounds of coating per hour, identified as follows: [40 CFR 63, Subpart WWWWWW]

(A) Five (5) Speedy Susan D guns, identified as EU01A, EU02A, EU16A, EU17A, and EU18A, each controlled by an integral baghouse with HEPA filters, identified as C01A, C02A, C16A, C17A, and C18A respectively, exhausting individually to Stack/Vent ID 01A, 02A, 16A, 17A, and 18A respectively;

(B) Two (2) D guns, identified as EU05A and EU06A, each controlled by an integral baghouse with HEPA filters, identified as C05A and C06A, exhausting to Stack/Vent ID 05A and 06A; and

(2) Two (2) plasma surface coating stations, identified as EU06B and EU10B, each controlled by an integral baghouse with HEPA filters, identified as C06D and C10D, each with a maximum capacity of 8.04 pounds of powder coating per hour, exhausting at Stack/Vent ID 06D and 10D, installed prior to 1982. [40 CFR 63, Subpart WWWWWW]

Location: Building 1415

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

(1) Three (3) Bader Grinders, identified as Bader Grinder #2, Bader Grinder #3, and Bader Grinder #4, each controlled by dust collectors with HEPA filters identified as C03C, C07B, and C08B, respectively. [40 CFR 63, Subpart WWWWWW]

(c) Emission units or activities with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Plasma Coating Operations

(1) Nine (9) plasma surface coating stations, including:

(A) EU01B, EU02B, EU05B, EU06B, EU07B, EU08B, EU09B, installed in 1994; EU11B, installed in 2009; and EU12B, installed in 2013; each with a maximum capacity of 16.08 pounds of metal or ceramic powders per hour, each controlled by an integral baghouse with HEPA filters, identified as C01B, C02B, C05B, C06B, C07B, C08B, C09B, C11B, and C12B, respectively and exhausting to stack/vents ID 01B, 02B, 05B, 06B, 07B, 08B, 09B, 11B, and 12B. [40 CFR 63, Subpart WWWWWW]

(i) EU08B is heated by kerosene at a maximum rate of 26 gallons of kerosene per month.

(ii) Cubicle EU12B is not subject to 40 CFR 63, Subpart WWWWWW because it does not spray the metal HAPs listed in the rule.

(2) One (1) low pressure plasma spray (LPPS) coating station, identified as EU01S, with a maximum capacity of 44.09 pounds of coating per hour, controlled by a dust collector during cleanout, identified as C01S with a control efficiency of 99.97%, exhausting to Stack/Vent ID 01S. [40 CFR 63, Subpart WWWWWW]

Tribomet Operation

(3) Two (2) Tribomet lines, each including a series of 16 dip tanks, controlled by a composite mesh pad system with mist eliminator with a control efficiency of 99.5%.[40 CFR 63, Subpart WWWWWW]

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

National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW] [326 IAC 2-8-4(1)]

E.2.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the generators described in this section except when otherwise specified in 40 CFR Part 63, Subpart WWWWWW.

E.2.2 National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations (40 CFR 63, Subpart WWWWWW)

Pursuant to 40 CFR 63, the Permittee shall comply with the provisions of National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations (40 CFR 63, Subpart WWWWWW), which are incorporated by reference as 326 IAC 20. The provisions of 40 CFR 63, Subpart WWWWWW are shown in their entirety in Attachment B to this operating permit.

Applicable portions of the NESHAP are the following:

(1) 40 CFR 63.11504(a)
(2) 40 CFR 63.11505(a), (b) & (e)
(3) 40 CFR 63.11506(a)
(4) 40 CFR 63.11507(a)(2), (f)(1) & (g)
(5) 40 CFR 63.11508(a), (b), (c)(2),(8),(9), (d)(1)(2)(4)(8)
(6) 40 CFR 63.11509
(7) 40 CFR 63.11510
(8) 40 CFR 63.11511
(9) 40 CFR 63.11512
(10) Table 1

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Location: 1550 Polco Street

Powder Manufacturing Area

(c) One (1) titanium powder process, approved in 2015 for construction, controlled by a rotoclone wet collector, identified as Rotoclone, with a control efficiency of 98.0%, exhausting to the atmosphere. The maximum capacity of this process has been considered confidential information. [40 CFR 63, Subpart CCCCCCC]

Insignificant Activities

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-four (24) Specialty Powders Manufacturing operations, identified in the table below, approved in 2015 for modification to reroute baghouses and approved in 2016 for modification and construction of a new operation, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-1	Specialty Powders	166.67	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifie DC048 controls the rest of the units.
EUS-2	Specialty Powders	166.67	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	83.335	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, a screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	429.3	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in elec furnace and placed into vacuum chamber to form a powde
EUS-3	Specialty Powders	429.3	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	312.5		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	-	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	312.5	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact m in Bay 5. DC012 controls powder handling in Bay 3 and Ba 4.
EUS-8B	Specialty Powders	58.4	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	58.4	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.

EUS-10	Specialty Powders	300	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*	Specialty Powders	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	Specialty Powders	100	DC002 (Stack S002)	Powder 5 Spray Dryer 2
EUP-11B**	Specialty Powders	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3
EUS-15A	Specialty Powders	341.66	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	341.66	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	-	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	341.66	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	341.66	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	770.96	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	-	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	341.66	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	341.66	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	8.33	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	21.606	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	429.3	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	100	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural

gas burners, but also handle material.
** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).

Specialty Powders Maintenance

(e) One (1) Sermatech Process, located in Specialty Powders (Building 1550), including a mixing operation to prepare water-based and solvent-based coatings, with water-based mixing controlled by two scrubbers, identified as Scrubber #1 and Scrubber #2;[40 CFR 63, Subpart CCCCCCC]

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

National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing [40 CFR 63, Subpart CCCCCCC] [326 IAC 2-8-4(1)]

E.3.1 General Provisions Relating to NESHAPs [326 IAC 20] [40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the generators described in this section except when otherwise specified in 40 CFR Part 63, Subpart CCCCCCC.

E.3.2 National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing (40 CFR 63, Subpart CCCCCCC)

Pursuant to 40 CFR 63, the Permittee shall comply with the provisions of National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing (40 CFR 63, Subpart CCCCCCC) which are incorporated by reference as 326 IAC 20. The provisions of 40 CFR 63, Subpart CCCCCCC are shown in their entirety in Attachment C to this operating permit.

Applicable portions of the NESHAP are the following:

(1) 40 CFR 63.11599(a) & (b)
(2) 40 CFR 63.11600
(3) 40 CFR 63.11601
(4) 40 CFR 63.11602
(5) 40 CFR 63.11603(a), (b), (c)
(6) 40 CFR 63.11605
(7) 40 CFR 63.11606
(8) 40 CFR 63.11607
(9) Table 1

SECTION E.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: 1550 Polco Street**

CSP Department

(a) One (1) powder manufacturing process, identified as EU020, constructed in 2014, including: [40 CFR 63, Subpart VVVVVV]

(1) One (1) raw material handling operation, including a liquid pumping operation and solid scooping operation, with uncontrolled emissions;

(2) One (1) raw material mixing operation, in which raw materials are mixed inside of an enclosed 55-gallon drum, with uncontrolled emissions;

(3) One (1) Combustion Spray Pyrolysis (CSP) operation, including spray drying, a cyclonic collection system with a collection efficiency of 95%, and a system to convert the powder to an oxide form. The 5% not collected by the system is routed to the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(4) One (1) natural gas-fired burner associated with EU020, with a heat input capacity of 0.40 MMBtu per hour, controlled by the CSP pollution control system, including a dust collector, identified as BAG (CSP) with a particulate control efficiency of 99.5%, and a selective catalytic reduction system, identified as SCR (CSP), with an NOx control efficiency of 90%;

(5) One (1) powder handling operation after CSP in which powder is conveyed to a hopper, which feeds the material into a kiln, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(6) One (1) electrically-heated rotary kiln, in which powder is calcined, with uncontrolled emissions;

(7) One (1) powder handling operation after the kiln, in which powder is screened and conveyed to a hopper which feeds the milling process, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(8) One (1) enclosed mill, emitting only during loading and unloading powder handling operations, detailed in (7) and (9);

(9) One (1) powder handling operation after the mill, in which powder is screened and then conveyed to the blending hopper, with emissions controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%;

(10) One (1) enclosed blender, used to homogenize the mixture;

(11) One (1) enclosed blender, permitted in 2014, used to homogenize the mixture. This blender will process small product batches and/or act as a backup blender for the existing enclosed blender; and

(12) One (1) final powder handling process, in which powder is screened and packaged, controlled by a dust collector, identified as DC-033, with a particulate control efficiency of 99.9%.

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

National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources [40 CFR 63, Subpart VVVVVV] [326 IAC 2-8-4(1)]

E.4.1 General Provisions Relating to NESHAPs [326 IAC 20] [40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the generators described in this section except when otherwise specified in 40 CFR Part 63, Subpart Subpart VVVVVV.

E.4.2 National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources (40 CFR 63, Subpart VVVVVV)

Pursuant to 40 CFR 63, the Permittee shall comply with the provisions of National Emission Standards for Chemical Manufacturing Area Sources (40 CFR 63, Subpart VVVVVV) which are incorporated by reference as 326 IAC 20. The provisions of 40 CFR 63, Subpart VVVVVV are shown in their entirety in Attachment D to this operating permit.

Applicable portions of the NESHAP are the following:

(1) 40 CFR 63.111494 (a)
(2) 40 CFR 63.111494 (a)(1)
(3) 40 CFR 63.111494 (a)(2)(i)
(4) 40 CFR 63.111494 (b)
(5) 40 CFR 63.111494 (h)
(6) 40 CFR 63.11495(a)(1)
(7) 40 CFR 63.11495(a)(3)
(8) 40 CFR 63.11496(f)(1)
(9) 40 CFR 63.11496(f)(4)
(10) 40 CFR 63.11501(a), (b), (c)(1)(i)(vii)(viii), (c)(3)(ii), (d)(1)(3)(4)(8)
(11) Table 9

SECTION E.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: **Location: 1500 Polco Street**

(j) Insignificant Thresholds: Activities with emissions equal to or less than thresholds require listing only. Lead (Pb) = 0.6 ton/year or 3.29 lbs/day; Carbon Monoxide (CO) = 25 tpy; Sulfur Dioxide (SO2) = 10 tpy; Particulate Matter (PM) = 5 tpy; Particulate Matter 10 (PM10) = 5 tpy; Nitrogen Oxides (Nox) = 10 tpy; Volatile Organic Compounds (VOC) = 5 tpy, for sources using controls to comply with 326 IAC 8 or 10 tpy for all other sources:

(1) One (1) insignificant Cleaver Brooks natural gas fired boiler identified as Emission Unit ID EU004 with a maximum heat input capacity of 14.6 million Btu per hour using no add on pollution control equipment and exhausting to Stack/Vent ID 004. Located in the powerhouse and manufactured and installed in 1992.

[40 CFR 60, Subpart Dc]

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

New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc] [326 IAC 2-8-4(1)]

E.5.1 General Provisions Relating to NSPS Dc [326 IAC 12] [40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the boiler described in this section except when otherwise specified in 40 CFR Part 60, Subpart Dc.

E.5.2 New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60, the Permittee shall comply with the provisions of New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc), which are incorporated by reference as 326 IAC 12. The provisions of 40 CFR 60, Subpart Dc are shown in their entirety in Attachment E to this operating permit.

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a)(1), (a)(3), (g), and (i)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Praxair Surface Technologies
Source Address: 1500 Polco Street, Indianapolis, Indiana 46222
1550 Polco Street Indianapolis, Indiana 46222
1245 Main Street, Indianapolis, Indiana 46224
1415 Main Street, Indianapolis, Indiana 46224
FESOP Permit No.: F097-33186-00060

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

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

Signature:

Printed Name:

Title/Position:

Date:

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Praxair Surface Technologies
Source Address: 1500 Polco Street, Indianapolis, Indiana 46222
1550 Polco Street Indianapolis, Indiana 46222
1245 Main Street, Indianapolis, Indiana 46224
1415 Main Street, Indianapolis, Indiana 46224
FESOP Permit No.: F097-33186-00060

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

□ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-8-12

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

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

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

Source Name: Praxair Surface Technologies
Source Address: 1500 Polco Street, Indianapolis, Indiana 46222
1550 Polco Street Indianapolis, Indiana 46222
1245 Main Street, Indianapolis, Indiana 46224
1415 Main Street, Indianapolis, Indiana 46224
FESOP Permit No.: F097-33186-00060

Months: _____ **to** _____ **Year:** _____

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

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP) Renewal

Source Description and Location

Source Name:	**Praxair Surface Technologies**
Source Location:	**1500 Polco Street, Indianapolis, Indiana 46222**
County:	**Marion (Wayne Township)**
SIC Code:	**3479 (Coating, Engraving, and Allied Services, Not Elsewhere Classified)**
Operation Permit No.:	**F097-33186-00060**
Operation Permit Issuance Date:	**April 1, 2014**
Significant Permit Revision No.:	**097-37221-00060**
Permit Reviewer:	**Brian Williams**

On May 24, 2016, the Office of Air Quality (OAQ) received an application from Praxair Surface Technologies related to a modification to an existing manufacturer of metallic and nonmetallic powders for surface coating and polishing.

Source Definition

(a) This metallic and non-metallic powder manufacturing and surface coating operation consists of four (4) separate buildings:

Building 1 is located at 1245 Main Street, Indianapolis, Indiana 46224;
Building 2 is located at 1415 Main Street, Indianapolis, Indiana 46224;
Building 3 is located at 1550 Polco Street Indianapolis, Indiana 46222; and
Building 4 is located at 1500 Polco Street, Indianapolis, Indiana 46222

This determination was initially made under FESOP No.: F097-7487-00060, issued on October 20, 2000:

The four (4) buildings are contiguous or adjacent and have the same owner. Operations are classified under two (2) separate Standard Industrial Classification Codes (SIC). Although the SIC codes are different, all four (4) buildings provide various support relationships to one another. Since the operations are located on contiguous or adjacent properties, owned by the same company, and provide a support relationship, they will be considered one (1) source, as defined by 326 IAC 2-7-1(22).

(b) This determination was initially made under FESOP No.: F097-33186-00060, issued on April 1, 2014:

Additionally, Praxair, Inc. owns and operates Praxair Surface Technologies, Inc. (source 097-00060) and Praxair Distribution, Inc. (source 097-00189). IDEM, OAQ has examined whether the plants are part of the same major source. The plants are both owned by Praxair, Inc. Therefore, the plants are under common ownership and common control, meeting the first part of the major source definition. Praxair Surface Technologies has the two-digit SIC Code 34 for the Major Group Fabricated Metal Products, Except Machinery and Transportation Equipment. Praxair Distribution has the two-digit SIC Code 51 for the Major Group Wholesale Trade-Nondurable Goods. The plants do not have the same two-digit SIC Code. A plant is a support facility to another plant if it dedicates 50% or more of its output to the other plant. Praxair Distribution sells gas in containers and dry ice. About 10-15% of its total output goes to Praxair Surface

Technologies. This is less than 50% of its output, so Praxair Distribution does not qualify as a support facility. Praxair Surface Technologies does not send any of its output to Praxair Distribution. Since neither plant is a support facility and the plants do not have the same two-digit SIC Code, they do not meet the second part of the major source definition. The plants are located on contiguous properties since they share a common property boundary. The plants meet the third element of the major source definition.

The plants do not meet all three elements of the major source definition. Therefore, IDEM, OAQ finds that the Praxair Surface Technologies, Inc. (source 097-00060) and the Praxair Distribution, Inc. (source 097-00189) plants are not part of the same major source.

Existing Approvals

The source was issued FESOP No. F097-33186-00060 on April 1, 2014. The source has since received the following approvals:

(a) Administrative Amendment No. 097-34910-00060, issued on October 7, 2014;

(b) Significant Permit Revision No. 097-35157-00060, issued on March 25, 2015;

(c) Significant Permit Revision No. 097-35433-00060, issued on May 7, 2015; and

(d) Significant Permit Revision No. 097-36948-00060, issued on June 21, 2016.

County Attainment Status

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

Pollutant	Designation
SO_2	Non-attainment effective October 4, 2013, for the Center Township, Perry Township, and Wayne Township. Better than national standards for the remainder of the county.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]
$PM_{2.5}$	Attainment effective July 11, 2013, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour designation was revoked effective June 15, 2005.

(a) Ozone Standards

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

(b) $PM_{2.5}$
Marion (Wayne Township) County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) SO_2
U.S. EPA, in the Federal Register Notice 78 FR 47191 dated August 5, 2013, has designated Marion (Wayne Township) County as nonattainment for SO_2. Therefore, SO_2 emissions were reviewed pursuant to the requirements of Emission Offset, 326 IAC 2-3.

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

Fugitive Emissions

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

Status of the Existing Source

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

This PTE table is from the TSD or Appendix A of 097-36948-00060, issued on June 21, 2016.

Process/ Emission Unit	**Potential To Emit of the Entire Source Prior Issuance of the Proposed Revision (tons/year)**									
Emissions Units	**PM**	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	0.56	0.53	Hexane
Kerosene-Fired Equipment	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	0.00	0.00	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	0.00	0.00	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	11.44	0.00	0.12	0.12	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	1.36	1.35	1.35	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	102.32	44.99	44.99	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.00	-
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-

Process/ Emission Unit	Potential To Emit of the Entire Source Prior Issuance of the Proposed Revision (tons/year)									
Emissions Units	**PM**	**PM10***	**PM2.5***	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Building 1550 CSP Dept. - EU020:										
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
CSP	10.00	10.00	10.00	0.00	59.99	0.00	0.00	2.42	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	0.00	0.00	Hexane
Powder Handling after CSP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	-
Powder Handling after Kiln	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	3.03	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)**	14.26	14.26	14.26	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	HCl
Building 1415- LPPS (EU01S)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.62	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.15	0.14	HCl
Building 1415- Operation 1, Process 1	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.32	0.32	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.79	0.79	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	HF
Building 1550- Praxair Powders (23 powder handling operations)**	5.52	5.52	5.52	0.00	0.00	0.00	0.00	2.53	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.00	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.06	0.06	Chromium
Titanium Process	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.47	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.07	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions***	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.00	-
Total Limited PTE for FESOP	**159.38**	**98.71**	**97.32**	**0.39**	**93.45**	**40.38**	**25.53**	**16.95**	**5.46**	**Nickel**
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10	**-**
PSD Major Source Thresholds	250	250	250	-	250	250	250	-	-	**-**
Emission Offset/ Nonattainment NSR Major Source Thresholds	-	-	-	100	-	-	-	**-**	**-**	**-**

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

(a) This existing source is not a major stationary source under PSD (326 IAC 2-2), because no PSD regulated pollutant, excluding GHGs, is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is not a major stationary source under Emission Offset (326 IAC 2-3), because SO_2 (nonattainment regulated pollutant) is emitted at a rate of less than 100 tons per

year.

(c) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the unlimited potential to emit HAPs is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Praxair Surface Technologies on May 24, 2016, relating to the following changes:

1. Praxair is requesting to add a new specialty ingot manufacturing process in Building 1550 of the Powder Manufacturing Area. The new process will include a slurry blending process, which produces slurry that is subsequently spray dried using the existing powder spray drying equipment. As a result, the potential to emit for the spray drying process will not increase as a result of this change. After spray drying, the dried powder is pressed into cylinders and sintered in an electric kiln. After sintering, the ingots will go to final finishing, which consists of a new chop saw and lathe.

Location: 1550 Polco Street

(a) One (1) specialty ingot manufacturing process, approved in 2016 for construction, consisting of the following:

(1) One (1) slurry blending process, with a maximum capacity of 1,093.30 pounds of raw materials per batch and a batch time of four (4) hours per batch, uncontrolled, and exhausting to the indoors. The slurry is then subsequently spray dried using existing spray drying equipment.

(2) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control during transfer of the powder from the spray dryer to the feed tank, identified as DC074, and exhausting to the indoors.

(3) One (1) feed tank.

(4) One (1) electric sintering kiln.

(5) One (1) final finishing machining lathe, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control, identified as DC075, and exhausting to the indoors.

(6) One (1) final finishing machining chop saw, with a maximum capacity of 275 pounds of specialty ingot per hour, uncontrolled, and exhausting to the indoors.

2. Praxair is requesting to replace an existing grit blaster (O1P1 EUG7) in Building 1415 with a newer grit blaster which has a higher maximum capacity. The existing grit blaster has a maximum capacity of 57 pounds per hour and the new blaster will have a maximum capacity of 81 pounds per hour.

Location: 1415 Main Street

(a) One (1) grit blasting unit, identified as follows:

Operation 1, Process 1:

(1) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

This emission unit is replacing an existing grit blasting unit that was previously identified as O1P1-EUG7. However, that grit blasting unit had a maximum capacity of 57 pounds per hour. Below is the unit being removed:

O1P1-EUG7, using aluminum oxide, with a maximum capacity of 57 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG7.

3. Praxair is requesting to change the solvent used in one of the degreasers in Building 1415 from EnSolv to Novec 72DE. The new solvent will result in increased VOC emissions.

Location: 1415 Main Street

Degreasing operations, including the following:

(a) Conveyorized Vapor Degreasers approved in 2016 for modification to change solvents: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	1 Operation 1 Degreaser	Novec 72DE, with a maximum capacity of 500 gallons per year

4. Praxair is requesting to add an additional spray dryer, identified as Powder 5 Spray Dryer 3 (EUP11B) and an associated integral dust collector (DC-046) in Building 1415. The new spray dryer will have a maximum throughput of 100 pounds of powder per hour.

Location: 1415 Main Street

Specialty Powders Manufacturing

(a) One (1) Specialty Powders Manufacturing operation, identified in the table below, approved in 2016 for construction, controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below:

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUP-11B*	Specialty Powders	100	DC046 (Stack S046)	Powder 5 Spray Dryer 3

*This process does not process, use, or generate materials containing HAP and is not subject to

the requirements of 40 CFR 63, Subpart CCCCCCC (7C).

