

**COMMONWEALTH OF PUERTO RICO / GOVERNMENT OFFICE**



**TITLE V OPERATING PERMIT  
AIR QUALITY PROGRAM  
ENVIRONMENTAL QUALITY BOARD**

Permit Number: **TV-2834-09-1196-017**

Operating Permit application received: **November 22, 1996**

Issue and/or Effective Date: **December 2, 2000**

Expiration Date: **December 2, 2005**

In accordance with the provisions of Part VI of the PR Regulation for the Control of Atmospheric Pollution (RCAP) for Puerto Rico and the provisions of the 40 CFR, Part 70,

**MERCK SHARP & DOHME QUIMICA  
DE PUERTO RICO, INC.  
BARCELONETA , PUERTO RICO**

hereinafter referred to as The Permittee, or **MSDQ** is authorized to operate a stationary source of air contaminants consisting of emissions units described in this permit. Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air pollutants from those processes and activities directly related to or associated with air contaminant source(s) in accordance with the requirements, limitations, and conditions of this permit. All conditions in this permit are federally enforceable and state enforceable unless otherwise specified. Requirements which are only state enforceable are identified in the permit. A copy of this permit shall be kept on-site at the above named facility at all times.



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## ***Section I - General Information***

### **A. Facility Information**

Company Name: **Merck & Co., Inc.**

Mailing Address: **One Merck Drive**

City: **White House Station** State: **NJ** Zip: **08889-0100**

Plant Name: **Merck Sharp & Dohme Química De Puerto Rico, Inc.**

Plant Location: **Carr 2 Km 56.7, Barceloneta, PR**

Plant Mailing Address: **PO Box 601, Barceloneta, PR 00617**

Facility Contact Person: **Mr. Edwin Rodriguez**

Phone: **(787) 846 - 4100**

Technical Contact: **Mr. Iván Lugo**  
**Environmental Department Director**

Phone: **(787) 846 - 4100**

Fax: **(787) 846 - 6665**

Primary SIC Code: **2834**

### **B. P4 Project**

This operating permit is being issued under a Pollution Prevention in Permitting Project (P4) as a flexible model permit for the pharmaceutical industry pursuant to 40 CFR Part 63, Subpart GGG. This permit conforms to the Change Management Strategy described in the Preamble to the Pharmaceuticals Production MACT final rule published in the Federal Register on September 21, 1998.

This permit includes future effective requirements under Subpart GGG, a strategy for dealing with changes within the pharmaceutical plant without triggering a revision to this permit, and a schedule for complying with the MACT by the compliance date and submitting a significant modification application to revise this permit. After the

compliance date, this permit will be revised in order to incorporate the details of how MSDQ will comply with Subpart GGG and the Change Management Strategy discussed in the Preamble to Subpart GGG.

This permit also creates a VOC Plantwide Applicability Limit (PAL). The purpose of a PAL is to allow a permittee to make changes within its facility such that if the actual VOC emissions remain below the PAL, the permittee will not be subject to major New Source Review, which includes PSD at 40 CFR 52.21 and the criteria pollutant provisions of Rule 201 of the RCAP. The intent in establishing a PAL is to ensure the plant's actual emissions of VOC do not grow above current actuals plus PSD significance levels under 40 CFR 52.21(b)(23)(i).

Under the VOC PAL, MSDQ will continue to apply for a Rule 203 permit for the construction of new units. However, if the 203 permit issued verifies that the change is under the PAL and does not create or change an existing applicable requirement, no revision of this operating permit is necessary. EQB intends that such 203 permits will be issued within 15 days of receipt of a complete application from MSDQ. For process changes that do not involve new emissions units but result in an increase in emissions that would normally be required to apply for a 203 permit if MSDQ did not have a VOC PAL, MSDQ will submit a notice to EQB 15 days in advance of making the change.

This permit also includes specific requirements that MSDQ must comply with when installing any new thermal oxidizer, condenser or scrubber. The addition of these three types of control device will not trigger a revision to this permit if the 203 permit issued verifies that the new control device complies with the requirements of this permit. All 203 permits and notifications will be attached to this operating permit in Attachment II.

MSDQ is currently subject to the Regulation of Control of Atmospheric Pollution [includes regulations approved into the Puerto Rico State Implementation Plan (SIP) and non-SIP regulations]; New Source Performance Standards for Volatile Organic Liquid Storage Vessels (40 CFR Part 60, Subpart Kb) and Stationary Gas Turbines (40 CFR Part 60, Subpart GG); and National Emission Standards for Hazardous Air Pollutants Pharmaceuticals Production (40 CFR Part 63, Subpart GGG), Hazardous Waste Combustor MACT (40 CFR Part 63, Subpart EEE), and Off-Site Waste & Recovery Operations (40 CFR Part 63, Subpart DD). Specific applicable requirements for all emissions units are found in Sections III and IV of this permit.

## C. Process Description <sup>1</sup>

MSDQ is a pharmaceutical industry dedicated to the Chemical Synthesis Manufacturing for intermediates, final bulk and finish dosages of pharmaceutical products and veterinary products.

Emissions units include batch process sources where common manufacturing activities take place such as: filling, depressurizing, gas sweeping, heating, gas evolution, vacuum distillation, air drying, vacuum drying, and vacuum and atmospheric distillations. Both human and animal health care products are produced.

Control devices used are: solvent incinerator, fume incinerator and/or rotary kiln incinerator, besides scrubbers, condensers, and dust collectors. Storage tanks are used to store chemical materials used in pharmaceutical productions. The emissions units are defined in Section II of this permit.

Four identical boilers provide steam to the plant. They use fuel oil #6 and kerosene as alternate scenario. All four boilers vent through two separated stacks. Adjacent to the boilers, there is a cogeneration turbine which supplies steam and electrical power to the plant. The unit consists of a turbine and a waste heat recovery boiler. It uses fuel oil #2 as fuel.

A solid waste incinerator thermally destroys solid wastes generated at the facility. It uses kerosene as supplementary fuel. Solid wastes burned at the facility typically consist of rubbish, paper, cardboard, wood scrap, foliage, and dining wastes. Plastics and resinous wastes are also included but no chlorinated plastics are incinerated in the unit.

The solvent incinerator thermally destroys liquid solvent wastes generated at the plant. It is regulated under the Resource Conservation and Recovery Act and uses kerosene as an auxiliary fuel. Solvent wastes include organic compounds containing chlorine and nitrogen, and elemental sulfur. Acid gas and PM emissions from the unit are controlled using a caustic wet scrubber. This unit is also used as a control device for emissions resulting from manufacturing productions.

A rotary kiln incinerator thermally destroys solid, liquid and gaseous wastes generated at the plant. It is regulated under the Resource Conservation and Recovery Act and uses kerosene as an auxiliary fuel. Liquid wastes include organic compounds containing chlorine and nitrogen, and elemental sulfur; and also halogenated compounds. Acid

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<sup>1</sup> The information contained in this section is for information purposes only and does not create any applicable requirement.

gases and PM emissions from the unit are controlled using scrubbers. This unit is also used as a control device for emissions resulting from manufacturing productions. Storage tanks are used to store process waste material from the pharmaceutical productions and are also regulated under the Resource Conservation and Recovery Act (RCRA).

Stationary internal combustion engines provide energy in case of emergencies. Twenty (20) small generators (15 kW to 150 kW) can be installed and operated under this permit if they meet the conditions for emergency generators specified in the permit.



**Section II - Summary of Process Units and Control Devices <sup>2</sup>**

The emissions units regulated by this permit at permit issuance are the following:

Emitting Unit ID	Description
EU-BOILERS	The emission unit includes four (4) identical boilers (maximum energy input of 21 MMBTU/hr-each) that supply steam to the MSDQ. Boilers use fuel oil #6 with 2.5% weight of sulfur and, as an alternate scenario, fuel oil #2 or kerosene.
EU-COGEN	The emission unit includes a cogeneration turbine (maximum energy input of 44.6 MM BTU /hr) that supplies steam and electrical power to the MSDQ plant. The unit uses fuel oil #2 with 0.2% weight of sulfur and, as an alternate scenario, kerosene.
EU-MFG NON-MACT	The emission unit includes chemical synthesis manufacturing for intermediates, final bulk and finish dosages. Process sources, equipment leaks, and VOC emissions from the wastewater treatment area are included in the emissions unit. This emissions unit also includes emissions from solvent recovery operations that are part of MSDQ's efforts to minimize waste generation and optimize the quantity of product generated from a given amount of raw materials. These solvents may be reused in the process, or sent off-site for energy recovery, used in other products or for disposal. These process sources are not subject to MACT and are connected to various control devices including condensers and scrubbers (see Attachment I for listing).
EU-MFG-DUST NON-MACT	The emission unit includes pharmaceutical production processes for animal health care products and chemical synthesis manufacturing. Process sources not subject to MACT using particulate control devices such as dust collectors and/or HEPA filters as the primary control equipment are included in the emissions unit.
EU-MFG-INC NON-MACT	The emission unit includes chemical synthesis for intermediates and final bulk products. Process sources not subject to MACT using thermal oxidizers as a control device are included in the emissions unit.

<sup>2</sup> The information contained in this section is for information purposes only and does not create any applicable requirement.

Emitting Unit ID	Description
EU-MFG MACT	The emission unit includes chemical synthesis manufacturing for intermediates, final bulk and finish dosages. Process sources, equipment leaks, and VOC and HAP emissions from the wastewater treatment area are included in the emissions unit. This emissions unit also includes emissions from solvent recovery operations that are part of MSDQ's efforts to minimize waste generation and optimize the quantity of product generated from a given amount of raw materials. These solvents may be reused in the process, or sent off-site for energy recovery, used in other products or for disposal. The process sources are connected to various control devices including condensers, thermal oxidizers and scrubbers (see Attachment I for listing).
EU-MFG-DUST MACT	The emission unit includes pharmaceutical production processes for animal health care products and chemical synthesis manufacturing. Process sources using particulate control devices such as dust collectors and/or HEPA filters as the primary control equipment are included in this emissions unit.
EU-MFG-INC MACT	The emission unit includes chemical synthesis for intermediates and final bulk products. Process sources using thermal oxidizers as a control device are included in this emissions unit.
EU-TANKS NON-MACT	The emission units consist of storage tanks used to store chemical materials that are used in pharmaceutical productions. Storage tanks included in the emissions unit are subject to the same applicable requirements. These tanks are not subject to a MACT standard.
EU-TANKS MACT	The emission unit consist of storage tanks used to store chemical materials that are used in pharmaceutical productions. Storage tanks included in the emissions unit are subject to the same applicable requirements, including a MACT standard.
EU-TANKS-RKI	The emission unit consist of storage tanks used to store process waste material from the pharmaceutical productions. Storage tanks included in the emissions unit are subject to the same applicable requirements and are regulated under RCRA. These tanks are not subject to a MACT standard.

Emitting Unit ID	Description

Emitting Unit ID	Description
EU-TRASH	The emissions unit includes a solid waste incinerator (maximum energy input of 1 MM BTU/hr) that thermally destroys solid wastes generated at the MSDQ plant. The unit uses kerosene as a supplementary fuel. The unit combusts type 0 and 1 wastes, which typically consist of rubbish, paper, cardboard, wood scrap, foliage, dining wastes, etc.; and type 6 wastes, which include plastic and resinous wastes. No chlorinated plastics are incinerated in the unit. The unit has a secondary combustion chamber that is used as an afterburner.
EU-EMRGEN	The emissions unit includes several emergency generators operated for more than 500 hrs/yr.
EU-RKI	The emissions unit includes a Rotary Kiln Incinerator turbine (maximum energy input of 26 MM BTU /hr) used to thermally destroy solid, liquid and gaseous wastes generated at the MSDQ plant. The unit uses kerosene as an auxiliary fuel. Liquid wastes include organic compounds/containing chlorine and nitrogen, and elemental sulfur, and also other halogenated compounds. The unit incorporates a secondary combustion chamber. Acid and PM emissions are controlled using a caustic wet scrubber and a collision scrubber.
EU-SOLV	The emissions unit includes a solvent incinerator that thermally destroys liquid solvent wastes generated at the MSDQ plant. The unit uses kerosene as a supplementary fuel. Solvent wastes include organic compounds containing chlorine and nitrogen, and elemental sulfur. This unit is also used as a control device for emissions resulting from manufacturing productions, and are included in EU-MFG-INC.

Attachment I includes a list of all process, emissions sources and control devices that are authorized to operate under this Title V permit.

Attachment II includes the 203 permits as new units are constructed and all notices required as changes are made pursuant to Section IV. F.

### ***Section III - General Conditions***

- 1. Sanctions and Penalties:** The permittee is obligated to comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Any violation of the terms of this permit will be subject to administrative, civil or criminal penalties as established in the Puerto Rico Environmental Public Policy Act, Article 17 (Act Number 9, June 18, 1970, as amended).
  
- 2. Right of Entry:** As specified under Rules 103 and 603 (c)(2) of RCAP, the Permittee shall allow the Board or an authorized representative, upon presentation of credentials and other documents as may be required by law, to perform the following activities:
  - a) Enter upon the Permittee's premises where an emissions source is located or where emissions-related activity is conducted, or where records must be kept under the conditions of the permit, under the RCAP, or under the Clean Air Act;
  
  - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit, under the RCAP, or under the Clean Air Act;
  
  - c) Inspect and examine any facility, equipment (including monitoring and air pollution control equipment), practices or operations (including QA/QC methods) regulated or required under the permit, as well as sampling emissions of air quality and fuels; and
  
  - d) As authorized by the Clean Air Act and the RCAP, sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.
  
- 3. Data Availability:** As specified under Rule 104 of the RCAP, all emission data obtained by or submitted to the Board, including data reported pursuant to Rule 103 of the RCAP, as well as that obtained in any other way, shall be available for public inspection and may also be made available to the public in any additional manner that the Board may deem appropriate.
  
- 4. Emergency Plan:** As specified under Rule 107 of the RCAP, the Permittee shall have available an emergency plan which must be consistent with adequate safety practices, and which provides for the reduction or retention of the emission from the plant during periods classified by the Board as air pollution alerts, warning or emergencies. These

plans shall identify the emission sources, include the reduction to be accomplished for each source, and the means by which such reduction will be accomplished. These plans will be available to any representative of the Board at any time.

**5. Compliance Certification:** As established under Rule 112(B) and 603(c)(5) of the RCAP, The Permittee shall submit a compliance certification, including the annual emissions calculation for the previous year, on the first day of April of each year. The compliance certification shall be sent both to the Board and EPA<sup>3</sup>. It shall include, but is not limited to, the following information:

- a) identification of the applicable requirement that is the basis of the certification;
- b) the method used for determining the compliance status of the source;
- c) the compliance status;
- d) whether compliance is continuous or intermittent; and
- e) such other facts as the Board may require.
- f) For purposes of paragraphs (b) and (d) of this section, the Permittee shall identify the methods or other means used to determine the compliance status with each term and condition during the certification period, and whether such methods or other means provide continuous or intermittent data. If necessary, the Permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Act, which prohibits knowingly making a false certification or omitting material information. For purposes of paragraph (c) of this section, the Permittee shall identify each deviation and take it into account in the compliance certification.

**6. Regulation Compliance:** As specified under Rule 115 of the RCAP, any violation of the RCAP, or of any other applicable rule or regulation, shall be grounds for the Board to suspend, modify, or revoke any relevant permit, approval, variance or other authorization issued by the Board.

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<sup>3</sup> The certification to the EQB shall be mailed to: Director, Air Quality Program, Environmental Quality Board, P.O. Box 11488, Santurce, PR 00910. The certification to the EPA shall be mailed to: Chief, Permitting Section, Air Programs Branch, EPA Region II, 290 Broadway, New York, NY 10007.

- 7. Location Approval:** As specified under Rule 201 of the RCAP, nothing in this permit shall be interpreted as authorizing the location or construction of a major stationary source or the major modification of a major stationary source without first obtaining a location approval from the Board and without first demonstrating compliance with the National Ambient Air Quality Standards (NAAQS). This permit does not allow the construction of new minor sources without the permit required under Rule 203 of RCAP issued in accordance with the procedures described in Section IV. E) of this permit
- 8. Open Burning:** As specified under Rule 402 of the RCAP, Permittee shall not cause or permit the open burning of refuse in their premises except as established under Rule 402 (E) of the RCAP to conduct training or research of fire fighting techniques. The Permittee shall,

  - a) Keep records of fire fighting activities related to research or training. These records shall be kept and shall be made available upon request.
  - b) Submit yearly to EQB a schedule for fire fighting activities related to research or training and notify the EQB seven (7) days in advance of each fire fighting activity.
- 9. Particulate Fugitive Emissions:** As established in Rule 404 of the RCAP, The Permittee shall not cause or permit:

  - a) any materials to be handled, transported, or stored in a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished, without taking reasonable precautions to prevent particulate matter from becoming airborne.
  - b) the discharge of visible emissions of fugitive dust beyond the boundary line of the property on which the emissions originate.
- 10. Objectionable Odors:** As specified under Rule 420 of the RCAP, The Permittee shall not cause or permit emission to the atmosphere of matter which produces an "objectionable" odor that can be perceived in an area other than that designated for industrial purposes. MSDQ shall demonstrate compliance with Rule 420 (A)(1) as follows: if malodors are detectable beyond MSDQ's property line, and complaints are received, MSDQ shall investigate and take measures to minimize and/or eliminate the malodors, if necessary. [This condition is enforceable only by the State].

- 11. Permit Renewal Applications:** As established under Rule 602 (a)(1)(iv) of the RCAP, the Permittee's applications for permit renewal shall be submitted at least twelve (12) months prior to the date of permit expiration. All required applications must be certified by a responsible official consistent with paragraph (c)(3) of Rule 602.
- 12. Permit Duration:** As specified under Rule 603 of the RCAP, the following terms will apply during the duration of this permit
- a) **Effective Date:** This permit will become valid and in effect 60 days after it is signed by the Governing Board of the Environmental Quality Board, unless objected by EPA within their 45 day review period.
  - b) **Expiration:** This authorization shall have a fixed term of five (5) years. The expiration date will be automatically extended until the Board issues a renewal permit (Rule 605 (c) (4) (ii)) but only in those cases where the Permittee submits a complete renewal application at least twelve (12) months before the expiration date.[Rule 603(a)(2); Rule 605(c)(2) and (c)(4) of the RCAP].
  - c) **Permit Shield:** As specified under Rule 605(c)(4)(i) of the RCAP, the permit shield may be extended until the time the permit is renewed if a timely and complete renewal application is submitted.
  - d) In case that this permit is subject to any challenge by third parties, the permit shall remain in effect until the time it is revoked by a court of law with jurisdiction in the matter.
- 13. Recordkeeping Requirement:** As established under Rule 603 (a)(4)(ii) of the RCAP, The Permittee shall retain records of all required monitoring data and support information for a period of five (5) years from the date of the monitoring sample, measurement, report, or application.
- 14. Reporting Requirement:** As established under Rule 603 (a)(5)(ii) of the RCAP, The Permittee shall submit reports of all required monitoring every six (6) months, or more frequently if required by the Board or any other underlying applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with paragraph (c)(3) of Rule 602.

- 15. Reporting of Deviations due to Emergencies:** As specified in Rule 603 (a)(5)(ii) of the RCAP, any deviation resulting from an upset (such as sudden malfunction or breakdown) or emergency conditions, as defined in Rule 603(E) of the RCAP, must be reported within the next two working days. Such notification may be used to assert an affirmative defense upon an enforcement action against the Permittee. If the Permittee raises the emergency defense upon an enforcement action, the Permittee shall demonstrate that such deviation happens due to an emergency and that the Board was adequately notified. If such emergency deviation last for more than twenty-four (24) hours, the affected units may be operated until the end of the cycle or forty-eight (48) hours, what occurs first. The Board may only extend the operation of an emission source in excess of 48 hours, if the source demonstrates to the Board's satisfaction that the National Air Quality Standards have not been exceeded and that there is no risk to the public health. For purposes of the VOC-PAL, the source shall demonstrate compliance with the PAL.
- 16. Deviation Reporting (Hazardous Air Pollutants):** The source shall shut down its operations immediately or shall act as specified in its Emergency Response Plan (established in Rule 107 (C)), when such Plan has demonstrated that there is no significant impact at the fenceline. [This condition is enforceable only by the State]. Pursuant to Rule 603 (A)(5)(ii)(b), a notification will be required if a deviation occurs that results in the release of emissions of hazardous air pollutants for more than an hour in excess of the applicable limit. MSDQ shall notify the Board within 24 hours of the deviation. For the discharge of any regulated air pollutant that continues for more than 2 hours in excess of the applicable limit, the Permittee shall notify the Board within 24 hours of the deviation. The Permittee shall also submit to the Board, within seven (7) days of the deviation, a detailed written report which includes probable causes, time and duration of the deviation, remedial action taken, and steps which are being taken to prevent a reoccurrence. This does not apply to monitoring provisions under the VOC PAL. The procedures in Condition 6 of Section IV.F are to be used instead.
- 17. Severability Clause:** As specified under Rule 603(a)(6) of the RCAP, the clauses in this permit are severable. In the event of a successful challenge to any portion of the permit in an administrative or judicial forum, or in the event any of its clauses is held to be invalid, all other portions of this permit shall remain valid and in effect, including those related to emission limits, terms and conditions, be they specific or general, as well as monitoring, recordkeeping and reporting requirements.
- 18. Permit Noncompliance:** As established in Rule 603 (a)(7)(i) of the RCAP, The Permittee must comply with all conditions of the permit. Permit noncompliance constitutes a violation of the RCAP and is grounds for taking the appropriate enforcement action; impose sanctions; revoke, terminate, modify and/or reissue to



permit; or to deny a permit renewal application.

19. **Defense Not Allowed:** As specified under Rule 603 (a)(7)(ii) of the RCAP, it shall not be a defense for The Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
20. **Permit Modification and Revocation:** As specified under Rule 603 (a)(7)(iii) of the RCAP, the permit may be modified, revoked, 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.
21. **Property Rights:** As specified under Rule 603(a)(7)(iv) of the RCAP, the permit does not convey any property rights of any sort, nor does it grant any exclusive privilege.
22. **Obligation to Furnish Information:** As specified in Rule 603 (a)(7)(v) of the RCAP, The Permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Board copies of records required to be kept by the permit.
23. **Changes in Operating Scenarios:** As specified under Rule 603 (a)(10) of the RCAP, The Permittee shall record in a logbook, contemporaneously with making a change from one operating scenario to another, the scenario under which it is operating. This logbook must be kept at The Permittee's facility at all times.
24. **Prohibition on Default Issuance:** As specified under Rule 605(d) of the RCAP, it shall never be considered that a permit has been issued by default as a result of the Board's failure to take final action on a permit application within eighteen (18) months. The Board's failure to issue a final permit within eighteen (18) months should be treated as a final action solely for the purpose of obtaining judicial review in state court.
25. **Administrative Permit Amendments and Permit Modifications:** As specified under Rule 606 of the RCAP, the permit shall not be amended nor modified unless The Permittee complies with the requirements for administrative permit amendments and permit modifications as described in the RCAP.
26. **Permit Reopenings:** As specified under Rule 608 of the RCAP, this permit shall be

reopened and revised under any of the following circumstances

- a) Whenever additional applicable requirements under the Act become applicable to The Permittee, when the remaining permit term is three (3) years or more. Such reopening shall be completed eighteen (18) months after promulgation of said applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended under Rule 605 (c)(4)(i) or (ii) of the RCAP.
  - b) Whenever the Board or EPA 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.
  - c) Whenever the Board or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- 27. Change in Name and/or Ownership:** This permit is issued to Merck Sharp & Dohme Quimica de Puerto Rico, Inc. In the event that the company changes its name or is transferred to a different owner, the new responsible official must submit a sworn statement in which he/she accepts and promises to comply with all conditions of this permit.
- 28. Renovation/Demolition Work:** The Permittee shall comply with the provisions of 40 CFR 61.145 and 61.150 when conducting any renovation or demolition activities at the facility and with the Rule 422 of the RCAP.
- 29. Requirements for Refrigerants (Stratospheric Ozone Protection):**
- a) In the event that the permittee has equipment or appliances, including air conditioning units, which use Class I or II refrigerants as defined in 40 CFR 82, Subpart A, Appendices A and B, he/she shall take the necessary measures to ensure that all maintenance, service or repair services performed are done so according to the practices, certification and personnel requirements, disposition requirements, and recycling and/or recovery equipment certification requirements specified under 40 CFR 82, Subpart F.
  - b) **Service on Motor Vehicles:** If The Permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the

permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

The term motor vehicle as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.

