

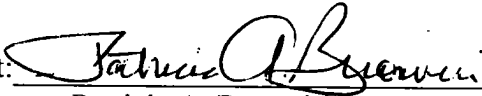
**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office**

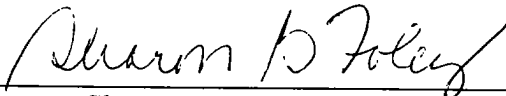
STATEMENT OF LEGAL AND FACTUAL BASIS

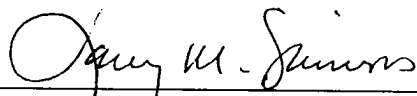
Merck & Co., Inc. (Stonewall Plant)
4 miles South of Elkton on VA Route 340
Rockingham County, Virginia

Permit Number: VRO80524

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Merck & Co., Inc. (Stonewall Plant) has applied for a Title V Operating Permit for its pharmaceutical manufacturing facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:  Date: 8/31/01
Patricia A. Buonviri
(540) 574-7823 or (804) 527-5123

Air Permit Manager:  Date: 8-31-01
Sharon G. Foley, P.E.

Regional Permit Manager:  Date: 9/7/01
Larry M. Simmons, P.E.

FACILITY INFORMATION

Permittee

Merck & Co., Inc. (Stonewall Plant)
P. O. Box 7
Elkton, Virginia 22827

Facility

Merck & Co., Inc. (Stonewall Plant)
4 miles South of Elkton on VA Route 340
Rockingham County, Virginia

NET ID No: 51-165-0001

SOURCE DESCRIPTION

SIC 2833 – Medicinal Chemicals and Botanical Products
SIC 2834 – Pharmaceutical Preparations

Merck & Co., Inc. (Stonewall Plant) is involved in the manufacture of various pharmaceutical intermediates and products.

The facility is currently a Title V major source of SO₂, NO_x, VOC, and HAPs. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility was previously permitted under a PSD permit (Project XL) issued on January 7, 1998 and amended on August 8, 2001.

COMPLIANCE STATUS

The facility is inspected once a year.

Merck & Co., Inc. (Merck) was last inspected on September 25, 2000, and found to be in compliance.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Table I. Significant Emission Units.

Emission Unit ID	Emission Unit Description	Applicable Permit Date
B	Powerhouse: - distillate oil-fired boiler (backup unit) (4) - two natural gas-fired boilers (with distillate oil or propane backup) (7 & 8)	2/10/1998 amended 8/8/2001
C	Sludge Incinerator	2/10/1998 amended 8/8/2001
D	Internal Combustion Engines	2/10/1998 amended 8/8/2001
E	Production Process Units	2/10/1998 amended 8/8/2001
F	Sludge Dryer	2/10/1998 amended 8/8/2001

EMISSIONS INVENTORY

A copy of the 2000 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

Table II. 2000 Actual Criteria Pollutant Emissions.

	Criteria Pollutant Emissions (tons/yr)				
	VOC	CO	SO ₂	PM-10	NO _x
Facility-Wide	91	20	270	23	168

Table III. 2000 Actual Hazardous Air Pollutant Emissions.

Pollutant	Hazardous Air Pollutant Emissions (tons/yr)
Hydrochloric Acid (CAS # 7647-01-0)	26
Cyanide Compounds	2
Hydrofluoric Acid (CAS # 7664-39-3)	3
Miscellaneous non-VOC, non-PM HAPs	0.25

EMISSION UNIT APPLICABLE REQUIREMENTS

Merck is currently operating under a PSD permit, dated January 7, 1998 with an amended date of 8/8/2001. All section numbers are from the PSD permit; a copy of the permit is included as Attachment B. The Federal and State rulemakings to support the PSD permit can be found in Attachments C and D, respectively.

Facility Wide Conditions (Project XL)

Limitations

Section 1 from the PSD permit (Site-wide Emission Caps) has been incorporated into the Title V permit.

40 CFR 60.49b(u)(1)(i), a requirement in NSPS Subpart Db, requires that low NO_x technology be installed on the natural gas-fired boilers in the powerhouse. This requirement has been incorporated into the Title V permit. Also, the approved fuels for the boilers have been included.

Monitoring and Recordkeeping

The monitoring, recordkeeping, and reporting requirements in Section 4 of the PSD permit have been incorporated and meet Part 70 requirements.

40 CFR 60.49b(u)(1)(ii), a monitoring requirement in NSPS Subpart Db, requires Merck to operate a continuous emissions monitoring system or a predictive emissions monitoring system for NO_x emissions from the natural gas-fired boilers. This requirement has been incorporated into the Title V permit.

Section 4 of the PSD permit dictates all of the required monitoring, recordkeeping, and reporting requirements for all of the applicable requirements in the permit. A tiered approach is utilized such that the requirements increase as Merck begins to operate at levels closer to the caps. The monitoring and recordkeeping that are in the PSD permit, and have been incorporated into the Title V permit, satisfy the periodic monitoring requirement for all applicable requirements in the permit.

The State Rulemaking that is applicable to Merck (a copy of which can be found in Attachment D) states that the monitoring in the PSD permit satisfies the monitoring requirements in 9 VAC 5-80-110E. Therefore, the monitoring in the Title V operating permit satisfies the periodic monitoring requirements for the facility.

Reporting

The reporting requirements from Section 4 of the PSD permit have been moved into their own section. This will allow Merck and DEQ staff to more easily identify the reporting requirements.

Testing

The permit requires performance testing on certain units when Tier III monitoring/reporting is reached. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Streamlined Requirements

The following Section was not incorporated into the Title V permit because the requirements have been completed. Please note that section numbers refer to those found in the PSD permit, a copy of which is included as Attachment B.

Section 5 - Merck is operating under the emission caps. Therefore, the requirements have been fulfilled and are no longer required.

Facility Wide Conditions (Visible Emissions & MACT)

Limitations

The PSD permit did not contain any visible emission limitations. Therefore, the following requirements have been added to the permit:

9 VAC 5-40-80: Standard for Visible Emissions

9 VAC 5-50-80: Standard for Visible Emissions.

The PSD permit did not address the Pharmaceutical MACT and a requirement for compliance with the MACT has also been added (see FUTURE APPLICABLE REQUIREMENTS section of this document for further information).

Monitoring

40 CFR 60.49b(u)(1)(ii), a monitoring requirement in NSPS Subpart Db, requires Merck to operate a continuous emissions monitoring system or a predictive emissions monitoring system for visible emissions from the natural gas-fired boilers. This requirement has been incorporated into the Title V permit.

The PSD permit did not address visible emission requirements and those limitations had to be added as part of the Title V permit. The visible emission limit established in the permit was established for all process unit stacks with the potential to emit particulate matter. Merck will be required to perform monthly visible emission checks on each process unit stack that has the potential to emit particulate matter. Those stacks that do not emit particulate matter will most likely be pure VOC streams, meaning that no visible emissions are expected. If visible emissions are present on any of the stacks that are observed, six minute visible emission evaluation must be performed unless corrective action can be taken such that the stack is returned to no visible emissions. If during the six minutes, any violations of the 20% opacity standard are noted, a one hour visible emission evaluation is required to demonstrate compliance with the standard. If 12 monthly inspections are performed on any given stack, and no visible emissions are present, then the visible inspections may be performed quarterly. However, as soon as visible emissions are noted during a quarterly inspection, the inspections must then be performed monthly again. This requirement satisfies the periodic monitoring requirement for the opacity standards on the process unit stacks with the potential to emit particulate matter.

Recordkeeping

Merck will be required to keep records as required for the opacity monitor on the natural gas-fired boilers and the visible emission evaluations on process unit stacks with the potential to emit particulate matter.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Administration of PSD (Project XL) Permit

The following Sections of the PSD permit dealt only with the administration of the PSD permit. As such, they have been included in a section of the Title V permit that has been devoted to Administration of the PSD permit.

Section 6 - Periodic Review of the PSD Permit

Section 7 - Duration of the PSD Permit

Section 8 - Termination of the PSD Permit

Section 9 - Inspection and Entry

Section 10 - Reservation of Rights

Section 11 - Transfer of Ownership

Section 12 - Definitions for Terms in the PSD Permit

Streamlined Requirements

The following Section was not incorporated into the Title V permit because the requirements have been completed. Please note that section numbers refer to those found in the PSD permit, a copy of which is included as Attachment B.

Section 8.1.3 - The powerhouse conversion has been completed.

Compliance with State and Federal Regulations and Air Permits Under PSD (Project XL) Permit

Sections 2 and 3 of the PSD permit have been included in Section VII of the Title V permit as the means for complying with applicable state and federal regulations.

Streamlined Requirements

Parts of the following Sections were not incorporated into the Title V permit because the requirements have been completed. Please note that section numbers refer to those found in the PSD permit, a copy of which is included as Attachment B.

Sections 2.1, 2.2, and 2.3 - The powerhouse conversion has been completed.
Section 3.1 - List of preconstruction permits replaced by PSD permit.
Section 4.3.2 - PM-10 cap adjustment has been completed.

PERMIT AMENDMENT

While drafting the Title V permit, Merck requested that several minor changes be made to their PSD permit. All requested changes can be made through the administrative permit modification procedure contained in 9 VAC 5-190-80D. Following is a summary of these changes.

<u>Permit Section</u>	<u>Summary of Change</u>
Section 1.2.1 (c)	PM-10 emission cap adjusted to 46 tons per year.
Section 3.1	List of superseded permits updated to include those issued or modified subsequent to the issuance of the PSD permit and prior to the effective date of the permit.
Section 4.9	“Prevented” changed to “reduced” to match the change made in the clarification of reporting requirements in Table 4.2 (A.8 and A.9).

Section 12.5	Clarified the definition of Process Unit by changing “and” to “or.”
Table 1.3.3	Solid waste incinerator deleted. This unit has undergone formal closure. Deleted DC-383 and DC-384 and added DC-609 for the sludge dryer to correspond to changes made in the permit dated 7/17/2000. Description of solvent recovery scrubber changed from “Venturi scrubber” to “Venturi/packed bed scrubber.”
Table 4.2	Requirements for cap calculations clarified in A.8 and A.9. References to solid waste incinerator deleted as unit has been formally shut down. Monitoring requirements for emergency powerhouse diesel generator (D.7) changed based on DEQ letter dated 2/1/99 which accepts the timing set by the manufacturer. Deleted DC-383 and DC-384 and added DC-609 for the sludge dryer to correspond to changes made in the permit dated 7/17/2000. Description of solvent recovery scrubber changed from “Venturi scrubber” to “Venturi/packed bed scrubber.”
Table 4.3	Deleted “MacEMIT” and “EMIT 10” and added the “1994 ACT” to more accurately describe the method of calculation rather than the specific tools used to implement the methods. Added Method No. 6, EPA AP-42 Emission Factors, as an additional method for calculation of VOC emission from bulk storage tanks.
Table 12.8	Updated the table of project signatory representatives by substituting Michael A. Breeden for William Kyger as Chairman of the Rockingham County Board of Supervisors.

This permit amendment will be issued contemporaneously with the proposed Title V permit.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

Several of the General Conditions that are normally included in Virginia's Title V operating permits are not applicable to Merck – either because the Variance (9 VAC 5 Chapter 190) explicitly states that they are not applicable or because they contradict with conditions in the PSD permit. The following General Conditions have been omitted from Merck's Title V operating permit. Please note that condition numbers refer to those found in the Title V operating permit boilerplate.

Omitted because they are not applicable:

Condition C: Recordkeeping and Reporting

Condition J: Permit Action for Cause (the requirements that did not pertain to Merck have been removed)

Condition O: Startup, Shutdown, and Malfunction

Condition Q: Inspection and Entry Requirements

Omitted because they contradict with conditions in the PSD permit:

Condition Z: Changes to Permits for Emissions Trading

Condition AA: Emissions Trading

STATE ONLY APPLICABLE REQUIREMENTS

Merck did not identify any state-only enforceable requirements in their application, and all requirements in the PSD permit are federally enforceable. Therefore, no state-only applicable requirements have been included in the permit.

FUTURE APPLICABLE REQUIREMENTS

Merck is currently a major source of hazardous air pollutants, and is subject to 40 CFR 63, Subpart GGG, National Emission Standards for Hazardous Air Pollutants for Pharmaceuticals Production. The MACT has been promulgated, and existing sources must be in compliance with the MACT no later than October 21, 2002. Currently, Merck has determined that it will comply

with the MACT by securing federally enforceable limits to become a synthetic minor source for HAPs. As such, a condition has been added to Section IV of the permit stating that they must be in compliance with the MACT as stated in 40 CFR 63.1250.

INAPPLICABLE REQUIREMENTS

Merck did not identify any inapplicable requirements in their application. Therefore, no inapplicable requirements are included in the permit.

COMPLIANCE PLAN

Merck is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

Merck did not identify any insignificant emission units in their application. Therefore, no insignificant emission units are included in the permit.

CONFIDENTIAL INFORMATION

Merck did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the Daily News Record, Harrisonburg, Virginia, on July 20, 2001. EPA was sent a copy of the draft permit and notified of the public notice on July 19, 2001 and concurrently reviewed the draft permit as a proposed permit. West Virginia, the only affected state, was sent a copy of the public notice in a letter dated July 20, 2001. All persons on the Title V mailing list were also sent a copy of the public notice in letters dated July 20, 2001.

Public comments were accepted from July 20, 2001, to August 20, 2001. No comments were received from the public, EPA, or West Virginia regarding the draft permit. Merck sent comments in a letter dated August 17, 2001 requesting delaying issuance of the initial Title V permit. Response to Merck's comments can be found in a DEQ letter dated August 31, 2001.

Attachment A

2000 Annual Emission Update

SUMMARY DATA FOR CALENDAR YEAR: 98

AIRS ID:	511650001
CONTACT PERSON:	JETT, TEDD H
TELEPHONE:	(540) 298-4869
EMPLOYEES:	933
PRINCIPAL PRODUCT:	PHARMACEUTICALS
SIC:	2834
ELEVATION:	1000 ft above sea level

ANNUAL UPDATE FOR CALENDAR YEAR 1993

SUMMARY DATA FOR CALENDAR YEAR: 98

[illegible]

2/24/09

ANNUAL UPDATE FOR CALENDAR YEAR 1999

REGISTRATION #: 80524
 FACILITY NAME: MERCK & CO INC
 PHYSICAL LOCATION: RT 340/4 MI SOUTH OF ELKTON
 ELKTON
 MAILING ADDRESS: MERCK & CO INC
 PO BOX 7
 ELKTON VA 228270007

AIRS ID: 511650001
 CONTACT PERSON: JETT, TEDD H
 TELEPHONE: (540) 298-4869
 EMPLOYEES: 933
 PRINCIPAL PRODUCT: PHARMACEUTICALS
 SIC: 2834
 ELEVATION: 1000 ft above sea level

SUMMARY DATA FOR CALENDAR YEAR: 98

STACK NO	PT	SEG NO	SEGMENT DESCRIPTION	SCC CODE	ANNUAL FUEL PROCESS RATE	UNITS	SULFUR %	ASH %	SCC UNIT	HEAT CONTENT (MMBTU/)	CONTROL EQUIPMENT		OPERATING SCHEDULE												STACK PARAMETERS								
											VOC	DESCRIPTION	EFFIC %	ANNUAL THROUGHPUT												STACK EXIT PLUME							
														DEC	MAR	JUN	SEPT	HR	DY	WK	YEAR	CAPCY	HEAT (ft)	SPACE (ft)	DIA (ft)	TEMP (F)	VEL (FPS)	HT (ft)					
006	021	01	6 ADDN'L VOC'S/VII STERL	49099999	0.4	Φ Tons Solvent Consumed	0	0	0	0	VOC	99.0	WATER-RECOVERY STE-1 UNIT	8	2	16	44	30	24	7	8760	0	0	37	1.00	77	5.0						
007	022	01	7 MK-787 & 791 PRODUCTION	30106099	851	100 lbs Product	0	0	0	0				45	7	11	37	24	7	8760	0	0	20	0.30	77	5.0							
010	040	01	E-4 BSP/ENV/ROTECH/SLUDG	50300506	0	Tons Dry Sludge Burned	0	0	0	0	PM10	83.0	VENTURI SCRUBBER	9	0	0	0	0	0	0	0	0	0	57	1.67	131	52.3						
010	040	01	E-4 BSP/ENV/ROTECH/SLUDG	50300506	0	Tons Dry Sludge Burned	0	0	0	0	PT	98.6	VENTURI SCRUBBER	9	0	0	0	0	0	0	0	0	0	57	1.67	131	52.3						
011	026	01	6 CENTRIFUGE	30106099	135	100 lbs Product	0	0	0	0				0	0	0	0	0	0	0	0	0	0	57	1.67	131	52.3						
012	041	01	E-4 BASIC EEI MODEL-2000	50300101	60	Tons Burned	0	0	0	0				0	0	0	0	0	0	0	0	0	0	57	1.67	131	52.3						
012	041	02	E-4 AUX. FUEL/#2-FUEL OIL	50390005	18	1000 Gallons Burned	0.5	0	0	140				100	0	0	0	12	2	806	0	0	100	4.70	620	34.1							
013					0.58	1000 Gallons Burned	0.5	0	0	140				23	28	25	1	24	7	8760	0	0	10	0.67	800	202.7							
014	042	01	DIESEL GENERATOR	20200401	18.7	1000 Gallons Burned	0.5	0	0	140				24	26	24	26	24	7	8760	0	0	10	0.67	800	202.7							
015					20	Tons Solvent Consumed	0	0	0	0				34	31	21	14	24	7	8760	0	0	10	0.67	800	202.7							
016	041	01	LOVASTATIN PRODUCTION	49099999	18.7	1000 Gallons Burned	0.5	0	0	140				34	31	21	14	24	7	8760	0	0	10	0.67	800	202.7							

John J. Jett
 2/24/00

Attachment B

PSD Permit
January 7, 1998
Amended
August 8, 2001



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Valley Regional Office

James S. Gilmore, III
Governor

Street address: 4411 Early Road, Harrisonburg, Virginia 22801
Mailing address: P.O. Box 3000, Harrisonburg, VA 22801-3000
Telephone (540) 574-7800 Fax (540) 574-7878
<http://www.deq.state.va.us>

Dennis H. Treacy
Director

John Paul Woodley, Jr.
Secretary of Natural Resources

R. Bradley Chewning, P.E.
Valley Regional Director

August 8, 2001

Mr. Donald T. Kremer
Plant Manager
Merck & Co., Inc.
P.O. Box 7
Elkton, Virginia 22827-0007

Facility: Merck Stonewall Plant
Location: Rockingham County
Registration No.: 80524
Plant ID No.: 51-165-0001

Dear Mr. Kremer:

Attached is an amendment to the permit dated January 7, 1998 to modify and operate the Merck Stonewall Plant in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board (SAPCB) Regulations for the Control and Abatement of Air Pollution, including 9 VAC 5-190-10 et seq. (Variance for Merck Stonewall Plant) and the SAPCB Order dated September 11, 1997. This amendment is being processed in accordance with the administrative permit modification procedure contained in 9 VAC 5-190-80D. Permit changes are summarized in the following table.

Permit Section	Summary of Change
Section 1.2.1.c	PM-10 emission cap adjusted to 46 tons per year based on stack test results.
Section 3.1	List of superseded permits updated to include those issued or modified subsequent to the issuance of the PSD permit and prior to the effective date of the permit.
Section 4.9	"Prevented" changed to "reduced" to match the change made in the clarification of reporting requirements in Table 4.2 (A.8 and A.9).
Section 12.5	Clarified the definition of Process Unit by changing "and" to "or."

Table 1.3.3	Solid waste incinerator deleted. This unit has undergone formal closure.
	Deleted DC-383 and DC-384 and added DC-609 for the sludge dryer to correspond to changes made in the permit dated 7/17/2000.
	Description of solvent recovery scrubber changed from "Venturi scrubber" to "Venturi/packed bed scrubber."
Table 4.2	Requirements for cap calculations clarified in A.8 and A.9.
	References to solid waste incinerator deleted as unit has been formally shut down.
	Monitoring requirements for emergency powerhouse diesel generator (D.7) changed based on DEQ letter dated 2/1/99 that accepts the timing set by the manufacturer.
	Deleted DC-383 and DC-384 and added DC-609 for the sludge dryer to correspond to changes made in the permit dated 7/17/2000.
	Description of solvent recovery scrubber changed from "Venturi scrubber" to "Venturi/packed bed scrubber."
Table 4.3	Deleted "MacEMIT" and "EMIT 10" and added the "1994 ACT" to more accurately describe the method of calculation rather than the specific tools used to implement the methods.
	Added Method No. 6, EPA AP-42 Emission Factors, as an additional method for calculation of VOC emission from bulk storage tanks.
Table 12.8	Updated the table of project signatory representatives by substituting Michael A. Breeden for William Kyger as Chairman of the Rockingham County Board of Supervisors.

This permit amends your permit dated January 7, 1998.

The permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and civil penalty.

In the course of evaluating the permit amendment request, and arriving at a final decision to approve the project, the Department of Environmental Quality deemed the application complete on July 10, 2001.

This permit amendment approval shall not relieve Merck & Co., Inc. of the responsibility to comply with all other applicable local, state and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provides that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC5-170-180 provides that you may request direct consideration of the decision by the

Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

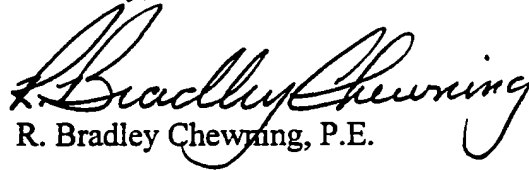
Additionally, as provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision (the date you actually received this amendment decision or the date o which it was mailed to you, whichever occurred first), within which to initiate an appeal of this decision by filing a Notice of Appeal with:

Dennis H. Treacy, Director
Department of Environmental Quality
P.O. Box 10009
Richmond, Virginia 23234-0009

In the event that this decision is served on you by mail, three days are added to the period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit amendment, please contact Patty Buonviri of the Valley Regional Office at (540) 574-7823 or (804) 527-5123.

Sincerely,


R. Bradley Chewing, P.E.

Attachments: Permit
40 CFR 124.19

cc: Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)
Chief, Air Enforcement Branch (3AT20), U.S. EPA, Region III
Superintendent, Shenandoah National Park
Project XL Stakeholders



COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT

STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Merck & Co., Inc.
P.O. Box 7
Elkton, Virginia 22827-0007
Registration No.: 80524
Plant ID No.: 51-165-0001

is authorized to modify and operate the

Merck Stonewall Plant

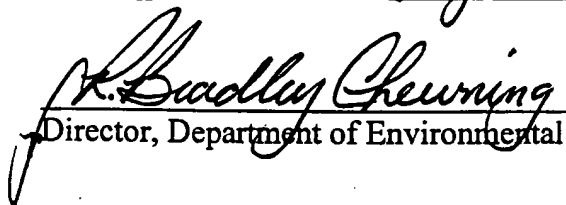
located

4 miles south of Elkton on Virginia Route 340
Rockingham County, Virginia

in accordance with the Conditions of this permit.

approved on January 7, 1998, with an effective date of

February 10, 1998, as amended on August 8, 2001.



Director, Department of Environmental Quality

Permit consists of 37 pages.

1. Site-wide Emissions Caps
 - 1.1. Initial Site-wide Emissions Caps
 - 1.1.1. Total Criteria Pollutant Emissions Cap: The total criteria pollutant emissions cap (total emissions cap) is 1503 tons per year (TPY). The criteria pollutants included in the cap are the following: ozone (using volatile organic compounds (VOCs) as surrogate), sulfur dioxide (SO₂), particulate matter with aerodynamic diameter less than 10 microns (PM-10), carbon monoxide (CO), and oxides of nitrogen (NO_x).
 - 1.1.2. SO₂ cap: The SO₂ cap is 719 TPY.
 - 1.1.3. PM-10 cap: The PM-10 cap is 42 TPY.
 - 1.1.4. NO_x cap: The NO_x cap is 291 TPY.
 - 1.2. Adjustments to the Site-wide Emissions Caps

The site-wide emissions caps shall be adjusted as follows:

 - 1.2.1. Initial benefit to the environment
 - a. Upon completion of the powerhouse conversion, the total emissions cap shall be reduced to 1202 TPY, a 20% reduction of the total from Subsection 1.1.
 - b. Upon completion of the powerhouse conversion, the SO₂ cap shall be reduced to 539 TPY, a 25% reduction of the total from Subsection 1.1.
 - c. Upon completion of the powerhouse conversion, the PM-10 cap shall be 46 TPY.
 - d. Upon completion of the powerhouse conversion, the NO_x cap shall be reduced to 262 TPY, a 10% reduction of the total from Subsection 1.1.
 - 1.2.2. Adjustments for criteria pollutant regulations

Prior to the compliance date of a criteria pollutant regulation¹, including New Source Performance Standards (40 CFR 60 and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.)), to which the site or a source at the site is newly subject, Merck will either plan to implement the regulation as written by the compliance date, or adjust the site-wide emissions caps as follows:

 - a. Merck shall determine the reduction in total actual emissions that would result from complying with the regulation on the compliance date. The total reduction will be based on the site's operations and production rate corresponding to the time period defined by the highest emission point (HEP) or another more appropriate emission rate, as agreed upon by the regulatory administering agency and Merck.
 - b. Proposed adjustment of site-wide emission caps: site-wide emission caps will be proposed to be adjusted as follows:
 - i. The SO₂ cap reduced by the reduction in total actual emissions of SO₂ that would result from complying with the new regulation
 - ii. The PM-10 cap reduced by the reduction in total actual emissions of PM-10 that would result from complying with the new regulation
 - iii. The NO_x cap reduced by the reduction in total actual emissions of NO_x that would result from complying with the new regulation

¹ A regulation promulgated under the Clean Air Act Title I or Virginia Air Pollution Control Law covering only those pollutants listed in Section 1.1 of this permit.