5. Praxair notified IDEM that the addition of the new spray dryer will increase the maximum capacity of the powder 5 processing operations, identified as EUS-10 from 200 pounds per hour to 300 pounds per hour. This modification will increase the unlimited potential to emit PM, PM10, and PM2.5 by 0.05 tons per year, each.

Location: 1415 Main Street

Specialty Powders Manufacturing

(a) One (1) Specialty Powders Manufacturing operation, identified in the table below, approved in 2016 to increase the maximum capacity, controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below:

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUS-10	Specialty Powders	300	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.

6. Praxair notified IDEM that the existing Powder 5 Spray Dryer 1 and Powder 5 Spray Dryer 2 in Building 1415 will be modified to exhaust through separate stacks instead of a common stack. This change will not affect the unlimited or limited potential to emit for these two (2) dryers.

Location: 1415 Main Street

Specialty Powders Manufacturing

(a) Two (2) Specialty Powders Manufacturing operations, identified in the table below, approved in 2016 for modification to the stack exhausts, controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below:

Unit ID	Location	Maximum Throughput (lb/hr)	Dust Collectors	Description
EUP-11*	Specialty Powders	100	DC001 (Stack S001)	Powder 5 Spray Dryer 1
EUP-11A*	Specialty Powders	100	DC002 (Stack S002)	Powder 5 Spray Dryer 2

*These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.

7. Praxair is requesting to add one (1) new furnace to the existing Operation 2 Process 4 in Building 1415 that will be controlled by the existing water scrubber. The new furnace will not increase the maximum permitted throughput of 0.5 pounds per hour for the Operation 2 Process 4. Therefore, the addition of the new furnace will not increase the unlimited potential to emit HAPs.

Location: 1415 Main Street

(a) (Operation 2, Process 4 (O2P4), approved in 2016 for modification to add one (1) new furnace, with emissions controlled by a water scrubber with a control efficiency of 90%.

"Integral Part of the Process" Determination

As part of FESOP No. 097-33186-00060, issued on April 1, 2014, IDEM, OAQ previously determined that the baffles, baghouses, dust collectors, and HEPA filters be considered an integral part of the specialty powders manufacturing processes and the surface coating processes. The baghouse and HEPA filters for the proposed powder spray dryer (EUP-11B) operate in the same manner as the existing integral baghouse and HEPA filters for the specialty powders manufacturing processes.

Therefore, the potential PM emissions from the proposed powder spray dryer (EUP-11B) will be calculated after consideration of the baghouse and HEPA filters. Operating conditions in the proposed permit will specify that the baghouse and HEPA filters shall operate at all times when the powder spray dryer (EUP-11B) is in operation.

Enforcement Issues

There are no pending enforcement actions related to this revision

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – FESOP Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-8-11.1 (Permit Revisions). This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

	PTE of Proposed Revision (tons/year)								
Process/ Emission Unit	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Grit Blaster (O1P1 EUG7) Building 1415*	3.55	2.48	2.48	0	0	0	0	0	0
Ingot Process - Slurry Blending	0	0	0	0	0	6.15	0	0.05	0.05 Methanol
Ingot Process - Powder Handling	0.004	0.002	0.002	0	0	0	0	0	0
Ingot Process - Final Machining	0.01	0.01	0.01	0	0	0	0	0	0
Powder 5 Processing (EUS-10)**	0.05	0.05	0.05	0	0	0	0	0	0
Spray Dryer (EUP-11B)***	0.49	0.49	0.49	0	0	0	0	0	0

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Building 1415 - Operation 2, Process 4****	0	0	0	0	0	0	0	0	0
Solvent Cleaning (Building 1415)*****	0	0	0	0	0	0.67	0	0	0
Total PTE of Proposed Revision	**4.11**	**3.04**	**3.04**	**0**	**0**	**6.82**	**0**	**0.05**	**0.05 Methanol**

negl. = negligible
*PTE of the Grit Blaster at 81 pounds per hour.
**PTE increase due to capacity increasing from 200 lb/hr to 300 lb/hr. PTE before modification was 0.12 tons per year and will increase to 0.17 tons per year after modification. IDEM has previously determined that the control devices associated with this process is integral to the process. Therefore, the PTE increase is calculated after controls.
***IDEM has previously determined that the control devices associated with this process is integral to the process. Therefore, the unlimited PTE is calculated after controls.
****The maximum throughput for this process will not increase due to the addition of one (1) new furnace to this process. Therefore, potential HAPs emissions will not increase.
*****Previous solvent had VOC PTE of 2.0 tons per year. The new solvent has a VOC PTE of 2.67 tons per year. Therefore, the VOC PTE increased 0.67 tons per year due to the new solvent.

Pursuant to 326 IAC 2-8-11.1(f), this FESOP is being revised through a FESOP Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves adding new FESOP limits.

PTE of the Entire Source After Issuance of the FESOP Revision

The table below summarizes the potential to emit of the entire source reflecting adjustment of existing limits, with updated emissions shown as **bold** values and previous emissions shown as ~~strikethrough~~ values.

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
Emissions Units	**PM**	**PM10***	**PM2.5****	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	0.56	0.53	Hexane
Kerosene-Fired Equipment	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	0.00	0.00	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	0.00	0.00	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	~~11.44~~ **12.11**	0.00	0.12	0.12	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	1.36	1.35	1.35	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	102.32	44.99	44.99	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.00	-

Process/ Emission Unit	**Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)**									
Emissions Units	**PM**	**PM10***	**PM2.5* ***	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1550 CSP Dept. - EU020:										
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
CSP	10.00	10.00	10.00	0.00	59.99	0.00	0.00	2.42	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	0.00	0.00	Hexane
Powder Handling after CSP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	-
Powder Handling after Kiln	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	3.03	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)**	14.26	14.26	14.26	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	HCl
Building 1415- LPPS (EU01S)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.62	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.15	0.14	HCl
Building 1415- Operation 1, Process 1	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.32	0.32	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.79	0.79	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	HF
Building 1550- Praxair Powders (~~23~~ **24** powder handling operations)**	~~5.52~~ **6.07**	~~5.52~~ **6.07**	~~5.52~~ **6.07**	0.00	0.00	0.00	0.00	2.53	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.00	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.06	0.06	Chromium
Building 1550 - Ingot Process - Slurry Blending	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.15**	**0.00**	**0.05**	**0.05**	**Methanol**
Building 1550 - Ingot Process - Powder Handling	**0.004**	**0.002**	**0.002**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Titanium Process	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.47	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.07	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions***	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.00	-
Total Limited PTE for FESOP	~~159.38~~ **159.93**	~~98.71~~ **99.26**	~~97.32~~ **97.87**	0.39	93.45	~~40.38~~ **47.21**	25.53	~~16.95~~ **16.99**	5.46	Nickel
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10	**-**
PSD Major Source Thresholds	250	250	250	-	250	250	250	-	-	**-**
Emission Offset/ Nonattainment NSR Major Source Thresholds	-	-	-	100	-	-	-	**-**	**-**	**-**

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

The table below summarizes the potential to emit of the entire source after issuance of this revision 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 to accommodate the Proposed Revision (tons/year)**									
Emissions Units	**PM**	**PM10***	**PM2.5***	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	0.56	0.53	Hexane
Kerosene-Fired Equipment	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	0.00	0.00	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	0.00	0.00	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	12.11	0.00	0.12	0.12	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	1.36	1.35	1.35	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	102.32	44.99	44.99	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.00	-
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1550 CSP Dept. - EU020:										
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
CSP	10.00	10.00	10.00	0.00	59.99	0.00	0.00	2.42	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	0.00	0.00	Hexane
Powder Handling after CSP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	-
Powder Handling after Kiln	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	3.03	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)**	14.26	14.26	14.26	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	HCl
Building 1415- LPPS (EU01S)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.62	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.15	0.14	HCl
Building 1415- Operation 1, Process 1	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.32	0.32	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.79	0.79	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	HF

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
Emissions Units	**PM**	**PM10***	**PM2.5***	**SO_2**	**NOx**	**VOC**	**CO**	**Combined HAPs**	**Worst Case HAP**	
Building 1550- Praxair Powders (24 powder handling operations)**	6.07	6.07	6.07	0.00	0.00	0.00	0.00	2.53	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.00	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.06	0.06	Chromium
Building 1550 - Ingot Process - Slurry Blending	0.00	0.00	0.00	0.00	0.00	6.15	0.00	0.05	0.05	Methanol
Building 1550 - Ingot Process - Powder Handling	0.004	0.002	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Titanium Process	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.47	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.07	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions***	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.00	-
Total Limited PTE for FESOP	**159.93**	**99.26**	**97.87**	**0.39**	**93.45**	**47.21**	**25.53**	**16.99**	**5.46**	**Nickel**
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10	**-**
PSD Major Source Thresholds	250	250	250	-	250	250	250	-	-	**-**
Emission Offset/ Nonattainment NSR Major Source Thresholds	-	-	-	100	-	-	-	**-**	**-**	**-**

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

(a) FESOP Status

This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

(1) Criteria Pollutants

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the emissions of PM10 and PM2.5 from the grit blaster (O1P1 EUG7) shall not exceed the following limits specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr
Grit Blaster		
O1P1 EUG7	0.18	0.18

This is a new limit since the source is removing the existing grit blaster that was previously identified as O1P1 EUG7 and replacing it with a larger grit blaster with the same emission unit id. The addition of the new emission units increases the source-wide total potential to emit of PM10 and PM2.5 to greater than 100 tons per year, each. Therefore, the source has accepted new federally enforceable PM10 and PM2.5 emission limits for the new grit blaster in order to ensure the requirements of 326 IAC 2-7 (Part 70 Permits) do not apply. The source shall continue to comply with all other applicable requirements and permit conditions as contained in FESOP No. F097-33186-00060, issued on April 1, 2014.

Compliance with this limit, combined with the potential to emit PM10 and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM10 and PM2.5

to less than 100 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

(b) PSD Minor Source
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit PM, PM10, and PM2.5 from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to render 326 IAC 2-2 (PSD) not applicable, the emissions of PM, PM10, and PM2.5 from the grit blaster (O1P1 EUG7) and the powder manufacturing operation (EUP-11B) shall not exceed the following limits specified in the table below:

Emission Unit	PM Limit (lbs/hr)	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
Grit Blasters			
O1P1 EUG7*	0.48	0.48	0.48
Building 1550- Praxair Powders (24 powder handling operations)			
EUP-11B	0.48	0.48	0.48

*This is a new limit since the source is removing the existing grit blaster that was previously identified as O1P1 EUG7 and replacing it with a larger grit blaster with the same emission unit id.

These are new emission limits for the new emission units due to this revision. The above PSD minor PM10 and PM2.5 limits combined with the potential to emit PM10 and PM2.5 from all other emission units at this source will allow the source to exceed the Title V Major Source thresholds. The source requested the limits be structured this way to avoid being citied for violating PSD in the event they exceed the new and existing Part 70 avoidance limits. The source shall continue to comply with all other applicable requirements and permit conditions as contained in FESOP No. F097-33186-00060, issued on April 1, 2014.

Compliance with these limits, combined with the PM, PM10, and PM2.5 emissions from all other emission units at the source, shall limit the source-wide potential to emit of PM, PM10, and PM2.5 to less than two hundred fifty (250) tons per year, each and shall render 326 IAC 2-2 (PSD) not applicable.

(c) Emission Offset Minor Source
This modification to an existing Emission Offset minor stationary source will not change the Emission Offset minor status, because the potential to emit of all nonattainment regulated pollutants from the entire source will continue to be less than the Emission Offset major source threshold levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Federal Rule Applicability Determination

(a) New Source Performance Standards (NSPS)
(1) There are no New Source Performance Standards (40 CFR Part 60) and 326 IAC 12 included for this proposed revision.

(b) National Emission Standards for Hazardous Air Pollutants (NESHAP)

(1) The requirements of the National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing, 40 CFR 63, Subpart CCCCCCC (7C) and 326 IAC 20, do not apply to the proposed specialty ingot manufacturing process or the powder spray dryer (EUP-11B) because these processes do not process, use, or generate materials containing HAP.

(2) There are no new National Emission Standards for Hazardous Air Pollutants (40 CFR Part 63), 326 IAC 14 and 326 IAC 20 included for this proposed revision.

(c) Compliance Assurance Monitoring (CAM)

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

State Rule Applicability Determination

(a) 326 IAC 2-8-4 (FESOP)
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

(c) 326 IAC 2-3 (Emission Offset)
This modification to an existing Emission Offset minor stationary source will not change the Emission Offset minor status, because the potential to emit of all nonattainment regulated pollutants from the entire source will continue to be less than the Emission Offset major source threshold levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

(d) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The proposed revision is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the new and modified emission units are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(e) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

(f) 326 IAC 5-1 (Opacity Limitations)
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 thirty percent (30%) 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.

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

(h) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), a source or facility is subject to the provisions of this rule if the source or facility is specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10, has a source-wide potential to emit of one hundred (100) tons or more, or source-wide actual emissions of ten (10) tons or more of particulate matter per year. This source has actual particulate emissions greater than ten (10) tons per year.

(i) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(j) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Conveyorized Vapor Degreaser - Building 1415

(a) 326 IAC 8-3-4 (Conveyorized Degreaser Control Equipment and Operating Requirements)
The change in solvent for the existing conveyorized vapor degreaser will not change the applicability of 326 IAC 8-3-4. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP No. F097-33186-00060, issued on April 1, 2014.

Operation 2 Process 4

(a) There are no applicable state requirements for the Operation 2 Process 4 because this process only emits hydrogen fluoride (HF).

Abrasive Blasting

(a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The requirements of 326 IAC 6-3-2 are not applicable to this source because it is subject to more stringent particulate matter limits under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).

(b) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from the grit blasters (O1P1-EUG7), shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)).

The baghouse shall be in operation at all times when the grit blaster is in operation, in order to comply with this limit.

Specialty Ingot Manufacturing Process - Building 1550

(a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The requirements of 326 IAC 6-3-2 are not applicable to this source because it is subject to more stringent particulate matter limits under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).

(b) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from the material transfer point, final finishing machining lathe and chop saw shall each not exceed seven-hundredths (0.07) gram per

dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)).

The dust collectors for the material transfer point and final finishing machining lathe shall be in operation at times when the material transfer point or final finishing machining lathe are in operation, in order to comply with these limits.

The final finishing chop saw is not equipped with a control device.

(c) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The specialty ingot manufacturing process is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from the specialty ingot manufacturing process is less than twenty-five (25) tons per year.

Powder 5 Processing and Powder 5 Spray Dryer 3

(a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The requirements of 326 IAC 6-3-2 are not applicable to this source because it is subject to more stringent particulate matter limits under 326 IAC 6.5 (Particulate Matter Limitations Except Lake County).

(b) 326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-2(a), particulate matter emissions from the powder 5 processing (EUS-10) and powder 5 spray dryer 3 (EUP-11B) shall not exceed seven-hundredths (0.07) gram per dry standard cubic meter (g/dscm) (three-hundredths (0.03) grain per dry standard cubic foot (dscf)), each.

The integral baghouses and HEPA filters shall be in operation at all times when the powder 5 processing (EUS-10) and powder 5 spray dryer 3 (EUP-11B) is in operation, in order to comply with these limits.

This is an existing requirement for EUS-10 and the applicability is not being revised in this significant permit revision.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance determination and monitoring requirements applicable to this proposed revision as follows:

Emission Unit/Control	Operating Parameters	Frequency
Grit Blaster (O1P1 EUG7) / Baghouse CG7	Pressure Drop	Once per day
Powder 5 Spray Dryer 3 (EUP-11B) / Baghouse and HEPA Filters DC046	Pressure Drop	Once per day

(1) These monitoring conditions are necessary because the baghouse for the grit blaster and baghouse and HEPA Filters for the powder spray dryer must operate properly to ensure compliance with 326 IAC 6.5 (Particulate Emissions Limitations Except Lake County), 326 IAC 2-8 (FESOP), and 326 IAC 2-2 (PSD).

(2) The existing monitoring conditions for the powder 5 processing (EUS-10) will not change due to this modification. The source will continue to be required to monitor the pressure drop of the baghouses and HEPA filters associated with this process at least once per day.

(b) There are no testing requirements applicable to this proposed revision because the uncontrolled PM, PM10, and PM2.5 emissions from the grit blaster and powder spray dryer are each less than five (5) tons per year.

Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

(1) The descriptive information in Sections A.3, A.4, D.1, D.4, D.8, and E.3 have been revised due to the changes proposed by the source.

(2) Conditions D.1.1 and D .1.3 have been revised to incorporate federally enforceable limits for the new grit blaster.

(3) Condition D.1.1 has been revised to incorporate federally enforceable limits for the new powder spray dryer.

(4) Conditions D.1.7 and D.8.4 have been revised to include parametric monitoring requirements for the new grit blaster and powder spray dryer.

(5) Condition D.8.1 has been revised to include new limits for the new grit blaster and powder spray dryer.

...

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

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

...

Location: 1415 Main Street

(a) Degreasing operations, including the following:

...

(2) Conveyorized Vapor Degreasers **approved in 2016 for modification to change solvents**: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	1 Operation 1 Degreaser	~~EnSolv~~ **Novec 72DE with a maximum capacity of 500 gallons per year**

(e) Operation 2, Process 4 (O2P4)**, approved in 2016 for modification to add one (1) new furnace,** with emissions controlled by a water scrubber with a control efficiency of 90%.

...

Location: 1550 Polco Street

...

(d) One (1) specialty ingot manufacturing process, approved in 2016 for construction, consisting of the following:

(1) One (1) slurry blending process, with a maximum capacity of 1,093.30 pounds of raw materials per batch and a batch time of four (4) hours per batch, uncontrolled, and exhausting to the indoors. The slurry is then subsequently spray dried using existing spray drying equipment.

(2) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control during transfer of the powder from the spray dryer to the feed tank, identified as DC074, and exhausting to the indoors.

(3) One (1) feed tank.

(4) One (1) electric sintering kiln.

(5) One (1) final finishing machining lathe, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control, identified as DC075, and exhausting to the indoors.

(6) One (1) final finishing machining chop saw, with a maximum capacity of 275 pounds of specialty ingot per hour, uncontrolled, and exhausting to the indoors.

A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

...

Location: 1415 Main Street

...

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

...

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

...

~~(D) O1P1-EUG7, using aluminum oxide, with a maximum capacity of 57 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG7.~~

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

...

Location: 1550 Polco Street

...

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-~~three~~ **four** (2~~3~~**4**) Specialty Powders Manufacturing ~~lines~~ **operations**, identified in the table below, approved in 2015 for modification to reroute baghouses **and approved in 2016 for modification and construction of a new operation**, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID~~*~~	Location	**Maximum Throughput (lb/hr)**	Dust Collectors	Description
EUS-1	Specialty Powders	**166.67**	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifier. DC048 controls the rest of the units.
EUS-2	Specialty Powders	**166.67**	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	**83.335**	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	**429.3**	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	Specialty Powders	**429.3**	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	**312.5**		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	**-**	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	**312.5**	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	Specialty Powders	**58.4**	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	**58.4**	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	Specialty Powders	**300**	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11~~**~~, ~~EUP-11A**,~~	**Specialty Powders**	**100**	DC001 **(Stack S001)**, ~~DC002, and DC046~~	Powder 5 Spray Dryer 1 ~~and Powder 5 Spray Dryer 2~~
EUP-11A*	**Specialty Powders**	**100**	**DC002 (Stack S002)**	**Powder 5 Spray Dryer 2**
EUP-11B**	**Specialty Powders**	**100**	**DC046 (Stack S046)**	**Powder 5 Spray Dryer 3**
EUS-15A	Specialty Powders	**341.66**	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	**341.66**	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty	**-**	DC056	DC056 controls packaging.

Unit ID*	Location	**Maximum Throughput (lb/hr)**	Dust Collectors	Description
	Powders			
EUS-15C	Specialty Powders	**341.66**	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	**341.66**	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	**770.96**	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	**-**	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	**341.66**	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	**341.66**	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	**8.33**	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	**21.606**	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	**429.3**	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	**100**	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

~~*Capacities of these units are listed in the calculation file, attached to this document at TSD Appendix A.~~

**These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.

**** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).**

...

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Location: 1245 Main Street

...

Location: 1415 Main Street

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

...

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

...

~~(D) O1P1-EUG7, using aluminum oxide, with a maximum capacity of 57 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG7.~~

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

...

Location: 1550 Polco Street

...

Insignificant Activities

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-~~three~~ **four** (2~~3~~**4**) Specialty Powders Manufacturing ~~lines~~ **operations**, identified in the table below, approved in 2015 for modification to reroute baghouses **and approved in 2016 for modification and construction of a new operation**, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID~~s~~	Location	**Maximum Throughput (lb/hr)**	Dust Collectors	Description
EUS-1	Specialty Powders	**166.67**	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifie DC048 controls the rest of the units.
EUS-2	Specialty Powders	**166.67**	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	**83.335**	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, a screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	**429.3**	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in elec furnace and placed into vacuum chamber to form a powde
EUS-3	Specialty Powders	**429.3**	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	**312.5**		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	**-**	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	**312.5**	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact m in Bay 5. DC012 controls powder handling in Bay 3 and Ba 4.
EUS-8B	Specialty Powders	**58.4**	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	**58.4**	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.

EUS-10	Specialty Powders	**300**	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*~~*~~, ~~EUP-11A**~~,	**Specialty Powders**	**100**	DC001 **(Stack S001)**~~,~~ ~~DC002, and DC046~~	Powder 5 Spray Dryer 1 ~~and Powder 5 Spray Dryer 2~~
EUP-11A*	**Specialty Powders**	**100**	**DC002 (Stack S002)**	**Powder 5 Spray Dryer 2**
EUP-11B**	**Specialty Powders**	**100**	**DC046 (Stack S046)**	**Powder 5 Spray Dryer 3**
EUS-15A	Specialty Powders	**341.66**	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	**341.66**	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	**-**	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	**341.66**	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	**341.66**	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	**770.96**	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	**-**	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	**341.66**	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	**341.66**	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	**8.33**	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	**21.606**	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	**429.3**	DC007, DC054, DC065, DC066,	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054

			DC067	controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	**100**	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

***These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.**
**** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).**
...

