New York State Department of Environmental Conservation  
Permit Review Report  
Permit ID: 9-1402-00435/00037  
Renewal Number: 2  
10/05/2017  

Facility Identification Data  
Name: PVS CHEMICAL SOLUTIONS INC  
Address: 55 LEE ST  
BUFFALO, NY 14210  

Owner/Firm  
Name: PVS CHEMICAL SOLUTIONS INC  
Address: 55 LEE ST  
BUFFALO, NY 14210, USA  
Owner Classification: Corporation/Partnership  

Permit Contacts  
Division of Environmental Permits:  
Name: KERRI L PICKARD-DEPRIEST  
Address: NYSDEC - Region 9 - Buffalo  
270 Michigan Ave  
Buffalo, NY 14203  
Phone:  

Division of Air Resources:  
Name: CHERYL WEBSTER  
Address: NYSDEC - REGION 9  
270 MICHIGAN AVE  
BUFFALO, NY 14203-2915  

Air Permitting Facility Owner Contact:  
Name: CHRISTOPHER J CANCILLA  
Address: PVS CHEMICAL SOLUTIONS INC  
55 LEE ST  
BUFFALO, NY 14210  
Phone: 7168255762  

Permit Description  
Introduction  
The Title V operating air permit is intended to be a document containing only enforceable terms and conditions as well as any additional information, such as the identification of emission units, emission points, emission sources and processes, that makes the terms meaningful. 40 CFR Part 70.7(a)(5) requires that each Title V permit have an accompanying "...statement that sets forth the legal and factual basis for the draft permit conditions". The purpose for this permit review report is to satisfy the above requirement by providing pertinent details regarding the permit/application data and permit conditions in a more easily understandable format. This report will also include background narrative and explanations of regulatory decisions made by the reviewer. It should be emphasized that this permit review report, while based on information contained in the permit, is a separate document and is not itself an enforceable term and condition of the permit.  

Summary Description of Proposed Project  
This project consists of the renewal of the Title V permit issued to PVS Chemical Solutions, Inc.
Changes within this permit renewal include:

- Addition of a sulfuric acid (expressed as 100 percent sulfuric acid) production limit of 300 tons per day. By accepting this limit, the facility will not be subject to continuous stack monitoring per 6NYCRR Part 224.4(a)(2) for existing emission sources.
- Addition of a requirement cited under 6NYCRR Part 200.6 to assure compliance with the 1-hour sulfur dioxide National Ambient Air Quality Standard (NAAQS) by maintaining a minimum scrubber efficiency.
- Removal of emission unit U-00070, which had consisted of the aqueous diethanolamine sulfur dioxide adduct production process.
- A lowered sulfur in fuel limit per 6NYCRR Part 225 which applies to the use of distillate oil in the facility boiler. The new limit of 0.0015 percent sulfur by weight is stricter than the federal limit of 0.5 percent in 40CFR60.42c (d).

The sulfuric acid production process is the most significant part of the facility and emits approximately 175 tons per year of sulfur dioxide. The process involves thermally decomposing spent sulfuric acid or burning elemental sulfur in the presence of excess oxygen. The sulfur dioxide is then catalytically converted to sulfur trioxide and absorbed in strong sulfuric acid to produce saleable commercial grades of sulfuric acid and fuming sulfuric acid (oleum)(SO3). Other operations include the receipt via truck or rail of spent sulfuric acid for recovery and production of ammonium thiosulfate solution and aqueous sodium bisulfite. The facility was built in the 1950’s and the sulfuric acid process has undergone only in-kind replacement of components, especially on the “wet” side (tail end) of the operation from the absorbers to finished product. Some items have been replaced at the beginning of the process, include the spent sulfuric acid recovery system precipitator. The converters have not been replaced, only refurbished with new refractory brick and catalyst. The vanadium catalyst is the same type of catalyst as originally used; it typically lasts ten years. None of the changes would have affected the production/emission rate because the converters are the limiting factor and without evidence to the contrary, no modification as defined in 6NYCRR Part 200 has occurred.

This facility has been classified as an existing source and regulated under 6NYCRR Part 212 “General Process Emissions” for control of sulfur dioxide and sulfuric acid mist and maintains a tail gas scrubber to meet the minimum 94% control efficiency requirement in §212-2.3(a) Table 3 for an ERP of 550 pounds per hour. The emissions after control are also below that established by 6NYCRR Part 224 “Sulfuric and Nitric Acid Plants” and the New Source Performance Standard (NSPS) 40CFR60 Subpart H “Standards of Performance for Sulfuric Acid Plants, of 4 pounds of sulfur dioxide per ton sulfuric acid produced and 0.50 pounds of sulfuric acid mist per ton sulfuric acid produced. 6NYCRR Part 224 applies to new or modified sulfuric and nitric acid plants for which an
application for a permit to construct was received after August 17, 1971 and has a continuous emission monitoring requirement for those existing facilities producing greater than 300 tons of sulfuric acid per day. NSPS 40CFR60 Subpart H also applies to sulfuric acid plants that commence construction or modification after August 17, 1971 and has no requirements for existing facilities. Part 224 and Subpart H were based on the efficiency of dual absorption plants, reflecting the extra recovery provided by the addition of an SO3 absorber. Dual absorption plants are capable of 99.7+% efficiency typically resulting with the 4 pounds of sulfur dioxide per ton of dry acid produced compared to the approximately 95% efficiency of single absorption plants, requiring tail gas controls. The PVS sulfuric acid process is considered a single absorption operation.

