



Environmental  
Protection Agency

Ted Strickland, Governor  
Lee Fisher, Lt. Governor  
Chris Korleski, Director

8/6/2010

Certified Mail

Eric Brown  
E.I. Du Pont Fort Hill Plant  
11215 Brower Rd  
North Bend,, OH 45052

No	TOXIC REVIEW
Yes	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
Yes	CEMS
No	MACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTA  
Facility ID: 1431350817  
Permit Number: P0105763  
Permit Type: OAC Chapter 3745-31 Modification  
County: Hamilton

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio EPA Weekly Review and the local newspaper, The Cincinnati Enquirer. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Issued Air Pollution Control Permits" link. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
Permit Review/Development Section  
Ohio EPA, DAPC  
122 South Front Street  
Columbus, Ohio 43215

and Hamilton County Dept. of Environmental Services  
250 William Howard Taft Pkwy.  
Cincinnati, OH 45219-2660

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Hamilton County Dept. of Environmental Services at (513)946-7777.

Sincerely,

  
Michael W. Ahern, Manager  
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 - *Via E-Mail Notification*  
HCDOES; Indiana; Kentucky



**PUBLIC NOTICE  
OHIO ENVIRONMENTAL PROTECTION AGENCY  
ISSUANCE OF DRAFT PERMIT TO INSTALL  
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION  
TO E. I. DUPONT FORT HILL PLANT**

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA) has issued, on August 6, 2010, a draft action of Permit to Install (PTI) application number P0105763 to E. I. DuPont Fort Hill Plant. This draft permit proposes to allow the installation of a hydrogen peroxide assisted scrubber at their existing sulfuric acid plant. This facility will be located in North Bend, Ohio.

This project, if approved, will result in permit allowable emissions as follows:

Pollutant	Permit Allowable (Tons/Year)
*PE	16.43
**SO <sub>2</sub>	281
NO <sub>x</sub>	3.07

\* As H<sub>2</sub>SO<sub>4</sub>.

\*\*Per a federal consent decree.

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations. The proposed project will trigger PSD review for H<sub>2</sub>SO<sub>4</sub>.

Copies of the draft permit, permit application and technical support information may be reviewed and/or copies made by first calling to make an appointment at the Hamilton County Department of Environmental Services, located at 250 William Howard Taft Road Cincinnati, Ohio, telephone number (513) 946-7777.





## **Permit Strategy Write-UP**

**STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT  
UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION  
FOR E.I. DU PONT FORT HILL PLANT  
LOCATED IN HAMILTON COUNTY, OHIO  
PTI NO. P0105763**

Ohio Environmental Protection Agency  
Division of Air Pollution Control  
Lazarus Government Center  
50 West Town St., Suite 700  
Columbus, Ohio 43215

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major stationary sources, which are facilities with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of major stationary source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous net increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within this five- or ten-year period are considered to be contemporaneous. In addition, Ohio has incorporated the PSD and NSR requirements by rule under OAC 3745-31, and currently has a program that is fully approved by USEPA. For PM<sub>2.5</sub> Ohio will have to use the requirements established in 40 CFR Part 51, Appendix S until the Ohio Administrative Code regulations are modified to include PM<sub>2.5</sub> emissions.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major stationary source. The principal requirements of the PSD regulations are:

- 1) **Best Available Control Technology (BACT) review** - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major stationary source.
- 2) **Ambient Air Quality Review** - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

1) Lowest Achievable Emission Rate (LAER)

The most stringent emission limitation that is contained in the implementation plan of any state for such class or category of emissions unit(s), unless the owner or operator of the proposed emissions unit demonstrates that such limitations are not achievable; or

The most stringent emission limitation that is achieved in practice by such class or category of emissions unit. This limitation, when applied to a major modification, means lowest achievable emissions rate for the new or modified emissions units within the stationary source. In no event shall the application of this term permit a proposed new or modified emissions unit to emit any air pollutant in excess of the amount allowable under applicable new source standards of performance.

2) Compliance certification

The applicant must certify that all existing major stationary sources owned or operated by the applicant (or any entity controlling, controlled by, or under common control with the applicant) in Ohio as the proposed major stationary source or major modification are in compliance with all applicable emission limitations and standards under the Clean Air Act (or are in compliance with an expeditious schedule which is federally enforceable or contained in a court decree).

3) Emission offsets

- (a) Emission reductions (offsets) from existing air contaminant sources in the area of the proposed major stationary source (whether or not under the same ownership) are required such that there will be reasonable progress, as determined by the director, toward attainment of the applicable national ambient air quality standard.
- (b) Only intra air pollutant emission offsets will be acceptable (e.g., hydrocarbon increases may not be offset against sulfur dioxide reductions).
- (c) Emission offsets must meet the baseline limitations of rule 3745-31-24 of the Administrative Code, the location limitations of rule 3745-31-25 of the Administrative Code, and the offset ratio limitations of rule 3745-31-26 of the Administrative Code.
- (d) Emission offsets are required only for those air pollutants for which the increased allowable emissions exceed the significant emission rates.
- (e) The total tonnage of increased emissions, in tons per year, resulting from a major modification that must be offset in accordance with Section 173 of the Clean Air Act shall be determined by summing the difference between the allowable emissions after the major modification and the actual emissions before the modification for each emissions unit.



#### 4) Net air quality benefit

The emission offsets must provide a positive net air quality benefit in the affected area pursuant to rule 3745-31-25 of the Administrative Code. Atmospheric dispersion modeling is not necessary for VOCs and nitrogen oxides in ozone nonattainment areas. Instead, complying with the requirements of paragraphs (A)(1) to (A)(3) of this rule and rule 3745-31-25 of the Administrative Code will be considered adequate to meet this condition.