- 30. Compliance Clause:** Under no circumstances does compliance with this permit exempt the Permittee from complying with all other state and federal laws, regulations, permits, administrative orders or applicable court orders.
- 31. Risk Management Plan:** If the threshold quantity of any substance regulated by 40 CFR Part 68 is exceeded while the permit is in effect, a risk management plan (RMP) shall be presented. The RMP will be done according to the compliance itinerary established in 40 CFR Part 68.10. The Permittee shall certify compliance with this requirements in the annual compliance certification as required by 40 CFR Part 70.
- 32. Emissions Calculations:** The Permittee shall submit, by April first of each year, the actual or permissible emissions calculations for the previous natural year. The emission calculations shall be submitted on the forms prepared by the EQB for this purpose and the responsible official shall certify all the information submitted is correct. The permittee must make the applicable payment for the emissions calculations for the previous year on or before June 30 of each year.
- 33. Annual Fee:** As specified under Rule 610 of the RCAP, the Permittee must submit an annual payment based on the emissions for each regulated pollutant emitted. The payment will be based on their actual emissions at a rate of \$31.00 per tonnage, unless the Board decides otherwise as permitted under Rule 610 (B)(2)(iv) of the RCAP. This payment must be made on or before June 30 of each year.
- 34. Control Equipment**
  - a) All pollution control equipment shall be operated at all times while the source being controlled is in operation except as specifically provided under an applicable requirement, (e. g., VOC-PAL). [Rule 108 of RCAP]
  - b) In case of a shutdown steps according to Rule108(E) shall be followed.

c) Operation of control equipment shall be maintained according to Rule108(F).

**35. Emergency Generators:**

a) The hours of operation for each generator listed as an insignificant activity is limited to 500 hrs/yr. (This limit does not apply to emergency generators included in the EU-EMRGEN emission unit.)

b) For each generator, The Permittee shall keep an annual record of the hours of operation and fuel usage, which shall be kept available for inspection to EQB and EPA personnel.

**36. Roof Surface Coating:** This is a state-only requirement. The Permittee shall not cause or permit the roof surface coating by applying hot tar or any other coating material containing organic compounds without previous notification to the Board. The use of used oil or hazardous waste for roof surface coating is prohibited. Operation of the source may start seven (7) days after the notification for operation unless this notification is deemed incomplete or the operation will be in conflict with any other Rule or Regulation.

**37. Sworn Statement:** All reports required pursuant Rule 103(D) (i.e., semiannual monitoring reports and annual compliance certifications) shall be submitted together with a sworn statement or affidavit by the Responsible Official or a duly authorized representative. Such sworn statement shall attest to the truth, correctness, and completeness of such records and reports.

**38. Reservation of Rights:** Except as expressly provided in this Title V permit:

a) Nothing herein shall prevent EPA or the Board from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the Title V permit, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties, fines and/or punitive damages.

b) Nothing herein shall be construed to limit the rights of EPA or the Board to undertake any criminal enforcement activity against MSDQ or any person.

c) Nothing herein shall be construed to limit the authority of EPA or the Board to undertake any actions in response to conditions that present an imminent and substantial endangerment to public health or welfare, or the environment.

- d) Nothing herein shall be construed to limit The Permittee's rights to administrative hearing and judicial appeal of termination/revocation/disputes over modification/denial actions in accordance with regulations and the Environmental Public Policy Act.

**Section IV- Permit Terms and Conditions**

Under this section are the specific enforceable permit conditions related to the applicable requirements and the methods to demonstrate compliance. The following tables contain summaries of applicable requirements along with the required compliance demonstration methods for all emission units identified in the Section I.

**A. Facility Wide Requirements**

**1. The emissions of the facility at the time of application are as follows:**

<b>POLLUTANT</b>	<b>EMISSIONS (TON / AÑO)</b>
PM <sub>10</sub>	34.8
SO <sub>2</sub>	1,046.5
NO <sub>x</sub>	138.8
CO	40.4
Ammonia	87.7
HCl	14.8
Methylene Chloride	37.9
Sulfuric Acid	0.4

The above emissions represent the potential emissions at the time of the permit application and shall be used for fee payment purposes only.

**2. VOC Plantwide Applicability Limit:**

- a) The Permittee’s annual emissions of Volatile Organic Compounds (VOCs) shall be limited to the following Plantwide Applicability Limit (PAL).

<b>Criteria Pollutant</b>	<b>Emission Limit (tons/year)</b>
VOC	157

This limit is based on actual emissions plus PSD significance levels. Operation under this limit and changes made at the facility within this limit means that major new source review, as it pertains to 40 CFR 52 and the criteria pollutant sections of Rule 201 of the RCAP, has not been triggered. Acetone emissions are excluded from this limit because it has been demonstrated that it does not participate in photochemical reactions.

- b) For the first year of the permit term, the VOC emissions will be added to each subsequent month, beginning with the first month, until 12 months have been reached (e.g., when the permit becomes effective, within 30 days after the first month, the first month's VOC emissions will be calculated. Within 30 days after the second month, the VOC emissions will be calculated for the month and added to the first month's emissions. This methodology will be used until 12 months have been reached). Starting on the thirteenth (13<sup>th</sup>) month, the Permittee's VOC emissions shall be calculated each month by adding the actual monthly VOC emissions for the units subject to the VOC PAL to the actual total VOC emissions from the previous eleven (11) months to obtain a twelve (12) months rolling total. Compliance with the VOC PAL in provision a) of this permit condition shall be determined within 30 days of the end of each month and shall be based on the total actual VOC emissions from the site for the immediately preceding 12 month period. MSDQ shall use the calculation techniques identified in Section IV. G to calculate site-wide actual VOC emissions.

### **3. Adjustments to the Site-wide VOC PAL.**

- a) The site-wide VOC PAL shall be adjusted as follows:
  - i) Prior to the compliance date of a VOC specific regulation to which the site is newly subject, the VOC PAL shall be reduced by the amount of actual emissions reductions that would result from complying with the regulation on the compliance date.
  - ii) No adjustment of the VOC PAL shall be required solely as a result of complying with applicable HAP regulations provided the reduction is not otherwise credited as a VOC reduction in an ozone program.<sup>4</sup>
- b) If MSDQ's actual emissions are less than the PAL, MSDQ may not provide to any other party the difference as an emission offset or emissions reduction credit.

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<sup>4</sup> A state or federal regulation promulgated under Section 112 of the Clean Air Act or state air toxics program.

#### **4. Operating under the VOC PAL**

The site's actual emissions of VOCs shall not exceed the VOC PAL established in Condition 2.a) of this section except as provided for in Condition 5.a) of this section.

#### **5. Petition to Modify the VOC PAL**

- a) MSDQ may petition the Board during the duration of this permit for permission to construct new emissions units outside the VOC PAL by submitting to the Board a PSD permit issued by USEPA Region 2 for the change accompanied by an application for a revised Title V permit as indicated in Rule 606 of RCAP. In its application for a 201/203 permit and revision to this Title V permit, MSDQ shall demonstrate that the actual emissions to result from the new units can not be constructed with the VOC PAL limit as established in Condition 2. a). To make this demonstration, MSDQ shall provide in its application the previous years actual VOC emissions under the PAL, the potential to emit and projected actual emissions of the new and existing units, and a statement as to why the emissions do not fit within the PAL.

The construction of a new VOC emissions source outside the PAL which results in any increase of VOC emissions is subject to the PSD rules at 40 CFR 52.21 regardless of the 40 tpy PSD significance level for VOC found at 40 CFR 52.21(b)(23) or the fact that MSDQ could otherwise net out of PSD pursuant to 40 CFR 52.21(b)(3)(i)(b). The construction of new units outside the PAL is also subject to Rule 201 of the RCAP.

- b) The revised Title V permit application will incorporate the BACT determination for the units outside the VOC PAL and all other PSD conditions, proposed permit terms and conditions necessary to assure compliance with the PSD permit, and either of the following:
  - i) emission limits for individual sources at the site (exclusive of new units added outside the VOC PAL), the total of which cannot exceed the PAL limit, in the case where MSDQ decides to extinguish the VOC PAL following the procedures in Condition 6.b) below; or
  - ii) a request to maintain the current VOC PAL and leave the new PSD affected units outside the VOC PAL. MSDQ may request that the VOC PAL be increased by the actual emissions of the PSD affected units after the PSD affected units have operated for at least two years which represent normal source operation. Any future change to the VOC PAL to include the actual VOC emissions from PSD affected units shall be processed as a significant permit modification under Rule 606 of the RCAP. BACT and any other



requirements in the PSD permit shall remain as applicable requirements of this Title V permit even if the VOC PAL is modified to include the actual emissions of the PSD affected units.

**6. Duration of the VOC PAL**

- a) Upon applying for a renewal permit at least twelve months prior to the expiration of this permit, MSDQ shall choose whether to keep the VOC PAL, subject to adjustment in accordance with regulations, if any, that address PALs or to extinguish the VOC PAL.
- b) If MSDQ chooses to extinguish the VOC PAL, each unit under the PAL must be allocated a unit-specific potential to emit limit for VOCs in tons per year on a 12-month rolling basis. The total potential to emit limit of all units at the plant, excluding PSD affected units that received PSD permits and have actual emissions that are not included in the VOC PAL, cannot exceed the PAL VOC limit in Condition 2 a). These new potential to emit limits must be added as enforceable permit conditions under Rule 203 of the RCAP and this Title V permit. Any future changes in VOC emissions including increases in operations that result in an increase in actual emissions or new constructions will be subject to new source review pursuant to Rules 201, 203 and/or 40 CFR 52.21 as appropriate. Increases or decreases in emissions that occurred from changes under the PAL or in the establishment of potential to emit limits on individual units when the PAL is extinguished are not creditable for purposes of contemporaneous netting under 40 CFR 52.21(b)(3).

- 7. Reestablishing a PAL:** If MSDQ chooses in the future to re-establish a VOC PAL, the VOC PAL shall be based on regulations, if any, that address PALs.

## B. Emission Units Requirements <sup>5</sup>

### 1. EU-BOILERS

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
Simultaneous Operation	N/A	N/A	N/A	Record	Daily	Daily	Semi-annual
PM Emission Limit	PM	0.3	lbs/MM Btu of heat input	Method 5  surrogate - sulfur-in-fuel limit	Once during first year of permit	Stack test result	Sixty (60) days after sampling
Sulfur Limit	SO <sub>2</sub>	2.5	Percent by weight	Fuel supplier certificate, log book	Upon delivery	Daily	Monthly
Opacity Limit	Opacity	20	Percent	Method 9  Visible inspection	Six times/year at approx. 2 month intervals  Daily	With each opacity reading.  Daily	Sixty (60) days after sampling test.  Semi-annual

#### a) Simultaneous Operation

- i) The Permittee shall operate no more than three boilers simultaneously with Cogeneration turbine; fourth boiler as stand-by only (Rule 204 of RCAP; federally enforceable by reference to EPA Memo of 1989) .
- ii) The Permittee shall record the hours of operation of each boiler and the cogeneration turbine on a daily basis. The records shall be in the form of log sheets, and the log sheets shall include the date and time of operation of each boiler and turbine to ensure no more than three boilers operate simultaneously with cogeneration turbine.

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<sup>5</sup> Some applicable requirements will appear both in the table as well as in the text for each emission unit.

**b) PM Emission Limit**

- i) The Permittee shall not cause or permit the emission, from any fuel burning equipment, burning solid or liquid fuel of PM in excess of 0.3 lb/MM BTU [ Rule 406 of RCAP] of heat input, under the normal and alternate operating scenarios.
- ii) Performance test (using Method 5, Appendix A, 40 CFR Part 60) shall be done within first year of permit.
- iii) A test protocol shall be submitted at least thirty (30) days before the performance test [Rule 106(C) of RCAP].
- iv) A written notification shall be submitted fifteen (15) days prior to performance test to allow EQB to assign an observer [Rule 106(D)].
- v) A final Report shall be submitted within sixty (60) days after the performance test [Rule 106(E)] and shall be included in annual certification of General Condition 5 of Section III for each year in which the test was conducted.
- vi) Sulfur in fuel monitoring is a surrogate: AP-42 emission factors for PM are used in conjunction with fuel usage records and sulfur content of fuel to demonstrate compliance with PM limit in above Table. USEPA emission factors from AP-42: "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition," Office of Air Quality Planning and Standards, January 1995.

**c) Sulfur Limit**

- i) The Permittee shall not burn or permit the use in any fuel burning equipment, any fuel with a sulfur content, by weight, which exceeds 2.5 percent (Rule 410 of the RCAP).
- ii) For the purposes of satisfying the requirement to keep a daily record of sulfur content in the fuel, the Permittee shall retain a copy of the fuel supplier certificate containing sulfur content for the most recent delivery. The Permittee shall obtain analysis of fuel Sulfur content once per fuel delivery using Method ASTM 4294 or ASTM D 2880-71.

**d) Sulfur Reports**

Monthly reports shall be submitted indicating on a daily basis the sulfur content

in the fuel burned at the unit.

**e) Calibration**

The Permittee shall maintain records of periodic calibration of fuel flow meters and such records shall be made available to EQB upon request. Calibration shall be made at least every 6 months.

**f) Opacity Limit**

- i) The Permittee shall not exceed the 20 percent opacity limit (6-minute average). However the facility may discharge visible emissions of an opacity up to 60 percent for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval [Rule 403 of RCAP].
- ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take six (6) visible emissions readings on an annual basis. The readings shall be taken using Method 9 as established in 40 CFR 60, Appendix A and shall be conducted at intervals of approximately two months apart. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
- iii) The Permittee shall conduct daily visual opacity inspections during daylight hours. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visual emissions other than condensed water vapor. The observer shall select a position at least 15 feet but no more than .25 miles from the facility and the observer should be in a position such that the sun is not directly in the observer's eyes. If any visible emissions are observed, the Permittee shall do the following:
  - (1) Verify that the equipment and/or control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the Permittee shall take corrective action immediately to eliminate excess opacity.
  - (2) If the corrective action taken in (1) does not correct the opacity problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9 by EQB. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB

within 24 hours.

## 2. EU-COGEN

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
<b>Simultaneous Operation Limitation</b>	N/A	N/A	N/A	Record	Daily	Daily	Semi-Annually
<b>PM Emission Limit</b>	PM	0.3	Lbs/MM BTU of heat input	Method 5 Surrogate-sulfur-in-fuel limit	Once during first year of permit	Result of stack test	Sixty (60) days after sampling test
<b>Sulfur Limit</b>	SO <sub>2</sub>	0.2	Percent by weight	Fuel supplier certificate	Upon Delivery	Daily	Monthly
<b>Opacity Limit</b>	Opacity	20	percent	Method 9  Visible inspection	Once during first year of permit	With each opacity reading.  Daily	Sixty (60) days after sampling test. Semi-annual
<b>Fuel Consumption</b>	fuel	330	gals/hour	Flow rate monitor	Continuous	Daily fuel rate	Semi-annually
<b>Specific Gravity Limit</b>	Specific Gravity	≥40	Degrees API	Fuel Supplier Analysis	With each fuel delivery	Upon delivery	Semi-annually
<b>NO<sub>x</sub> Emissions</b>	Water to fuel ratio	≥0.631	none	Flow rate monitor	Continuous	Monthly	Quarterly
<b>NO<sub>x</sub> Emissions (Cont.)</b>				Fuel-bound nitrogen	Upon delivery	Daily	Monthly
				Method 20	Once during 1st year of permit	NO <sub>x</sub> emission	60 days after testing

### a) Simultaneous Operation

The Permittee shall keep operating records of cogeneration turbine and boilers on a daily basis, following the requirements in condition 1. for EU-BOILERS.

**b) PM Emission Limit**

- i) The Permittee shall not cause or permit the emission, from any fuel burning equipment, burning solid or liquid fuel of PM in excess of 0.3 lb/MM BTU [ Rule 406 of RCAP] of heat input, under the normal and alternate operating scenarios.
- ii) Performance test (using Method 5) shall be conducted during first year of the permit term to demonstrate compliance with the PM limit.
- iii) Test protocol shall be submitted at least 30 days before the performance test recordings [Rule 106(C)].
- iv) Written notification shall be submitted 15 days prior to the test to allow EQB to assign an observer [Rule 106(D)].
- v) Final report shall be submitted within 60 days after the performance test recordings [Rule 106(E)] and shall be included in annual certification of General Permit Condition 5- of Section III for each year in which the test was conducted.
- vi) Sulfur in fuel monitoring is a surrogate: The Permittee shall maintain records of the type and actual fuel usage (including percent sulfur of fuel) in this unit. AP-42 emission factors are used in conjunction with fuel usage records and sulfur content to demonstrate compliance with PM limit in above table. USEPA emission factors from AP-42 (“Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition,” Office of Air Quality Planning and Standards, January 1995).

**c) Sulfur Limit**

- i) The Permittee shall not burn or permit the use in any fuel burning equipment of any fuel with a sulfur content that exceeds 0.2% by weight [Rule 410 of RCAP and 40 CFR 60.333 (b)].
- ii) For the purposes of satisfying the requirement to keep a daily record of sulfur content in the fuel, the Permittee shall retain a copy of the fuel supplier certificate containing sulfur content for the most recent delivery. The Permittee shall obtain analysis of fuel Sulfur content once per fuel delivery. Fuel Sulfur content shall be determined by ASTM D 2880-71 or ASTM 4294.

**d) Opacity Limit**

- (i) The Permittee shall not exceed the 20 percent opacity limit (6-minute average). However, the facility may discharge visible emissions of opacity up

to sixty (60) percent for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval (Rule 403 of RCAP).

- (ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take one visible emission reading during the first year of the permit. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
- (iii) The Permittee shall conduct daily visual opacity inspections during daylight hours. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visual emissions, other than condensed water vapor. The observer shall select a position at least 15 feet but not more than .25 miles from the affected facility and the observer should be in a position such that the sun is not directly in the observer's eyes. If any visible emissions are observed, the Permittee shall do the following:
  - (1) Verify that the equipment and control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the Permittee shall take corrective action immediately to eliminate excess opacity.
  - (2) If the corrective action taken in (1) does not correct the opacity problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9 by EQB. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB within 24 hours.

**e) Fuel Consumption**

Fuel consumption of the unit shall not exceed 330 gals/hr (Rule 204 of RCAP; federally enforceable by reference to EPA Memo of 1989) . Fuel consumption shall be determined by dividing the fuel burned by the hours of operation of each day.

**f) Specific Gravity**

Specific gravity of the fuel shall be 40 degrees API or more. A record shall be kept of the specific gravity for each fuel delivery.

**g) NO<sub>x</sub> Emissions**

- i) The Permittee shall not cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain NO<sub>x</sub> in excess of 150 ppmdv corrected to 15% O<sub>2</sub> [40 CFR 60.330 (a) and 60.332 (a) (2)].

- ii) A water to fuel ratio of greater than or equal to 0.631 shall be maintained on a 1 hour rolling average, to control NO<sub>x</sub> emissions.
- iii) The Permittee shall submit a written report of all excess emissions and monitoring systems performance for every calendar quarter including all information required in 40 CFR 60.334(c). All quarterly reports shall be postmarked by 30th day following the end of each quarter [60.334(c)][60.7(c)].
- iv) Records shall be kept of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; all information that could be required to be reported in the excess emissions report under 40 CFR 60.334(c) including water to fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen and sulfur content of the fuel burned; and all other information required shall be recorded in a permanent form suitable for inspection. The file shall be retained for at least five (5) years following the date of such measurements, maintenance, reports, and records.
- v) Test protocol for conducting a Method 20 test shall be submitted at least 30 days before the performance test recordings [Rule 106(C)].
- vi) Written notification shall be submitted 15 days prior to the test to allow EQB to assign an observer [Rule 106(D)].
- vii) Final report shall be submitted within 60 days after the performance test recordings [Rule 106(E)] and shall be included in annual certification of General Permit Condition 5. of Section III for each year in which the test was conducted.

#### **h) NO<sub>x</sub> /Sulfur Reports**

Monthly reports shall be submitted indicating on a daily basis the sulfur and nitrogen content in the fuel burned at the unit. The values shall be determined and recorded daily if fuel is supplied to the turbine without intermediate bulk storage.



### 3. EU-EMRGEN

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
<b>PM Emission Limit</b>	PM	0.3	lbs/MM Btu of heat input	surrogate - sulfur-in-fuel limit	When in use	When in use	Annual
<b>Opacity Limit</b>	Opacity	20	Percent	Method 9	Annually	With each opacity reading.	Sixty (60) days after sampling test.
				Visible inspection	Daily	Daily	Semi-annual
<b>Hours of Operations</b>	hrs.	See condition c)	hrs	Recordkeeping	Daily when in operation	Daily when in operation	Semi-annual

#### a) PM Emission Limit

- i) The Permittee shall not exceed the emission limit defined in the table above under their normal and alternate operating scenarios. (Rule 406 of RCAP)
- ii) The Permittee shall not cause or permit the emission, from any fuel burning equipment of PM in excess of 0.3 lb/MM BTU [ Rule 406 of RCAP].
- iii) Sulfur in fuel monitoring is surrogate: AP-42 emission factors are used in conjunction with fuel usage records, including sulfur content of fuel burned, to demonstrate compliance with PM limit. USEPA emission factors from AP-42: “Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition,” Office of Air Quality Planning and Standards, January 1995.

#### b) Opacity Limit

- i) The Permittee shall not exceed the 20 percent opacity limit (6 minute average) defined in the table above. However the facility may discharge visible emissions of an opacity up to 60 percent for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval [Rule 403 of RCAP].

- ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take one visible emission reading annually. This is not required for the 15 kW units identified in the table in Condition c) of this part. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
  
- iii) The Permittee shall conduct daily visual opacity inspections during daylight hours, when in operation. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visual emissions, other than condensed water vapor. The observer shall select a position at least 15 feet but not more than .25 miles from the affected facility and the observer should be in a position such that the sun is not directly in the observer's eyes. If any visible emissions are observed, the Permittee shall do the following:
  - (1) Verify that the equipment and/ or control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the Permittee shall take corrective action immediately to eliminate excess emissions.
  
  - (2) If the corrective action taken in (1) does not correct the opacity problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB within 24 hours. The Permittee shall hire an independent third party, certified by EQB to conduct these tests, which should be conducted on every shift until the problem has been corrected.