A permit condition is being proposed to ensure production is monitored and remains below 300 tons of sulfuric acid per day. According to §224.4(a)(2), for existing emission sources, if the facility production capacity is greater than 300 tons per day, continuous stack monitoring is required. An extensive instrumentation array would be required to satisfy the Part 224 continuous stack monitoring requirements, including molten sulfur mass flow meters and sulfur dioxide analyzers and flow meters at the front end of the plant, and a sulfur dioxide analyzer and flow meter at the scrubber stack, with questionable accuracy and lots of operation and maintenance costs associated with the instrumentation. Based on PVS’s graphical representation of weekly production data for the years since 2001, the plant has never exceeded the 300 tons per day production threshold (on a 2100 tons/week total basis). PVS determines their production rate on a weekly basis (to lessen the inaccuracies introduced by large off-site shipments) using an inventory system on 14 storage tanks, with a radar level device, and up to 20 trailers/container.

### Attainment Status

PVS CHEMICAL SOLUTIONS INC is located in the town of BUFFALO in the county of ERIE. The attainment status for this location is provided below. (Areas classified as attainment are those that meet all ambient air quality standards for a designated criteria air pollutant.)

<table>
<thead>
<tr>
<th>Criteria Pollutant</th>
<th>Attainment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter (PM)</td>
<td>ATTAINMENT</td>
</tr>
<tr>
<td>Particulate Matters &lt;10µ in diameter (PM10)</td>
<td>ATTAINMENT</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO2)</td>
<td>ATTAINMENT</td>
</tr>
<tr>
<td>Ozone*</td>
<td>MARGINAL NON-ATTAINMENT</td>
</tr>
<tr>
<td>Oxides of Nitrogen (NOx)**</td>
<td>ATTAINMENT</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>ATTAINMENT</td>
</tr>
</tbody>
</table>
Ozone is regulated in terms of the emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NOx) which are ozone precursors.

**NOx has a separate ambient air quality standard in addition to being an ozone precursor.**

**Facility Description:**
PVS Chemicals Inc. (NY) is a manufacturer of all strengths and grades of sulfuric acid and oleum using the contact process. Other substances produced and stored at this facility include ammonium thiosulfate, sodium bisulfite, etc. Raw materials for these processes are molten sulfur, spent sulfuric acid, anhydrous ammonia, sodium hydroxide, etc. This facility is also a shipping terminal for hydrochloric acid.

**Permit Structure and Description of Operations**
The Title V permit for PVS CHEMICAL SOLUTIONS INC is structured in terms of the following hierarchy: facility, emission unit, emission point, emission source and process. A facility is defined as all emission sources located at one or more adjacent or contiguous properties owned or operated by the same person or persons under common control. The facility is subdivided into one or more emission units (EU). Emission units are defined as any part or activity of a stationary facility that emits or has the potential to emit any federal or state regulated air pollutant. An emission unit is represented as a grouping of processes (defined as any activity involving one or more emission sources (ES) that emits or has the potential to emit any federal or state regulated air pollutant). An emission source is defined as any apparatus, contrivance or machine capable of causing emissions of any air contaminant to the outdoor atmosphere, including any appurtenant exhaust system or air cleaning device. [NOTE: Indirect sources of air contamination as defined in 6 NYCRR Part 203 (i.e. parking lots) are excluded from this definition]. The applicant is required to identify the principal piece of equipment (i.e., emission source) that directly results in or controls the emission of federal or state regulated air pollutants from an activity (i.e., process). Emission sources are categorized by the following types:
- Combustion - devices which burn fuel to generate heat, steam or power
- Incinerator - devices which burn waste material for disposal
- Control - emission control devices
- Process - any device or contrivance which may emit air contaminants that is not included in the above categories.

**PVS CHEMICAL SOLUTIONS INC** is defined by the following emission unit(s):

**Emission unit  U00010  -** Spent sulfuric acid is received at PVS in tank trailer and tank car quantities and transferred into one of three storage tanks. This emission unit is comprised of three bulk chemical tanks storing spent sulfuric acid. All three tanks vent to atmosphere. Spent sulfuric acid is generally comprised of 60%-95% H2SO4, with hydrocarbons and water as contaminants.

**Emission unit  U00010  is associated with the following emission points (EP):**
00102, 00103, 00113

**Process: 001 is located at YARD -** Spent sulfuric acid is received from off-site in railroad tank cars and in tank trailers. As spent sulfuric acid is transferred into a storage tank, the tank is vented to the atmosphere through a flame arrester. There are three spent sulfuric acid storage tanks for this process on site which can receive spent sulfuric acid at any time of day or night.

