AIR POLLUTION CONTROL PERMIT APPLICATION REQUIREMENTS

(Revised 7/1/2013)

New Sources & Source Modifications

STATE OF VERMONT
Agency of Natural Resources
Department of Environmental Conservation
Air Quality & Climate Division
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Montpelier, Vermont 05620-3802

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http://www.anr.state.vt.us/air/index.htm

IMPORTANT - PLEASE READ BEFORE STARTING:

This outline is a general checklist of what constitutes the information necessary to submit an air pollution control permit application for new sources or modifications to existing sources. **This outline is not a "fill-in-the-blanks" type form**; rather it is intended to give the applicant guidance as to what data the application needs to contain. This outline is intended to be used in conjunction with the Air Quality & Climate Division's *Air Pollution Control Permitting Handbook* and the state of Vermont Air Pollution Control Regulations (*Regulations*). The Division's Permitting & Engineering Section may be available to meet with an applicant to discuss the project and permitting process. Please contact the Division for more information. Large new projects are strongly encouraged to arrange a pre-application meeting. Only one copy of the application need be submitted to the Agency, however additional copies may be requested if the Agency deems it necessary.

Prior to submitting the prepared application, one company official responsible for its submission must read, complete and sign the attached form (page 10) certifying the information contained in the application is complete and accurate to the best of his/her knowledge and granting access to the property to verify information. This form **must** be incorporated as part of the submitted application.

The following fees are currently applicable. Base fees must be submitted with the application and supplemental fees must be submitted prior to permit issuance. Municipalities are exempt from the fees if the municipality **cannot** recover its costs by charging a user fee to those who use the permitted services (e.g. a new boiler at a POTW is not exempt since a user fee is charged for operation of the POTW but a new boiler for the town office is exempt since property taxes are not considered a user fee). In addition, pursuant to 32 V.S.A. §710 many governmental entities are exempt from the fees where funds for the project are authorized within the state capital construction act or where funds are authorized for a transportation related project within a general appropriation act.

Table A: Air Pollution Control Application Fees

Base Fee Schedule	Type	Amount
Permit Application	Major Sources	$ 15,000
	Non-Major Sources	$ 2,000
Administrative Amendment	Name or clerical changes, etc.	$ 150
Potential Supplemental Fees Applicable to Non-Major Sources		
Engineering Review		$ 2,000
Air Quality Impact Analysis		$2,000
Observe & Review Emissions Test		$ 2,000
Audit Performance of Continuous Emissions Monitoring		$ 2,000
Audit Performance of Ambient Air Monitoring		$ 2,000
Implement Public Comment Requirement		$ 500

Fees should be made payable to: "State of Vermont - Air Quality & Climate Division". Fees must be sent to the Air Quality & Climate Division at the address on front of this form to be properly credited. Supplemental fee submittals should reference the permit application number provided.

A. Type of Application:

1. New Source Construction? (i.e. a brand new facility)
2. Reconstructing An Existing Source? (i.e. extensive upgrades or repairs to existing equipment)
3. Modifying or Installing New Equipment At An Existing Source?

B. Site Information

1. Name of the proposed project or source; owner or parent corporation; and operator, if different. **Please include the official corporation name as registered with the Secretary of State** as well as any official trade names.
2. Name, telephone and fax numbers and email (optional) of application contact(s).
3. Location of source:
   i. Physical location and mailing address, if different:
   ii. Attach maps, sketches and drawings showing:
   iii. A drawing which clearly show the source's layout. Include building dimensions, location of equipment, location of exhaust stacks, etc. Include a north arrow.
   iv. A drawing which clearly show the buildings' side profiles in relation to stack locations, etc.. Include dimensions.
   v. A scaled engineering drawing describing the properties' plot plan. Identify all significant buildings, structures, other on-site uses, and roads. Include a north arrow, property boundaries, estimates of distances to property boundaries **and a description of adjacent land uses**.
   vi. A U.S.G.S. topographical, town, or highway map depicting the source's location.
4. Please estimate the distance from the source to:
   i. Lye Brook Wilderness Area (near Manchester, Vermont)
   ii. Great Gulf and Dry River Wilderness Areas (near Mt. Washington, New Hampshire)
   iii. Nearest Vermont designated "sensitive area" (geographical area at an elevation of 2500 feet or more)
5. To the best of your knowledge, please state applicability or status with the following federal, state and local regulations or review processes:
   - Land Use Permit Review, "Act 250" (10 *VSA* Chapter 151)?
   - "Section 248" for new electric generation and transmission facilities (30 *VSA* Section 248)?
   - Other DEC permits? The Division strongly encourages applicants to contact an Agency Permit Specialist in the nearest Agency of Natural Resources Regional Office for information regarding other applicable requirements.
   - Local zoning or planning requirements?
   - Federal New Source Performance Standards (NSPS), 40 *CFR* Part 60?
   - Federal National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 *CFR* Parts 61 & 63?

C. Operational Information

1. Nature of Operation:
   i. Please provide a narrative description of the facility operations. Be sure to identify and include all individual processes or operations at the facility that may generate air pollution. Some common examples include combustion units (boilers, furnaces, diesel engines, waste oil furnaces, outdoor wood stoves but not motorized vehicles), occasional open burning, dust producing operations (woodworking operations

including transfer and disposal of wood wastes, sandblasting, aggregate and other dust producing material handling, processing or transfer operations), solvent degreasing operations, painting and coating operations, printing operations, other evaporative operations or sources of fumes, potential odor producing operations, and volatile organic liquid storage tanks including fuel storage tanks.

ii. Please sketch a process flow diagram with arrows depicting emissions to the atmosphere.

iii. For multiple processes using common vents or stacks, please provide an additional sketch of the exhaust system(s) indicating the location of inlets and approximate distances, dimensions, and flow rates.

iv. Please provide the facilities' SIC code(s).