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

D.1.1 PSD Minor Limits (PM)(PM10)(PM2.5) [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable, the emissions of PM, PM_{10}, and $PM_{2.5}$ from each of the grit blasting units, the surface coating units, the powders manufacturing operations, the one (1) Combustion Spray Pyrolysis (CSP) operation, and the titanium powder process shall not exceed the following limits specified in the table below:

Emission Unit	PM Limit (lbs/hr)	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr)
Grit Blasters			
...			
~~O1P1 EUG7~~	~~0.48~~	~~0.48~~	~~0.48~~
O1P1 EUG7 (approved in 2016 for construction)	**0.48**	**0.48**	**0.48**
...			
Building 1550- Praxair Powders (2~~3~~**4** powder handling operations)			
...			
EUP-11B (approved in 2016 for construction)	**0.48**	**0.48**	**0.48**
...			

...

D.1.3 FESOP Limit (PM10 and PM2.5) [326 IAC 2-8]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the emissions of PM_{10} and $PM_{2.5}$ from each of the grit blasting, three (3) grinding units, and titanium powder process shall not exceed the following limits specified in the table below:

Emission Unit	PM_{10} Limit (lbs/hr)	$PM_{2.5}$ Limit (lbs/hr
Grit Blasters		
...		
~~O1P1 EUG7~~	~~0.18~~	~~0.18~~
O1P1 EUG7 (approved in 2016 for construction)	**0.18**	**0.18**
...		

...

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

D.1.7 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the emission units identified in the table below at least once per day when any of the processes identified in the table below are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range the Permittee shall take a reasonable response. The normal range for each baghouse is a pressure drop between the values listed in the table below unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument(s) used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Emission Unit	Control ID	Pressure Drop Range (inches of H_2O)
Grit Blasters		
...		
~~O1P1 EUG7~~	~~CG7~~	~~0.2 – 5.0~~
O1P1 EUG7 (approved in 2016 for construction)	**CG7**	**0.2 – 5.0**
...		
Building 1550- Praxair Powders (~~20~~**21** powder handling operations)		
...		
EUP-11B (approved in 2016 for construction)	**DC046**	**0.2 - 5.0**
...		

...

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Location: 1415 Main Street

~~Degreasing operations, including the following Conveyorized Vapor Degreasers: [326 IAC 8-3-4]~~

(a) Degreasing operations, including the following:

(2) Conveyorized Vapor Degreasers approved in 2016 for modification to change solvents: [326 IAC 8-3-4]

Location	Type	Solvent
Building 1415	1 Operation 1 Degreaser	~~EnSolv~~ **Novec 72DE with a maximum capacity of 500 gallons per year**
Building 1415	2 Operation 2 Degreasers	Novec 72DE

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

...

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Location: 1245 Main Street

...

Location: 1415 Main Street

Insignificant Activities

(b) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of equal to or less than 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including; deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations, identified as follows:

Abrasive Blasting

...

(3) Seventeen (17) grit blasting units, identified as follows:

Operation 1, Process 1:

...

~~(D) O1P1-EUG7, using aluminum oxide, with a maximum capacity of 57 pounds per hour, controlled by a baghouse with HEPA filters, rated at 99.7 percent efficiency, identified as O1P1-CG7.~~

(D) O1P1-EUG7, approved in 2016 for construction, using aluminum oxide, with a maximum capacity of 81 pounds per hour, controlled by a baghouse with HEPA filters, identified as O1P1-CG7.

...

Location: 1550 Polco Street

...

(d) One (1) specialty ingot manufacturing process, approved in 2016 for construction, consisting of the following:

(1) One (1) slurry blending process, with a maximum capacity of 1,093.30 pounds of raw materials per batch and a batch time of four (4) hours per batch, uncontrolled, and exhausting to the indoors. The slurry is then subsequently spray dried using existing spray drying equipment.

(2) One (1) material transfer point, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control during transfer of the powder from the spray dryer to the feed tank, identified as DC074, and exhausting to the indoors.

(3) One (1) feed tank.

(4) One (1) electric sintering kiln.

(5) One (1) final finishing machining lathe, with a maximum capacity of 275 pounds of specialty ingot per hour, equipped with a dust collector for particulate control, identified as DC075, and exhausting to the indoors.

(6) One (1) final finishing machining chop saw, with a maximum capacity of 275 pounds of specialty ingot per hour, uncontrolled, and exhausting to the indoors.

Insignificant Activities

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-~~three~~ **four** (2~~3~~**4**) Specialty Powders Manufacturing ~~lines~~ **operations**, identified in the table below, approved in 2015 for modification to reroute baghouses **and approved in 2016 for modification and construction of a new operation**, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID~~*~~	Location	**Maximum Throughput (lb/hr)**	Dust Collectors	Description
EUS-1	Specialty Powders	**166.67**	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifier. DC048 controls the rest of the units.
EUS-2	Specialty Powders	**166.67**	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	**83.335**	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, and screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	**429.3**	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in electric furnace and placed into vacuum chamber to form a powder
EUS-3	Specialty Powders	**429.3**	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	**312.5**		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	**-**	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	**312.5**	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact mill in Bay 5. DC012 controls powder handling in Bay 3 and Bay 4.
EUS-8B	Specialty Powders	**58.4**	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	**58.4**	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	Specialty Powders	**300**	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table), and delumper. DC044 controls 2 blenders and 2 screeners, and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11~~*~~, ~~EUP-11A**,~~	**Specialty Powders**	**100**	DC001 **(Stack S001)**, ~~DC002, and DC046~~	Powder 5 Spray Dryer 1 ~~and Powder 5 Spray Dryer 2~~
EUP-11A*	**Specialty Powders**	**100**	**DC002 (Stack S002)**	**Powder 5 Spray Dryer 2**
EUP-11B**	**Specialty Powders**	**100**	**DC046 (Stack S046)**	**Powder 5 Spray Dryer 3**
EUS-15A	Specialty Powders	**341.66**	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	**341.66**	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty	**-**	DC056	DC056 controls packaging.

	Powders			
EUS-15C	Specialty Powders	**341.66**	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	**341.66**	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	**770.96**	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	**-**	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	**341.66**	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	**341.66**	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	**8.33**	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	**21.606**	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	**429.3**	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	**100**	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

***These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.**

**** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).**

...

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

D.8.1 Particulate Emission Limitations [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a), particulate emissions from each of the following emission units shall not exceed the grain per dry standard cubic foot (dscf) limit listed in the table below:

Emission Unit	PM Limit (grain/dscf)
...	
Location: 1415 Main Street	
...	
~~O1P1 EUG7~~	~~0.03~~
O1P1 EUG7 (approved in 2016 for construction)	**0.03**
...	
Location: 1550 Polco Street	
...	
Specialty Ingot - Material Transfer Point (approved in 2016 for construction)	**0.03**
Specialty Ingot - Final Finishing Machining Lathe (approved in 2016 for	**0.03**

Emission Unit	PM Limit (grain/dscf)
construction)	
Specialty Ingot - Final Finishing Machining Chop Saw (approved in 2016 for construction)	**0.03**
...	
EUP-11B (approved in 2016 for construction)	**0.03**
...	

...

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

D.8.4 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses, and dust collectors used in conjunction with the emission units identified in the table below at least once per day when any of the processes identified in the table below are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range the Permittee shall take reasonable response. The normal range for each baghouse is a pressure drop between the values listed in the table below unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

The instrument(s) used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

Emission Unit	Control ID	Pressure Drop Range (inches of H2O)
...		
Location: 1415 Main Street		
...		
~~O1P1 EUG7~~	~~CG7~~	~~0.2 – 5.0~~
O1P1 EUG7 (approved in 2016 for construction)	**CG7**	**0.2 – 5.0**
...		
Location: 1550 Polco Street		
...		
Specialty Ingot - Material Transfer Point (approved in 2016 for construction)	**DC074**	**0.2 - 5.0**
Specialty Ingot - Final Finishing Machining Lathe (approved in 2016 for construction)	**DC075**	**0.2 - 5.0**
...		
EUP-11B (approved in 2016 for construction)	**DC046**	**0.2 - 5.0**
...		
Building 1550- Praxair Powders (2~~0~~**1** powder handling operations)		
...		

...

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: <u>Location: 1550 Polco Street</u> ... Insignificant Activities

(d) An emission unit or activity with potential uncontrolled emissions of particulate matter with aerodynamic diameter less than or equal to ten (10) micrometers (PM10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day, identified as follows:

Specialty Powders Manufacturing

(1) Twenty-~~three~~ **four** (2~~3~~**4**) Specialty Powders Manufacturing ~~lines~~ **operations**, identified in the table below, approved in 2015 for modification to reroute baghouses **and approved in 2016 for modification and construction of a new operation**, each controlled by an integral baghouse and HEPA filters, identified in the table below, exhausting indoors through Stack/Vents identified in the table below: [40 CFR 63, Subpart CCCCCCC]

Unit ID~~*~~	Location	**Maximum Throughput (lb/hr)**	Dust Collectors	Description
EUS-1	Specialty Powders	**166.67**	DC048, DC073	Powder 1 powder processing, including a blender, sieve, crusher, mill, and dust booth. DC073 controls one classifie DC048 controls the rest of the units.
EUS-2	Specialty Powders	**166.67**	DC015	Weigh out station for Powder 2 Bay 2
EUS-7	Specialty Powders	**83.335**	DC028, DC029	General processing equipment used to blend and size Powder 1. Processes include crushing, milling, blending, a screening. DC029 controls the impact mill and conveyor in Bay 5.
EUP-3	Specialty Powders	**429.3**	DC063	Bay 2 vacuum for Powder 2- Metal powders melted in elec furnace and placed into vacuum chamber to form a powde
EUS-3	Specialty Powders	**429.3**	DC064, DC063	Bay 2 vacuum Powder 2 powder handling. DC064 controls powder handling. DC063 is located in Bay 2 to control any general dust in Bay 2.
	Specialty Powders	**312.5**		Bay 5- one (1) electric furnace for Powder 3, rated at 312.5 lbs/hr
	Specialty Powders	**-**	DC020	DC020 controls the electrode saw in Bay 5.
EUS-5	Specialty Powders	**312.5**	DC012, DC029	Powder 3 is milled and sized. DC029 controls the impact m in Bay 5. DC012 controls powder handling in Bay 3 and Ba 4.
EUS-8B	Specialty Powders	**58.4**	DC040	Powder 4 handling in mill and blender prior to furnacing.
EUS-8A	Specialty Powders	**58.4**	DC041	Powders from Powder 4 furnaces sent through delumper, mill, two classifiers, two screeners, and magnets. Serves purpose of filling crucibles prior to Powder 4 furnaces and emptying crucibles after the furnace.
EUS-10	Specialty Powders	**300**	DC043, DC044, DC045, Powder 5 Baghouse	Processing oxides and metal powders for Powder 5. Supports spray dryers. Includes a bag breaking table, delumper, blenders, and five screeners. DC043 controls 2 blenders, a screener, the filling station (bag breaking table and delumper. DC044 controls 2 blenders and 2 screeners and other general powder handling operations. DC045 controls 1 blender, 2 screeners, and other general powder handling operations. The Powder 5 Baghouse controls the spray dryer hot exhaust.
EUP-11*~~*~~, ~~EUP-11A**,~~	**Specialty Powders**	**100**	DC001 **(Stack S001)**, ~~DC002, and DC046~~	Powder 5 Spray Dryer 1 ~~and Powder 5 Spray Dryer 2~~

EUP-11A*	**Specialty Powders**	**100**	**DC002 (Stack S002)**	**Powder 5 Spray Dryer 2**
EUP-11B**	**Specialty Powders**	**100**	**DC046 (Stack S046)**	**Powder 5 Spray Dryer 3**
EUS-15A	Specialty Powders	**341.66**	DC026, DC057	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 1, 2, and 3 (1 screener per line, 2 blenders per line). Line 1 and 2 screeners and blenders are controlled by DC026. Screener and blenders for Line 3 are controlled by DC057.
EUS-15B	Specialty Powders	**341.66**	DC059, DC060	3 Screeners and 6 Blenders in Powder 2 Processing for Lines 4, 5, and 6 (1 screener per line, 2 blenders per line). Line 4 screener and blenders are controlled by DC059. Line 5 and 6 screeners and blenders are controlled by DC060.
	Specialty Powders	**-**	DC056	DC056 controls packaging.
EUS-15C	Specialty Powders	**341.66**	DC011, DC068	Two classifiers for Powder 2 Processing Line 6. DC011 controls one classifier, and DC068 controls the other.
EUS-15D	Specialty Powders	**341.66**	DC022, DC069	Two classifiers for Powder 2 Processing Line 5. DC022 controls one classifier, and DC069 controls the other.
EUS-4B	Specialty Powders	**770.96**	DC023, DC070, DC071, DC072	Four classifiers for Powder 2 Processing Lines 1, 2, 3, and 4. DC023 controls Line 4. DC070 controls Line 3. DC071 controls Line 2. DC072 controls Line 1.
	Specialty Powders	**-**	DC026	Scale for Powder 2 Processing Lines 1, 2, 3, 4, and 5.
EUS-15F	Specialty Powders	**341.66**	DC058, DC024, Demisters 5,6,8	Support for Viga 250, used for Powder 2. DC058 controls dust from support operations in the West Viga 250. Demister 8 is used for the West Viga 250 to remove oil used in the viga. DC024 controls dust from support operations in the East Viga 250. Demisters 5 and 6 are used for the East Viga 250 to remove oil that was used in the viga.
EUS-15G	Specialty Powders	**341.66**	DC021, DC057, Demister 4	Support for Viga 150, used for Powder 2. DC021 is used for support operations. DC057 is used during cleanout. Demister 4 is used to remove oil used in the viga.
EUP-17	Specialty Powders	**8.33**	DC035, DC061, Demister 3	Viga 2/5 for Powder 2, support and special orders (SO) processing. Powder handling is controlled by DC061, while the exhaust from the viga is controlled by DC035. Demister 3 is used to remove oil that was used in the viga.
EUS-22	Specialty Powders	**21.606**	DC005	Powder 7 Operation: Electric furnace, 3 mills, jaw crusher, 2 blenders, 3 screeners, classifier, and work bench.
EUS-4A	Specialty Powders	**429.3**	DC007, DC054, DC065, DC066, DC067	Powder 6 Operation: Powder is weighed, mixed into a slurry, and spray dried. Following spray drying, it's screened, classified, and blended. DC007 controls the scale, the screeners, and general powder handling operations. DC054 controls the spray dryer. DC065 and DC066 control general process dust. DC067 controls the classifier.
EUS-12	Specialty Powders	**100**	DC014	High purity room powder handling, Chrome Oxide Fill Station, Lab, and Epoxy Super Sac.

***These units are also listed in the natural gas combustion list. EUP-11 and EUP-11A because they have natural gas burners, but also handle material.**

**** This process does not process, use, or generate materials containing HAP and is not subject to the requirements of 40 CFR 63, Subpart CCCCCCC (7C).**

...

IDEM, OAQ made additional revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

1. Section A.1 has been revised to include the township name, since specific townships in Marion County are nonattainment for SO2.

2. The descriptions for the existing twenty-three (23) specialty powder manufacturing lines have been revised to clarify that the source does not have twenty-three (23) different specialty powder manufacturing lines. The source has twenty-three (23) existing individual powder handling/processing equipment which are used in the manufacturing of specialty powders in Building 1550 (see above for changes).

...

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary manufacturer of metallic and nonmettallic powders for surface coating and polishing.

...

County Location: Marion**, Wayne Township**

...

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 May 24, 2016. Additional information was received on June 24, 2016.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 097-37221-00060. The staff recommends to the Commissioner that this FESOP Significant Permit Revision be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Brian Williams 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) 234-5375 or toll free at 1-800-451-6027 extension 4-5375.

(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 Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A: Emission Calculations
Summary of Modification

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Unlimited Potential to Emit of the Modification (tons/yr)										
Emission Units	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**Total HAPs**	**Worst Case HAP**	
Grit Blaster (O1P1 EUG7) Building 1415[a]	3.55	2.48	2.48	0	0	0	0	0	0	
Ingot Process - Slurry Blending	0	0	0	0	0	6.15	0	0.05	0.05	Methanol
Ingot Process - Powder Handling	0.004	0.002	0.002	0	0	0	0	0	0	
Ingot Process - Final Machining	0.01	0.01	0.01	0	0	0	0	0	0	
Powder 5 Processing (EUS-10)[b]	0.05	0.05	0.05	0	0	0	0	0	0	
Spray Dryer (EUP11B)[c]	0.49	0.49	0.49	0	0	0	0	0	0	
Building 1415 - Operation 2, Process 4[d]	0	0	0	0	0	0	0	0	0	
Solvent Cleaning (Building 1415)[e]	0	0	0	0	0	0.67	0	0	0	
Total	**4.11**	**3.04**	**3.04**	**0**	**0**	**6.82**	**0**	**0.05**	**0.05**	**Methanol**

[a] PTE of the Grit Blaster at 81 pounds per hour.

[b] PTE increase due to capacity increasing from 200 lb/hr to 300 lb/hr. PTE before modification was 0.12 tons per year and will increase to 0.17 tons per year after modification. IDEM has previously determined that the control devices associated with this process is integral to the process. Therefore, the PTE increase is calculated

[c] IDEM has previously determined that the control devices associated with this process is integral to the process. Therefore, the unlimited PTE is calculated after controls.

[d] The maximum throughput for this process will not increase due to the addition of one (1) new furnace to this process. Therefore, potential HAPs emissions will not increase.

[e] Previous solvent had VOC PTE of 2.0 tons per year. The new solvent has a VOC PTE of 2.67 tons per year. Therefore, the VOC PTE increased 0.67 tons per year due to the new solv

Appendix A: Emissions Summary
Summary of Unlimited Emissions

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Potential / Uncontrolled Emissions - Criteria Pollutants and HAPs (tons/year)											
Emissions Units	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**	**VOC**	**CO**	**GHG as CO_2e**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	35,552	0.556	0.53	Hexane
Kerosene-Fired Equipment	0.001	0.0004	0.0004	0.02	0.01	0.0001	0.002	6.73	0.000	0.000	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	108.18	0.003	0.001	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	6.39	0.003	0.002	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	12.11	0.00	0.00	0.120	0.120	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	450.52	450.52	450.52	0.00	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	902.26	651.71	651.71	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.000	0.0002	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.000	0.00	-
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1550 CSP Dept. - EU020:											
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
CSP	11.73	11.73	11.73	0.00	73.48	0.00	0.00	0.00	2.418	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	207.34	0.0032	0.003	Hexane
Powder Handling after CSP	0.0013	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.000	0.00	-
Powder Handling after Kiln	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	0.00	3.026	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)*	1,202.36	1,202.36	1,202.36	0.00	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.909	0.91	HCl
Building 1415- LPPS (EU01S)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.013	0.01	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.375	0.62	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.153	0.14	HCl
Building 1415- Operation 1, Process 1	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.318	0.32	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.788	0.79	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.783	0.78	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.502	0.50	HF
Building 1550- Praxair Powders (24 powder handling operations)*	776.09	776.09	776.09	0.00	0.00	0.00	0.00	0.00	2.529	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.0008	0.0004	0.0004	0.00	0.00	4.03	0.00	0.00	0.000	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.000	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.00	0.055	0.06	Chromium
Building 1550 - Ingot Process - Slurry Blending	0.00	0.00	0.00	0.00	0.00	6.15	0.00	0.00	0.047	0.05	Methanol
Building 1550 - Ingot Process - Powder Handling	0.004	0.002	0.002	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
Titanium Process	17.52	17.52	17.52	0.00	0.00	0.00	0.00	0.00	0.473	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.067	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions**	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Total (PTE for PSD)	**3,382.92**	**3,129.02**	**3,127.63**	**0.39**	**106.94**	**47.21**	**25.53**	**35,880.62**	**16.99**	**5.46**	**Nickel**
Total (PTE for Part 70)	**1,424.79**	**1,170.90**	**1,169.50**	**0.39**	**106.94**	**47.21**	**25.53**	**35,880.62**	**16.99**	**5.46**	**Nickel**

*The baffles, baghouses, dust collectors, and HEPA filters be considered an integral part of the specialty powders manufacturing processes and the surface coating processes. Therefore, the potential PM emissions from the surface coating booths and specialty powders manufacturing processes will continue to be calculated after consideration of the baffles, baghouses, dust collectors, and HEPA filters for purposes of determining permitting level and 326 IAC 6.5 applicability. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD), potential emissions from the surface coating booths and specialty powders manufacturing processes will continue to be calculated before consideration of the baffles, baghouses, dust collectors, and HEPA filters.