Finally, New Source Performance Standards (NSPS), New Emission Standards of Hazardous Air Pollutants (NESHAPS), SIP emission standards and public participation requirements must be followed in all cases.

#### Site Description

The E.I. Du Pont Fort Hill Plant is proposing to install a hydrogen peroxide assisted scrubber at their existing sulfuric acid plant located in North Bend, Ohio, Hamilton County, to comply with the following consent decree in the matter of United States v. E.I. DuPont de Nemours and Company (S.D.Ohio) relating to alleged violations of the Clean Air Act.

#### New Source Review (NSR)/PSD Applicability

Since we are processing in part an installation permit application related to past alleged violations of the Clean Air Act, we will identify both attainment and non-attainment areas as they existed at that time when the alleged violations occurred and today to help explain potentially how some of the pollutants are and are not identified in the terms of the issued draft installation permit.

At the time when the alleged violations occurred, Hamilton county was classified as nonattainment for ozone and attainment for all other criteria pollutants, including total suspended particulate matter (PM), particulate matter 10 microns and less in diameter (PM10), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and lead (Pb).

Currently, Hamilton county is classified as nonattainment for particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) and attainment for all other criteria pollutants, including total suspended particulate matter (PM), particulate matter 10 microns and less in diameter (PM10), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), ozone, and lead (Pb).

The E.I. Du Pont Fort Hill Plant currently operates under the following Title V Permit: facility premise number 14-31-35-0817 and is also currently considered a major stationary source for PSD for SO<sub>2</sub>.

Therefore any increase in emissions by a physical change or change in the method of operation at the E.I. Du Pont Fort Hill Plant above the significant level would trigger a major modification at current major stationary source.

The facility had made modifications to the plant which trigger PSD for SO<sub>2</sub>. The facility entered into a consent decree with US EPA to resolve the subsequent notice of violation. The consent decree requires the facility to control the SO<sub>2</sub> emissions with a scrubber. As a result of the



installation of the hydrogen peroxide assisted scrubber, potential sulfuric acid mist emissions will increase above PSD significant emission threshold levels and conversely NO<sub>x</sub> and SO<sub>2</sub> emissions will be reduced below PSD significant levels.

As a result of the consent decree, BACT analysis was established in that consent decree for SO<sub>2</sub> and is listed in this permitting action.

However, as stated above, sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>) emissions will increase above PSD significant levels (the change due to the installation of the hydrogen peroxide assisted scrubber will be 14.79 tons per year which is 7.79 tons per year over the significant level) and therefore a BACT analysis needs to be completed for sulfuric acid mist.

### Control Technology Review (BACT)

The requirement to conduct a BACT analysis and determination is set forth in section 165(a)(4) of the Clean Air Act (Act), in federal regulations at 40 CFR Part 52.21.(j) and also in OAC rules 3745-31-15(C) and 3745-31-01(S). The BACT requirement is defined as:

“... an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each regulated NSR pollutant which would be emitted from any proposed major stationary source or major modification which the director, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such major stationary source or major modification through application of production processes or available methods, systems and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63. If the director determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be approved by the director instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.”

The BACT process was further formalized in a memorandum by USEPA on December 1, 1987 and in the draft New Source Review Workshop Manual (EPA 1990b) issued on March 15, 1990, by introducing a “top-down” concept for BACT analysis. The top-down process requires that all available control technologies be ranked in descending order of control effectiveness. The BACT process first examines the most stringent - or “top”- alternative. That alternative is established as BACT unless it is demonstrated that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not applicable. If the most stringent technology is eliminated, then the next most stringent alternative is considered, and this process is continued until an acceptable BACT is selected.

The objective of the BACT analysis is to conduct pollutant-specific control technology evaluation per USEPA requirements. The BACT evaluation steps consist of:

- Step 1: identify all control technologies;
- Step 2: eliminate technically infeasible options;
- Step 3: rank remaining control technologies by control effectiveness;
- Step 4: evaluate most effective controls and document results; and
- Step 5: select the most effective control based on energy, environmental and economic impacts (generally the feasible technology that is also considered to be cost effective)

**BACT Analysis: Hydrogen Peroxide Assisted Scrubber Ohio EPA emissions unit number P001.**

See specific details of the BACT analysis in the air permit-to-install application.

In sulfuric acid plants, sulfuric acid mist is removed from the gas stream exiting the acid tower primarily using either candles (vertical tubes) or mesh pads.

Candle filter media primarily consist of fibers, filaments, or wires.

Mist eliminator performance is multi-faceted, comprised of mist collection, particle regeneration (re-entrainment), pressure drop, service life, and maintenance.

There are three types of mist particulate control mechanisms.

One is impaction which involves the trapping of a mist particle in a gas stream when it impacts on a filter. Mesh pads are primarily impaction devices.

The second is interception where the particle is intercepted from the gas stream if it cannot squeeze between two targets or if it touches a target as it passes by.

Impaction and interception are the primary collection methods for removing large mist particles from a gas stream.

The third mechanism is called Brownian Diffusion which involves the likelihood that the sub-micron size particles which are in constant random motion (Brownian movement) will contact a target and be captured as the mist particle passes by in the gas stream.

Brownian Diffusion devices also collect particles by impaction and interception, but are selected for their high efficiency when removing fine sub-micron particles.

The following table was generated based upon RBLC search of data from 01/01/2000 to 08/03/2010, using process code number 62.015, and using Sulfuric Acid Mist as the pollutant. This was done to confirm the above control mechanism information presented in the application.