2. Equipment Specifications:

   i. Please provide specifications and/or copies of manufacturer's literature for process equipment including maximum design and actual process rates and capacities (**see Attachment A**). For volatile organic liquid storage tanks including fuel storage tanks, please indicate whether it is above ground or below ground, the date of installation, the size in gallons or cubic meters, the fuel or product stored, and the maximum true vapor pressure of the product if known.

   ii. Please provide the date of installation of the piece of equipment.

   iii. Please provide specifications and/or copies of manufacture's literature for air pollution control equipment (**see Attachment B**).

   iv. Please provide the following parameters for each vent or stack, if known:
   - Outlet Height
   - Internal Diameter
   - Flow Rate: actual cubic feet per minute & dry standard cubic feet per minute
   - Moisture Content of Exhaust Gas (% by volume)
   - Exhaust Gas Temperature at Outlet
   - Velocity at Outlet: feet per second
   - Static Pressure, if known: inches of water
   - Lack or presence of a rain cap on the stack.

3. Ozone Depleting Chemical Usage

   i. If the source will generate emissions of any chloroflurocarbons (CFCs), please identify alternatives to the use of these ozone-depleting chemicals.

   ii. Please state whether the facility has any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone depleting substances or regulated substitute substances.

   iii. Please state whether and air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs. If yes, describe what type of equipment and how many units are at the facility.

   iv. Please state whether your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 40 CFR Part 82.152).

   v. Cite and describe which Title VI requirements of the federal Clean Air Act are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G).

4. Proposed Operating Limits *(Optional - Used to lower potential emissions which are used to designate the size of the source and determine the level of review. Unlimited operation may result in high potential emissions and imposition of additional permit requirements).*
    i. Annual fuel caps, fuel types, fuel sulfur content (% by weight)
    ii. Hourly operation (must be enforceable e.g., non-resettable meters installed, etc.)
    iii. Raw material throughput or final product output caps
    iv. Solvent or coating usage caps
    v. Existing permit limits, if applicable.

5. Please provide a schedule for the proposed project which includes major milestones.

D. Quantification of Air Contaminant Emissions

Methods of estimating and quantifying emissions are described in Appendix L of the Division's *Air Pollution Control Permitting Handbook*. Please include fugitive emissions (dust, vapors, etc.). Attach all sample calculations and assumptions as an Appendix to the application. To assist applicants, the U.S. EPA compiles emission factors for most common air pollution generating equipment and operations in A Compilation of Air Pollution Emission Factors (AP-42). These emission factors are available at the U.S. EPA internet site http://www.epa.gov/ttn/chief

Step 1. Emission Inventory

For **each** process or piece of equipment at the facility, please estimate the allowable emissions of all regulated contaminants. Consult Appendix C of the *Regulations* for a list of regulated hazardous contaminants. All estimates of allowable emissions should be calculated assuming the processes and equipment are operated at their **maximum** capacity and at continuous operation (8760 hours per year), unless the applicant has proposed to limit the operation, in section C(5).

For sources which currently operate under restrictions of an existing air pollution control permit, state or federal standard, or other limiting regulation, the applicant should consider that restriction to be the allowable emission rate for the affected process, unless the applicant proposes a change. Please include the date that the equipment was, or will be installed. **Installation dates are significant in the permitting process.**

If a control device is installed or proposed, an estimate of emissions ***after control***, based on the control efficiency of the device, should also be included. Control efficiency documentation must be attached as an Appendix to the submitted application.

In similar fashion, for existing facilities already operating, also include an estimate of the *actual emissions* from each process or piece of equipment at the facility based on **actual** operating hours and rates averaged over the last two years. **List all assumptions and sample calculations and attach these as an Appendix.**

The following format is suggested:

PROCESS NAME: **DATE OF INSTALLATION:**							
CONTAMINANT	UNCONTROLLED OR ALLOWABLE EMISSIONS		TYPE OF CONTROL DEVICE & CONTROL EFFICIENCY	ALLOWABLE EMISSIONS AFTER CONTROL		ACTUAL EMISSIONS	
	lb/hr	ton/yr		lb/hr	ton/yr	lb/hr	ton/yr
Sulfur dioxide (SO_2)							
Oxides of Nitrogen (NO_x)							
Particulate Matter (PM_{10})							
Lead (Pb)							
Carbon Monoxide (CO)							
Volatile Organic Compounds (VOC)							
Hazardous Air Contaminants (HACs)							
Carbon dioxide equivalents (CO_2e)							

(NOTE: Hazardous chemicals that are designated as VOC's should also be added in with the VOC compounds)

Step 2. Facility Totals

Once emissions from all processes at the facility have been inventoried they should be totaled and summarized:

The following format is suggested:

FACILITY EMISSIONS SUMMARY				
CONTAMINANT	**TOTAL ALLOWABLE EMISSIONS FROM EXISTING FACILITY (ton/year)**	**TOTAL ALLOWABLE EMISSIONS FROM PROPOSED NEW EQUIPMENT (ton/year)**	**ALLOWABLE EMISSIONS FROM EXISTING AFFECTED EQUIPMENT AND PREVIOUS MINOR MODIFICATIONS (ton/year)**	**ESTIMATED ACTUAL EMISSIONS FROM EXISTING AFFECTED EQUIPMENT (ton/year)**
sulfur dioxide (SO_2)				
oxides of nitrogen (NO_x)				
particulate matter (PM_{10})				
lead (Pb)				
Carbon Monoxide (CO)				
volatile organic compounds (VOC)				
(hazardous chemical)				
(hazardous chemical)				
(hazardous chemical)				
Carbon dioxide equivalent (CO_2e)				
TOTAL				

Step 3. **Designation of Application**

Using the above estimates designate the application:

a. For New or Reconstructed Sources:

For new or reconstructed sources, designate the source as either major or non-major. Major sources are those sources with *potential or allowable* emissions of any air contaminant equal to or greater than 50 tons per year; or 5 tons per year for lead. Major sources are subject to review under Sections 5-501 and 5-502 of the *Regulations*.