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

Appendix A: Emissions Summary
Summary of Limited Emissions for PSD Applicability

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Limited Potential Emissions PSD Applicability - Criteria Pollutants and HAPs (tons/year)											
Emissions Units	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**	**VOC**	**CO**	**GHG as CO_2e**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	35,552	0.556	0.53	Hexane
Kerosene-Fired Equipment	0.001	0.0004	0.0004	0.02	0.01	0.0001	0.002	6.73	0.000	0.00	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	108.18	0.003	0.001	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	6.39	0.003	0.002	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	12.11	0.00	0.00	0.120	0.12	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	1.36	1.35	1.35	0.00	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	102.32	102.32	102.32	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.003	0.003	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.000	0.0002	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.000	0.00	-
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Building 1550 CSP Dept. - EU020:											
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
CSP	10.00	10.00	10.00	0.00	59.99	0.00	0.00	0.00	2.42	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	207.34	0.003	0.003	Hexane
Powder Handling after CSP	0.0013	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.000	0.00	-
Powder Handling after Kiln	0.0013	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	0.00	3.03	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0003	0.0003	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)	50.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.909	0.909	HCl
Building 1415- LPPS (EU01S)	0.013	0.013	0.013	0.00	0.00	0.00	0.00	0.00	0.013	0.010	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.375	0.624	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.029	0.00	0.00	0.153	0.142	HCl
Building 1415- Operation 1, Process 1	0.071	0.071	0.071	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.931	0.00	0.00	0.318	0.318	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.040	0.00	0.00	0.788	0.788	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.783	0.783	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.502	0.502	HF
Building 1550- Praxair Powders (24 powder handling operations)	50.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	2.53	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.00	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.00	0.06	0.06	Chromium
Building 1550 - Ingot Process - Slurry Blending	0.00	0.00	0.00	0.00	0.00	6.15	0.00	0.00	0.05	0.05	Methanol
Building 1550 - Ingot Process - Powder Handling	0.004	0.002	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Titanium Process	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.00	0.47	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.07	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions*	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total Limited PTE for PSD	**239.60**	**236.26**	**234.86**	**0.39**	**93.45**	**47.21**	**25.53**	**35,880.62**	**16.99**	**5.46**	**Nickel**

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

Appendix A: Emissions Summary
Summary of Limited Emissions for Parto 70 Applicability

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Limited Potential Emissions Part 70 Applicability - Criteria Pollutants and HAPs (tons/year)											
Emissions Units	**PM***	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**	**VOC**	**CO**	**GHG as CO_2e**	**Combined HAPs**	**Worst Case HAP**	
Natural Gas-Fired Equipment	0.56	2.24	2.24	0.18	29.45	1.62	24.74	35,551.98	0.56	0.53	Hexane
Kerosene-Fired Equipment	0.00	0.00	0.00	0.02	0.01	0.00	0.00	6.73	0.00	0.00	Selenium
Diesel-Fired Emergency Generators	0.21	0.21	0.21	0.19	2.91	0.24	0.63	108.18	0.00	0.00	Formaldehyde
Propane-Fired Emergency Generator	0.00	0.00	0.00	0.00	0.18	0.01	0.01	6.39	0.00	0.00	Formaldehyde
Solvent Cleaning (10 solvent cleaning operations)	0.00	0.00	0.00	0.00	0.00	12.11	0.00	0.00	0.12	0.12	1,2-Epoxybutane
Maintenance Welding	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Grinding, Metal Sawing, and Plasma Cutting	1.36	1.35	1.35	0.00	0.00	0.00	0.00	0.00	0.00002	0.00002	Lead
Grit Blasters (49 grit blasters)	102.32	44.99	44.99	0.00	0.00	0.00	0.00	0.00	0.000	0.00	-
Grit Reclassifier	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Non-Production Carpenter Shop	5.97	3.16	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1500 - Paint Shop (Maintenance)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	Ethylbenzene
Building 1550 Polishing Dept. - Mixing Operations (5 tanks, limited by bottleneck)	0.00	0.00	0.00	0.00	0.00	17.56	0.00	0.00	0.00	0.00	-
Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	0.14	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1550 CSP Dept. - EU020:											
Raw Material Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
CSP	10.00	10.00	10.00	0.00	59.99	0.00	0.00	0.00	2.42	2.42	Nickel
CSP Natural Gas-Fired Burner	0.00	0.00	0.00	0.00	0.17	0.01	0.14	207.34	0.00	0.00	Hexane
Powder Handling after CSP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Kiln	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	-
Powder Handling after Kiln	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Milling	14.13	12.01	12.01	0.00	0.00	0.00	0.00	0.00	3.03	3.03	Nickel
Powder Handling after Milling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Final Powder Handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nickel
Buildings 1415 and 1245- Surface Coating (22 booths)**	14.26	14.26	14.26	0.00	0.00	0.00	0.00	0.00	2.85	2.85	Cobalt
Building 1245- Alpha 100 (EU01T)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1245- LSR1 (EU01R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	HCl
Building 1415- LPPS (EU01S)	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	Nickel
Building 1415- Tribomet Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.62	Cobalt
Buildings 1245 and 1415- Stripping	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.15	0.14	HCl
Building 1415- Operation 1, Process 1	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Building 1415- Operation 2, Process 1	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.32	0.32	HCl
Building 1415- Operation 2, Process 2	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.79	0.79	Methanol
Building 1415- Operation 2, Process 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	HF
Building 1415- Operation 1, Process 3 (O1P3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	HF
Building 1550- Praxair Powders (24 powder handling operations)**	6.07	6.07	6.07	0.00	0.00	0.00	0.00	0.00	2.53	1.82	Chromium
Building 1550- Epoxy Kits (EUS-12)	0.00	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	0.00	-
Building 1550- IPA Room	0.00	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	0.00	-
Building 1550- Sermatech Slurry	1.29	1.29	1.29	0.00	0.00	1.33	0.00	0.00	0.06	0.06	Chromium
Building 1550 - Ingot Process - Slurry Blending	0.00	0.00	0.00	0.00	0.00	6.15	0.00	0.00	0.05	0.05	Methanol
Building 1550 - Ingot Process - Powder Handling	0.004	0.002	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Titanium Process	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.00	0.47	0.47	Chromium
Miscellaneous Material Usage	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.07	0.03	Ethylene Glycol
Paved Roads (site-wide) - Fugitive Emissions***	7.30	1.46	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total Limited PTE for FESOP	**159.93**	**99.26**	**97.87**	**0.39**	**93.45**	**47.21**	**25.53**	**35,880.62**	**16.99**	**5.46**	**Nickel**

* PM is not a regulated air pollutant under Part 70.
** The controls for these emission units have been determined to be integral to the process. Therefore, the unlimited and limited PTE for the purposes of Part 70 applicability were calculated after control.

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

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

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Location	Equipment Name	MMBtu/hr
Power House	Cleaver Brooks Boiler 2	8.369
Power House	Cleaver Brooks Boiler 3	8.369
Power House	Cleaver Brooks Boiler 4	14.645
Building 1550	2 Powder 5 Spray Dryer Heaters @ 0.3 MMBtu/hr, eac	0.60
Building 1550	1 Powder 6 Burner @ 0.3 MMBtu/hr	0.30
Building 1550	Furnaces (Powder 4 and Powder 5) @ 3 MMBtu/hr, ea	27.00
Building 1550	Lochinvar Boiler (B-001)	1.26
Building 1550	Multi-Pulse Boiler (B-002)	0.150
Building 1550	Ajax Boiler (B-003)	0.45
Building 1550	Ajax Boiler (B-004)	0.45
Building 1245	2 Heaters for Kolene Tank @ 0.150 MMBtu/hr, each	0.30
Building 1245	1 Kiln for LSR1 @ 0.150 MMBtu/hr	0.15
Building 1415	Carrier RTU-A2 and RTU-A3 @ 0.360 MMBtu/hr, each	0.72
Building 1415	Carrier RTU-F @ 0.115 MMBtu/hr	0.115
Building 1415	Carrier RTU-C1 @ 0.250 MMBtu/hr	0.25
Building 1415	Carrier RTU-E1, RTU-B2, RTU-A5, RTU-A6 @ 0.525 MMBtu/hr, each	2.10
Building 1415	Trane RTU-00 @ 0.587 MMBtu/hr	0.587
Building 1415	York RTU-B1 and RTU-A-1 @ 0.3 MMBtu/hr, each	0.60
Building 1415	York RTU-A7 @ 0.699 MMBtu/hr	0.70
Building 1415	Aaon RTU-E1 @ 0.18 MMBtu/hr	0.18
Building 1415	Aaon RTU-D2 @ 0.54 MMBtu/hr	0.54
Building 1415	Aaon RTU-C1 @ 0.27 MMBtu/hr	0.27
Building 1415	Trane ACPR1-1 and ACPR1-2 @ 0.117 MMBtu/hr,	0.23
Building 1415	Carrier ACPR4-1 @ 0.133 MMBtu/hr	0.133
Building 1415	Carrier ACPR4-2 @ 0.115 MMBtu/hr	0.115
	Total	**68.59**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
68.59	589.03

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.56	2.24	2.24	0.18	29.45	1.62	24.74

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics					
	Benzene	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**	
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	6.18E-04	3.53E-04	2.21E-02	5.30E-01	1.00E-03	**Total Haps**
						0.56

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.47E-04	3.24E-04	4.12E-04	1.12E-04	6.18E-04

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

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	35,342	0.7	0.6
Summed Potential Emissions in tons/yr		35,343	
CO2e Total in tons/yr		**35,552**	

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
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 (25) + N2O Potential Emission ton/yr x N2O GWP (298)

Appendix A: Emissions Calculations
Kerosene Combustion Only
MM BTU/HR <100

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Location	Equipment Name	gal/month
1415	Kerosene used in EU08B	26
1245	Kerosene used in EU19A	26
	Total Capacity (gal/month)	**52**
	Total Capacity (kgal/month)	**0.052**
	Heating Value (MMBtu/gal)	**0.135**
	Total Capacity (MMBtu/month)	**7.0**

S = Weight % Sulfur: 0.5

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/kgal	2.0	1.3	1.3	71.0 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	6.24E-04	4.06E-04	4.06E-04	2.22E-02	6.24E-03	1.06E-04	1.56E-03

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/MMBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	1.68E-07	1.26E-07	1.26E-07	1.26E-07	3.79E-07

	HAPs - Metals, continued			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/MMBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	1.26E-07	2.53E-07	1.26E-07	6.32E-07

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

	Greenhouse Gas Emissions:		
	Methane	**N_2O**	**CO_2**
Emission Factor in lb/kgal	0.216	0.26	21,500
Potential Emission in tons/yr	6.74E-05	8.11E-05	6.71
Summed Potential Emissions in tons/yr	6.71		
CO2e Total in tons/yr	**6.73**		

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
Total Capacity (MMBtu/month) = Total Capacity (gal/month) x Heating Value (MMBtu/gal)
Emission Factors from AP 42, Chapter 1.3, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-11, and 1.3-12 for distillate oil-fired boilers < 100 MMBtu/hr.
Emission (tons/yr) = Throughput (kgal/yr) x Emission Factor (lb/kgal) x (12 months/yr) / (2,000 lb/ton)
Emission (tons/yr) = Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu) x (12 months/yr) / (2,000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Generator	Location	hp
Generac Generator	Building 1500	207.0
ONAN/Cummins Generator	Powerhouse	168.0
	Total	**375.0**

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	375.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	187,500

	Pollutant						
	PM*	**PM10***	**direct PM2.5***	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.21	0.21	0.21	0.19	2.91	0.24	0.63

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

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

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	**Toluene**	**Xylene**	**1,3-Butadiene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**Total PAH HAPs*** **
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	6.12E-04	2.68E-04	1.87E-04	2.57E-05	7.74E-04	5.03E-04	6.07E-05	1.10E-04

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

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**0.0025**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	**CH4**	**N2O**
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	1.08E+02	4.34E-03	8.68E-04

Summed Potential Emissions in tons/yr	**107.82**
CO2e Total in tons/yr	**108.18**

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (1,273,280 hp-hr/yr) * (0.0310 lb/hp-hr) / (2,000 lbs/ton) = 19.74 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
LP Gas-Fired Emergency Generator

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Capacity		
	53.0	hp
	39.5	kW
	0.18	MMBtu/hr

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMBtu	9.91E-03	7.71E-05	7.71E-05	5.88E-04	4.08	0.118	0.317
Potential Emission in tons/yr	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.01**	**0.01**

	HAPs - Organics					**HAPs Total**
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Hexane	**0.003**
Emission Factor in lb/MMcf	8.4E-03	5.1E-03	5.3E-02	2.5E-03	1.1E-03	
Potential Emission in tons/yr	3.78E-04	2.32E-04	2.39E-03	1.13E-04	4.97E-05	

	CO2	**CH4**	**N2O**	**CO2e**
	110	1.25	0.000	
Summed Potential Emissions in tons/yr	4.97	0.06	0.00	
CO2e Total in tons/yr				**6.39**

Methodology
Conversion factors from AP-42 Appendix A: To convert from hp to kW, use the conversion 1 hp = 0.74558 kW. To convert from kW to MMBtu/hr, use the conversion of 1 kW = 3,412 Btu/hr

Emission Factors are from AP42 (Supplement F 8/2000), Table 3.2-2. Because no emission factors are available for propane-fired engines, the emission factors for 4 stroke lean burn natural gas-fired engines were used.
Emission (tons/yr) = Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu) * 500 hr/yr / (2,000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
Solvent Cleaning

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Location	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Max Gal of Mat. Added (gal/yr)	Waste Material (gal/yr)	Pounds VOC per gallon of solvent less water	Pounds VOC per gallon of solvent	Potential VOC tons per year
Building 1500- Mineral Spirit Wash	Mineral Spirits	6.56	100.00%	0.0%	100.0%	0.0%	10.00	0.00	6.56	6.56	0.03
Building 1415- Maintenance Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	10.00	0.00	6.80	6.80	0.03
Building 1415-Tribomet Line Vapor Degreaser	n-propyl bromide	11.18	100.00%	0.0%	100.0%	0.0%	660.00	165.00	11.18	11.18	2.77
Building 1415-LPPS Vapor Degreaser	n-propyl bromide	11.18	100.00%	0.0%	100.0%	0.0%	660.00	82.00	11.18	11.18	3.23
Building 1245- Manual Degreasing	*MEK	6.76	100.00%	0.0%	100.0%	0.0%	140.00	0.00	6.76	6.76	0.47
Building 1245- Maintenance Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	10.00	0.00	6.80	6.80	0.03
Building 1550- Maintenance Parts Washer	Super Agitene 141	6.68	100.00%	0.0%	100.0%	0.0%	20.00	0.00	6.68	6.68	0.07
Building 1415- Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen Solvent	6.80	100.00%	0.0%	100.0%	0.0%	180.00	0.00	6.80	6.80	0.61
Building 1415- Two Operation 2 Degreasers	Novec 72DE	10.68	100.00%	0.0%	100.0%	0.0%	410.11	0.00	10.68	10.68	2.19
Building 1415- One Operation 2 Degreaser	Novec 72DE	10.68	100.00%	0.0%	100.0%	0.0%	500.0	0.0	10.68	10.68	2.67

*Note: Praxair uses either MEK, IPA, and ZeroTri Heavy-Duty Degreaser in the Building 1245 Manual Degreasing. Therefore, MEK was used because it was worst-case for VOCs.

Total Potential Emissions (tons/yr) 12.11

METHODOLOGY
Pounds of VOC per Gallon Solvent less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Solvent = (Density (lb/gal) * Weight % Organics)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * (Max Gal of Material (gal/yr) - Waste Material (gal/yr)) * (1 ton/2000 lbs)

HAP Emission Calculations

Location	Material	Density (Lb/Gal)	Max Gal of Material (gal/yr)	Waste Material (gal/yr)	Weight % Benzene	Weight % 1,2-Epoxybutane	Weight % p-dichlorobenzene	Weight % Toluene	Weight % Xylene	Benzene Emissions (tons/yr)	1,2-Epoxybutane Emissions (tons/yr)	p-dichlorobenzene Emissions (tons/yr)	Toluene Emissions (tons/yr)	Xylene Emissions (tons/yr)
Building 1500- Mineral Spirit Wash	Mineral Spirits	6.56	10.00	0.00	0.00%	0.00%	0.00%	0.00%	1.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.28E-04
Building 1415- Maintenance Parts Washer	Safety Kleen Solvent	6.80	10.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	1.65E-08	0.00E+00	2.09E-07	1.25E-06	0.00E+00
Building 1415-Tribomet Line Vapor Degreaser	n-propyl bromide	11.18	660.00	165.00	0.00%	2.00%	0.00%	0.00%	0.00%	0.00E+00	5.54E-02	0.00E+00	0.00E+00	0.00E+00
Building 1415-LPPS Vapor Degreaser	n-propyl bromide	11.18	660.00	82.00	0.00%	2.00%	0.00%	0.00%	0.00%	0.00E+00	6.46E-02	0.00E+00	0.00E+00	0.00E+00
Building 1245- Manual Degreasing	*MEK	6.76	140.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Building 1245- Maintenance Parts Washer	Safety Kleen Solvent	6.80	10.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	1.65E-08	0.00E+00	2.09E-07	1.25E-06	0.00E+00
Building 1555- Maintenance Parts Washer	Super Agitene 141	6.68	20.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Building 1415- Operation 1 and 2 Machine Shop Parts Washer	Safety Kleen Solvent	6.80	180.00	0.00	0.00005%	0.00%	0.001%	0.004%	0.00%	2.97E-07	0.00E+00	3.75E-06	2.25E-05	0.00E+00
Building 1415- Two Operation 2 Degreasers	Novec 72DE	10.68	410.11	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Building 1415- One Operation 2 Degreaser	Novec 72DE	10.68	500.00	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

METHODOLOGY
HAPS emission rate (tons/yr) = Density (lb/gal) * Max Gal of Material (gal/yr) * Weight % HAP * 1 ton/2000 lbs

Potential HAP Emissions (tons/yr) 3.30E-07 1.20E-01 4.17E-06 2.50E-05 3.28E-04
Combined HAPs (tons/yr) 1.20E-01

Appendix A: Emission Calculations
Welding and Thermal Cutting

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

	TIG		MIG		Arc	
Location	**# of Stations**	**Total Wire Used (lbs/hr)**	**# of Stations**	**Total Wire Used (lbs/hr)**	**# of Stations**	**Total Wire Used (lbs/hr)**
Building 1500	1	0.02	1	0.33	0	0.00
Building 1555- CSP Department	0	0.00	0	0.00	0	0.00
Building 1555- Polishing Department	0	0.00	0	0.00	0	0.00
Building 1415	2	0.01	0	0.00	0	0.00
Building 1245	0	0.00	2	0.002	0	0.00
Building 1415- Operations 1 and 2 Maintenance Shop	1	0.04	0	0.00	0	0.00
Building 1550- Powders	1	0.50	0	0.00	**0**	0.00
Total	**5**	**0.57**	**3**	**0.34**	**0**	**0**

PROCESS	**Number of Stations**	**Max. electrode consumption per station (lbs/hr)**		**EMISSION FACTORS* (lb pollutant/lb electrode)**				**EMISSIONS (lbs/hr)**				**HAPS (lbs/hr)**
WELDING				**PM = PM_{10}**	**Mn**	**Ni**	**Cr**	**PM = PM_{10}**	**Mn**	**Ni**	**Cr**	
Metal Inert Gas (MIG)(carbon steel)	3	0.11		0.0055	0.0005			0.002	0.000	0	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	5	0.114		0.0055	0.0005			0.003	0.000	0	0	0.000
	Number of Stations	**Max. Metal Thickness Cut (in.)**	**Max. Metal Cutting Rate (in./hr)**	**EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)****				**EMISSIONS (lbs/hr)**				**HAPS (lbs/hr)**
FLAME CUTTING				**PM = PM_{10}**	**Mn**	**Ni**	**Cr**	**PM = PM_{10}**	**Mn**	**Ni**	**Cr**	
Plasma**	1	0.5	300.0	0.0039				0.001	0	0	0	0
EMISSION TOTALS												
Potential Emissions lbs/hr								0.01	0.00	0	0	0.00
Potential Emissions lbs/day								0.15	0.01	0	0	0.01
Potential Emissions tons/year								0.03	0.00	0	0	0.00

Notes:
There is 1 plasma cutter located in Building 1245, capable of cutting up to 1/2 inch pieces at a maximum cutting rate of 5 inches per minute.

METHODOLOGY
*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
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.
PM=PM10=PM2.5

Appendix A: Emission Calculations
Grinding and Metal Cutting Operations

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Process:	Max Throughput Rate*		Particulates				HAPs	
			Emission Factor **		Potential to Emit		Lead Content (%) ***	PTE of Lead (tons/year)
	(lbs/hr)	(tons iron/hr)	PM (lbs/ton)	PM10/PM2.5 (lbs/ton)	PM (tons/yr)	$PM_{10}/PM_{2.5}$ (tons/yr)		
Building 1500- Machine Shop	3.00	0.0015	0.01	0.0045	6.57E-05	2.96E-05	7.70%	5.06E-06
Building 1245- Maintenance Shop	3.00	0.00150	0.01	0.0045	6.57E-05	2.96E-05	7.70%	5.06E-06
Building 1245- Brown and Sharp Grinder	3.00	0.00150	0.01	0.0045	6.57E-05	2.96E-05	7.70%	5.06E-06
Building 1415- Maintenance Shop	0.30	0.00015	0.01	0.0045	6.57E-06	2.96E-06	7.70%	5.06E-07
Building 1550- Crucible Cutting****	400.00	0.20000	0.01	0.0045	8.76E-03	3.94E-03	0.00%	0.00E+00
Building 1415- Operations 1 and 2 Maintenance Shop	0.04	0.00002	0.01	0.0045	8.76E-07	3.94E-07	7.70%	6.75E-08
Building 1550 - Ingot Machining - Lathe	275.00	0.1375	0.01	0.0045	6.02E-03	2.71E-03	0.00%	0.00E+00
Building 1550 Ingot Machining - Chop Saw	275.00	0.1375	0.01	0.0045	6.02E-03	2.71E-03	0.00%	0.00E+00
		Total			**8.96E-03**	**4.03E-03**		**1.58E-05**

*The maximum metal throughput is based on 3 grinders grinding a maximum of 5 lbs/day and 1 metal saw cutting a maximum of 1 lb/day, with a work shift of 6 hours per day.
** Emission factors are from FIRE Volume II, Chapter 14, Grey Stone Iron Foundries - SCC 3-04-003-60 (July, 2001)
*** Lead Emission are based on the lab test conducted by Precision Process Division in Walkerton, Indiana
****In the Building 1550 Crucible Cutting room, the product cut is graphite, not metal. Therefore, there are no HAP emissions.
In the absence of valid PM2.5 Emission Factors, it is assumed that PM2.5 emissions = PM10 emissions.