**Emission unit  U00020  -** Sulfur dioxide (SO2) is generated by thermally decomposing spent sulfuric acid (H2SO4) or by burning elemental sulfur in the presence of excess oxygen. The SO2 is then catalytically converted to sulfur trioxide (SO3) and absorbed in strong sulfuric acid to produce saleable commercial...
Emission unit U00020 is associated with the following emission points (EP):
00005
Process: 002 is located at GROUND, Building B3 - Sulfur dioxide (SO2) is generated by thermally decomposing spent sulfuric acid (H2SO4) or by burning elemental sulfur in the presence of excess oxygen. The SO2 is then catalytically converted to sulfur trioxide (SO3) and absorbed in strong sulfuric acid to produce saleable commercial grades of sulfuric acid and fuming sulfuric acid (oleum).

Emission unit U00030 - Molten sulfur is received from off-site and transferred into storage vessels to satisfy production demand. Also, during the course of production and sales, sulfuric acid storage tanks are filled and emptied. This emission unit is comprised of all molten sulfur and sulfuric acid storage tanks at PVS.

Emission unit U00030 is associated with the following emission points (EP):
00018, 00019, 00020, 00022, 00023, 00029
Process: 003 is located at YARD - Molten sulfur is received from off-site in railroad tank cars and in tank trailers. As molten sulfur is transferred into a storage tank, the tank is vented to the atmosphere. Some breathing losses also occur at the storage vessel. There are two molten sulfur storage vessels on site which can receive molten sulfur at any time of day or night.

Process: 004 is located at YARD - As sulfuric acid is added to a storage vessel, the storage vessel is vented to the atmosphere. Some breathing losses also occur at the storage vessel. There are a total of four vessels storing sulfuric acid.

Emission unit U00040 - As sales distribution mandates, sulfur trioxide (SO3) is stripped from a stream of fuming sulfuric acid in an evaporator. The SO3 is combined with pure water in specialty constructed absorption columns to form high purity sulfuric acid. The high purity sulfuric acid processes are connected to a scrubber which removes free SO3 and H2SO4 aerosol from the gas stream before being emitted. There are several tanks associated with the high purity sulfuric acid process.

Emission unit U00040 is associated with the following emission points (EP):
00006, 00007, 00141, 00142, 00143, 00144, 00147, 00148, 00149, 00341, 00342
Process: 005 is located at YARD - Gaseous sulfur trioxide (SO3) is absorbed into strong sulfuric acid in two absorption towers to form fuming sulfuric acid (oleum). The two pump tanks used for circulating the oleum over the towers are vented to the oleum scrubber.

Process: 009 is located at GROUND, Building B2 - As sales distribution mandates, sulfur trioxide (SO3) is stripped from a stream of fuming sulfuric acid in an evaporator. The SO3 is mixed with clean dry air is then combined with pure water in specialty constructed absorption columns to form high purity sulfuric acid. As the dry air exits the process, it carries sulfuric acid mist. The specialty construction absorption columns are vented to the oleum scrubbers to remove acid mist carryover. Finished product is transferred to a series of storage tanks which are vented to atmosphere.

Emission unit U00060 - Sulfur dioxide, ammonia and water are combined to form an aqueous mixture of
ammonium sulfite and ammonium bisulfite. All ammonium bisulfite is then driven to sulfite with the addition of ammonia. The ammonium sulfite is heated and excess sulfur is added to produce ammonium thiosulfate solution. All process gases are vented through a scrubber system before being exhausted to atmosphere.

Emission unit U00060 is associated with the following emission points (EP):
00160
Process: 012 is located at GROUND, Building B4 - Sulfur dioxide, ammonia and water are combined in a gassing tank to form an aqueous mixture of ammonium sulfite and ammonium bisulfite. This is an intermediate in the production of ammonium thiosulfate solution. All process gasses from the gassing tank are vented through an alkaline scrubber to remove SO2 and an acidic scrubber to remove NH3. Ammonia is used to neutralize an aqueous mixture of ammonium sulfite and ammonium bisulfite in the digest tank. After neutralization, the solution is heated and molten sulfur is added to the mixture to form ammonium thiosulfate solution. All process gasses are vented through an alkaline scrubber to remove SO2 and an acidic scrubber to remove NH3.

Emission unit U00080 - Aqueous sodium bisulfite is formed by combining sulfur dioxide and water with sodium carbonate or sodium hydroxide. Reaction is carried out in packed towers with gas flowing countercurrent to liquid followed by liquid finishing in tanks to meet product specifications. Process gasses are vented to an alkaline scrubber to remove SO2. This emission unit includes a vent manifold for three sodium bisulfite storage tanks and a bulk sodium carbonate receiving system.

Emission unit U00080 is associated with the following emission points (EP):
00180, 00181, 00182
Process: 015 is located at Building B3 - Aqueous sodium bisulfite is formed by combining sulfur dioxide and water with sodium carbonate or sodium hydroxide. Reaction is carried out in packed towers with gas flowing countercurrent to liquid followed by liquid finishing in tanks to meet product specifications. Process gasses are vented to an alkaline scrubber to remove SO2. As sodium bisulfite solution is produced, it is transferred to three storages which are vented through a common vent header to atmosphere.

Process: 016 is located at Building B3 - Sodium carbonate is received in bulk dry powder form and is transferred into storage via pneumatic conveyor. A two stage spray scrubber is used to remove particles from the loading air system.

Emission unit U00050 - A series of 31% and 35% hydrochloric acid storage tanks are connected in a vent manifold and vented through a wet scrubber. Activities at this emission unit include transfers to and from the storage tanks.