A Reconstructed Source means a source wherein the fixed capital cost of the new components exceeds 50% of the fixed capital cost of a comparable entirely new source. Reconstructed sources are treated as new sources.

b. For Existing Sources Seeking Approval To Modify or Install New Equipment:

i. Designate the existing source as either major or non-major. Major sources are sources with *allowable* emissions of any air contaminant equal to or greater than 50 tons per year; or 5 tons per year for lead.

ii. Designate the proposed modification(s) or new installation(s) as either major or non-major **on a pollutant-by-pollutant, ton per year, basis**:

Step a) Calculate *allowable* emissions for each **new** piece of equipment or process being added.

Step b) Calculate the *allowable* emissions for **all** existing processes that are ***affected*** by the modification.

Affected equipment or processes are those with quantifiable emission increases due to the modification. For instance, the modification may result in emission increases due to removal of bottle-necks in production, increased loads on energy or heat demands, increased fugitive emissions, and increased emissions due to production rate increases attributable to the modification.

Step c) Calculate the *actual* emissions from all existing processes that are *affected* by the modification (i.e. ,that were included in Step b) that were installed prior to 1979 or have already been reviewed as being major under section 5-502 of the *Regulations* .

Step d) Calculate the *allowable* emissions from all other equipment or processes at the facility modified since 1979 that have not been reviewed as being major in the past.

This calculation is made in order to account for prior incremental minor modifications that were never reviewed as a major source or major modification. This calculation reflects emissions from previous modifications unrelated or unaffected by the change being applied for herein.

Step e) Calculate the size of the modification on a pollutant-by-pollutant basis using the following formula:

[step a results + step b results - step c results + step d results] = size of modification (tpy)

Step f) Designate the size of the modification either major or non-major:

If the existing source has been designated as a major source, then the *Significant Level* thresholds apply. Compare the results calculated in Step e with the *Significant Levels* defined under Section 5-101 of the *Regulations*. The modification is designated as major if the emissions calculated in Step e are equal to or greater than any of the *Significant Levels* defined in Section 5-101.

OR

If the existing source has been designated as a non-major source, designate the proposed modification(s) as major if the emissions calculated in Step e are greater than or equal to 50 tons per year for any air pollutant or 5 tons per year for Pb.

Major sources and major modifications are subject to review under sections 5-501 and 5-502 of the *Regulations*. Under section 5-502, major sources are required to achieve the Most Stringent Emission Rate (MSER) for any air contaminant the source is major for. MSER requires a "top-down" style of control device or product substitution analysis. Continuous Emission Monitoring equipment (CEMs) may also be required to ensure continuous compliance. The Division strongly encourages the applicant arrange a pre-application meeting with representatives of the Division's permitting staff early on in the project's design.

Step 4. Identify Applicable Requirements & Certify Compliance

To assess the compliance status of the existing or proposed facility, the applicant is required to review each section of the *Regulations* and any applicable Federal Performance Standard (NSPS) or National Emission Standard forHazardous Air Pollutants (NESHAP) found in Title 40 of the *Code of Federal Regulations* Parts 60, 61 and 63. The applicant must then state whether the facility is currently operating (or will be operated) in compliance with each applicable section. This review must include toxic air emissions as described in section 5-261 of the *Regulations*.

For existing sources, the applicant is required to evaluate the source's compliance status with the conditions contained in the facility's current Air Pollution Control Permits and certify whether it is currently operating in compliance with its permits. The applicant is also required to certify that all of the equipment on the property has been properly permitted in the past. That is to say, that **any equipment installed since 1979 without a permit must fulfill obligations under *Subchapter V - Review of New Air Contaminant Sources*, found in the *Regulations*.**

The applicant is required to state the method (e.g. stack test, restrictions, etc.) or assumptions that were used to determine the compliance status with each regulation or permit condition. The applicant is further required to state or specify a method to insure that compliance is adhered to in the future. **If the facility is not operating in compliance**, the compliance situation must be resolved. No modification permits will be issued to facilities not operating in compliance with state or federal

regulations.

Step 5. Dispersion Modeling

An ambient air quality impact evaluation is required for all new major sources and major modifications as described in Section 5-502 of the *Regulations*. Non-major sources and non-major modifications may be required to perform an ambient air quality impact evaluation if there will be a net increase in allowable emissions of any air contaminant in excess of 10 tons per year or in the event that an Action Level is exceeded. An ambient air quality impact evaluation is performed to demonstrate that a proposed project will not cause or contribute to violations of any federal Ambient Air Quality Standards, Prevention Significant Deterioration increments, or state Hazard Ambient Air Quality Standards.

Pre-construction ambient monitoring may be required in some circumstances for a period of up to one year in order to determine local air quality and/or meteorological inputs for the ambient air quality impact evaluation. All monitoring plans must be approved by the Division.

A "pre-application" protocol detailing the proposed modeling parameters and assumptions must be submitted to the Division prior to conducting the air quality impact evaluation. This option generally eliminates issues being raised during the application review which may impact on the processing time of the application. Consult the Division directly for further information.

Step 6. Public Comment

This section applies to all new sources, new installations or modifications that may increase allowable emissions over 10 tons per year of all pollutants combined. Vermont Statute requires the Division to post notice of receipt of an air pollution control permit application for sources applicable to public comment in a local newspaper. This notice will indicate the location where a copy of the permit application may be reviewed by members of the public. In addition, the Division is required to post notice of all proposed final decisions and allow 30 days for the public to comment and request an informational meeting to be scheduled. If an informational meeting is requested, the Division will post notice which will include the time and location of the informational meeting. The Division will hold open the public comment period for one week after the informational meeting. The Division is then allowed time to respond to public comment.

Step 7. Pollution Control Technology Evaluations

This section is applicable to new major sources and proposed major modifications subject to review under Section 5-502 of the Regulations and/or to non-major sources applicable to Section 5-261 of the *Regulations*, i.e., non-major sources with proposed allowable emissions of hazardous air contaminants over the regulatory Action Levels listed in Appendix C of the *Regulations*. Applicable sources are required to achieve the *Most Stringent Emission Rate* or *Hazardous Most Stringent Emission Rate*. The evaluation must be performed in a top-down (i.e., best to worst) analysis of available control technologies (including production processes, equipment design, operational standards, work practices, or any combination of these) which may be employed to reduce an emission to its "most stringent emission rate." Additional information on MSER analyses is contained in the *Air Pollution Control Permitting Handbook* or by consulting the Division.