- iv. The total emissions cap reduced by the reduction in total actual emissions of CO or VOCs, as appropriate, that would result from complying with the new regulation
- c. Approval of cap adjustment:
 - i. Merck will submit the emission reduction determination and rationale to the regulatory administering agency for review and approval on a date prior to the compliance date of the regulation which is no later than 120 days for new regulations, or no later than 90 days for existing regulations to which the site or a source at the site is newly subject. Merck shall provide additional documentation of the reduction estimate in a timely manner if requested. If Merck fails to comply with the requirements of this paragraph, Merck shall comply with the regulation as written.
 - ii. The emission reduction determination will be considered approved by the administering agency unless Merck is notified in writing within 60 days of the initial notification provided in (i).
 - iii. If the regulation is administered by EPA under a Federal Implementation Plan (CAA Section 110) or if it is an NSPS other than Subpart Kb² (40 CFR 60.110b et seq.), Merck shall implement the regulation as written by the compliance date if: (1) EPA determines that compliance with the regulation instead of a cap adjustment is necessary for achieving the objectives of the regulation, and (2) EPA notifies Merck in writing within 60 days of the initial notification provided in (i).
- iv. Except as provided in paragraph 1.2.2(c)(iii), if it does not agree with Merck's estimate provided in (c)(i), the administering agency shall provide an alternate reduction estimate based on the site's operations and production rate as described in (a) and accepted emission estimation methods described in Table 4.3.
- v. Except as provided in paragraph 1.2.2(c)(iii), the parties will seek agreement on the reduction estimate that represents the reduction that would be effected by the regulation. Until an agreement is reached, the site shall operate with the site-wide emissions caps reduced by the amount determined by Merck in (a) and (b), and shall be deemed to be in compliance with the regulation.
- vi. Except as provided in paragraphs 1.2.2(c)(iii) and (v), if the parties have not obtained agreement on the appropriate reduction estimate within three months of the administering agency's response in (c)(ii), Merck shall have the option of either: adjusting the site-wide emissions caps by amounts determined by the administering agency in (c)(iv), or complying with the regulation as written no later than a date agreed upon by the parties which shall be no later than 12 months after the compliance date of the regulation.
- d. The site-wide emissions caps will be reduced as described in (b).

² If the regulation is NSPS Subpart Kb including associated provisions of Subpart A, subparagraph (iii) would not apply.

- e. The adjustments to the site-wide emissions caps will represent compliance with the regulation.
- 1.2.3. Adjustments for Hazardous Air Pollutant (HAP) Regulations
No adjustment of the emissions caps shall be required when complying with applicable HAP regulations.³
- 1.3. Operating under the Emissions Caps
 - 1.3.1.
 - a. The site's actual emissions of criteria pollutants shall not exceed the total emissions cap established in subsections 1.1 and 1.2.
 - b. The site's actual emissions of SO₂, PM-10, and NO_x shall not exceed the individual pollutant caps established in subsections 1.1 and 1.2.
 - c. Compliance with the total emissions cap and individual pollutant caps shall be determined by comparing the specific cap to the 12-month rolling total for that cap. Compliance with the total emissions cap and individual pollutant caps shall be determined within one month of the end of each month based on the prior 12 months. Merck shall use the calculation techniques identified in Table 4.3 to calculate site-wide actual criteria pollutant emissions.
 - 1.3.2. Installation of controls for significant modifications and significant new installations
 - a. Subsection 1.3.2 applies to significant modifications and significant new installations. Significant modifications for the purposes of this section are defined as changes to an existing process unit that result in an increase of the potential emissions of the process unit after consideration of existing controls of more than the significance levels listed in Subsection 1.3.2 (b). Significant new installations for the purposes of this section are defined as new process units with potential emissions before controls that exceed the significance levels listed in Subsection 1.3.2 (b). For purposes of this section potential emissions means process unit point source emissions that would be generated by the process unit operating at its maximum capacity.
 - b. Significance levels for determining significant modifications and significant new installations:
 - 40 TPY VOC
 - 100 TPY CO
 - 40 TPY NO_x
 - 40 TPY SO₂
 - 15 TPY PM-10
 - c. For any significant modification or significant new installation Merck shall install at the process unit emission controls, pollution prevention or other technology that represents good environmental engineering practice in the pharmaceutical or batch processing industry, based on the emission characteristics (flow, variability, pollutant properties, etc.) of the process unit. Examples of emission controls that meet this requirement include, but are not limited to:

³ A state or federal regulation promulgated under the Clean Air Act Title III.

- condensation for high concentration VOC streams
- thermal oxidation for low concentration high flow VOC streams
- carbon adsorption for low concentration low flow VOC streams
- water or caustic scrubbing for acid gases and water soluble compounds
- water or acid scrubbing for caustic gases
- dust collection (bag filters) or other particle removal for particulates
- low NO_x technology for significant NO_x combustion sources

1.3.3. Operation of listed control equipment

Merck shall continue to operate the emissions control equipment listed in Table 1.3.3 as follows: the equipment shall be operated in a manner which minimizes emissions, considering the technical and physical operational aspects of the equipment and associated processes. This operation shall include an operation and maintenance program based on manufacturers' specifications and good engineering practice.

1.3.4. Prohibition on emissions trading

Emission reductions of criteria pollutants listed in Sections 1.1 and 1.2 shall not be credited for trade or sale to any other site. Nor shall Merck increase its allowable emissions through acquisition of emissions credits from the open market or from any other site.

1.3.5. Prohibition for acid rain opt-in program

Merck shall not participate in the acid rain program under the "opt-in" provisions of Clean Air Act Section 410.

1.3.6. Control requirements for certain units

- a. Units that would otherwise be subject to requirements in 40 CFR 264 Subpart AA (40 CFR 264.1030 et seq.), or 40 CFR 265 Subpart AA (40 CFR 265.1030 et seq.), shall be controlled with a secondary brine condenser or thermal oxidizer, and monitored as specified in Section 4.
- b. Merck shall continue its maintenance and repair program (that resulted in the site-specific emission factors referenced in Table 4.3) for all equipment components (valves, flanges, pumps, compressors, sampling connections) that are in contact with VOCs and/or volatile organics (volatile organics as defined in 40 CFR 264 and 265).
- c. Merck shall install and maintain covers with no visible holes, gaps, or other open spaces on all containers that would otherwise be regulated under 40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.).
- d. Merck shall install covers with no visible holes, gaps, or other open spaces on all storage/accumulation tanks that would otherwise be subject to the tank provisions of 40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.). Fixed-roof tanks may be equipped with one or more conservation vents.
- e. Merck shall install covers with no visible holes, gaps, or other open spaces on hazardous waste treatment tanks that would otherwise be subject to the treatment tank provisions of 40 CFR 264 Subpart CC

(40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.). Such tanks shall either be equipped with a floating roof, or be vented to a brine condenser or thermal oxidizer and monitored as specified in Section 4.

2. Powerhouse Conversion

2.1. Commitment to Convert Powerhouse

Merck shall convert the site's steam-generating powerhouse from burning coal as the primary fuel to natural gas as primary fuel and either #2 fuel oil or propane as backup fuel. The new boilers shall be equipped with low NO_x technology.

2.2. Timeframe for conversion

The conversion shall take place according to the following schedule:

2.2.1. Merck expects to contract with a boiler manufacturer for two natural gas-fired boilers within six months of the effective date of the PSD permit. A contract for purchase of two natural gas-fired boilers shall be made no later than 12 months after the effective date of the PSD permit.

2.2.2. Merck expects to complete the powerhouse conversion 18 months after the effective date of the PSD permit. Completion of the powerhouse conversion shall take place no later than 30 months after the effective date of the PSD permit.

2.3. Merck shall provide the following information to the project signatories:

2.3.1. Notification within 30 days after commencement of powerhouse conversion

2.3.2. Notification within 30 days after completion of powerhouse conversion.

2.3.3. Notification that stack test of the powerhouse has been performed, and an estimate based on that stack test of the actual emission reductions achieved from the conversion.

2.4. Regulatory Compliance for the Powerhouse

2.4.1. This PSD permit is deemed to be the preconstruction permit for the powerhouse conversion project described in this section for purposes of Major New Source Review Permitting and Minor New Source Review Permitting (40 CFR 52.21 and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), 9 VAC 5-80-10, 9 VAC 5-80-11, 9 VAC 5 Chapter 80, Part II, Article 8 (9 VAC 5-80-1700 et seq.), and 9 VAC 5-20-160).

2.4.2. Compliance with this permit shall be deemed to be compliance with all requirements of 40 CFR 60 Subpart Db (40 CFR 60.40b et seq.) and 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.).

3. Compliance with State and Federal Regulations and Air Permits under the PSD permit. This permit allows Merck to construct or modify emission units at the site. Any such permitted activities would not be subject to any further PSD, NSR or minor NSR preconstruction permitting requirements for the pollutants as specified in Sections 3.2 and 3.3.

3.1. This permit replaces all other pre-construction permits issued to the site prior to November 9, 2000, including:

<u>Process</u>	<u>Permit Date</u>
Sludge Dryer	07/17/2000
MK-991 Process	11/24/1997
CRIXIVAN® Process	01/21/2000
Lovastatin Process	08/20/1997
Fire Pump Diesel Generator	02/28/1996
Powerhouse Diesel Generator	09/09/1994
Sterile Bulk Pharmaceutical Facility Centrifuge (Cefoxitin)	09/03/1993
Pharmaceutical Film Tablet Coating Pan	07/31/1992
Efrotomycin Process	06/07/1988
Primaxin Manufacturing	08/25/1983
Powerhouse	01/28/1982
Waste Disposal Incinerator	08/12/1981
Cefoxitin Process	10/27/1976
Activated Sludge Incinerator	05/28/1976
MPMD Pharmaceutical Tablet Manufacturing	06/16/1975
MK-476 Process	01/11/2000
Two Internal Combustion Engines (Tank Farm Fire Suppression)	09/27/1999
Emergency compressor Unit	03/07/2000
	(Expiration date of 12/31/2000)
Building 5 temporary emergency generator	08/31/2000
	(Expiration date of 12/31/2000)

- 3.2. Major New Source Review (NSR) Permitting and Registration
Compliance with this permit shall be deemed to satisfy all requirements of the major NSR permitting and registration regulations (40 CFR 52.21, 40 CFR 52.2420 as it pertains to major NSR permitting and registration, and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), 9 VAC 5 Chapter 80, Part II, Article 8 (9 VAC 5-80-1700 et seq.), 9 VAC 5-80-30, and 9 VAC 5-20-160) for pollutants listed in Section 1.1 and particulate matter (PM), but not for particulate matter regulated as PM-2.5.
- 3.3. Other Regulations for Which the PSD permit Constitutes Compliance
Compliance with this permit shall be deemed to satisfy all requirements of the following regulations for all pollutants except Lead, except particulate matter regulated as PM-2.5, and except any new criteria pollutants listed by EPA in 40 CFR 52.21(b)(23)(i) after issuance of this permit:
 - 3.3.1. Minor NSR Permitting and Registration
40 CFR 52.2420 as it pertains to minor NSR permitting and registration, and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), 9 VAC 5-80-10, 9 VAC 5-80-11, and 9 VAC 5-20-160
 - 3.3.2. Standards of Performance for Stationary Sources
VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), and 40 CFR 52.2420, as it pertains to 9 VAC 5-50-240 et seq., standards of performance for stationary sources

- 3.3.3. Virginia Air Toxics Rule
VA Air Regulations 9 VAC 5 Chapter 40, Part II, Article 3 (9 VAC 5-40-160 et seq.) and 9 VAC 5 Chapter 50, Part II, Article 3 (9 VAC 5-50-160 et seq.)
- 3.3.4. Notification, Records, and Reporting
VA Air Regulations 9 VAC 5-40-50 and 9 VAC 5-50-50, and 40 CFR 52.2420 as it pertains to 9 VAC 5-40-50 and 9 VAC 5-50-50, notification, records and reporting.
- 3.3.5. Emission Standards for General Process Operations, Incinerators, and Fuel Burning Equipment
VA Air Regulations 9 VAC 5 Chapter 40, Part II, Article 4 (9 VAC 5-40-240 et seq.), 9 VAC 5 Chapter 40, Part II, Article 7 (9 VAC 5-40-730 et seq.), and 9 VAC 5 Chapter 40, Part II, Article 8 (9 VAC 5-40-880 et seq.), and 40 CFR 52.2420 as it pertains to VA Air Regulations 9 VAC 5 Chapter 40, Part II, Article 4, 9 VAC 5 Chapter 40, Part II, Article 7, and 9 VAC 5 Chapter 40, Part II, Article 8, Emission Standards for General Process Operations, Incinerators, and Fuel Burning Equipment
- 3.3.6. Compliance and Monitoring
VA Air Regulations 9 VAC 5-40-20, 9 VAC 5-40-21, 9 VAC 5-40-22, 9 VAC 5-40-40, 9 VAC 5-40-41 and 9 VAC 5-50-40, and 40 CFR 52.2420, as it pertains to 9 VAC 5-40-20, 9 VAC 5-40-21, 9 VAC 5-40-22, 9 VAC 5-40-40, 9 VAC 5-40-41 and 9 VAC 5-50-40, compliance and monitoring
- 3.3.7. RCRA Organic Air Emissions Standards
40 CFR 264 Subparts AA and BB (40 CFR 264.1030 et seq. and 264.1050 et seq.), and 40 CFR 265 Subparts AA and BB (40 CFR 265.1030 et seq. and 265.1050 et seq.)
- 3.4. Regulations for Which This Permit Constitutes Compliance for Certain Provisions
Compliance with this permit shall be deemed to satisfy certain requirements of the following regulations for all pollutants, except Lead, except particulate matter regulated as PM-2.5, and except any new criteria pollutants listed by EPA in 40 CFR 52.21(b)(23)(i) after issuance of this permit. Merck shall continue to comply with other sections of these rules as specified in the regulations. These regulations and the portions for which the PSD permit constitutes compliance are specified below.
 - 3.4.1. Standards of Performance for New Stationary Sources (NSPS)
The PSD permit constitutes compliance with 40 CFR 60 Subpart Kb (40 CFR 60.110b et seq.), 40 CFR 60 Subpart A (40 CFR 60.1 et seq.), VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.), and 40 CFR 52.2420 as it pertains to VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5, for new and existing bulk volatile organic liquid storage vessels (including petroleum liquid storage vessels) that would otherwise only be subject to notification, recordkeeping and reporting requirements.
 - 3.4.2. Title V Permitting
 - a. Monitoring Requirements: Monitoring requirements specified in Section 4 of the PSD permit shall constitute compliance with any

- applicable monitoring requirements in 40 CFR 71.6(a)(3) and 9 VAC 5-80-110 E that would be applicable to provisions of this permit.
- b. Recordkeeping and Reporting Requirements: Recordkeeping and reporting requirements specified in Section 4 of the PSD permit shall constitute compliance with recordkeeping and reporting requirements that would be applicable to provisions of the PSD permit in 40 CFR 71.6(a)(3)(ii), 40 CFR 71.6(a)(3)(iii)(A), 9 VAC 5-80-110.F.1, and 9 VAC 5-80-110.F.2.a
- 3.4.3. CERCLA and EPCRA Emergency Release Reporting (40 CFR 302, 40 CFR 355.40)
Emissions in compliance with this permit are “federally permitted releases” for purposes of release reporting under Section 103(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 304 of the Emergency Planning and Community Right-To-Know Act (EPCRA).
- 3.4.4. Facility and control equipment maintenance or malfunction compliance
VA Air Regulations 9 VAC 5-20-180 and 9 VAC 5-50-20, and 40 CFR 52.2420 as it pertains to 9 VAC 5-20-180 and 9 VAC 5-50-20, facility and control equipment maintenance or malfunction compliance (except for visible emissions and odor).
- 3.4.5. Control Programs
VA Air Regulations 9 VAC 5-20-170, and 40 CFR 52.2420 as it pertains to 9 VAC 5-20-170, Control Programs (except for visible emissions and odor).
- 3.4.6. Compliance, Monitoring and Performance Testing
VA Air Regulations 9 VAC 5-40-30, 9 VAC 5-50-30, and 40 CFR 52.2420 as it pertains to 9 VAC 5-40-30 and 9 VAC 5-50-30, Compliance, Monitoring and Performance Testing (all except 9 VAC 5-40-30B and 9 VAC 5-50-30B, which subject emission testing to approved guidelines)
- 3.4.7. RCRA Organic Air Emissions Standards for Tanks and Containers
40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), and 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.), except for provisions applicable to surface impoundments.
- 3.5. Compliance with the terms of this permit shall not relieve Merck of its obligation to comply with applicable local, State or Federal laws and regulations not addressed in this section.
- 3.6. Violation of a term of this permit shall not constitute a violation of regulations listed in this section for which the permit constitutes compliance.
4. Monitoring, Recordkeeping and Reporting
Merck shall comply with the monitoring, recordkeeping and reporting requirements specified in Table 4.2. Monitoring, recordkeeping and reporting as prescribed in this section shall constitute the basis for Merck’s certification of compliance with the provisions of this PSD permit pursuant to Title V.
- 4.1. Reporting Tiers:
- 4.1.1. Tier I requirements are in effect whenever the actual criteria pollutant emissions for the last 12 months are determined to be greater than 0% and

- less than 75% of the total emission cap, and during the startup period of the permit (the period between the effective date of this section and 12 months after completion of the powerhouse conversion project).
- 4.1.2. Except as provided in 4.1.1, Tier II requirements are in effect whenever the actual criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 75% and less than 90% of the total emission cap.
- 4.1.3. Except as provided in 4.1.1, Tier III requirements are in effect whenever the actual criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 90% of the total emission cap.
- 4.2. Except as provided in 4.11, Tier I, II and III monitoring, recordkeeping and reporting requirements for SO₂, PM-10, NO_x, CO and VOCs are found in Table 4.2.
- 4.3. Emission Calculation Techniques
- 4.3.1. Table 4.3 specifies the emission calculation techniques to be used for each emission type at the site.
- 4.3.2. Adjustment to the PM-10 Emission Cap: Upon completion of the powerhouse stack test required in Table 4.2, the PM-10 emission cap shall be adjusted as follows:
- Merck shall submit the stack test results to VADEQ for confirmation that the test was performed correctly.
 - The powerhouse's condensable PM-10 emission rate shall be determined as: the sum of (1) the quantity of condensable PM-10 measured while burning natural gas at full load (in lb/day) times 345 days, and (2) the quantity of condensable PM-10 estimated while burning backup fuel at full load (in lb/day) times 20 days, converted to TPY.
 - The PM-10 emission cap in 1.2.1(c) shall be increased by the powerhouse's condensable PM-10 emission rate as determined in (b) or 10 TPY, whichever is less. Operation of this provision shall trigger an administrative permit modification only.
- 4.3.3. If the AP-42 emission factors described in Table 4.3 are updated, and the project signatories fail to agree upon appropriate changes needed to incorporate these updated factors into the permit as provided in Section 6.1.1, VADEQ may at its discretion initiate the following actions:
- Describe to the project stakeholders in writing that use of the updated AP-42 emission factor is important for the technical validity of the site's emission calculations.
 - Obtain from Merck: 1) confirmation that the emission source(s) at the site are the same type of sources as those for which the AP-42 emission factor applies, and (2) agreement on how the emissions caps, HEP and current actual emissions should be adjusted to reflect the updated emission factor.
 - Provided that agreement is reached in (b), initiate the permit modification procedure to incorporate the change into the permit.

4.4. Monthly Requirements:

4.4.1. Beginning on the first day of each month, Merck shall perform the monitoring, recordkeeping and reporting requirements in Table 4.2 according to the reporting tier determined by the 12-month rolling total of criteria pollutant emissions of the period ending two calendar months prior to that date. The monthly calculations specified in Table 4.2 shall cover the period which ended one calendar month prior to that date.

4.4.2. Example

- a. By 2/1/97 calculate the 12-month rolling total of criteria pollutant emissions for 1/1/96 through 12/31/96.
- b. Assume 1/1/96-12/31/96 emissions total equals 80% of total emissions cap.
- c. Assume Tier I requirements were in effect 1/97 and prior.
- d. For the month of March 1997, Tier II monitoring, recordkeeping and reporting requirements would be in effect.
- e. Twelve-month rolling total including the first month of Tier II data (from 3/97) will be calculated by 5/1/97 for period 4/1/96 through 3/31/97.

4.5. Annual and Semi-Annual Requirements:

4.5.1. On September 1 of each year, Merck shall submit a semi-annual report for the six-month period ending June 30th if any tier reached during that period required a semi-annual report.

4.5.2. On March 1 of each year, Merck shall submit a semi-annual report for the six-month period ending December 31st if any tier reached during that period required a semi-annual report.

4.5.3. On March 1 of each year, Merck shall submit an annual report for the 12-month period ending December 31st.

4.6. Reports required in this section shall be submitted to the project signatories.

4.7. Reports specified in Section 4.5 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.

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

4.9. Annual Progress Report

In addition to the reports otherwise required in the section, Merck shall submit to the project stakeholders and to other parties an annual progress report. This report shall include a summary of the site's actual emissions and site-wide emission caps, emissions reduced as a result of the PSD permit, and other information about the site and the operation of the PSD permit.

4.10. Adherence to Continuous Monitoring Requirements

This paragraph applies to each of the monitoring systems required by this permit. Adherence to the requirement to monitor continuously shall be demonstrated by either 4.10.1 or 4.10.2.

4.10.1. Collection of at least 90% of the data required to be collected by the permit during any one month, or

4.10.2. Collection of less than 90% of the data required to be collected by the permit during any one month, and either

- a. verification and documentation through independent means sufficient to establish that the control device was operating properly during the period that the monitoring system failed to collect data, or
 - b. the assumption for the purpose of emission calculations that the control device was not operating during the period that the monitoring system failed to collect data.
- 4.11. HAP Monitoring and Emission Testing Requirements Under CAA Section 112(d)
 - 4.11.1. Compliance with monitoring requirements required for a particular control device under an applicable CAA 112(d) regulation shall constitute compliance with any Section 4 monitoring requirement applicable to that device.
 - 4.11.2. Compliance with emission testing requirements required for a particular control device under an applicable CAA 112(d) regulation shall constitute compliance with any Section 4 emission testing requirement applicable to that device.
- 4.12. In addition to the requirements in Section 3.4.4 for visible emissions and odor, the VADEQ shall be notified of each event involving malfunction or bypass of a control device listed in Table 1.3.3 or any new control device installed pursuant to Section 1.3.2, if the total criteria pollutant emissions resulting from such event are expected to exceed 5% of the total emissions cap. This notification shall be provided no later than four (4) daytime business hours after the determination of applicability of this section is made.
- 5. Phase In of PSD Permit Terms
 - 5.1. All sections of the PSD permit are effective upon the effective date of this permit except:
 - 5.1.1. Section 1: Site-wide Emissions Caps
 - 5.1.2. Section 3: Compliance with State and Federal Regulations and Air Permits under the PSD Permit
 - 5.1.3. Section 4: Monitoring, Recordkeeping and Reporting
 - 5.2. Sections 1, 3 and 4 of the PSD permit are effective on the first day of the month 12 months after completion of the powerhouse conversion project or after written notification is provided by Merck to the project stakeholders, whichever is sooner.
 - 5.3. If Sections 1, 3, and 4 of this permit become effective prior to 12 months after completion of the powerhouse conversion project pursuant to Section 5.2, Merck shall conduct a performance test on any control device installed pursuant to Section 1.3.2, excluding condensers and conservation vents. Such performance test shall be conducted within 180 days of the start-up of the unit. This condition shall cease to be applicable once Section 1.2.1 becomes effective.
- 6. Periodic Review of the PSD Permit

The PSD permit shall be periodically reviewed as specified in this section. Changes to the PSD permit shall be made either: after full consent of the project signatories and subject to the permit modification procedures promulgated in Merck's site-specific rule, or pursuant to PSD permit modification procedures generally applicable to all PSD permits. Changes to the PSD permit other than those described below are not subject to

review except as otherwise agreed to by full consent of the project signatories. Discussion of issues brought by the project stakeholders relating to the PSD permit may occur as needed.