**c) Operating Hours**

Operating Hours for each emission unit should not exceed the following:

<b>Source</b>	<b>Hours of Operation Permitted</b>
Lab Emergency Generator (15kw) #1	8760
Lab Emergency Generator (15kw) #2	8760
Lab Emergency Generator (15kw) #3	8760
Emergency Generator Well #3(250 kW)	2000

Source	Hours of Operation Permitted
Emergency Generator Cogen (250 kW)	2000
F1 Emergency Generator (1765 hp)	8760
Emergency Generator (2000 kW)	2160
Air Compressor	3380

#### 4. EU-RKI

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
<b>Opacity Limit</b>	Opacity	20	Percent	Method 9  Visible inspection	Annually  Daily	With each opacity reading.  Daily	Sixty (60) days after sampling test. Semi-annual
<b>Part 63, Subpart EEE</b>	N/A	N/A	N/A	N/A	N/A	Notification see condition	N/A

##### a) Opacity Limit

- i) The facility shall not exceed the 20 percent opacity limit (6 minute average) defined in the table above. However, the facility may discharge visible emissions of an opacity up to sixty (60) percent opacity up for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval (Rule 403 of RCAP).
- ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take one visible emission reading annually. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
- iii) The Permittee shall conduct daily visual opacity inspections during daylight hours. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visual emissions, other than condensed water vapor. The observer shall select a position at least 15 feet but not more than .25 miles from the affected facility and the observer should be in a position such that the sun is not directly in the observer's eyes. If any

visible emissions are observed, the Permittee shall do the following:

- (1) Verify that the equipment and/ or control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the Permittee shall take corrective action immediately to eliminate excess emissions
- (2) If the corrective action taken in (1) does not correct the opacity problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9 by EQB. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB within 24 hours.

**b) Hazardous Waste Combustor MACT**

MSDQ shall comply with 40 CFR part 63, subpart EEE and the provisions of subpart A as provided in Table 1 to subpart EEE (hereinafter “HWC MACT standard”). MSDQ must be in compliance with the HWC MACT standard by September 30, 2002 (hereinafter “compliance date”). The requirements are summarized below.

- i) Initial Notification. On or before January 28, 2000, MSDQ shall submit an Initial Notification containing information pursuant to 40 CFR 63.1210(a)(1) and 63.9(b).
- ii) Notification of Intent to Comply. On or before September 30, 2000, MSDQ shall submit a Notification of Intent to Comply (NIC) that meets the requirements of 40 CFR 63.1210(b) and (c). MSDQ shall also meet the following two requirements related to the NIC:
  - (1) On or before July 30, 2000, MSDQ shall hold at least one informal public meeting on the draft NIC that meets the requirements of 40 CFR 63.1210(c).
  - (2) Not later than 30 days before the public meeting required in Condition (4)(b)(ii)(1) above, MSDQ shall make the draft NIC available for public review and shall provide public notice of the NIC meeting as required by 40 CFR 63.1210(b) and (c).
- iii) Progress Report. On or before September 30, 2001, MSDQ shall submit a Progress Report that meets the requirements of 40 CFR 63.1211(b).
- iv) Initial Comprehensive Performance Test and Continuous Monitoring System

Performance Evaluation. Not later than 6 months after the compliance date, MSDQ shall commence the initial comprehensive performance test and continuous monitoring system (CMS) performance evaluation, meeting all applicable requirements of 40 CFR 63.1207, 63.1208, 63.7, and 63.8. MSDQ shall complete the test not later than 60 days after commencing it. MSDQ shall also meet the following three requirements related to the initial comprehensive performance test and CMS performance evaluation:

- (1) Not later than 1 year before the initial comprehensive performance test and CMS performance evaluation is scheduled to commence, MSDQ shall submit a Notification of Initial Comprehensive Performance Test and CMS Performance Evaluation and a site-specific test plan and CMS evaluation plan as required by 40 CFR 63.1207(e), 63.9(e), and 63.9(g)(1) and (3). [MSDQ may also be required to submit a feedstream analysis plan under 40 CFR 63.1209(c)(3).] Note that this requirement falls due on or before March 30, 2002, depending on the schedule MSDQ adopts for testing.
  - (2) After the Administrator has approved the test plan and CMS performance evaluation plan, MSDQ shall make the plans available to the public for review. MSDQ shall issue a public notice announcing the approval of the plans and the location where the plans are available for review, as required by 40 CFR 63.1207(e)(2).
  - (3) Not later than 60 days before the initial comprehensive performance test and CMS performance evaluation is scheduled to commence, MSDQ shall submit a notification of intent to conduct the performance test, along with any comments received on the approved test plan and CMS performance evaluation plan.
- v) Notification of Compliance. Not later than 90 days after completing the initial comprehensive performance test and CMS performance evaluation [see Condition (4)(b)(iv) above], MSDQ shall submit a Notification of Compliance that meets the applicable requirements of 40 CFR 63.1210(d), 63.1207(j), 63.9(h), 63.10(d)(2), and 63.10(e)(2). Depending on the submittal date, MSDQ will meet one of the following two conditions:
- (1) If the Notification of Compliance is postmarked on or after the compliance date, MSDQ must comply with the emission standards and operating parameter limits established in the notification beginning on the date of postmark.
  - (2) If the Notification of Compliance is postmarked before the compliance date, MSDQ must comply with the emission standards and operating

parameter limits established in the notification beginning on the compliance date.

vi) Documentation of Compliance. Depending on the submittal date of the Notification of Compliance [see Condition (4)(b)(v) above], MSDQ shall meet one of the following two conditions:

- (1) If MSDQ has not submitted the Notification of Compliance by the compliance date, MSDQ shall develop and include in the operating record (by the compliance date) a Documentation of Compliance (DOC) that meets the requirements of 40 CFR 63.1211(d). MSDQ shall comply with the emission standards and operating parameter limits specified in the DOC until the postmark date of the Notification of Compliance.
- (2) If MSDQ submits the Notification of Compliance on or before the compliance date, MSDQ need not develop a DOC.

vii) Certifications. MSDQ shall make the following certifications:

- (1) MSDQ shall certify the NIC and Progress Report as required by 40 CFR 63.1212.
- (2) The responsible official for MSDQ, as designated for title V purposes, shall certify the DOC (if it must be developed) and the Notification of Compliance.

viii) Title V Permit Modification. MSDQ shall meet the following conditions related to modifying its title V operating permit:

- (1) On or before the compliance date, MSDQ shall submit an application for a significant permit modification (SPM) to incorporate into its title V permit the applicable requirements of the HWC MACT standard, a description of the affected source and activities subject to the standard, and a description of how MSDQ will meet the requirements of the standard, according to one of the following two conditions:
  - (a) If MSDQ has not yet submitted the Notification of Compliance [see Condition (4)(b)(v) above], the application shall contain the DOC [see Condition (4)(b)(vi) above].
  - (b) If MSDQ has previously submitted the Notification of Compliance (or submits the Notification of Compliance at the

same time as the application), the application shall be consistent with that notification.

- (2) If MSDQ submits the Notification of Compliance after it has submitted the initial SPM application [i.e., Condition (4)(b)(viii)(A)(I) above applies], an addendum to the SPM application is required to incorporate the operating parameter limits determined from performance testing. In this case, MSDQ shall submit an addendum to the SPM application (at the same time that the Notification of Compliance is submitted) to revise the SPM application as necessary to be consistent with the Notification of Compliance.
- (3) On and after the compliance date, MSDQ shall operate consistent with the SPM application (as modified, when applicable, by the addendum to the SPM application) up until the time that the permit modification is finalized. After the permit modification is finalized, MSDQ shall operate consistent with the modified permit.

ix) Emission Standards. MSDQ shall meet the emission standards for existing hazardous waste incinerators in 40 CFR 63.1203(a), (c), and (d) on or before the compliance date. These standards are as follows:

(1) Emission limits for existing sources. MSDQ shall not discharge or cause combustion gases to be emitted into the atmosphere that contain:

(a) For dioxins and furans:

(i) Emissions in excess of 0.20 ng TEQ/dscm corrected to 7 percent oxygen; or

(ii) Emissions in excess of 0.40 ng TEQ/dscm corrected to 7 percent oxygen provided that the combustion gas temperature at the inlet to the initial particulate matter control device is 4000F or lower based on the average of the test run average temperatures (For purposes of compliance, operation of a wet particulate control

device is presumed to meet the 4000F or lower requirement.);

(b) Mercury in excess of 130 ng/dscm corrected to 7 percent oxygen;

(c) Lead and cadmium in excess of 240 ng/dscm, combined emissions, corrected to 7 percent oxygen;

(d) Arsenic, beryllium, and chromium in excess of 97 ng/dscm, combined emissions, corrected to 7 percent oxygen;

(e) For carbon monoxide and hydrocarbons, either:

(i) Carbon monoxide in excess of 100 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis and corrected to 7 percent oxygen, and hydrocarbons in excess of 10 parts per million by volume over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis, corrected to 7 percent oxygen, and reported as propane, at any time during the destruction and removal efficiency (DRE) test runs or their equivalent as provided by 40 CFR 63.1206(b)(7); or

(ii) Hydrocarbons in excess of 10 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis, corrected to 7 percent oxygen, and reported as propane;

(f) Hydrochloric acid and chlorine gas in excess of 77 parts per million by volume, combined emissions, expressed as hydrochloric acid equivalents, dry basis and corrected to 7 percent oxygen; and

(g) Particulate matter in excess of 34 mg/dscm corrected to 7 percent oxygen.

(2) Destruction and removal efficiency (DRE) standard.



- (a) *99.99% DRE.* Except as provided in paragraph (B)(2) of this section, MSDQ shall achieve a destruction and removal efficiency (DRE) of 99.99% for each principle organic hazardous constituent (POHC) designated under paragraph (B)(3) of this section. MSDQ shall calculate DRE for each POHC from the following equation:

$$DRE = [1 - (W_{out} / W_{in})] \times 100\%$$

where:

$W_{in}$  = mass feedrate of one principal organic hazardous constituent (POHC) in a waste feedstream; and

$W_{out}$  = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere

- (b) *99.9999% DRE.* If MSDQ burns the dioxin-listed hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27 (see 40 CFR 261.31), MSDQ shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each principle organic hazardous constituent (POHC) that MSDQ designates under paragraph (B)(3) of this section. MSDQ shall demonstrate this DRE performance on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-*p*-dioxins and dibenzofurans. MSDQ shall use the equation in paragraph (B)(1) of this section to calculate DRE for each POHC. In addition, MSDQ shall notify the Administrator of its intent to incinerate hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27.

- (c) *Principal organic hazardous constituents (POHCs).*

- (i) MSDQ shall treat the Principal Organic Hazardous Constituents (POHCs) in the waste feed that MSDQ specifies under paragraph (B)(3)(ii) of this section to the extent required by paragraphs (B)(1) and (B)(2) of this section.
- (ii) MSDQ shall specify one or more POHCs from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1), excluding caprolactam (CAS number 105602) as provided by 40 CFR 63.60, for each waste to be burned. MSDQ shall base this specification on

the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses or other data and information.

- (3) Significant figures. The emission limits provided by paragraph (A) of this section are presented with two significant figures. Although MSDQ must perform intermediate calculations using at least three significant figures, MSDQ may round the resultant emission levels to two significant figures to document compliance.
  - (4) Air emission standards for equipment leaks, tanks, surface impoundments, and containers. MSDQ is subject to the air emission standards of 40 CFR part 264, subparts BB and CC.
- x) Compliance Procedures. MSDQ shall meet all applicable requirements of 40 CFR 63.1206(b).
  - xi) Operating requirements. MSDQ shall meet all applicable operating requirements as specified in 40 CFR 63.1206(c).
  - xii) Testing.
    - (1) MSDQ shall comply with the provisions of 40 CFR 63.7(b) and (c) and 63.8(e) [as modified by 40 CFR 63.1207(e)] for notification of performance tests and CMS performance evaluations, and for approval of test plans and CMS performance evaluation plans.
    - (2) MSDQ shall conduct all performance tests according to the requirements of 40 CFR 63.1207 and 63.1208.
  - xiii) Monitoring. MSDQ shall meet all applicable monitoring requirements as specified in 40 CFR 63.1209.
  - xiv) Notifications. MSDQ shall meet all applicable notification requirements as specified in 40 CFR 63.1210.
  - xv) Recordkeeping and reporting. MSDQ shall meet all applicable recordkeeping and reporting requirements as specified in 40 CFR 63.1211.

**5. EU-MFG-MACT, EU-MFG-NONMACT, EU-MFG-INC-MACT, EU-MFG-INC-NONMACT, EU-TANKS-NONMACT, EU-TANKS-MACT, EU-TANKS-RKI, EU-MFG-DUST-MACT, EU-MFG-DUST-NONMACT, EU-BOILERS, EU-COGEN, EU-TRASH, EU-EMRGEN, EU-RKI, EU-SOLV**

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
VOC Emission Limits	VOC	PAL - 157	TPY	See Section IV G.	Monthly	Monthly	Semi-annually
Stationary Tanks	N/A	N/A	N/A	Design or control equipment	N/A	Maintenance, repairs.	Annually

**a) Hazardous Air Pollutants**

If MSDQ makes a change that results in an increase in HAPS above 10 tpy for an individual HAP or 25 tpy for all HAPs combined, MSDQ shall apply for a permit pursuant to Rule 201 of the RCAP, perform the appropriate risk assessment and such change must be included in this Title V permit. (State enforceable only).

**b) Stationary Tanks**

- i) The Permittee shall not place, store or hold any VOC in any stationary tank, reservoir, or other container of more than 40,000 gallons, unless such tank, reservoir, or other container is a pressure tank capable of maintaining working pressures sufficient, under normal operating conditions, to control vapor or gas loss to the atmosphere, or unless it is equipped with: a floating roof as indicated in Rule 417(A), a vapor recovery system as indicated in Rule 417(B), and any other federal applicable requirements.
- ii) Compliance of the above condition i). is exempted for the following:
  - (1) storage of any liquid having no photochemical reactivity (including those compounds listed under the definition of VOC) and /or having a true vapor pressure less than 0.75 psia and
  - (2) tanks that treat waste water permitted under the Clean Water Act and exempted by rule from RCRA or CERCLA.
  - (3) Exemptions based on vapor pressure shall be demonstrated with calculations using Antoine's equation and average liquid surface temperature.

**6. EU-MFG-MACT, EU-MFG-DUST-MACT, EU-MFG-INC-MACT, EU-TANKS-MACT**

**a) General Standards - 40 CFR 63 Subpart GGG (Existing Sources)**

MSDQ shall comply with 40 CFR 63 Subpart GGG and the provisions of subpart A as provided for in Table 1 of subpart GGG. MSDQ must be in compliance with the subpart GGG standard by compliance date established by this Subpart. The requirements are summarized below.

- i) On or before 6 months prior to the compliance date, MSDQ shall submit the pre-compliance report [63.1260(e)] applicable for any alternative monitoring parameters [63.1258(b)(4)], verification procedures for APCD handling less than 1 tpy HAPs [63.1258(b)(1)(i)], any parametric trigger levels extrapolated from performance test results [63.1258(b)(3)(ii)(C)], any pollution prevention compliance procedures [63.1257(f)], and any uncontrolled emissions calculations based on engineering assessment [63.1257(d)(2)] or methods otherwise approved by the Administrator. In addition, MSDQ shall submit at this time any replicable operating procedures proposed to be incorporated into the permit for purposes of managing changes at the facility to minimize permit revisions. MSDQ shall use the replicable operating procedures listed in Section IV. H. (which are procedures that are replicable as written in subpart GGG), unless MSDQ submits alternative procedures at this time.
- ii) On or before the compliance date, MSDQ shall submit an application for significant permit modification. This application shall include all information related to source operation and compliance that can be known prior to any performance tests that have not yet occurred, as well as any other information required in an initial application pursuant to Rule 602 of the RCAP. That is, the application must describe contemporaneous baseline operations at the facility, including complete information on the processes that the source anticipates operating during the permit term, existing process equipment, emissions calculations, applicability determinations, control/treatment devices, control strategies, monitoring plan, and the change management strategy, including the replicable operating procedures MSDQ proposes to incorporate into the permit. The only information that need not be included is that which will be obtained directly from performance tests to be conducted after the compliance date, such as the numerical values of operational and control device parameters that assure compliance with the applicable subpart GGG requirements (hereinafter “parameter trigger levels”) when determined directly from testing without extrapolation.
- iii) MSDQ shall provide a 60-day advance notification of the planned date of any and all performance tests pursuant to 63.1260(l) and 63.7(b). Notifications are required for performance tests conducted either before or after the compliance date for subpart GGG, including tests conducted as the basis for extrapolated parameter trigger levels submitted in the pre-compliance report required under Condition 6 (a)( i) above.
- iv) On or before 150 days after the compliance date, MSDQ shall submit a Notification of Compliance Status report [hereinafter Compliance Report] to the permitting authority. This Compliance Report shall include (to the extent not previously included in the significant permit modification application

submitted pursuant to Condition No. iii) above the results of all initial compliance demonstrations (including the results of emissions profiles, performance tests, engineering analyses, design evaluations, and calculations used to demonstrate compliance), the parameter trigger levels established during the initial compliance determinations (including data and calculations to support the established levels), and all other information specified in 63.1260(f). The Compliance Report shall also certify whether MSDQ operated in compliance with subpart GGG during the period between the compliance date and the date of the Compliance Report, as determined based on Condition vi) and the Monitoring Section below.

- v) At the same time that the Compliance Report specified in Condition iv) above is submitted, MSDQ shall submit an addendum to the application for a significant permit modification (provided for in Condition ii) above) to incorporate all remaining compliance and change management strategy details, such as the parameter trigger levels and the control device operating conditions associated with the trigger levels.
- vi) From the compliance date to the date of the Compliance Report specified in Condition iv) above, MSDQ shall operate consistent with the significant permit modification application submitted pursuant to Condition ii) above. (See Condition ix) below and Section IV. H. for additional requirements related to the management of change.) MSDQ shall operate those processes, equipment, and control/treatment devices for which all compliance details are complete (including monitor installation and performance verification and establishment of parameter trigger levels) according to the specified compliance plan, including operation of monitors as specified in the Monitoring Section below. MSDQ shall operate processes, equipment, and control/treatment devices for which compliance details will be finalized based on performance tests occurring after the compliance date according to good engineering practices to minimize HAP emissions to the level required by subpart GGG.
- vii) From the date of the Compliance Report specified in Condition iv) above to the date that the revised permit is issued, MSDQ shall operate consistent with the application for a significant permit modification, as finalized by the addendum submitted pursuant to Condition v) above. (See Condition ix) below for additional requirements related to the management of change.)
- viii) On and after the compliance date, MSDQ shall maintain records required under subpart GGG, consistent with the application for a significant permit modification submitted pursuant to Condition ii) above, and (after its submission) consistent with the permit application addendum submitted pursuant to Condition v) above.
- ix) Change Management. After the revised permit is issued, MSDQ shall make and operate process changes in accordance with the change management strategy and replicable operating procedures contained in the revised permit.

During the period from the compliance date to the date that the revised permit is issued, MSDQ may make process changes, subject to the following conditions:

(1) Definition of “process change.” For purposes of addressing change management prior to the final significant permit modification, a “process change” at a pharmaceutical facility is defined as any of the following:

(a) The addition of new process equipment. (For purposes of this placeholder, like-kind replacements and equipment drawn from storage that was included in the significant permit modification application are considered existing equipment, rather than new equipment).

(b) The introduction of a new process.

(c) The modification of an existing process such that one or more of the following occurs:

(i) The process emits a HAP that it previously did not emit.

(ii) The uncontrolled emission rate (in pounds per hour) of any HAP increases for any emission episode in the process.

(iii) Total per-batch uncontrolled emissions of any HAP for the process increase.

(d) An increase in projected production for a process where the revised production levels would trigger a new applicable requirement.

(2) Updates to the application for a significant permit modification.

(a) MSDQ shall submit updates to the significant permit modification application (see Condition ii) above) to detail any revisions needed by process changes that occur up to the date that the addendum to the application is submitted (see Condition v) above). MSDQ shall submit these updates on a schedule to be prescribed by the EQB. At a minimum, MSDQ shall include in the application addendum (required under

Condition v)) information equivalent to that required under Condition ii) describing the operation of any process changes implemented prior to submission of that addendum.

- (b) MSDQ shall submit additional application updates to reflect any process changes that occur after the application addendum is submitted and before the draft revised permit is issued for review by the public. MSDQ shall submit these updates prior to their operation. Such updates shall be considered both an addendum to the pending significant permit modification application and to the Compliance Report (required in Condition iv)).
- (c) In any application update submitted pursuant to Condition 9(2)(a) or 9(2)(b) above, MSDQ may modify any aspect of baseline operations, including redefining absolute worst case conditions and parameter trigger levels.
- (d) After the date of the latest application update submitted pursuant to Condition ix(2)(a) or ix(2)(b) above, MSDQ may continue to make process changes that involve existing equipment (including the addition of new process equipment) and that remain within the demonstrated capacity of the control/treatment devices, as determined through the use of the proposed change management strategy (including proposed replicable operating procedures). The addition of any new process equipment shall also be consistent with the range of changes described within the draft revised permit.

The information reflected in the final revised permit shall be considered the baseline operations for the facility, and all equipment named in the final revised permit shall be considered existing equipment. After the date of the latest application update submitted pursuant to Condition ix(2)(a) or ix(2)(b) or ix(2)(d) above, MSDQ may further update the significant permit modification application but only to revise the description of existing process equipment without requesting that the draft permit be revised and the public review period begun.

- (3) Use of the proposed change management strategy. Until and unless otherwise advised by EQB, MSDQ shall operate in accordance with the proposed change management strategy defined in this Condition ix) including the proposed replicable operating procedures, as set out in paragraphs below. In all cases, MSDQ must record all process changes in the on-site implementation log and associated records as discussed in Section IV.H.

(a) From the compliance date to the date of the issuance of final revised permit, MSDQ shall apply the proposed change management strategy to all process changes, including those that involve the addition of process equipment. Such equipment will subsequently be considered existing equipment, provided it is included in a permit application update and in the final revised permit.

(b) After the draft significant permit modification is issued for public review, MSDQ may continue to make process changes subject to the provisions of the proposed change management strategy, including proposed replicable operating procedures. Under these provisions, MSDQ may only make process changes involving equipment that remains within the demonstrated capacity of the control/treatment devices (e.g., do not create new absolute worst case conditions or require a change to a previously-fixed parameter trigger level) without revising the draft revised permit. To make changes that are outside the demonstrated control/treatment device capacity, MSDQ must use one of the processes listed in paragraphs (i) and (ii) below. The permitting authority shall select the process to be used in each case based on the expected time remaining before the final revised permit is issued, absent the current change.

(i) Submit a revision to the significant permit modification application and to the draft permit, and begin the public review process anew.

(ii) Submit an application for a minor permit modification to be processed in parallel with the remainder of the significant permit modification process.

**b) General Standards - GGG (New Affected Source)**

- i) MSDQ shall obtain prior approval for construction or reconstruction of a new affected source according to all applicable requirements of 40 CFR 63 subparts A and GGG. The primary requirements are included in 40 CFR 63.1259(a)(5) and 63.5.
- ii) Upon operation of any new affected sources as defined in 40 CFR 63.1250(b), the facility must comply with all applicable requirements of 40 CFR 63 subparts GGG and A.



**c) Process Vents Standards - GGG**

On or before the compliance date, MSDQ shall be in compliance with the following emission standards: Process Vents (63.1254)

i) Existing source vents:

(1) except for processes with a large vent that must be controlled as per 63.1254(a)(3), the sum of all process vents within a process shall not exceed 2,000 lb/yr of actual HAPs emissions, and, there shall be no more than 7 such processes in any 365 day period except that processes with less than 100 lb/yr of uncontrolled HAP emissions shall be excluded from the 7; or

(2) the uncontrolled HAP emissions from all vents within a process that do not meet the requirements of 63.1254 (a)(3) shall be reduced by 93% and the vents from a process that meet the requirements of 63.1254(a)(3) shall be controlled as per that section (98% or 93% for certain units that existed prior to April 2, 1997). Alternatively, pursuant to 63.1254(c), limit emissions to 20 ppmv by routing all vents from a process to a control device.

ii) Vents at a new affected source shall meet requirements in 63.1254 (b) or (c).