The following steps should be documented:

1. Identify available MSER (or HMSER) alternatives. List the alternatives from top to bottom with lowest emission rate at the top.

2. For each alternative identified in Step 1, evaluate the following factors:
    a. Energy (e.g., kilowatt-hours of electricity, gallons per year of oil, etc.)
    b. Environmental (e.g., control device generates toxic waste or visibility impairment)
    c. Economic [e.g., capital costs, average cost effectiveness (cost per ton of pollutant reduced), etc.]

3. Select MSER control technology alternative

Step 8. Continuous Emission Monitoring System Requirements

An air contaminant source may be required to install and operate a continuous emission monitoring system (CEMS) for any air contaminant emission. Certain source categories have been predetermined to require CEMS. These sources include certain sources subject to some federal New Source Performance Standards (NSPS), municipal waste incinerators, medical waste incinerators, combustion turbine projects, and large boilers. A determination as to CEMS applicability for other source categories will be made upon reviewing preliminary permit application material.

Sources required to install and operate a CEMS must propose and receive conceptual approval of the system prior to the issuance of an air pollution control permit. The proposal must include the following:

1. description of the proposed equipment;
2. description of all process parameter monitors relevant to the emission limit compliance determinations;
3. approximate sampling location(s);
4. system response time;
5. sampling frequency (applies to noncontinuous samplers); and
6. sample duration (applies to noncontinuous samplers).

The Division may require the CEMS be accessible by computer modem or other electronic telecommunications system. In such instances, software and hardware compatible with Division's requirements will be needed. In addition, all sources required to install and operate CEMS must do so in accordance with the Agency's "Continuous Emission Monitoring Requirements". Copies are available from the Air Quality & Climate Division upon request.

CERTIFICATION OF INFORMATION ACCURACY

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on information and belief formed after reasonable inquiry, the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(Signature)	*(Date)*
(Print Name)	*(Title)*

CONSENT FOR ACCESS TO PROPERTY

I recognize that by signing this application, I am giving consent to employees of the State of Vermont to enter the subject property for the purpose of obtaining information relevant to the processing of this application. I also understand that by acceptance of a Permit, I agree to allow representatives of the State of Vermont access to the properties covered by the Permit, at reasonable times, for the purpose of ascertaining compliance with the Permit and with Vermont environmental and health statutes and regulations.

(Signature)	*(Date)*
(Print Name)	*(Title)*

ATTACHMENT A

ADDITIONAL DATA NEEDED FOR SPECIFIC SOURCE CATEGORIES

Listed below are examples of some specific informational requirements for typical source categories. Some air contaminant sources may generate emissions from more than one of the below listed source categories at the same site. Therefore, please review all the categories in order to ensure all required information has been provided. If a category is not included, please consult the Division for further guidance.

BOILERS
Boiler Manufacturer, Model No., Serial No., Date of Manufacture Date of Installation Purpose of boiler: steam or hot water production? process heat or electric generation? Boiler Type: (e.g., water-tube, fire-tube, sectional) Boiler Maximum Rated Heat Input: (million British Thermal Units per hour - MMBtu/hr) Boiler Maximum Rated Heat Output: (horsepower) Boiler Design Heat Transfer Efficiency (i.e., MMBtu/hr output divided by MMBtu/hr input) Firebox Heating Surface Area and Volume (esp. for solid fuel-fired boilers) Maximum & Design Operating Pressures (psig) If purpose of the boiler is for steam production, indicate maximum and design steam production rate (lbs of steam/hr) Fuel Type: primary & secondary Assumed Fuel Higher Heating Values: liquid (MMBtu/gal); solid (MMBtu/dry ton); gaseous (Btu/cubic foot): Fuel Sulfur Content (% by weight, dry): If solid fuel, indicate ash content (% by weight, dry) and fuel moisture content (% by weight): Will fly ash collection/reinjection be used? If so, provide specifications on this equipment. Number of Burners Burner Manufacturer, Model No., Serial Nos. (if available) Burner Type or Fuel Feeding Mechanism Maximum Fuel Firing Rate: liquid fuel (gal/hr); solid fuel (tons/hr); gaseous fuel (cubic feet/hour) If oil-fired, indicate method of atomization (steam or compressed air) Forced draft or atmospheric boiler Combustion air blower capacity in actual cubic feet per minute (if applicable) Excess Air (% by volume) Carbon Dioxide (CO_2) Content of the Flue Gas (% by volume, wet) Moisture Content of the Flue Gas (% by volume) Will flue gas recirculation (FGR) be employed? Will staged air combustion or staged fuel combustion be used? Will the combustion air be preheated? Will low-Nox burners be utilized? If so, what type:(staged air combustion, staged fuel combustion, internal flue gas recirculation, external flue gas recirculation, or ceramic radiant combustion)? Sootblowing frequency and duration Will the steam be utilized for electrical generation? If so, provide specifications on the generating capacity.