6.1. Five-Year Periodic Review

Within three months of the five year anniversary of the completion of the powerhouse conversion project and every five years thereafter, the project stakeholders shall reconvene to review whether any of the following changes to the PSD permit are required.

- 6.1.1. Significant changes in calculation methods -- Current state-of-the-art emission estimation techniques are used to calculate emissions from the site. These methods and their application to the site's emission sources are specified in Table 4.3. If significant changes are made to these methods, or new methods are identified that are determined to be appropriate for emission sources at the site, adjustments to the site's emissions caps, HEP and current actual emissions may be considered, depending on the nature and extent of the new methods or changes to the current emission estimation techniques.
- 6.1.2. Change in list of criteria pollutants or National Ambient Air Quality Standards (NAAQS)-- If EPA adds, deletes, or modifies the list of criteria pollutants or NAAQSs, adjustments to the site's emissions caps, HEP, current actual emissions, and other changes to the PSD permit may be considered, depending on the reason for the change and its impact on the site's emission totals. If changes are made to incorporate the revision, Section 1 will also be revised to reflect the addition, deletion or modification of the pollutant.
- 6.1.3. Review of examples of control technology in 1.3.2(c) -- Controls listed in Subsection 1.3.2(c) represent good environmental engineering practice with regard to controlling air pollutants. Changes to this list may be considered, including evaluation of new control technology, to ensure that the section continues to represent good environmental engineering practice.
- 6.1.4. Adequacy of Section 4 requirements -- Section 4 (Monitoring, recordkeeping and reporting requirements) may be reviewed to ensure that it provides information necessary to evaluate the site's performance under the agreement. This section also may be reviewed to identify overlapping or unnecessary requirements.
- 6.1.5. Review Procedure for New Criteria Pollutant Regulations -- Subsection 1.2.2(c) describes the review and approval procedure for the emissions cap adjustment for new regulations. This procedure may be evaluated and changes to the procedure considered in order to facilitate timely and appropriate adjustments.
- 6.1.6. Review of Termination Criteria -- Section 8 specifies criteria subject to which the PSD permit would be terminated. These criteria may be evaluated and changes considered as deemed necessary.
- 6.1.7. Review of Modeling for Short Term PM-10 and SO₂ emissions -- Prior to the five-year review, Merck shall submit to the project stakeholders information necessary to perform short term PM-10 and SO₂ NAAQS

modeling, similar in extent and detail to the modeling performed for the permit support documentation. This information shall include but not be limited to the current plant configuration with information on building locations and dimensions, information on emission sources including stack dimensions, exit gas parameters, and emission rates for actual operating conditions and worst case short-term (3 and 24-hour) operating conditions. If major changes have been made at the site not reflected in the most recent modeling analysis, Merck shall perform an updated modeling analysis if requested by EPA or VADEQ.

- 6.1.8. Review of the Determination that the Area is NO_x- Limited for Ozone Formation -- If any project stakeholders present technical papers or studies that change the generally recognized determination that the area near the site, including the Shenandoah National Park, is NO_x-limited for ozone formation, changes to terms of the PSD permit may be considered.
- 6.1.9. Review of Periodic Review Criteria -- Section 6 specifies criteria by which the PSD permit shall be periodically reviewed. These criteria may be evaluated and changes considered as deemed necessary.
- 6.2. Review Triggered by Emission Levels
 - 6.2.1. Review of Air Quality Related Values (AQRVs)
 - a. Trigger for AQRV Assessment: The AQRV assessment specified in this subsection shall be triggered upon either of the following events:
 - i. After installation of any individual new process or process modification that results in a net increase in the site's actual VOC emissions of 100 TPY or more. Net increase means the sum of emission increases and decreases occurring at the site resulting from the new or modified installation.
 - ii. After the first time the site-wide VOC emissions exceed two times the baseline (Table 1.1) VOC level (i.e., if site-wide VOC emissions reach 816 TPY).
 - b. AQRV Assessment: If an AQRV assessment is triggered in (a), VOC emission increases shall be reviewed to determine whether they are the cause of or significantly contribute to adverse impacts on any AQRVs at the Class I area (Shenandoah National Park). Merck shall be responsible for performing the assessment of VOC impacts on AQRVs using demonstrated methods for such assessments.
 - c. Mitigation Measures: If the project signatories agree that Merck's VOC emissions are the cause of adverse impacts on any AQRVs at the Class I area (Shenandoah National Park), Merck shall implement mitigation measures that are agreed to by the project signatories.
 - 6.2.2. Review of Non-HAP VOCs -- No later than three months after the site-wide VOC emissions reach 125% of the baseline (Table 1.1) VOC level (i.e., if site-wide VOC emissions reach 510 TPY):
 - a. Merck shall provide to the project stakeholders the list of non-HAP VOCs that were emitted from the facility in the previous 12 months. EPA shall conduct a review of the scientific literature for any new information on the health effects of these compounds and provide such information to the project stakeholders.

- b. Merck shall conduct a site-wide modeling assessment of non-HAP VOC emissions yielding average property line concentrations. These modeling results shall be compared to the Significant Ambient Air Concentrations (SAAC) established in the Virginia Air Regulations (9 VAC 5 Chapter 40, Part II, Article 3 (9 VAC 5-40-160 et seq.) and 9 VAC 5 Chapter 50, Part II, Article 3 (9 VAC 5-50-160 et seq.) except the most recent Threshold Limit Values published by the ACGIH shall be used in the SAAC calculations. If this assessment predicts an exceedance of the SAAC for any of the modeled substances, Merck shall either:
 - i. Demonstrate to the VADEQ's satisfaction that the applicable SAAC is inappropriate for the substance in question by showing that the emissions from the site produce no endangerment of human health; or
 - ii. Implement changes at the site resulting in ambient concentrations of the substance that are below the SAAC or resulting in such other ambient concentrations acceptable to the VADEQ.Any actions pursuant to (i) or (ii) to resolve any SAAC exceedance shall be initiated within four months of reaching the VOC level that triggered this subsection, and communicated to the project stakeholders.
- c. Subsequent assessments specified in (a) and (b) shall be conducted if site-wide VOC emissions increase further whenever such incremental increases exceed 100 TPY (i.e., at VOC levels of 610 TPY, 710 TPY, 810 TPY, etc.). If 9 VAC 5 Chapter 40 Part II Article 3 or 9 VAC 5 Chapter 50 Part II Article 3 of the Virginia Air Regulations are significantly modified or rescinded, the project stakeholders shall consider an alternative system upon which to base this periodic evaluation. Unless the project signatories agree to change or eliminate this system, the requirements of this subsection shall remain in effect.

7. Duration of the PSD Permit

The PSD permit shall continue to be in effect unless terminated as specified in Section 8 or 11.

8. Termination of the PSD Permit

- 8.1. The PSD permit may be terminated as provided in 8.2 through 8.4 upon written notice for the following reasons only:
 - 8.1.1. If the EPA or VADEQ determines that continuation of the PSD permit is an imminent and substantial endangerment to public health or welfare, or the environment.
 - 8.1.2. If Merck knowingly falsifies emissions data.
 - 8.1.3. If Merck fails to implement the powerhouse conversion project in accordance with Section 2.
 - 8.1.4. If Merck receives four consent orders or two judgments adverse to Merck arising from non-compliance with this permit in a five year period that are deemed material.

- 8.1.5. If the total emissions cap is exceeded.
- 8.1.6. Upon full consent of all project signatories.
- 8.1.7. For other reasons not specified in Section 8.1 for which VADEQ has statutory authority to terminate the permit.
- 8.2. Force majeure exemption from Section 8.1.
 - 8.2.1. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Merck, which cannot be overcome by due diligence and which delays or prevents performance by a date or manner required by this PSD permit.
 - 8.2.2. Such force majeure events shall not cause termination of the PSD permit, providing that Merck complies with the notification requirements in 8.2.3.
 - 8.2.3. Within seven calendar days after it becomes aware of an event which Merck claims constitutes a force majeure exemption from Subsection 8.1, Merck shall notify EPA and VADEQ. This notification shall include the estimated time anticipated for the delay, its cause, measures taken or to be taken to prevent or minimize the delay, and the estimated timetable for the implementation of these measures.
- 8.3. In the event of termination as specified in Subsection 8.1, the VADEQ or EPA shall provide the project signatories with written notice of its intent to terminate the PSD permit. Within 30 calendar days of Merck's receipt of this notice, Merck may take corrective action to remedy the cause of the termination. If this remedy (which may include a corrective action plan and schedule) is deemed acceptable by the regulatory agency that provided written notice of its intent to terminate the permit, the action to terminate the PSD permit shall be withdrawn. Otherwise, the PSD permit is terminated as provided in Subsection 8.4.
- 8.4. If the notice of intent to terminate is not withdrawn by the enforcing agency as provided in Subsection 8.3, the agreement shall be terminated in the following manner:
 - 8.4.1. Merck shall submit a revised Title V application under the then-applicable Title V program no later than 12 months after the notice of intent to terminate, or within some other reasonable shorter time period as agreed to by the Title V-implementing agency and Merck (called the interim period).
 - 8.4.2. During this interim period Merck shall meet with the Title V-implementing agency to agree upon the appropriate applicable requirements to be included in the Title V application and draft permit.
 - 8.4.3. During this interim period Merck shall abide by all terms of the PSD permit that are in effect at that time. If the site's actual 12-month rolling total of criteria pollutant emissions equals or exceeds the total emissions cap, increases of these emissions shall be allowed only with prior approval from the permitting authority(ies) and receipt of any necessary preconstruction permits.
 - 8.4.4. Once the revised Title V permit application is submitted and deemed complete, the Title V-implementing agency shall issue an order stipulating that the site shall operate under the requirements as specified in the Title V application and in compliance with all applicable requirements. Upon issuance of the order the PSD permit would be terminated.

- 8.5. Termination of the PSD permit does not cancel Merck's obligation to complete any corrective actions relating to non-compliance under the PSD permit.
9. Inspection and Entry
 - 9.1. Upon presentation of credentials and other documents as may be required by law, Merck shall allow authorized representatives of EPA and VADEQ to perform the following:
 - 9.1.1. Enter upon the site
 - 9.1.2. Have access to and copy at reasonable times any records that must be kept under the conditions of the PSD permit
 - 9.1.3. Have access at reasonable times to batch and other plant records needed to verify emissions
 - 9.1.4. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required under the PSD permit
 - 9.1.5. Sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring PSD permit compliance or as otherwise authorized by the Clean Air Act.
 - 9.2. No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for PSD permit violation and assessment of civil penalties.
 - 9.3. Such site, facility and equipment access, and sampling and monitoring shall be subject to Merck safety and industrial hygiene procedures, and Food and Drug Administration and Good Manufacturing Practice requirements in force at the site.
10. Reservation of Rights
 - 10.1. Except as expressly provided in this PSD permit:
 - 10.1.1. Each project signatory reserves all rights and defenses it may have, and
 - 10.1.2. Nothing herein shall prevent EPA or VADEQ from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the PSD permit, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties, fines and/or punitive damages.
 - 10.2. Nothing herein shall be construed to limit the rights of EPA or VADEQ to undertake any criminal enforcement activity against Merck or any person.
 - 10.3. Nothing herein shall be construed to limit the authority of EPA or VADEQ to undertake any actions in response to conditions which present an imminent and substantial endangerment to public health or welfare, or the environment.
 - 10.4. Nothing herein shall be construed to limit Merck's rights to administrative and judicial appeal of termination actions in accordance with 9 VAC 5 Chapter 170, Part VIII of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.
11. Transfer of Ownership
 - 11.1. The terms of the PSD permit are transferable to a new owner upon sale of the site.

- 11.2. In the event of any change in ownership or control of the site, Merck shall notify the project stakeholders in writing no later than 10 days after the change. The notification shall include the name, address, telephone number of the transferee in interest, and the date of the transfer.
 - 11.3. For the first 12 months after change in ownership or control of the site, the new owner shall submit the monthly 12-month rolling total of criteria pollutant emissions to the project signatories, in the same manner as specified in Section 4.
 - 11.4. Within 12 months of the change in ownership or control of the site, the PSD permit shall be reviewed as specified in Section 6. Such review shall also include an affirmative renewal of the PSD permit by the project signatories. Affirmative renewal means that the PSD permit shall continue to be in effect if all project signatories (excluding Merck and including the new owner/operator) agree that the PSD permit should continue; otherwise, the PSD permit shall be terminated as specified in Subsection 8.4.
12. Definitions for Terms in the PSD Permit
- 12.1. 12-Month Rolling Total: The 12-month rolling total for an individual pollutant or the total of Section 1.1 pollutants is calculated on a monthly basis as the sum of all actual emissions of the respective pollutant(s) from the previous 12 months.
 - 12.2. Completion of powerhouse conversion: the date upon which the new boilers are operational. This determination shall be made by Merck based on the boiler manufacturer's installation, startup and shakedown specifications.
 - 12.3. Compliance date: the date upon which the site is required to take action in order to comply with a new regulation or a regulation to which it is newly subject.
 - 12.4. Highest Emission Point (HEP): The highest 12-month rolling total of criteria pollutant emissions from the site since 12 months after completion of the powerhouse conversion project.
 - 12.5. Process unit: (a) manufacturing equipment assembled to produce a single intermediate or final product, or (b) any combustion device.
 - 12.6. Project stakeholders: employees of the project signatories to the Final Project Agreement, plus other parties as follows:
 - 12.6.1. up to three other community representatives shall be included as nominated by the Rockingham County Board of Supervisors, and agreed to by full consent of the project signatories to the Final Project Agreement. Community representatives are defined as local government and or community residents with an ongoing stake in the project, and
 - 12.6.2. up to one representative from a regional public interest group shall be included as nominated by any project signatory and agreed to by full consent of the project signatories.
 - 12.7. Responsible official: (1) The president, secretary, treasurer, or vice-president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or (2) A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980

- dollars), or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.
- 12.8. Signatories to the Final Project Agreement or project signatories: The U.S. Environmental Protection Agency (EPA), the Virginia Department of Environmental Quality (VADEQ), the Department of the Interior Federal Land Manager (FLM), the Rockingham County Board of Supervisors, and Merck & Co., Inc. All correspondence required by this PSD permit shall be directed to the individual representatives for each of these project signatories listed in Table 12.8. This table may be revised upon written notification to the project signatories.
- 12.9. Site: the contiguous property at Route 340 South, Elkton, Virginia, under common control by Merck & Co., Inc., and its successors in ownership, known as the Stonewall site.

Table 1.1
Actual Criteria Pollutant Emissions from the Stonewall Site

Pollutant	1992 Actual Emissions (TPY)	1993 Actual Emissions (TPY)	Average of 1992 and 1993 (TPY)	Emission Cap Established in Subsection 1.2.1
SO ₂	714	723	719	539
NO _x	293	290	291	262
CO	44	42	43	NA
PM-10	42	42	42	42
VOC	442	374	408	NA
Total criteria emissions	1535	1471	1503	1202

Table 1.3.3.
Operation of Listed Control Equipment

Emission Unit	Control Device	Pollutant
General requirement for all air pollution control (APC) equipment: Maintain APC equipment in proper working order		
Diesel generator	NO _x control	NO _x
Sludge Dryer	Dust collector (DC-609)	PM-10
	Venturi scrubber (VS-390)	PM-10
Sludge incinerator	Venturi scrubber (SCB-290)	PM-10
Solvent Recovery	Venturi/packed bed scrubber in solvent recovery (SCR-1000)	VOCs
CRIXIVAN [®]	Fabric filter boxes (Finishing) (VF-121, VF-185)	PM-10
	Thermal oxidizer (TOU-2542)	VOCs
	Scrubber (SCR-2546)	
	Secondary brine condensers in solvent recovery (CN-102, CN-505/506, CN-702)	VOCs
Lovastatin	Bulk storage tank conservation vent	VOCs
	Secondary brine condensers in solvent recovery (CN-203) and Building 43 (CN-911)	VOCs

Table 4.2
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section A: Site-Wide Criteria Pollutant Emissions					
Cap calculations	Monthly	Monthly	Monthly	Record	12-month rolling total site wide criteria pollutant emissions
A.1	Monthly	Monthly	Monthly	Record	12-month rolling total site wide SO ₂ , NO _x , PM-10, CO, and VOC emissions respectively
A.2	Monthly	Monthly	Monthly	Record	Total emissions cap, SO ₂ cap, NO _x cap, PM-10 cap
A.3	Monthly	Monthly	Monthly	Record	Current HEP
A.4	Monthly	Monthly	Monthly	Record	Current reporting tier as defined in Section 4.
A.5	Monthly	Monthly	Monthly	Report	12-month rolling total site wide criteria pollutant emissions for each month covered by report.
A.6	Semi-annually	Semi-annually	Monthly	Report	12-month rolling total SO ₂ , NO _x , PM-10, CO, and VOC emissions, respectively for each month covered by report.
A.7	Semi-annually	Semi-annually	Monthly	Report	Total criteria pollutant emissions and SO ₂ , NO _x , and PM-10 emissions reduced from XL project since last report (difference between cap/subcap and actuals)
A.8	Annually	Semi-annually	Monthly	Report	Total criteria pollutant emissions and SO ₂ , NO _x , and PM-10 emissions reduced from XL project since start of PSD permit (cumulative difference between cap/subcap and actuals)
A.9	Annually	Semi-annually	Monthly	Report	Reporting tier as defined in Section 4 for each month covered by report.
A.10	Annually	Semi-annually	Monthly	Report	Reporting tier as defined in Section 4.
A.11	Within one month of changing from a lower tier to a higher tier			Report	

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section A: Site-Wide Emissions (continued)					
Cap adjustments	Monthly	Monthly	Monthly	Record	Any adjustments to total emissions cap or individual caps
	Annually	Semi-annually	Monthly	Report	Any adjustments to total emissions cap or individual caps, and explanation for adjustment
	Upon compliance date of new regulation			Record	Record decision whether to implement regulation as written or adjust cap under Subsection 1.2.2.
	120 or 190 days prior to compliance date of new regulation selected for cap adjustment as required by Subsection 1.2.2.c.			Report	Report total criteria pollutant reduction resulting from regulation, HEP or alternate emission rate, and basis for estimate
Subsection 1.3.2. Installations	Upon operation of any modification or new installation			Record	Calculations determining whether the process modification or new installation triggers 1.3.2.b. significance levels
	Within 45 days of operation of any significant modification or significant new installation			Report	Submit report describing the significant modification or significant new installation (as defined in 1.3.2), and the controls, pollution prevention or other technology employed to meet the requirements of 1.3.2. If the method employed is not one of the methods listed in 1.3.2.c., include an explanation for the technology selected.

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section A: Site-Wide Emissions (continued)					
A.18	Within 45 days of operation of any significant modification or significant new installation			Report	Submit report providing the following information: a schematic diagram showing the type and sequence of new equipment installed or modified, equipment identification numbers, location of the new installation or modification on the plant site, air pollution control equipment associated with the new installation or modification, and the total emissions of each criteria pollutant emitted from each piece of new or modified equipment.
Operation of Listed Controls (1.3.3.)	Ongoing	Ongoing	Ongoing	Record	Record time control equipment listed in Table 1.3.3. is not operating while the controlled emissions unit is operating.
A.20	Annually	Annually	Annually	Report	Percent time that each control device listed in Table 1.3.3. operated over the previous year.
Modeling Parameters	Upon request within reasonable time period			Report	Stack parameters and modeling inputs for sources of PM-10, NO _x and SO ₂ .

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section B: Powerhouse					
Natural Gas-Fired Boilers	Within 180 days of powerhouse conversion			Monitor	Perform stack test to quantify criteria pollutant emissions
B.1	Continuously	Continuously	Continuously	Monitor and Record	NO _x and opacity using CEMs or PEMs
B.2	Monthly	Monthly	Monthly	Monitor and Record	Type and amount of fuel used
B.3	Monthly	Monthly	Monthly	Record	Emissions based on stack test, NO _x CEM/PEM, emission factors and fuel usage
B.4	Annually	Semi-annually	Monthly	Report	Emissions based on stack test, NO _x CEM/PEM, emission factors and fuel usage
B.5	Monthly	Monthly	Monthly	Record	Percent time burning natural gas and backup fuel
B.6	Annually	Semi-annually	Monthly	Report	Percent time burning natural gas and backup fuel
B.7	Monthly	Monthly	Monthly	Monitor and Record	Amount and type of fuel used
Backup oil Unit	Monthly	Monthly	Monthly	Record	Emissions based on emission factors and fuel usage
B.8	Monthly	Monthly	Monthly	Record	
B.9	Monthly	Monthly	Monthly	Record	

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section C:					
Sludge Incinerator					
C.1	Monthly			Record	Emissions based on emission factors and operation..
C.2	Annually			Report	Emissions based on emission factors and operation schedule
C.3		Monthly	Monthly	Monitor	Amount and type of fuel used
C.4		Monthly	Monthly	Monitor	Waste throughput
C.5		Monthly		Record	Emissions based on emission factors, fuel usage and waste throughput
C.6		Semi-annually		Report	Emissions based on emission factors, fuel usage and waste throughput
C.7			One-time ⁴	Monitor	Perform stack test to quantify criteria pollutant emissions
C.8			Monthly	Record	Emissions based on stack test, fuel usage and waste throughput
C.9			Monthly	Record	Emissions based on stack test, fuel usage and waste throughput

⁴ Within 6 months of reaching Tier III for the first time. A stack test performed no more than 5 years prior to reaching Tier III may be used in place of a new test provided that the emission controls and operating conditions are still representative of those under which the prior test was conducted.

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section D: Emergency Generators					
Natural Gas-Fired Boilers	Monthly			Record	Emissions based on emission factors, operation schedule and any non-scheduled event requiring operation of a unit for five days or more.
	Annually			Report	Emissions based on emission factors, operation schedule and any non-scheduled event requiring operation of a unit for five days or more.
		Monthly	Monthly	Monitor and Record	Time of operation
		Monthly	Monthly	Monitor and Record	Amount and type of fuel used
		Monthly	Monthly	Record	Emissions based on emission factor and fuel usage
		Semi-annually	Monthly	Report	Emissions based on emission factor and fuel usage
	Annually	Annually	Annually	Monitor	Verify that original timing as set by the manufacturer has not been changed
Powerhouse Generator					

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section E: Production Process Units					
E.1	Monthly	Monthly	Monthly	Record	Changes to the process that affect the emission factor
E.2	Monthly	Monthly	Monthly	Record	Maintain current process emission factors
E.3	Monthly	Monthly	Monthly	Monitor and Record	WWTP influent flow, temperature and VOC constituent concentrations
E.4	Monthly	Monthly	Monthly	Monitor and Record	Number of production units
E.5	Monthly	Monthly	Monthly	Record	Emissions based on emission factor and number of production units
E.6	Annually	Semi-annually	Monthly	Report	Emissions based on emission factor and number of production units
E.7		Annually	Semi-annually	Report	Summary of changes to emission factors based on process modifications
E.8	Annually	Annually	Annually	Report	Basis for point source emission factors (see example 1 below)

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section E: Production Process Units (continued)					
...	E.9	Within 180 days of start-up of new unit operation		Record	Emission factor verification study for unit operations not included in the following list: Fill, Evacuation, Gas Sweep, Heat, Gas Evolution, Vacuum Distillation, Vacuum Drying, Tank Breathing

Example 1
 Basis for Process Vent Emission Factor
 For Each Process:

Step Number	Vessel I.D.	VOC Emissions (lb/step)
1	RE-101	0.1
2	RE-101	2.5
3	RE-101	20
4	TA-105	0.2
...	...	...
80	TA-308	0.3
Total		95.2 lb/production unit

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F: Criteria Pollutant Control Equipment					
Sludge Dryer dust collector (DC-609)					
F.1	Continuously	Continuously	Continuously	Monitor	Differential pressure drop
F.2	Once per day	Once per day	Once per day	Record	Differential pressure drop
Sludge Dryer venturi scrubber (VS-390)	Continuously	Continuously	Continuously	Monitor	Pressure drop and liquid flow
F.3	Continuously	Continuously	Continuously	Monitor	Pressure drop and liquid flow
F.4	Once per day	Once per day	Once per day	Record	Pressure drop and liquid flow
F.5	Continuously	Continuously	Continuously	Monitor	Pressure drop and liquid flow
Sludge incinerator venturi scrubber (SCB-290)	Continuously	Continuously	Continuously	Monitor	Pressure drop and liquid flow
F.6	Once per day	Once per day	Once per day	Record	Pressure drop and liquid flow
F.7	Continuously			Monitor	Differential pressure drop across filter
CRIXIVAN [®] fabric filters (finishing) (VF-121, VF-185)	Once per batch			Record	Differential pressure drop across filter
F.8	Once per batch			Record	Differential pressure drop across filter
CRIXIVAN [®] thermal oxidizer (TOU-2542)	Continuously			Monitor and Record	Combustion chamber temperature
CRIXIVAN [®] scrubber (SCR-2546)	Continuously			Monitor	Liquid flow and differential pressure drop
F.10	Continuously			Monitor	Liquid flow and differential pressure drop
F.11	Once per batch			Record	Liquid flow and differential pressure drop

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F: Criteria Pollutant Control Equipment (continued)					
CRIXIVAN® secondary brine condensers in solvent recovery (CN-102, CN-505, CN-506, CN-702)	Continuously	Continuously	Continuously	Monitor	Exit vapor temperature or coolant flow and coolant exit temperature
	Once per batch	Once per batch	Once per batch	Record	Exit vapor temperature or coolant flow and coolant exit temperature
Lovastatin secondary brine condenser in solvent recovery (CN-203) and Building 43 (CN-911)	Continuously	Continuously	Continuously	Monitor	Exit vapor temperature or coolant flow and coolant exit temperature
	Once per batch	Once per batch	Once per batch	Record	Exit vapor temperature or coolant flow and coolant exit temperature
Solvent recovery venturi/packed bed scrubber (SCR-1000)	Continuously			Monitor	Liquid flow and differential pressure drop
	Once per batch			Record	Liquid flow and differential pressure drop
Carbidopa thermal oxidizer (RE-3500)	Continuously			Monitor	Combustion chamber temperature
	Once per batch			Record	Combustion chamber temperature
Carbidopa packed bed scrubber (SCR-634, SCR-3500)	Continuously			Monitor	Liquid flow and pH
	Once per batch			Record	Liquid flow and pH

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F:					
Criteria Pollutant Control Equipment (continued)					
Units that would otherwise be regulated under 40 CFR 264 Subpart AA or 265 Subpart AA controlled by a condenser	F.22 Continuously	Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
	F.23 Once per batch	Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
Units that would otherwise be regulated under 40 CFR 264 Subpart AA or 265 Subpart AA controlled by a thermal oxidizer	F.24 Continuously			Monitor and Record	Combustion chamber temperature
VOC and volatile organic ⁵ bulk storage tanks $\geq$ 10,000 gal capacity: conservation vent	F.25 Annually	Annually	Annually	Monitor	Verify conservation vent pressure setting at or above 0.030 psi
New condensers added under 1.3.2. of the permit	F.26 Continuously	Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
	F.27 Once per batch	Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
New non-catalytic thermal oxidizers added under 1.3.2. of the permit	F.28 Continuously			Monitor and Record	Combustion chamber temperature

⁵ As defined in 40 CFR 264 and 265.