Emission unit U00050 is associated with the following emission points (EP):
00150
Process: 010 is located at YARD - Hydrochloric acid at strengths ranging from 30% to 35% is received in railroad tank cars and tank trailers. The HCL transferred from the shipping containers into a series of three storage tanks all connected with a common vent header. The vent header vents through a scrubber before being exhausted to atmosphere.

Process: 011 is located at YARD - Hydrochloric acid at strengths ranging from 30% to 35% is received in railroad tank cars and tank trailers. The HCL is transferred from the shipping containers into a series of nine
storage tanks. The HCL is then transferred into shipping vessels for distribution. Transfer operations are vented back to the vent header and then through a scrubber before being exhausted to atmosphere.

Emission unit U00090 - Natural gas or #2/#3 fuel oil is burned in a 25.0 MBtu/hr package boiler to generate steam for the facility.

Emission unit U00090 is associated with the following emission points (EP): 00028
Process: 017 is located at GROUND, Building B1 - Natural gas is burned in a 25.0 million Btu/hr fire tube package boiler to generate steam for the facility. Although boiler is rated for 25.0 million Btu/hr, boiler routinely operates at less than 20% of capacity in modulating mode. Note: package boiler has duel fuel capability and can burn up to 166 gals/hr of #2 fuel oil in place of natural gas.

Process: 018 is located at ground floor, Building B1 - #2 or #3 fuel oil is burned in a 25.0 million Btu/hr fire tube package boiler to generate steam for the facility. Although the boiler is rated for 25.0 million btu/hr, the boiler routinely operates at less than 20% of capacity in modulating mode. This boiler has dual fuel capability (fuel oil or natural gas).

**Title V/Major Source Status**
PVS CHEMICAL SOLUTIONS INC is subject to Title V requirements. This determination is based on the following information:
This PVS Chemical Solutions, Inc. facility has the potential-to-emit both sulfur dioxide and sulfuric acid above the major source threshold of 100 tons per year.

**Program Applicability**
The following chart summarizes the applicability of PVS CHEMICAL SOLUTIONS INC with regards to the principal air pollution regulatory programs:

<table>
<thead>
<tr>
<th>Regulatory Program</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSD</td>
<td>NO</td>
</tr>
<tr>
<td>NSR (non-attainment)</td>
<td>NO</td>
</tr>
<tr>
<td>NESHAP (40 CFR Part 61)</td>
<td>NO</td>
</tr>
<tr>
<td>NESHAP (MACT - 40 CFR Part 63)</td>
<td>NO</td>
</tr>
<tr>
<td>NSPS</td>
<td>NO</td>
</tr>
<tr>
<td>TITLE IV</td>
<td>NO</td>
</tr>
<tr>
<td>TITLE V</td>
<td>YES</td>
</tr>
<tr>
<td>TITLE VI</td>
<td>NO</td>
</tr>
<tr>
<td>RACT</td>
<td>NO</td>
</tr>
<tr>
<td>SIP</td>
<td>YES</td>
</tr>
</tbody>
</table>

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NOTES:
PSD    Prevention of Significant Deterioration (40 CFR 52, 6 NYCRR 231-7, 231-8) - requirements which pertain to major stationary sources located in areas which are in attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NSR    New Source Review (6 NYCRR 231-5, 231-6) - requirements which pertain to major stationary sources located in areas which are in non-attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NESHAP National Emission Standards for Hazardous Air Pollutants (40 CFR 61, 6 NYCRR 200.10) - contaminant and source specific emission standards established prior to the Clean Air Act Amendments of 1990 (CAA) which were developed for 9 air contaminants (inorganic arsenic, radon, benzene, vinyl chloride, asbestos, mercury, beryllium, radionuclides, and volatile HAP’s).

MACT    Maximum Achievable Control Technology (40 CFR 63, 6 NYCRR 200.10) - contaminant and source specific emission standards established by the 1990 CAAA. Under Section 112 of the CAAA, the US EPA is required to develop and promulgate emissions standards for new and existing sources. The standards are to be based on the best demonstrated control technology and practices in the regulated industry, otherwise known as MACT. The corresponding regulations apply to specific source types and contaminants.

NSPS   New Source Performance Standards (40 CFR 60, 6 NYCRR 200.10) - standards of performance for specific stationary source categories developed by the US EPA under Section 111 of the CAAA. The standards apply only to those stationary sources which have been constructed or modified after the regulations have been proposed by publication in the Federal Register and only to the specific contaminant(s) listed in the regulation.

Title IV Acid Rain Control Program (40 CFR 72 thru 78, 6 NYCRR 201-6) - regulations which mandate the implementation of the acid rain control program for large stationary combustion facilities.

Title VI Stratospheric Ozone Protection (40 CFR 82, Subpart A thru G, 6 NYCRR 200.10) - federal requirements that apply to sources which use a minimum quantity of CPC’s (chlorofluorocarbons), HCFC’s (hydrofluorocarbons) or other ozone depleting substances or regulated substitute substances in equipment such as air conditioners, refrigeration equipment or motor vehicle air conditioners or appliances.