INTERNAL COMBUSTION ENGINES
Engine Manufacturer, Model No., Serial No. (if available), Date of Manufacture Date of Installation: Engine Use (emergency backup, primary power , peaking power, nongenerator use (explain)): Engine Rating (Horsepower): Engine Rating (Continuous/Prime/Standby): Generator Rating (kW): Engine Operating Speed (rpm): Fuel Type(on-highway diesel [clear, no tint]/standard diesel [red tint]/natural gas/propane/gasoline/other): Maximum Fuel Firing Rate@100% load (liquid fuel [gals/hr]/gaseous fuel [cubic feet/hr]): Engine Design: number of cylinders displacement per cylinder (cubic inches) two-cycle or four-cycle turbocharged, supercharged or naturally aspirated? intercooled or aftercooled? method of ignition [spark or compression (diesel cycle)]: Is the engine certfied to meet the federal nonroad engine emission limits of 40 CFR Part 89? If so, state engine certification year (ie. the year of the standards to which it is certified): Will stratified charge or engine retard be utilized? Will the engine utilize a catalyst for air pollution control? Will the engine be equipped with a smoke particle trap to reduce emissions of particulate matter? Generator Manufacturer, Model No., Serial No. (if available) Generator Rating (KW): Prime power and/or Stand-by power Exhaust Chemistry (if available)

MUNICIPAL SOLID WASTE AND MEDICAL WASTE INCINERATORS
Incinerator Manufacturer, Model No., Serial No. (if available), Date of Manufacture Date of Installation: Maximum design charging rate (tons per hour and tons per day): Type of Furnace Design (Mass Burn, RDF, etc.): Continuous or Batch system, if continuous please indicate specifications on feeding mechanism and on grate system, if batch please indicate cycle time Number combustion chambers, their respective min. & max. operating temperatures (ºF) and residence times (seconds) Explanation of the combustion control system - oxygen trim, recycling of flue gas, overfire air, and underfire air system Characteristics of waste stream Description of materials separation program Number of Auxiliary Burners For Each Burner type of fuel, fuel sulfur content (% by weight), fuel higher heating value, and burner maximum heat input rating (MMBtu/hr) Method of ash removal and disposal; please indicate techniques to be used to avoid fugitive emissions of ash Measures to be taken in order to avoid nuisance dust and odors Will heat recovery be utilized? If yes, provide the following information on the heat recovery unit: Manufacturer, Model No., Serial No. (if available) Rated Heat Input (MMBtu/hr), Rated Output (HP) If steam will be generated, maximum steam production and pressure (lbs. of steam/hour and psig) Will electricity be generated? If so, provided the following: Generator Manufacturer, Model No., Serial No. (if available) Maximum Generating Capacity (KW) Maximum Exhaust Air Flow actual cubic feet per minute and dry standard cubic feet per minute Exhaust Moisture Content (% by volume) Exhaust Carbon Dioxide (% by volume, wet)

SMALL PATHOLOGICAL AND CREMATORY INCINERATORS
Incinerator Manufacturer, Incinerator Model No., Incinerator Serial No., Date of Manufacture Date of Installation: Maximum Charge Weight (lbs): Maximum Charge Rate (lbs/hr): Method of Loading (batch/continuous/other): If batch, cycle time for full charge (minutes): Type and characteristics of waste to be incinerated: [e.g., Classification (i.e., Type O), Btu Content, Plastics Content, Moisture Content, etc.] Number of Combustion Chambers: Per Chamber: type of auxiliary fuel, fuel sulfur content (% by weight), fuel higher heating value auxiliary burner maximum heat input (MMBtu/hr): minimum and maximum operating temperatures (ºF): minimum residence time (seconds) @ 1600 ºF: Exhaust Air Flow: actual cubic feet per minute and dry standard cubic feet per minute: Exhaust Moisture Content (% by volume): Exhaust Carbon Dioxide, CO_2 Content (% by volume, wet):

STORAGE TANKS
Storage Tank Manufacturer, Serial No. Date of Manufacture (required for determining applicability of federal NSPS Subpart Kb 40CFR§60.110b) Date of Installation: Type of Storage Vessel (fixed roof, internal floating roof, external floating roof, pressure vessel, other): If pressure vessel, what is the operating pressure (psi)?: Design Capacity of storage tank (gallons): Working Capacity of storage tank (gallons): Estimated Annual Throughput (gallons): Storage tank dimensions: Type of liquid stored: (e.g. gasoline, No.2 fuel oil, asphalt (specify), chemical (specify), etc.) Temperature of Liquid Stored (ºF): (e.g. only if liquid is heated or cooled to maintain a certain temperature such as asphalt cement or No. 6 fuel oil) Maximum True Vapor Pressure of Liquid Stored (psi): Is the Storage Tank Above Ground or Below Ground? If above ground, is it located outside or within a climate controlled building? Color of tank: Is the tank equipped with pressure/vacuum relief vents? If so, how many are there and are they atmospheric vents (ie. unrestricted flow) or pressure/vacuum relief valves? If there are atmospheric vents what size are the openings? If there are **pressure** relief valves, what is the design opening pressure (psi)and the manufacturer's tolerance (+/-)? If there are **vacuum** relief valves, what is the design opening vacuum pressure (psi) and the manufacturer's tolerance (+/-)? Do all pressure/vacuum relief valves remain functional after popping or do they need immediate replacement? Is vapor balance or vapor recovery used during filling or emptying of the tank (specify): If equipped with a floating roof; Describe the primary seal type (metallic shoe, liquid-mounted resillient filled seal, vapor-mounted resillient filled seal, flexible wiper seal) Describe the secondary seal type: Welded deck or bolted deck? Number of fixed roof support columns, dimensions and controls (e.g. gasket, flexible fabric seal, other): Number of deck fittings, types (e.g. columns, access hatches, deck drains, stub drains, rim vents, ladder wells, other) and controls (e.g. gaskets, fabric seals, sliding cover, other):

NON-METALLIC MINERAL PROCESSING

Type of non-metallic mineral(s) to be processed: (e.g. sand, gravel, ledge rock, granite, marble, talc ore, etc.)
Will the gravel material (if applicable) be prescreened prior to crushing?
Method of quarrying material:
Include a process flow diagram depicting each piece of equipment, process flow, and anticipated processing rates (tph)
Number of crushers to be utilized:
For each Crusher

- crusher manufacturer, model no., serial no., date of manufacture (required for determining applicability of federal NSPS Subpart OOO 40CFR§60.670)
- type of crusher: (e.g., jaw, cone, etc.)
- manufacturer's maximum rated capacity at largest possible setting (specify setting) (tph):
- manufacturer's maximum rated capacity at proposed setting (specify setting) (tph):
- actual anticipated capacity at the proposed setting, include recirculation load if applicable (tph):