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit		Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F:						
Criteria Pollutant Control Equipment (continued)						
New catalytic thermal oxidizers added under 1.3.2. of the permit	F.29	Continuously			Monitor and Record	Inlet temperature and temperature increase across catalyst bed.
New scrubbers added under 1.3.2. of the permit	F.30	Continuously			Monitor	Scrubber water flow and differential pressure
	F.31	Once per batch			Record	Scrubber water flow and differential pressure
New carbon adsorption systems added under 1.3.2. of the permit	F.32	Within 60 days of unit's initial startup			Record	Establish appropriate regeneration cycle based on breakthrough rate, and performance indicator (e.g., online time, number of batches, or breakthrough indicator)
	F.33	Once per batch			Record	Carbon performance indicator
New regenerative carbon adsorption systems added under 1.3.2. of the permit	F.34	Once per regeneration cycle			Monitor and Record	Regeneration medium mass flow during regeneration and carbon bed temperature after regeneration
New dust collection systems added under 1.3.2. of the permit	F.35	Continuously			Monitor	Differential pressure across filter
	F.36	Once per batch			Record	Differential pressure across filter

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F:					
Criteria Pollutant Control Equipment (continued)					
Each condenser at site with uncontrolled emissions > 8000 lb/yr VOCs		Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
		Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
All non-catalytic thermal oxidizers at site		Continuously	Continuously	Monitor and Record	Combustion chamber temperature
All catalytic thermal oxidizers at site		Continuously	Continuously	Monitor and Record	Inlet temperature and temperature increase across catalyst bed.
All scrubbers at site		Continuously	Continuously	Monitor	Scrubber water flow and differential pressure
		Once per batch	Once per batch	Record	Scrubber water flow and differential pressure
All carbon adsorption systems at site		Within 60 days of unit's initial startup		Record	Establish appropriate regeneration cycle based on breakthrough rate, and performance indicator (e.g., online time, number of batches, or breakthrough indicator)
		Once per batch	Once per batch	Record	Carbon performance indicator
All regenerative carbon adsorption systems at site		Once per regeneration cycle	Once per regeneration cycle	Monitor and Record	Regeneration medium mass flow during regeneration and carbon bed temperature after regeneration

Table 4.2 (continued)
Monitoring, Recordkeeping and Reporting Requirements

Emission Unit	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section F:					
Criteria Pollutant Control Equipment (continued)					
All dust collection systems at site					
F.46		Continuously	Continuously	Monitor	Differential pressure across filter
F.47		Once per batch	Once per batch	Record	Differential pressure across filter
F.48			Continuously	Monitor	Coolant flow and coolant outlet temperature
F.49			Once per batch	Record	Coolant flow and coolant outlet temperature
F.50			One-time ⁶	Monitor and Record	Confirm condenser performance with engineering calculation tool or stack test
F.51			One-time ⁶	Monitor and Record	Perform stack test on unit to determine criteria pollutant emissions
F.52			One-time ⁶	Monitor and Record	Confirm scrubber performance with engineering calculation tool or stack test
F.53			One-time ⁶	Monitor and Record	Confirm carbon system performance with engineering calculation tool or stack test
F.54			One-time ⁶	Monitor and Record	Confirm dust collection system performance with engineering calculation tool or stack test

⁶ Within 6 months of reaching Tier III for the first time for existing equipment, and within 3 months of commencement of operation for new equipment. A stack test performed no more than 5 years prior to reaching Tier III may be used in place of a new test provided that the emission controls and operating conditions are still representative of those under which the prior test was conducted.

Table 4.3
Calculation Techniques Used to Determine Site-Wide Emissions⁷

Emission Sources	Methods of Calculation				
	VOC	SO ₂	PM-10	NO _x	CO
Process Vents	1,2	2	2	2	2
Internal Combustion Sources	2,6,7	2,6,7	2,6,7	2,6,7	2,6,7
External Combustion Sources	2,6,9	2,6,9	2,6,9	2,6,8,9	2,6,9
Natural Gas-Fired Boilers	2,6,10	2,6,10	2,6,10	2,6,8,10	2,6,10
VOC Bulk Storage Tanks	1,2,6	2	2	2	2
Solvent Recovery	2,4	2	2	2	2
Equipment Leaks	2,3	2	2	2	2
Wastewater Treatment	2,5	2	2	2	2

Key to Methods of Calculation:

1. 1978 Control Techniques Guideline (CTG), EPA; 1994 Alternative Control Techniques (ACT), EPA
2. Engineering Calculations
3. Site-Specific Emissions Factors based on site-generated monitoring data approved for use by the VADEQ.
4. B-JAC Condenser Model
5. Toxchem Model, approved for use by the EPA
6. EPA AP-42 Emissions Factors. (5th Edition, 1995)
7. Vendor Emission Data.
8. Actual NO_x data from CEMs or PEMs.
9. Available stack test data from comparable sources.
10. Stack test performed on unit.

⁷ For additional information about emission calculation techniques, please refer to the permit support document.

Table 12.8
Individual Signatory Representatives

Name	Title	Affiliation	Address	Telephone
Ms. Judith Katz	Director, Air Radiation and Toxics Division	EPA Region III	(3AT00) 841 Chestnut Street Philadelphia, PA 19107	215-566-2050
Mr. R. Bradley Chewning	Regional Director	Valley Regional Office Virginia Department of Environmental Quality	4411 Early Rd. P.O. Box 3000 Harrisonburg, VA 22801-9519	540-574-7800
Christine L. Shaver	Chief, Air Resources Division	National Park Service	P.O. Box 25287 Denver, CO 80225	303-969-2074
Mr. Michael A. Breeden	Chairman	Rockingham County Board of Supervisors	P.O. Box 1252, Harrisonburg, VA 22801	540-433-5626
Mr. Tedd Jett	Environmental Engineering Manager	Environmental Engineering Department Merck & Co., Inc.	P.O. Box 7 Elkton, VA 22827-0007	540-298-4869

Attachment C

Federal Rule
40 CFR 52.2454

met since the plan includes approvable procedures for the Prevention of Significant Air Quality Deterioration.

(b) Regulations for preventing significant deterioration of air quality. The provisions of § 52.21 (b) through (w) are hereby removed from the applicable state plan for the Commonwealth of Virginia.

[63 FR 13798, Mar. 23, 1998]

§ 52.2452 Visibility protection.

(a) The requirements of section 169A of the Clean Air Act are not met, because the plan does not include approvable procedures for protection of visibility in mandatory Class I Federal areas.

(b) Regulation for visibility monitoring. The provisions of § 52.26 are hereby incorporated and made a part of the applicable plan for the State of Virginia.

(c) *Long-term strategy.* The provisions of § 52.29 are hereby incorporated and made part of the applicable plan for the State of Virginia.

[50 FR 28553, July 12, 1985, as amended at 52 FR 45137, Nov. 24, 1987]

§ 52.2453 Requirements for state implementation plan revisions relating to new motor vehicles.

Virginia must comply with the requirements of § 51.120 with respect to the portion of Virginia that in 1990 was located in the Consolidated Metropolitan Statistical Area containing the District of Columbia.

[60 FR 4738, Jan. 24, 1995]

§ 52.2454 Prevention of significant deterioration of air quality for Merck & Co., Inc.'s Stonewall Plant in Elkton, VA.

(a) *Applicability.* (1) This section applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(2) This section sets forth the prevention of significant deterioration of air quality preconstruction review requirements for the following pollutants only: carbon monoxide, nitrogen oxides, ozone (using volatile organic compounds as surrogate), particulate mat-

ter with an aerodynamic diameter less than 10 microns (PM_{10}), and sulfur dioxide. This section applies in lieu of § 52.21 for the pollutants identified in this paragraph as well as particulate matter, but not for particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns ($PM_{2.5}$) regulated as $PM_{2.5}$; however, the preconstruction review requirements of § 52.21, or other preconstruction review requirements that the Administrator approves as part of the plan, shall remain in effect for any pollutant which is not specifically identified in this paragraph and is subject to regulation under the Act.

(b) *Definitions.* For the purposes of this section:

12-month rolling total for an individual pollutant or the total criteria pollutants, as specified in paragraph (d) of this section, is calculated on a monthly basis as the sum of all actual emissions of the respective pollutant(s) from the previous 12 months.

Act means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

Completion of the powerhouse conversion means the date upon which the new boilers, installed pursuant to paragraph (g) of this section, are operational. This determination shall be made by the site based on the boiler manufacturer's installation, startup and shakedown specifications.

Permitting authority means either of the following:

(1) The Administrator, in the case of an EPA-implemented program; or

(2) The State air pollution control agency, or other agency delegated by the Administrator, pursuant to paragraph (o) of this section, to carry out this permit program.

Process unit means:

(1) Manufacturing equipment assembled to produce a single intermediate or final product; and

(2) Any combustion device.

Responsible official means:

(1) The president, secretary, treasurer, or vice-president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or

(2) A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.

Site means the contiguous property at Route 340 South, Elkton, Virginia, under common control by Merck & Co., Inc., and its successors in ownership, known as the Stonewall site.

(c) *Authority to issue permit.* The permitting authority may issue to the site a permit which complies with the requirements of paragraphs (d) through (n) of this section. The Administrator may delegate, in whole or in part, pursuant to paragraph (o) of this section, the authority to administer the requirements of this section to a State air pollution control agency, or other agency authorized by the Administrator.

(d) *Site-wide emissions caps.* The permit shall establish site-wide emissions caps as provided in this paragraph.

(1) *Initial site-wide emissions caps.* The initial site-wide emissions caps shall be based on the site's actual emissions during a time period, within five years of the date of permit issuance, which represents normal site operation. The permitting authority may allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual site-wide emissions shall be calculated using the actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

(i) *Total criteria pollutant emissions cap.* The permit shall establish a total criteria pollutant emissions cap (total emissions cap). The criteria pollutants included in the total emissions cap are the following: carbon monoxide, nitrogen oxides, ozone (using volatile organic compounds as surrogate), particulate matter with an aerodynamic di-

ameter less than 10 microns, and sulfur dioxide.

(ii) *Individual pollutant caps.* The permit shall establish individual pollutant caps for sulfur dioxide, nitrogen oxides and PM₁₀.

(2) *Adjustments to the site-wide emissions caps.* (i) The permit shall require that upon completion of the powerhouse conversion, the site shall reduce the site-wide emissions caps as follows:

(A) The total emissions cap shall be reduced by 20 percent from the initial site-wide emissions cap established pursuant to paragraph (d)(1)(i) of this section.

(B) The sulfur dioxide cap shall be reduced by 25 percent from the initial site-wide emissions cap established pursuant to paragraph (d)(1)(ii) of this section.

(C) The nitrogen oxide cap shall be reduced by 10 percent from the initial site-wide emissions cap established pursuant to paragraph (d)(1)(ii) of this section.

(ii) The permit may specify other reasons for adjustment of the site-wide emissions caps.

(e) *Operating under the site-wide emissions caps.* (1) The permit shall require that the site's actual emissions of criteria pollutants shall not exceed the total emissions cap established pursuant to paragraph (d) of this section.

(2) The permit shall require that the site's actual emissions of sulfur dioxide, nitrogen oxides and PM₁₀ shall not exceed the respective individual pollutant cap established pursuant to paragraph (d) of this section.

(3) Compliance with the total emissions cap and individual pollutant caps shall be determined by comparing the respective cap to the 12-month rolling total for that cap. Compliance with the total emissions cap and individual pollutant caps shall be determined within one month of the end of each month based on the prior 12 months. The permit shall set forth the emission calculation techniques which the site shall use to calculate site-wide actual criteria pollutant emissions.

(4) *Installation of controls for significant modifications and significant new installations.* (i) This paragraph applies to significant modifications and significant new installations. Significant

modifications for the purposes of this section are defined as changes to an existing process unit that result in an increase of the potential emissions of the process unit, after consideration of existing controls, of more than the significance levels listed in paragraph (e)(4)(ii) of this section. Significant new installations for the purposes of this section are defined as new process units with potential emissions before controls that exceed the significance levels listed in paragraph (e)(4)(ii) of this section. For purposes of this section, potential emissions means process unit point source emissions that would be generated by the process unit operating at its maximum capacity.

(ii) The significance levels for determining significant modifications and significant new installations are: 100 tons per year of carbon monoxide; 40 tons per year of nitrogen oxides; 40 tons per year of sulfur dioxide; 40 tons per year of volatile organic compounds; and 15 tons per year of PM_{10} .

(iii) For any significant modification or significant new installation, the permit shall require that the site install, at the process unit, emission controls, pollution prevention or other technology that represents good environmental engineering practice in the pharmaceutical or batch processing industry, based on the emission characteristics (such as flow, variability, pollutant properties) of the process unit.

(f) *Operation of control equipment.* The permit shall require that the site shall continue to operate the emissions control equipment that was previously subject to permit requirements at the time of issuance of a permit pursuant to this section. This equipment shall be operated in a manner which minimizes emissions, considering the technical and physical operational aspects of the equipment and associated processes. This operation shall include an operation and maintenance program based on manufacturers' specifications and good engineering practice.

(g) *Powerhouse conversion.* The permit shall require that the site convert the steam-generating powerhouse from burning coal as the primary fuel to burning natural gas as the primary fuel and either No. 2 fuel oil or propane as backup fuel.

(1) The new boilers shall be equipped with low nitrogen oxides technology.

(2) The site shall complete the powerhouse conversion (completion of the powerhouse conversion) no later than 30 months after the effective date of the permit.

(h) *Monitoring, recordkeeping and reporting.* (1) The permit shall set forth monitoring, recordkeeping, and reporting requirements sufficient to demonstrate compliance with the site-wide emissions caps. The monitoring, recordkeeping and reporting requirements shall be structured in a tiered system, such that the requirements become more stringent as the site's emissions approach the total emissions cap.

(2) At a minimum, the permit shall require that the site submit to the permitting authority semi-annual reports of the site-wide criteria pollutant emissions (expressed as a 12-month rolling total) for each month covered by the report. These reports shall include a calculation of the total emissions cap, as well as, the emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds and PM_{10} .

(3) Any reports required by the permit to be submitted on an annual or semi-annual basis shall contain a 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.

(4) Any records required by the permit shall be retained on site for at least five years.

(i) *Air quality analysis.* The permittee shall demonstrate, prior to permit issuance and on a periodic basis which shall be specified in the permit, that emissions from construction or operation of the site will not cause or contribute to air pollution in excess of any:

(1) Maximum allowable increase or maximum allowable concentration for any pollutant, pursuant to section 165 of the Act;

(2) National ambient air quality standard or;

(3) Other applicable emission standard or standard of performance under the Act.

(j) *Termination.* (1) The permit may be terminated as provided in this paragraph for reasons which shall include the following, as well as any other termination provisions specified in the permit:

(i) If the Administrator or the permitting authority determines that continuation of the permit is an imminent and substantial endangerment to public health or welfare, or the environment;

(ii) If the permittee knowingly falsifies emissions data;

(iii) If the permittee fails to implement the powerhouse conversion pursuant to paragraph (g) of this section;

(iv) If the permittee receives four consent orders or two judgments adverse to the site arising from non-compliance with this permit in a five year period that are deemed material by the Administrator or the permitting authority; or

(v) If the total emissions cap is exceeded.

(2) In the event of termination, the Administrator or the permitting authority shall provide the permittee with written notice of its intent to terminate the permit. Within 30 calendar days of the site's receipt of this notice, the site may take corrective action to remedy the cause of the termination. If this remedy, which may include a corrective action plan and schedule, is deemed acceptable by the Administrator or the permitting authority (whichever agency provided written notice of its intent to terminate the permit), the action to terminate the permit shall be withdrawn. Otherwise, the permit shall be terminated in accordance with procedures specified in the permit.

(3) Termination of the permit does not waive the site's obligation to complete any corrective actions relating to non-compliance under the permit.

(k) *Inspection and entry.* (1) Upon presentation of credentials and other documents as may be required by law, the site shall allow authorized representatives of the Administrator and the permitting authority to perform the following:

(i) Enter upon the site;

(ii) Have access to and copy, at reasonable times, any records that must

be kept under the conditions of the permit;

(iii) Have access at reasonable times to batch and other plant records needed to verify emissions.

(iv) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required under the permit;

(v) Sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring permit compliance or as otherwise authorized by the Act.

(2) No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit violation and assessment of civil penalties.

(3) Such site, facility and equipment access, and sampling and monitoring shall be subject to the site's safety and industrial hygiene procedures, and Food and Drug Administration Good Manufacturing Practice requirements (21 CFR parts 210 and 211) in force at the site.

(l) *Transfer of ownership.* The terms of the permit are transferable to a new owner upon sale of the site, in accordance with provisions specified by the permit.

(m) *Permit issuance.* The permitting authority shall provide for public participation prior to issuing a permit pursuant to this section. At a minimum, the permitting authority shall:

(1) Make available for public inspection, in at least one location in the area of the site, the information submitted by the permittee, the permitting authority's analysis of the effect on air quality including the preliminary determination, and a copy or summary of any other materials considered in making the preliminary determination;

(2) Notify the public, by advertisement in a newspaper of general circulation in the area of the site, of the application, the preliminary determination, and of the opportunity for comment at a public hearing as well as written public comment;

(3) Provide a 30-day period for submittal of public comment;

(4) Send a copy of the notice of public comment to the following: the Administrator, through the appropriate Regional Office; any other State or local air pollution control agencies, the chief executives of the city and county where the site is located; any State, Federal Land Manager, or other governing body whose lands may be affected by emissions from the site.

(5) Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the site, the control technology required, and other appropriate considerations.

(n) *Permit modifications.* The permit shall specify the conditions under which the permit may be modified by the permitting authority. The permitting authority shall modify the permit in accordance with the procedures set forth in this paragraph.

(1) *Permit modifications that require public participation.* For any change that does not meet the criteria for an administrative permit modification established in paragraph (n)(2)(i) of this section, the permitting authority shall provide an opportunity for public participation, consistent with the provisions of paragraph (m) of this section, prior to processing the permit modification.

(2) *Administrative permit modification.* (i) An administrative permit modification is a permit revision that:

(A) Corrects typographical errors;

(B) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the site;

(C) Requires more frequent monitoring, recordkeeping, or reporting by the permittee;

(D) Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the permitting authority.

(E) Updates the emission calculation methods specified in the permit, pro-

vided that the change does not also involve a change to any site-wide emissions cap.

(F) Changes the monitoring, recordkeeping or reporting requirements for equipment that has been shutdown or is no longer in service.

(G) Any other change that is stipulated in the permit as qualifying as an administrative permit modification, provided that the permit condition which includes such stipulation has already undergone public participation in accordance with paragraph (m) of this section.

(ii) An administrative permit modification may be made by the permitting authority consistent with the following procedures:

(A) The permitting authority shall take final action on any request for an administrative permit modification within 60 days from receipt of the request, and may incorporate such changes without providing notice to the public, provided that the permitting authority designates any such permit revisions as having been made pursuant to this paragraph.

(B) The permitting authority shall submit a copy of the revised permit to the Administrator.

(C) The site may implement the changes addressed in the request for an administrative permit modification immediately upon submittal of the request to the permitting authority.

(o) *Delegation of authority.* (1) The Administrator shall have the authority to delegate the responsibility to implement this section in accordance with the provisions of this paragraph.

(2) Where the Administrator delegates the responsibility for implementing this section to any agency other than a Regional Office of the Environmental Protection Agency, the following provisions shall apply:

(i) Where the delegate agency is not an air pollution control agency, it shall consult with the appropriate State and local air pollution control agency prior to making any determination under this section. Similarly, where the delegate agency does not have continuing responsibility for managing land use, it shall consult with the appropriate State and local agency primarily responsible for managing land use prior

§ 52.2460

to making any determination under this section.

(ii) The delegate agency shall send a copy of any public comment notice required under paragraph (n) of this section to the Administrator through the appropriate Regional Office.

[62 FR 52638, Oct. 8, 1997]

§ 52.2460 Small business stationary source technical and environmental compliance assistance program.

On November 10, 1992, the Executive Director of the Virginia Department of Air Pollution Control submitted a plan for the establishment and implementation of a Small Business Stationary Source Technical and Environmental Compliance Assistance Program as a State Implementation Plan revision, as required by title V of the Clean Air Act. EPA approved the Small Business Stationary Source Technical and Environmental Compliance Assistance Program on February 4, 1994, and made it a part of the Virginia SIP. As with all components of the SIP, Virginia must implement the program as submitted and approved by EPA.

[59 FR 5329, Feb. 4, 1994]

§ 52.2465 Original identification of plan section.

(a) This section identifies the original "Air Implementation Plan for the State of Virginia" and all revisions submitted by Virginia that were federally approved prior to March 1, 2000.

(b) The plan was officially submitted on January 30, 1972.

(c) The plan revisions listed below were submitted on the dates specified.

(1) Miscellaneous non-regulatory additions and errata to the plan submitted on May 4, 1972, by the Virginia Air Pollution Control Board.

(2) Revisions to control strategy for particulate matter, section IV, Rules 3 and 7 of the Virginia Air Pollution Control Regulations, and public availability of emission data regulation submitted June 30, 1972, by the Governor.

(3) Revisions to nitrogen dioxide control strategy regulations section 705.05 of the Virginia Air Pollution Control Regulations, submitted July 26, 1972, by the Governor.

40 CFR Ch. I (7-1-00 Edition)

(4) Miscellaneous non-regulatory additions to the plan submitted on February 14, 1973, by the Governor.

(5) Transportation control plan for National Capital AQCR submitted April 11, 1973, by the Governor.

(6) Amendments to the National Capital AQCR Transportation Control Plan submitted on May 30, 1973, by the Governor.

(7) Amendments to the National Capital AQCR Transportation Control Plan submitted on July 11, 1973, by the Governor.

(8) Amendments to the National Capital AQCR Transportation Control Plan submitted on July 9, 1973, by the Governor.

(9) Miscellaneous non-regulatory additions to the plan submitted on August 10, 1973, by the Governor.

(10) Revision to plan setting forth control strategy for particulate matter in the State Capital AQCR submitted August 20, 1973, by the Governor.

(11) Indirect Source Review plan was submitted December 6, 1973, by the State Air Pollution Control Board.

(12) Revisions to air quality standards for sulfur oxides section 3.703 of the Commonwealth of Virginia's Regulations for the Control and Abatement of Air Pollution, submitted February 12, 1974, by the Virginia Air Pollution Control Board.

(13) AQMA designations were submitted on May 7, 1974 by the Governor of the State of Virginia.