RBLC's	RBLC's	RBLC's	RBLC's	Process	RBLC's	Control
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ID Number	Corporate/Company & Facility Name	Process Code	Description	Mechanisms
TX-0535	Rhodia Inc; Sulfuric Acid Regeneration Unit	62.015	Sulfuric Acid Regeneration Unit	Filter Media to Capture Acid Mist.
LA-0231	Lake Charles Cogeneration, LLC, Lake Charles Gasification Facility	62.015	Wet Sulfuric Acid Plants (2)	Condensers, Wet Electrostatic Precipitators, and Hydrogen Peroxide Scrubber.
TX-0534	Rhodia Inc.; Rhodia Houston Plant	62.015	Sulfuric Acid Plant No. 8	Mist Eliminator.
LA-0217	E. I. Du Pont De Nemours & CO, Inc; Burnside Plant	62.015	Sulfuric Acid Plant	Brownian Diffusion Mist Elimination Candles in both the Interpass Absorber Tower and the Final Absorber.
LA-0220	E. I. DuPont De Nemours and Company; Dupont Burnside Plant	62.015	Sulfuric Acid Plant	Brownian Diffusion Candles.
NJ-0070	E. I. DuPont De Nemours & Company, Inc; E. I. Dupont Moses Mill Plant	62.015	North Sulfuric Acid Plant Regeneration Plant; and South Sulfuric Acid Regeneration Plant	Mist Eliminators.
TX-0533	E. I. DuPont De Nemours & Company, Inc; Dupont Sulfuric Acid Regeneration Plant – El Paso	62.015	Sulfuric Acid Plant Regeneration Plant	Mist Eliminator.
TX-0519	Agrifos Fertilizer; Agrifos Sulfuric Acid Plant	62.015	H2SO4 Plant Stack (including MMS)	No control listed.
FL-0260	CF Industries, Inc; Plant City Phosphate Complex	62.015	Absorber	Mist Eliminators.
DE-0021	E. I. DuPont De Nemours & Company, Inc; E. I. Dupont Red Lion Plant	62.015	Sulfuric Acid Plant	Brink Mist Eliminator.
NC-0088	PCS Phosphate Company; PCS Phosphate Company	62.015	Sulfuric Acid Plant No. 4	Vertical Tube Mist Eliminator.
TX-0392	Ineos Acrylics, Inc; Lucite Beaumont	62.015	Sulfuric Acid Plant	No control listed.
TX-0377	Rohm and Haas Texas Inc; Deer Park Plant	62.015	HR Davy Stack, HR - 8	Scrubber.
FL-0237	U.S. Agri-Chemicals Corporation; U.S. Agri-Chemicals/FT Meade Plant	62.015	Absorber	Mist Eliminators.
NC-0099	PCS Phosphate Company; PCS Phosphate Company	62.015	Sulfuric Acid Plant No. 3	Fiberglass Packed Mist Eliminators and a Mesh Pad



				installed on the final Absorbing Tower.
FL-0253	IMC Phosphates MP, Inc	62.015	Absorber	No control listed.

The Brownian Diffusion candles were selected as BACT due to their high efficiency in capturing sub-micron particles and their ability to collect large particulate in the gas streams for both the existing acid tower and the tower associated with the installation of the new hydrogen peroxide assisted scrubber.

**Modeling Summary:**

No SO2 air dispersion modeling analysis was conducted due to the consent decree establishing BACT in this permitting action. There was no sulfur acid mist (H2SO4) air dispersion modeling analysis conducted for that pollutant either due to there being no national air quality standard (NAAQS) for sulfuric acid mist emissions.

However, an Ohio EPA air toxics air dispersion modeling analysis was conducted for sulfuric acid mist emissions and this analysis showed compliance with Ohio EPA's air toxic policy.

**Secondary Impact Analysis**

E.I. Du Pont Fort Hill Plant conducted a secondary impact analysis for H2SO4 because the amount of increase due to the change in method operation listed above was over the major modification significant emission threshold levels. That is, the proposed increase is 14.79 tons per year which is 7.79 tons per year over the significant major modification at current stationary source emission level.

As part of that analysis, there are four distinct analyses: growth, air quality impact, soil and vegetation, and visibility impact.

**Growth Analysis:**

Since the change in method of operation is the installation of hydrogen peroxide scrubber to reduce SO2 emissions from an existing emissions unit, no additional permanent jobs would be created and no additional industrial, commercial, or residential growth would result from the change. Since there will not be any community growth related to the change, no additional emissions from the off-site are expected.

**Air Quality Impact Analysis:**

Since there are no NAAQS for H2SO4 and no emissions related to the change in the method of operation, an air quality impact analysis was not assessed.

**Soils and Vegetation:**

Since there are no NAAQS for H<sub>2</sub>SO<sub>4</sub> and no additional emissions from off-site growth are expected, the potential impact on soils and vegetation in the area surrounding the Fort Hill Plant was not assessed.

### **Conclusions**

Based upon the review of the permit to install application and the supporting documentation provided by the applicant, the Ohio EPA staff has determined the installation will comply with all applicable State and Federal environmental regulations and that the requirements for attainment area review are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to the E.I. Du Pont Fort Hill Plant for the installation of a peroxide assisted scrubber pursuant to requirements contained within the above mentioned consent decree.



**DRAFT**

**Division of Air Pollution Control  
Permit-to-Install  
for  
E.I. Du Pont Fort Hill Plant**

Facility ID: 1431350817  
Permit Number: P0105763  
Permit Type: OAC Chapter 3745-31 Modification  
Issued: 8/6/2010  
Effective: To be entered upon final issuance





Division of Air Pollution Control
Permit-to-Install
for
E.I. Du Pont Fort Hill Plant

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## Authorization

Facility ID: 1431350817

Facility Description: sulfuric acid production

Application Number(s): A0037613

Permit Number: P0105763

Permit Description: Permit to Install application required by consent decree, for the purpose of obtaining approval to construct and operate a peroxide assisted scrubbing unit and associated equipment.