Methodology
PTE PM/PM-10 (tons/year) = Max. Thorughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs
PTE Lead (tons/year) = Max. Throughput Rate (tons/hour) * PM Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * Lead Content (%)

Unit ID	Control Efficiency	Outlet Grain Loading (grains/dscf)	Air Flow Rate (cfm)	PM/PM10/PM2.5 before Controls (lbs/hr)	PM/PM10/PM2.5 beforeControls (tons/yr)	PM/PM10/PM2.5 after Controls (lbs/hr)	PM/PM10/PM2.5 after Controls (tons/yr)
Bader Grinder #2	99.70%	0.003	4000	34.29	150.17	0.10	0.45
Bader Grinder #3	99.70%	0.003	4000	34.29	150.17	0.10	0.45
Bader Grinder #4	99.70%	0.003	4000	34.29	150.17	0.10	0.45
Methodology				**Total**	**450.51**	**Total**	**1.35**

PM10 and PM2.5 emissions assumed equal to PM emissions.
PM/PM10/PM2.5 after Controls (lbs/hr) = [Outlet Grain Loading (grains/dscf)] * [Air Flow Rate (cfm)] * [60 min/hr] * [lb/7000 grains]
PM/PM10/PM2.5 after Integral Controls (tons/yr) = [PM/PM10/PM2.5 after Controls (lbs/hr)] * [8760 hr/yr] * [ton/2000 lb]
PM/PM10/PM2.5 before Integral Controls (lbs/hr) = [PM/PM10/PM2.5 after Controls (lbs/hr)] / [1 - control efficiency]
PM/PM10/PM2.5 before Integral Controls (tons/yr) = [PM/PM10/PM2.5 after Controls (tons/yr)] / [1 - control efficiency]

Appendix A: Emission Calculations
Grit Blasting

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Emission Factors for Abrasives

	Emission Factor	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	0.70

Location	Grit Blaster ID	Dust Collector ID	Grit Type	Max Throughput (lbs/hr)	PM Emission Factor (lbs/lb grit)	PM10/ PM2.5 Emission Factor (lbs/lb grit)	Dust Collector Control Efficiency	Potential PM Emissions (tons/yr)	Potential PM10/ PM2.5 Emissions (tons/yr)	Controlled Potential PM Emissions (tons/yr)	Controlled Potential PM10/ PM2.5 Emissions (tons/yr)
1245 Main Street	EU001G	C001G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU002G	C002G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU004G	C004G	Aluminum Oxide	600	0.010	0.007	99.97%	26.28	18.40	0.01	0.01
	EU005G	C005G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU007G	C007G	Silicon Carbide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU008G	C008G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU010G	C010G	Aluminum Oxide	600	0.010	0.007	99.97%	26.28	18.40	0.01	0.01
	EU011G	C011G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU012G	C012G	Aluminum Oxide	50	0.010	0.007	99%	2.19	1.53	0.02	0.02
	EU013G	C013G	Aluminum Oxide	200	0.010	0.007	99%	8.76	6.13	0.09	0.06
	EU014G	C014G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU015G	C015G	Silicon Carbide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU016G	C016G	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU018G	C018G	Aluminum Oxide	600	0.041	0.0287	99%	107.75	75.42	1.08	0.75
	EU019G	C019G	Aluminum Oxide	600	0.041	0.0287	99%	107.75	75.42	1.08	0.75
	EU01GB	C01GB	Glass Peen	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU02GB	C02GB	Glass Peen	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU01L	C01L	Shot Peen	5.36	0.004	0.86	99%	0.09	20.19	0.00	0.20
	EU01M	C01M	Fine Grit	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU02M	C02M	Fine Grit	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
1415 Main Street	EU01C	C01C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU01M	C01M	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU03C	C03C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU04C	C04C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU05C	C05C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU06C	C06C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU08C	C08C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU09C	C09C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU10C	C10C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	EU12C	C12C	Aluminum Oxide	600	0.010	0.007	99%	26.28	18.40	0.26	0.18
	EU14C	C14C	[1]Wet Blast	-	-	-	-			-	-
	EU07C	C07C	Aluminum Oxide	360	0.010	0.007	99%	15.77	11.04	0.16	0.11
	O1P1 EUG1	CG1	Aluminum Oxide	173	0.010	0.007	99.7%	7.58	5.30	0.02	0.02
	O1P1 EUG2	CG2	Aluminum Oxide	173	0.010	0.007	99.7%	7.58	5.30	0.02	0.02
	O1P1 EUG3	CG3	Glass Peen	80.5	0.010	0.007	99.7%	3.53	2.47	0.01	0.01
	O1P1 EUG4	CG4	Aluminum Oxide	15	0.010	0.007	99.7%	0.66	0.46	0.00	0.00
	O1P1 EUG5	CG5	Aluminum Oxide	173	0.010	0.007	99.7%	7.58	5.30	0.02	0.02
	O1P1 EUG6	CG6	Aluminum Oxide	173	0.010	0.007	99.7%	7.58	5.30	0.02	0.02
	O1P1 EUG7	CG7	Aluminum Oxide	81	0.010	0.007	99.7%	3.55	2.48	0.01	0.01
	O2P3 EUG1	CG1	Calcined Alumina	221	0.010	0.007	99.7%	9.68	6.78	0.03	0.02
	O2P3 EUG2	CG2	Calcined Alumina	221	0.010	0.007	99.7%	9.68	6.78	0.03	0.02
	O2P3 EUG3	CG3	Calcined Alumina	221	0.010	0.007	99.7%	9.68	6.78	0.03	0.02
	O2P1 EUG1	CG1/2	Aluminum Oxide	224	0.010	0.007	99.7%	9.81	6.87	0.03	0.02
	O2P1 EUG2		Aluminum Oxide	224	0.010	0.007	99.7%	9.81	6.87	0.03	0.02
	O2P1 EUG3	CG3/4	Aluminum Oxide	81	0.010	0.007	99.7%	3.55	2.48	0.01	0.01
	O2P1 EUG4		Aluminum Oxide	81	0.010	0.007	99.7%	3.55	2.48	0.01	0.01
	O2P1 EUG5	CG5	Aluminum Oxide	50	0.010	0.007	99.7%	2.19	1.53	0.01	0.00
	O1P2 EUG1	CG1	Aluminum Oxide	138	0.010	0.007	99.7%	6.04	4.23	0.02	0.01
	O1P2 EUG3	CG3	Aluminum Oxide	138	0.010	0.007	99.7%	6.04	4.23	0.02	0.01
							Total PTE (tons/yr)	**902.26**	**651.71**		
									Total Controlled PTE (tons/yr)	**7.76**	**5.63**

[1] No emissions from wet blasting

Methodology
Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Potential PTE (ton/yr) = Max Throughput (lb/hr) x Emission Factor (lbs/lb grit) x (1- Control Efficiency) x (8,760 hr/yr) / (2,000 lbs/ton)

Appendix A: Emission Calculations
EU020G - Grit Reclassifier Building 1245

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Uncontrolled PM Emissions (lbs/hr)	Uncontrolled PM10/PM2.5 Emissions (lbs/hr)	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
400	0.0069	0.0033	0.01	0.003	0.0014	0.0007	99.0%	0.00006	0.00003

METHODOLOGY:
Emission factors for PM and PM10/2.5 from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer.
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) / (2,000 lbs/ton) * EF (lbs/ton) * (8,760 hours/year) / (2,000 lbs/ton)

Appendix A: Emission Calculations
Building 1500- Non-Production Carpenter Shop

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Information Provided by the Source

Amount collected:	985	lbs	
Time Collected	1	month	*Praxair tracks monthly waste from the carpenter shop. Since 2005, the worst-case for one month has been 985 pounds.
Dust Collector Control Eff (estimated)	99%		

Uncontrolled Particulate Emissions (lbs/hr) = Amount of dust collected (lbs/collection) x (1 Collection/Time Collected) / Control Efficiency
= 994.9 pounds per hour (lb/month)

*Note: AP-42, Appendix B.1, 10.5 Woodworking Waste Collection Operations is used to determine the particle size distribution. For PM10 and PM2.5, the worst-case distribution was used.

Weight % PM = 100%
Weight % PM10 = 52.90%
Weight % PM2.5 = 29.50%

Uncontrolled PM (tons/yr) = Uncontrolled Particulate Emissions (lb/month) x (% PM) x 12 month/yr x 1 ton/2,000 lbs
= 5.97 tons/yr
Uncontrolled PM10 (tons/yr) = Uncontrolled Particulate Emissions (lb/month) x (% PM10) x 12 month/yr x 1 ton/2,000 lbs
= 3.16 tons/yr
Uncontrolled PM2.5 (tons/yr) = Uncontrolled Particulate Emissions (lb/month) x (% PM2.5) x 12 month/yr x 1 ton/2,000 lbs
= 1.76 tons/yr

Controlled PM Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) x (1-Control Efficiency)
= 0.06 tons/yr
Controlled PM10 Emissions (tons/yr) = Uncontrolled PM10 Emissions (tons/yr) x (1-Control Efficiency)
= 0.03 tons/yr
Controlled PM2.5 Emissions (tons/yr) = Uncontrolled PM2.5 Emissions (tons/yr) x (1-Control Efficiency)
= 0.02 tons/yr

Appendix A: Emission Calculations
1500 Spray Paint Operation

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Material	Density (Lb/Gal)	VOC Weight %	VOC Content (lbs/gal)	Weight % Non-Volatiles (Solids)	Max Gal of Mat. (gal/yr)	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	Transfer Efficiency	Paint Filter Control Efficiency
Rust-Oleum Topcoat/Alkyd Enamel (ID 904402)	7.75	94%	7.29	6.0%	5.00	1.82E-02	2.91E-04	75%	90%

State Potential Emissions (tons/yr)	**0.0182**	**0.0003**
Controlled Potential Emissions (ton/syr)	**0.0182**	**0.00003**

Material	Ethylbenzene Weight %	Ethylbenzene Potential (ton/yr)
Rust-Oleum Topcoat/Alkyd Enamel (ID 904402)	1.0%	1.94E-04

NOTES
The paint booth is used to paint equipment used in Building 1500. This is a maintenance activity. The facility uses no more than 5 gallons per year of paint.
The paint composition is based on the worst-case VOC coating used in the paint booth.
Transfer efficiency for the paint shop is 75%, based on electrostatic air atomized transfer efficiency.
PM10 & PM2.5 emissions are each assumed equal to PM emissions

METHODOLOGY

VOC Potential (tons/yr) = Max Gal of Material (gal/yr) x VOC Content (lbs/gal) / (2,000 lbs/ton)
Particulate Potential (tons/yr) = Max Gal of Mat (gal/yr) x Density (lbs/gal) x (Weight % Solids) x (1-Transfer efficiency) / (2,000 lbs/ton)
Controlled Particulate Emissions (tons/yr) = (Particulate Potential (tons/yr) x (1-Paint Filter Control Efficiency)
HAP Potential (tons/yr) = Max Gal of Material (gal/yr) x Density (lbs/gal) x Weight % HAP / (2,000 lbs/ton)

Appendix A: Emission Calculations
Mixing Operations in Bldg 1550 Polishing Dept- Lens Polish and Suspension Room

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Material	Weight % Volatile (H20 & Organics)	Density (Lb/Gal)	Weight % Water & Exempt Solvents	Weight % Organics	Maximum Hourly Throughput (gal/hr)	Pounds VOC per gallon of coating	Emission Rate (% Material Emitted)	VOC Potential (ton/yr)
Lens Polish Mixing Tank 1:								
Material 1	66.00%	8.35	65.9%	0.10%	0.36	0.008	0.89%	0.00
Material 2	80.00%	10.01	79.0%	1.00%	6.69	0.10	0.89%	0.03
Material 3	100.00%	8.68	0.0%	100.00%	24.77	8.68	0.89%	8.40
						Potential Emissions for Lens Polish Mixing Tank 1 (tons/yr)		8.43
Lens Polish Mixing Tank 2:								
Material 1	66.00%	8.35	65.9%	0.10%	0.36	0.008	0.89%	0.00
Material 2	80.00%	10.01	79.0%	1.00%	6.69	0.10	0.89%	0.03
Material 3	100.00%	8.68	0.0%	100.00%	24.77	8.68	0.89%	8.40
						Potential Emissions for Lens Polish Mixing Tank 2 (tons/yr)		8.43
Suspension Room Mixing Tank:								
Material 3	100.00%	8.68	0.0%	100.00%	1.99	8.68	0.89%	0.67
Material 4	100.00%	8.18	1.0%	99.00%	0.12	8.10	0.89%	0.04
						Potential Emissions for Suspension Room Mixing Tank (tons/yr)		0.71
							Total Potential Emissions (tons/yr)	**17.56**

Description of Process:

Lens Polish and Suspension Room mixing operations are used to mix various lens polishes. The Suspension Room Mixing operation is a small-scale mixing operation, and the composition of the final product is different than the Lens Polish area. There are other components of the mixtures, but they do not contain VOCs or HAPs.

Max Throughput Description:
-The batch compositions were provided by the facility.
-Maximum gallons of material is based on the usage of each chemical per batch.
-There are 4 mixing tanks in Lens Polish, but the throughput is limited to two mixing tanks, based on a bottleneck created by the bottle filling line and the pail filling
-There are 2 suspension room batches every 8 hours (one every 4 hours).

METHODOLOGY
Based on a material balance of the raw material in and product out, the 99.03% of the raw materials remain in the final product. Therefore, 0.97% is lost. Part of the loss is due to waste material remaining on the tank due to surface tension, and the other portion is due to air emissions. The waste remaining in the mixing tank was estimated using the "Instructions for Completing Part II of EPA Form R: Summary of Residue Quantities," and a median point was chosen between water and motor oil (water = 4 cp, motor oil = 94 cp, Material 3 = 46 cp) for dish-bottom steel tanks. The weight % of the drum's capacity that would remain on the tank and be wasted is 0.0785% of the drum's capacity, based on a median between 0.034% for water and 0.191% for motor oil. The weight % of 0.0785% was subtracted from 0.97% to determine that 0.892% of the contents are emitted.

Weight % Water & Exempt Solvents = Weight % Volatile (H20 & Organics) - Weight % Organics
Material compositions are from MSDSs.
Pounds of VOC per Gallon Material = Density (lb/gal) x Weight % Organics
VOC Potential (tons/yr) = Pounds of VOC per Gallon Material (lb/gal) x Max Gal of Material per Batch (gal/hr) / Batch Time (hrs/batch) x Emission Rate (%) x (8,760 hrs/yr) x (1 ton/2000 lbs)

Appendix A: Emission Calculations

Material Handling in Bldg 1550 Polishing Dept- Lens Polish, Suspension, and Premix

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Total Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Uncontrolled PM Emissions (lbs/hr)	Uncontrolled PM10/PM2.5 Emissions (lbs/hr)	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
9152.86	0.0069	0.0033	0.14	0.07	0.03	0.02	99.5%	0.00	0.00

Information from Praxair:
-The throughput is a combined throughput for Lens Polish Mixing Tank Loading, Suspension Room Custom Blend Loading, Suspension Room Powder Packaging, and Premix. There are 4 mixing tanks in Lens Polish, but the throughput is limited to two mixing tanks, based on a bottleneck created by the bottle filling line and the pail filling line. The powder handling operations are controlled by dust collectors with a control efficiency of 99.5%. There are no HAPs in the dry materials used in the Polishing Department.

METHODOLOGY:
*Handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Uncontrolled Emissions (tons/yr) = Powder Throughput (lbs/hr) / (2,000 lbs/ton) * EF (lbs/ton) * (8,760 hours/year) / (2,000 lbs/ton)

Appendix A: Emission Calculations
EU020-Raw Material Handling

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Throughput (lbs/hr)*	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)
12.37	0.0069	0.0033	0.0002	0.0001

METHODOLOGY:
*The throughput is based on the batch weights for dry materials. There are a total of 4 batches with a combined total weight of 12.37 pounds. None of the dry materials contain HAPs.
**Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emission Calculations

EU020- CSP

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Calculation of Process Rates and Masses

Batch Time (hours) = 20

Batch	Number of Batches	Solution Weight		Solids Weight		Weight Water Evaporated in Dryer		Oxides Weight	
		Weight for All Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	For all Batches per Hour (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)	For all Batches (kg)	Process Rate for all Batches (kg/hr)
Batches 1, 2, 3, and 4	4	1155.04	57.75	605.23	30.26	549.82	27.49	205.55	10.28

METHODOLOGY FOR DETERMING PROCESS RATES AND MASSES:
Weight per batch for Solutions, Solids, and Oxides fare based on stoichiometry. Assume 100% evaporation of water and 100% conversion to oxides.
Weight Water Evaporated for all batches (kg) = Solution Weight for all Batches (kg) - Solid Weight for all Batches (kg/batch)
Weight per hour (kg/hr) = Weight (kg/batches) / Batch Time (hours)

Abatement System Calculations:

Percent Product Captured in Collection System[1] 95%
Percent of Solids to Abatement System[2] 80.3%
Percent of Oxides to Abatement System[2] 19.6%
Batch Time (hours) = 20

Batch	Solids Weight (kg)	Oxides Weight (kg)	Fraction Oxides to Solids	Solids to Abatement (kg)	Oxides to Abatement (kg)	[3]Water to Abatement (kg)	[4]NO Formed (kg)	[4]NO_2 Formed (kg)	% NO/ NO2 Generated in CSP vs Kiln	[4]NO to Abatement (kg)	[4]NO_2 to Abatement (kg)
Batches 1, 2, 3, and 4	605.23	205.55	0.34	24.30	2.01	549.82	21.55	132.18	99%	21.3345	130.8582

Batch	Solids to Abatement (kg/hr)	Oxides to Abatement (kg/hr)	[5]Weight % Mn in Solids	[5]Weight % Ni in Solids	[5]Weight % Total HAPs in Solids	[5]Weight % Mn in Oxides	[5]Weight % Ni in Oxides	[5]Weight % Total HAPs in Oxides
Batches 1, 2, 3, and 4	1.2	0.10	8.13%	16.37%	16.37%	23.53%	51.18%	51.18%

Batch	Mn to Abatement (kg/hr)	Ni to Abatement (kg/hr)	Total HAPs to Abatement (kg/hr)	Water to Abatement (kg/hr)	NO to Abatement (kg/hr)	NO_2 to Abatement (kg/hr)	NOx to Abatement (kg/hr)	PM/PM10/ PM2.5 to Abatement (lbs/hr)	Mn to Abatement (lbs/hr)	Ni to Abatement (lbs/hr)	Total HAPs to Abatement (lbs/hr)	NOx to Abatement (lbs/hr)
Batches 1, 2, 3, and 4	0.12	0.25	0.25	27.49	1.066725	6.54291	7.609635	2.68	0.27	0.55	0.55	16.78

Batch	Uncontrolled PM/PM10/ PM2.5 Emissions (tons/yr)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Uncontrolled Total HAP Emissions (tons/yr)	Uncontrolled NOx Emissions (tons/yr)	Dust Collector Control Efficiency	Controlled PM/PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)	SCR Control Efficiency	Controlled NOx Emissions (tons/yr)
Batches 1, 2, 3, and 4	**11.73**	**1.18**	**2.42**	**2.42**	**73.48**	99.5%	**0.06**	**0.01**	**0.012**	**0.01**	**90%**	**7.35**
								326 2-8 FESOP Required control efficiency			**18.4%**	**59.96**
											lb/hr	**ton/yr**
								326 2-8 FESOP Required limitations			**13.70**	**59.99**

[1]The product in the dryer is captured by a collection system. Any product not captured goes to the abatement system.
[2]Based on a similar process, it is known that in the 5% air escaping, a smaller percentage of the solids and oxides are present in the escaped air than what is present in the captured product. 80.3% of the total solids and 19.6% of oxides will be in the 5% air to abatement.
[3]Assume 100% evaporation of water in dryers.
[4]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.
[5]Based on worst-case HAP contents of batches.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:
Solids and oxides weights from "Process Rates and Masses" above.
Fraction Oxides to Solids = Theoretical Oxides Weight (kg) / Theoretical Solids Weight (kg)
Solids to Abatement (kg) = Solids Weight (kg) x (1- Percent Captured in Collection System) x Percent of Solids to Capture System

NO/NO2 to Abatement (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in CSP vs. Kiln
*Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.
Solids/Oxides/Water/NO/NO2 to Abatement (kg/hr) = Solids/Oxides/Water/NO/NO2 to Abatement (kg) / Batch Time (hours)
HAP to Abatement (kg/hr) = [Solids to Abatement (kg/hr) x Weight % HAP in Solids] + [Oxides to Abatement (kg/hr) x Weight % HAP in Oxides]
NOx to Abatement (kg/hr) = NO to Abatement (kg/hr) + NO2 to Abatement (kg/hr)

Emissions to Abatement (lbs/hr) = Emissions to Abatement (kg/hr) x (2.20462 lbs/kg)
Uncontrolled Emissions (tons/yr) = Emissions to Abatement (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) x (1-Control Efficiency)

Appendix A: Emission Calculations
EU020 CSP Natural Gas-Fired Burner

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
0.40	3.44

	Pollutant						
	PM*	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.00	0.01	0.01	0.00	0.17	0.01	0.14
Control Efficiency (%)	99.5%	99.5%	99.5%	0%	90%	0%	0%
Controlled Emissions in tons/yr	0.00	0.00	0.00	0.00	0.02	0.01	0.14

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichloro benzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.61E-06	2.06E-06	1.29E-04	3.09E-03	5.84E-06

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	8.59E-07	1.89E-06	2.40E-06	6.53E-07	3.61E-06

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

Greenhouse Gas Emissions:

	Pollutant					
	Methane	**N_2O**	**HFC**	**PFC**	**SF_6**	**CO_2**
Emission Factor in lb/MMCF	2.3	2.2	-	-	-	120,000
Potential Emission in tons/yr	0.004	0.004	0.000	0.000	0.000	206.118
CO2 eq factor	25	298	-	-	-	1
CO2 eq tpy	0.10	1.13	0.00	0.00	0.00	206.12
CO2e Total in tons/yr				**207.34**		

METHODOLOGY

Note: The CSP Burner is routed to an abatement system with a dust collector (particulate control eff = 99.5%) and an SCR (NOx control eff = 90%).

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Controlled Emissions (tons/yr) = Emissions (tons/yr) x (1- Control Efficiency)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix A: Emission Calculations
EU020 Powder Handling after CSP

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Percent Product Captured in Collection System[1] 95%
Batch Time (hours) = 20

Batch	Solids Weight (kg)	Oxides Weight (kg)	Total Powder (kg)	Total Powder Captured (kg)	Powder Throughput (lbs/hr)	Weight % Mn in Solids	Weight % Ni in Solids	Weight % Mn in Oxides	Weight % Ni in Oxides	Weight % Mn in Powder	Weight % Ni in Powder
Batches 1, 2, 3 and 4	605.23	205.55	810.77	770.23	84.90	8.13%	16.37%	23.53%	51.18%	12.03%	25.19%

[1]The powder product is captured by a collection system. Any product not captured goes to the abatement system.
[2]See "Emission Calculations for CSP" for reference in determining manganese and nickel compositions.
See "Emission Calculations for CSP" for reference in determining powder from CSP.