(14) Revision deleting preface to the State air pollution control regulations submitted May 24, 1974 by the Virginia Air Pollution Control Board.

(15) An amendment to Section 2.05(a) (Variances) former Section 2.01(f) of the Commonwealth of Virginia Regulations for the Control and Abatement to Air Pollution submitted on August 14, 1975 by the Commonwealth Secretary of Commerce and Resources.

(16) A variance to allow the operation of the Alexandria City Incinerator in excess of the federally approved particulate emission limitations for incinerators until December 31, 1979, by the Commonwealth Secretary of Commerce and Resources.

(17) Amendment to section 7.02 (Episode Determination) [former sections 6.01(b), 6.701(b)] of the Commonwealth

Attachment D

State Rule 9 VAC 5 Chapter 190

COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD

9 VAC 5 CHAPTER 190.
VARIANCE FOR MERCK STONEWALL PLANT.

9 VAC 5-190-10.	Applicability and designation of affected facility.
9 VAC 5-190-20.	Definitions.
9 VAC 5-190-30.	Site-wide emissions caps.
9 VAC 5-190-40.	Major New Source Review permitting and registration requirements.
9 VAC 5-190-50.	Other regulatory requirements.
9 VAC 5-190-60.	Certain emissions standards, permitting, and other requirements.
9 VAC 5-190-70.	Federal operating permits.
9 VAC 5-190-80.	PSD permit issuance and modifications.
9 VAC 5-190-90.	Transfer of ownership.
9 VAC 5-190-100.	Applicability of future regulation amendments.
9 VAC 5-190-110.	Documents incorporated by reference.

9 VAC 5-190-10. Applicability and designation of affected facility.

The affected facility to which the provisions of this chapter apply is the Merck Stonewall Plant.

9 VAC 5-190-20. Definitions.

A. For the purpose of this chapter or any associated orders issued by the board, the words or terms shall have the meaning given them in subsection C of this section.

B. As used in this chapter, all terms not defined herein shall have the meaning given them in 9 VAC 5 Chapter 10 (9 VAC 5-10-10 et seq.), unless otherwise required by context.

C. Terms Defined.

"Code" means the Code of Virginia.

"DEQ" means the Department of Environmental Quality, an agency of the Commonwealth described in § 10.1-1183 of the Code.

"Emissions caps" means the site-wide limitations on the rate of emissions of criteria pollutants established and identified as emissions caps in 9 VAC 5-190-30.

"EPA" means The United States Environmental Protection Agency.

"Merck" refers to Merck & Co., Inc., a New Jersey corporation authorized to conduct business in Virginia and the owner/operator of a plant (the Stonewall Plant), located at Route 340 South, in Elkton, Virginia.

"Order" means the order granting this variance.

"PM₁₀" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the applicable reference method or an equivalent method.

"PSD permit" means the Prevention of Significant Deterioration permit issued to Merck and Co., Inc., Stonewall Plant, pursuant to the Order.

"Regional Director" means the Director of the Valley Regional Office of the Department of Environmental Quality located in Harrisonburg, Virginia.

"SAPCB Regulations" means 9 VAC 5 Chapters 10 through 80.

"Site" and "Facility" and "Stonewall Plant" mean the contiguous property at Route 340 South, Elkton, Virginia, under common control by Merck & Co., Inc., and its successors in ownership.

"VAC" or "9 VAC" means Title 9 of the Virginia Administrative Code. This title comprises the environmental regulations for the Commonwealth of Virginia, including the regulations of the State Air Pollution Control Board.

"Variance" means this chapter.

9 VAC 5-190-30. Site-wide emissions caps.

A. On or after the date that Merck provides written notification to the DEQ that it accepts and will operate under the provisions of this chapter and Sections 1, 3 and 4 of the PSD permit, no owner or other person shall cause or permit to be discharged into the atmosphere from the affected facility any emissions in excess of the following site-wide emissions caps:

The total criteria pollutant emissions cap (total emissions cap) shall be 1503 tons per year (tpy). The criteria pollutants included in the cap are as follows: ozone (using volatile organic compounds (VOCs) as surrogate), sulfur dioxide (SO₂), particulate matter (PM₁₀), carbon monoxide (CO), and oxides of nitrogen (NO_x). The emissions caps for individual criteria pollutants shall be as follows:

1. For SO₂, the emissions cap shall be 719 tpy.
2. For PM₁₀, the emissions cap shall be 42 tpy.

3. For NO_x, the emissions cap shall be 291 tpy.

B. On or after the earlier of (i) the completion date of the powerhouse conversion project if Merck has provided the written notification pursuant to subsection A of this section or (ii) the first day of the month 12 months after completion of the powerhouse conversion project, no owner or other person shall cause or permit to be discharged into the atmosphere from the affected facility any emissions in excess of the following site-wide emissions caps:

The total criteria pollutant emissions cap (total emissions cap) shall be 1202 tons per year (tpy). The criteria pollutants included in the cap are as follows: ozone (using volatile organic compounds (VOCs) as surrogate), sulfur dioxide (SO₂), particulate matter (PM₁₀), carbon monoxide (CO), and oxides of nitrogen (NO_x). The emissions caps for individual criteria pollutants shall be as follows:

1. For SO₂, the emissions cap shall be 539 tpy.
2. For PM₁₀, the emissions cap shall be 42 tpy.
3. For NO_x, the emissions cap shall be 262 tpy.

C. Upon completion of the stack test for the powerhouse required by Table 4.2 of the PSD permit, the emissions cap for PM₁₀ prescribed in subsection B of this section may be adjusted by the DEQ based on the results of the stack test and in accordance with Section 4.3.2 of the PSD permit.

9 VAC 5-190-40. Major New Source Review permitting and registration requirements.

A. This section applies in lieu of regulatory requirements for the following pollutants: ozone (using volatile organic compounds as surrogate), sulfur dioxide, particulate matter, particulate matter (PM₁₀), carbon monoxide, and oxides of nitrogen. This section is not intended to provide an alternate method of compliance for any future regulatory requirements designed to address particulate matter with aerodynamic diameter less than or equal to a nominal 2.5 microns (PM_{2.5}).

B. For the pollutants cited in subsection A of this section, compliance with this chapter and the PSD permit shall constitute compliance with the following provisions of the SAPCB regulations:

9 VAC 5-20-160.

9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.).

9 VAC 5 Chapter 80, Part II, Article 8 (9 VAC 5-80-1700 et seq.).

9 VAC 5 Chapter 80, Part II, Article 9 (9 VAC 5-80-2000 et seq.).

9 VAC 5-190-50. Other regulatory requirements.

A. This section applies in lieu of regulatory requirements for all pollutants except: lead, particulate matter regulated as PM_{2.5}, or any criteria pollutant which is listed in the definition of "Significant" in 9 VAC 5-80-1710 C by an amendment adopted after November 15, 1997.

B. For the pollutants cited in subsection A of this section, compliance with this chapter and the PSD permit shall constitute compliance with the following provisions of the SAPCB regulations:

1. Pertaining to minor new source review permitting and registration:

9 VAC 5-20-160.

9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.).

9 VAC 5-80-10.

9 VAC 5-80-11.

2. Pertaining to standards of performance for stationary sources:

9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.).

3. Pertaining to the Virginia Air Toxics Program requirements:

9 VAC 5 Chapter 40, Part II, Article 3 (9 VAC 5-40-160 et seq.).

9 VAC 5 Chapter 50, Part II, Article 3 (9 VAC 5-50-160 et seq.).

4. Pertaining to notification, records, and reporting requirements:

9 VAC 5-40-50.

9 VAC 5-50-50.

5. Pertaining to emission standards for general process operations, incinerators, and fuel burning equipment:

9 VAC 5-40-22.

9 VAC 5 Chapter 40, Part II, Article 4 (9 VAC 5-40-240 et seq.).

9 VAC 5 Chapter 40, Part II, Article 7 (9 VAC 5-40-730 et seq.).

9 VAC 5 Chapter 40, Part II, Article 8 (9 VAC 5-40-880 et seq.).

6. Pertaining to compliance and monitoring requirements:

9 VAC 5-40-20.

9 VAC 5-40-21.

9 VAC 5-40-40.

9 VAC 5-40-41.

9 VAC 5-50-40.

9 VAC 5-190-60. Certain emissions standards, permitting, and other requirements.

A. This section applies in lieu of regulatory requirements for all pollutants except: lead, particulate matter regulated as PM_{2.5}, or any criteria pollutant which is listed in the definition of "Significant" in 9 VAC 5-80-1710 C by an amendment adopted after November 15, 1997.

B. For the pollutants cited in subsection A of this section, compliance with this chapter and the PSD permit shall constitute compliance with the following provisions of the SAPCB regulations:

1. Pertaining to standards of performance for new stationary sources:

a. For the natural gas-fired boilers installed in accordance with Section 2.1 of the PSD permit, compliance with that permit shall constitute compliance with all requirements of 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.).

b. For any new and existing bulk volatile organic liquid storage vessels (including petroleum liquid storage vessels) that would otherwise only be subject to notification, recordkeeping and reporting requirements, compliance with the PSD permit shall constitute compliance with 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.).

2. Pertaining to control programs:

9 VAC 5-20-170, except for visible emissions and odor.

3. Pertaining to facility and control equipment maintenance or malfunction, except for visible emissions and odor:

9 VAC 5-20-180.

9 VAC 5-50-20.

4. Pertaining to compliance, monitoring, and performance testing:

9 VAC 5-40-30, all except 9 VAC 5-40-30 B.

9 VAC 5-50-30, all except 9 VAC 5-50-30 B.

C. Should any regulation of the board become applicable to the Stonewall Plant after November 15, 1997 that establishes requirements for any of the criteria pollutants listed in 9 VAC 5-190-30, Merck may choose to comply directly with the requirements of these new regulations or to make commensurate reductions in applicable emission caps in accordance with Section 1.2.2 of the PSD permit.

9 VAC 5-190-70. Federal operating permits.

A. Merck shall be subject to the provisions of 9 VAC 5 Chapter 80, Part II, Article 1 (9 VAC 5-80-50 et seq.) except as follows:

1. Compliance with monitoring requirements specified in Section 4 of the PSD permit shall constitute compliance with any monitoring requirements in 9 VAC 5-80-110 E that would be applicable to provisions of the PSD permit.

2. Compliance with recordkeeping and reporting requirements specified in Section 4 of the PSD permit shall constitute compliance with any recordkeeping and reporting requirements in 9 VAC 5-80-110 F 1 and 9 VAC 5-80-110 F 2 a that would be applicable to the PSD permit.

3. The PSD permit and documentation submitted in obtaining the PSD permit are deemed sufficient for the permit application requirements pertaining to the applicable requirements in the PSD permit. For applicable requirements outside of the PSD permit, Merck shall submit information on standard forms provided by DEQ, or in accordance with instructions accompanying those forms, or as otherwise acceptable to DEQ.

4. Merck's initial federal operating permit application need not list equipment, emissions or applicable requirements as of the time of application, but rather as of the conditions representative of the PSD permit.

5. Merck's initial federal operating permit application compliance certification need not be based on applicable requirements as of the time of application, but rather as of the conditions representative of the PSD permit, expressed as a future commitment to meet those requirements if they are not in effect at the time of application.

6. If all of the provisions of the PSD permit have not become effective by January 10, 2000, Merck shall submit a revised application for a federal operating permit which shall list all equipment, emissions and applicable requirements as they exist at that time, and shall make the applicable compliance certification in accordance with those current requirements.

B. Merck shall be subject to the provisions of 9 VAC 5 Chapter 80, Part II, Article 2 (9 VAC 5-80-310 et seq.) and shall provide DEQ with emission inventory update information sufficient to allow DEQ to assess permit program fees.

9 VAC 5-190-80. PSD permit issuance and modifications.

A. DEQ shall issue and modify the PSD permit in accordance with the procedures set forth in subsections B through D of this section. Public participation activities associated with issuance of the PSD permit which were conducted prior to November 15, 1997 shall be considered applicable toward meeting the requirements of this section. DEQ shall specify within the PSD permit the conditions under which the PSD permit may be modified.

B. DEQ shall provide for public participation prior to issuing the PSD permit. At a minimum, DEQ shall:

1. Make available for public inspection in at least one location in the area of the site the information submitted by the permittee, the DEQ's analysis of the effect on air quality including the preliminary determination, and a copy or summary of any other materials considered in making the preliminary determination;

2. Notify the public by advertisement in a newspaper of general circulation in the area of the site of the application, the preliminary determination, and of the opportunity for comment at a public hearing as well as written public comment;

3. Provide a 30-day period for submittal of public comment;

4. Send a copy of the notice of public comment to the following: the EPA Administrator, through the appropriate Regional Office; any other State or local air pollution control agencies, the chief executives of the city and county where the site is located; any State, Federal Land Manager, or other governing body whose lands may be affected by emissions from the site; and

5. Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the site, the control technology required, and other appropriate considerations.

C. For any change that does not meet the criteria for an administrative permit modification established in subdivision D 1 of this section, DEQ shall provide an opportunity for public participation consistent with the provisions of subsection B of this

section prior to processing the permit modification.

D. The following provisions govern administrative permit modifications:

1. An administrative permit modification is a permit revision that:
 - a. Corrects typographical errors;
 - b. Identifies a change in the name, address, or phone number of any person identified in the PSD permit, or provides a similar minor administrative change at the site;
 - c. Requires more frequent monitoring, recordkeeping, or reporting by the permittee;
 - d. Allows for a change in ownership or operational control of a source where DEQ determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to DEQ.
 - e. Updates the emission calculation methods specified in the permit, provided that the change does not also involve a change to any site-wide emissions cap.
 - f. Changes the monitoring, recordkeeping, or reporting requirements for equipment that has been shutdown or is no longer in service; or
 - g. Any other change that is stipulated in the PSD permit as qualifying as an administrative permit modification, provided that the permit condition which includes such stipulation has already undergone public participation in accordance with subsection B of this section.
2. DEQ may make an administrative permit modification consistent with the following procedures:
 - a. DEQ shall take final action on any request for an administrative permit modification within 60 days from receipt of the request, and may incorporate such changes without providing notice to the public, provided that DEQ designates any such permit revisions as having been made pursuant to this Paragraph.
 - b. DEQ shall submit a copy of the revised permit to the EPA Administrator.
 - c. Merck may implement the changes addressed in the request for an administrative permit modification immediately upon submittal of the request to

DEQ.

9 VAC 5-190-90. Transfer of ownership.

A. The terms of this chapter and the PSD permit are transferable to a new owner upon sale of the site in accordance with provisions specified by the PSD permit.

B. In the case of a transfer of ownership of the site, the new owner shall comply with this chapter and the PSD permit. The new owner shall notify the DEQ of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9 VAC 5-190-80 C.

C. In the case of a name change of the site, the owner shall comply with this chapter and the PSD permit. The owner shall notify the DEQ of the change in source name within 30 days of the name change and shall comply with the requirements of 9 VAC 5-190-80 C.

9 VAC 5-190-100. Applicability of future regulation amendments.

Subsequent amendments to the SAPCB regulations to which this chapter applies shall not apply to the Stonewall Plant unless and until the board amends this chapter to specifically address the applicability of the regulatory amendments to the facility. In any action to amend this chapter, the board shall, to the maximum extent possible, preserve the operating flexibility and regulatory simplification achieved by the Merck XL project and justified by the superior environmental performance it provides.

9 VAC 5-190-110. Documents incorporated by reference.

A. The United States Environmental Protection Agency Regulations on Approval and Promulgation of Implementation Plans (40 CFR Part 52) and Standards of Performance for New Stationary Sources (40 CFR Part 60), as indicated in subsection B of this section, are incorporated by reference into this chapter as amended by the word or phrase substitutions given in subsection C of this section.

B. The following documents (October 8, 1997, 62 FR 52622) from the United States Environmental Protection Agency are incorporated herein by reference:

1. 40 CFR 52.2454: Prevention of significant deterioration of air quality for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.
2. 40 CFR 60.1: Applicability.
3. 40 CFR 60.49b: Reporting and recordkeeping requirements.
4. 40 CFR 60.112b: Standard for volatile organic compounds (VOC).

C. Word or phrase substitutions.

In all the standards designated in subsection B of this section, substitute:

1. "Board" for "Administrator".
2. "Board" for "U.S. Environmental Protection Agency".

HISTORICAL NOTES:

Effective Date: November 15, 1997

Promulgated: November 15, 1997

Amended: January 1, 1998

I:\OPD\REG\VAC\CH190-MRK

CERTIFIED MAIL NO. Z 296-438-582
RETURN RECEIPT REQUESTED

Merck & Co., Inc.
P.O. Box 7
Elkton VA 22827
Tel 540 298 1211

DEQ-VALLEY

JAN 18 1999

January 8, 1999

TO: _____
FILE: _____



Ms. Sharon Foley
Virginia Department of Environmental Quality
Valley Regional Office
4411 Early Road
P. O. Box 1129
Harrisonburg, VA 22801-1129

RE: Registration No. 20524, Merck & Co., Inc. (Stonewall Plant), Submission of Revisions to the Complete Title V Operating Permit Application to Address the National Emission Standards for Pharmaceutical Production (Pharmaceutical MACT)

Dear Ms. Foley:

As you requested by your letter dated September 30, 1998 we are hereby revising applicable sections of our Title V operating permit application to address the subject NESHAP requirements (see Attachment I summarizing the revised pages). As indicated in your letter the Merck Stonewall Plant may be subject to the Pharmaceutical MACT, making it an applicable requirement under the Title V operating permit program. For "existing sources" this new rule establishes September 21, 2001 as the date when the source must be in full compliance with the applicable standards. Therefore, unlike other sources which may require immediate compliance upon becoming newly subject to an existing MACT standard, the Pharmaceutical MACT carries this future compliance date for existing sources subject to the rule. The enclosed amended application has been prepared to reflect this distinction. Our site is currently reviewing this new rule in light of our current operations to make applicability determinations and plan for future compliance. We understand that in order to construct and operate a new major affected source at our site, we may need to obtain pre-construction approval and revise our Title V permit application for appropriate Title V permit action. The form and substance of this pre-construction approval at Stonewall is the subject of ongoing discussions between Merck, EPA and DEQ in light of the unique circumstances associated with our Project XL PSD permit.

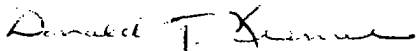
We have completed these revisions to our Title V permit application as an existing source to include the sections of the Pharmaceutical MACT which may become applicable to our operations. Due to the complexity of this new rule, the complexity of our batch processes, and the significant time remaining until the stipulated compliance date, we anticipate resolving specific applicability requirements for all our affected processes in the Precompliance Report, due on March 21, 2001. We believe the information provided in these revisions to the application is sufficient to enable the development of appropriate Title V permit "place-holder" language detailing future compliance requirements. We believe this approach is consistent with the manner in which USEPA is incorporating the Pharmaceutical MACT requirements into Title V application for our Barceloneta Plant in Puerto Rico. We also believe it is consistent with the accuracy and completeness determinations to which we are able to certify at this time.

**LETTER, MS. SHARON FOLEY
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY - VRO
TITLE V OPERATING PERMIT APPLICATION REVISIONS
PAGE 2**

We would be glad to meet with you to discuss the information provided in these revisions to the application and discuss the placeholder language which EPA has agreed to use in the Title V permit for our Barceloneta facility at your convenience.

Should you have any questions, please contact either Tedd Jett at (540) 298-4869 or Scott Alexander at (540) 298-4110.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald T. Kremer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Donald T. Kremer
Plant Manager

Attachment I

**Summary of Title V Operating Permit Revisions
Merck & Co., Inc (Stonewall Plant)**

Form Title	Remove Pages	Insert Pages
Contents and Documentation Certification	Page (i)	Page (i)
General Information	Page 1	Page 1
Stack/Fugitive Emissions Parameters and Vent/Exhaust Data	Page 9	Page 9
Air Pollution Control Equipment	Page 10	Page 10
Annual Air Pollutant Emissions	Page 12	Page 12
Applicable Requirements	Page 1 of 3 (Page 14, Sheet Nos. 1 - 3)	Page 1 of 3 (Page 14, Sheet Nos. 1 - 4)
Applicable Requirements	Page 2 of 3 (Page 15, Sheet Nos. 1 - 3)	Page 2 of 3 (Page 15, Sheet Nos. 1 - 3)
Applicable Requirements	Page 3 of 3 (Page 16, Sheet Nos. 1 - 3)	Page 3 of 3 (Page 16, Sheet Nos. 1 - 4)
Attachment I, List of Reference Documents	Attachment I	Attachment I

STONEWALL
JAN 10
TO:
FUEL

CHECK ALL FORMS THAT APPLY AND LIST ALL ATTACHED DOCUMENTS.
For each page, indicate in the blank the quantity of copies attached.

- ___ INSIGNIFICANT EMISSION UNITS/ACTIVITIES, page 18
 ___ COMPLIANCE CERTIFICATION, Page 1 of 3, page 19
 ___ COMPLIANCE CERTIFICATION, Page 2 of 3, page 20
 ___ COMPLIANCE CERTIFICATION, Page 3 of 3, page 21

Attachment I, List of Referenced Documents

DEO-VALLEY

13 1999

TO: _____
FROM: _____

INSTRUCTIONS FOR CHECKING THE CONTENT LIST

Under the section on page i entitled "General Information," indicate to the left of each page title the number of sheets of the Form page which have been included in the application package being submitted. Since each page of Form 805 may not apply to your particular facility, each sheet of the submitted application package needs to be numbered, in the lower right corner. Attachments for the application package are to be listed in the area provided under "General Information."

One of the attachments listed in the "General Information" section on page i is a "suggested draft permit." This is not required for initial Title V permits; it is optional. However, the Regulations require a suggested draft permit as part of the application package for minor permit modifications (see 9 VAC 5-80-210.C.2.), group processing of minor permit modifications (see § 9 VAC 5-80-220.B.2.), and significant permit modifications (see 9 VAC 5-80-230.B.2.). For the permit modifications indicated, suggested draft language is necessary only to illustrate the change sought in the permit language. There is no need to submit an entire new permit application or entire draft permit when changing just a few provisions.

In the case of applications covering large facilities, it is permissible to fill out entire forms for individual process areas as well as to list all process areas in order on one form with multiple page copies. This is not to be confused with making separate applications covering a single facility.

Note: while the applicable requirements indicated in this Application will be used to assist in permit preparation, the application will not be incorporated by reference into the resulting permit.

DOCUMENT CERTIFICATION FORM

INSTRUCTIONS FOR USE

The Regulations require that certain documents submitted to the Board or the Department be signed by a responsible official with certification that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. Documents covered by this requirement include, but are not limited to, permit applications, registrations, emission statements, emission testing and monitoring reports, or compliance certifications. The certification should include the full name, title, signature, date of signature, and telephone number of the responsible official. A responsible official is defined as follows (Regulations, 9 VAC 5-80-60.C.):

1. For a business entity, such as a corporation, association or cooperative, a responsible official is either:
 - (a) the president, secretary, treasurer, or a vice-president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or
 - (b) a duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.
2. For a partnership or sole proprietorship, a responsible official is a general partner or the proprietor, respectively.
3. For a municipality, state, federal, or other public agency, a responsible official is either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

The certification, text of which is specified in the Regulations (9 VAC 5-80-80.G.2.), is required with all application submittals. Other information submitted in the course of making an application complete is also subject to certification.

PLEASE READ CAREFULLY

This is an application form for a federal air operating permit pursuant to Rule 8-5 (cited as Chapter 80, Part II, Article 1, 9 VAC 5-80-50 et seq.) of the Virginia Regulations for the Control and Abatement of Air Pollution (hereinafter "Regulations"). The staff of the Department of Environmental Quality (DEQ) reviews all permit applications to determine compliance with the Regulations. The evaluation of a permit application is a detailed and lengthy process, so your application should be submitted in accordance with the established application schedule. Once an application is determined to be complete, you are covered by the "application shield," provided the application was received on time. An "application shield" protects the applicant from enforcement action for failure to have an operating permit, until the Department takes final action on the permit application (see Regulations, 9 VAC 5-80-80.F.) (The application shield does not allow construction of a new or modified emission unit in the absence of a permit to construct under 9 VAC 5-80-10, 5-80-20, or 5-80-30, formerly § 120-08-01, -02, or -03 of the Regulations.) To expedite the permit application and review process, please supply the information requested on the attached forms accurately and completely.

A complete application must include:

1. **FORM 805** Air permit application form (Form 805), including Document Certification Form
2. **MAP** Source location map.
3. **CONFIDENTIAL INFORMATION JUSTIFICATION** Justification for claiming confidentiality of any information in the application or attachments, based on the criteria given on page iv of this form
4. **CALCULATIONS** Sample calculations of emission estimates, and justification of control technology to demonstrate compliance with applicable requirements.
5. **ALTERNATIVE SCENARIOS** If desired, furnish information separately (or on duplicate forms) to explain any alternative operating scenarios for which you are applying. An alternative operating scenario means operating under different applicable requirements from normal operation. For example, printing with water-based inks, without emission controls, might be the normal operation in a printing plant, but printing with oil-based inks would involve the use of emission controls under applicable requirements. (See Regulations, 9 VAC 5-80-90.H. and 5-80-110.J.) Additional guidance is given in the instructions for Page 2, "General Information, Continued" of this Form.
6. **PROCESS DESCRIPTION** Give SIC code and narrative description of process; provide a process flow diagram for complex, sequential processes.
7. **OTHER DATA** Site plans, building dimensions, stack locations if required.