Permit Type: OAC Chapter 3745-31 Modification

Permit Fee: \$2,000.00 *DO NOT send payment at this time, subject to change before final issuance*

Issue Date: 8/6/2010

Effective Date: To be entered upon final issuance

This document constitutes issuance to:

E.I. Du Pont Fort Hill Plant  
11215 Brower Rd  
North Bend, OH 45052

of a Permit-to-Install for the emissions unit(s) identified on the following page.

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Hamilton County Dept. of Environmental Services  
250 William Howard Taft Pkwy.  
Cincinnati, OH 45219-2660  
(513)946-7777

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski  
Director



## **Authorization (continued)**

Permit Number: P0105763  
Permit Description: Permit to Install application required by consent decree, for the purpose of obtaining approval to construct and operate a peroxide assisted scrubbing unit and associated equipment.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	Sulfuric Acid Stack
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



## **A. Standard Terms and Conditions**



## **1. Federally Enforceable Standard Terms and Conditions**

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
  - (1) Standard Term and Condition A.2.a), Severability Clause
  - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
  - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
  - (4) Standard Term and Condition A.9., Reporting Requirements
  - (5) Standard Term and Condition A.10., Applicability
  - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
  - (7) Standard Term and Condition A.14., Public Disclosure
  - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
  - (9) Standard Term and Condition A.16., Fees
  - (10) Standard Term and Condition A.17., Permit Transfers

## **2. Severability Clause**

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

## **3. General Requirements**

- a) The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.

- b) 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 federally enforceable terms and conditions of this permit.
- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

#### **4. Monitoring and Related Record Keeping and Reporting Requirements**

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - (1) The date, place (as defined in the permit), and time of sampling or measurements.
  - (2) The date(s) analyses were performed.
  - (3) The company or entity that performed the analyses.
  - (4) The analytical techniques or methods used.
  - (5) The results of such analyses.
  - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Hamilton County Dept. of Environmental Services.

- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Hamilton County Dept. of Environmental Services. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
  - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the Hamilton County Dept. of Environmental Services every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## 5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Hamilton County Dept. of Environmental Services in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

## 6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- c) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:



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- (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- d) The permittee shall submit progress reports to the Hamilton County Dept. of Environmental Services concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

## **7. Best Available Technology**

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

## **8. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

## **9. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Hamilton County Dept. of Environmental Services.

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- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Hamilton County Dept. of Environmental Services. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

## **10. Applicability**

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

## **11. Construction of New Sources(s) and Authorization to Install**

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

## 12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

## 13. Construction Compliance Certification

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.

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- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

**14. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

**15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations**

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**16. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

**17. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

**18. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

**19. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

## **B. Facility-Wide Terms and Conditions**

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1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
  - a) None.

## **C. Emissions Unit Terms and Conditions**



1. P001, Sulfuric Acid Plant

Operations, Property and/or Equipment Description:

Sulfuric acid production process with peroxide scrubber

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(14) through (17) and e)(4).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)	Emissions of Sulfur Dioxide (SO <sub>2</sub> ) shall not exceed 2.2 lbs/ton of acid produced, the production expressed as 100 percent sulfuric acid mist (H <sub>2</sub> SO <sub>4</sub> ), based on a 3-hour rolling average, and 281 tons/yr, based on a 12-month rolling average, except for periods of startup and malfunction.  The particulate emissions (PE) limitation specified by this rule is equivalent to the PE limitation established pursuant to 40 CFR Part 60, Subpart H.  PE (as sulfuric acid mist) shall not exceed 16.43 TPY.  Emissions of nitrogen oxides (NO <sub>x</sub> ) shall not exceed 0.70 lb/hr and 3.07 tons per year.  The requirements of this rule also include compliance with the requirements of Ohio Administrative Code (OAC) rule 3745-17-07(A)(1) and 40 CFR Part 60, Subpart H.
b.	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to 40 CFR Part 60, Subpart H.
c.	OAC rule 3745-17-11	The PE limitation specified by this rule is



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-18-37(KK)	The requirements specified by this rule are less stringent than those established pursuant to OAC rule 3745-31-05(A)(3).
e.	OAC rules 3745-31-10 through 3745-31-20	<p>No later than March 1, 2011 or the Alternate Compliance Date if selected, this emissions unit shall meet a short term SO<sub>2</sub> emission limit of 2.2 lbs/ton of acid produced, the production expressed as 100 percent H<sub>2</sub>SO<sub>4</sub>, based on a 3-hour rolling average, and shall be subject to a Mass Cap of 281 tons, based on a 12-month rolling average, except for periods of startup and malfunction.</p> <p>The PE limitation (as H<sub>2</sub>SO<sub>4</sub>) specified by this rule is equivalent to the PE limitation established pursuant to 40 CFR Part 60, Subpart H.</p> <p>See b)(2)m.</p>
f.	40 CFR Part 60, Subpart H	<p>See d)(5) through d)(8) and f)(1) through f)(3).</p> <p>The SO<sub>2</sub> emission limits specified by this rule are less stringent than those established pursuant to Consent Decree in United States v. E.I. Du Pont Nemours &amp; Co. DOJ case number SD Ohio, Case #1:07-cv-558.</p> <p>Emissions of PE (as sulfuric acid mist) shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, based on a 3-hour rolling average.</p> <p>Visible particulate emissions from the stack serving this emissions unit shall not exhibit 10 percent or greater opacity as a six-minute average.</p>
g.	OAC 3745-31-02 Consent Decree in United States v. E.I. Du Pont Nemours & Co. DOJ case number SD Ohio, Case #1:07-cv-558.	See b)(2)c. through b)(2)h., d)(1) through d)(4), e)(1) through e)(2), f)(5) and g)(1).