RACT   Reasonably Available Control Technology (6 NYCRR Parts 212-3, 226, 227-2, 228, 229, 230, 232, 233, 234, 235, 236) - the lowest emission limit that a specific source is capable of meeting by application of control technology that is reasonably available, considering technological and economic feasibility. RACT is a control strategy used to limit emissions of VOC’s and NOx for the purpose of attaining the air quality standard for ozone. The term as it is used in the above table refers to those state air pollution control regulations which specifically regulate VOC and NOx emissions.

SIP    State Implementation Plan (40 CFR 52, Subpart HH, 6 NYCRR 200.10) - as per the CAAA, all states are empowered and required to devise the specific combination of controls that, when implemented, will bring about attainment of ambient air quality standards established by the federal government and the individual state. This specific combination of measures is referred to as the SIP. The term here refers to those state regulations that are approved to be included in the SIP and thus are considered federally enforceable.

Compliance Status
Facility is in compliance with all requirements.
SIC Codes
SIC or Standard Industrial Classification code is an industrial code developed by the federal Office of Management and Budget for use, among other things, in the classification of establishments by the type of activity in which they are engaged. Each operating establishment is assigned an industry code on the basis of its primary activity, which is determined by its principal product or group of products produced or distributed, or services rendered. Larger facilities typically have more than one SIC code.

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2819</td>
<td>INDUSTRIAL INORGANIC CHEMICALS</td>
</tr>
<tr>
<td>9999</td>
<td>NONCLASSIFIABLE ESTABLISHMENTS</td>
</tr>
</tbody>
</table>

SCC Codes
SCC or Source Classification Code is a code developed and used by the USEPA to categorize processes which result in air emissions for the purpose of assessing emission factor information. Each SCC represents a unique process or function within a source category logically associated with a point of air pollution emissions. Any operation that causes air pollution can be represented by one or more SCC’s.

<table>
<thead>
<tr>
<th>SCC Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-02-006-02</td>
<td>EXTERNAL COMBUSTION BOILERS - INDUSTRIAL INDUSTRIAL BOILER - NATURAL GAS</td>
</tr>
<tr>
<td>3-01-006-05</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - CLEANING CHEMICALS CHEMICAL MANUFACTURING ALKALINE Saponification</td>
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<tr>
<td>3-01-011-98</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - HYDROCHLORIC ACID Handling and Storage (99,9% Removal)</td>
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<tr>
<td>3-01-021-22</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - SODIUM CARBONATE SODA ASH STORAGE: LOADING &amp; UNLOADING</td>
</tr>
<tr>
<td>3-01-023-01</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - SULFURIC ACID (CONTACT PROCESS) Absorber/® 99,9% Conversion</td>
</tr>
<tr>
<td>3-01-023-21</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - SULFURIC ACID (CONTACT PROCESS) Storage Tank Vent</td>
</tr>
<tr>
<td>3-01-999-98</td>
<td>CHEMICAL MANUFACTURING CHEMICAL MANUFACTURING - OTHER NOT CLASSIFIED Specify in Comments Field</td>
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<tr>
<td>3-99-999-94</td>
<td>MISCELLANEOUS MANUFACTURING INDUSTRIES MISCELLANEOUS INDUSTRIAL PROCESSES Other Not Classified</td>
</tr>
</tbody>
</table>

Facility Emissions Summary
In the following table, the CAS No. or Chemical Abstract Service code is an identifier assigned to every chemical compound. [NOTE: Certain CAS No.’s contain a ‘NY’ designation within them. These are not true CAS No.’s but rather an identification which has been developed by the department to identify groups of contaminants which ordinary CAS No.’s do not do. As an example, volatile organic compounds or
VOC’s are identified collectively by the NY CAS No. 0NY998-00-0. The PTE refers to the Potential to Emit. This is defined as the maximum capacity of a facility or air contaminant source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or air contamination source to emit any air contaminant, including air pollution control equipment and/or restrictions on the hours of operation, or on the type or amount or material combusted, stored, or processed, shall be treated as part of the design only if the limitation is contained in federally enforceable permit conditions. The PTE for each contaminant that is displayed represents the facility-wide PTE in tons per year (tpy) or pounds per year (lbs/yr). In some instances the PTE represents a federally enforceable emissions cap or limitation for that contaminant. The term ‘HAP’ refers to any of the hazardous air pollutants listed in section 112(b) of the Clean Air Act Amendments of 1990. Total emissions of all hazardous air pollutants are listed under the special NY CAS No. 0NY100-00-0. In addition, each individual hazardous air pollutant is also listed under its own specific CAS No. and is identified in the list below by the (HAP) designation.