The initial determination of application completeness is based upon "administrative completeness." This means that the appropriate sections of the form have been filled in and submitted, along with required attachments. During the evaluation of the application, questions about its completeness or correctness may arise based on technical considerations. The reviewer may ask the applicant for further information even after the application is deemed complete. Failure to respond to a request for more information may result in loss of the application shield described above (Regulations, 9 VAC 5-80-80.F.6.).

INSTRUCTIONS ARE PROVIDED FOR EACH PAGE OF THE FORM. If you require assistance in completing this application, please contact the regional office for your area. You may contact the regional office to make sure you are using the most up-to-date version of the form; but prior versions, properly updated, are acceptable. The completed application form should be submitted to the regional office. There is no need to copy or return instruction pages.

**IT IS A VIOLATION OF STATE REGULATIONS TO OPERATE A SOURCE OF AIR EMISSIONS
WITHOUT OBTAINING AN OPERATING PERMIT, IF SUCH A PERMIT IS REQUIRED**

[Note: This form is available in WordPerfect 5.1™ format.]

CONFIDENTIAL INFORMATION

Under the Virginia Freedom of Information Act (*Virginia Code* Chapter 21, §§ 2.1-340 *et seq.*), all information submitted by the applicant to the Department is available to anyone requesting the information unless the information is considered confidential (proprietary).

Confidential information. To be exempt from disclosure under the Freedom of Information Act, the material must be accepted by the Department as confidential in nature. Confidential information must meet the following criteria:

1. Information for which the company has been taking and will continue to take measures to protect the confidentiality;
2. Information that has not been and is not presently reasonably obtainable without the company's consent by private citizens or other firms through legitimate means other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding;
3. Information which is not publicly available from sources other than the company; and
4. Information the disclosure of which would cause substantial harm to the company.

(Regulations, 9 VAC 5-20-150, formerly § 120-02-30.)

Note: it may be necessary for the Department or the source to share confidential information with EPA. Where the Department provides such information, it will make a claim of confidentiality; where the source provides the information, the source will claim confidentiality. The information will be safeguarded by EPA as well as the Department in accordance with Title 40, Code of Federal Regulations, Parts 2 and 70 (see Part 70, § 70.4(j)(1)).

Confidential information includes, but is not limited to, trade secrets.

Trade secrets. A "trade secret" is defined as information, including but not limited to, a formula, pattern, compilation, program, device, method, technique, or process, that:

1. Derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and
2. Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(See *Virginia Code* §§ 59.1-336 *et seq.*)

Distinction. The distinction between confidential information and a trade secret is that disclosure of a trade secret can give rise to a private legal action and remedy based on the value of the secret, whereas disclosure of confidential information does not. It is possible, however, for the same item of information to qualify as both confidential and a trade secret. Therefore, if you wish to keep certain information confidential, please indicate this information as such by marking the pages confidential and submitting, as an attachment, the specific justification for each case based on the criteria. Please note that emissions information cannot be marked as confidential. Also, prepare and submit a copy of the appropriate confidential pages with confidential information removed, so that the Department's public records indicate the fact that some confidential information was submitted.

The Department staff will review the material to determine its confidentiality and inform you in writing of the determination.

If you have any questions, please contact the DEQ regional office to which the application is submitted.

DEQ-VALLEY

JAN 13 1999

TO: _____
FILE: _____

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V AIR OPERATING PERMIT APPLICATION GENERAL INFORMATION:

DATE	REGISTRATION NUMBER	AIRS IDENTIFICATION NUMBER
April 30, 1998 Revised Date 1/8/99	20524	
TITLE V PERMIT ACTION SOUGHT (Note: see instructions for this page): ☒ INITIAL OPERATING PERMIT ☐ RENEWAL OF OPERATING PERMIT (current permit expiration date: _____) ☐ SIGNIFICANT PERMIT MODIFICATION -- describe: _____ ☐ MINOR PERMIT MODIFICATION -- describe: _____ ☐ Administrative Permit Amendment (Includes change of address; for ownership change, please contact the appropriate DEQ Regional Office for information needed.)		
SOURCE/FACILITY NAME: Merck & Co., Inc. (Stonewall Plant)		PARENT COMPANY, IF ANY: Merck & Co., Inc.
OWNER AND MAILING ADDRESS: Merck & Co., Inc. One Merck Drive PO Box 100 Whitehouse Station, NJ 08889-0100		
OPERATOR AND MAILING ADDRESS, if different from owner: Merck & Co., Inc. Highway 340 South P. O. Box 7 Elkton, VA 22827-0007		
TELEPHONE NUMBER: 540-298-1211	UNDERLINE OR CIRCLE THE NAMES OF OTHER STATES AND/OR THE DISTRICT OF COLUMBIA WITHIN 50 MILES OF YOUR FACILITY (if any): WV PA MD DC DE NC TN KY	FEDERAL TAX ID NUMBER: 22-1109110
EXACT SOURCE LOCATION - INCLUDE NAME OF CITY (COUNTY) AND FULL STREET ADDRESS OR DIRECTIONS: 4 miles South of Elkton on Virginia Route 340 - Rockingham County		
PERSON TO CONTACT ON AIR POLLUTION MATTERS - NAME AND TITLE: Mr. Tedd H. Jett, P.E. Manager, Environmental Engineering		PHONE NUMBER: 540-298-4869 FAX NUMBER, IF AVAILABLE: INTERNET E-MAIL, IF AVAILABLE:

IS THE FACILITY TO BE PERMITTED AS A PORTABLE PLANT? YES ___ NO ☒ IF YES, ATTACH FIRST LOCATION FOR ITS OPERATION.

DESCRIBE THE PRODUCTS MANUFACTURED AND/OR SERVICES PERFORMED AT THIS FACILITY (use attachments if necessary)

Manufactures various pharmaceutical intermediates and products.

LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE(S) FOR THE FACILITY:

2 8 3 3

2 8 3 4

JAN 18 1999

FILE:

GENERAL INFORMATION INSTRUCTIONS

REGISTRATION NUMBER - Provide the official state identification number assigned to your facility by the Department.

AIRS IDENTIFICATION NUMBER - Provide, if available, the AIRS identification number assigned to your facility by the Department. The AIRS identification number consists of the State 2-digit identification (i.e., 51 for Virginia), 3-digit FIPS County Code and the 4- or 5-digit Plant Number.

PERMIT ACTION SOUGHT - check the appropriate box(es). **NOTE:** The Title V permit program, and these forms, involve a detailed delineation of currently applicable emission limits and other requirements. Any request to increase emission limits, or relax other requirements, must be made as an application for a permit to modify pursuant to 9 VAC 5-80-10, 5-80-20, or 5-80-30 (formerly §§ 120-08-01, 120-08-02, or 120-08-03) of the Regulations. In certifying to the application on page i, the signer certifies knowledge of this requirement and entries on this page which accord with it.

1. "INITIAL OPERATING PERMIT" means that you are applying for an operating permit.
***Note:** If you are applying for a permit to construct or modify a facility, as opposed to operating it, please contact the appropriate DEQ regional office and ask for a copy of Form 7.
2. "RENEWAL OF OPERATING PERMIT" means that you have an operating permit which will expire in approximately six months and wish to renew it.
3. "SIGNIFICANT PERMIT MODIFICATION" refers to a significant change in an existing permit. See 9 VAC 5-80-190 and 5-80-230 of the Regulations. Briefly describe the modification, using additional sheets if necessary.
4. "MINOR PERMIT MODIFICATION" refers to a minor change in an existing permit. See 9 VAC 5-80-190 and 5-80-210 of the Regulations. Briefly describe the modification, using additional sheets if necessary.
5. "Administrative Permit Amendment" refers to a correction of minor errors, change of address/ownership, requirements for more frequent monitoring or reporting, or other matters; see 9 VAC 5-80-200.

COMPANY AND DIVISION NAME - list the official company name and the division if applicable.

PARENT COMPANY - give the name of the parent company, if there is one.

OWNER AND MAILING ADDRESS - list the mailing address of the owner of the facility on this application.

OPERATOR AND MAILING ADDRESS, if different from owner - fill in if the facility is operated by a person or entity other than the owner.

TELEPHONE NUMBER - list the phone number at the facility.

UNDERLINE OR CIRCLE THE NAMES OF OTHER STATES WITHIN 50 MILES - the Department is required to notify states within 50 miles of a source when a permit is to be written for the source (see 9 VAC 5-80-60.C and 5-80-290.B. of the Regulations). This information will enable the Department to complete its work. Please underline or circle the name(s) of the state(s) and/or District of Columbia within 50 miles of your facility.

FEDERAL TAX IDENTIFICATION NUMBER - indicate the company's federal tax identification number here.

EXACT SOURCE LOCATION - give the facility location indicating street address or directions to the facility. Provide either or both of the following: a map pinpointing the exact source location and showing where the plant property boundaries are; a plant layout with dimensions of all buildings (height, length, width) at the facility indicating all stack and emission point locations by stack or reference number. The DEQ regional office may waive requirements for a map and/or plant layout if sufficient documentation already exists in agency files.

PERSON TO CONTACT ON AIR POLLUTION MATTERS - provide the name and title of the person to contact on air pollution matters.

PHONE NUMBER - phone number of the contact person.

FAX PHONE NUMBER - Contact person's fax machine, if available. (Note: **shaded boxes are optional.** See Below.)

INTERNET E-MAIL - contact person's electronic mail address, if available.

IS THE FACILITY TO BE PERMITTED AS A PORTABLE PLANT? - indicate whether the facility can be moved from the current (or proposed) location at a future date. State the first location of the facility; to the extent possible, add anticipated locations within the coming five years. Also indicate when an existing air permit was issued, if applicable.

DESCRIBE THE PRODUCTS MANUFACTURED/SERVICED - indicate the type of business in which this facility is engaged, listing products produced and/or services performed. Use attachments if necessary.

SIC CODE(S) - provide all 4-digit Standard Industrial Classification Code(s) for this facility and for the process(es). Indicate the primary SIC code in the first set of blocks. Use attachments if necessary for additional SIC codes.

NOTES ON SHADING THROUGHOUT THE FORM: A shaded column means that filling in the information is optional with the applicant, but it may be beneficial to complete the column to extend the coverage of the permit shield. A shaded heading alone, without the column, means that the information is sometimes optional and sometimes required; read the instructions to determine which. The optional pages all have shaded titles and are identified as "Optional Page 1," etc.

JAN 18 1997

NO.
FILE

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	---	------------------------

[illegible]

NOTE: The information requested on this page is addressed by the Project XL PSD Permit and various supporting documents listed in Attachment I. For existing sources compliance with NESHA's Part 260 for Pharmaceutical Production (40 CFR 63, Subpart GGG) is required by September 21, 2001. Specific information needed to support compliance with 40 CFR 63 Subpart GGG will be available with the Precompliance Report due March 21, 2001.

STACK/FUGITIVE EMISSIONS PARAMETERS AND VENT/EXHAUST DATA INSTRUCTIONS

UNIT REF. NO. - continue the unique assigned reference number(s) from previous pages.

FUGITIVE EMISSIONS - Indicate whether there are any fugitive emissions associated with the units described on this page by writing "yes" or "no." (Fugitive emissions are to be listed on page 12, "**Annual Air Pollutant Emissions.**")

VENT/STACK INFORMATION:

Stack Reference Number - one reference number may have more than one exhaust point, but the converse is also true, and more likely. Assign a unique vent/stack number for each vent or stack through which the process or equipment identified by this unit reference number exhausts. Use the same number in describing air pollution control equipment on Page 10 of this Form.

Configuration - indicate the appropriate configuration by using Code H from the Code List (reproduced at the end of this Form).

Height - list the exit height (in feet) from the ground level.

Diameter - list the inside diameter (in feet) of the vent/stack at its exit. For rectangular vents, provide length and width (in feet) of the vent/stack at its exit.

EXIT GAS PARAMETERS:

Velocity - list the velocity in feet per minute of the stack gas as it exits the vent/stack.

Volume - list the volume of the flow in actual cubic feet per minute.

Temp. - list the temperature in degrees Fahrenheit.

EXHAUST

June 1979

TO: [illegible]
FROM: [illegible]

AIR POLLUTION CONTROL EQUIPMENT INSTRUCTIONS

UNIT REF. NO. - continue assigned reference number(s) from previous page(s).

VENT/STACK NO. - assign a unique vent/stack number for each vent or stack through which the process or equipment identified by this reference number exhausts. This number should correspond with the number used on page 9, "**Stack/Fugitive Emissions Parameters and Vent/Exhaust Data.**"

DEVICE REF. NO. - assign a unique pollution control device reference number(s).

CONTROLLED POLLUTANT - list each pollutant emitted from this unit that is controlled by a control device, using separate lines if more than one pollutant is controlled. Indicate with the word "voluntary" if the control device has been installed voluntarily. If work practices are used to control the pollutant, indicate that by saying "work practice" in the box.

Air Pollution Control Equipment:

MANUFACTURER AND MODEL - list the manufacturer and model of the control equipment associated with the pollutant listed in the preceding column, or other information sufficient to identify the control equipment with reasonable specificity.

TYPE - identify the type of control equipment by using Code I or Code J from the Code List (reproduced at the end of this Form). Code I offers a wide array of control equipment types to choose from, and many will not apply to the situation you have in hand. Merely note the codes for the equipment you have, or propose, and make no reference to the rest. Code J is intended for volatile liquid storage tanks and refers to various seal types.

PERCENT EFFICIENCY - CAPTURE - Provide the percentage of emissions from the emissions unit which is sent to or treated by the control device. (List all emissions which are emitted through the control device (as well as those which are not, including fugitive emissions), on page 12, "**Annual Air Pollutant Emissions.**" In any case, make sure that the listings on page 12 take into account emissions of both types.)

PERCENT EFFICIENCY - DESIGN & ACTUAL - list the design and actual control efficiency for the control equipment and associated pollutant. The percent efficiency should show the collection or destruction rate of captured emissions, not overall collection efficiency. You should give the actual control efficiency if data exist, and in any event if a test was required; otherwise, give the design efficiency. Note: apart from the case of a required test, you may list the control efficiency on this page, OR list the operating parameters on page 11, "**Air Pollution Control Equipment - Supplemental Information.**"

DRO-VALLEY

JUN 10 1999

TO:
FILE

ANNUAL AIR POLLUTANT EMISSIONS INSTRUCTIONS

The purpose of this page is to convey, in conjunction with the annual emission inventory, information on the actual annual emissions from your facility. The information is needed by the Department and the applicant to assess permit fees, as required by 9 VAC 5-80-340.B. and -C., and also to allow compliance with 9 VAC 5-80-270.C.1.f., relating to public notification of emissions and fuels used. (See Regulations, 9 VAC 5-80-270.C.1.f.)

Emission Inventory Citation Option - If desired, you may check the statement that the prior calendar year's Emissions Inventory reflects the emissions applied for as the basis of annual emission rates and permit fees in the permit. If the emission inventory is to be used in lieu of new submittal of emissions data in this application, you should first review the data and determine it to be both complete and accurate. Note that most sources with Hazardous Air Pollutant (HAP) emissions will need to supplement the emissions inventory. If the emissions data on file with DEQ are incomplete and/or inaccurate, the box may be still checked, and missing or corrected information added in the spaces provided. The second box is to enable you to point out discrepancies in unit reference numbers between the ones used on the Form and those in the Emissions Inventory. If there are discrepancies, please check this box and attach a list which cross-references the unit reference numbers between the Emissions Inventory and this Form.

UNIT REF. NUMBER(S) - continue assigned reference number(s) from previous page(s). For emissions units with **alternative scenarios**, list each scenario on a separate line, and assign a unique unit reference number and scenario number combination that is unique for each scenario, as before. Explain any alternative scenario relationships, using attachments if necessary. List each emission unit, except those that qualify as insignificant. (To determine whether an emission unit is insignificant, see the "**Insignificant Emission Units/Activities**" and "**Insignificant Activities Worksheet**" pages of this Application (page 17 and optional page 2), along with 9 VAC 5-80-710 and -720.) Units may be combined, provided the method of quantifying emissions, including any emission factors, is the same for each, and the parts being combined are not subject to differing applicable requirements.

VENT/STACK NO. - use the unique vent/stack number previously assigned for each vent or stack.

POLLUTANT - list each pollutant on a separate line under the heading "**Pollutant name**," and indicate whether it is fugitive in the column entitled "**Check if fugitive**." List stack and fugitive emissions separately if calculated by different means, and indicate whether the pollutant is fugitive in the box to the right of the listed name. The following pollutants need to be included:

PM₁₀ (particulate matter $\leq 10 \mu\text{m}$ aerodynamic diameter) (Do not list opacity as a pollutant on this page.)

Sulfur dioxide (SO₂)

Nitrogen oxides (NO_x)

Volatile organic compounds (VOCs) (see definition in 9 VAC 5-80-20). Do not include acetone as a VOC. Do not include perchloroethylene, but list it as a hazardous air pollutant (HAP). Do not include Title VI pollutants: (a) hydrochlorofluorocarbon, HCFC 225ca, (CAS # 422-56-0); (b) hydrochlorofluorocarbon, HCFC 225cb (CAS # 507-55-1); or (c) hydrofluorocarbon, HCFC 43-10mee (CAS # 138495-42-8).

Carbon monoxide (CO)

Lead (Pb)

Reduced sulfur compounds (TRS)

Sulfuric acid mist (H₂SO₄) (Do not include SO₃ or sulfuric acid mist emissions resulting from fuel combustion, as these are treated as SO₂ in emission factors.)

Hazardous air pollutants (HAPs) (Any pollutant subject to a standard promulgated under § 112 or other requirements established under § 112 of the federal Clean Air Act (CAA), particularly §§ 112(b), 112(d), 112(g)(2), and 112(j), but not any pollutant that is a regulated pollutant solely because it is subject to a standard or regulation under § 112(r) of the CAA. **Note:** Hazardous components of PM₁₀ and VOC emissions should be identified separately by component and listed on this page as specific hazardous pollutants, but do not need to be quantified.)

CAS # IF HAP - list the Chemical Abstract Services (CAS) number.

ACTUAL EMISSIONS - list the measured or calculated emission of each pollutant in tons per year. **NOTE:** If you have several units emitting the same pollutant but it is difficult to assign a quantity to each, combine the units in the "Unit Reference Number" column and combine the total emissions of the pollutant. For example, one line in the chart may say, under the respective columns, Unit reference numbers: "1-4," pollutant: "SO₂," actual emissions: "120 tons/year." This information should take account of emissions through the control device as well as those which do not go through a control device.

BASIS OF EMISSION ESTIMATES - indicate how emissions listed have been derived by using Code K from the Code List. Attach a sample calculation for each different equation, and emission factor used. Show the source of the emission factor, including the edition number if EPA publication AP-42, or similar works, are used.

EXEMPT FROM FEES? - certain pollutants are not included in the total emissions upon which fees are based. If the pollutant fits one of these categories, mark an "X" in the space.

BASIS FOR BEING EXEMPT FROM FEES - select one of the categories in Code L from the Code List if a fee exemption applies. Note that an emission is not exempt from fees simply because it is fugitive.

TO: _____
FILE: _____

APPLICABLE REQUIREMENTS, page 1 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NUMBER 20524
---------------------------------------	--	----------------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	The Project XL PSD Permit contains both present and future applicable requirements.	Criteria (except lead and PM-2.5)	40 CFR Parts 52.60, 264, and 265 9 VAC 5 Chapter 190	No	1
General	NESHAPS General Provisions	Hg, radionuclides, asbestos, benzene	40 CFR 61 Subpart A 9 VAC 5-60-70 Subpart A	No	2
General	General Provisions for NESHAPS for Source Categories: Pharmaceutical Production	HCL, methanol, methyl chloride, cyanide compounds, methyl tert butyl ether, acetonitrile	40 CFR 63 Subpart A	No	2.1
General (Future Applicable Requirement)	NESHAPS for Source Categories – Pharmaceutical Production (Future compliance date for existing sources is September 21, 2001). DEQ-VALLEY JAN 13 1999	HCL, methanol, methyl chloride, cyanide compounds, methyl tert butyl ether, acetonitrile	40 CFR 63 Subpart GGG including: Process Vent Stds @ 40 CFR 63.1254; Storage Tank Stds @ 40 CFR 63.1253; Wastewater Stds @ 40 CFR 63.1256; and Equipment Leak Stds @ 40 CFR 63, Subpart GGG, Appendix A; Monitoring Requirements @ 40 CFR 63.1258; Recordkeeping Requirements @ 40 CFR 63.1259; Reporting Requirements at 40 CFR 63.1260	No	2.2

TO:
FILE:

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "**Streamlining Applicable Requirements**") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "**Applicable Requirements**" pages and the "**Streamlining Applicable Requirements**" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "**Requirements which do not apply to the source.**") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. **If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110.** If a voluntary cap is being added (see "Non-Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "**Streamlining Multiple Applicable Requirements**"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGE - A code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

DEC Form 805 6/16/97 JUN 13 1999

Page 14 Instructions

Sheet No. 1

TO: _____
FILE: _____

APPLICABLE REQUIREMENTS, page 1 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NUMBER 20524
--------------------------------	---	---------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Unit Ref. No.	Brief Description of Applicable Requirement Note: If an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
Sludge Incinerator	Wastewater treatment plant sludge incinerator Hg emission limit: 3.200g/24 hr.	Hg	40 CFR 61 Subpart E 9 VAC 5-60-70 Subpart E	No	3
Sludge Incinerator	Determine sludge incinerator emission rate either by stack sampling or by sludge analysis, unless waived by USEPA per §61.13.	Hg	40 CFR 61 Subpart E 9 VAC 5-60-70 Subpart E	No	4
General	Effective dose limits: 10 mrem/yr (any member of public, from all radionuclides including iodine). 3 mrem/yr (any member of public, from iodine).	Radionuclides	40 CFR 61 Subpart I 9 VAC 5-60-70 Subpart I	No	5
General	Regulates installations of insulation with asbestos - containing materials (ACM) and demolition and renovation in the presence of ACM.	Asbestos	40 CFR 61 Subpart M 9 VAC 5-60-70 Subpart M	No	6
General	Submit initial report on affected waste streams or statement that no benzene on-site in wastes, products, byproducts, or intermediates by April 6, 1993.	Benzene	40 CFR 61 Subpart FF 9 VAC 5-60-70 Subpart FF	No	7
General	Repeat determination of annual benzene waste quantity whenever process change could cause total to exceed 1 Mg/yr	Benzene	40 CFR 61 Subpart FF 9 VAC 5-60-70 Subpart FF	No	8
General	Have risk management plan in place for regulated substances when required.	Anhydrous HCl, Aqueous Ammonia, Propane	40 CFR 68	No	9
General	Protection of stratospheric ozone: Certification, leak repair, and recordkeeping requirements for Ozone Depleting Substances (ODS)-containing equipment.	ODS	40 CFR 82	No	10

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "**Streamlining Applicable Requirements**") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "**Applicable Requirements**" pages and the "**Streamlining Applicable Requirements**" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "**Requirements which do not apply to the source.**") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation limits, regulated specifications of fuels or materials, work practices, emission testing, monitoring, and other matters. The focus of this page is on emission and operating limits; the two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. **If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110.** If a voluntary cap is being added (see "New Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "**Streamlining Multiple Applicable Requirements**"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

APPLICABLE REQUIREMENTS, page 1 of 3:

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NUMBER 20524
--------------------------------	--	---	---------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	Circumvention: Do not conceal or dilute emissions by any means that would violate any regulation set forth by the Director.	Criteria and Toxic Pollutants	9 VAC 5-20-70	No	11
General	Facility and Control Equipment Maintenance or Malfunction: Maintain and operate equipment to minimize emissions and provide notice to the board of excess emissions resultant from facility or control equipment malfunction and scheduled maintenance.	Visible Emissions and Odor Only	9 VAC 5-20-180	No	12
General	Visible emissions standards for point sources and for fugitive dust (including work practices).	Visible Emissions	9 VAC 5 Chapter 40 Part II Article 1	No	13
General	Installation and operation of opacity CEMS on applicable sources with recordkeeping and reporting.	Visible Emissions	9 VAC 5 Chapter 40 Part II Article 1	No	14
General	Standard prohibits emissions causing an objectionable odor; application of controls for odor upon determination that a violation has occurred. [State only]	Odor	9 VAC 5 Chapter 40 Part II Article 2	No	15
General	Open burning only with specifications contained in this section and with permission from the board.	Opacity	9 VAC 5 Chapter 40 Part II Article 40	No	16
General	Standards of performance, including compliance tests, opacity limits, installation/operation of CEMs (if applicable), notification/reporting	Visible Emissions, Odor	9 VAC 5-50-20	No	17
General	Performance testing for applicable new or modified sources shall be subject to testing guidelines approved by the Board.	Criteria	9 VAC 5-40-30B	No	18
General	Visible emission standards for point sources and fugitive dust; installation of CEMs on applicable sources with recordkeeping and reporting.	Visible Emissions	9 VAC 5 Chapter 50 Part II Article 1	No	19
General	Emission standard for odors; Standards prohibit emissions causing objectionable odor; requires BACT for control of odor upon determination of violation of a standard. [State only]	Odor	9 VAC 5 Chapter 50 Part II Article 2	No	20

JAN 13 1999

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "**Streamlining Applicable Requirements**") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "**Applicable Requirements**" pages and the "**Streamlining Applicable Requirements**" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "**Requirements which do not apply to the source.**") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation limits, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "*Virginia Code* § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. **If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110.** If a voluntary cap is being added (see "New Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "**Streamlining Multiple Applicable Requirements**"), or (4) include an additional state-only requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

DEQ VALLEY

JAN 13 1999

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NUMBER 20524
---------------------------------------	---	----------------------------------

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	Federal Operating Permits for Stationary Sources - Submit timely and complete application containing information.	Criteria HAPs	9 VAC 5 Chapter 80 Part II Article 1	No	21
General	Permit Program Fees for Stationary Sources.	Criteria HAPs	9 VAC 5 Chapter 80 Part II Article 2	No	22
	REQUIREMENT TO FIRST APPEAL TO THE COURTS				

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "**Streamlining Applicable Requirements**") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "**Applicable Requirements**" pages and the "**Streamlining Applicable Requirements**" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "**Requirements which do not apply to the source.**") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation limits, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110. If a voluntary cap is being added (see "New Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "**Streamlining Multiple Applicable Requirements**"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

DEQ-VALLEY

JAN 13 1999

TO: _____
FILE: _____

APPLICABLE REQUIREMENTS, page 2 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Linkage Number from Previous Page	Existing Monitoring Method Requirement	Existing Monitoring Frequency Requirement	Citation for Required Monitoring	Measured or Estimated Results (Compliance Status)	Basis of Results (Code K)	Subject to CAM? (Yes/No)
1	Requirements contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR Parts 52, 60, 264, and 265 9 VAC 5 Chapter 190	(1)	(1)	No
2	N/A	N/A	N/A	N/A	N/A	No
2.1	N/A (2)	N/A (2)	N/A (Note: 40 CFR 63.1258 specifies requirements which will apply to existing sources on September 21, 2001.	N/A	N/A	No
2.2	N/A (2)	N/A (2)	N/A (Note: 40 CFR 63.1258 specifies requirements which will apply to existing sources on September 21, 2001.	N/A	N/A	No
3	N/A	N/A	N/A	N/A	N/A	No
4	N/A	N/A	N/A	N/A	N/A	No
5	N/A	N/A	N/A	N/A	N/A	No
6	N/A	N/A	N/A	N/A	N/A	No

- (1) In accordance with DEQ guidance letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.
- (2) Compliance with monitoring requirements specified at 40 CFR 63.1258 is not required for existing sources until September 21, 2001.