**d) Storage Tanks Standards - GGG**

On or before the compliance date, MSDQ shall be in compliance with the following emission standards: Storage Tanks (63.1253)

- i) For a tank  $\geq 10,000$  gallons but  $< 20,000$  gallons of design capacity storing a liquid for which the maximum true vapor pressure of total HAPs is  $\geq 1.9$  psia, install a floating roof or control emissions by 90%. For tanks with  $\geq 20,000$  gallons design capacity storing a liquid for which the maximum true vapor pressure of total HAPs is  $\geq 1.9$  psia, install a floating roof or control emissions by 95%. Alternatively, limit emissions from the tanks' control device to 20 ppmv.

**e) Waste Water Standards - GGG**

On or before the compliance date, MSDQ shall be in compliance with the following emission standards: Wastewater sources (63.1256)

- i) For any point of determination (POD) that discharges an affected wastewater stream (wastewater containing  $> 1,300$  ppmw partially soluble HAP or  $> 5,200$

ppmw partially soluble and soluble HAP), comply with the requirements in 63.1256(b) - (f), except as provided by 63.1256(g)(3), for all wastewater tanks, surface impoundments containers, individual drain systems, and oil/water separators.

**f) Equipment Leaks Standards - GGG**

On or before the compliance date, MSDQ shall be in compliance with the following emission standards: Equipment Leaks (40 CFR 63.1255)

- i) All equipment components containing 5% HAPs and in HAP service for at least 300 hours per year or more shall be subject to the Leak Detection and Repair (LDAR) requirements. These requirements apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems. (MSDQ may choose to continue to comply with 40 CFR 63 Subpart I for any equipment currently subject to it, and Subpart GGG for all other components).

**g) Testing**

MSDQ shall comply with the following testing requirements.

- i) MSDQ shall comply with notification of performance procedures in 40 CFR 63.7(b), 63.9 and 63.1260(l), including submitting the site-specific test plan required by 63.1260(l) and 63.7(c).
- ii) MSDQ shall conduct all performance tests according to the requirements of 63.1257. MSDQ shall complete all performance tests in time for all demonstrations of compliance with subpart GGG not previously submitted to be included in the Compliance Report that must be submitted on or before 150 days after the compliance date.

**h) Monitoring**

MSDQ shall comply with the following monitoring requirements.

- i) MSDQ shall provide evidence of continued compliance with the process vent, storage tank, and wastewater standards pursuant to 63.1258(a), (b), (c), (g), and (h) and 63.8 [except 63.8(b)(2)].
- ii) For purposes of subpart GGG, all parameter monitoring systems and continuous emission monitoring systems are considered “continuous monitoring systems” as defined in 63.2. Accordingly, MSDQ shall comply with the associated monitoring, notification, recordkeeping, and reporting

requirements of subpart A, including 63.8(b)(3), (c), (d), and (e); 63.9(g); and 63.10(b), (c), and (e). (Note that these continuous monitoring system requirements are to be applied in a manner that is reasonable and appropriate for the type of monitoring system.) Where these requirements are substantially similar to the recordkeeping and reporting requirements of 63.1259 and 63.1260, compliance with the latter requirements will be considered compliance with the subpart A requirements.

- iii) MSDQ shall submit its monitoring plan as part of the application for a significant permit modification on or before the compliance date (see Condition ii) of the General Requirements for Existing Sources). It is required that the monitoring plan be complete, despite the fact that the results of the performance test, that were previously planned to occur after the date of compliance, are not available. MSDQ shall complete its monitoring plan as part of the addendum to the significant permit modification application on or before 150 days after the compliance date (see Condition (v) of the General Requirements for Existing Sources).
- iv) Monitoring is not required for subpart GGG prior to the compliance date. After this date, MSDQ shall conduct monitoring according to the following conditions, as applicable:
  - (1) Prior to the date on which the associated parameter or emission monitor's performance has been verified, MSDQ shall operate and maintain all control/treatment devices according to good engineering practices to minimize HAP emissions to the level required by subpart GGG. In addition, MSDQ shall maintain records adequate to demonstrate that this condition has been met.
  - (2) For parameter monitors, from the earliest date on which a monitor is installed and its performance has been verified, up to the date on which the associated parameter trigger level is established, MSDQ shall operate the monitor and maintain associated records according to subpart GGG and the monitoring plan submitted as part of the application for a significant permit modification, except for any provisions related to exceedances of the parameter trigger level.
  - (3) For parameter and emission monitors, from the earliest date on which a monitor is installed, its performance has been verified, and (for parameter monitors) the associated parameter trigger level has been established, up to the date that the revised permit is issued, MSDQ shall operate the monitor and maintain associated records according to subpart GGG and the monitoring plan submitted as part of the application for a significant permit modification (and, when

applicable, the addendum to the application).

(4) On and after the date that the revised permit is issued, MSDQ shall operate all monitors and maintain associated records according to subpart GGG and the revised permit. The monitoring requirements for Control Devices used to comply with subpart GGG are included in Table I-2.

v) On and after the compliance date, MSDQ shall identify each piece of equipment subject to the LDAR requirements of 63.1255 such that it can be distinguished readily from equipment that is not subject to the standard. MSDQ shall monitor equipment subject to the LDAR standard as required by 63.1255.

**i) Reporting**

MSDQ shall submit all routine reports pursuant to 63.1260(g), (h), (i), and (j). These reports include the periodic report, submitted either quarterly or semi-annually, the notification of process change report, the start-up, shut-down and malfunction report and reports required by the LDAR program.

**j) Startup, shutdown, malfunction plan**

MSDQ shall develop and implement a startup, shutdown, malfunction plan pursuant to 40 CFR 63.6(e)(3) and 63.1250(g) by the compliance date, which shall be made available to EQB or EPA upon request. The contents of this plan are incorporated by reference into this permit and does not constitute a revision to the permit.

**7. EU-MFG-DUST-MACT AND EU-MFG-DUST-NONMACT**

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
Non-Process Sources	PM	0.05	lbs out/lb in-hr	Recordkeeping	Daily	Daily	Semi-annual

**a) Non-Process Sources**

The Permittee shall not cause or permit the emission of particulate matter in any one hour in excess of 0.05 pounds per pound of uncontrolled emissions from any non-process source (Rule 409 of the RCAP). The Permittee shall demonstrate

compliance with the above requirement by maintaining the pressure drop for the dust collectors within the manufacturers recommended range.

**b) Pressure Drop in Control Equipment (Dust Collector)**

- i) Pressure drop indicators shall be calibrated twice per year and shall be kept within range recommended by the manufacturer to maintain compliance with the PM emissions limit.
- ii) Record keeping shall be kept of maintenance of control equipment, calibration results of pressure drop indicator and methodology used for calibration.
- iii) The Permittee shall read and record the pressure drop on a daily basis to determine if it is within the following range. These equipment can operate below the minimum established pressure drop during startup and filter preloading period after verifying that the unit is operating adequately (e. g., filters are new, loading is very low, or flows are low for the size of the unit).

:

Unit	Pressure Drop Range (Inches w. g.)
DC-385	1.00 - 6.00
DC-6644	0.50 - 3.00
DC-C115	1.00 - 6.00
DC-C16	1.00 - 6.00
DC-B103	1.00 - 4.00

**8. EU-SOLV**

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
Composition Waste Limitation	Feed stream	Condition b) below	N/A	Condition b)	Daily log	Daily	Semi-Annual

Opacity Limit	Opacity	20	Percent	Method 9	Annually	With each opacity reading.	Sixty (60) days after sampling test.
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				Visible Inspection	Daily	Daily	Semi-annual
<b>pH Monitor Requirement</b>	pH	71	S.U.	PH recording	Continuously	Continuously	Semi-Annual
<b>Part 63, Subpart EEE</b>	N/A	N/A	N/A	N/A	N/A	Notification see condition	N/A

**a) Opacity Limit**

- i) The Permittee shall not exceed the 20 percent opacity limit (6-minute average). However, the facility may discharge visible emissions of an opacity up to 60 percent for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval. (Rule 403 of RCAP).
- ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take one visible emission reading annually. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
- iii) The Permittee shall conduct daily visual opacity inspections during daylight hours. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visual emissions, other than condensed water vapor. The observer shall select a position at least 15 feet but not more than .25 miles from the affected facility and the observer should be in a position such that the sun is not directly in the observer’s eyes. If any visible emissions are observed, the Permittee shall do the following:
  - (1) Verify that the equipment and/or control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the Permittee shall take corrective action immediately to eliminate excess opacity.
  - (2) If the corrective action taken in (1) does not correct the opacity problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9 by EQB. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB within 24 hours.

### b) Composition Waste

Composition waste shall be in accordance with trial burn performed at the unit as per RCRA permit NO. PRD090028101.

### c) pH Monitor

- i) The Permittee shall keep records of continuous pH recording of scrubber solution.
- ii) Range of pH of scrubber solution shall be kept above or equal to 7.0.
- iii) The Permittee shall calibrate pH monitor twice per year.

### d) Hazardous Waste Combustor MACT

This emission unit will be subject to the same requirements established for the emission unit EU-RKI in 4.b) of this part.

## 9. EU-TRASH

Condition	Parameter	Value	Units	Method of Compliance	Frequency of Method	Record Keeping Requirement	Reporting Frequency
<b>Auxiliary Fuel Limitation</b>	Fuel feed rate	8	gallons/hr	Flow rate meter log	Continuous	Daily	Semi-Annually
<b>Calibration of Temp Indicators And Fuel Flow Meters</b>	Manufacturer Range	As recommended	Degree Celsius, gallons	log	Semiannually	Semi-annual	Semi-Annually
<b>Temperature</b>	To be determined	N/A	N/A	N/A	N/A	N/A	N/A
<b>Liquid, Gas Waste Burning</b>	N/A	N/A	N/A	Recordkeeping	Daily when operating	Daily when operating	Semi-Annually

<b>Prohibition</b>							
<b>Opacity Limit</b>	Opacity	20	Percent	Method 9  Visible inspection	Annually  Daily	With each opacity reading.  Daily	Sixty (60) days after sampling test.  Semi-annual
<b>Maximum Resin Block Feed Rate Type 6</b>	Feed Rate	85	lbs/hr	Weight balance log	Daily	Daily	Semi-Annually
<b>Incineration PM Emission Limit</b>	PM	0.40	lb/100 lbs of waste charged	Method 5  surrogate - opacity and temperature monitoring	Every five (5) years	PM Emission final report	Sixty (60) days after sampling test
<b>Sulfur Limit Auxiliary Fuel</b>	SO <sub>2</sub>	0.2	Percent	Fuel supplier certificate	Upon delivery	Daily fuel consumption	Monthly

<b>Condition</b>	<b>Parameter</b>	<b>Value</b>	<b>Units</b>	<b>Method of Compliance</b>	<b>Frequency of Method</b>	<b>Record Keeping Requirement</b>	<b>Reporting Frequency</b>
<b>Waste Feed Rate Type 0,1 or Plastic</b>	Feed Rate	250	lbs/hour	Weight balance log	Per batch feed	Daily	Semi-annually
<b>Operators Training</b>	N/A	N/A	N/A	Certification	Annually	Annually	Annually

**a) Auxiliary Fuel**

- i) Auxiliary fuel flow rate shall not exceed 8 gallons per hour on a daily average basis (Rule 204 of RCAP; federally enforceable by reference to EPA Memo of 1989).
- ii) Daily record shall be kept of auxiliary fuel flow rate in gals/hr.



**b) Instrument Calibration**

- i) Temperature indicators and fuel flow meters shall be calibrated twice per year.
- ii) A record shall be kept of each calibration.

**c) Liquid, Gas Waste Burning Prohibition**

Liquid, gaseous wastes shall not be burned at any time in the trash incinerator. The Permittee shall maintain daily records of waste characteristics, quantity, and operational times of the unit when the unit is operating.

**d) Opacity Limit**

- i) The facility shall not exceed the 20 percent opacity limit (6-minute average). However, the facility may discharge visible emissions of an opacity up to 60 percent for a period of no more than four (4) consecutive minutes in any consecutive thirty (30) minutes interval. (Rule 403 of RCAP).
- ii) The Permittee shall hire an independent opacity reader, certified by the Board, to take one visible emission reading annually. If no reader certified by the Board is available in a timely manner, the facility may hire any other third party certified on Method 9 upon agreement with EQB, for all opacity testing requirements.
- iii) The Permittee shall conduct visual opacity inspections during daylight hours. Visual inspections shall consist of a visual survey of each stack over a two minute period to identify if the stack has visible emissions, other than condensed water vapor. The observer shall select a position at least 15 feet but not more than .25 miles from the affected facility and the observer should be in a position such that the sun is not directly in the observer's eyes. If any visible emissions are observed, the permittee shall do the following:
  - (1) Verify that the equipment and/or control device causing the visible emissions is operating according to manufacturer specifications and this operating permit. If the equipment or control device is not operating properly, the permittee shall take corrective action immediately to eliminate excess emissions.
  - (2) If the corrective action taken in (1) does not correct the opacity

problem within 24 hours, The Permittee shall perform a check via a certified opacity reader in accordance with Method 9 by EQB. Such test shall be conducted each shift until corrective action is taken to successfully correct the opacity problem. This shall be notified to EQB within 24 hours.

**e) Resin Block Rate Feed**

- i) Maximum resin block feed rate shall not exceed 85 lbs/hr (24hr/day, 7 days/week, 49 weeks/year) (Rule 204 of RCAP; federally enforceable by reference to EPA Memo of 1989).
- ii) A record shall be kept per daily incineration where maximum resin block feed rate shall be indicated.

**f) Incineration Emission Limit**

- i) Non-hazardous solid waste and/or medical waste incinerators shall not cause or permit the emission of particulate matter (PM) in excess of 0.40 lbs/ 100 lbs 4 gm/kg) of waste charged ( Rule 405 of RCAP).
- ii) Performance test shall be conducted before September 2000 and every five (5) years thereafter.
- iii) Temperature of secondary chamber shall be established during the performance test for efficient operation of the incinerator. This temperature shall become a condition of this permit (via a minor permit modification). The temperature of secondary chamber shall be maintained within the range established after the performance test.
- iv) Test protocol shall be submitted at least 30 days before the performance of the sampling test.[Rule106 (C) of RCAP].
- v) Written notification shall be submitted 15 days prior to test to allow EQB to assign an observer.[Rule106 (D) of RCAP].
- vi) Final report shall be submitted within 60 days after the visible emission testing [Rule106 (E)of RCAP] and shall be included in the annual certification of General Permit Condition 5- of Section III for year which test was conducted.
- vii) Surrogate monitoring sulfur in fuel: AP-42 emission factors for PM are used in conjunction with fuel usage and sulfur content records to demonstrate

compliance. USEPA emission factors from AP-42 (“Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition,” Office of Air Quality Planning and Standards, January 1995).

**g) Sulfur Limit Auxiliary Fuel**

Sulfur content in fuel shall not exceed 0.2% by weight. For the purposes of determining the Sulfur content in the fuel combusted on a daily basis, the Permittee shall record the Sulfur content of the most recent fuel delivery. The Permittee shall obtain analysis of fuel Sulfur content once per fuel delivery.

**h) Waste Feed Rate**

- i) Maximum waste feed rate for type 0 and 1 and/or plastic shall not exceed 250 lbs/hr (24/day, 7 days/week, 49 weeks/year).
- ii) Record shall be kept of daily incineration where maximum waste feed rate for type 0 and 1 and/or plastic shall be indicated for every hour of operation.

**i) Incineration Operational Training**

The Permittee shall submit to the Board on an annual basis a certification showing adequate operational training to operators of incinerator and related equipment.

**j) Cease Operations**

This unit will cease operations on August 31, 2000, therefore the requirements mentioned above for this unit will not apply from this date on.

**C. Additional Alternate Operating Scenarios**

**1. EU-BOILERS**

The Permittee is authorized to burn Fuel Oil #2 and/or kerosene with a Maximum percent sulfur of 0.5% by weight provided The Permittee complies with all applicable requirements.

**2. Emergency Generators**

The Permittee is authorized to install 20 emergency generators (sized at 15 to 150 kW)

which must comply with Section IV. E. and with Section III, Condition 35.

#### **D. Pollution Prevention**

1. The Permittee shall develop and implement a pollution prevention plan in accordance with the conditions specified below:
  - a) The Permittee shall submit a proposed pollution prevention plan to EQB within one hundred and eighty (180) days of permit issuance.
  - b) EQB will review and comment on the proposed plan within one hundred and eighty (180) days with respect to program elements.
  - c) The Permittee shall submit written response to EQB's comments and recommendations within thirty (30) days. The Permittee shall incorporate EQB's recommendations or provide justification/explanation for rejecting the recommendations.
  - d) EQB will notify The Permittee within one hundred and eighty (180) days as to the pollution prevention plan approval status.
  - e) The Pollution Prevention Plan shall be contained outside of this permit. The details of the plan itself shall not be enforceable. Revisions to this plan will not trigger permit modifications and an inadequate plan will not cause a permit violation.
  - f) MSDQ shall make public its pollution prevention efforts by conducting public outreach meetings annually.
  - g) Failure to submit a pollution prevention plan is a violation of this Title V permit.
2. The Permittee shall prepare a document detailing its hazardous waste reduction plan as used by Merck in the past as part of its first year pollution prevention program required in condition 1 of this section.

#### **E. Changes Under the VOC PAL**

1. **Operation of control equipment:**

The Permittee shall continue to operate and maintain air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards and consistent with the procedures provided for in this permit as provided for in Rule 108 of the RCAP.

## **2. Physical or operational changes:**

- a) MSDQ shall be able to make changes resulting in emissions of VOCs within its facility without triggering major new source review if total facility-wide actual emissions of VOCs (including any from new process units) would not exceed the PAL in Condition 2 of Section IV(A). MSDQ shall be able to make changes resulting in emissions of VOCs within its facility without a Title V permit revision if the following criteria are met:
  - i) total facility-wide actual emissions of VOCs (including any from new process units) would not exceed the PAL in Condition 2 of Section IV.A.; and
  - ii) where EQB issues a construction permit pursuant to Rule 203 of the RCAP and provision 3.a of this condition, the 203 permit does not create a new applicable requirement for VOCs or change an existing applicable requirement of this Title V permit (including method of compliance).

Where criteria i) and ii) are not met, then this permit must be revised following procedures in Rule 606 of the RCAP. For new applicable requirements for criteria pollutants other than VOCs, the change may be treated as off-permit if the criteria and procedures in Rule 607(b) are met.

## **3. Compliance with Rule 203 under the PAL**

- a) For any physical or operational change, which is also a minor modification under Part II of the RCAP, that results in the addition of any new emission unit or control device, The Permittee shall submit a notification in the form of a Rule 203 permit application to the EQB at least 15 days prior to such change. MSDQ cannot commence construction of any new units that requires preconstruction approval under Rule 203 of the RCAP until EQB has issued a Rule 203 permit. EQB will issue the permit following its procedures within 15 days.

With regards to VOCs, if EQB agrees that the change meets the criteria established under the VOC PAL and no additional requirement is necessary to protect the NAAQS for ozone, then EQB shall issue a Rule 203 permit based on a determination that the information required has been provided in the application

and therefore The Permittee has fulfilled the Rule 203 requirements as agreed to in this Title V operating permit. In this case, the Rule 203 permit issued by EQB will not include any applicable requirements and will only contain a determination that the information submitted fulfills the notification requirements and that the project has been approved. If the Rule 203 permit issued by EQB does include any new or changed applicable requirements for VOCs or a new method to assure compliance than as currently provided in this Title V permit, this Title V permit shall be revised following the procedures in Rule 606 of the RCAP. After the Rule 203 permit is issued, MSDQ shall attach the Rule 203 permit to this permit in Attachment II upon receipt. Failure to have the valid 203 permit will mean that the new unit is operating without a Title V permit.

- b) For changes that would otherwise be subject to Rule 203 but do not involve the construction of a new emissions unit but which still results in the increase in the rate of emissions per batch of any pollutant; the emission of a new pollutant; or changes which increase the efficiency of a unit or process, MSDQ shall submit a notification to the EQB 15 days prior to making such change. MSDQ shall also submit a 15 day advance notice of the installation of an emergency generator; however, this notice can be more streamlined than the requirements of provision d) below based on EQB guidance. The notification shall be attached to this permit in Attachment II.
- c) The notification required in provision b) and the 203 application required in provision b) of this condition should include the following:
  - i) The notification and application shall list each process vent associated with each process, any control device being applied to that process vent, the efficiency of the control device, the controlled and uncontrolled emissions from the vent, and the information required in Rule 203 (C) and Rule 602 of the RCAP. For condensers the efficiency shall be established based on the uncontrolled emissions and the controlled emissions calculated using condenser exit gas temperatures as established using the condenser model in Section IV.F.2.; for thermal oxidizers meeting the requirements set out in Section IV.F.3. use a destruction efficiency of 98%. The notification and application must also contain a demonstration that actual emissions from the site will be under the VOC-PAL cap levels set out in Condition 2 of Section IV.A. after implementing the change.
  - ii) The application shall include a technical demonstration that a control device being installed pursuant to Section IV. F. meets the required efficiency. The demonstration must address the VOC concentration of the vent stream entering the control device and any other vapors, gases and liquids, other than fuels, received by the control device. For a thermal oxidizer, the design

evaluation must include the autoignition temperature of the compounds in the stream, the vent stream flow rate, the minimum and maximum design flow rate for the thermal oxidizer, the design minimum and average temperatures in the combustion zone, the combustion zone residence time, and a stack test protocol. For a condenser, the design evaluation must include the vent stream flow rate and relative humidity, temperature and composition of the condenser inlet vapor, the target temperature of the outlet vapor stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet. MSDQ shall also run the condenser model provided in Condition 2 of Section IV.F. as part of the application. For a scrubber, the design evaluation must include: vent stream composition, constituent concentration, gas and liquid flow rates, type of scrubbing liquid and scrubbing liquid flow rate and concentration, liquid and air stream temperature, desired pollution concentration of effluent gas, type and total number of theoretical and actual trays, type and total surface area of packing for entire column, and a stack test protocol. The notification or application must also include either the vendor guarantees or MSDQ's specifications that are being sent to vendors.

- iii) The notification and application must also contain a certification of compliance with Rule 220, from the Environmental Quality Board Regulation for the Preparation of Environmental Impact Statements, or otherwise shall include other Agencies permits and certification of compliance with Article 4-C of Law Num.9. (State only requirement)
  - iv) EQB may notify the Permittee at any time during this application period that additional information is needed to process the Rule 203 permit.
- d) No notification or 203 application is required for the following changes:**
- i) The production of an existing product in another factory area provided no new equipment is used, there is no increase in emissions, and production complies with all terms of this permit.
  - ii) Equipment ID changes are authorized upon submittal of a request as established in Rule 606(a)(2) and (3). These ID changes shall be included in Attachments I or II.
  - iii) Like-kind replacement of equipment, excluding control devices, in the manufacturing process that are subject to the VOC PAL and that do not trigger a new or change an existing applicable requirement. All such changes must be maintained in the VOC On-Site-Implementation Log required in Section IV.G..

- iv) Outside of manufacturing, like-kind replacement of equipment components and other routine maintenance or repair. All such changes must be maintained in the VOC On-Site-Implementation Log in Section IV.G.
- v) Any other change not resulting in an increase in emissions or a new or changed method of compliance or otherwise subject to rule 203 of the RCAP.

#### **F. Advance Approval of Operating Scenarios/Changes under the VOC PAL**

This permit authorizes changes to the extent that they meet conditions contained in Permit Terms and Conditions and the following. A description of the reasonably anticipated operating scenarios that are allowed to be made under the VOC PAL and without triggering a Title V revision is included in Appendix I. Included in these authorized changes are the following: the installation and operation of new and existing condensers and thermal oxidation units and reliance on their use for demonstrating compliance with the terms of this permit for new and existing processes provided such control devices comply with the requirements set out below; the installation and operation of scrubbers for processes emitting SO<sub>2</sub> or SO<sub>2</sub> and HCl, and reliance on those scrubbers for compliance with the terms of the permit; the installation and operation of new storage tanks. The requirements and procedures for making such changes are discussed below.