<table>
<thead>
<tr>
<th>Cas No.</th>
<th>Contaminant</th>
<th>PTE lbs/yr</th>
<th>PTE tons/yr</th>
<th>Actual lbs/yr</th>
<th>Actual tons/yr</th>
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<tbody>
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<td>007664-41-7</td>
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</table>

**NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS**

**Item A:** Public Access to Recordkeeping for Title V Facilities - 6 NYCRR 201-1.10(b)
The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6 NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.
Item B:  Timely Application for the Renewal of Title V Permits -6 NYCRR Part 201-6.2(a)(4)

Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item C:  Certification by a Responsible Official - 6 NYCRR Part 201-6.2(d)(12)

Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item D:  Requirement to Comply With All Conditions - 6 NYCRR Part 201-6.4(a)(2)

The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item E:  Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR Part 201-6.4(a)(3)

This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Item F:  Cessation or Reduction of Permitted Activity Not a Defense - 6 NYCRR 201-6.4(a)(5)

It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

Item G:  Property Rights - 6 NYCRR 201-6.4(a)(6)

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

Item H:  Severability - 6 NYCRR Part 201-6.4(a)(9)

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item I:  Permit Shield - 6 NYCRR Part 201-6.4(g)

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit.
application or revision, determines in writing that other requirements specifically identified
are not applicable to the major stationary source, and the permit includes the determination
or a concise summary thereof. Nothing herein shall preclude the Department from revising
or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary
abatement authority. Nothing in this permit shall alter or affect the following:

i. The ability of the Department to seek to bring suit on behalf of the State of
   New York, or the Administrator to seek to bring suit on behalf of the United
   States, to immediately restrain any person causing or contributing to pollution
   presenting an imminent and substantial endangerment to public health, welfare or
   the environment to stop the emission of air pollutants causing or contributing to
   such pollution;

ii. The liability of a permittee of the Title V facility for any violation of
    applicable requirements prior to or at the time of permit issuance;

iii. The applicable requirements of Title IV of the Act;

iv. The ability of the Department or the Administrator to obtain information
    from the permittee concerning the ability to enter, inspect and monitor the facility.

Item J: Reopening for Cause - 6 NYCRR Part 201-6.4(i)

This Title V permit shall be reopened and revised under any of the following circumstances:

i. If additional applicable requirements under the Act become applicable where
   this permit's remaining term is three or more years, a reopening shall be
   completed not later than 18 months after promulgation of the applicable
   requirement. No such reopening is required if the effective date of the
   requirement is later than the date on which this permit is due to expire, unless
   the original permit or any of its terms and conditions has been extended by the
   Department pursuant to the provisions of Part 2 01-6.7 and Part 621.

ii. The Department or the Administrator determines that the permit contains a
    material mistake or that inaccurate statements were made in establishing the
    emissions standards or other terms or conditions of the permit.

iii. The Department or the Administrator determines that the Title V permit
    must be revised or reopened to assure compliance with applicable requirements.

iv. If the permitted facility is an "affected source" subject to the requirements
    of Title IV of the Act, and additional requirements (including excess emissions
    requirements) become applicable. Upon approval by the Administrator, excess
    emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same
procedures as apply to initial permit issuance but shall affect only those parts of
the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to
the facility by the Department at least thirty days in advance of the date that the
permit is to be reopened, except that the Department may provide a shorter time
period in the case of an emergency.
Item K: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item L: Federally Enforceable Requirements - 40 CFR 70.6(b)

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined by subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the Department for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner or operator can identify the cause(s) of the emergency;
(2) The equipment at the permitted facility causing the emergency was at the time being properly operated and maintained;
(3) During the period of the emergency the facility owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
(4) The facility owner or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner or operator seeking to establish the occurrence of an emergency has the burden of proof.
(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement. item_02

Item B: General Provisions for State Enforceable Permit Terms and Condition - 6
NYCRR Part 201-5

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Regulatory Analysis

<table>
<thead>
<tr>
<th>Location</th>
<th>Regulation</th>
<th>Condition</th>
<th>Short Description</th>
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<tbody>
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<td>FACILITY</td>
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<td>19</td>
<td>Protection of Stratospheric Ozone - recycling and emissions reduction</td>
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<td>FACILITY</td>
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<td>6NYCRR 200.7</td>
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<td>Maintenance of equipment.</td>
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<td>6NYCRR 201-1.4</td>
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<td>Unavoidable noncompliance and violations</td>
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<td>Recycling and Salvage Prohibition of reintroduction of collected contaminants to the air</td>
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<td>Trivial Activities - proof of eligibility</td>
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<td>General Conditions -</td>
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U-00060/00160/012/00160 6NYCRR 212-2.3(b) 46
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Requirement to Provide Information
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General Conditions - Right to Inspect
Recordkeeping and Reporting of Compliance Monitoring
Records of Monitoring, Sampling and Measurement Reporting Requirements - Deviations and Noncompliance
Compliance Schedules - Progress Reports
Compliance Certification
Off Permit Changes Required emissions tests.
Emission Statements - Applicability
Emission Statements - record keeping requirements.
General Prohibitions - air pollution prohibited
Limiting of Opacity
Federal SIP Criteria air contaminants applicable to Table 3
Federal SIP Criteria air contaminants applicable to Table 3
Federal SIP Criteria air contaminants applicable to Table 3
Federal SIP Criteria air contaminants applicable to Table 3
State Air Program Non-Criteria air contaminants subject Table 4
State Air Program Non-Criteria air contaminants subject Table 4
State Air Program Non-Criteria air contaminants subject Table 4
Open Fires - Prohibitions
Sulfuric acid production.
Continuous stack monitoring.
Sulfur-in-Fuel Limitations
Applicability Discussion:
Mandatory Requirements: The following facility-wide regulations are included in all Title V permits:

ECL 19-0301
This section of the Environmental Conservation Law establishes the powers and duties assigned to the Department with regard to administering the air pollution control program for New York State.