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Mn Composition (Weight %)	Ni Composition (Weight %)	Uncontrolled Mn HAP Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)	Control Efficiency
Batches 1, 2, 3 and 4	84.90	0.0069	0.0033	0.0013	0.0006	12.03%	25.19%	1.54E-04	3.23E-04	3.23E-04	99.9%

Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Total Controlled HAP Emissions (tons/yr)
0.000001	0.000001	1.54E-07	3.23E-07	3.23E-07

METHODOLOGY:
Powder Throughput (lbs/hr) = Total Powder Captured (kg) x (2.20462 lbs/kg) / Batch Time
Weight % HAP in powder = [(Solids Weight (kg) x Weight % HAP in Solids) + (Oxides Weight (kg) x Weight % HAP in Oxides)] / (Solids Weight (kg) + Oxides Weight (kg))
Total HAPs are based on worst-case HAP.
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Allowable Emission Rate:

Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable Emission Rate (lbs/hr)
84.90	0.042	**0.49**

METHODOLOGY:
Process Weight Rate (lbs/hr) = Total Powder Throughput (lbs/hr)

Allowable Emission Rate calculated based on method in 326 IAC 6-3-2 (e):

$E = 4.10\ P^{0.67}$

Where: E: Allowable Emission Rate (lbs/hr)
P: Process Weight Rate (tons/hr)

Appendix A: Emission Calculations
EU020- Kiln

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Batch Time (hours) = 20

[1]NO Formed (kg)	[4]NO_2 Formed (kg)	[2]% NO/ NO2 Generated in Kiln vs. CSP	[4]NO Emissions (kg)	[4]NO_2 Emissions (kg)	NO Emissions (kg/hr)	NO_2 Emissions (kg/hr)	NOx Emissions (kg/hr)	NOx Emissions (lbs/hr)	NOx Emissions (tons/yr)
21.55	132.18	1%	0.2155	1.3218	0.01	0.07	0.08	0.17	0.74

[1]NO and NO_2 generated per batch is based on a similar process at another Praxair facility. This value is based on an air flow rate of 1,000 cfm and known air compositions of 480 ppm NO and 1,920 ppm NO_2.

[2]Note: 99% of the nitrates are reacted in the CSP, and the remaining 1% is reacted in the kiln.

METHODOLOGY FOR ABATEMENT SYSTEM CALCS:
NO/NO2 Emissions (kg) = NO/NO2 Formed (kg) x % NO/NO2 Generated in Kiln vs. CSP
NO/NO2 Emissions (kg/hr) = NO/NO2 Emissions (kg) / Batch Time (hours)
NOx Emissions (kg/hr) = NO Emissions (kg/hr) + NO2 Emissions (kg/hr)
Uncontrolled NOx Emissions (tons/yr) = NOx Emissions (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emission Calculations
EU020- Powder Handling after Kiln

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Batch	Powder Handling after CSP Throughput (lbs/hr)	PM Emissions Handling after CSP (lbs/hr)	Powder Handling after Kiln Throughput (lbs/hr)
Batches 1, 2, 3 and 4	84.90	0.00029	84.90

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	84.90	0.0069	0.0033	0.0013	0.0006	12.03%	25.19%	1.54E-04	3.23E-04	3.23E-04

Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled HAP Emissions (tons/yr)
99.9%	0.0000	0.00000	0.00	0.00	0.00

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:
Throughput (lbs/hr) = Powder Handling after CSP Throughput (lbs/hr) - [CSP PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Allowable Emission Rate:

Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable Emission Rate (lbs/hr)
84.90	0.042	**0.49**

METHODOLOGY:
Process Weight Rate (lbs/hr) = Total Powder Throughput (lbs/hr)
Allowable Emission Rate calculated based on method in 326 IAC 6-3-2 (e):

$E = 4.10\ P^{0.67}$ Where: E: Allowable Emission Rate (lbs/hr)
P: Process Weight Rate (tons/hr)

Appendix A: Emission Calculations
EU020- Milling

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Batch	Powder Handling after Kiln Throughput (lbs/hr)	PM Emissions Handling after Kiln (lbs/hr)	Milling Throughput (lbs/hr)
Batches 1, 2, 3 and 4	84.90	0.00029	84.90

Batch	Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)	[2]Controlled PM Emissions (tons/yr)	[2]Controlled PM10/PM2.5 Emissions (tons/yr)	[2]Controlled Mn Emissions (tons/yr)	[2]Controlled Ni Emissions (tons/yr)	[2]Total Controlled HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	84.90	76.00	64.60	14.13	12.01	12.03%	25.19%	1.70	3.03	3.03	0.00	0.00	0.00	0.00	0.00

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)
[2]The milling operation is completely enclosed. Any emissions from milling would be during loading and unloading. Unloading and loading is already accounted for in "Powder Handling after Kiln" and Powder Handling After Milling" calculations.

METHODOLOGY:
Throughput (lbs/hr) = Powder Handling after Kiln Throughput (lbs/hr) - [Handling after Kiln PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
Emission factors for PM and PM10/2.5 from WebFIRE, SCC 3-05-00802 for Crushing, Grinding, & Milling during Ceramic Clay/Tile Manufacture
Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)

Appendix A: Emission Calculations
EU020- Powder Handling after Milling

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Batch	Milling Throughput (lbs/hr)	Milling PM Emissions (lbs/hr)	Powder Handling after Milling Throughput (lbs/hr)
Batches 1, 2, 3 and 4	84.90	14.13	70.77

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)	Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn HAP Emissions (tons/yr)	Controlled Ni HAP Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	70.77	0.0069	0.0033	1.07E-03	5.11E-04	12.03%	25.19%	1.29E-04	2.69E-04	2.69E-04	99.9%	1.07E-06	5.11E-07	1.29E-07	2.69E-07	2.69E-07

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:
Throughput (lbs/hr) = Milling Throughput (lbs/hr) - [Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Allowable Emission Rate:

Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	**Allowable Emission Rate (lbs/hr)**
70.77	0.035	**0.44**

METHODOLOGY:
Process Weight Rate (lbs/hr) = Total Powder Throughput (lbs/hr)
Allowable Emission Rate calculated based on method in 326 IAC 6-3-2 (e):

$E = 4.10\ P^{0.67}$ Where: E: Allowable Emission Rate (lbs/hr)
P: Process Weight Rate (tons/hr)

Appendix A: Emission Calculations

EU020- Final Powder Handling

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Batch	Powder Handling after Milling Throughput (lbs/hr)	Powder Handling After Milling PM Emissions (lbs/hr)	Final Powder Handling Throughput (lbs/hr)
Batches 1, 2, 3 and 4	70.77	0.00024	70.77

Batch	Powder Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	[1]Mn Composition (Weight %)	[1]Ni Composition (Weight %)	Uncontrolled Mn Emissions (tons/yr)	Uncontrolled Ni Emissions (tons/yr)	Total Uncontrolled HAP Emissions (tons/yr)
Batches 1, 2, 3 and 4	70.77	0.0069	0.0033	0.0011	0.0005	12.03%	25.19%	2.69E-04	2.69E-04	2.69E-04
	70.77									

Control Efficiency	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)	Controlled Mn Emissions (tons/yr)	Controlled Ni Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
99.9%	1.07E-06	5.11E-07	2.69E-07	2.69E-04	2.69E-07

[1]See "Powder Handling after CSP" to determine HAP Composition (Weight %)

METHODOLOGY:

Throughput (lbs/hr) = Powder Handling after Milling Throughput (lbs/hr) - [Powder Handling after Milling PM Emissions (tons/yr) * (2,000 lbs/ton) / 8,760 hrs /yr]
*Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Total HAPs are based on worst-case HAP.

Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled HAP Emissions (tons/yr) = Uncontrolled PM Emissions (tons/yr) * HAP Composition (Weight %)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

*Note: Emissions are controlled by a dust collector with a control efficiency of 99.9%.

Appendix A: Emission Calculations
Surface Coating at 1245 Main Street and 1415 Main Street

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Location	Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Amount Collected (lbs/hr)	Control Efficiency	HEPA Filter Control Efficiency	Uncontrolled Potential Particulate Emissions (lbs/hr)	Uncontrolled Potential Particulate Emissions (tons/yr)	Controlled Potential Particulate Emissions (tons/yr)	**PSD Limit (lb/hr)**	**PSD Limit (ton/yr)**
1245 Main Street	EU01A	C01A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU02A	C02A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU04A	Baffles	HVOF Coating	16.08	8.68	80%	0%	10.85	47.52	9.50	0.52	2.27
	EU05A	C05A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU06A	C06A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU16A	C16A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU17A	C17A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU18A	C18A	D-Gun Coating	32.16	21.7	99.97%	99.99%	21.71	95.07	2.85E-06	0.52	2.27
	EU19A	C19A	HVOF Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU03B	Baffles	Plasma Coating	8.04	4.34	80%	0%	5.43	23.76	4.75	0.52	2.27
	EU05B	C05D	Plasma Coating	8.04	5.42	99.97%	99.99%	5.42	23.75	7.12E-07	0.52	2.27
	EU06B	C06D	Plasma Coating	8.04	5.42	99.97%	99.99%	5.42	23.75	7.12E-07	0.52	2.27
	EU10B	C10D	Plasma Coating	8.04	5.42	99.97%	99.99%	5.42	23.75	7.12E-07	0.52	2.27
1415 Main Street	EU01B	C01B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU02B	C02B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU05B	C05B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU06B	C06B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU07B	C07B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU08B	C08B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU09B	C09B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU11B	C11B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
	EU12B	C12B	Plasma Coating	16.08	9.00	99.97%	99.99%	9.00	39.43	1.18E-06	0.52	2.27
								Total PTE (tons/yr)	**1202.36**	**14.26**	**11.42**	**50.00**

HAP Emissions:

Location	Surface Coater ID	Control Device ID	Surface Coating Type	Titanium Tetrachloride Content (%)	Nickel Content %	Chromium Content (%)	Cobalt Content (%)	Total HAP Content (%)	Controlled Titanium Tetrachloride Emissions (tons/yr)	Controlled Nickel Emissions (tons/yr)	Controlled Chromium Emissions (tons/yr)	Controlled Cobalt Emissions (tons/yr)	Controlled Total HAP Emissions (tons/yr)
1245 Main Street	EU01A	C01A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU02A	C02A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU04A	Baffles	HVOF Coating	0%	0%	0%	20%	20%	0.00	0.00	0.00	1.90	1.90
	EU05A	C05A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU06A	C06A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU16A	C16A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU17A	C17A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU18A	C18A	D-Gun Coating	0%	50%	75%	0%	95%	0.00	1.43E-06	2.14E-06	0.00	0.00
	EU19A	C19A	HVOF Coating	0%	0%	0%	20%	20%	0.00	0.00	0.00	0.00	0.00
	EU03B	Baffles	Plasma Coating	0%	0%	0%	20%	20%	0.00	0.00	0.00	0.95	0.95
	EU05B	C05D	Plasma Coating	0%	0%	20%	75%	79%	0.00	0.00	1.42E-07	0.00	0.00
	EU06B	C06D	Plasma Coating	0%	0%	20%	75%	79%	0.00	0.00	1.42E-07	0.00	0.00
	EU10B	C10D	Plasma Coating	0%	0%	20%	75%	79%	0.00	0.00	1.42E-07	0.00	0.00
1415 Main Street	EU01B	C01B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU02B	C02B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU05B	C05B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU06B	C06B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU07B	C07B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU08B	C08B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU09B	C09B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU11B	C11B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
	EU12B	C12B	Plasma Coating	0%	50%	50%	50%	95%	0.00	5.91E-07	5.91E-07	0.00	0.00
								Total PTE (tons/yr)	**0.00**	**1.53E-05**	**2.07E-05**	**2.85**	**2.85**

Methodology:
Maximum Throughput, Amount Collected, and Control Efficiencies are from the source.
Uncontrolled Potential Particulate Emissions (tons/yr) = [Amount Collected (lbs/hr) / Dust Collector Control Efficiency (%)] x (8,760 hrs/year) / (2,000 lbs/hr)
Controlled Potential Particulate Emissions (tons/yr) = Uncontrolled Potential Emissions (tons/yr) x [(1-Dust Collector Control Efficiency (%)) x (1 - HEPA Filter Efficiency (%))]*
*If no HEPA Filter, use [1 - Dust Collector Control Efficiency(%)]

Controlled HAP Emissions (tons/yr) = Controlled Potential Particulate Emissions (tons/yr) x HAP Content (%)
HAP Content is based on worst-case coatings for booths, given below:

Spray Type:	**Coating:**
D-Gun	CRC-104
HVOF	WC-559
1245 Plasma	CO-111
1245 Plasma-EU03B	WC-106
1415 Plasma	CO-159
LPPS	NI-535-2

*Note that the coating booths with baffles do not use coatings containing chromium or nickel HAPs per 40 CFR Part 63, Subpart WWWWWW.
**Total HAPs were determined by subtracting the lower range % of the non-HAP materials in the MSDS from 100%.
***The HVOF, D-Gun, and Plasma coating operations involve gas explosions. In the HVOF and and Plasma coaters, hydrogen gas is exploded. In the D-Gun coaters, acetylene is exploded. There are no HAPs or criteria pollutants generated by the exploded gas. Kerosene is used in EU08B and EU19A. Calculations are provided in a separate spreadsheet for kerosene combustion.

Appendix A: Emissions Calculations
Building 1245- Alpha 100 Coater (EU01T)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Amount of Dust Cleaned (lbs/week)	% Dust in Coater Emitted during Cleaning	PTE Particulate during Cleaning (tons/yr)
EU01T	N/A	PVD	0.25	0.25	5%	0.0003

There are no HAPs in the titanium pucks.

Methodology:
PTE Particulate During Cleaning (tons/yr) = Amount of Dust Cleaned (lbs/week) x (% Dust in Coater Emitted During Cleaning) x (52 weeks/year) / (2000 lbs/ton)

Appendix A: Emissions Calculations
Building 1245- LSR1 (EU01R)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

HAPs

Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Molecular Weight TiCl4 (g/mol)	Molecular Weight HCl (g/mol)	Mol HCl/ Mol TiCl4	Uncontrolled PTE HCl (tons/yr)	Scrubber Control Efficiency	Controlled PTE HCl (tons/yr)
EU01R	Scrubber	CVD	0.27	189.679	36.46094	4	0.91	90%	0.09

Methodology:
HAPs are emitted from the conversion of TiCl4 to HCl. In this reaction, there are 4 moles of HCl per mole of TiCl4.

Uncontrolled PTE HCl (tons/yr) = Max Throughput (lbs/hr) x Molecular Weight HCl (g/mol) / Molecular Weight TiCl4 (g/mol) x (Mol HCl/Mol TiCl4) x (8,760 hrs/yr) / (2,000 lbs/hr)

Controlled PTE HCl (tons/yr) = Uncontrolled PTE HCl x (1 - Scrubber Control Efficiency)

Appendix A: Emissions Calculations
Building 1415- LPPS Surface Coater (EU01S)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Criteria Pollutants

Surface Coater ID	Control Device ID	Surface Coating Type	Max Throughput (lbs/hr)	Dust Captured by Baghouse during Cleaning (lbs/week)	Control Efficiency of Dust Collector (%)	Uncontrolled Particulate during Cleaning (tons/yr)	Controlled Particulate during Cleaning (tons/yr)
EU01S	C01S**	LPPS	44.09	0.5	99.97%	0.01	3.90E-06

HAPs

				Uncontrolled			Controlled		
Surface Coater ID	Nickel Content (%)	Chromium Content (%)	Total HAP Content (%)	PTE Nickel (tons/yr)	PTE Chromium (tons/yr)	PTE Combined HAPs (tons/yr)	PTE Nickel (tons/yr)	PTE Chromium (tons/yr)	PTE Combined HAPs (tons/yr)
EU01S	75%	50%	98%	0.01	0.01	0.01	0.00	0.00	0.00

Methodology:
Emissions During Cleaning:
Uncontrolled Particulate (tons/yr) = Dust Captured in Baghouse During Cleaning (lbs/week) / Control Efficiency (%) x (52 wks/yr) / (2,000 lbs/ton)
Controlled Particulate during Cleaning (tons/yr) = Uncontrolled Particulate (tons/yr) x (1- Control Efficiency)

Based on HAP content, the Worst-Case LPPS Coating is NI-535-2. The single HAPs are based on the upper bound of the range from the MSDS.
The total HAP content was determined by taking 100% minus the lower bound of the ranges for non-HAP materials.
HAP Emissions (tons/yr) = Total PTE Particulate (tons/yr) x HAP Content (%)

Appendix A: Emissions Calculations
Tribomet Lines (Building 1415)

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Tank ID	Materials	Amount in Tank	Units	Amount Added per Month	Units	Total Added per Year (lbs/yr)	Density (lbs/gal)	Estimated Evaporation Rate	Total Emissions (lbs/yr)	VOC Content	HCl Content (%)	Nickel Compound Content (%)	Cobalt Compound Content (%)	Chromium Compound Content (%)	Uncontrolled PTE VOC (tons/yr)	Uncontrolled PTE HCl (tons/yr)	Uncontrolled PTE Nickel Compounds (tons/yr)	Uncontrolled PTE Cobalt Compounds (tons/yr)	Uncontrolled PTE Chromium Compounds (tons/yr)
104	HCl	30	gal	10	gal	1191.67	9.93	20%	238.33	0%	38%	0%	0%	0%	0.00	0.05	0.00	0.00	0.00
	Nickel Chloride	209	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
204	HCl	30	gal	10	gal	1191.67	9.93	20%	238.33	0%	38%	0%	0%	0%	0.00	0.05	0.00	0.00	0.00
	Nickel Chloride	209	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
108	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
109	T104CS Powder	67.2	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	763.9	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	45.8	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
112	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
113	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
115	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
116	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
208	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
211	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
213	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
214	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
216	T104CS Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
110	Nickel Sulfamate (65%)***	193.1	gal	40	lbs	480.00	13.19	20%	96.00	0%	0%	65%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Nickel Chloride	7.7	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Boric Acid	124.4	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
	CBN Powder	10.6	lbs	40	lbs	480.00	29.21	20%	96.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
117	Nickel Sulfamate (65%)***	118	gal	40	lbs	480.00	13.19	20%	96.00	0%	0%	65%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Nickel Chloride	4.7	gal	40	lbs	480.00	11.18	20%	96.00	0%	0%	54%	0%	0%	0.00	0.00	0.03	0.00	0.00
	Boric Acid	76	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
	CBN Powder	6.5	lbs	40	lbs	480.00	29.21	20%	96.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
210	T104C Powder	110	lbs	40	lbs	480.00	*	20%	96.00	0%	0%	0%	0%	80%	0.00	0.00	0.00	0.00	0.04
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
212	TM308 Powder	110	lbs	40	lbs	480.00	52.82	20%	96.00	0%	0%	0%	0%	70%	0.00	0.00	0.00	0.00	0.03
	Cobalt Sulphate	1250	lbs	40	lbs	480.00	16.27	20%	96.00	0%	0%	0%	100%	0%	0.00	0.00	0.00	0.05	0.00
	Boric Acid	75	lbs	10	lbs	120.00	12.02	20%	24.00	0%	0%	0%	0%	0%	0.00	0.00	0.00	0.00	0.00
														Total Uncontrolled PTE (tons/yr)	**0.00**	**0.09**	**0.17**	**0.62**	**0.49**
														Control Efficiency	**99.50%**	**99.50%**	**99.50%**	**99.50%**	**99.50%**
														Total Controlled PTE (tons/yr)	**0.00**	**0.0005**	**0.0008**	**0.0031**	**0.0025**

Methodologv:
*Density was not provided in the MSDS
**Tanks are changed out once every 2 years.
***Nickel Sulfamate is diluted to 65%.
The Tribomet lines are controlled by a composite mesh pad system with mist eliminator with a control efficiency of 99.5%

Total Amount Added Per Year (lbs/yr)
For amounts given in lbs:
For amounts given in gal:
Total Amount (lbs/yr) = Amount Added per Month (lbs/month) x (12 months/yr)
Total Amount (lbs/yr) = Amount Added per Month (gal/month) x Density (lbs/gal) x (12 months/yr)
Total Emissions = Amount Added per Year (lbs/yr) x Evaporation Rate (%)
Evaporation rate of 20% is a conservative engineering estimate, based on the amount that is added per month compared to the tank contents. The evaporation percentage is not an exact ratio of the amount added divided by the tank contents, because the percentage accounts for the portion of the liquid that remains on the product or is wasted.

Appendix A: Emissions Calculations
Stripping and Cleaning Operations

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Building	Stripping Line	Tank	Material	Tank Capacity (gal)	Turnovers/Year	Amount Used per Year (gal)	Density (lbs/gal)	VOC Content (%)	HF Content (%)	HCl Content (%)	VOC Emissions (tons/yr)	HF Emissions (tons/yr)	HCl Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
1415	Hydrochloric Acid Stripping Line	1	Hydrofluoric Acid	30	2	60	9.60	0%	4%	0%	0.00	0.01	0.00	0.01
		2	Hydrochloric Acid	30	2	60	9.93	0%	0%	38%	0.00	0.00	0.11	0.11
		3	Hydrochloric Acid	30	0.5	15	9.93	0%	0%	38%	0.00	0.00	0.03	0.03
1245	Titanium Nitrate Cleaning Operation	1	T-4181	28	2	56	10.35	10%	0%	0%	0.03	0.00	0.00	0.00
										Total PTE (tons/yr)	**0.03**	**0.01**	**0.14**	**0.15**

Note: Calculations are not included for the stripping operations where there are no VOCs or HAPs. The following are stripping tanks at Praxair that do not emit VOCs or HAPs.
Building 1415- Hydrochloric Acid Stripping- Two (2) water rinse tanks and one (1) caustic tank
Building 1415- Nitric Acid Stripping - One (1) nitric acid tank and one (1) water rinse tank
Building 1245- Electrolytic Stripping Line - One (1) electrolytical stripping tank (NaOH, tartaric acid, water, and soda ash), one (1) nitric acid tank, one (1) immersion fluid tank, and one (1) Kolene tank
Building 1245- Titanium Nitrate Cleaning Operation- One (1) phosphoric acid cleaning tank

METHODOLOGY:
Tank capacities and turnovers per year were provided by Praxair.
The densities are the densities for pure hydrofluoric acid and hydrochloric acid, as a worst-case scenario.