1. New process lines that are connected to existing or new condensers or existing or new thermal oxidizers or new scrubbers shall meet the requirements of conditions 2, 3, or 4 of this Section F. and approval shall follow the procedure in condition 2 of Section IV.E. Where a condenser or thermal oxidizer or scrubber does not meet the requirements of conditions 2 or 3 or 4 of this Section, then this Title V permit must be revised to incorporate the new control device following the procedures of Rule 606 of the RCAP.

Section IV. F. 2 provides the procedure to be used in establishing the condenser exit temperature for new and existing condensers that is used for calculating actual emissions from a process when establishing removal efficiencies and providing a technical demonstration of those removal efficiencies to comply with the requirements of Section IV. E. 3. c) ., for calculating for VOC emissions to demonstrate ongoing compliance with the PAL as established in Section G, and for verifying adequacy of monitoring only the condenser coolant temperatures as allowed in Section IV.F.2.B.

Section IV. F. 3 provides the procedure to be used in relying on a 98% removal efficiency for a new or existing thermal oxidation unit when calculating actual emissions from a process when establishing removal efficiencies and providing a technical demonstration of those removal efficiencies to comply with the requirements of Section IV. E. 3. c) ., and for calculating VOC emissions to demonstrate ongoing compliance with the PAL as established in Section G.



Section IV. F. 4 provides the procedure to be used in establishing removal efficiency for a new scrubber when calculating actual emissions from a process and providing a technical demonstration of those removal efficiencies to comply with the requirements of Section IV. E. 3.c) , and for calculating for SO<sub>2</sub> emissions to demonstrate ongoing compliance with the preapproval conditions for SO<sub>2</sub> scrubber set out in this section.

Section IV.F.5 provides the procedure for demonstrating the total VOC emissions from a proposed change to a new or existing process to comply with the requirements of Section IV.E.3.c). Section IV.F. 6. provides the procedures for demonstrating compliance with the VOC PAL when monitoring results indicate parameters have exceeded those provided to EQB in notifications or applications under Section IV. E. 3. c). Section IV F. 7 authorizes the installation and operation of storage tanks. Section IV. F. 8 provide state only requirements for sources constructed under the VOC PAL.

2. The efficiency of the condenser and the temperature at which the condenser must be maintained shall be established using the following condenser model for the sizing a condenser:
  - a) The following generalized procedure is followed when sizing a condenser to achieve a specified outlet gas temperature or verifying the achievable outlet gas temperature for an existing condenser.
    - i) Determine composition, flowrate and temperature of condenser inlet vapor. This is generally estimated using EPA's 1978 Batch Control Techniques Guidelines models, and based on the specific batch operation to be controlled (See VOC PAL Calculation Methodology), although in certain emission operations such as air drying a mass balance approach may be used. The composition and condition of the inlet vapor will be based on a representative operation, or a critical step of particular regulatory significance. This will usually be the worse case emission episode. In the event of a gas evolution step, laboratory results may be used to estimate this composition.
    - ii) Determine the target temperature of the outlet vapor stream. This can either be an outlet mass loading or a reduction efficiency. The temperature necessary to obtain the desired outlet mass loading can be determined through trial and error substitution of outlet temperatures for the process exit temperature that was used to calculate uncontrolled emissions. For example, if a percentage reduction is desired, the uncontrolled emission can be reduced by the appropriate percentage to determine the desired outlet mass loading and then use trial and error to identify the appropriate outlet temperature as described above.

- iii) Determine the heat duty required to reach the target outlet vapor temperature. This is generally determined based on the heat capacity equation:

$$Q = m_p C_p \Delta T_v + x_m H_v \quad (1)$$

Where:

$Q$  = heat duty required to reach the outlet vapor temperature

$m_p$  = mass flowrate of the process vapor from uncontrolled emissions calculations

$C_p$  = heat capacity of the process vapor from standard tests (e.g. Perry's; Lange's, etc.)

$\Delta T_v$  = difference between the inlet vapor temperature and the outlet target temperature

$x_m$  = mass fraction of the process vapor to be condensed

$H_v$  = latent heat of vaporization of the process vapor

- iv) Determine whether the coolant medium is capable of providing the heat removal needed to reach the target outlet conditions. This is generally determined by the heat capacity equation:

$$Q = m_c C_p \Delta T_c \quad (2)$$

Where:

$Q$  = heat duty requirement

$m_c$  = mass flowrate of the coolant medium

$C_p$  = heat capacity of the coolant medium

$\Delta T_c$  = temperature increase of the coolant medium through the condenser

- v) Verify that the proposed heat exchanger can provide that heat flux required based on vendor supplied data. This is generally determined from the equation:

$$Q = UA \Delta T_{lm} \quad (3)$$

Where:

Q = heat duty required

U = overall heat transfer coefficient

A = heat exchange area

$\Delta T_{lm}$  = log mean temperature difference <sup>6</sup>

- b)** The following procedure is used to verify adequacy of monitoring only the coolant to determine performance of the condenser. The procedure is the same as provision a) with the following modification. This approach can not be used for new condensers installed to meet compliance with the Pharmaceutical MACT, or for existing condensers used to demonstrate compliance with the Pharmaceutical MACT after the MACT compliance date.

- i) Step i) is the same in that uncontrolled emissions must be calculated.
- ii) In Step ii) the desired outlet temperature is known; monitoring of the coolant is done to verify that this temperature is achieved.
- iii) Step iii) is the same.
- iv) Step iv) is the same.

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<sup>6</sup> The parameters in the above equations are often derived from published data, well established correlation, or from field verification of specific equipment types. The overall approach can be tailored to a specific situation depending on the rigor required. If a rough estimate of a condenser's performance is needed, the above equations can be used as shown to provide a quick verification of performance. If the predicted performance is much higher than required (e.g., if 60% control is needed and a quick calculation shows the condenser achieving >90%), no further refinement of the calculation may be necessary. When a more exact estimate is needed, various elements of the above procedure can be performed in more detail. Elements that might be given more rigorous treatment would be integration of physical properties ( $C_p$ ,  $H_v$ , etc.) over the operational temperature range, more precise estimation of vapor liquid equilibrium, especially for multi-component systems, detailed correlations for U, and correlations for  $\Delta T_{lm}$  for various heat exchanger systems. These refinements often require iterative solutions of the above basic equations and necessitate the use of computer tools such as AspenPlus for condenser performance evaluation.

- v) All the information required for Step v) must be available and maintained on-site to utilize this approach; however, where this information is not available, a performance test under normal operating conditions may be used to verify any of the variables. Successful completion of these steps will provide a demonstration that monitoring coolant temperature is adequate to monitor performance of the condenser.
- c) Monitoring of the condenser shall follow the monitoring and recordkeeping requirements established in Table I . The results of the monitoring shall be submitted in the semi-annual monitoring reports required under Rule 603(a)(5) of the RCAP.

### 3. Use of Existing or New Thermal Oxidizers

- a) Upon modifying a process or installing a new process using an existing thermal oxidizer, or installing a new thermal oxidizer of a capacity not greater than 16 mmmbtu, the controlled emissions from any process vent connected to the thermal oxidizer are initially calculated and documented using the following methods:
  - i) The uncontrolled emissions shall be calculated using appropriate equations from the 1978 CTG.
  - ii) The controlled VOC emissions per batch are calculated assuming the uncontrolled emissions from the process vents are reduced by 98% provided the thermal oxidizer achieves a minimum temperature of 1600 ° F and 0.75 seconds residence time. Such operating parameters must be maintained until the operating parameters that achieve the specified destruction efficiency are established through a stack test and this permit is revised to incorporate the new temperature and/or residence time parameter.
  - iii) In order to use an assumed reduction of 98% for a new thermal oxidizer, the preapproved stack testing protocol as required in Rule 106 of the RCAP must be submitted to the PREQB prior to beginning operation of the oxidizer .
  - iv) A stack test for the new and existing oxidizer must be conducted after the oxidizer is fully operational but in no case later than 180 days after initial operation using 40 CFR Part 60, Test Method 25.
  - v) MSDQ shall monitor combustion chamber temperature pursuant to Table I to verify that the thermal oxidizer is operating above 1600 degrees F.
  - vi) The gas inlet stream through the thermal oxidizer cannot be less than the minimum design flow rate for the thermal oxidizer.

- vii) No halogenated VOCs can be directed to the thermal oxidizer unless connected to an HCl scrubber.

**b) Preapproved Thermal Oxidation Units**

- i) MSDQ is approved to install and operate two thermal oxidizer units (TOU). The units shall have a minimum residence time of 0.75 seconds and achieve a minimum operating temperature of 1600 degrees F. The units shall be equipped with a scrubber capable of achieving 95% or greater removal of SO<sub>2</sub>, and 99% or greater removal of HCl or 4lb/hr of HCl, whichever is greater. Such scrubber must meet the requirements for an SO<sub>2</sub> scrubber as described in Condition 4 of this section F.
- ii) The TOU will be designed for a heat release not to exceed 16 MM BTU/hr. Particulate from each TOU is not to exceed 0.3 lb/MM BTU for a total of 21 tons/year for each on a 12 month rolling basis. SO<sub>2</sub> shall be less than 9 tons/year for each on a 12 month rolling basis. NO<sub>x</sub> emissions shall be less than 30 tons/year for each on a 12 month rolling basis. CO emissions from each unit shall be less than 9 tons/year on a 12 month rolling basis. VOC emissions from each TOU will have no specific limit; however, VOC emissions from the TOU must be added with all other VOC emissions from the site to determine compliance with the site VOC cap at Section IVA., Condition 2.
- iii) Each TOU shall be stack tested within 180 days of its beginning operation. The units must be tested at conditions representing worse case conditions and must be tested using Methods described in 40 CFR 60 Appendix A for CO, NO<sub>x</sub>, SO<sub>2</sub>, VOC, and particulate. Thirty (30) days prior to the stack testing, a detailed stack test protocol shall be provided to EQB for their approval, as well as related written notification and final report according to Rule 106 of the RCAP.
- iv) Actual emissions of NO<sub>x</sub> from the TOU shall be determined on the following basis. The maximum hourly emissions of NO<sub>x</sub> recorded during the stack test will be used to establish an hourly NO<sub>x</sub> emissions rate for thermal and auxiliary fuel NO<sub>x</sub> for the unit. This factor will be multiplied by the hours of operation of the TOU during each month that the unit is not burning fumes from compounds containing organic nitrogen to determine the monthly total emissions. This number is then added to the previous eleven monthly totals to derive the rolling 12 month total NO<sub>x</sub> emissions. During months when fumes from compound containing organic nitrogen are burned in addition to the above calculation, the uncontrolled emissions to the TOU of the compound containing nitrogen used to establish the actual emissions (see

VOC PAL Calculation Procedure) will be multiplied by the percentage of Nitrogen in that compound to determine mass of Nitrogen being sent to the incinerator. An assumed conversion of 50% (each mole of organic N will be assumed to result in one half mole of NO<sub>x</sub> as NO<sub>2</sub>) will be used to determine the NO<sub>x</sub> generated by burning the organic nitrogen in the TOU. This number will be added to the total monthly emissions number described above to establish a new total monthly emission of NO<sub>x</sub> for that month.

- v) Actual monthly emissions of particulate will be determined on the following basis. The maximum hourly emissions of particulate determined during the stack test will be used to establish an hourly particulate emissions rate. This factor will be multiplied by the hours of operation of the TOU during each month to determine the monthly total emissions. This number is then added to the previous eleven monthly totals to derive the rolling 12 month total particulate emissions.
- vi) Actual emissions of SO<sub>2</sub> from the TOU shall be determined on the following basis. The total fuel usage for the month shall be multiplied by the percentage sulfur in the fuel; this shall be assumed to be 2.5% unless a vendor certification of a lower percentage sulfur is available for that shipment of fuel oil. Then entire mass of sulfur in the fuel oil burned will be assumed to be converted to SO<sub>2</sub>. This number is then added to the previous eleven monthly totals to derive the rolling 12 month total SO<sub>2</sub> emissions. During months when fumes from compounds containing organic sulfur are burned, in addition to the above calculation, the uncontrolled emissions to the TOU of the compound containing sulfur used to establish the actual emissions (see VOC PAL Calculation Procedure) will be multiplied by the percentage of sulfur in that compound to determine mass of sulfur being sent to the incinerator. The entire mass of sulfur sent to the TOU will be assumed to be converted to SO<sub>2</sub>. This number will be added to the total monthly emissions number described above to establish a new total monthly emission of SO<sub>2</sub> for that month.
- vii) Actual monthly emissions of CO will be determined on the following basis. The maximum hourly emissions of CO determined during the stack test will be used to establish an hourly CO emissions rate. This factor will be multiplied by the hours of operation of the TOU during each month to determine the monthly total emissions. This number is then added to the previous eleven monthly totals to derive the rolling 12 month total particulate emissions.
- viii) Temperature for each unit will be monitored and recorded on a continuous basis, as defined in 40 CFR Part 63, Subpart GGG. Fuel usage will be recorded monthly.

4. Advance approval of processes emitting SO<sub>2</sub>.

- a) During the term of the permit, MSDQ may install and operate up to four processes that emit SO<sub>2</sub> as a byproduct. For each process MSDQ may emit SO<sub>2</sub> from up to two separate emitting vessels. The vessel shall not exceed 10000 gallons in capacity each. No single vessel may emit more than 6 tons/year of controlled SO<sub>2</sub> emissions, no single process may emit more than 10 tons/year and the total combined SO<sub>2</sub> emissions of the four new processes shall not exceed 15 tons/year. All emissions are to be determined on a 12 month rolling basis.
- b) Each vessel emitting SO<sub>2</sub> shall be routed to a scrubber. The scrubber shall be designed and operated according to the following specifications, derived from Ceilcote Air Pollution Control's Technical Bulletin 12-2.
- i) Each scrubber shall have a removal efficiency of 95% of SO<sub>2</sub>. This is determined according to the following equation.

$$N_{OG} = \ln Y_1 / Y_2 \quad (4)$$

where:

$N_{OG}$  = number of mass transfer units required to give a specific scrubbing efficiency

$Y_1$  = concentration of incoming polluted gas

$Y_2$  = desired pollution concentration of effluent gas

ratio of  $Y_1 / Y_2 = 20$  when there is a removal efficiency of 95%;  $\ln 20 = 3.0$ ; therefore, to assure at least 95% removal efficiency the scrubber must have an  $N_{OG} =$  or  $> 3.0$

- ii) The packing depth of the scrubber is determined by the equation

$$Z = (H_{OG})(N_{OG}) \quad (5)$$

where

$Z$  = packing height

$H_{OG}$  = height of transfer unit

$N_{OG}$  = number of mass transfer units required to give a specific scrubbing efficiency

The height of the transfer unit is determined experimentally and will depend on the type of packing; concentration of the gas; gas and liquid flow rates; type of scrubbing liquid; and liquid and air stream temperatures. This information is generally determined by the vendor based on the specific process information.

However, it is known that gases with low solubility can be effectively removed with deep packed beds of 5 feet or more. Therefore, MSDQ must obtain vendor data prior to construction that demonstrates that the minimum value of  $Z/H_{OG} = 3.0$  or greater and that the height of the packed bed is 5 feet or more. Such documentation must be maintained onsite in the Onsite Implementation Log and must be submitted to the EQB at least fifteen days prior to startup.

- iii) For medium solubility gases, including  $SO_2$ , scrubbing liquid rates are generally between 6 and 20 gpm/ft<sup>2</sup>. Scrubbing liquid rates are among the parameters used by the vendor to determine the value for  $H_{OG}$ . Therefore, MSDQ must continuously monitor the scrubbing liquid flow rate to demonstrate that it is at all times equal or greater than the liquid flow rate used by the vendor in their determination. At a minimum this must be 6 gpm/ft<sup>2</sup> or greater. Sufficient caustic must be added to the scrubbing liquid to ensure that the scrubber blowdown maintains a pH greater than 7. The scrubber blowdown pH must be continuously monitored and recorded.
- iv) Each scrubber shall also have a removal efficiency of HCl of 99% or 4lb/hr, whichever is greater.
- v) Within 180 days of startup of the new process utilizing the scrubber, MSDQ shall conduct a test that demonstrates the scrubber achieves a removal efficiency of 95% of  $SO_2$  at maximum process conditions, and a removal of 99% HCl or 4lb/hr HCl as provided in provision iv) above. The stack test will be conducted using Methods from 40 CFR 60 Appendix A.
- vi) The scrubber shall be used at all times when the process is emitting  $SO_2$  except for the following conditions: when it is unsafe to shut down the process, when the scrubber malfunctions, is out of range or otherwise fails to operate as designed, the process is authorized to continue operation until it is



safe to shut down the process provided the initial notification or application submitted under Section IV. E. 3. c), included modeling results demonstrating that emissions of SO<sub>2</sub> from the process without the scrubber functioning, does not result in a fence line or offsite concentration in excess of 0.3 ppm and the annual emissions of SO<sub>2</sub> will not exceed the limit set out in this section. In addition, the Permittee must notify EQB within 24 hours that such an event has occurred.

- c) Prior to startup, MSDQ must calculate the uncontrolled emissions per batch of SO<sub>2</sub>. This shall be calculated based on the stoichiometry of the process. The uncontrolled emissions will then be multiplied by 0.05 reflecting the 95% removal efficiency achieved by the scrubber to determine emissions per batch of SO<sub>2</sub>. Upon demonstration of a higher efficiency during the stack test, MSDQ may use the higher efficiency in calculating controlled actual emissions.
  - d) Processes operating under this scenario are subject to the limitations and procedures described above.
5. The total quantity of VOC's that would be emitted from a batch of the new or modified process is calculated by adding the emissions from the new processes as calculated using the VOC PAL procedures and the information from conditions 2 and 3 of this section F. to the emissions from any uncontrolled vent in the new or modified process. This emissions per batch factor shall be used in monitoring compliance with the VOC PAL in condition 2 of Section IV.A..
6. In the event that monitoring parameter values for air pollution control equipment used to demonstrate compliance with the VOC PAL exceeds those values contained in the Rule 203 application or notification to EQB, the following procedure must be followed:
- a) The EQB must be verbally notified by the end of the next working day that one of the monitoring parameter values has been exceeded;
  - b) For the entire time period that the parameter is exceeded beginning with the last monitoring period that the parameter was below the levels provided to EQB in the application/notification, the actual emissions from the process must be calculated based on the actual emissions that would result from the control equipment operating at the monitoring parameter level indicated by monitoring during the excursion.
  - c) Within seven days of the first monitored excursion, The Permittee must notify the EQB in writing of the excursion and whether the excursion in and of itself has resulted in a violation of the VOC PAL.

- d) The increased actuals due to the excursion must be included in the determination of compliance with the 12 month rolling limit.
  - e) Noncompliance with these provisions will be considered a deviation.
7. New storage tanks are authorized if the addition meets the requirements of the VOC PAL and the new tank receives a 203 permit following the procedures in condition 2 of Section IV.E. MSDQ shall comply with the following applicable requirements as appropriate:
- a) Conditions for Stationary tanks as provided for in Section IV.B.5. of this permit;
  - b) Storage vessels with a design capacity less than 75 cubic meters, with a design capacity greater or equal to 75 cubic meters but less than 151 cubic meters storing a liquid with a maximum true vapor pressure less than 15.0 KPa, and with a design capacity equal to or greater than 151 cubic meters storing a liquid with a maximum true vapor pressure less than 3.5 KPa are subject to the recordkeeping requirements of 40 CFR 60.116b(b).
  - c) Storage vessels with a design capacity equal to or greater than 40 cubic meters other than defined in condition b) above, shall meet the following 40 CFR Part 60, Subpart Kb requirements:
    - i) Storage vessels with a design capacity greater than or equal to 151 cubic meters storing a liquid with a maximum true vapor pressure greater than or equal to 5.2 kPa but less than 76.6 kPa, and storage vessels with a design capacity greater than or equal to 75 cubic meters and less than 151 cubic meters storing a liquid with a maximum true vapor pressure greater than or equal to 27.6 kPa but less than 76.6 kPa, shall install one of the following control schemes following the requirements under 40 CFR 60.112b:
      - (1) fixed roof with internal floating roof;
      - (2) external floating roof; or
      - (3) closed vent system with control device.
    - ii) If choosing control option (1), comply with the testing procedures under 40 CFR 60.113b(a) and the reporting/recordkeeping requirements under 40 CFR 60.115b(a); if choosing control option (2), comply with the testing procedures under 40 CFR 60.113b(b) and the reporting/recordkeeping requirements under 40 CFR 60.115b(b); and if choosing control option (3), comply with the

testing procedures under 40 CFR 60.113b(c) and the reporting/recordkeeping procedures under 40 CFR 60.115b(c).

- iii) Comply with the monitoring of operations requirements of 40 CFR 60.116b.
- iv) Comply with the notification provisions specified in 40 CFR 60.7(a)(1) through (4).
- v) Comply with the standards and maintenance requirements specified in 40 CFR 60.11(d).
- d) If subject to 40 CFR Part 63, Subpart GGG, comply with 60.1253 as provided in the Tanks section of Table 5 in Section IV.B. of this permit.
- e) MSDQ shall include in Attachment II, the 203 permit issued when constructing a new storage tank.

**8. State Only Requirements:**

**a) Rule 201 (I) (1) (d) – Risk Assessments Requirements**

Any source constructed under the VOC PAL which has potential annualized emissions of 10 tons or more of any HAP or 25 tons or more of HAPs in the aggregate is considered a major source of toxics and, therefore, shall be subject to Rule 201 as it applies to Puerto Rico's risk assessment requirements.

**b) Installation of controls for compliance with Rule 419 of the Regulation for the Control of Atmospheric Pollution.**

- i) Upon promulgation of the final Pharmaceutical MACT regulating all sources of HAP emission at the site, MSDQ shall be considered in compliance with Rule 419 by demonstrating compliance with the VOC PAL in Condition 2 of Section IV.A..
- ii) Upon the first effective compliance date of the final Pharmaceutical MACT regulations, sources of HAPs emissions at the site shall be considered subject to the final Pharmaceutical MACT regulations and therefore exempt from the requirements of Rule 419. All other VOC emissions shall be considered in compliance with Rule 419 by demonstrating compliance with the VOC PAL in Condition 2 of Section IV.A.

## **G. Duties to Verify Compliance with the VOC PAL**

### **1. VOC PAL Calculation Methodology**

MSDQ shall calculate monthly VOC emissions from all emission points listed within 30 calendar days of the previous month. The VOC emissions per rolling twelve (12)-month period shall be calculated by the sum of emissions during any one calendar month at MSDQ added to the sum of emissions during the previous eleven (11) calendar months, except as specified in Section IV. A. 2) (b). The emissions for any month will be calculated by adding the number of manufactured lots up to the last Thursday of the month.

MSDQ shall follow the procedures described below to calculate VOC emissions:

#### **a) Process Vents**

- i) For each process, calculate uncontrolled VOC emissions in lbs/batch. MSDQ shall calculate these emissions using 1978 CTG procedures. All input parameters for using CTG procedures shall be obtained from the process description/and manufacturing procedures per batch. MSDQ shall keep records of calculations for each step in the manufacturing process in an on site implementation log (OSIL). In addition, when within 10 tpy of the VOC PAL (i.e., at and above 147 tpy) MSDQ shall verify and keep records of all input parameters used to calculate uncontrolled emissions. Such input parameters shall include but not limited to the raw materials' charge amount, process temperature and purging time. VOC emissions resulting from routine cleaning, rinsing, washing or boil-off of equipment in batch operations shall be accounted for in calculating the uncontrolled emissions.
- ii) For each process, calculate controlled emissions in lbs/batch. In order to determine controlled emissions from each processing step, determine which type of control device the uncontrolled emissions will be vented to.
  - (1) When a condenser is used as a control device, use the calculated condenser temperature as the outlet temperature or receiving vessel temperature to calculate actual controlled emissions. Record calculations and all relevant monitoring data in an OSIL.
  - (2) When a thermal oxidizer is used as a control device, use 98% when meeting the conditions of the preapproval or manufacturer's or site test data to obtain destruction efficiency to determine controlled emissions. Record calculations and all relevant monitoring data in an OSIL.