Number of screening units to be utilized:
For each Screen Unit

- screening unit manufacturer, model no., serial no., date of manufacture (required for determining applicability of federal NSPS Subpart OOO 40CFR§60.670)
- number of screens:
- dimensions of screens (ft.):
- size distribution of the products:
- manufacturer's rated capacity (tph):
- actual anticipated capacity, include recirculation load if applicable (tph):

Number of belt conveyors:
For each Conveyor

- conveyor manufacturer, model no., conveyor serial no.,date of manufacture (required for determining applicability of federal NSPS Subpart OOO 40CFR§60.670)
- length and width of conveyor:
- enclosed or not enclosed:
- manufacturer's rated capacity (tph):
- actual anticipated capacity, include recirculation load if applicable (tph):

Non-metallic mineral moisture content (% by weight):
Will a fabric filter (baghouse) dust collector be used to control fugitive dust from the processing equipment?
If so, describe methods to be used to capture and control the fugitive dust: (e.g. location of dust collection pickup points; describe dust collection pickup points; estimate of capture efficiency at each pickup point; air flow rates at pickup points; dust collector specifications (see Attachment B).
Will wet suppression be utilized to control fugitive dust from the processing equipment?
If so, describe methods and equipment to be used to control the fugitive dust: (e.g., specify location, make and model of water spray nozzles; type of nozzles (e.g. fog, saturation, etc.); water pressure and flow rates; source of water (e.g. municipal water; dug well; artesian well; on-site surface water source such as pond, quarry or river; off-site source)
On an attached flow diagram of the processing equipment, please note the location of all control devices (enclosures, dust pickup points, water nozzles, pressure gauges, source of water, pump locations, etc.).

HOT MIX ASPHALT PLANTS

Plant Manufacturer, Model No., Date of manufacture, Date of Installation
Type of HMA plant (batch or drum-mix):

- If batch plant, maximum batch size (tons)
- If drum mix, where will the asphalt cement (AC) be mixed with the hot aggregate material?
  - If material will be mixed outside the drum please indicate method and equipment.
  - If AC will be injected into drum please indicate the location of the injection point

Maximum Production Rate (tons per hour):
Actual Design Production Rate (tons per hour):
Rotary Dryer Dimensions:
Asphalt cement type: (include Material Safety Data Sheet)
Number of storage tanks and capacity for asphalt cement:
Number of storage tanks and capacity for fuel:
Rotary Dryer Burner Type:
Fuel Type:
Fuel Sulfur Content (% by weight) :
Fuel Higher Heating Value: Liquid fuel (MMBtu/gallon) Gaseous fuel (Btu/cubic foot)
Rotary Dryer Burner Maximum Rated Heat Input (MMBtu/hr)
Rotary Dryer Burner Maximum Fuel Firing Rate: Liquid fuel (gallons/hour). Gaseous fuel (cubic feet/hour)
Will a storage silo be utilized? If so, identify manufacturer, model no., serial no., capacity, and size
Number of feed hoppers

- For each feed hopper: manufacturer, model no., serial no., material contents (e.g., 3/8" stone, sand, etc.), capacity (cubic yards), feed rate (tons per hour)

Number of conveyors (including bucket elevators)

- For each conveyor: manufacturer, model no., serial no., transfer rate (tons/hour), enclosed or not enclosed, vented to a fabric filter?

Number of weight hoppers

- For each weight hopper: manufacturer, model no., serial no., transfer rate, enclosed or not enclosed, vented to a fabric filter?

Number of screening units

- For each screening unit: manufacturer, model no., serial no., production rate (tons per hour), enclosed or not enclosed, vented to a fabric filter?

Baghouse fines removal procedures and method of final disposal.
If an internal combustion engine will be utilized to generate electricity on-site please supply specifications in accordance with the above requirements.

FLUID EVAPORATORS

Manufacturer, Model No., Serial No. Date of Manufacture, Date of Installation:
Burner Maximum Rated Heat Input (MMBtu/hr)
Fuel Type, maximum sulfur content (% by weight), fuel higher heating value
Maximum fuel consumption rate (gallons/hour)
Maximum processing rate (gallons/hour)
Number of solutions to be processed

- For each solution processed provide: manufacturer, product name, list of all constituents contained in the product, percentage of each constituent in the product (% by weight or volume, please specify), product density (lbs/gallon), maximum processing rate (gallons/hour), volatile organic compound content (% VOCs by volume), system exhaust rate (actual cubic feet per minute)

CONCRETE BATCHING OPERATIONS
Batch Plant Manufacturer, Model, Date of Manufacture, Date of Installation: Maximum Production Rate (tons per hour of concrete) Number of Cement Storage Silos ▪ For each Cement Silo: manufacturer, model no., serial no., capacity (cubic yards of cement), control device, specifications on pneumatic cement transfer system (e.g., pressure, transfer rate, etc.), length of time for unloading cycle (minutes) Number of feed hoppers ▪ For each feed hopper: manufacturer, model no., serial no., material contents (e.g., 3/8" stone, sand, etc.), capacity (cubic yards), feed rate (tons per hour) Number of conveyors (including bucket elevator) ▪ For each conveyor: manufacturer, model no., serial no., transfer rate (tons/hour), enclosed or not enclosed, vented to a fabric filter? Will weigh hoppers or constant weight feeders be utilized? Number of weigh hoppers or weight feeders ▪ For each weigh hopper or weight feeder: manufacturer, model no., serial no., transfer rate (tons/hour), enclosed or not enclosed, vented to a fabric filter? What means of dust control will be utilized to minimize emission during truck loading? What portions of the batch plant will be enclosed if any? Will fuel burning equipment be utilized on-site? If so, please provide the following: maximum rated heating input (MMBtu/hr), maximum fuel firing rate (gallons per hour, cubic feet per hour, etc.), fuel type, fuel maximum sulfur content, and fuel higher heating value (MMBtu/gallon, Btu/cubic foot, etc.). Will an internal combustion engine be utilized to generate electricity on-site? If so, please provide supply specifications in accordance with the above requirements.