6 NYCRR 200.6
Acceptable ambient air quality - prohibits contravention of ambient air quality standards without mitigating measures

6 NYCRR 200.7
Anyone owning or operating an air contamination source which is equipped with an emission control device must operate the control consistent with ordinary and necessary practices, standards and procedures, as per manufacturer's specifications and keep it in a satisfactory state of maintenance and repair so that it operates effectively

6 NYCRR 201-1.4
This regulation specifies the actions and recordkeeping and reporting requirements for any violation of an applicable state enforceable emission standard that results from a necessary scheduled equipment maintenance, start-up, shutdown, malfunction or upset in the event that these are unavoidable.

6 NYCRR 201-1.7
Requires the recycle and salvage of collected air contaminants where practical

6 NYCRR 201-1.8
Prohibits the reintroduction of collected air contaminants to the outside air

6 NYCRR 201-3.2 (a)
An owner and/or operator of an exempt emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains exempt emission sources or units, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6 NYCRR 201-3.3 (a)
The owner and/or operator of a trivial emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains trivial emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6 NYCRR Subpart 201-6
This regulation applies to those terms and conditions which are subject to Title V permitting. It establishes the applicability criteria for Title V permits, the information to be included in all Title V permit applications as well as the permit content and terms of permit issuance. This rule also specifies the compliance,
monitoring, recordkeeping, reporting, fee, and procedural requirements that need to be met to obtain a Title V permit, modify the permit and demonstrate conformity with applicable requirements as listed in the Title V permit. For permitting purposes, this rule specifies the need to identify and describe all emission units, processes and products in the permit application as well as providing the Department the authority to include this and any other information that it deems necessary to determine the compliance status of the facility.

6 NYCRR 201-6.4 (a) (4)
This mandatory requirement applies to all Title V facilities. It requires the permittee to provide information that the Department may request in writing, within a reasonable time, in order to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. The request may include copies of records required to be kept by the permit.

6 NYCRR 201-6.4 (a) (7)
This is a mandatory condition that requires the owner or operator of a facility subject to Title V requirements to pay all applicable fees associated with the emissions from their facility.

6 NYCRR 201-6.4 (a) (8)
This is a mandatory condition for all facilities subject to Title V requirements. It allows the Department to inspect the facility to determine compliance with this permit, including copying records, sampling and monitoring, as necessary.

6 NYCRR 201-6.4 (c)
This requirement specifies, in general terms, what information must be contained in any required compliance monitoring records and reports. This includes the date, time and place of any sampling, measurements and analyses; who performed the analyses; analytical techniques and methods used as well as any required QA/QC procedures; results of the analyses; the operating conditions at the time of sampling or measurement and the identification of any permit deviations. All such reports must also be certified by the designated responsible official of the facility.

6 NYCRR 201-6.4 (c) (2)
This requirement specifies that all compliance monitoring and recordkeeping is to be conducted according to the terms and conditions of the permit and follow all QA requirements found in applicable regulations. It also requires monitoring records and supporting information to be retained for at least 5 years from the time of sampling, measurement, report or application. Support information is defined as including all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

6 NYCRR 201-6.4 (c) (3) (ii)
This regulation specifies any reporting requirements incorporated into the permit must include provisions regarding the notification and reporting of permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken.

6 NYCRR 201-6.4 (d) (5)
This condition applies to every Title V facility subject to a compliance schedule. It requires that reports, detailing the status of progress on achieving compliance with emission standards, be submitted semiannually.

6 NYCRR 201-6.4 (e)
Sets forth the general requirements for compliance certification content; specifies an annual submittal frequency; and identifies the EPA and appropriate regional office address where the reports are to be sent.
6 NYCRR 201-6.4 (f) (6)
This condition allows changes to be made at the facility, without modifying the permit, provided the changes do not cause an emission limit contained in this permit to be exceeded. The owner or operator of the facility must notify the Department of the change. It is applicable to all Title V permits which may be subject to an off-permit change.

6 NYCRR 202-1.1
This regulation allows the department the discretion to require an emission test for the purpose of determining compliance. Furthermore, the cost of the test, including the preparation of the report are to be borne by the owner/operator of the source.

6 NYCRR 202-2.1
Requires that emission statements shall be submitted on or before April 15th each year for emissions of the previous calendar year.

6 NYCRR 202-2.5
This rule specifies that each facility required to submit an emission statement must retain a copy of the statement and supporting documentation for at least 5 years and must make the information available to department representatives.

6 NYCRR 215.2
Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

40 CFR Part 68
This Part lists the regulated substances and their applicability thresholds and sets the requirements for stationary sources concerning the prevention of accidental releases of these substances.

40 CFR Part 82, Subpart F
Subpart F requires the reduction of emissions of class I and class II refrigerants to the lowest achievable level during the service, maintenance, repair, and disposal of appliances in accordance with section 608 of the Clean Air Act Amendments of 1990. This subpart applies to any person servicing, maintaining, or repairing appliances except for motor vehicle air conditioners. It also applies to persons disposing of appliances, including motor vehicle air conditioners, refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment. Those individuals, operations, or activities affected by this rule, may be required to comply with specified disposal, recycling, or recovery practices, leak repair practices, recordkeeping and/or technician certification requirements.