(3) If actual monitoring data indicate that the control devices were operating out of the assumed ranges used in calculating controlled emissions, recalculate controlled emissions using actual monitoring data. Keep records in an OSIL.

iii) Add controlled or uncontrolled emissions from all processing steps to obtain emissions in lbs/batch. Multiply the number of batches manufactured for each process times the controlled emissions in lbs/batch for each process to obtain monthly actual VOC emissions from process vents in the manufacturing area.

**b) Storage Tanks**

i) MSDQ shall use EPA's TANKS 3.1 model to calculate uncontrolled emissions from each storage tank. In order to calculate uncontrolled emissions from the storage tanks, MSDQ shall use monthly throughput data and stored liquid's chemical characteristics for each storage tank as primary input to the TANKS model. All pertinent tank data such as tank diameter, tank type, working volume, shell color, vacuum/pressure setting etc. shall be input once in the TANKS model. All data for throughput, chemical composition, tank geometry and calculations for uncontrolled emissions shall be recorded in an OSIL.

ii) When the uncontrolled emissions from the storage tanks are routed to a control device such as a thermal oxidizer or a condenser, MSDQ shall use the procedures described in the Process Vent section above (Condition ii) to calculate controlled emissions from the storage tanks. If no control is used, uncontrolled emissions shall be considered as actual emissions.

iii) Add controlled or uncontrolled emissions from all storage tanks to obtain emissions in lbs/tank/month. Add VOC emissions per month from each storage tank to obtain monthly emissions from the storage tanks at MSDQ. All pertinent monitoring data and input parameters shall be recorded in an OSIL.

**c) Wastewater Area**

i) For each process, MSDQ shall develop a wastewater stream characterization to identify volumes and compositions of all wastewater streams discharged to the sewer. The wastewater stream characterization shall be based on sample results or process knowledge. The characterization will be used to calculate compound mass load factors (mass of compound sewer per batch of product manufactured) for each process.

ii) MSDQ shall calculate the monthly VOC emissions by the following procedure:

(1) The compound mass loads sent to sewer will be calculated for each process by multiplying the number of batches manufactured for the month by the compound mass load factor for the process. The compound contributions from each process will then be summed to determine the total mass load for each compound.

(2) The monthly-average effluent flowrate to the wastewater system will be used to calculate the influent compound concentrations by dividing the mass load for each compound by the flowrate.

(3) The calculated compound concentrations and the monthly-average flowrate will be applied in ToxChem to generate the predicted daily air emissions. These values will be multiplied by the number of days in the month to generate the monthly compound mass emission values.

iii) MSDQ shall record all wastewater stream characterizations in an OSIL.

**d) Equipment Leaks**

i) Fugitive VOC emissions from equipment leaks shall be calculated using site specific emission factors. Emission factors for the components are expressed in lb/hr/component type. The emission factor for each process is obtained by multiplying the component emission factor times the batch cycle time in hr/batch to obtain lb/component type/batch.

ii) MSDQ shall calculate monthly VOC emissions from equipment leaks for each process by multiplying the emission factor in lb/component type/batch times the number of batches manufactured in the month times the number of components in service.

iii) MSDQ shall maintain the batch cycle times and the number of components for each process in the OSIL.

iv) MSDQ shall furnish site specific fugitive emission factors for all components including but not limited to valves, connectors and pumps to the permitting authority.

**e) All Other Areas**

MSDQ shall determine and record VOC emissions from the areas not classified above on a monthly basis. All documentation verifying calculations and

monitoring data shall be kept in an OSIL.

f) The following emissions factors apply to all combustion units and incinerators.

<b>Source</b>	<b>VOC Emission Factor (lb/Kgal fuel)</b>
4 Boilers	0.2
Cogeneration	2.3
Solid Waste Incinerator	0.34 (fuel)
	3.0 (lbs/ton 0 & 1 waste)
	3.0 (lbs/ton 6 waste)
Solvent Incinerator	0.34 (fuel)
	0.2 (solvent)
<u>Emergency Gen. &gt; 600HP</u> 1 Unit 1765 HP (1316 kW) 1 Unit 2688 HP (2000 kW) 1 Unit 800 HP (596 kW)	14
<u>Emergency Gen. &lt; 600HP</u> 4 Engines-215 HP each (160 kW) ea. 2 Units 336 HP (250 kW) ea. 2 Unit 100 HP (75kW) ea. 1 Unit 470 HP (350 kW) 1 Unit 120 HP (90 kW) 1 Unit 403 HP (300 kW)	49
<u>Emergency Gen. &lt; 600HP</u> <u>(Gasoline)</u> 3 Units 20 HP (15 kW) ea.	401
RKI Incinerator	0.34 (fuel)
	0.028 (lb/ton solid)
	0.050 (lbs/tons solvent)

## H. Management of Change Under 40 CFR Part 63 Subpart GGG

1. MSDQ shall be able to make changes pursuant to Part 63, Subpart GGG without a revision to this permit if MSDQ follows the procedures established in the table below and records the information in the on-site implementation log as required in condition 2 of this section.

### REPLICABLE PROCEDURES AS WRITTEN IN SUBPART GGG

Procedure	40 CFR Part 63 Citation
Calculating uncontrolled emissions from process vents--equations for eight types of operations	63.1257(d)(2)(i)(A) through (H)
Calculating controlled emissions from process vents discharged through a condenser--equations for eight types of operations	63.1257(d)(3)(i)(B)(I) through (8)
Equations for determining whether an existing vent is subject to 98% control	63.1254(a)(3)(i)
Maximum true vapor pressure for determining storage tank applicability.	63.1251 definition
EPA performance test methods and calculations	63.1257(a)(2), (a) (3), (b)(1) through (8), and (b)(10)(i) through (iii)

2. MSDQ shall maintain an on-site implementation log (OSIL) and associated records on and after the compliance date of 40 CFR Part 63, Subpart GGG to document all process changes [including all process equipment added under the proposed change management strategy] and to document the current operating scenario for each process in operation at the facility. Failure to maintain the OSIL and associated records, failure to revise the OSIL each time the process operating scenario changes, and failure to operate according to the compliance obligations established in the OSIL are violations of this permit and of the underlying requirement. The operating scenario included in the OSIL for each process must include the following information:

- a) A description of the process and the type of process equipment used.
- b) An identification of related process vents and their associated emissions episodes and durations, wastewater points of determination (PODs), and tanks



- c) The applicable control requirements of subpart GGG, including the level of required control.
  - d) The control or treatment devices used, as applicable, including a description of operating and/or testing conditions for any associated control device.
  - e) The process vents, wastewater PODs, and storage tanks (including those from other processes) that are simultaneously routed to the control or treatment device(s).
  - f) The applicable monitoring requirements of subpart GGG and any parametric level that assures compliance for all emissions routed to the control or treatment device.
  - g) Calculations and engineering analyses required to demonstrate compliance, including the basis for such calculations and analyses.
  - h) A verification that the operating conditions for any associated control or treatment device have not been exceeded and that any required calculations and engineering analyses have been performed.
3. MSDQ shall submit quarterly reports to EQB of any new operating scenarios contained in the OSIL which occurred during the quarter, including (but not limited to) any process changes. For reporting purposes, a change to any of the elements listed above in Condition 2, except for element e), that has not been included in any previous report shall constitute a new operating scenario. The quarterly reports must be submitted to EQB on or before 60 days after the end of the quarterly reporting period. The first report must be submitted no later than 150 days after the date that the Compliance Report is due and must include each operating scenario for each process operated during the period from the compliance date of subpart GGG to the end of the 3-month period beginning on the Compliance Report due-date that has not previously been included in an application (including updates and addendum), notification, notice, or report submitted to EQB.

## **I. Monitoring, Recordkeeping, and Reporting Requirements**

1. MSDQ shall comply with the monitoring, recordkeeping and reporting requirements established in Table I-1 in order to assure compliance with the VOC PAL in Condition 2 of Section IV.A.
2. For any units that are subject to Part 63, Subpart GGG, MSDQ shall comply with the

control device monitoring requirements established in Table I-2 as of the compliance date of Subpart GGG.

**Table I-1  
Monitoring, Recordkeeping and Reporting Requirements**

<b>Section A: Site-Wide VOC PAL</b>				
<b>Emission Unit</b>	<b>Item No.</b>	<b>Frequency</b>	<b>Monitor/Record /Report</b>	<b>Requirement</b>
VOC PAL calculations	A.1	Monthly	Record	12-month rolling total site-wide VOC emissions.
	A.2	Monthly	Record	Any adjustments to calculating emissions of individual units and explanation for adjustment
Operation of listed controls	A.3	Ongoing	Record	Record time control equipment is not operating while the controlled emissions unit is operating.

**Table I-1  
Monitoring, Recordkeeping and Reporting Requirements**

<b>Section B: Production Process Units</b>				
<b>Emission Unit</b>	<b>Item No.</b>	<b>Frequency</b>	<b>Monitor/Record /Report</b>	<b>Requirement</b>
VOC PAL	B.1	Monthly	Record	Changes to the process that affect the emission factor
	B.2	Monthly	Record	Maintain current process emission factors
	B.3	Monthly	Monitor and Record	Number of production units (batches)
	B.4	Monthly	Record	Emissions based on emission factor and number of production units (batches)
	B.5	Semi-Annually	Report	Emissions based on emission factor and number of production units (batches)
	B.6		Report	Summary of changes to emission factors based on process modifications
	B.7	Annually	Report	Basis for point source emission factors
	B.8	Within 180 days of start-up of new unit	Record	Emission factor verification for unit operations not included in the following list: Fill, Evacuation, Gas Sweep, Heat, Gas Evolution, Vacuum Distillation, Vacuum Drying, Tank Breathing and Working Losses.

**Table I-1  
Monitoring, Recordkeeping and Reporting Requirements**

<b>Section C: Criteria Pollutant Control Equipment</b>				
<b>Emission Unit</b>	<b>Item No.</b>	<b>Frequency</b>	<b>Monitor/Record /Report</b>	<b>Requirement</b>
Condensers (CN- ###)	C.1	Daily	Record	Inlet coolant temperature
Venturi scrubber (SCR- ###)	C.2	Daily	Record	Liquid flow and pH
Thermal oxidizer (TOU-###)	C.3	Daily	Record	Combustion chamber temperature
Packed bed scrubber (SCR- ###)	C.4	Daily	Record	Liquid flow and pH
New condensers added	C.5	Daily	Record	Coolant inlet temperature
New scrubbers added	C.6	Daily	Record	Scrubber water flow and pH
New dust collection systems added	C.7	Daily	Record	Differential pressure across filter
All scrubbers	C.8	Daily	Record	Scrubber water flow and pH
All dust collection systems	C.9	Daily	Record	Differential pressure across filter
All thermal oxidizers	C.10	Every 5 years	Record	Perform stack test on unit to determine VOC emissions

**Table I-2: Monitoring Requirements for Control Devices Under Part 63, Subpart GGG<sup>7, 8</sup>**

<b>Control Device</b>	<b>Monitoring equipment required</b>	<b>Parameters to be monitored</b>	<b>Frequency</b>
All control devices	<ol style="list-style-type: none"> <li>1. Flow indicator installed at all bypass lines to the atmosphere and equipped with continuous recorder; or</li> <li>2. Valves sealed closed with carseal or lock-and-key configuration.</li> </ol>	<ol style="list-style-type: none"> <li>1. Presence of flow diverted from the control device to the atmosphere; or</li> <li>2. Monthly inspections of sealed valves.</li> </ol>	<ol style="list-style-type: none"> <li>1. Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour.</li> <li>2. Monthly</li> </ol>
Scrubber	Liquid flow rate or pressure drop monitoring device. Also a pH monitor if the scrubber is used to control acid emissions.	<ol style="list-style-type: none"> <li>a. Liquid flow rate into or out of the scrubber or the pressure drop across the scrubber.</li> <li>b. pH of effluent scrubber liquid</li> </ol>	<ol style="list-style-type: none"> <li>a. Every 15 minutes</li> <li>b. Once a day</li> </ol>

<sup>7</sup> As an alternative to the monitoring requirements specified in the table, the owner or operator may use a CEM meeting the requirements of Performance Specifications 8 or 9 of appendix B of part 60 to monitor TOC every 15 minutes.

<sup>8</sup> All monitoring must commence on the later of (1) the compliance date and (2) the date the monitor is required to be installed and performance verified. Installation and verification of all monitors must occur on or before the compliance date, except where the associated air pollution control device must be performance tested and the performance test is not conducted until after the compliance date. Thus, for small condensers (<10 tons HAP/yr) and large control devices (≥ 10 tons HAP/yr), monitoring must commence as of the compliance date. Monitoring of other large control devices can be delayed until the monitors are installed and performance verified, up to the date of the performance test. “Periodic verification” of very small control devices (<1 ton HAP/yr) must commence on the compliance date.

<b>Control Device</b>	<b>Monitoring equipment required</b>	<b>Parameters to be monitored</b>	<b>Frequency</b>
Thermal incinerator	Temperature monitoring device installed in firebox or in ductwork immediately downstream of firebox. <sup>9</sup>	Firebox temperature	Every 15 minutes
Catalytic incinerator	Temperature monitoring device installed in gas stream immediately before and after catalyst bed.	Temperature immediately before the catalyst bed and temperature difference across catalyst bed.	Every 15 minutes.
Flare	Heat sensing device installed at the pilot light.	Presence of a flame at the pilot light.	Every 15 minutes.
Boiler or process heater < 44 mega watts and vent stream is not mixed with the primary fuel	Temperature monitoring device installed in firebox.	Combustion temperature	Every 15 minutes
Condenser	Temperature monitoring device installed at condenser exit.	Condenser exit (product side) temperature	Every 15 minutes
Carbon adsorber (nonregenerative)	None	Operating time since last replacement	N/A

<sup>9</sup> Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

Control Device	Monitoring equipment required	Parameters to be monitored	Frequency
Carbon adsorber (regenerative)	Stream flow monitoring device and Carbon bed temperature monitoring device.	<ol style="list-style-type: none"> <li>1. Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s)</li> <li>2. Temperature of carbon bed after regeneration.</li> <li>3. Temperature of carbon bed within 15 minutes of completing any cooling cycle(s).</li> <li>4. Operating time since end of last regeneration.</li> <li>5. Check for bed poisoning.</li> </ol>	<ol style="list-style-type: none"> <li>1. For each regeneration cycle, record the total regeneration stream mass or volumetric flow.</li> <li>2. For each regeneration cycle, record the maximum carbon bed temperature.</li> <li>3. Within 15 minutes of completing any cooling cycle, record the carbon bed temperature.</li> <li>4. Operating time to be based on worst-case conditions.</li> <li>5. Yearly</li> </ol>



### **3. Monitoring, Recordkeeping and Reporting**

The Permittee shall comply with the monitoring, recordkeeping and reporting requirement specified in Table I - 1 and I - 2, as appropriate.

**a) Emission Calculation Techniques**

Calculations to demonstrate compliance with VOC PAL are found at Section IV.G.

**b) Semi-Annual Reporting Requirements:**

The Permittee shall submit semi-annual reports beginning with the six month period after the effective date of the permit and for every six-month period thereafter. Semi-annual reports must be submitted within 90 days after the end of each six-month period.

**c) Reports specified in Table I-1 and 2 shall contain certification by the site's responsible official that to his belief, based on reasonable inquiry, the information submitted in the report is true, accurate, and complete.**

**d) Records required in this section shall be retained on site for at least five years.**

**e) Records of required monitoring information shall include the following:**

- i) The date, place as defined in the permit, and time of sampling or measurement,
- ii) The date(s) analysis were performed,
- iii) The company or entity that performed the analysis,
- iv) The analytical techniques or methods used,
- v) The results of such analyses, and,
- vi) The operating conditions as existing at the time of sampling or measure.

**Section V- Insignificant Emission Units**

The following activities shall be considered insignificant as long as the Permittee complies with description indicated below.

<b>Emission Unit ID</b>	<b>Description</b>														
Four (4) emergency fire pump engines (no.1 to 4; 215 HP ea.)	Operation equal to or less than 500 hrs/yr														
Two emergency generators (100 HP) ea.	Operation equal to or less than 500 hrs/yr														
One emergency generator (470 HP)	Operation equal to or less than 500 hrs/yr														
One emergency generator (120 HP)	Operation equal to or less than 500 hrs/yr														
One emergency generator (403 HP)	Operation equal to or less than 500 hrs/yr														
Research trials	Duration ≤30 days, prior a 15 days notice and compliance with VOC PAL.														
<p>Individual emission unit changes including:</p> <ol style="list-style-type: none"> <li>1. Clean-out procedures,</li> <li>2. Reduction of wastewater flow to waste- treatment facility</li> <li>3. Alternate use of tanks</li> <li>4. Change of process condenser service</li> <li>5. Change of column packing</li> <li>6. Use of storage tanks to store intermediates, and</li> <li>7. Solvent switch in existing storage tank.</li> </ol>	<p>Allowable emission rates &lt; the following:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Pollutant</u></th> <th style="text-align: right;"><u>Tons per year</u></th> </tr> </thead> <tbody> <tr> <td>TSP</td> <td style="text-align: right;">2</td> </tr> <tr> <td>SO<sub>x</sub></td> <td style="text-align: right;">2</td> </tr> <tr> <td>NO<sub>x</sub></td> <td style="text-align: right;">1</td> </tr> <tr> <td>VOC</td> <td style="text-align: right;">1</td> </tr> <tr> <td>CO</td> <td style="text-align: right;">1</td> </tr> <tr> <td>PM<sub>10</sub></td> <td style="text-align: right;">1</td> </tr> </tbody> </table>	<u>Pollutant</u>	<u>Tons per year</u>	TSP	2	SO <sub>x</sub>	2	NO <sub>x</sub>	1	VOC	1	CO	1	PM <sub>10</sub>	1
<u>Pollutant</u>	<u>Tons per year</u>														
TSP	2														
SO <sub>x</sub>	2														
NO <sub>x</sub>	1														
VOC	1														
CO	1														
PM <sub>10</sub>	1														

***Section VI- Permit Shield***

- A. As established under rule 603 (D) of RCAP, compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as specifically identified in this permit and other requirements specifically identified as not applicable to the source as of the date of permit issuance as listed below. Compliance with the conditions of the permit shall be deemed to be in compliance with all permits issued to MSDQ under Rule 203 and 204 of the RCAP as of the effective date of this permit. Changes made in compliance with Sections IV(E) and (F) of this permit shall be deemed to be in compliance with Rule 203/204 of the RCAP. Changes made in compliance with the terms of the VOC PAL will be deemed to have not triggered major new source review as it pertains to 40 CFR 52 and the criteria pollutant sections of Rule 201 of the RCAP.

**B.** The following requirements are not applicable to the following emission units:

**1. Emission Unit**

**a) EU- BOILERS**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-BOILERS	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 409	Non-Process Sources - Unit is subject to another standard, Rule 406 (A).
	PR Rule 412	Sulfur Dioxide Emissions - Emission Unit is covered by other applicable rules and regulations.
	40 CFR Part 60, Subpart D	Standards of Performance for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971.
	40 CFR Part 60, Subpart Da	Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commence after September 18,1978.
	40 CFR Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units. However these units have not heat input rates <100 MMBTU/hr.
	40 CFR Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units with heat rates <100 MMBTU/hr but ≥ 10 MMBTU/hr. However, these units were not constructed, reconstructed or modified after 6/9/89.

**b) EU - TANKS**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) 4.
	PR Rule 407	Process Sources - No particulate matter are emitted from the emission unit.
	PR Rule 409	Non-process sources - No particulate matter are emitted from the emission unit.
	PR Rule 410	Maximum Sulfur Content in fuel. No fuel-burning equipment included in the emission unit.
	PR Rule 412	Sulfur Dioxide Emissions - There is no SO2 emissions from this emission unit.
	PR Rule 417 (D)	Storage of Volatile Organic Compounds. This rule does not apply to storage tanks used for storage of any liquid having no photochemical reactivity and/or having a true vapor pressure less than 0.75 psia or tanks that treat wastewater.
	PR Rule 419 (D) (2)	Volatile Organic Compounds (VOC) - This Rule does not apply to tanks covered or exempted by Rule 417.
	PR Rule 419 (D) (6)	Volatile Organic Compounds (VOC) - This Rule does not apply to tanks used to store VOC's with capacity of less than 40,000 gallons if provided with a conservation vent, flame arrestor or any other equivalent control.
	PR Rule 419 (D) (7)	This Rule does not apply to open ponds, sumps or lagoons of liquid containing organic solvents or compounds used for the sole purpose of wastewater treatment and its related equipment.

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS (Cont.)	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1291-1667-II-III-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	Operating Permit PFE-09-1291-1668-I-II-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	40 CFR Part 60, Subpart Kb	Standards of Performance for VOC Storage Vessels for which Construction, Reconstruction, or Modification Commenced after 7/23/84. Not applicable to process tanks and storage vessels not containing VOC's.
	40 CFR Part 60, Subpart Kb	Standards of Performance for VOC Storage Vessels for which Construction, Reconstruction, or Modification Commenced after 7/23/84. Not applicable to storage tanks < 10,568 gal.
	40 CFR Part 60, Subpart Kb	Standards of Performance for VOC Storage Vessels for which Construction, Reconstruction, or Modification Commenced after 7/23/84. MSDQ stores organic liquids on several vessels with capacity greater than 40 cubic meters. None of these tanks, however, have been constructed, reconstructed or modified after 7/23/84.
	40 CFR 60.112(a)(1) and (a)(2)	NSPS Requirements for tanks with fixed/internal floating roof and/or external floating roof. MSDQ has no storage tanks of this nature.
	40 CFR 60.112 b (b)	NSPS Requirements for tanks > 20,000 gal. and 1.11 psia. MSDQ has no storage tanks of this nature.
	40 CFR 60.113 b (a) and (d)	NSPS Requirements for tanks with fixed/internal floating roof, external floating roof, and/or flare. MSDQ has no storage tanks of this nature.
	40 CFR 60.114 b	Alternate means of emission limitation
40 CFR 60.115 b (a), (b) and (d)	NSPS Requirements for tanks with fixed/internal floating roof, external floating roof, and/or flare. MSDQ has no storage tanks of this nature.	

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS (Cont.)	40 CFR 60.116 (b) (f)	NSPS Requirements for tanks with indeterminate or variable composition. Waste mixtures stored in tanks at MSDQ are of generally known and relatively constant composition.
	40 CFR 60.8	NSPS General Provisions - Performance Tests. No testing requirements are applicable to storage tanks at MSDQ (see 40 CFR 60.113 b(c)).
	40 CFR 60.13	NSPS General Provisions - Monitoring Requirements. Applies only to sources with CEM's or COM's.
	40 CFR 60.18	General control device requirements. Applies only to flares.

**c) EU - SOLV**

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-SOLV	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 409	Non-Process Sources - Unit Subject to RCRA Standards.
	PR Rule 412	Sulfur Dioxide Emissions - Emission Unit is covered by other applicable rules and regulations.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1291-1668-I-II-O Rule 405	Comply with standard limit of 0.4 lb/100 lb. Basis for existing conditions (Rule 405) has been subsequently modified to exclude from applicability hazardous waste incinerators.
	40 CFR Part 60, Subpart E	Standards of Performance for Incinerators. Incinerator burns only industrial waste solvents (non-municipal waste).
	Operating Permit PFE-09-1291-1668-I-II-O Conditions 6, 7	Methyl Chloride Feed Rate - Process will no longer be manufactured at the facility.