SPRAY BOOTHS
Manufacturer, Model No. Date of Installation Spray Booth Type (dry filter, water wash, etc.) Spray Booth Outside Dimensions (width, length, and height) Method of Coating Application: (air atomization spray, airless spray, air assisted airless spray, electrostatic/air atomization, electrostatic/airless, electrostatic/air assisted airless, High Volume Low Pressure spray) Number of exhaust fans and maximum air flow rating for each fan Number and dimensions of exhaust filter elements (width, height and thickness of each element) Capture efficiency of the filter elements for a specific particle size Will ovens or heaters be utilized to speed curing of applied product? Estimate of transfer efficiency Filter face velocity (feet per minute) Describe how pieces are placed and removed For each coating or solution to be applied: manufacturer, product name, list of all constituents contained in the product, percentage of each constituent in the product (% by weight or volume, please specify), product density (lbs/gallon), usage rate (gallons per hour), volatile organic compound content (% VOCs as applied, excluding water) Clean up solvents (same as listed for coatings)

COMBUSTION TURBINES
Manufacturer, Model No., Serial No., Date of Manufacture, Date of Installation Type of Combustion Turbine Peaking Unit or Combined-Cycle Combustion Turbine Size Fuel Type Maximum Fuel Sulfur Content (% by weight) Fuel Higher Heating Value- liquid fuel (MMBtu/gal); gaseous fuel (MMBtu/cubic foot) Fuel Lower Heating Value- liquid fuel (MMBtu/gal); gaseous fuel (MMBtu/cubic foot) Combustion Turbine Rated Heat Input, MMBtu/hr, (based on HHV of fuel and LHV of fuel) Combustion Turbine Generating Capacity (MW) If heat recovery will be utilized provide the following: ▪ Heat Recovery Steam Generator Inlet and Outlet Temperatures (°F) ▪ Steam Production Rate and pressure (lbs of steam per hour and psig) ▪ Steam Turbine Electric Generating Capacity (MW) Will steam or water be injected into the combustion turbine, if so, please specify water to fuel ratio

FUGITIVE SOURCES
Type of fugitive emission point: (open door or window, haul road, aggregate pile, bucket loading of material, truck dumping, etc.) Average material moisture content (aggregate, road, etc.) Measures to be employed to reduce emissions (wet suppression, chloride application, wetting followed by sweeping of paved portions, maintaining negative pressures within a room or building, etc.)

COATING OPERATIONS (other than spray booths and lithographic printing)
Type of coating process (silkscreen, curtain coating, web, etc.) Date of Installation Substrate material Equipment Manufacturer, Model No., Serial No. (if available) Number of ovens Type of oven (flame, electric, ultraviolet, or infra-red) ▪ For each oven: manufacturer, model no., serial no., fuel type, maximum sulfur content (% by weight), fuel higher heating value), no. of burners/oven (or heat lamps) and their respective maximum rated heat inputs (MMBtu/hr), exhaust air flow (acfm) For product applied and wash solution: manufacturer, product name, list of all constituents contained in the product, percentage of each constituent in the product (% by weight or volume, please specify), product density (lbs/gallon), maximum usage rate (gallons per hour), volatile organic compound content (% VOCs by volume as applied, excluding water)

LITHOGRAPHIC PRINTING OPERATIONS
Manufacturer,Model No., Serial No., Date of Manufacture, Date of Installation Type of printing process, relief (i.e., letterpress), planographic (i.e., lithographic), intaglio (i.e., rotogravure), stencil (i.e., screen), sheetfed or web fed, maximum paper size, cold-set or heatset? If heatset, provide the following: Number of ovens Type of oven (flame, electric, ultraviolet, or infra-red) ▪ For each oven: manufacturer, model no., serial no., fuel type, maximum sulfur content (% by weight), fuel higher heating value, no. of burners/oven (or heat lamps) and their respective maximum rated heat inputs (MMBtu/hr), exhaust air flow (acfm) Will chill rollers be required? Number of ink fountains and ink rollers Number of fountain rollers Number of colors to be applied For each ink product, fountain solution, wash solution, or other solvents: manufacturer, product name, list of all constituents contained in the product, percentage of each constituent in the product (% by weight or volume, please specify), product density (lbs/gallon), maximum usage rate (gallons per hour), volatile organic compound content (% VOCs by volume as applied, excluding water)

PLASTIC EXTRUSION PROCESSES
Extruder manufacturer, trade name, model no., serial no., Date of Manufacture, Date of Installation Maximum rated capacity (lb/hour), Diameter of barrel Length of heated portion of extruder (ft), Number of heat zones and rating (Kw) Mode of quenching (water/air/none/other), Mode of venting (atmosphere/vacuum - inches of water) Method of feed conveyance Type of product manufactured, particle size, shape, density Type of material processed - manufacture, trade name, code no., amount used (lb/hr), content of free monomer (%), particle size, shape, density, MSDS's. Types of additives used (eg. plasticizer, blowing agent), manufacturer, trade name, code number, amount used (parts/100 parts resin), particle size, shape, density, percent in feed, percent in product, MSDS's. Operating parameters, methods for determining how equipment is operating, determining production capabilities, factors which influence production Method of cleaning parts and equipment (e.g., sandblasting, burn-off, clean furnace, chemical removal)

MISCELLANEOUS INDUSTRIAL PROCESSES
Equipment Manufacturer, Model No., Serial No., Date of Manufacture, Date of Installation Maximum Production Rate, tons/hour, widgets/hour, etc.) Indication of potential emission points Exhaust system description Description of material inputs (identification of chemical products and their usages, MSDS's) Operating parameters: (methods for determining how equipment is operating, determining production capabilities, factors which influence production) Exhaust system description: (exhaust temperatures and pressures, moisture content, constituents of the exhaust stream, airflow rates) Method of cleaning parts and equipment (e.g., sandblasting, burn-off, clean furnace, chemical removal)