(2) Additional Terms and Conditions

- a. The permittee shall maintain a written quality assurance/quality control plan for the continuous SO<sub>2</sub> monitoring system, designed to ensure continuous valid and representative readings of SO<sub>2</sub> emissions in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous SO<sub>2</sub> monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

- b. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

- c. Short-term limits on SO<sub>2</sub> emissions:

For any three-hour period that includes at least one hour during startup, emissions unit P001 shall comply with the emission limits specified below:

3-hour time period (hours after startup commences)	short-term SO <sub>2</sub> emission limit, lbs/ton
1 <sup>st</sup> through 3 <sup>rd</sup> hr	15.0
2 <sup>nd</sup> through 4 <sup>th</sup> hr	15.0
3 <sup>rd</sup> through 5 <sup>th</sup> hr	15.0
4 <sup>th</sup> through 6 <sup>th</sup> hr	15.0
5 <sup>th</sup> through 7 <sup>th</sup> hr	15.0
6 <sup>th</sup> through 8 <sup>th</sup> hr	15.0
7 <sup>th</sup> through 9 <sup>th</sup> hr	15.0
8 <sup>th</sup> through 10 <sup>th</sup> hr	15.0
9 <sup>th</sup> through 11 <sup>th</sup> hr	15.0
10 <sup>th</sup> through 12 <sup>th</sup> hr	15.0
11 <sup>th</sup> through 13 <sup>th</sup> hr	12.0
12 <sup>th</sup> through 14 <sup>th</sup> hr	9.0
13 <sup>th</sup> through 15 <sup>th</sup> hr	6.0
14 <sup>th</sup> through 16 <sup>th</sup> hr	6.0
15 <sup>th</sup> through 17 <sup>th</sup> hr	6.0
16 <sup>th</sup> through 18 <sup>th</sup> hr	6.0
17 <sup>th</sup> through 19 <sup>th</sup> hr	6.0
18 <sup>th</sup> through 20 <sup>th</sup> hr	6.0
19 <sup>th</sup> through 21 <sup>st</sup> hr	6.0
20 <sup>th</sup> through 22 <sup>nd</sup> hr	6.0
21 <sup>st</sup> through 23 <sup>rd</sup> hr	6.0
22 <sup>nd</sup> through 24 <sup>th</sup> hr	6.0

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23 <sup>rd</sup> through 25 <sup>th</sup> hr	4.7
24 <sup>th</sup> through 26 <sup>th</sup> hr	3.5

d. SO<sub>2</sub> Emission Limits During Startup:

No later than March 1, 2011, that short-term emission limit shall apply at all times (including periods of Shutdown), except for periods of startup and malfunction.

The short term SO<sub>2</sub> emission limits in c. above shall apply during any malfunction period that occurs during startup, unless the total mass of SO<sub>2</sub> emissions that result from keeping the plant in operation during and after the malfunction is in good faith estimated to be less than the total SO<sub>2</sub> emissions that would result from shutting down the plant during malfunction and subsequently having another startup at the plant. Consistent with best practices the permittee shall take all steps practicable to minimize the frequency of occurrence of startup and malfunction and the duration of each startup and malfunction.

e. This emissions unit shall meet an interim Short-term Limit for SO<sub>2</sub> emissions of 20.0 lbs/ton, beginning no later than the first operation of this emissions unit after its first scheduled maintenance turnaround that occurs after the effective date of the Consent Decree and continuing until March 1, 2012, or the Alternate Compliance Date if selected. After this date, the permittee shall comply with the emission limitations in b).

f. Acid Mist Emission Limits:

This emissions unit shall comply with the NSPS, Subpart H sulfuric acid mist emission limitation of 0.15 lbs/ton of 100% Sulfuric Acid Produced, as set forth at 40 CFR 60.83, no later than March 1, 2011 or the Alternate Compliance Date if selected.

g. NSPS Applicability:

DuPont Fort Hill Ohio EPA Premise Number 1431350817 (the permittee) shall be considered an affected facility for purposes of the New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart H, no later than March 1, 2011 or the Alternate Compliance Date if selected. After such date, the facility shall comply with all applicable requirements for affected facilities under the NSPS 40 CFR Part 60, Subparts A and H, or with the requirements of this permit, if more stringent.

h. O & M Plans

i. The permittee shall prepare an Operation and Maintenance Plan (O&M Plan) for this emission unit. The O&M Plan shall describe operating and maintenance procedures necessary to:

- (a) minimize the frequency of plant shutdowns (thereby reducing the number of plant startups), and