Facility Specific Requirements
In addition to Title V, PVS CHEMICAL SOLUTIONS INC has been determined to be subject to the following regulations:

40 CFR Part 64
The federal Compliance Assurance Monitoring (CAM) rule, 40 CFR Part 64, requires monitoring of control device, capture system, and/or process parameters to provide a reasonable assurance of compliance with emission limitations or standards. It applies to emission units that use a control device to comply with certain standards and limitations and that have potential pre-control device emissions equal to or greater than a major source threshold.
Acid Rain program requirements; stratospheric ozone protection requirements; post-1990 New Source Performance Standards, Emission Guidelines, and National Emission Standards for Hazardous Air Pollutants; and some other limitations are exempt from CAM. However, many of the exempt requirements are subject to less stringent periodic monitoring under 40 CFR Part 70 and 6NYCRR Subpart 201-6.

6 NYCRR 211.1
This regulation requires that no person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property.

6 NYCRR 212-1.6 (a)
This provisions requires that the facility owner or operator not cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source or emission point, except for the emission of uncombined water.

6 NYCRR 212-2.3 (a)
Table 3 of 212-2.3 describes the reduction in emissions required for a criteria air contaminant based on its uncontrolled emission rate. The uncontrolled emission rate in conjunction with the assigned environmental rating determines the degree of controlled applied.

6 NYCRR 212-2.3 (b)
Table 4 of 212-2.3 describes the reduction in emissions required for a non-criteria air contaminant based on its uncontrolled emission rate. The uncontrolled emission rate in conjunction with the assigned environmental rating determines the degree of controlled applied.

6 NYCRR 224.2 (b) (1)
This rule sets the maximum allowable emission of sulfuric acid mist from existing sources to no more than 0.50 pounds per ton of sulfuric acid produced.

6 NYCRR 224.4 (a) (2)
Sulfur-in-fuel limitation for the firing of distillate oil on or after July 1, 2016.

6 NYCRR 227-1.3 (a)
This regulation prohibits any person from operating a stationary combustion installation which emits smoke equal to or greater than 20% opacity except for one six-minute period per hour of not more than 27% opacity.

Compliance Certification
Summary of monitoring activities at PVS CHEMICAL SOLUTIONS INC:

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<tr>
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<th>Cond No.</th>
<th>Type of Monitoring</th>
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<tr>
<td>U-00020</td>
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<td>record keeping/maintenance procedures</td>
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<tr>
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Basis for Monitoring
Most of the monitoring requirements contained in this permit are based on specific monitoring methods and observations as prescribed in the applicable rules. Facility
specific monitoring conditions were written to assure that reliable information is obtained representing the facility's compliance status for the following issues:

**Opacity (conditions #25, 26, & 27):**
Visible emissions at PVS Chemicals are restricted to 20% average opacity during any six consecutive minutes per 6 NYCRR Part 212-1.6(a). These conditions specifically require the facility operator to observe emission point 00160 once per day during daylight hours and emission points 00005, 00006, and 00007 hourly to determine if any unusual opacity conditions exist. Additionally, emission points 00005, 00006, and 00007 are also periodically monitored by the operator via video monitor. Based on operational limits imposed on the facility by other applicable rules, the chosen monitoring method and frequency are adequate and reasonable for determining compliance with the opacity standard.

**Scrubbers (conditions #28, 34, 35, 36, 37, 38, 39, 40, 45, 46 & 47):**
Various surrogate scrubber parameters (pH, presence and quantity of flow, concentration, and control efficiency) were chosen as compliance indicators because proper operation of the scrubbers were documented at the specific levels. Also, intermittent emission testing is required to be performed once per permit term on the SO2 scrubber to verify compliance with the minimum control efficiency requirement.

**Compliance Assurance Monitoring (conditions #32, 34, 35, 36 & 37):**
These conditions detail the monitoring indicators and performance criteria used at the facility to assure proper operation of the SO2 scrubber per the Compliance Assurance Monitoring (CAM) Plan that PVS was required to submit. The indicators specified in the CAM Plan are the scrubber solution pH in both the upper and lower sections of the scrubber, and the scrubber solution flow rate. If any pH or flow readings, on an hourly average basis, do not meet the following standards, they will be considered excursions requiring follow-up action.

**Production Limit (condition #29):**
This condition limits the actual production of sulfuric acid (expressed as 100 percent sulfuric acid) to 300 tons per day. By accepting this limit, the facility will not be subject to continuous stack monitoring per 6NYCRR 224.4(a)(2).

**National Ambient Air Quality Standard for Sulfur Dioxide (condition #21):**
This condition requires PVS to assure compliance with the 1-hour sulfur dioxide (SO2) National Ambient Air Quality Standard (NAAQS). They will do this by performing refined air dispersion modeling to better define the maximum 1-hour SO2 impact from facility emissions for comparison to the NAAQS.

**Sulfur Content in Fuel Limited (condition #42):**
This condition limits the facility to use of distillate oils in the boiler to those with sulfur contents of less than 0.0015 percent by weight. Compliance with this condition also assures compliance with the sulfur content limit in 40 CFR 60.42c(d) of no greater than 0.5 percent by weight.