ATTACHMENT B

AIR POLLUTION CONTROL EQUIPMENT

Attach a description of each air pollution control system. This attachment must describe the basic methods applied to remove air contaminants as well as the following details:

(1) Data and calculations used in the sizing and selection of the control equipment.
(2) Data and calculations used to determine the control efficiency.
(3) If the control equipment is standard and commercially available off the shelf, specify the manufacturer, type, model, and capacity of the equipment. Manufacturer's literature would be helpful.
(4) If the control system consists of other than standard equipment, provide a sketch of the control equipment.
(5) Describe the means of disposal of any air contaminants which are collected by the control equipment.
(6) Show any bypass of the control equipment and specify when and under what conditions the bypass will be used. The APCD may deny permission for the installation of a bypass.
(7) Describe the procedure to be used for maintaining and operating the unit, including schedule.
(8) Include fixed and indirect cost estimates.

ADDITIONAL DATA NEEDED FOR SPECIFIC CONTROL DEVICES

SCRUBBER
Purpose of device: acid gas or particulate control Type of scrubber (e.g., venturi, bubble plate, etc.) Gas flow rate before the scrubber in cubic feet per minute (cfm) Liquid flow rate in gallons per minute (gpm) Scrubbing liquid used pH of scrubbing liquid Chemical additives used (if any) and amounts. Provide Material Safety Data Sheets for each chemical product. Scrubbing liquid, once through or recirculated Plan for disposal of scrubbing liquid (municipal sewer plant, onsite, etc.) Sketch of device Pressure drop across scrubber in inches of water (inches of water column) Demister type and dimensions *NOTE* For packed scrubber indicate type of packing and dimensions of packed bed

CYCLONE/MULTICYCLONE
Wet or dry cyclone Particle size distribution and density of contaminant Pressure drop in inches of water column Cyclone inlet temperature in ^{o}F Dimensions of cyclone Is the system equipped with an airlock?

FILTER PADS
Type of filter Dimensions of filter bank Control efficiency relative to a specific particle size Pressure drop in inches of water column

ADSORPTION
Adsorbent and amount to be used Adsorbent capacity for specific contaminant (i.e., lbs. contaminant/lbs. adsorbent) Collection efficiency of adsorbent for contaminant being controlled Operating pressures (psig) Operating temperatures (ºF) Dimensions of bed Gas flow rate through bed in cfm Method of measuring activity Method and schedule of reactivation (if applicable) Method of disposal of desorbate

CONDENSER
Type of condenser Entrance and exit temperatures of gas stream in ºF Type of cooling medium Flow of cooling liquid in gallons per minute Area of cooling surface in square feet (sq. ft.)

ELECTROSTATIC PRECIPITATOR
Evidence that contaminant is liquid or solid and not vapor. Are contaminants heated or cooled between source and precipitator? Type of unit (e.g., 1 or 2 stage, tube, plate) Method of cleaning (e.g., rapping, gravity, wash off) Capacity in cubic feet per minute % Moisture in gas stream Temperature of inlet stream in ºF Collecting surface area in sq. ft. Apparent migration velocity (precipitation rate) Corona power Resistivity of particles

FABRIC FILTER
Number and dimensions of bags. Total cloth filtering area. Maximum rated air flow rate in actual cubic feet per minute Type of bag fabric Fabric weight, weave and finish of bags Air to cloth ratio Method of cleaning (if pulse jet indicate pressure in psi) Operating pressure drop in inches of water column Inlet and outlet temperature (ºF) Description of access to filter bags for maintenance Is the unit capable of fluorescent powder testing (e.g., visolite)? Is the system equipped with an airlock?

ABSORPTION
Type (e.g., spray dryer, packed, sieve plate, bubble plate) Dimensions of Unit Liquid used Amount of liquid used in gallons per minute If spray dryer type absorption unit used: ▪ inlet and outlet temperatures (°F) ▪ slurry concentration (%) ▪ slurry feedrate (gallons per minute) ▪ dilution water flow rate (gallons per minute) ▪ atomizing air pressure (psi) ▪ control mode (automatic/manual) Gas flow rate through unit in standard cubic feet per minute Method of rich liquid disposal (stripping tower, neutralization, other) Number of transfer units (NOG); Height of transfer units (HOG) Identify surfactants

COMPRESSION, REFRIGERATION
Equilibrium temperature of condenser in °F Composition of feed vapor Composition of recovered liquid and/or vapor and quantity of each Number of equilibrium stages

INCINERATION
Burner maximum rated heat input in million Btus per hour Fuel type Maximum fuel flow rate in gallons per minute or cubic feet per minute Maximum incineration temperature in °F Residence time in seconds Exit temperature of the gas stream in °F

SELECTIVE CATALYTIC REDUCTION
Type and characteristics (physical properties) of catalyst: honeycomb (hexagonal), honeycomb (square), honeycomb (triangle), plate Location of catalyst Catalyst parameters (open cross-sectional area, length, cell density, volume of catalyst, surface area of catalyst) Operating conditions (inlet and outlet NOx concentrations, ppmv, gas flow rate, inlet and outlet temperature, °F, pressure drop, inches of water) Catalyst life and catalyst replacement schedule ammonia injection system (detail of ammonia injection grid, ammonia flow, nozzle size, ammonia injection grid pressure, duct pressure) Maintenance procedures for the ammonia injection grid system Description of system to control ammonia slip and optimize NOx control

WATER/STEAM INJECTION
Maximum water injection rate, gallons per minute Maximum fuel injection rate, gallons per minute Maximum and minimum water to fuel ratio and corresponding carbon monoxide and nitrogen oxides emissions (ppmvd corrected to 15%O_2)

SELECTIVE NON-CATALYTIC REDUCTION
Description of injection system (number and location of injection points) Operating temperature at point of injection Solution to be injection (urea, aqueous ammonia, other) Concentration of solution to be injected Maintenance procedures for the injection system Description of system to control ammonia slip and optimize NOx control