**d) EU-TRASH**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TRASH	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 409	Non-Process Sources - Unit subject to another standard, Rule 405 (B).
	PR Rule 412	Sulfur Dioxide Emissions - Emission Unit is covered by other applicable rules and regulations.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	40 CFR Part 60, Subpart E	Standards of Performance for Incinerators. The Trash Incinerator burns only industrial waste (non-municipal).

e) EU - MFG

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-MFG	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 407	Process Sources - Particulate matter emissions sources at this emission unit do not constitute process sources.
	PR Rule 409	Non-process sources - Particulate matter emissions from this emission unit constitute fugitive sources of emission and not discrete emission sources.
	PR Rule 410	Maximum Sulfur Content in fuel. No fuel burning equipment included in the emission unit.
	PR Rule 412	Sulfur Dioxide Emissions - There is no SO2 emissions from this emission unit.
	PR Rule 417	Storage of Volatile Organic Compounds - This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks, which are not considered "storage tanks" due to the high solvent throughputs and continuous tank turnover.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1291-1667-II-III-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	Operating Permit PFE-09-1291-1668-I-II-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-MFG (Cont.)	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commences after July 23, 1984. This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks. The process tanks used are not "storage" tanks, due to the high solvent throughputs and continuous tank turnover.
	40 CFR Part 63, Subparts F & G	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry - Process Vents, Storage Vessels, Transfer Operations, and Wastewater
	40 CFR Part 63, Subparts H & I	National Emissions Standards for Organic Hazardous Air Pollutants for Equipment Leaks and National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks. These regulations apply only to pharmaceutical production processes using carbon tetrachloride or methylene chloride in over 300 hrs/year. Process using methylene chloride at MSDQ is not manufactured for more than 300 hr/yr.

**f) EU - MFG - INC**

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-MFG-INC	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 407	Process Sources - Particulate matter emissions sources at this emission unit do not constitute process sources.
	PR Rule 409	Non-process sources - Particulate matter emissions from this emission unit constitute fugitive sources of emission and not discrete emission sources.
	PR Rule 410	Maximum Sulfur Content in fuel. No fuel-burning equipment included in the emission unit.
	PR Rule 412	Sulfur Dioxide Emissions - There is no SO2 emissions from this emission unit.
	PR Rule 417	Storage of Volatile Organic Compounds - This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks, which are not considered "storage tanks" due to the high solvent throughputs and continuous tank turnover.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1291-1667-II-III-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	Operating Permit PFE-09-1291-1668-I-II-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-MFG-INC  (Cont.)	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commences after July 23, 1984. This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks. The process tanks used are not "storage" tanks, due to the high solvent throughputs and continuous tank turnover.
	40 CFR Part 63, Subparts F & G	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry - Process Vents, Storage Vessels, Transfer Operations, and Wastewater
	40 CFR Part 63, Subparts H & I	National Emissions Standards for Organic Hazardous Air Pollutants for Equipment Leaks and National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks. These regulations apply only to pharmaceutical production processes using carbon tetrachloride or methylene chloride in over 300 hrs./year. The Process that uses methylene chloride at MSDQ is not operated for more than 300 hr/yr.

**g) EU - MFG - DUST**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU- MFG-DUST	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 407	Process Sources - Particulate matter emissions sources at this emission unit do not constitute process sources.
	PR Rule 410	Maximum Sulfur Content in fuel. No fuel-burning equipment included in the emission unit.
	PR Rule 412	Sulfur Dioxide Emissions - There is no SO2 emissions from this emission unit.
	PR Rule 417	Storage of Volatile Organic Compounds - This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks, which are not considered "storage tanks" due to the high solvent throughputs and continuous tank turnover.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-0493-0516-I-O	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commences after July 23, 1984. This regulation does not apply to tanks used in this emission unit, as all tanks used are considered "process" tanks. The process tanks used are not "storage" tanks, due to the high solvent throughputs and continuous tank turnover.
	40 CFR Part 63, Subparts F & G	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry - Process Vents, Storage Vessels, Transfer Operations, and Wastewater
40 CFR Part 63, Subparts H & I	National Emissions Standards for Organic Hazardous Air Pollutants for Equipment Leaks and National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks. These regulations apply only to pharmaceutical production processes using carbon tetrachloride or methylene chloride over 300 hrs/year. The Process that uses methylene chloride at MSDQ is not operated for more than 300 hr/yr.	

**h) EU-TANKS -RKI**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS-RKI	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) 4.
	PR Rule 407	Process Sources - No particulate matter are emitted from the emission unit.
	PR Rule 409	Non-process sources - No particulate matter are emitted from the emission unit.
	PR Rule 410	Maximum Sulfur Content in fuel. No fuel-burning equipment included in the emission unit.
	PR Rule 412	Sulfur Dioxide Emissions - There is no SO2 emissions from this emission unit.
	PR Rule 417 (D)	Storage of Volatile Organic Compounds. This rule does not apply to storage tanks used for storage of any liquid having no photochemical reactivity and/or having a true vapor pressure less than 0.75 psia or tanks that treat wastewater.
	PR Rule 419 (D) (2)	Volatile Organic Compounds (VOC) - This Rule does not apply to tanks covered or exempted by Rule 417.
	PR Rule 419 (D) (6)	Volatile Organic Compounds (VOC) - This Rule does not apply to tanks used to store VOC's with capacity of less than 40,000 gallons if provided with a conservation vent, flame arrestor or any other equivalent control.
	PR Rule 419 (D) (7)	This Rule does not apply to open ponds, sumps or lagoons of liquid containing organic solvents or compounds used for the sole purpose of wastewater treatment and its related equipment.

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS-RKI (Cont.)	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1291-1667-II-III-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	Operating Permit PFE-09-1291-1668-I-II-O Condition #1	Operate process and corresponding control equipment as illustrated in permit attachment. Emission unit will operate under a plant-wide emission Cap for VOC. Therefore equipment/control devices configurations are irrelevant.
	40 CFR 60.112(a)(1) and (a)(2)	NSPS Requirements for tanks with fixed/internal floating roof and/or external floating roof. MSDQ has no storage tanks of this nature.
	40 CFR 60.112 b (b)	NSPS Requirements for tanks > 20,000 gal. and 1.11 psia. MSDQ has no storage tanks of this nature.
	40 CFR 60.113 b (a) and (d)	NSPS Requirements for tanks with fixed/internal floating roof, external floating roof, and/or flare. MSDQ has no storage tanks of this nature.
	40 CFR 60.114 b	Alternate means of emission limitation
	40 CFR 60.115 b (a), (b) and (d)	NSPS Requirements for tanks with fixed/internal floating roof, external floating roof, and/or flare. MSDQ has no storage tanks of this nature.



NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-TANKS-RKI (Cont.)	40 CFR 60.116 (b) (f)	NSPS Requirements for tanks with indeterminate or variable composition. Waste mixtures stored in tanks at MSDQ are of generally known and relatively constant composition.
	40 CFR 60.8	NSPS General Provisions - Performance Tests. No testing requirements are applicable to storage tanks at MSDQ (see 40 CFR 60.113 b(c)).
	40 CFR 60.13	NSPS General Provisions - Monitoring Requirements. Applies only to sources with CEM's or COM's.
	40 CFR 60.18	General control device requirements. Applies only to flares.

**i) EU- COGEN**

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-COGEN	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) 4.
	PR Rule 409	Non-Process Sources - Unit is subject to another standard, Rule 406 (A).
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Previously Issued Operating Permits	Maintain a 0.72 water-to-fuel ratio and a maximum fuel consumption of 299 gal/hrs. Condition have been modified in subsequent operating permits.
	40 CFR Part 60, Subpart D	Standards of Performance for Fossil Fuel Fired Steam Generators for which Construction is Commenced after 8/17/71. MSDQ operates fossil fuel fired steam generators. No steam generating units >250 MMBTU/hr at MSDQ.
	40 CFR Part 60, Subpart Da	Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced after 9/18/78.
	40 CFR Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units. However these units have not heat input rates <100 MMBTU/hr.

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-COGEN (Cont.)	40 CFR Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units with heat rates <100 MMBTU/hr but ≥ 10 MMBTU/hr. However, these units were not constructed, reconstructed or modified after 6/9/89.
	PR Rule 412	Sulfur Dioxide Emissions - Emission Unit is covered by other applicable rules and regulations.

**j) EU-RKI**

NON-APPLICABLE REQUIREMENTS

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-RKI	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) (4).
	PR Rule 405	Comply with standard limit of 0.4 lb/100 lb. Basis for existing conditions (Rule 405) has been subsequently modified to exclude from applicability hazardous waste incinerators.
	PR Rule 406	Fuel Burning Equipment - Unit is not a fuel burning equipment as defined in PR Rule 102.
	PR Rule 409	Non-Process Sources - Unit is subject to RCRA Standards.
	PR Rule 412	Sulfur Dioxide Emissions - Emission Unit is covered by other applicable rules and regulations.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).
	Operating Permit PFE-09-1193-1722-I-II-O, Condition #2	Requirement to comply with the RCRA - Not an applicable requirement for Title V purposes.
	Operating Permit PFE-09-1193-1722-I-II-O, Condition #1	Perform sampling to determine removal efficiency of air pollution control system. Requirement has been met, therefore, it is not an on-going applicable requirement for Title V purposes.
	40 CFR Part 60, Subpart E	Standards of Performance for Incinerators - Incinerator does not burn municipal waste.

**k) EU - EMRGEN**

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENT
EU-EMRGEN	PR Rule 105	Malfunction - This Rule does not apply to Title V sources, as per PR Rule 105 (H).
	PR Rule 204	Permit to Operate a Source - Any source that must submit a Title V Operating Permit Application will be exempted from all permits requirements established under this Rule, as per Rule 204 (A) 4.
	PR Rule 406	Fuel Burning Equipment - Unit is not a fuel burning equipment as defined in PR Rule 102.
	PR Rule 420	Objectionable Odors - The requirement of this rule are duplicated for this emission unit (See Plant-wide requirements).

## 2. Plantwide

NON-APPLICABLE REQUIREMENTS		
EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENTS
Plant-wide	40 CFR Part 60, Subpart Ca	Emission Guidelines and Compliance Times for Municipal Waste Combustors. Incinerators at MSDQ do not burn municipal waste.
	40 CFR Part 60, Subpart Cb	Emissions Guidelines and Compliance Schedules for Municipal Waste Combustors That Are Constructed on or Before December 19, 1995. Incinerators at MSDQ do not burn municipal waste.
	40 CFR Part 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units. However these units have not heat input rates < 100 MMBTU/hr.
	40 CFR Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. MSDQ operates steam generating units with heat rates < 100 MMBTU/hr. but ≥ 10 MMBTU/hr. However, these units were not constructed, reconstructed or modified after 6/9/89.
	40 CFR Part 60, Subpart E	Standards of Performance for Incinerators. Waste Incinerators at MSDQ do not burn municipal waste.
	40 CFR Part 60, Subpart Ea	Standards of Performance for Municipal Waste Combustors. Waste incinerators at MSDQ do not burn municipal waste.
	40 CFR Part 60, Subpart Eb	Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994. Waste incinerators at MSDQ do not burn municipal waste.
	40 CFR Part 60, Subpart K	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after 6/11/73 and Prior to 5/19/78. MSDQ operates storage vessels with capacity > 40,000 gallons for the storage of petroleum liquids. However these have not been as defined, constructed, reconstructed or modified between 6/11/73 and 5/19/78.
	40 CFR Part 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after 5/18/78 and Prior to 7/23/84. MSDQ operates storage vessels with capacity > 40,000 gallons for the storage of petroleum liquids. However these have not been as defined, constructed, reconstructed or modified between 5/18/78 and 7/23/84.
	40 CFR Part 60, Subpart EE	Standards of Performance for Surface Coating of Metal Furniture.
	40 CFR Part 60, Subpart QQ	Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing.
	40 CFR Part 60, Subpart RR	Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations.
	40 CFR Part 60, Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry. MSDQ does not produce any of the SOCMCI chemicals listed in 40 CFR 60.489.
	40 CFR Part 60, Subpart DDD	Standards of Performance for VOC Emissions from the Polymer Manufacturing Industry. MSDQ does not manufacture polymers.
40 CFR Part 60, Subpart III	Standards of Performance for VOC Emissions from the SOCMCI Air Oxidation Unit Processes. MSDQ does not produce any of the chemicals listed in 40 CFR 60.617.	
40 CFR Part 60, Subpart NNN	Standards of Performance for VOC Emissions from the SOCMCI Distillation Operations. MSDQ does not produce any of the chemicals listed in 40 CFR 60.707.	

**NON-APPLICABLE REQUIREMENTS**

EMISSION UNIT ID NO.	NON-APPLICABLE REQUIREMENT CITATION	NON-APPLICABLE REQUIREMENTS
Plant-wide (Cont.)	40 CFR Part 60, Subpart RRR	Standards of Performance for VOC Emissions from the SOCMR Reactor Processes. MSDQ does not produce any of the chemicals listed in 40 CFR 60.707.
	40 CFR Part 60, Subpart TTT	Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.
	40 CFR Part 60, Subpart VVV	Standards of Performance for Polymeric Coating of Supporting Substrates Facilities.
	40 CFR Part 61, Subpart C	National Emission Standard for Beryllium. MSDQ's incinerators do not burn Beryllium containing waste.
	40 CFR Part 61, Subpart J	National Emission Standard for Equipment Leaks (Fugitive Emissions Sources) of Benzene. No components in Benzene service at MSDQ.
	40 CFR Part 61, Subpart V	National Emission Standard for Equipment Leaks (Fugitive Emissions Sources). MSDQ has no components in VHAP service (benzene or vinyl chloride).
	40 CFR Part 61, Subpart Y	National Emission Standard for Benzene Emissions from Benzene Storage Vessels. No Benzene storage vessels at MSDQ.
	40 CFR Part 61, Subpart BB	National Emission Standard for Benzene Emissions from Benzene Transfer Operations. No Benzene loading racks at MSDQ.
	40 CFR Part 61, Subpart FF	National Emission Standard for Benzene Waste Operations. No Benzene waste operations at MSDQ.
	40 CFR Part 63, Subpart B	Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections 112(g) & 112(j). No sources of MSDQ have triggered case-by-case MACT review.
	40 CFR Part 63, Subpart F	National Emission Standard for Organic HAPs from the Synthetic Organic Chemical Manufacturing Industry. MSDQ does not manufacture any compounds in Table 1 of Subpart F.
	40 CFR Part 63, Subpart G	National Emission Standard for Organic HAPs from the Synthetic Organic Chemical Manufacturing Industry Process Vents, Storage Vessels, Transfer Operations and Wastewater. MSDQ does not manufacture any compounds in Table 1 of Subpart F, or use as a reactant or manufacture as a product, by-product, or-product, any if the organic hazardous air pollutants listed in Table 2 of Subpart F.
	40 CFR Part 63, Subpart H	National Emission Standard
	40 CFR Part 63, Subpart O	Ethylene Oxide Emission Standards for Sterilization Facilities.
	40 CFR Part 63, Subpart Q	National Emission Standard for Industrial Process Cooling Towers. Cooling Towers at MSDQ do not use chromium-based water treatment.
	40 CFR Part 63, Subpart T	National Emission Standard for Halogenated Solvent Cleaning.
	40 CFR Part 63, Subpart DD	National Emission Standards for Hazardous Air Pollutants from Off-Site Waste Recovery Operations
	40 CFR Part 63, Subpart JJ	National Emissions Standards for Wood Furniture Manufacturing Operations
40 CFR Part 63, Subpart KK	National Emissions Standards for the Printing and Publishing Industry.	
PR Rule 412	Sulfur Dioxide Emissions - This rule does not apply to any Emissions Units, except for EU COGEN, EU EMRGEN.	

***Section VII- Permit Approval***

By virtue of the powers bestowed to the Environmental Quality Board by the Public Environmental Policy Act, Law 9 of June 18, 1970 as amended, and after review of the administrative record, and the compliance with the Law of Uniform Administration Procedures. Law Number 170 of August 12, 1988, as amended, the Federal Clean Air Act, and the Puerto Rico Regulations for the Control of Atmospheric Pollution, the Environmental Quality Board approves this permit under such terms and conditions expressed in such.

Issued on \_\_\_\_\_, in San Juan, Puerto Rico,

**ENVIRONMENTAL QUALITY BOARD**

Maribelle Marrero Vázquez  
Associate Member

Jorge Marrero Huertas  
Associate Member

Héctor Russe Martínez  
Chairman



# ***APPENDIXES***

## APPENDIX I

### Reasonably Anticipated Operating Scenarios

The base case for this permit includes operation of all the processes and equipment included as Attachment I. In addition changes at MSDQ that do not trigger a requirement for a Rule 203 preconstruction permit, that do not trigger an NSPS requirement not described in this permit and that do not trigger the requirement to obtain a PSD permit are considered part of the base case described in this permit. Examples of such changes include: changing from one raw material supplier to another, changing column packing, replacing equipment with similarly sized spare equipment, use of a storage tank to store a nonHAP intermediate, and manufacture of research trial batches for FDA purposes. There are four operating scenarios that consist of changes that are not provided for in the base case described in this permit. They are changes that will not trigger an NSPS requirement not mentioned in this permit; nor will any of these changes trigger the requirement to obtain a PSD permit. As part of these four operating scenarios, unit specific requirements for condensers, thermal oxidizers, scrubbers, storage tanks, and emergency generators are included in the permit.

#### I) Changes to Processes not involving HAPs

This scenario applies to processes that do not use HAPs in the production of pharmaceutical products. This scenario includes the addition of new manufacturing equipment to an existing process, or the deletion of manufacturing equipment from an existing process resulting in increased emissions of VOC/batch, that results in the production of the same intermediate or product. Examples of new equipment that could be added to a process include: process tanks, reactors, mixing tanks, extractors, wiped film evaporators, centrifuges, distillation units, crystallizers, quench tanks and other equipment necessary for the synthesis, isolation, purification, formulation, and packaging of pharmaceutical products, as well as ancillary equipment used to support such production including storage tanks, chillers, emergency generators, preapproved scrubbers for the control of SO<sub>2</sub> generated by the process and by preapproved thermal oxidizers, and new condensers sized in accordance with the procedures outlined in this permit. This scenario does not include new combustion units other than preapproved thermal oxidation units (TOU's) used to control emissions from the process and ancillary facilities.

## **II) Changes to Processes involving HAP's**

This scenario applies to processes that use HAPs in the production of pharmaceutical products. This scenario includes the addition of new manufacturing equipment to an existing process, or the deletion of manufacturing equipment from an existing process resulting in increased emissions of VOC/batch, that results in the production of the same intermediate or product. Examples of new equipment that could be added to a process include: process tanks, reactors, mixing tanks, extractors, wiped film evaporators, centrifuges, distillation units, crystallizers, quench tanks and other equipment necessary for the synthesis, isolation, purification, formulation, and packaging of pharmaceutical products, as well as ancillary equipment used to support such production including storage tanks, chillers, emergency generators, preapproved scrubbers for the control of SO<sub>2</sub> generated by the process and by preapproved thermal oxidizers, and new condensers sized in accordance with the procedures outlined in this permit. This scenario does not include new combustion units other than preapproved thermal oxidation units (TOU's) used to control emissions from the process and ancillary facilities.

## **III) New Processes not involving HAPs**

This scenario applies to processes that do not use HAPs in the production of pharmaceutical products. This scenario includes the addition of new manufacturing equipment to manufacture a new process, the addition of new manufacturing equipment to existing manufacturing equipment to produce a new product, or the manufacturing of a new product in all existing equipment. Examples of new equipment that could be added to a process include: process tanks, reactors, mixing tanks, extractors, wiped film evaporators, centrifuges, distillation units, crystallizers, quench tanks and other equipment necessary for the synthesis, isolation, purification, formulation, and packaging of pharmaceutical products, as well as ancillary equipment used to support such production including storage tanks, chillers, emergency generators, preapproved scrubbers for the control of SO<sub>2</sub> generated by the process and by preapproved thermal oxidizers, and new condensers sized in accordance with the procedures outlined in this permit. This scenario does not include new combustion units other than preapproved thermal oxidation units (TOU's) used to control emissions from the process and ancillary facilities.

#### **IV) New Processes Involving HAPs**

This scenario applies to processes that use HAPs in the production of pharmaceutical products. This scenario includes the addition of new manufacturing equipment to manufacture a new process, the addition of new manufacturing equipment to existing manufacturing equipment to produce a new product, or the manufacturing of a new product in all existing equipment. Examples of new equipment that could be added to a process include: process tanks, reactors, mixing tanks, extractors, wiped film evaporators, centrifuges, distillation units, crystallizers, quench tanks and other equipment necessary for the synthesis, isolation, purification, formulation, and packaging of pharmaceutical products, as well as ancillary equipment used to support such production including storage tanks, chillers, emergency generators, preapproved scrubbers for the control of SO<sub>2</sub> generated by the process and by preapproved thermal oxidizers, and new condensers sized in accordance with the procedures outlined in this permit. This scenario does not include new combustion units other than preapproved thermal oxidation units (TOU's) used to control emissions from the process and ancillary facilities.

## APPENDIX II

### DEFINITIONS and ABBREVIATIONS

#### I. Definitions

1. "Act" means the Clean Air Act, as amended, 42 U.S. 7401, et seq.
2. Responsible Official- see definition of responsible official, as established in the EQB Regulation for the Control of Atmospheric Pollution, (1995).
3. Regulations- Regulation for the Control of Atmospheric Pollution of EQB
4. Permittee- person or establishment to whom EQB has issued an operating permit for an emission source covered by Title V.
5. Title V- Title V of the Federal Clean Air Act (42 U.S.C. 7661).

#### II. Abbreviations

APCD	Air Pollution Control Device
AQ	Air Quality
BACT	Best Available Control Technology
BTU	British Thermal Unit
CAA	Federal Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CTG	Control Technique Guidelines
EPA	Environmental Protection Agency
EQB	Environmental Quality Board
FDA	Food and Drug Administration
HAP	Hazardous Air Pollutant
LDAR	Leak Detection and Repair
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NO <sub>x</sub>	Nitrogen Oxides

NSPS	New Source Performance Standards
OSIL	On-site Implementation Log
PAL	Plant-wide Applicability Limit
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance/Quality Control
RCAP	Regulation for the Control of Atmospheric Pollution
RCRA	Resource Conservation & Recovery Act
SIC	Source Industrial Classification
SO <sub>2</sub>	Sulfur Dioxide
TOU	Thermal Oxidizer Unit
TPY	Tons per year
USC	United States Code
VOC	Volatile Organic Compound

### **III. NOTIFICATION ADDRESSES**

#### Compliance Notifications and Permit Modifications:

Commonwealth of Puerto Rico  
Environmental Quality Board  
Air Quality  
P. O. Box 11488  
Santurce, PR 00910

# ***ATTACHMENTS***

## ATTACHMENT I - PROCESS EQUIPMENT AND CONTROL DEVICES<sup>10</sup>

### A. AMILORIDE PROCESS

PROCESS STEP	SOURCE	CONTROL EQUIPMENT
<b>CRUDE</b>	ST-31	CN-24
	ST-21	CN-82
	MT-41	CN-94
	VR-27	CL-96/97
	TA-61	CN-94
	CE-65	CN-65
	CE-60	CN-65
	EX-86	CN-82
	TA-75/77	CN-75
	VR-57	CL-96/97
	EX-82	CN-82
	EX-84	CN-82
<b>PURE</b>	ST-21/EX-80	CL-97
	MT-41	CN-65
	CE-60	CN-65
	EX-86	CN-82
	EX-84	CL-97
	BT-42	None
	DR-371	CN-94
	MT-51	None
	EX-82	CL-97
	BN-95	CN-94

<sup>10</sup> All listed equipment shall be identified in the facility to facilitate the inspections performed by EQB and EPA. Combustion equipment shall include a description with the capacity, serial number and model.