Emissions (tons/yr)= Tank Capacity (gal) x Turnovers per Year x Density (lbs/gal) x Content (%)

Appendix A: Emissions Calculations
Building 1415: Operation 1, Process 1 (O1P1)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Waste Particulate Collected (lbs/yr)	Hours Operated per Year	Dust Collector Control Efficiency	PTE Particulate (lbs/hr)	PTE Particulate (tons/yr)
39795	7392	99.7%	0.02	0.07

Methodology:
"Waste Particulate Collected" and "Hours Operated per Year" were provided by Praxair based on waste and operating records. The waste number excludes large chunks that were cleaned out of the equipment.

PTE Particulate During Cleaning (lbs/hr) = (Waste Particulate Collected (lbs/hr))/ Dust Collector Control Efficiency (%) / Hours Operated per Year x (1- Dust Collector Control Efficiency (%))
PTE Particulate from Dust Collector (tons/yr) = PTE Particulate During Cleaning (lbs/hr) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Calculations
Building 1415- Operation 2, Process 1 (O2P1)

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Tanks	Tank Capacity (gal)	Amount Added per Month (gal/month)	Total Added per Year (gal/yr)	Density (lbs/gal)	Estimated Evaporation Rate	Total Emissions (lbs/yr)	VOC Content	HCl Content (%)	Uncontrolled PTE VOC (tons/yr)	Uncontrolled PTE HCl (tons/yr)	Total PTE HAPs (tons/yr)
HCl	10.57	10	120.00	10.01	100%	1201.68	0%	39%	0.00	0.23	0.23
Turco 4181L	10.57	15	180.00	10.35	100%	1862.60	100%	9%	0.93	0.08	0.08
								Total (tons/yr)	**0.93**	**0.32**	**0.32**

Total Added Per Year (gal/yr) = Amount Added per Month (gal/month) x (12 months/yr)
Estimated evaporation rate assumes that 100% of the product lost from the tank is evaporated.

Total Emissions (lbs/yr) = Total Added per Year (gal/yr) x Density (lbs/gal) x Evaporation Rate
Uncontrolled PTE (tons/yr) = Total Emissions (lbs/yr) x Content (%) x Estimated Evaporation Rate (%)

Appendix A: Emissions Calculations
Building 1415- Operation 2, Process 2 (O2P2)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Maximum Usage (lbs/hr)	Density (lbs/gal)	VOC Content (lbs/gal)	Methanol Content (%)	VOC Emissions (tons/yr)	Methanol Emissions (tons/yr)
<12.0	20.96	0.02	1.50%	0.04	0.79

Methodology:
VOC Emissions (tons/yr) = Maximum Usage (lbs/hr) / Density (lbs/gal) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)
Single HAP Emissions (tons/yr) = Maximum Usage (lbs/hr) x HAP Content (%) x (8,760 hrs/yr) / (2,000 lbs/ton)
Combined HAP Emissions (tons/yr) = Sum of Single HAP Emissions (tons/yr)

Notes:
-There are no particulate emissions because the transfer efficiency is 100%.

Appendix A: Emissions Calculations
Building 1415- Operation 2, Process 4

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

HAPs

Material	Control Device ID	Max Throughput (lbs/hr)	(MW HF/MW Material) x (Mol HF/Mol Material)	Percent Reacted	Uncontrolled PTE HF (tons/yr)	Scrubber Control Efficiency	Controlled PTE HF (tons/yr)
Material 1	Wet Scrubber	<0.5	0.71	50%	0.78	90%	0.08

Methodology:
The maximum hourly usage is from Praxair.
HAPs are emitted from the material conversion to HF.

Uncontrolled PTE HF (tons/yr) = Max Throughput (lbs/hr) x Molecular Weight HF (g/mol) / Molecular Weight Material (g/mol) x (Mol HF/Mol Material) x (Percent Reacted) x (8,760 hrs/yr) / (2,000 lbs/hr)

Controlled PTE HF (tons/yr) = Uncontrolled PTE HF x (1 - Scrubber Control Efficiency)

Appendix A: Emissions Calculations
Building 1415- Operation 1, Process 3 (O1P3)

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Tank Contents	Usage (lbs/week)	Molecular Weight ABF (g/mol)	Molecular Weight HF (g/mol)	Ratio Moles HF to Moles ABF	HF Emissions (ton/yr)
Ammonium Bifluoride (ABF)	55.00	57.04	20.01	1	0.50

Operation 1 Process 3 includes a dip tank containing a mixture of compounds. There are no VOC compounds or HAP compounds added to the tank. However, ammonium bifluoride in the tank reacts when in contact with water to generate HF and ammonium fluoride (NH4F). Further decomposition of NH4F takes place at temperatures of 100 degree C and above, however, the O1P3 process operates at less than 100 degree C. Therefore, one mole of ABF reacts to form one mole of HF.

Usage (lbs/week) is based on the amount added to the dip tank.
Assume that 100% of the HF generated evaporates.
The ratio of moles of HF to moles of ABF is based on the reaction. The reaction of ABF generates HF and Ammonium Fluoride. There is one mole HF reacted for every mole of ABF.

Uncontrolled PTE (tons/yr) = Usage (lbs/week) x Molecular Weight HF (g/mol) / Molecular Weight ABF (g/mol) x Ratio x (52 weeks/yr) / (2,000 lbs/ton)

Appendix A: Emission Calculations
Building 1550- Powders Processing
Note: All dust collectors have been determined to be integral.

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Process ID	Powder Type	Throughput (lbs/hr)	Dust Collected per Year (lbs/yr)	Hours Operated per Year	Dust Collected per Hour (lbs/hr)	Dust Collector Control Efficiency	HEPA Filter Control Efficiency	Uncontrolled Particulate Emissions (tons/yr)	Controlled PTE Particulate (tons/yr)
EUS-1	Powder 1	166.67	27,780	515	53.94	99.5%	99.9%	237.69	1.42
EUS-2	Powder 2	166.67	4,077	2,446	1.67	99.5%	99.9%	7.34	0.04
EUS-7	Powder 1	83.335	857	514	1.67	99.5%	99.9%	7.35	0.04
EUP-3	Powder 2	429.3	3,600	750	4.80	99.5%	99.9%	21.15	0.13
EUS-3	Powder 2	429.3	3,220	750	4.29	99.5%	99.9%	18.92	0.11
EUS-5	Powder 3	312.5	50,000	609	82.10	99.5%	99.9%	361.77	2.17
EUS-8B	Powder 4	58.4	2,500	5,993	0.42	99.5%	99.9%	1.84	0.01
EUS-8A	Powder 4	58.4	10,000	5,993	1.67	99.5%	99.9%	7.35	0.04
EUS-10	Powder 5	300	11,571	1,750	6.61	99.5%	99.9%	29.14	0.17
EUP-11	Powder 5	100	155	155	1.00	90.0%	99.9%	4.87	0.49
EUP-11A	Powder 5	100	155	155	1.00	90.0%	99.9%	4.87	0.49
EUP-11B	Powder 5	100	155	155	1.00	90.0%	99.9%	4.87	0.49
EUS-15A	Powder 2	341.66	1,600	3,237	0.49	99.5%	99.9%	2.18	0.01
EUS-15B	Powder 2	341.66	1,600	3,237	0.49	99.5%	99.9%	2.18	0.01
EUS-15C	Powder 2	341.66	400	3,237	0.12	99.5%	99.9%	0.54	0.00
EUS-15D	Powder 2	341.66	400	3,237	0.12	99.5%	99.9%	0.54	0.00
EUS-4B	Powder 2	770.96	14,281	1,852	7.71	99.5%	99.9%	33.98	0.20
Scale	Powder 2	341.66	1600	3,237	0.49	99.0%	99.9%	2.19	0.02
EUS-15F	Powder 2	341.66	800	3,237	0.25	99.5%	99.9%	1.09	0.01
EUS-15G	Powder 2	341.66	800	3,237	0.25	99.5%	99.9%	1.09	0.01
EUP-17	Powder 2	8.33	710.08	4,262	0.17	99.5%	99.9%	0.73	0.00
EUS-22	Powder 7	21.606	960	4,000	0.24	99.5%	99.9%	1.06	0.01
EUS-4A	Powder 6	429.3	3,220	750	4.29	99.5%	99.9%	18.92	0.11
High Purity Room Powder Handling	Powder 8	100	-	-	1.00	99.0%	99.9%	4.42	0.05
							Total (tons/yr)	**776.09**	**6.07**

HAP Emissions:

Process ID	Powder Type	PTE Particulate (tons/yr)	% Cobalt	%Chromium	%Nickel	% Total HAPs**	PTE Cobalt (tons/yr)	PTE Chromium (tons/yr)	PTE Nickel (tons/yr)	Total PTE HAPs (tons/yr)
EUS-1	Powder 1	1.42	0%	95%	0%	95%	0.00	1.35	0.00	1.35
EUS-2	Powder 2	0.04	50%	50%	50%	95%	0.02	0.02	0.02	0.04
EUS-7	Powder 1	0.04	0%	95%	0%	95%	0.00	0.04	0.00	0.04
EUP-3	Powder 2	0.13	50%	50%	50%	95%	0.06	0.06	0.06	0.12
EUS-3	Powder 2	0.11	50%	50%	50%	95%	0.06	0.06	0.06	0.11
EUS-5	Powder 3	2.17	20%	0%	0%	20%	0.43	0.00	0.00	0.43
EUS-8B	Powder 4	0.01	0%	100%	0%	100%	0.00	0.01	0.00	0.01
EUS-8A	Powder 4	0.04	0%	100%	0%	100%	0.00	0.04	0.00	0.04
EUS-10	Powder 5	0.17	0%	0%	0%	0%	0.00	0.00	0.00	0.00
EUP-11	Powder 5	0.49	0%	0%	0%	0%	0.00	0.00	0.00	0.00
EUP-11A	Powder 5	0.49	0%	0%	0%	0%	0.00	0.00	0.00	0.00
EUP-11B	Powder 5	0.49	0%	0%	0%	0%	0.00	0.00	0.00	0.00
EUS-15A	Powder 2	0.01	50%	50%	50%	95%	0.01	0.01	0.01	0.01
EUS-15B	Powder 2	0.01	50%	50%	50%	95%	0.01	0.01	0.01	0.01
EUS-15C	Powder 2	0.00	50%	50%	50%	95%	0.00	0.00	0.00	0.00
EUS-15D	Powder 2	0.00	50%	50%	50%	95%	0.00	0.00	0.00	0.00
EUS-4B	Powder 2	0.20	50%	50%	50%	95%	0.10	0.10	0.10	0.19
Scale	Powder 2	0.02	50%	50%	50%	95%	0.01	0.01	0.01	0.02
EUS-15F	Powder 2	0.01	50%	50%	50%	95%	0.00	0.00	0.00	0.01
EUS-15G	Powder 2	0.01	50%	50%	50%	95%	0.00	0.00	0.00	0.01
EUP-17	Powder 2	0.00	50%	50%	50%	95%	0.00	0.00	0.00	0.00
EUS-22	Powder 7	0.01	0%	44%	5%	45%	0.00	0.00	0.00	0.00
EUS-4A	Powder 6	0.11	0%	75%	20%	95%	0.00	0.09	0.02	0.11
High Purity Room Powder Handling	Powder 8	0.05	0%	0%	0%	0%	0.00	0.00	0.00	0.00
						Total (tons/yr)	**0.71**	**1.82**	**0.30**	**2.53**

Notes:
*Total HAPs were determined by subtracting the lower range % of the non-HAP materials in the MSDS from 100%.

Methodology:
Unlimited PTE for PM is calculated for 326 IAC 2-2 (PSD) purposes only. The dust collectors are integral to the processes for 326 IAC 2-7 (Part 70).
HAP PTE is based on controlled emissions because the dust collectors are integral to the processes and these HAPs are not specifically regulated by 326 IAC 2-2 (PSD).
Uncontrolled Particulate Emissions (tons/yr) = Dust Collected per Hour (lbs/hr) /(Dust Collector Control Efficiency x HEPA Filter Control Eff) x (8,760 hrs/yr) / (2,000 lbs/ton
PTE Particulate (tons/yr) = Uncontrolled Particulate Emissions (tons/yr) x (1- (HEPA Filter Control Eff x Dust Collector Control Eff))
PTE HAP (tons/yr) = PTE Particulate (tons/yr) x HAP Content (%)
HAP Content is based on worst-case coatings for each powder type.

Appendix A: Emission Calculations
Building 1550- Epoxy Kits (EUS-12)

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Epoxy Kit Filling:

Volume of Container (oz)	Volume of Container (ft3/can)	Container Throughput (cans/hr)	V_{Tair} (ft3/yr)	MEK Batch Amount (g/can)	Density MEK (g/cm3)	MEK Batch Amount (ft3/can)	Volume % MEK	V_{air} (ft3/yr)	T_{fill} (K)	VP_{MEK} (mmHg)	Molecular Weight MEK (g/mol)	K_{MEK}	C_{blend}	VOC Potential Emissions (tons/yr)
10	0.01	120	10978.52	70	0.810	0.003	29%	3208.14	298.15	90.6	72.11	1.09	29%	4.03

Methodology:
Note: The materials for the epoxy kit are added directly to the bottles. The filling is sealed to minimize VOC emissions.There are 6 products manufactured on the epoxy kit line. The worst-case VOC product, UCAR 106 Epoxy/MEK was used in the calculations.
The methodology is from the American Chemical Council "MDI Emissions Reporting Guidelines for the Polyurethane Industry," Section 5-27 Filling/Blending, published May 2012.
MEK chemical properties are from the MSDS.

Volume % MEK = MEK Batch Amount (ft3/can) / Volume of Container (ft3/can)
V_{Tair} (ft3/yr)= Container Throughput (cans/hr) x (8,760 hrs/yr) x Volume of Container (ft3/can)
V_{air} (ft3/yr) = V_{Tair} (ft3/yr) x Volume % MEK
T_{fill} = 298.15 K (ambient temperature)
K_{MEK} = MEK Concentration in Feedstock (100%) x T_{fill} (K) /273.15K
C_{blend} = Volume % MEK
VOC Emissions (tons/yr) = V_{air} x (1 / 359) x [273.15 / T_{fill} (K)] x (VP_{MEK} (mmHg) / 760) x Molecular Weight MEK (g/mol) x K_{MEK} x C_{blend} / (2,000 lbs/ton)

***Vermiculate Pouring:**

Material	Max Throughput (lbs/hr)	PM EF (lbs/ton)	PM10/ PM2.5 EF (lbs/ton)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM10/PM2.5 Emissions (tons/yr)	Control Efficiency Dust Collector	Control Efficiency HEPA Filters	Controlled PM Emissions (tons/yr)	Controlled PM10/ PM2.5 Emissions (tons/yr)
Vermiculate	50	0.0069	0.0033	**7.56E-04**	**3.61E-04**	99.50%	99.999%	**3.79E-06**	**1.81E-06**

*Vermiculate is used in the packaging for the epoxy kits. It is controlled by dust collector DC014, which is equipped with HEPA filters.

Methodology:
Maximum throughputs were provided by Praxair.
VOC content and density are from the MSDSs.
Vermiculate pouring PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer.

Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x VOC Emission Rate x (8,760 hrs/yr) / (2,000
Uncontrolled Particulate PTE (tons/yr) = Max Throughput (lbs/hr) / (2,000 lbs/ton) x EF (lbs/ton) x (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Particulate PTE (tons/yr) = Uncontrolled Particulate PTE (tons/yr) x [1- (Control Eff Dust Collector x Control Eff HEPA Filters)]

Appendix A: Emission Calculations
Building 1550- IPA Room

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Material	Max Throughput (lbs/hr)	Density (lbs/gal)	Max Throughput (gal/hr)	VOC Content (lbs/gal)	VOC Emission Rate	Uncontrolled VOC PTE (tons/yr)
IPA	0.67	6.57	0.10	6.57	100%	2.92

Explanation of Process:
IPA is mixed with powder for milling in the Powder 7 processing area (EUS-22). The IPA is then evaporated out by ovens. The powder handling is already accounted for in the 1550 Powders calculations.

Methodology:
Maximum usage is based on 16 gallons used in 24 hours of operation.
The density and VOC content are from the MSDS.
The VOC emission rate comes from AP-42, 6.4.1.

Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x VOC Emission Rate x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emissions Calculations
Bldg. 1550 Powders- SermaTech Process

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

Mixing Type	Max Throughput (lbs/hr)	Density (lbs/gal)	Max Throughput (gal/hr)	Solid Weight %	Particulate EF (lbs/ton pigment)*	VOC Content (lbs/gal)	VOC Emission Rate	Chromium Compound Content (%)
Mixing	60.00	13.77	4.36	35%	20	0.00	2%	6%
Mixing	24.00	10.01	2.40	35%	20	6.33	2%	0%

Scrubber PM Control Efficiency (%)	Uncontrolled Particulate PTE (tons/yr)	Uncontrolled VOC PTE (tons/yr)	Uncontrolled Chromium PTE (tons/yr)	Controlled Particulate PTE (tons/yr)	Controlled Chromium PTE (tons/yr)
99%	0.92	0.00	0.06	0.01	0.00
0%	0.37	1.33	0.00	0.37	0.00
Total (tons/yr)	**1.29**	**1.33**	**0.06**	**0.38**	**0.00**

Info from Praxair:
Maximum Throughput was provided by the facility.

METHODOLOGY
The VOC and HAP content are based on the MSDS of the worst-case final product, so it is multiplied times the powder and liquid material throughputs, combined.
The VOC emission rate comes from AP-42, 6.4.1.
The PM emission factors come from AP-42, Table 6.4-1. The PM Emission factor is based on pigment throughput, so it is only multiplied times the solid content.
Two scrubbers are used to control powder from the water-based paint mixing process.
The worst-case water-based paint is Sermatel 962, based on HAP content.
The worst-case solvent-based paint is Sermatel 1140, based on VOC content.

Uncontrolled Particulate PTE (tons/yr) = [Max Throughput (lbs/hr) x Solid Weight % / (2,000 lbs/ton)] x Particulate EF (lbs/ton pigment) x (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled VOC PTE (tons/yr) = Max Throughput (gal/hr) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)
Uncontrolled Chromium PTE (tons/yr) = Uncontrolled Particulate PTE (tons/yr) x Chromium Compound Content (%)
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) x [1 - Scrubber PM Control Efficiency (%)]

Appendix A: Emissions Calculations
Bldg. 1550 Ingot Process - Slurry Blending

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Ingredients	Usage (lbs/batch)	Batch time (hrs)	Maximum Batches per Year	VOC Content (%)	Methanol (HAP) Content (%)	VOC PTE (tons/yr)	HAP PTE (tons/yr)
Dispersant	2.50	4.00	2,190.00	0.0%	0.0%	0	0
PEG	5.40			100.0%	0.0%	5.91	0
PVA	4.30			5.0%	1.0%	0.24	0.05
Various Powders	1,081.10			0.0%	0.0%	0	0
Total	**1,093.30**					**6.15**	**0.05**

Methodology
Batch time and ingredient forumlations provided by Praxair. VOC content obtained from MSDSs.
PTE (tons/yr) = Usage (lbs/batch) x (batches/year) x VOC % x (1 ton / 2,000 lbs)

Appendix A: Emissions Calculations
Bldg. 1550 Ingot Process - Powder Handling

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Powder Throughput (lb/hr)	PM EF (lb/ton)	PM10/PM2.5 EF (lb/ton)	Uncontrolled PM PTE (tons/yr)	Uncontrolled PM10/PM2.5 PTE (tons/yr)	Control Efficiency (%)	Controlled PM PTE (tons/yr)	Controlled PM10/PM2.5 PTE (tons/yr)
275.00	0.0069	0.0033	0.0042	0.0020	99.90%	4.16E-06	4.16E-03

METHODOLOGY:
Raw material handling PM and PM10/2.5 emission factors are from AP 42, Table 11.12-2, Concrete Batching-Aggregate Transfer
Uncontrolled Emissions (tons/yr) = Throughput (lbs/hr) * 1/2,000 (ton/lb) * Emission Factor (lbs/ton) * (8,760 hrs/yr) / (2,000 lbs/ton)
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1-Control Efficiency)

Appendix A: Emission Calculations
Titanium Process

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Titanium Process Emissions

Amount to wet collector =	4.00	lbs/hr
Chromium Content =	2.70%	of particulates
Control Efficiency =	98.00%	

Potential Emissions Before Control

Uncontrolled Particualte Emissions (lb/hr) =	4.00	lbs/hr
Uncontrolled Particualte Emissions (ton/yr) =	17.52	tons/yr
Uncontrolled Chromium Emissions (ton/yr) =	0.47	tons/yr

Potential Emissions After Control

Controlled Particualte Emissions (lb/hr) =	0.08	lbs/hr
Controlled Particualte Emissions (ton/yr) =	0.35	tons/yr
Controlled Chromium Emissions (ton/yr) =	0.01	tons/yr

Methodology

Amount to wet collector provided by source.
Uncontrolled Particulate Emissions (lb/hr) = Amount to wet collector (lbs/hr)
Uncontrolled Particulate Emissions (tons/yr) = Uncontrolled Emissions (lb/hr) * 8,760 (hr/yr) * 1/2,000 (ton/lbs)
Uncontrolled Chromium Emissions (ton/yr) = Uncontrolled Partiuclate Emissions (tons/yr) * % Chromium
Controlled Particulate Emissions (lb/hr) = Uncontrolled Particulate Emissions (lb/hr) * (1 - %CE)
Controlled Particulate Emissions (ton/yr) = Controlled Particulate Emissions (lb/hr) * 8,760 * 1/2,000 (ton/lbs)
Controlled Chromium Emissions (ton/yr) = Controlled Partiuclate Emissions (tons/yr) * % Chromium