JAN 13 1999

DEQ Form 805 6/16/97

Page 15

Sheet No. 1

TO: _____
FILE: _____

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "**Applicable Requirements, page 1 of 3**" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "**Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3**" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM? Indicate here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

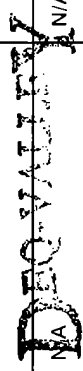
JAN 18 1999

APPLICABLE REQUIREMENTS, page 2 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Linkage Number from Previous Page	Existing Monitoring Method Requirement	Existing Monitoring Frequency Requirement	Citation for Required Monitoring	Measured or Estimated Results (Compliance Status)	Basis of Results (Code K)	Subject to CAM? (Yes/No)
7	N/A	N/A	N/A	N/A	N/A	No
8	N/A	N/A	N/A	N/A	N/A	No
9	N/A	N/A	N/A	N/A	N/A	No
10	N/A	N/A	N/A	N/A	N/A	No
11	N/A	N/A	N/A	N/A	N/A	No
12	Requirements contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR Parts 52, 60, 264, 265 9 VAC 5-20-180	(1)	(1)	No
13	N/A	N/A	N/A	N/A	N/A	No
14	N/A	N/A	N/A	N/A	N/A	No
15	N/A	N/A	N/A	N/A	N/A	No



 JAN 13 1999

 TO: _____

 FILE: _____

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "**Applicable Requirements, page 1 of 3**" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "**Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3**" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC and NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM? - Indicate, here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

JAN 13 1999

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Linkage Number from Previous Page	Existing Monitoring Method Requirement	Existing Monitoring Frequency Requirement	Citation for Required Monitoring	Measured or Estimated Results (Compliance Status)	Basis of Results (Code K)	Subject to CAM? (Yes/No)
16	N/A	N/A	N/A	N/A	N/A	No
17	Requirements are contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR 52, 60, 264, 265 9 VAC 5 Chapter 190	(1)	(1)	No
18	N/A	N/A	N/A	N/A	N/A	No
19	Requirements are contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR 52, 60, 264, 265 9 VAC 5 Chapter 190	(1)	(1)	No
20	N/A	N/A	N/A	N/A	N/A	No
21	Requirements are contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR Parts 52, 60, 264, 265 9 VAC 5-20-190	(1)	(1)	No
22	N/A	N/A	N/A	N/A	N/A	No

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

NO
FILE

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "**Applicable Requirements, page 1 of 3**" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in the preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "**Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3**" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC + NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

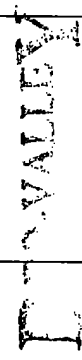
2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM Rule - Indicate here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

TO: _____
FROM: _____

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.			DATE April 30, 1998 Revised Date January 8, 1999		REGISTRATION NO. 20524			
Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	PERIODIC MONITORING					
			Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)
1	(1)	(1)						
2	N/A	N/A						
2.1	N/A	1) For existing sources, on or before 1/19/99 submit the Initial Notification pursuant to 40 CFR 63.1260(b) and 63.9(b) 2) For existing sources, on or before 2/18/02 submit the Notification of Compliance Status Report pursuant to 40 CFR 63.1260 (f) and 63.9 3) Application for construction or reconstruction according to the applicable requirements of 40 CFR 63 subpart A 63.5 and 40 CFR 63.1259(a)(5).						



 VALLEY FORGE

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

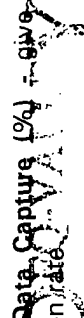
Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

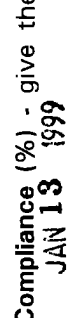
Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate. 

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate. 

TO: _____
FILE: _____

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

PERIODIC MONITORING									
Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
2.2	N/A (2)	1) Precompliance Report pursuant to 40 CFR 63.1260(e) 2) All other routine reports pursuant to 40 CFR 63.1260 (b) thru (l)							
3	Records of sludge sampling and other data to be retained 2 years. See 40 CFR 61.54(g)	Notification of sludge sampling test. See 40 CFR 61.54(a) & (b)							
4	Records of sludge sampling and other data to be retained 2 years. See 40 CFR 61.54(g)	Notification of sludge sampling test. See 40 CFR 61.54(a) & (b)							
5	Records to demonstrate compliance to be retained 5 years. 40 CFR 61.105	None							
6	None	40 CFR 61.145(b)							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

(2) Compliance with recordkeeping requirements at 40 CFR 63.1259 is not required until September 21, 2001.

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate.

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate.

JUN 13 1999

DEQ-VALLEY

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

PERIODIC MONITORING									
Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
7	Retain record of initial notification for 2 years. 40 CFR 61.356(a)	40 CFR 61.357(a)							
8	Retain records of annual determination (if required by process change) for 2 years.	None							
9	N/A	N/A							
10	Retain records related to leak repair, for at least 3 years. 40 CFR 82.166	Report leak repair related items as required by 40 CFR 82.166							
11	N/A	N/A							
12	(1)	Reporting related to facility and control equipment maintenance or malfunction, (Visible Emissions & Odor Only) 9 VAC 5-20-180	TO: FILE JAN 13 1999						
13	(1)	Notification records, and reporting as summarized in 9 VAC 5-40-50							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate. **JAN 13 1999**

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate. **FILE**

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998 Revised Date January 8, 1999	REGISTRATION NO. 20524
--------------------------------	--	---	------------------------

PERIODIC MONITORING									
Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
14	(1)	Notification, records, and reporting as summarized in 9 VAC 5-40-50							
15	N/A	N/A							
16	N/A	N/A							
17	(1)	(1)							
18	(1)	(1)							
19	(1)	(1)							
20	N/A	N/A							
21	Records required by 9 VAC 5-80-110 F.1.	Reporting required by 9 VAC 5-80-110 F.2.							
22	N/A	N/A							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture Rate - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate.

Required Compliance - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate.

Attachment I
Merck & Co., Inc.
Virginia Title V Permit Application
List of Referenced Documents¹

1. Project XL PSD Permit, 1/7/98.
2. Project XL PSD Permit Support Document, 9/26/97.
3. Registration and Support Information dated 4/18/96 for Carbidopa.
4. Project XL Federal Site-Specific Rule, 62 FR 52622-52642; 10/8/97.
5. Project XL SAPCB Order Granting a Variance, 9/11/97.
6. Project XL Variance Regulation for Merck Stonewall Plant (9 VAC 5 Chapter 190)
7. Title V Implementation Issues Letter, VADEQ (Mr. Chewning) to Merck (Mr. Jett), 9/5/97.
8. Letter, Tedd H. Jett to Sharon Foley, "1997 Emissions for Title V Fee Assessment," 11/19/98.

H:\mammary\Title V\Title V Attachment I.doc

DEQ-VALENT
JUN 13 1999

¹ For the purposes of submission of this Title V Permit Application, Merck & Co., Inc., deems any and all confidential supporting information previously submitted to the VADEQ in conjunction with these referenced documents as confidential and exempt from the Freedom of Information Act, Chapter 21, Section 2.1-3.40.

STONEWALL VALLEY

Merck & Co., Inc.
P.O. Box 7
Elkton VA 22827
Tel 540 298 1211

REGISTERED MAIL NO. P 090-205-302
RETURN RECEIPT REQUESTED

MAY 6 1998

SGF

May 1, 1998



Mr. R. Bradley Chewning
Regional Director
Virginia Department of Environmental Quality, Valley Regional Office
4411 Early Road
P.O. Box 1129
Harrisonburg, VA 22801

RE: Submittal of Title V Operating Permit Application for Merck & Co., Inc. - Stonewall Facility

Dear Mr. Chewning:

Enclosed is the Title V Operating Permit Application for the Stonewall facility of Merck & Co., Inc. (Stonewall) located near Elkton, Virginia. Three copies of our application are included with this submittal. The purpose of this letter is to outline the organization and content of the application and to explain a number of issues we have addressed and assumptions we have made in preparing the application. Please let us know if you have a different understanding of these issues or questions regarding this application generally, so that we can work together to resolve them prior to permit issuance.

1. Overview of the Merck Stonewall Plant

The Merck Stonewall facility is a batch pharmaceutical and chemical manufacturing plant located near Elkton in Rockingham County. The main products made at the plant include Avermectin and Lovastatin intermediates, Mefoxin[®], Primaxin[®], Carbidopa, and CRIXIVAN[®]. These products are manufactured using biological fermentation, organic synthesis, and pharmaceutical finishing processes. In addition to our manufacturing facilities, the Stonewall plant is supported by a coal fired power plant, two waste incinerators, a wastewater treatment plant, and bulk storage tanks for raw materials and process wastes. Construction to convert the power plant to natural gas is presently underway.

2. Application Organization

A. Overview of the Application

To facilitate presentation of the applicable requirements and other required information, we have entered the Virginia Title V application forms into our computer system. In doing so, we were careful not to omit any aspect or information contained in the original forms. The version of the forms that we used was DEQ Form 805 dated 6/16/97.

LETTER, MR. R. BRADLEY CHEWNING
VDEQ - VRO
TITLE V APPLICATION
PAGE 2

Please note that the information in this Title V permit application was developed for the limited purpose of complying with the requirements associated with this application (i.e., identifying current and future applicable requirements), and such information is not intended and may not be suitable for other purposes. We request that DEQ *not* incorporate this application by reference into our Title V operating permit as a set of applicable requirements.

B. Regulatory Guidance Used in Preparing the Application

In preparing the application, we have relied on the following regulations, guidance documents, and rule interpretations obtained from the Virginia Department of Environmental Quality (DEQ):

- DEQ's Title V Operating Permit Regulations, Federal Operating Permits for Stationary Sources, contained in 9 VAC 5 Chapter 80 Article 1 of the Commonwealth of Virginia Regulations for Control and Abatement of Air Pollution.
- DEQ's Permit Program Fees for Stationary Sources, contained in 9 VAC 5 Chapter 80 Part II Article 2 of the Commonwealth of Virginia Regulations for Control and Abatement of Air Pollution.
- DEQ's instructions for Title V Permit Applications dated 6/16/97.
- DEQ's Supplemental Instructions & Reference Materials for Federal Air Operating Permits in Virginia dated September, 1997.
- A guidance letter from DEQ to Merck outlining Title V application requirements unique to Merck resulting from Project XL, dated 9/5/97.
- A guidance letter from DEQ to Merck summarizing how CAM and MACT should be addressed in the Title V permit application, dated 2/18/98.

3. Identification and Recordation of Applicable Requirements

A. Relationship of the Title V Operating Permit to Existing Permits

The Merck Stonewall facility has several air quality permits issued by the DEQ that regulate air emissions from the plant's operations. Between the time of Merck's Title V permit application submittal and issuance of the plant's Title V permit, it is expected that the terms and conditions of the plant's Project XL PSD permit will be fully implemented. All of the plant's existing air permits will be rescinded at that time, as required by the Project XL PSD permit. For that reason, and per agreement with the DEQ, Merck's application looks ahead and includes applicable requirements that are expected to be in effect under Project XL at the time of Title V permit issuance. Current applicable requirements that will not be applicable after the existing preconstruction permits are rescinded are not addressed in the application, as provided for in DEQ's 9/5/97 guidance letter.

LETTER, MR. R. BRADLEY CHEWNING
VDEQ - VRO
TITLE V APPLICATION
PAGE 3

B. Assumptions regarding Existing Operations and Sources Under Construction

Several pharmaceutical and chemical production processes at Merck's Stonewall facility are either currently being modified or may be constructed or modified before Title V permit issuance. These projects include:

- Powerhouse conversion to natural gas
- CRIXIVAN® expansion
- MK-991 process construction

In addition, due to the dynamic nature of our industry it is likely that other projects not presently identified will be implemented prior to issuance of Merck's Title V operating permit. We request that the DEQ notify Merck prior to initiating final review of our Title V permit application. That way we will be able to update our application to reflect current plant operations and incorporate any new applicable requirements that have been implemented since our original submittal.

C. Emissions Data Contained in Permit Application

The emissions data contained in our Title V application, which are largely incorporated by reference from Project XL documentation on file with the DEQ, are based on one or more of the following: stack tests, vendor guarantees, engineering calculations, sampling results, and/or EPA emission factors available at the time we prepared the application. The emissions data referenced in the application are intended solely to comply with the Virginia Title V operating permit program and are not intended to be used for any other purpose now or in the future.

4. Monitoring and Recordkeeping Requirements

The Virginia Title V operating permit program provides that operating permits should include "periodic monitoring" requirements in cases where an applicable requirement does not currently require periodic testing or monitoring. DEQ's 9/5/97 guidance to Merck stated that the monitoring specified in the Project XL PSD permit will fulfill Virginia's Title V periodic monitoring requirements for the pollutants and emissions units regulated by the XL permit.

In an additional guidance letter concerning Merck's Title V application content, on 2/18/98 DEQ agreed that the monitoring specified in the Project XL PSD permit also satisfied Compliance Assurance Monitoring (CAM) requirements for the criteria pollutants regulated under Project XL. The XL permit does not regulate hazardous air pollutants. However, the CAM rule is only applicable to specified HAP emitting units not subject to a standard proposed after November 15 1990 pursuant to Section 111 or 112 of the Act (see 40 CFR 64.2). None of our HAP emitting sources are presently subject to any HAP emission limitations or standards. When they become subject to the Pharmaceutical MACT rule, which was proposed on April 2, 1997, they will still not be subject to CAM due to the exemption for sources subject to proposed MACT standards. MACT monitoring is intended to supersede CAM; sources will not be subject to both.

LETTER, MR. R. BRADLEY CHEWNING
VDEQ - VRO
TITLE V APPLICATION
PAGE 4

5. Application Certifications

A few of the certification issues we have considered are noted below. Please let us know if you have any questions or if your understanding of the certification requirements differs from ours. In its compliance certification, Merck is certifying its intent to comply with the Project XL PSD permit requirements that are expected to be in place at the time of permit issuance, per DEQ guidance.

A. Reasonable Inquiry

Merck understands that the certifications contained on Page i and Page 21 of Form 805 require Merck to exercise reasonable inquiry in: (1) identifying applicable requirements that will apply to the facility after implementation of Project XL; (2) executing the certifications that accompany the permit application; and (3) providing other information to be submitted with the application. While this inquiry requires reasonable efforts to identify such applicable requirements, Merck understands that the inquiry does not require reconsideration of previous applicability determinations made internally by Merck or in conjunction with DEQ.

Merck identified applicable requirements for the Stonewall facility by reviewing relevant provisions of the Project XL PSD permit and appropriate federal and state requirements relevant to this facility. In executing the certifications contained in this application, Merck has certified based on information and belief formed after reasonable inquiry that the application is true, accurate, and complete as of the time that the certifications were signed. Such certifications are based on emissions data, calculations, and/or other information as of the date such information was generated.

B. Certification as to Compliance with All Applicable Requirements at the Time of Permit Issuance

Compliance with applicable requirements is noted beginning on page 14 of the application. Most of the future applicable requirements to which Merck is certifying its intent to comply are contained in the Project XL PSD permit, which is incorporated by reference. The other applicable requirements which are listed individually comprise present and future applicable requirements for which the XL permit will not constitute alternate compliance. Since the certification on page 21 of Form 805 encompasses the entire application, then by executing the certifications we are certifying our intent to be in compliance with all applicable requirements at the time our Title V operating permit is issued.

If all of the provisions of the Project XL PSD permit, which contains most of the plant's future applicable requirements, have not become effective by January 10, 2000, Merck will submit a revised Title V application on or before that date. The revised application will contain a listing of all requirements applicable as of the date of its submittal, including associated monitoring, recordkeeping, and reporting requirements.

LETTER, MR. R. BRADLEY CHEWNING
VDEQ - VRO
TITLE V APPLICATION
PAGE 5

C. Responsible Official

The certifications contained on Pages i and 21 of Form 805 require the signatory to meet the definition of “responsible official” as defined in 9 VAC 5-80-60. Since Merck is a corporation, the responsible official for the Stonewall facility may be an authorized representative of a corporate officer if the representative is responsible for the overall operation of a manufacturing facility, provided the facility employs more than 250 persons. The plant manager is the designated responsible official for the Stonewall facility because: (1) he or she has been delegated responsibility for overall plant operations; and (2) the Stonewall facility employs over 250 people.

D. Personal Knowledge of the Responsible Official

The application requires that the responsible official execute the certifications to the best of his or her knowledge. We understand this provision to mean that the certifications contained in the application are not meant to imply that the responsible official has literally read the entire permit application and all supporting documentation. Rather, we understand that the certifications require the responsible official to make a reasonable review of the permit application and supporting documentation and, in conducting that review, the responsible official may rely on plant and other personnel, qualified engineering consultants, and legal assistance.

Prior to signing the certifications contained in this application, I was informed of Merck’s obligation to prepare and submit an operating permit application and of the principal elements that must comprise the application. I also received reports on the content of the application from those who prepared it, and inquired of them as to the application’s truth, accuracy, and completeness. These activities are believed to constitute reasonable inquiry by the responsible official.

6. Permit Shield

Section 9 VAC 5-80-140 of the Virginia Regulations for the Control and Abatement of Air Pollution provides that the DEQ may issue permits with a permit shield - *i.e.*, a term providing that compliance with applicable requirements included in an operating permit will be considered to be compliance with the corresponding applicable federal and state requirements. Additionally, if it is determined during the permitting process that certain applicable requirements do not apply to the facility and the determination is recorded in a Title V permit with a permit shield provision, then the source is shielded during the term of the permit from claims that it is required to comply with any provision for which such a negative determination is recorded in the permit. The permit shield must be expressly included as a term in permits to which it will apply. We request that DEQ include a permit shield provision in the Stonewall Title V permit. To facilitate the development of an accurate and comprehensive permit shield provision, we have included a list of requirements determined *not* to apply to the Merck Stonewall facility on Optional Page 3 of this application.

LETTER, MR. R. BRADLEY CHEWNING
VDEQ - VRO
TITLE V APPLICATION
PAGE 6

In sum, the applicable requirements listed in the application in combination with the list of non-applicable requirements contained on Optional Page 3 should provide a comprehensive picture of the requirements that do and do not apply to our facility for permit shield purposes. Please call us with any questions or if you care to discuss any of our determinations.

7. Operational Flexibility

The pharmaceutical industry is extremely competitive and dynamic, which requires our Stonewall facility to have significant manufacturing flexibility. DEQ has worked with us in the past to ensure our air permits provide us with operational flexibility, yet still provide for compliance with the Clean Air Act and Virginia air quality regulations. It is our hope that through the Title V process, we can continue to work together to ensure that the Merck Stonewall plant remains competitive in the pharmaceutical marketplace and that Title V does not unnecessarily undermine the flexibility we have all worked hard to obtain under Project XL.

8. Application Shield

The Virginia Title V operating permit program provides that sources that submit timely and complete operating permit applications are authorized to operate until the time that DEQ issues an operating permit to the facility – i.e., the facility will be authorized to operate under the *application shield*. We have worked hard to ensure that the enclosed application is complete and have submitted the application by the application due date for the Merck Stonewall facility. If, however, you find that any aspect of this application may be incomplete, please let us know as soon as possible so we can move to quickly address your concerns.

We look forward to working with the Department in the development of Merck's Title V operating permit. As indicated, Merck would appreciate the opportunity to review the draft permit prior to issuance by DEQ. Please contact Tedd H. Jett of our Environmental Department (540-298-4869) if you or your staff have any questions.

Sincerely,



Donald T. Kremer
Plant Manager

Enclosures

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

DEQ-VALLEY

MAY 6 1998



TO: _____
FILE: _____

AIR OPERATING PERMIT APPLICATION
General Information

CHECK ALL FORMS THAT APPLY AND LIST ALL ATTACHED DOCUMENTS.
For each page, indicate in the blank the quantity of copies attached.

- 1 CONTENTS, and DOCUMENT CERTIFICATION, this page
1 GENERAL INFORMATION, page 1
1 GENERAL INFORMATION, *continued*, page 2
1 FUEL-BURNING EQUIPMENT, etc., page 3
1 PROCESSING, etc., page 4
0 VOCs in INKS, COATINGS, STAINS, and ADHESIVES, page 5
0 HAPs in INKS, COATINGS, STAINS, and ADHESIVES, page 6
1 INCINERATORS for LIQUID and/or SOLID WASTE, page 7
0 LOADING RACKS and OIL-WATER SEPARATORS, page 8
1 STACK/FUGITIVE EMISSIONS PARAMETERS, page 9
1 AIR POLLUTION CONTROL EQUIPMENT, page 10
0 AIR POLLUTION CONTROL/SUPPLEMENTAL INFORMATION, page 11
1 ANNUAL AIR POLLUTANT EMISSIONS, page 12
1 POLLUTANTS for which THIS SOURCE is MAJOR, page 13
3 APPLICABLE REQUIREMENTS, Page 1 of 3, page 14
3 APPLICABLE REQUIREMENTS, Page 2 of 3, page 15
3 APPLICABLE REQUIREMENTS, Page 3 of 3, page 16
0 STREAMLINING APPLICABLE REQUIREMENTS, page 17

- 1 INSIGNIFICANT EMISSION UNITS/ACTIVITIES, page 18
1 COMPLIANCE CERTIFICATION, Page 1 of 3, page 19
1 COMPLIANCE CERTIFICATION, Page 2 of 3, page 20
1 COMPLIANCE CERTIFICATION, Page 3 of 3, page 21
0 POTENTIAL TO EMIT WORKSHEET, Optional, page 1
0 INSIGNIFICANT ACTIVITIES WORKSHEET, Optional, page 2
1 REQUIREMENTS that do not APPLY, Optional, page 3
0 VOC/PETROLEUM LIQUID STORAGE TANKS WORKSHEET, Optional, pages 4-6

LIST ATTACHED DOCUMENTS:

- ☒ MAP ☐ FACILITY SITE PLAN ☐ PROCESS FLOW DIAGRAM/SCHEMATIC
☐ MSDS ☐ ESTIMATED EMISSIONS CALCULATIONS ☐ STACK TESTS
☐ SUGGESTED DRAFT PERMIT ☐ LISTING OF CROSS-REFERENCES
☐ STATEMENT AND VERIFICATION OF CONFIDENTIAL INFORMATION

Attachment I, List of Referenced Documents

Attachment II, HCl and HF Emission Calculations

DOCUMENT CERTIFICATION FORM

(see other side for instructions)

I certify under penalty of law that this document and all attachments [as noted above] were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:

Donald T. Kremer

DATE:

5/1/98

COMPANY Merck & Co., Inc.