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- (b) minimize the quantity of emissions of all pollutants at all times, including periods of startup and malfunction.
- ii. The permittee shall submit a proposed O&M Plan to USEPA and Ohio EPA no later than 120 days before March 1, 2011 or the Alternate Compliance Date if selected.
- iii. On and after March 1, 2011 or the Alternate Compliance Date if selected, the permittee shall comply with the O & M Plan unless and until such O&M Plan is disapproved or approved with modifications. Once an O&M Plan has been approved or approved with modifications, the permittee shall comply with that O&M Plan as approved. Any failure by USEPA to act on a submitted O&M Plan shall not extend the compliance dates specified above nor excuse any non-compliance with any emission limit or Mass Cap specified in the permit.
- iv. No less frequently than once every three years, the permittee shall review and update as necessary, its approved O&M Plan for this emission unit. Within 30 days after such review, the permittee shall provide written notice to U.S. EPA and Ohio EPA either:
  - (a) of changes made to the O&M Plan; or
  - (b) that no change to the O&M Plan was required.
- v. U. S. EPA may, after a reasonable opportunity for review and comment by Ohio EPA, approve, disapprove, or approve with modifications, any changes to an O&M Plan. The permittee shall comply with each changed O&M Plan immediately upon submission of these changes unless and until the changes are disapproved or approved with modifications. Any failure by U.S. EPA to act on submitted changes to an O&M Plan shall not extend the compliance dates specified above nor excuse any non-compliance with any emission limit or Mass Cap specified in the permit.
- i. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.
- j. Stack height shall be no lower than 175 feet above ground level.
- k. At all times, including periods of startup, shutdown and malfunction, the permittee shall to the extent practicable maintain and operate this emission unit, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, consistent with 40 CFR 60.11(d).
- l. The Best Available Control Technology (BACT) emission limitations for SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> were established under the Consent Decree in United States v. E.I. Du Pont Nemours & Co. DOJ case number SD Ohio, Case #1:07-cv-558.
- m. The Best Available Control Technology (BACT) limitation for H<sub>2</sub>SO<sub>4</sub> is the use of Brown Diffusion candles due to their high efficiency in capturing sub-micron

particles and their ability to collect large particulate in the gas streams of both towers.

c) Operational Restrictions

None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall install and make operational a SO<sub>2</sub> continuous emissions monitoring system (CEMS). Except during CEMS breakdowns, repairs, calibration checks and zero span adjustments, the CEMS shall be in continuous operation, and shall be used to demonstrate compliance with the SO<sub>2</sub> emission limits and Mass caps. The permittee shall monitor and record SO<sub>2</sub> emissions from this emissions unit as follows:
  - a. The SO<sub>2</sub> CEMS shall continuously monitor and record the 3-hour arithmetic average SO<sub>2</sub> emission rate in units of pounds of SO<sub>2</sub> emitted per ton of 100% acid produced, at all times when the emissions unit is in operation.
  - b. By the fifteenth day of each month, the permittee shall determine and record the total mass of SO<sub>2</sub> emitted by emissions unit P001 in the 12-month period preceding the current month.
  - c. The CEMS shall be installed, certified, calibrated, maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B, Performance Specification 2, and Part 60, Appendix F, Procedure 1. If an oxygen monitor is necessary, it shall meet 40 CFR Part 60, Appendix B Performance Specification 3. If a tail gas volumetric flow rate monitor is necessary, it shall meet 40 CFR Part 60, Appendix B Performance Specification 6.
- (2) The permittee shall submit to USEPA for review and approval a written SO<sub>2</sub> CEMS Plan, no later than 180 days after the Effective Date of the Consent Decree. The SO<sub>2</sub> CEMS Plan shall describe how the permittee proposes to implement the monitoring requirements of d)(1) above. Each SO<sub>2</sub> CEMS Plan shall include procedures for accurately monitoring pounds of SO<sub>2</sub> emissions per ton of 100% sulfuric acid production and the SO<sub>2</sub> mass emission rate. U.S. EPA will review the CEMS Plan and may, after a reasonable opportunity for review and comment by Ohio EPA, approve it, disapprove it, or approve it with modifications. Such approval, disapproval, or approval with modifications shall be in writing. If the SO<sub>2</sub> CEMS Plan is disapproved, within 60 days of receipt of the disapproval, the permittee shall submit a revised SO<sub>2</sub> CEMS Plan that corrects deficiencies noted in the disapproval. Once an SO<sub>2</sub> CEMS Plan has been approved or approved with modifications, the permittee shall, upon installation of the SO<sub>2</sub> CEMS, implement and thereafter comply with the SO<sub>2</sub> CEMS Plan. Any failure by U.S. EPA to act on a submitted SO<sub>2</sub> CEMS Plan shall neither extend the dates by which the SO<sub>2</sub> CEMS must be installed nor excuse any non-compliance with the SO<sub>2</sub> CEMS monitoring requirements of d) of this permit. Approval of each SO<sub>2</sub> CEMS Plan shall constitute approval of an alternative monitoring plan for purposes of NSPS, per 40 CFR 60.13(i).

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- (3) The permittee shall take all steps necessary to avoid CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintain an on-site inventory of spare parts or other supplies necessary to make rapid repairs to the equipment.
- (4) In the event of CEMS downtime lasting longer than 24 hours, the permittee shall demonstrate compliance with the applicable SO<sub>2</sub> emission limits and Mass Caps in this permit using suitable methods, e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13. Reich tests or tests using other suitable methods shall be conducted and analyzed once every three hours while this emissions unit is operating until the CEMS resumes operation. Reich test data or data from other suitable test methods shall be converted to units of lbs/ton using best engineering judgment. In the event of downtime of the flow monitor or other equipment necessary for a Reich test or other suitable test method, the permittee shall estimate and record the SO<sub>2</sub> mass emission rate in accordance with best engineering judgment.
- (5) The permittee shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF = k[(1.000 - 0.015r)/(r - s)]$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm).

k = constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under paragraph (a) of 40 CFR Part 60, Subpart H, section 60.84. (NSPS)

- (6) The owner or operator shall record all conversion factors and values under paragraph (b) of this section from which they were computed (i.e., CF, r, and s).
- (7) Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO<sub>2</sub> emission rates in terms of the standard of 40 CFR Part 60, Subpart H. This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO<sub>2</sub>, O<sub>2</sub>, and CO<sub>2</sub> (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Appendix B,

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Performance Specifications 2 and 3 of 40 CFR Part 60. The calibration procedure and span value for the SO<sub>2</sub> monitor shall be as specified in paragraph (b) of 40 CFR Part 60, Subpart H, section 60.84. The span value for CO<sub>2</sub> (if required) shall be 10 percent and for O<sub>2</sub> shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO<sub>2</sub> emission rate as follows:

$$E_s = (C_s S) / [0.265 - (0.126 \%O_2) - (A \%CO_2)]$$

where:

E<sub>s</sub> = emission rate of SO<sub>2</sub>, kg/metric ton (lb/ton) of 100 percent of H<sub>2</sub>SO<sub>4</sub> produced.