Appendix A: Emission Calculations
Miscellaneous Material Usage

Company Name: **Praxair Surface Technologies**
Address City IN Zip: **1500 Polco Street, Indianapolis, Indiana 46222**
Permit Number: **097-37221-00060**
Permit Reviewer: **Brian Williams**

Building	Lubricant	Maximum Usage (gal/yr)	Density (lbs/gal)	VOC Content (lbs/gal)	Ethylene Glycol Content (%)	Toluene Content (%)	Antimony Compound Content (%)	Lead Compound Content (%)
1245/1415	DP Lubricant Blue	55	6.84	6.78	15%	0%	0%	0%
1245	Molydag	10	11.18	5.14	0%	30%	30%	10%

	VOC Emissions (tons/yr)	Ethylene Glycol Emissions (tons/yr)	Toluene Emissions (tons/yr)	Antimony Compound Emissions (tons/yr)	Lead Compound Emissions (tons/yr)	Combined HAP Emissions (tons/yr)
	0.19	0.03	0.00	0.00	0.00	0.03
	0.03	0.00	0.02	0.02	0.01	0.04
Total PTE (tons/yr)	**0.21**	**0.03**	**0.02**	**0.02**	**0.01**	**0.07**

DP Lubricant Blue is a lubricant used in the polishing process in a quality assurance lab. It is applied to polishing wheels by hand, and is used at a maximum annual rate of 55 gallons per year.
Molydag is a production material that is applied to some customer parts at Building 1245. The maximum annual usage is 10 gallons.
Methodology:
VOC Emissions (tons/yr) = Maximum Usage (gal/hr) x VOC Content (lbs/gal) x (8,760 hrs/yr) / (2,000 lbs/ton)
HAP Emissions (tons/yr) = Maximum Usage (gal/hr) x Density (lbs/gal) x HAP Content (%) x (8,760 hrs/yr) / (2,000 lbs/ton)

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

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)

Building	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)
1500	Semi Trucks (entering facility) (one-way trip)	1	1	1.0	40	40.0	650	0.123	0.1	44.9
1500	Semi Trucks (leaving facility) (one-way trip)	1	1	1.0	40	40.0	650	0.123	0.1	44.9
1500	Box Trucks (entering facility) (one-way trip)	1	1	1.0	17.5	17.5	650	0.123	0.1	44.9
1500	Box Trucks (leaving facility) (one-way trip)	1	1	1.0	17.5	17.5	650	0.123	0.1	44.9
1500	Delivery Vans (entering facility) (one-way trip)	2	1	2.0	12.5	25.0	650	0.123	0.2	89.9
1500	Delivery Vans (leaving facility) (one-way trip)	2	1	2.0	12.5	25.0	650	0.123	0.2	89.9
1245	Semi Trucks (entering facility) (one-way trip)	4	1	4.0	30	120.0	1250	0.237	0.9	345.6
1245	Semi Trucks (leaving facility) (one-way trip)	4	1	4.0	30	120.0	1250	0.237	0.9	345.6
1245	Box Trucks (entering facility) (one-way trip)	4	1	4.0	12	48.0	1250	0.237	0.9	345.6
1245	Box Trucks (leaving facility) (one-way trip)	4	1	4.0	12	48.0	1250	0.237	0.9	345.6
1415	Semi Trucks (entering facility) (one-way trip)	8	1	8.0	30	240.0	250	0.047	0.4	138.3
1415	Semi Trucks (leaving facility) (one-way trip)	8	1	8.0	30	240.0	250	0.047	0.4	138.3
1415	Box Trucks (entering facility) (one-way trip)	4	1	4.0	12	48.0	250	0.047	0.2	69.1
1415	Box Trucks (leaving facility) (one-way trip)	4	1	4.0	12	48.0	250	0.047	0.2	69.1
1415	Semi Trucks (entering facility) (one-way trip)	6	1	6.0	40	240.0	1200	0.227	1.4	497.7
1415	Semi Trucks (leaving facility) (one-way trip)	6	1	6.0	40	240.0	1200	0.227	1.4	497.7
1415	Box Trucks (entering facility) (one-way trip)	7	1	7.0	5.5	38.5	1200	0.227	1.6	580.7
1415	Box Trucks (leaving facility) (one-way trip)	7	1	7.0	5.5	38.5	1200	0.227	1.6	580.7
1550	Semi Trucks (entering facility) (one-way trip)	10	1	10.0	44	440.0	400	0.076	0.8	276.5
1550	Semi Trucks (leaving facility) (one-way trip)	10	1	10.0	44	440.0	400	0.076	0.8	276.5
1550	Straight Trucks (entering facility) (one-way trip)	3	1	3.0	15	45.0	400	0.076	0.2	83.0
1550	Straight Trucks (leaving facility) (one-way trip)	3	1	3.0	15	45.0	400	0.076	0.2	83.0
1550	Delivery Trucks (entering facility) (one-way trip)	1	1	1.0	5	5.0	400	0.076	0.1	27.7
1550	Delivery Trucks (leaving facility) (one-way trip)	1	1	1.0	5	5.0	400	0.076	0.1	27.7
1550	Box Trucks (entering facility) (one-way trip)	1	1	1.0	8	8.0	400	0.076	0.1	27.7
1550	Box Trucks (leaving facility) (one-way trip)	1	1	1.0	8	8.0	400	0.076	0.1	27.7
1555	Delivery Vans (entering facility) (one-way trip)	6	1	6.0	5	30.0	1100	0.208	1.3	456.3
1555	Delivery Vans (leaving facility) (one-way trip)	6	1	6.0	5	30.0	1100	0.208	1.3	456.3
1555	Semi Trucks (entering facility) (one-way trip)	3	1	3.0	20	60.0	1100	0.208	0.6	228.1
1555	Semi Trucks (leaving facility) (one-way trip)	3	1	3.0	20	60.0	1100	0.208	0.6	228.1
1555	Parcel Trucks (entering facility) (one-way trip)	3	1	3.0	10	30.0	1100	0.208	0.6	228.1
1555	Parcel Trucks (leaving facility) (one-way trip)	3	1	3.0	10	30.0	1100	0.208	0.6	228.1
1555	Semi Trailers (entering facility) (one-way trip)	3.0	1.0	3.0	40.0	120.0	1100	0.208	0.6	228.1
1555	Semi Trailers (leaving facility) (one-way trip)	3.0	1.0	3.0	40.0	120.0	1100	0.208	0.6	228.1
			Totals	**134.0**		**3110.0**			**20.3**	**7424.4**

Average Vehicle Weight Per Trip = 23.2 tons/trip
Average Miles Per Trip = 0.15 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 =	23.2	23.2	23.2	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m^2 = 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 = 125 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, Ef =	2.149	0.430	0.106	lb/mile
Mitigated Emission Factor, Eext =	1.965	0.393	0.096	lb/mile
Dust Control Efficiency =	0%	0%	0%	No controls

Building	Type	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)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
1500	Semi Trucks (entering facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Semi Trucks (leaving facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Box Trucks (entering facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Box Trucks (leaving facility) (one-way trip)	0.05	0.01	0.00	0.04	0.01	0.00	0.04	0.01	0.00
1500	Delivery Vans (entering facility) (one-way trip)	0.10	0.02	0.00	0.09	0.02	0.00	0.09	0.02	0.00
1500	Delivery Vans (leaving facility) (one-way trip)	0.10	0.02	0.00	0.09	0.02	0.00	0.09	0.02	0.00
1245	Semi Trucks (entering facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Semi Trucks (leaving facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Box Trucks (entering facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1245	Box Trucks (leaving facility) (one-way trip)	0.37	0.07	0.02	0.34	0.07	0.02	0.34	0.07	0.02
1415	Semi Trucks (entering facility) (one-way trip)	0.15	0.03	0.01	0.14	0.03	0.01	0.14	0.03	0.01
1415	Semi Trucks (leaving facility) (one-way trip)	0.15	0.03	0.01	0.14	0.03	0.01	0.14	0.03	0.01
1415	Box Trucks (entering facility) (one-way trip)	0.07	0.01	0.00	0.07	0.01	0.00	0.07	0.01	0.00
1415	Box Trucks (leaving facility) (one-way trip)	0.07	0.01	0.00	0.07	0.01	0.00	0.07	0.01	0.00
1415	Semi Trucks (entering facility) (one-way trip)	0.53	0.11	0.03	0.49	0.10	0.02	0.49	0.10	0.02
1415	Semi Trucks (leaving facility) (one-way trip)	0.53	0.11	0.03	0.49	0.10	0.02	0.49	0.10	0.02
1415	Box Trucks (entering facility) (one-way trip)	0.62	0.12	0.03	0.57	0.11	0.03	0.57	0.11	0.03
1415	Box Trucks (leaving facility) (one-way trip)	0.62	0.12	0.03	0.57	0.11	0.03	0.57	0.11	0.03
1550	Semi Trucks (entering facility) (one-way trip)	0.30	0.06	0.01	0.27	0.05	0.01	0.27	0.05	0.01
1550	Semi Trucks (leaving facility) (one-way trip)	0.30	0.06	0.01	0.27	0.05	0.01	0.27	0.05	0.01
1550	Straight Trucks (entering facility) (one-way trip)	0.09	0.02	0.00	0.08	0.02	0.00	0.08	0.02	0.00
1550	Straight Trucks (leaving facility) (one-way trip)	0.09	0.02	0.00	0.08	0.02	0.00	0.08	0.02	0.00
1550	Delivery Trucks (entering facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Delivery Trucks (leaving facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Box Trucks (entering facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1550	Box Trucks (leaving facility) (one-way trip)	0.03	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
1555	Delivery Vans (entering facility) (one-way trip)	0.49	0.10	0.02	0.45	0.09	0.02	0.45	0.09	0.02
1555	Delivery Vans (leaving facility) (one-way trip)	0.49	0.10	0.02	0.45	0.09	0.02	0.45	0.09	0.02
1555	Semi Trucks (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trucks (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Parcel Trucks (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Parcel Trucks (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trailers (entering facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
1555	Semi Trailers (leaving facility) (one-way trip)	0.25	0.05	0.01	0.22	0.04	0.01	0.22	0.04	0.01
	Totals	**7.98**	**1.60**	**0.39**	**7.30**	**1.46**	**0.36**	**7.30**	**1.46**	**0.36**

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]

Appendix A: Emission Calculations
326 IAC 6.5 PM Limit Compliance and PSD Limits

Company Name: Praxair Surface Technologies
Address City IN Zip: 1500 Polco Street, Indianapolis, Indiana 46222
Permit Number: 097-37221-00060
Permit Reviewer: Brian Williams

									PM/PM10/PM2.5 PSD limits		FESOP PM10 and PM2.5 limits			
	Potential / Uncontrolled Emissions - Criteria Pollutants and HAPs								PM	PM	PM_{10}	PM_{10}	$PM_{2.5}$	$PM_{2.5}$
	Emissions Units	**Control Unit ID**	**Airflow (acfm)**	**0.03 gr/ft³ equivalent lb/hr**	**Controlled PM Emissions tons/yr**	**Controlled PM emission rate lb/hr**	**Controlled PM emission rate gr/ft³**	**Able to Comply with limit of 0.03 gr/ft³**	**PSD Limit lb/hr**	**PSD Limit ton/yr**	**FESOP Limit lb/hr**	**FESOP Limit ton/yr**	**FESOP Limit lb/hr**	**FESOP Limit ton/yr**
	Maintenance Welding	NO CONTROLS	NA	NA	0.03	0.01	NA	YES	X	X	X	X	X	X
	Grinding, Metal Sawing, and Plasma Cutting	NO CONTROLS	NA	NA	0.0090	0.00	NA	YES	X	X	X	X	X	X
	Grit Blasters (49 grit blasters)													
Building 1245	EU001G	C001G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU002G	C002G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU004G	C004G	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU005G	C005G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU007G	C007G	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU008G	C008G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU010G	C010G	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU011G	C011G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU012G	C012G	4,000	1.029	0.02	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU013G	C013G	4,000	1.029	0.09	0.02	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU014G	C014G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU015G	C015G	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU016G	C016G	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU018G	C018G	4,000	1.029	1.08	0.25	0.01	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU019G	C019G	4,000	1.029	1.08	0.25	0.01	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU01GB	C01GB	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU02GB	C02GB	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU01L	C01L	4,000	1.029	0.00	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU01M	C01M	4,000	1.029	0.26	0.06	0.00	YES	1.00	4.40	1.00	4.40	1.00	4.40
	EU02M	C02M	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
Building 1415	Bader Grinder #2	C03B	4,000	1.029	1.35	0.31	0.01	YES	0.10	0.45	0.10	0.45	0.10	0.45
	Bader Grinder #3	C07B	4,000	1.029	1.35	0.31	0.01	YES	0.10	0.45	0.10	0.45	0.10	0.45
	Bader Grinder #4	C08B	4,000	1.029	1.35	0.31	0.01	YES	0.10	0.45	0.10	0.45	0.10	0.45
	EU01C	C01C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU01M	C01M	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU03C	C03C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU04C	C04C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU05C	C01C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU06C	C06C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU08C	C08C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU09C	C09C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU10C	C10C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	EU12C	C12C	4,000	1.029	0.26	0.06	0.00	YES	0.48	2.08	0.28	1.21	0.28	1.21
	EU07C	C07C	4,000	1.029	0.16	0.04	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG1	CG1	4,000	1.029	0.02	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG2	CG2	4,000	1.029	0.02	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG3	CG3	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG4	CG4	4,000	1.029	0.00	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG5	CG5	4,000	1.029	0.02	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG6	CG6	4,000	1.029	0.02	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P1 EUG7	CG7	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P3 EUG1	CG1/2	4,000	1.029	0.03	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P3 EUG2		4,000	1.029	0.03	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P3 EUG3	CG3	4,000	1.029	0.03	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P1 EUG1	CG1	4,000	1.029	0.03	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P1 EUG2	CG2	4,000	1.029	0.03	0.01	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P1 EUG3	CG3/4	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P1 EUG4		4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O2P1 EUG5	CG5	4,000	1.029	0.01	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P2 EUG1	CG1	4,000	1.029	0.02	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	O1P2 EUG3	CG3	4,000	1.029	0.02	0.00	0.00	YES	0.48	2.08	0.18	0.77	0.18	0.77
	Building 1500 - Non-Production Carpenter Shop	Carpenter Shop Dust Collector	4,000	1.029	0.06	0.01	0.00	YES	X	X	X	X	X	X
	Building 1550 Polishing Dept. - Material Handling Operations (3 material handling operations)	DC062 and DC032	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1550 CSP Dept. - EU020:													
	Raw Material Handling	NO CONTROLS	NA	NA	0.00	0.00	NA	YES	X	X	X	X	X	X
	CSP	DC-020A	4,000	1.029	0.06	0.01	0.00	YES	2.28	10.00	X	X	X	X
	CSP Natural Gas-Fired Burner	DC-020A	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Powder Handling after CSP	DC-020B	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Kiln	NO CONTROLS	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Powder Handling after Kiln	DC-020B	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Milling	Total Enclosure	-	1.029	0.00	0.00	-	YES	X	X	X	X	X	X
	Powder Handling after Milling	DC-020B	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Final Powder Handling	DC-020B	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1245- Alpha 100 (EU01T)	NO CONTROLS	-	-	0.000	0.00	-	YES	X	X	X	X	X	X
	Building 1245- LSR1 (EU01R)	Scrubber	-	-	0.00	0.00	-	YES	X	X	X	X	X	X
	Building 1415- LPPS (EU01S)	C01S	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1415- Operation 1, Process 1	DCC1-CV, DCC2-CV, DCC4-CV	4,000	1.029	0.07	0.02	0.00	YES	X	X	X	X	X	X
	Building 1415- Operation 2, Process 1	NO CONTROLS	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1415- Operation 2, Process 2	NO CONTROLS	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1415- Operation 2, Process 4	Scrubber	4,000	1.029	0.00	0.00	0.00	YES	X	X	X	X	X	X
	Building 1550- Sermatech Slurry	scrubber	4,000	1.029	0.38	0.09	0.00	YES	X	X	X	X	X	X
	Building 1550- Praxair Powders (24 powder handling operations)													
	EUS-1	DC048, DC073	4,000	1.029	1.42	0.325	0.009	YES	0.48	2.08	X	X	X	X
	EUS-2	DC015	4,000	1.029	0.04	0.010	0.000	YES	0.48	2.08	X	X	X	X
	EUS-7	DC028, DC029	4,000	1.029	0.04	0.010	0.000	YES	0.48	2.08	X	X	X	X
	EUP-3	DC063	4,000	1.029	0.13	0.029	0.001	YES	0.48	2.08	X	X	X	X
	EUS-3	DC064, DC008	4,000	1.029	0.11	0.026	0.001	YES	0.48	2.08	X	X	X	X
	EUS-5	DC012, DC013	4,000	1.029	2.17	0.495	0.014	YES	0.48	2.08	X	X	X	X
	EUS-8B	DC040	4,000	1.029	0.01	0.003	0.000	YES	0.48	2.08	X	X	X	X
	EUS-8A	DC041	4,000	1.029	0.04	0.010	0.000	YES	0.48	2.08	X	X	X	X
	EUS-10	DC004, DC043, DC044, DC045	4,000	1.029	0.17	0.040	0.001	YES	0.48	2.08	X	X	X	X
	EUP-11	DC001	4,000	1.029	0.49	0.112	0.003	YES	0.48	2.08	X	X	X	X
	EUP-11A	DC002	4,000	1.029	0.49	0.112	0.003	YES	0.48	2.08	X	X	X	X
	EUP-11B	DC046	4,000	1.029	0.49	0.112	0.003	YES	0.48	2.08	X	X	X	X
	EUS-15A	DC026, DC057	4,000	1.029	0.01	0.003	0.000	YES	0.48	2.08	X	X	X	X
	EUS-15B	DC059	4,000	1.029	0.01	0.003	0.000	YES	0.48	2.08	X	X	X	X
	EUS-15C	DC011, DC068	4,000	1.029	0.00	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUS-15D	DC022, DC069	4,000	1.029	0.00	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUS-4B	DC023, DC070, DC071, DC072	4,000	1.029	0.20	0.047	0.001	YES	0.48	2.08	X	X	X	X
	Scale	DC026	4,000	1.029	0.02	0.005	0.000	YES	0.48	2.08	X	X	X	X
	EUS-15F	DC058, DC024, Demisters 5,6,8	4,000	1.029	0.01	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUS-15G	DC021, DC057, Demister 4	4,000	1.029	0.01	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUP-17	DC035, DC061, Demister 3	4,000	1.029	0.00	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUS-22	DC005	4,000	1.029	0.01	0.001	0.000	YES	0.48	2.08	X	X	X	X
	EUS-4A	DC006, DC007, DC054, DC065, DC066, DC067	4,000	1.029	0.11	0.026	0.001	YES	0.48	2.08	X	X	X	X
	High Purity Room Powder Handling	DC014	4,000	1.029	0.05	0.011	0.000	YES	0.48	2.08	X	X	X	X
	Titanium Process	Rotoclone Wet Collector	4,000	1.029	17.52	4.000	0.117	YES	0.80	3.50	0.80	3.50	0.80	3.50

Methodology
326 IAC 6.5 equivalent limit (lb/hr) = limit in the rule (0.03 gr/dscf) x air flow rate of control device (dscf/min) x 1 lb/7000 gr x 60 mins/hr
Note: This source is only subject to the pound/hour limitations in this table. The ton/year "limits" are for calculation purposes only and are not federally enforceable limitations.

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

July 27, 2016

Michael Bass
Praxair Surface Technologies
1500 Polco St
Indianapolis, IN 46224

Re: Public Notice
Praxair Surface Technologies
Permit Level: FESOP - Significant Permit Revision
Permit Number: 097 - 37221 - 00060

Dear Michael Bass:

Enclosed is a copy of your draft FESOP - Significant Permit Revision, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Indianapolis Star in Indianapolis, IN publish the abbreviated version of the public notice no later than July 30, 2016. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Speedway Public Library, 5633 W 25th St in Speedway IN. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Brian Williams, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 4-5375 or dial (317) 234-5375.

Sincerely,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

July 27, 2016

Indianapolis Star
Attn: Classifieds
130 S. Meridian St.
Indianapolis, Indiana 46225

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Praxair Surface Technologies, Marion County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than July 30, 2016.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: FESOP - Significant Permit Revision
Permit Number: 097 - 37221 - 00060

Enclosure
PN Newspaper.dot 6/13/2013

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

July 27, 2016

To: Speedway Public Library 5633 W 25th St Speedway IN

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

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Praxair Surface Technologies
Permit Number: 097 - 37221 - 00060

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 2/16/2016

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

July 27, 2016
Praxair Surface Technologies
097 - 37221 - 00060

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 2/17/2016

Mail Code 61-53

IDEM Staff	LPOGOST 7/27/2016 Praxair Surface Technologies, Inc. 097 - 37221 - 00060 draft/			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee / Remarks
1		Michael Bass Praxair Surface Technologies, Inc. 1500 Polco St Indianapolis IN 46224 (Source CAATS)									
2		Marion County Health Department 3838 N, Rural St Indianapolis IN 46205-2930 *(Health Department)*									
3		Indianapolis City Council and Mayors office 200 East Washington Street, Room E Indianapolis IN 46204 *(Local Official)*									
4		Marion County Commissioners 200 E. Washington St. City County Bldg., Suite 801 Indianapolis IN 46204 *(Local Official)*									
5		Speedway Public Library 5633 W 25th St Speedway IN 46224-3899 *(Library)*									
6		Mr. Alic Bent August Mack Environmental, Inc. 1302 N Meridian St, Suite 300 Indianapolis IN 46202 *(Consultant)*									
7		Matt Mosier Office of Sustainability City-County Bldg/200 E Washington St. Rm# 2460 Indianapolis IN 46204 *(Local Official)*									
8		Johan & Susan Van Den Heuvel 4409 Blue Creek Drive Carmel IN 46033 *(Affected Party)*									
9		Indiana Members Credit Union 5103 Madison Avenue Indianapolis IN 46227 *(Affected Party)*									
10											
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