**B. ENALAPRIL MALEATE PROCESS**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>ALA-PRO</b>	ST-31	CN-24 CL-96/97
	ST-21	CN-24 CL-96/97
	VR-37	CL-96/97
	VR-57	CN-82
	TA-02	CL-96/97
	EX-82	CL-96/97
	MT-41	CN-65
	ST-11/VR-17	CN-82
	CE-60	CN-65
	CE-65	CN-65
	TA-61	CN-64
	DR-371	CN-374
	EX-80	None
	EX-86	None
	BN-95	CN-94
	TA-75/77	CN-75
	EX-84	None
	TA-03	None
	<b>KETO ESTER</b>	TA-05
VR-17		CL-96/97
VR-27		CL-96/97
ST-21		CN-24
VR-73		CN-72
TA-74		CN-72
TA-81		CN-72
EX-82		CN-82
EX-86		CN-82
ST-01		CN-72
ST-11		CN-14
ST-31		CN-24
VR-57		CN-24
EV-70		CN-72
EX-84		CN-82
TA-75/77		CN-75

**ENALAPRIL MALEATE PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>DAWU</b>	TA-06A	CN-72
	TA-05	CN-72
	ST-01	CN-72
	VR-307	CN-308
	PF-301	CN-308/CN-309
	TA-76	CN-82
	ST-321	CN-324
	TA-75/77	CN-75
	VR-57	CN-14
	VR-37	CN-82
	ST-11	CN-14/CL-96/97
	VR-17	CN-82/617-5
	ST-21	CN-24/117-5/495/14
	VR-27	CN-24/117-5/495/14
	TA-04	CN-82
	EX-84	CN-82
	EX-80	CN-82/617-5
	TA-304	CN-310
	TA-306	CN-310
	ST-31	None
	MT-41	CN-65/417-5/117-5
	MT-51	CN-54/417-5/117-5
	CE-65	CN-65
	EX-86	CN-82/417-5/117-5
	EX-82	CN-54/417-5/117-5
	EX-88	CN-82
	PF-308	None
	PF-87	None
	CE-60	CN-65

### C. HEARTGARD CHEWABLE PROCESS

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>CHEWABLE</b>	Mixer (BN-C112)	DC-C115
	Hot Box (HB-C14)	DC-C16
	Premix Nauta (CBN-C12)	DC-C16
	(2) Weights SC-C51/SC-C50	DC-C16
	Sifter	DC-C16
	Dispensing Room	DC-C115

**D. CYCLOBENZAPRINE PROCESS**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>GRIGNARD REACTION</b>	EX-80	CN-72
	EX-84	CN-82
	ST-01	CN-72
	TA-05	CN-72
	TA-07	CN-72
<b>CYCLOCARBINOL</b>	EX-84	CN-82
	ST-21	CN-24
	ST-31	CN-33
	PF-301	CN-305
	VR-227	CN-82
	VR-307	CN-305
	VR-17	CN-24
	VR-57	CN-24
	EX-82	CN-82
	TA-75/77	CN-75
<b>GAMMA BASE</b>	EX-82	CN-82
	EX-86	CN-82
	TA-02	CN-82
<b>TRIENONE</b>	TA-61	CN-64
	EX-80	CN-82
	VR-57	CL-96/97
	ST-11	CN-14
	ST-21	CN-24
	MT-41	CN-65
	VR-17	CN-82
	VR-27	CN-65
	CE-60	CN-65
	CE-65	CN-65
	DR-371	CN-373
	EX-84	CN-82
	TA-03	CN-82
	TA-75/77	CN-75

**CYCLOBENZAPRINE PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>CYCLOBENZAPRINE HCl</b>	PF-301	CN-82
	ST-11	CN-13
	MT-41	CN-65
	CE-60/65	CN-65
	VR-27	CN-82
	VR-37	CN-88
	DR-371 / BN-95	CN-373
	TA-75/77	CN-75
	EX-86	CN-88
<b>REWORK STEP</b>	MT-41	CN-65
	ST-11	CL-96/97
		CN-14

## E. LISINOPRIL PROCESS

PROCESS STEP	SOURCE	CONTROL EQUIPMENT
<b>ETHYL ESTER</b>	ST-01	CN-72
	VR-37	CN-82
	PF-301	CN-309
	EX-80	CN-82
	VR-17	CN-94
	TA-61	CN-82
	TA-75/77	CN-75
	VR-307	CN-309
	PF-80A/87	None
	TA-304	CN-310
	TA-306	CN-310
	PF-308	None
	TA-680A	None
	ST-321	CN-324
	TA-04	CN-82
	TA-06A	CN-72
	TA-05	CN-72
<b>SAPONIFICATION</b>	TA-75/77	CN-75
	VR-57	CN-14
	ST-11	CN-14/CL-96/97
	PF-87	None
	TA-61	CN-64
<b>DESALINATION</b>	VR-227	CN-82
	TA-401	CN-82
	TA-76	CN-82
	VR-217	CN-82

**LISINOPRIL PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>DESALINATION (Cont.)</b>	TA-275	None
	TA-75/77	CN-75
	CL-271	None
<b>REVERSE OSMOSIS</b>	TA-680A	None
	RO-281	None
	TA-291	CN-82
<b>CRUDE</b>	CE-65	CN-65
	EX-80	CN-82/617-5
	TA-75/77	CN-75
	ST-21	CN-24/CN-495/117-5
	VR-27	CN-24/CN-82/CN-117-5
	VR-17	CN-82/CN-671-5
<b>PURE</b>	CE-60	CN-65
	DR-371	CN-373
	EX-82	CN-82
	EX-88	CN-117//417/495/82
	MT-41	CN-117/417-5/117-5
	BN-95	CN-94/DC-385
	MI-94	None
	EX-84	CN-82/417-5/117-5
	MT-51	CN-54/417-5/117-5
	EX-86	CN-82/417-5/117-5
	VR-37	CN-82
	PF-74	None

**LISINOPRIL PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>SOLVENT RECOVERY</b>	ST-01	CN-72
	ST-321	CN-324
	PF-301	CN-308
<b>MOTHER LIQUORS RECOVERY IN FACTORY 1</b>	ST-402/4402	None
	TA-612/6612	None
	TA-4323	None
	CE-4318	None
	TA-651	None



**F. IVERMECTIN BULK PROCESS**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>1X CONFIGURATION</b>	ST-A300	CN-A305
	ST-A400	CN-A403
	TA-A402	CN-A403
	TA-A403	CN-A403
	CR-A450	CN-A501
	PF-A500	CN-A501
	CR-A450	CN-A501
	TA-A502	None
	RE-A200	CN-A201
	TA-A800	None
	TA-A808	None
	CR-A600	None
	CE-A700	None
	TA-A702	None
	TA-A504	None
	TA-A508	None
	TA-A506	None
	RM-A703	None
	DE-A104	None
	TA-A703	None
ST-A102	None	
<b>10X CONFIGURATION</b>	TA-A800	None
	PF-A500	CN-A501
	TA-A502	None
	TA-A402	CN-A403
	CR-A600	None
	CE-A700	None
	TA-A702	None
	TA-A254	CN-A252
	DE-A154	None
	RM-A703	None
	ST-A560	CN-A804
	TA-A508	None
	TA-A506	None

**IVERMECTIN BULK PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
	CR-A570	CN-A572
	CR-A450	CN-A501
	TA-A703	None
	ST-A150	CN-A152
	ST-A350	CN-A352/A804
	ST-A550	CN-A552/A804
	RE-A250	CN-A252
	TA-A403	CN-A 403
	TA-A504	None
<b>CLEANOUT (10X)</b>	ST-A150	CN-A152
	RE-A250	CN-A252
	ST-A350	CN-A352/A804
	ST-A550	CN-A352/A804
	TA-A254	CN-A252
<b>CLEANOUT (1X)</b>	ST-A102	None
	RE-A200	CN-A201
	ST-A300	CN-A305
	ST-A400	CN-A403
	ST-A560	CN-A804
	ST-A403	CN-A403

**G. IVOMEK PROCESS**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>EPRINEX</b>	Capper	None
	TA-A845	None
	TA-A835	None
	PF-A835	None
	Kalishtronic Filler	None
<b>POUR-ON</b>	Capper	None
	TA-A835	VCN-A836
	PF-A835	None
	TA-A845	VCN-A846
	Kalishtronic Filler	None

## H. LOVASTATIN PROCESS

PROCESS STEP	SOURCE	CONTROL EQUIPMENT
<b>PURE</b>	TA-61	CN-64
	EX-84	CN-82
	ST-21	CN-24
	EX-86	CN-82
	CE-65	CN-65
	CE-60	CN-65
	DR-371	CN-374
	BN-95	CN-193
	TA-291	CN-82
	MT-51	CN-54
	MT-41	CN-65
	ST-11	CN-14
	TA-291	CN-94
	MI-381	None
	DC-385	None
	<b>SEMIPURE</b>	EX-86
TA-61		CN-64
VR-307		CN-308/24
TA-76		CN-82
PF-301		CN-308/24
ST-01		CN-24/72
EX-84		CN-82
EX-82		CN-82
EX-80		CN-94/82
ST-11		CN-14
ST-21		CN-24
MT-41		CN-65
MT-51		CN-54
CE-60		CN-65
CE-65		CN-65
ST-31		CN-14

**LOVASTATIN PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>SOLVENT RECOVERY &amp; CRUDE</b>	VR-57	CN-82
	EX-80	CN-82/617-5/117-5
	VR-17	CN-82/617-5-117-5
	VR-27	CN-24/72
	VR-227	CN-82
	ST-01	CN-24/72
	PF-301	CN-308/CN-309
	TA-61	CN-64
	TA-76	CN-82
	EX-82	CN-82
	VR-217	CN-82
	VR-37	CN-82
	VR-307	CN-308/309

## I. TIMOLOL MALEATE PROCESS

PROCESS STEP	SOURCE	CONTROL EQUIPMENT
<b>OXAZOLIDINE</b>	ST-11	CN-14
	EX-80	CN-14
	VR-17	CN-14
	EV-70	CN-72
	VR-57	CN-72
	VR-73	CN-72
	TA-75/77	CN-75
<b>DCT</b>	TA-61	CN-64
	ST-11	CN-14/ CL-96/97
	EX-82	CN-82
	EX-86	CN-82
	ST-21	CN-24
	VR-17	CL-96/97
	VR-27	CL-96/97
	TA-76	CL-96/97
	EX-80	CN-82
	PF-75	None
	VR-37	CN-14
	ST-31	CN-14
	VR-57	CN-14
<b>PURE SALT</b>	ST-11	CN-14
	MT-41	CN-65
	CE-60	CN-65
	CE-65	CN-65
	EX-84	CN-82
	DR-371	CN-373

**TIMOLOL MALEATE PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>PURE SALT (Cont.)</b>	TA-75/77	CN-75
	EX-86	CN-82
	TA-61	CN-64
<b>GLICOLAMINE</b>	EX-80	CN-82
	EX-82	CN-82
	VR-17	CL-96/97
	EX-86	CN-82
	PF-08	CN-24
	ST-21	CN-24
	VR-57	CN-24
	VR-37	CN-82
	MT-41	CN-14
	VR-27	CN-14
	MT-51	CN-65
	CE-60	CN-65
	CE-65	CN-65
	EX-84	CN-82
	DR-371	CN-374
TA-75/77	CN-75	
<b>CHLOROMORPHOLINE</b>	EX-82	CL-97
	TA-14	CL-97
	TA-61	CL-97
	ST-11	CN-14
	EX-80	CN-82
	VR-17	CN-82
	ST-21	CN-24
	VR-27	CN-24

**TIMOLOL MALEATE PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>CRUDE SALT</b>	ST-21	CN-24
	ST-31	CN-24
	VR-27	CN-24
	VR-57	CN-24
	ST-11	CN-14
	MT-41	CN-65
	CE-60	CN-65
	EX-84	CN-82
	TA-61	CN-64
	EX-86	CN-82
	TA-75/77	CN-75
<b>FREE BASE</b>	VR-17	CL-97/96
	TA-05	CN-14
	ST-01	CN-14
	TA-04	CN-14
	TA-61	None
	ST-21	CN-24
	VR-27	CN-24
	EX-84	CN-82
	EX-82	CN-82
	PF-74	None
	MT-51	CN-65
	ST-31	CN-24
	VR-57	CN-24
	VR-37	CN-82
	EX-80	CN-82



**TIMOLOL MALEATE PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>MALEATE</b>	EX-86	CN-82
	CE-60	CN-65
	CE-65	CN-65
	ST-31	CN-24
	MT-41	CN-65
	ST-11	CN-14
	DR-371	CN-94
	TA-75/77	CN-75

**J. TOCAINIDE PROCESS**

PROCESS STEP	SOURCE	CONTROL EQUIPMENT
<b>TOCAINIDE HCl</b>	ST-11	CN-14
	VR-57	CN-14
	VR-27	CN-24
	ST-21	CN-24
	MT-41	CN-65
	TA-61	None
	EX-86	CN-82
	EX-82	CN-82
	EX-80	CN-82
	MT-51	CN-65
	DR-371	CN-65
	CE-60	CN-65
	CE-65	CN-65
	EX-84	CN-82
	TA-75/77	CN-75
	ST-01	CN-72
	VR-17	CN-72
	TA-14	CL-96/97

**K. L-METHYLDOPA PROCESS**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>NITROSTYRENE</b>	TA-301	VCN-301
	TA-305	VCN-301
	RE-2000	VCN-2007
	TA-2008	VCN-2007
	TA-2009	None
	TA-2005	VCN-2007
	TA-2014	CN-2019
	TA-2016	CN-2019
	TA-2021	CN-2021
	ST-2010	CN-2019
	DE-2004	VCN-2007
	TA-2020	None
	TA-2006	VCN-2007
<b>IRON REDUCTION</b>	PF-4445/4465	CN-410A/410B
	TA-4498	CN-410A/410B
	ST-4441/4492 (TA-4441 (HC)/ TA-4492 (HC))	CN-410A/410B
	WT-4425	VCN-4425
	WT-425	VCN-425
	TA-403/409	CN-410A/410B
	TA-4464	None
<b>MVK</b>	TA-413/433	CN-410A/410B
	TA-499	None
	PF-4308	None
	EX-407	CN-410A/410B
	EX-412	CN-410A/410B
	EX-408	CN-410A/410B
<b>KBA</b>	TA-4461	VCN-4466
	EX-4451	VCN-4466
	EX-4453	VCN-4466
	EX-4456	VCN-4466
	EX-4459	VCN-4466
	ST-4215	VCN-4466
	TA-207/4207	VCN-4466

**L-METHYLDOPA PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>KBA (Cont.)</b>	TA-4470	VCN-4466
	TA-4470 A\B	VCN-4466
	TA-225	None
	TA-4311	None
	TA-335	None
<b>AMINONITRILE</b>	ST-312	CL-380/370
	ST-4312	CL-380/370
	TA-333	CL-4420/4490
	TA-404	CL-380/CL-370
	TA-300	CL-380/CL-370
	TA-330	CL-4420/4490
	TA-4334	CL-380/370
	TA-4336	CL-4420/4490
	TA-4230	CL-380/370
	TA-4213	CL-380/370
	CE-409	CL-380/370
	CE-4409	CL-380/370
	CE-4217	CL-380/370
	TA-4234	CL-380/370
	TA-4479	CL-380/370
	TA-335	None
<b>DLAAN</b>	CE-4520	CL-4420/4490
	CE-520	CL-4420/4490
	TA-4530	CL-4420/4490
	TA-530/5909	CL 4420/4490
	TA-4501	CL-4420/4490

**L-METHYLDOPA PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>DLAAN (CONT.)</b>	TA-501A	CL-4420/4490
	TA-510	CL-4420/4490
	ST-4501A	CL-4420/4490
	TA-4508	CL-4420/4490
<b>ISOLATION/Rework</b>	ST-4402/402	SC-627A/B
	TA-6612/612	SC-627A/B
	TA-6627	SC-627A/B
	TA-6628	SC-627A/B
	FE-6643	None
	TA-6624	SC-6624
	TA-651	None
	TA-6651	None
	CE-4318	None
	DC-6644	None
	DC-6671	None
	BN-6632	None
	TA-4414	SC- 627 A/B
<b>PURGE CRYSTAL RECOVERY</b>	TA-5428	None
	ST-5420	VCN-5422
	TA-5422	VCN-5422
	TA-501A	None
	TA-5419	VCN-5422
	CE-4520/5420	VCN-5422
<b>AZEOTROPE RECOVERY</b>	TA-5231A	VCN-5231A
	TA-5238/CL-5236	None
	TA-5241/5242	None
	TA-5243/243	VCN-5243

**L-METHYLDOPA PROCESS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>TOLUENE PURIFICATION</b>	ST-5260/TA-5231	VCN-5231
<b>AMMONIA RECOVERY</b>	TA-911	CL-4490/4420
	TA-5931/CL-5916	CL-4490/4420
	TA-5936	CL-4490/4420
	TA-936	CL-4490/4420
	TA-5950	CL-4490/4420
<b>CYANIDE DESTRUCTION</b>	TA-4742/RE-919	VCN-4742 CL-4420/4490

**L. SPA Process**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>DMT</b>	EX-510	TOU
	EX-520	TOU
	PF-515	TOU
	ST-11	TOU
	ST-511	TOU
	TA-291	TOU
	TA-524	TOU
	TA-61	TOU
	VR-217	TOU
	VR-37	TOU
	VR-57	TOU
<b>VINYL ETHER</b>	DR-565	TOU
	EX-80	TOU
	EX-82	TOU
	EX-88	TOU
	PF-450	TOU
	PF-550	TOU
	PF-580	TOU
	ST-21	TOU
	ST-440	TOU
	ST-540	TOU
	TA-306	TOU
	TA-522	TOU
	VR-17	TOU
	VR-227	TOU
	VR-27	TOU
	TA-452	TOU
	VR-560	TOU
TA-76	TOU	
<b>TSA SALT</b>	CE-60/65	VCN-65
	DR-371	TOU
	EX-84/EX-86	TOU
	MT-41/MT-51	TOU
	ST-31	TOU

**SPA Process (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>CRUDE</b>	CE-60/65	VCN-65
	DR-371	TOU
	EX-84/EX-86	TOU
	MT-41/MT-51	TOU
	ST-31	TOU
	ST-501	TOU
	TA-291	TOU
	ST-01	VCN-03
	TA-507	TOU
	VR-227	TOU
	VR-57	TOU
<b>PURE</b>	CE-60/65	VCN-65
	DR-371	TOU
	EX-84/86	TOU
	MT-41/51	TOU
	PF-530	TOU
	ST-31	TOU
	ST-501	TOU
<b>FREE BASE</b>	EX-510	VCN-514
	EX-520	TOU
	ST-511	TOU
	TA-522	VCN-544
	TA-524	TOU
	VR-217	TOU
	VR-37	TOU
<b>HCl CRUDE</b>	EX-82	TOU
	EX-88	TOU
	PF-450	TOU
	ST-440	TOU
	TA-61	TOU
	VR-27	TOU



**SPA Process (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CONTROL EQUIPMENT</b>
<b>HCl PURE</b>	DR-565	TOU
	PF-550	TOU
	ST-11	TOU
	ST-21	TOU
	ST-540	TOU
	VR-17	TOU
	VR-560	TOU

**M. STORAGE TANKS**

LOCATION	SOURCE	CAPACITY (GALS)	CONTROL EQUIPMENT
<b>TANK FARM</b>	TA-5559	20,000	None
	TA-770	20,000	None
	TA-4744	30,000	None
	TA-760/762	30,000	None
	TA-4705	30,000	None
	TA-701	20,000	None
	TA-4746	30,000	None
	TA-559	30,000	None
	TA-4737	30,000	None
	TA-737	20,000	None
	TA-99A	10,000	None
	TA-4702	20,000	None
	TA-99B	20,000	None
	TA-800	30,000	None
	TA-4730	30,000	None
	TA-4732	30,000	None
	TA-4752	30,000	None
	TA-702	20,000	None
	TA-744	30,000	None
	TA-4734	30,000	None
	TA-4728	30,000	None
	TA-98A	10,000	None
	TA-98B	20,000	None
	TA-93	5,000	None
TA-0002	30,000	None	
TA-4701	30,000	None	

**STORAGE TANKS (Cont.)**

<b>PROCESS STEP</b>	<b>SOURCE</b>	<b>CAPACITY (GALS)</b>	<b>CONTROL EQUIPMENT</b>
<b>WASTE TANKS</b>	TA-808	20,000	RKI
	TA-75	30,000	RKI
	TA-77	1,838	None
	TA-79	1,359	None
	TA-680	20,000	RKI
	TA-2209 A/B	20,000	RKI
	TA-2205 A/B	20,000	RKI

**N. Combustion Equipment:**

<b>Combustion Units</b>	<b>Capacity</b>	<b>Comments</b>	
Boiler A	21 MM Btu/hr	Model: Serial no.:	H3S6006 02968
Boiler B	21 MM Btu/hr	Model: Serial no.:	H3S6006 06256
Boiler C	21 MM Btu/hr	Model: Serial no.:	H3S6006 Serial no.: 04043
Boiler D	21 MM Btu/hr	Model: Serial no.:	H3S6006 P-0581
Co-generation Turbine	44.6 MM Btu/hr	Model: Serial no.:	Allison 501-K Serial no.: 83-06
Rotary Kiln Incinerator	26 MM Btu/hr	Model:	RKI
Solvent Incinerator	5 MM Btu/hr	Model: Serial no.:	LV5 T-1221
Fire pump (PU – 1117)	215 hp	Model: Serial no.:	N-855-F 637137
Fire pump (PU – 1118)	215 hp	Model: Serial no.:	N-835-IF 334005
Fire pump (PU – 1119)	215 hp	Model: Serial no.:	NH-220-IF 40630
Fire pump (PU – 1120)	215 hp	Model: Serial no.:	N-856-F 43567
Emergency Generator (Onan)	100 hp	Model: Serial no.:	75ODYC-15R/9124F L760195571
Emergency Generator RKI	470 hp	Model: Serial no.:	350R02D71 339340
Factory 1 Enterprise	1765 hp	Model: Serial no.:	DSQ-318 624068
Lab Emergency Generator #1	15 kW	Model: Serial no.:	165925A 0698-27
Lab Emergency Generator #2	15 kW	Model: Serial no.:	165925A 0698-30

**N. Combustion Equipment (Cont.)**

<b>Combustion Units</b>	<b>Capacity</b>	<b>Comments</b>	
Lab Emergency Generator #3	15 kW	Model:	165925A
		Serial no.:	0698-34
Emergency Generator for Cogeneration Turbine	250 kW	Model:	250DFAC
		Serial no.:	K980818436
Well #3 Emergency Generator	250 kW	Model:	250DFAC
		Serial no.:	K980818437
Emergency Generator (New)	2000 kW	Model:	N-322-IF
		Serial no.:	028634
Air compressor (Powerhouse)	800 hp	Model:	ZR5-63
		Serial no.:	AIF.039411
Emergency Generator (Capital)	403 hp	Model:	TBD
		Serial no.:	TBD
Emergency Generator	90 kW	Model:	D90P1
		Serial no.:	E2895A-001
Emergency Generator	75 kW	Model:	D75P1
		Serial no.:	E32701-001
Trash Incinerator	1 MM Btu/hr	N/A	

**ATTACHMENT II**

**LIST OF NEW UNITS AND CONTROL DEVICES**

**203 Permits and Notifications**