C<sub>s</sub> = concentration of SO<sub>2</sub>, kg/dscm (lb/dscf).

S = acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H<sub>2</sub>SO<sub>4</sub> produced.

%O<sub>2</sub> = oxygen concentration, percent dry basis.

A = auxiliary fuel factor,

= 0.00 for no fuel.

= 0.0226 for methane.

= 0.0217 for natural gas.

= 0.0196 for propane.

= 0.0172 for No 2 oil.

= 0.0161 for No 6 oil.

= 0.0148 for coal.

= 0.0126 for coke.

%CO<sub>2</sub> = carbon dioxide concentration, percent dry basis.

Note: It is necessary in some cases to convert measured concentration units to other units for these calculations:

Use the following table for such conversions:

From—	To—	Multiply by—
g/scm	kg/scm	10 <sup>-3</sup>
mg/scm	kg/scm	10 <sup>-6</sup>
ppm (SO <sub>2</sub> )	kg/scm	2.660 × 10 <sup>-6</sup>
ppm (SO <sub>2</sub> )	lb/scf	1.660 × 10 <sup>-7</sup>

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- (8) For the purpose of reports under 40 CFR 60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards of 40 CFR Part 60, Subpart H, section 60.82.
- (9) The permittee shall maintain on-site, the document(s) of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous SO<sub>2</sub> monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 2. The letter(s)/document(s) of certification shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

- (10) The permittee shall operate and maintain equipment to continuously monitor and record SO<sub>2</sub> emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous SO<sub>2</sub> monitoring system including, but not limited to:

- a. emissions of SO<sub>2</sub> in parts per million on an instantaneous (one-minute) basis;
- b. emissions of SO<sub>2</sub> in pounds per hour and in all units of the applicable standard(s) in the appropriate averaging period;
- c. results of quarterly cylinder gas audits;
- d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- f. hours of operation of the emissions unit, continuous SO<sub>2</sub> monitoring system, and control equipment;
- g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous SO<sub>2</sub> monitoring system;
- h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous SO<sub>2</sub> monitoring system; as well as, and
- i. the reason (if known) and the corrective actions taken (if any) for each such event in (g.) and (h.).

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- (11) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (12) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber and the liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (13) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute) and pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber, flow rate and pH on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

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- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. a description of the corrective action;
- b. the date the corrective action was completed;
- c. the date and time the deviation ended;
- d. the total period of time (in minutes) during which there was a deviation;
- e. the pressure drop and flow rate immediately after the corrective action was implemented; and
- f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable SO<sub>2</sub> and acid mist emission rates for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (14) The permit-to install (PTI) application for this/these emissions unit(s), P001, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other

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Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
  - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
  - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: sulfuric acid

TLV (mg/m<sup>3</sup>): 0.2

Maximum Hourly Emission Rate (lbs/hr): 3.75

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 3.26

MAGLC (ug/m<sup>3</sup>): 4.76

The permittee, has demonstrated that emissions of sulfuric acid from emissions unit(s) P001, is calculated to be less than eighty per cent of the maximum acceptable ground

level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (15) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
  - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final permit-to install (PTI) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (16) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F),

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initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

- d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

- (17) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

e) Reporting Requirements

- (1) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous SO<sub>2</sub> monitoring system:

- a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR Parts 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of SO<sub>2</sub> emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapter 3745-18, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).
- b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
  - i. the facility name and address;
  - ii. the manufacturer and model number of the continuous SO<sub>2</sub> and other associated monitors;
  - iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;
  - iv. the excess emissions report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified above;
  - v. the total SO<sub>2</sub> emissions for the calendar quarter (tons);
  - vi. the total operating time (hours) of the emissions unit;

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- vii. the total operating time of the continuous SO<sub>2</sub> monitoring system while the emissions unit was in operation;
- viii. results and date of quarterly cylinder gas audits;
- ix. unless previously submitted, results and date of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
- x. unless previously submitted, the results of any relative accuracy test audit showing the continuous SO<sub>2</sub> monitor out-of-control and the compliant results following any corrective actions;
- xi. the date, time, and duration of any/each malfunction\*\* of the continuous SO<sub>2</sub> monitoring system, emissions unit, and/or control equipment;
- xii. the date, time, and duration of any downtime\*\* of the continuous SO<sub>2</sub> monitoring system and/or control equipment while the emissions unit was in operation; and
- xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi.) and (xii.).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

\*\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit.

- (2) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its wet scrubber:
  - a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate or pH was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range for each parameter following any required compliance demonstration;
  - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
  - c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;
  - d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into

compliance with the acceptable range, was determined to be necessary and was not taken; and

- e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.
- (3) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
- (4) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.
- f) Testing Requirements
- (1) In conducting the performance tests required in 40 CFR 60.8, the permittee shall use as reference methods and procedures the test methods in Appendix A of 40 CFR Part 60 or other methods and procedures as specified in 40 CFR 60.85, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of 40 CFR 60.85.
- (2) The owner or operator shall determine compliance with the SO<sub>2</sub> acid mist, and visible emission standards in this permit and 40 CFR 60.82 and 60.83 as follows:
- a. The emission rate (E) of acid mist or SO<sub>2</sub> shall be computed for each run using the following equation:
- $$E = (CQ_{sd})/(PK)$$
- where:
- E = emission rate of acid mist or SO<sub>2</sub> kg/metric ton (lb/ton) of 100 percent H<sub>2</sub>SO<sub>4</sub> produced.
- C = concentration of acid mist or SO<sub>2</sub>, g/dscm (lb/dscf).
- Q<sub>sd</sub> = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
- P = production rate of 100 percent H<sub>2</sub>SO<sub>4</sub>, metric ton/hr (ton/hr).
- K = conversion factor, 1000 g/kg (1.0 lb/lb).
- b. Method 8 shall be used to determine the acid mist and SO<sub>2</sub> concentrations (C's) and the volumetric flow rate (Q<sub>sd</sub>) of the effluent gas. The moisture content may

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- be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).
- c. Suitable methods shall be used to determine the production rate (P) of 100 percent H<sub>2</sub>SO<sub>4</sub> for each run. Material balance over the production system shall be used to confirm the production rate.
  - d. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.
- (3) The owner or operator may use the following as alternatives to the reference methods and procedures specified in 40 CFR 60.85:
- a. If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:
    - i. The integrated technique of Method 3 is used to determine the O<sub>2</sub> concentration and, if required, CO<sub>2</sub> concentration.
    - ii. The SO<sub>2</sub> or acid mist emission rate is calculated as described in 40 CFR 60.84(d), substituting the acid mist concentration for C<sub>s</sub> as appropriate.
- (4) Compliance with the emission limitations specified in b)(1) shall be determined in accordance with the following methods:
- a. Emission Limitations:

Emissions of Sulfur Dioxide (SO<sub>2</sub>) shall not exceed 2.2 lbs/ton, based on a 3-hour rolling average and 281 tons/yr, based on a 12-month rolling average, except during periods of start-up and malfunction.

Applicable Compliance Method:

Ongoing compliance with the SO<sub>2</sub> emission limitations contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.
  - b. Emission Limitation:

Emissions of PE (as sulfuric acid mist) shall not exceed 0.15 lb/ton of 100% sulfuric acid produced, based on a 3-hour rolling average. PE (as sulfuric acid mist) shall not exceed 16.43 TPY.

Applicable Compliance Method:

Ongoing compliance with the PE limitations contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this

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permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

c. Emission Limitations:

Emissions of nitrogen oxides (NO<sub>x</sub>) shall not exceed 0.70 lb/hr and 3.07 tons per year.

Applicable Compliance Methods:

The hourly and annual emissions of NO<sub>x</sub> shall be calculated using the following equations:

$$\text{Lbs/hr of NO}_x = (A) \times (B)$$

$$\text{Tons/yr of NO}_x = (A) \times (B) \times (C) \times 1 \text{ ton}/2000 \text{ lbs}$$

Where,

A = maximum hourly amount of acid produced;

B = emission factor of 0.028 lbs of NO<sub>x</sub>/ton of 100% acid produced, from PTI application #A0037613, received 11/23/2009; and

C = maximum annual hours operated.

(5) The permittee shall conduct, or have conducted, the following performance tests, and shall submit to U. S. EPA and to the Ohio EPA a report documenting the results of the performance tests, no later than 180 days after March 1, 2011 for compliance with the short-term SO<sub>2</sub> and acid mist emission limits:

a. A performance test measuring the emission rate of acid mist from this emissions unit in accordance with the applicable requirements of 40 CFR Part 60, Appendix A, Reference Method 8, or an alternative method approved by U.S. EPA. This performance test shall be used to demonstrate compliance with the acid mist emission limit and may serve as the NSPS performance test required under 40 CFR 60.8. The permittee shall take all steps necessary to assure accurate measurements of 100% sulfuric acid production during each test run.

b. A performance test measuring the emission rate of SO<sub>2</sub> from this emissions unit, in accordance with the applicable requirements of 40 CFR Part 60 Appendix A, Reference Method 8, and Part 60 Appendix B, Performance Specification 2. This test shall consist of at least nine reference method test runs and may serve as the CEMS relative accuracy test required under Performance Specification 2. If applicable, this test may also serve as the NSPS performance test required under 40 CFR 60.8. The permittee shall take all steps, necessary to assure accurate measurements of 100% sulfuric acid production during each test run.

No later than 30 days before any performance test required is conducted, the permittee shall provide notice of its intent to conduct such test to USEPA and the Ohio EPA. This notification shall include the scheduled date of the test, an emissions test protocol, a description of the planned operating rate and operating conditions, and the procedures that will be used to measure 100% sulfuric acid production. If USEPA or the Ohio EPA

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requires any adjustment of the testing protocol or operating conditions, the permittee shall make such adjustments and conduct the performance test in conformity with USEPA's and the Ohio EPA's requirements.

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

g) **Miscellaneous Requirements**

(1) **Emission Credit Generation:**

The permittee will neither generate nor use any SO<sub>2</sub> or acid mist emission reductions resulting from any projects conducted pursuant to the Consent Decree listed in b) for the purpose of obtaining netting credits or offsets in any Prevention of Significant Deterioration (PSD), major NSR, and/or minor NSR permit or permit proceeding. However, nothing in this paragraph shall be construed to limit the generation and use of emissions credits respecting SO<sub>2</sub> or acid mist emission reductions that are either more stringent than the emissions limits established under the Consent Decree listed in b) or achieved from sources not covered under the Consent Decree listed in b), as well as reductions of any other pollutant at any source.