PRINTED NAME: Donald T. Kremer

REGISTRATION NUMBER: 20524

TITLE: Plant Manager

TELEPHONE NUMBER: 540-298-1211

Reference: Regulations, 9 VAC 5-80-80.G). See reverse of this form for instructions.

INSTRUCTIONS FOR CHECKING THE CONTENT LIST

Under the section on page i entitled "General Information," indicate to the left of each page title the number of sheets of the Form page which have been included in the application package being submitted. Since each page of Form 805 may not apply to your particular facility, each sheet of the submitted application package needs to be numbered, in the lower right corner. Attachments for the application package are to be listed in the area provided under "General Information."

One of the attachments listed in the "General Information" section on page i is a "suggested draft permit." This is not required for initial Title V permits; it is optional. However, the Regulations require a suggested draft permit as part of the application package for minor permit modifications (see 9 VAC 5-80-210.C.2.), group processing of minor permit modifications (see § 9 VAC 5-80-220.B.2.), and significant permit modifications (see 9 VAC 5-80-230.B.2.). For the permit modifications indicated, suggested draft language is necessary only to illustrate the change sought in the permit language. There is no need to submit an entire new permit application or entire draft permit when changing just a few provisions.

In the case of applications covering large facilities, it is permissible to fill out entire forms for individual process areas as well as to list all process areas in order on one form with multiple page copies. This is not to be confused with making separate applications covering a single facility.

Note: while the applicable requirements indicated in this Application will be used to assist in permit preparation, the application will not be incorporated by reference into the resulting permit.

DOCUMENT CERTIFICATION FORM

INSTRUCTIONS FOR USE

The Regulations require that certain documents submitted to the Board or the Department be signed by a responsible official with certification that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. Documents covered by this requirement include, but are not limited to, permit applications, registrations, emission statements, emission testing and monitoring reports, or compliance certifications. The certification should include the full name, title, signature, date of signature, and telephone number of the responsible official. A responsible official is defined as follows (Regulations, 9 VAC 5-80-60.C.):

1. For a business entity, such as a corporation, association or cooperative, a responsible official is either:
 - (a) the president, secretary, treasurer, or a vice-president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or
 - (b) a duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.
2. For a partnership or sole proprietorship, a responsible official is a general partner or the proprietor, respectively.
3. For a municipality, state, federal, or other public agency, a responsible official is either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

The certification, text of which is specified in the Regulations (9 VAC 5-80-80.G.2.), is required with all application submittals. Other information submitted in the course of making an application complete is also subject to certification.

PLEASE READ CAREFULL

This is an application form for a federal air operating permit pursuant to Rule 8-5 (cited as Chapter 80, Part II, Article 1, 9 VAC 5-80-50 et seq.) of the Virginia Regulations for the Control and Abatement of Air Pollution (hereinafter "Regulations"). The staff of the Department of Environmental Quality (DEQ) reviews all permit applications to determine compliance with the Regulations. The evaluation of a permit application is a detailed and lengthy process, so your application should be submitted in accordance with the established application schedule. Once an application is determined to be complete, you are covered by the "application shield," provided the application was received on time. An "application shield" protects the applicant from enforcement action for failure to have an operating permit, until the Department takes final action on the permit application (see Regulations, 9 VAC 5-80-80.F.) (The application shield does not allow construction of a new or modified emission unit in the absence of a permit to construct under 9 VAC 5-80-10, 5-80-20, or 5-80-30, formerly § 120-98.01, -02, or -03 of the Regulations.) To expedite the permit application and review process, please supply the information requested on the attached forms accurately and completely.

A complete application must include:

MAY 6 1998

1. **FORM 805** Air permit application form (Form 805), including Document Certification Form
2. **MAP** Source location map.
3. **CONFIDENTIAL INFORMATION JUSTIFICATION** Justification for claiming confidentiality of any information in the application or attachments, based on the criteria given on page iv of this form
4. **CALCULATIONS** Sample calculations of emission estimates, and justification of control technology to demonstrate compliance with applicable requirements.
5. **ALTERNATIVE SCENARIOS** If desired, furnish information separately (or on duplicate forms) to explain any alternative operating scenarios for which you are applying. An alternative operating scenario means operating under different applicable requirements from normal operation. For example, printing with water-based inks, without emission controls, might be the normal operation in a printing plant, but printing with oil-based inks would involve the use of emission controls under applicable requirements. (See Regulations, 9 VAC 5-80-90.H. and 5-80-110.J.) Additional guidance is given in the instructions for Page 2, "General Information, Continued" of this Form.
6. **PROCESS DESCRIPTION** Give SIC code and narrative description of process; provide a process flow diagram for complex, sequential processes.
7. **OTHER DATA** Site plans, building dimensions, stack locations if required.

The initial determination of application completeness is based upon "administrative completeness." This means that the appropriate sections of the form have been filled in and submitted, along with required attachments. During the evaluation of the application, questions about its completeness or correctness may arise based on technical considerations. The reviewer may ask the applicant for further information even after the application is deemed complete. Failure to respond to a request for more information may result in loss of the application shield described above (Regulations, 9 VAC 5-80-80.F.6.).

INSTRUCTIONS ARE PROVIDED FOR EACH PAGE OF THE FORM. If you require assistance in completing this application, please contact the regional office for your area. You may contact the regional office to make sure you are using the most up-to-date version of the form; but prior versions, properly updated, are acceptable. The completed application form should be submitted to the regional office. There is no need to copy or return instruction pages.

IT IS A VIOLATION OF STATE REGULATIONS TO OPERATE A SOURCE OF AIR EMISSIONS WITHOUT OBTAINING AN OPERATING PERMIT, IF SUCH A PERMIT IS REQUIRED

[Note: This form is available in WordPerfect 5.1™ format.]

CONFIDENTIAL INFORMATION

Under the Virginia Freedom of Information Act (*Virginia Code* Chapter 21, §§ 2.1-340 et seq.), all information submitted by the applicant to the Department is available to anyone requesting the information unless the information is considered confidential (proprietary).

Confidential information. To be exempt from disclosure under the Freedom of Information Act, the material must be accepted by the Department as confidential in nature. Confidential information must meet the following criteria:

1. Information for which the company has been taking and will continue to take measures to protect the confidentiality;
2. Information that has not been and is not presently reasonably obtainable without the company's consent by private citizens or other firms through legitimate means other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding;
3. Information which is not publicly available from sources other than the company; and
4. Information the disclosure of which would cause substantial harm to the company.

(Regulations, 9 VAC 5-20-150, formerly § 120-02-30.)

Note: it may be necessary for the Department or the source to share confidential information with EPA. Where the Department provides such information, it will make a claim of confidentiality; where the source provides the information, the source will claim confidentiality. The information will be safeguarded by EPA as well as the Department in accordance with Title 40, Code of Federal Regulations, Parts 2 and 70 (see Part 70, § 70.4(j)(1)).

Confidential information includes, but is not limited to, trade secrets.

Trade secrets. A "trade secret" is defined as information, including but not limited to, a formula, pattern, compilation, program, device, method, technique, or process, that:

1. Derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and
2. Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(See *Virginia Code* §§ 59.1-336 et seq.)

Distinction. The distinction between confidential information and a trade secret is that disclosure of a trade secret can give rise to a private legal action and remedy based on the value of the secret, whereas disclosure of confidential information does not. It is possible, however, for the same item of information to qualify as both confidential and a trade secret. Therefore, if you wish to keep certain information confidential, please indicate this information as such by marking the pages confidential and submitting, as an attachment, the specific justification for each case based on the criteria. Please note that emissions information cannot be marked as confidential. Also, prepare and submit a copy of the appropriate confidential pages with confidential information removed, so that the Department's public records indicate the fact that some confidential information was submitted.

The Department staff will review the material to determine its confidentiality and inform you in writing of the determination.

If you have any questions, please contact the DEQ regional office to which the application is submitted.

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF ENVIRONMENTAL QUALITY
TITLE V AIR OPERATING PERMIT APPLICATION GENERAL INFORMATION:

DATE	REGISTRATION NUMBER	AIRS IDENTIFICATION NUMBER
April 30, 1998	20524	

TITLE V PERMIT ACTION SOUGHT (Note: see instructions for this page):

☒ **INITIAL OPERATING PERMIT**

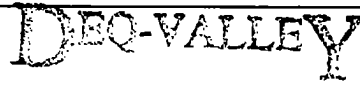
☐ **RENEWAL OF OPERATING PERMIT** (current permit expiration date: _____)

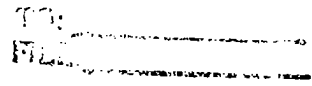
☐ **SIGNIFICANT PERMIT MODIFICATION -- describe:** _____

☐ **MINOR PERMIT MODIFICATION -- describe:** _____

☐ **Administrative Permit Amendment** (Includes change of address; for ownership change, please contact the appropriate DEQ Regional Office for information needed.)

SOURCE/FACILITY NAME: Merck & Co., Inc. (Stonewall Plant)	PARENT COMPANY, IF ANY: Merck & Co., Inc.
---	---

OWNER AND MAILING ADDRESS: Merck & Co., Inc. One Merck Drive PO Box 100 Whitehouse Station, NJ 08889-0100	 MAY 6 1998
--	---

OPERATOR AND MAILING ADDRESS, if different from owner: Merck & Co., Inc. Highway 340 South P. O. Box 7 Elkton, VA 22827-0007	
---	---

TELEPHONE NUMBER: 540-298-1211	UNDERLINE OR CIRCLE THE NAMES OF OTHER STATES AND/OR THE DISTRICT OF COLUMBIA WITHIN 50 MILES OF YOUR FACILITY (if any): WV PA MD DC DE NC TN KY	FEDERAL TAX ID NUMBER: 22-1109110
--	---	---

EXACT SOURCE LOCATION - INCLUDE NAME OF CITY (COUNTY) AND FULL STREET ADDRESS OR DIRECTIONS:
 4 miles South of Elkton on Virginia Route 340 - Rockingham County

PERSON TO CONTACT ON AIR POLLUTION MATTERS - NAME AND TITLE: Mr. Tedd H. Jett, P.E. Manager, Environmental Engineering	PHONE NUMBER: 540-298-4869 FAX NUMBER, IF AVAILABLE: INTERNET E-MAIL, IF AVAILABLE:
---	---

IS THE FACILITY TO BE PERMITTED AS A PORTABLE PLANT? YES ___ NO ✓ IF YES, ATTACH FIRST LOCATION FOR ITS OPERATION.

DESCRIBE THE PRODUCTS MANUFACTURED AND/OR SERVICES PERFORMED AT THIS FACILITY (use attachments if necessary):

Manufactures various pharmaceutical intermediates and products.

LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE(S) FOR THE FACILITY:

2	8	3	3	2	8	3	4												
---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--

GENERAL INFORMATION INSTRUCTIONS

REGISTRATION NUMBER - Provide the official state identification number assigned to your facility by the Department.

AIRS IDENTIFICATION NUMBER - Provide, if available, the AIRS identification number assigned to your facility by the Department. The AIRS identification number consists of the State 2-digit identification (i.e., 51 for Virginia), 3-digit FIPS County Code and the 4- or 5-digit Plant Number.

PERMIT ACTION SOUGHT - check the appropriate box(es). **NOTE:** The Title V permit program, and these forms, involve a detailed delineation of currently applicable emission limits and other requirements. Any request to increase emission limits, or relax other requirements, must be made as an application for a permit to modify pursuant to 9 VAC 5-80-10, 5-80-20, or 5-80-30 (formerly §§ 120-08-01, 120-08-02, or 120-08-03) of the Regulations. In certifying to the application on page i, the signer certifies knowledge of this requirement and entries on this page which accord with it.

1. "INITIAL OPERATING PERMIT" means that you are applying for an operating permit.
***Note:** If you are applying for a permit to construct or modify a facility, as opposed to operating it, please contact the appropriate DEQ regional office and ask for a copy of Form 7.
2. "RENEWAL OF OPERATING PERMIT" means that you have an operating permit which will expire in approximately six months and wish to renew it.
3. "SIGNIFICANT PERMIT MODIFICATION" refers to a significant change in an existing permit. See 9 VAC 5-80-190 and 5-80-230 of the Regulations. Briefly describe the modification, using additional sheets if necessary.
4. "MINOR PERMIT MODIFICATION" refers to a minor change in an existing permit. See 9 VAC 5-80-190 and 5-80-210 of the Regulations. Briefly describe the modification, using additional sheets if necessary.
5. "Administrative Permit Amendment" refers to a correction of minor errors, change of address/ownership, requirements for more frequent monitoring or reporting, or other matters; see 9 VAC 5-80-200.

COMPANY AND DIVISION NAME - list the official company name and the division if applicable.

PARENT COMPANY - give the name of the parent company, if there is one.

OWNER AND MAILING ADDRESS - list the mailing address of the owner of the facility on this application.

OPERATOR AND MAILING ADDRESS, if different from owner - fill in if the facility is operated by a person or entity other than the owner.

TELEPHONE NUMBER - list the phone number at the facility.

UNDERLINE OR CIRCLE THE NAMES OF OTHER STATES WITHIN 50 MILES - the Department is required to notify states within 50 miles of a source when a permit is to be written for the source (see 9 VAC 5-80-60.C and 5-80-290.B. of the Regulations). This information will enable the Department to complete its work. Please underline or circle the name(s) of the state(s) and/or District of Columbia within 50 miles of your facility.

FEDERAL TAX IDENTIFICATION NUMBER - indicate the company's federal tax identification number here.

EXACT SOURCE LOCATION - give the facility location indicating street address or directions to the facility. Provide either or both of the following: a map pinpointing the exact source location and showing where the plant property boundaries are; a plant layout with dimensions of all buildings (height, length, width) at the facility indicating all stack and emission point locations by stack or reference number. The DEQ regional office may waive requirements for a map and/or plant layout if sufficient documentation already exists in agency files.

PERSON TO CONTACT ON AIR POLLUTION MATTERS - provide the name and title of the person to contact on air pollution matters.

PHONE NUMBER - phone number of the contact person.

FAX PHONE NUMBER - Contact person's fax machine, if available. (Note:  See Below.)

INTERNET E-MAIL - contact person's electronic mail address, if available.

IS THE FACILITY TO BE PERMITTED AS A PORTABLE PLANT? - indicate whether the facility can be moved from the current (or proposed) location at a future date. State the first location of the facility; to the extent possible, add anticipated locations within the coming five years. Also indicate when an existing air permit was issued, if applicable.

DESCRIBE THE PRODUCTS MANUFACTURED/SERVICED - indicate the type of business in which this facility is engaged, listing products produced and/or services performed. Use attachments if necessary.

SIC CODE(S) - provide all 4-digit Standard Industrial Classification Code(s) for this facility and for the process(es). Indicate the primary SIC code in the first set of blocks. Use attachments if necessary for additional SIC codes.

NOTES ON SHADING THROUGHOUT THE FORM: A shaded column means that filling in the information is optional with the applicant, but it may be beneficial to complete the column to extend the coverage of the permit shield. A shaded heading alone, without the column, means that the information is sometimes optional and sometimes required; read the instructions to determine which. The optional pages all have shaded  and are identified as "Optional Page 1," etc.

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF ENVIRONMENTAL QUALITY
TITLE V AIR OPERATING PERMIT APPLICATION GENERAL INFORMATION, continued:

COMPANY NAME	DATE	REGISTRATION NUMBER
Merck & Co., Inc.	April 30, 1998	20524

Cross-referenced information. Does this application cross-reference information from other applications or documents?
☒ YES ☐ NO If "yes," please cite, on a separate sheet, the documents to which reference was made; attach copies of any documents referenced which are not currently on file at DEQ.

Process description (also attach a process flow diagram)

Products and SIC Code The Stonewall Plant manufactures various pharmaceutical intermediates and products, SIC Codes 2833 and 2834.

Process - see note below.

DEQ-VALLEY

Process Steps - see note below.

MAY 6 1998

TO: _____
FILE: _____

Emission units - See note below.

The information required for these items is addressed in the Project XL PSD Permit and various support documents listed in Attachment I.

Emission Unit Description

Alternative Operating Scenarios.

☐ Check here if you are applying for Alternative Operating Scenarios with respect to part or all of your facility. Please read "Overall instructions for alternative operating scenarios" on the back of this page. Alternative operating scenarios may be described within the form or on duplicate form pages (see instructions), or on separate sheets.

Acid Rain Sources.

☐ Check here if your facility is an Acid Rain source subject to the provisions of Rule 8-7 (9 VAC 5-80-360 through 5-80-700) of the Regulations and to Title IV of the Clean Air Act. Please attach the separate EPA Form, "Phase II Permit Application" (see instructions).

CROSS-REFERENCED INFORMATION - Pursuant to EPA's White Paper II (March 5, 1996), an applicant may cross-reference existing information relied upon, or provided, in an application (White Paper II, pages 34-36). The other information must exist and be available to the DEQ, EPA, and the public; the citation must give enough information to allow for its retrieval. In the case of an earlier permit or a permit application, it may be appropriate to include an additional copy to facilitate the Department's procurement of the information to which reference was made. In the case of laws, regulations, etc., a reasonably precise citation will be sufficient. Cross-referencing should be done on a separate sheet of paper.

PROCESS DESCRIPTION - Complete a process description for each distinct production area of the facility. (The facility may include multiple processes and products, multiple products from one process, or one product resulting from multiple processes. If there are alternative operating scenarios, list these separately. Use multiple copies of this page if necessary, or replicate the entire Form as suggested in the instructions for the Contents and Certification page. Attach one or more diagrams to show material flow, identifying which pieces of equipment are involved with specific stages, feed materials, product materials, intermediate materials, and by-products, and showing where emissions to the air result.

Products and SIC Code - indicate the products, if any, resulting from each process. These may or may not be final products; they could be materials or component packages that go on to the next process for further work. Moreover, a process could exist which does not produce a separate product.

Process - Briefly describe each process which emits air pollutants. Indicate how emission units in the process are connected.

Explanation: A "process" as such is not defined in the Regulations. For purposes of air permitting, a process is considered to be the operation of one or more pieces of machinery or equipment, using fuels and/or other raw materials, which is unified or inter-connected, and which emits air pollutants. Two or more processes may have the same SIC code. The exact nature of a process may be a trade secret and identified as confidential information in the application; see page iv, "**Confidential Information.**" Considerations for determining separate processes include SIC codes, physical layout, raw materials flow, etc. Support facilities such as power plants and wastewater plants serving multiple processes should be listed as separate processes.

Process steps - In simple terms, describe how the units of the process are connected.

Emission units - Assign a unique emissions unit identification number or other designation, and list each unit or emitting activity, including control equipment, even if it has no applicable requirement. Assign emissions unit identifications for each alternative operating scenario and indicate in the description that it is an alternative operating scenario. Insignificant emission units or activities may be excluded from this list.

Emission unit description - Explain briefly the function of each emission unit relative to the overall process. Where multiple units perform the same function, they may be grouped together for purposes of this description.

Overall instructions for alternative operating scenarios - As indicated on page ii ("**Please read carefully**"), item 5 of this Form, an alternative operating scenario means operating under different applicable requirements from normal operation. The Regulations do not limit the ways in which the concept can be used. Accordingly, two approaches are acceptable for applying for alternative operating scenarios: (1) list each scenario on a separate line, and assign a unit reference number and scenario number combination that is unique for each scenario, such as "Unit 6, Alt. 1," "Unit 6, Alt. 2," etc. If the alternative scenario is interrelated with others, explain the relationship, using attachments if necessary; (2) use duplicate forms or form sheets to indicate the alternative scenario.

Acid rain sources - A limited number of Title V sources are also "affected sources" under the acid rain provisions of Title IV of the Clean Air Act. Please check the box if your facility is an affected source as defined in 9 VAC 5-80-60.C of the Regulations. If it is, the applicable requirements may be referenced or described on page 14, "**Applicable Requirements**" as well as on the EPA Phase II permit application form (OMB No. 2060-0258). Affected sources emitting NO_x are required to submit their Title IV applications to DEQ by January 1, 1998.

**FUEL-BURNING EQUIPMENT AND STATIONARY COMBUSTION ENGINES (EXCEPT INCINERATORS)
(BOILERS, TURBINES, GAS/DIESEL ENGINES, KILNS, ETC.):**

[illegible]

—

FUEL-BURNING EQUIPMENT AND STATIONARY COMBUSTION ENGINES INSTRUCTIONS

UNIT REF. NO. - assign a unique reference number for each piece of fuel burning equipment. If numbers have previously been established for inventory purposes, use those same numbers, or attach a list explaining changes. **NOTE:** Where a unit burns more than one fuel, assign a separate line for each, pegged to the unit (i.e., #1A for oil, #1B for the same unit burning coal, etc.).

EQUIPMENT MANUFACTURER AND MODEL, IF KNOWN; OTHERWISE, TYPE OF EQUIPMENT - provide the nameplate information for each piece of equipment, including the date of manufacturer or construction. Note: there is no need to list pieces of equipment that are defined as insignificant activities pursuant to 9 VAC 5-80-710 or -720, unless the failure to list would interfere with the determination or imposition of an applicable requirement. If the manufacturer or model number is not known, describe by size and design type. A date such as "before 1972" is acceptable if sufficient to determine which regulatory requirement applies.

MAXIMUM RATED INPUT HEAT CAPACITY FOR EACH FUEL - provide the manufacturer's maximum rated heat input in Million BTUs per hour based on the nameplate rating or maximum fuel usage. This is needed for fuel-burning equipment other than reciprocating internal combustion engines.

TYPE OF FUEL - identify all the types of fuel that will be burned by each referenced piece of equipment and the corresponding data for each fuel type. If used in a process, relate this to the appropriate process. Indicate whether the fuel is primary or standby by placing a P or an S in the box next to the fuel named. If a piece of equipment uses more than one fuel, use separate lines for each (as indicated above).

TYPE OF EQUIPMENT - use Code A from the Code List, which is reproduced at the end of this Form.

MAXIMUM RATED OUTPUT - provide the maximum rated output capacity in units consistent with your operation. Examples: if a diesel engine is to be installed to power a blower, report the output brake horsepower (also known as mechanical horsepower); if a boiler is to be installed to generate process steam, then report pounds of steam per hour or boiler horsepower; if a turbine is to be installed to generate electricity, report kilowatts of electricity.

USAGE - Use Code B from the Code List (reproduced at the end of this Form).

REQUIREMENTS WHICH DO NOT APPLY TO THE SOURCE: (This page is optional.)

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

Use this table if you want the permit to reflect requirements which do not apply to the source. These requirements may include conditions from existing permits which no longer apply.

Unit Ref. No., combination, or activity to which requirement does <u>not</u> apply	Citation	Brief description of requirement	Why the requirement does not apply (Note: no narrative is required here if the reason is evident in the brief description to the left.)
General	40 CFR 60 Subpart VV 9 VAC 5-50-410, Subpart VV	Equipment Leaks of Volatile Organic Compounds in the Synthetic Organic Chemicals Manufacturing Industry	
General	40 CFR 60 Subpart III 9 VAC 5-50-401, Subpart III	Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes	
General	40 CFR 60 Subpart NNN 9 VAC 5-50-410 Subpart NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry Distillation Operations	
General	40 CFR 60 Subpart RRR 9 VAC 5-50-410 Subpart RRR	Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry Reactor Processes.	

JOJO VALLEY

MAY 6 1998

REQUIREMENTS WHICH DO NOT APPLY TO THE SOURCE INSTRUCTIONS

This table provides an opportunity for applicants to make additional use of the permit shield. The permit shield is a required permit term stating that compliance with the conditions of the permit constitutes compliance with all applicable requirements in effect and stated in the permit. It covers requirements which, according to a determination in the permit, are not applicable as well. (See 9 VAC 5-80-140.) With this table, you may request permit terms that expressly shield your facility from application of requirements which might appear to apply, but in fact do not. (It is not to be confused with a request to list every requirement that does not apply.) This page also serves as your request for exemption from otherwise applicable requirements (see 9 VAC 5-80-90.G.).

In brief, if you wish to avoid an otherwise applicable requirement and to have that avoidance provided in the permit as a matter of record, please identify the requirement on this page by following the instructions below.

It should be noted that pre-existing new source review permits, from which applicable requirements are being drawn for either inclusion in or exclusion from this application, may have incorporated permit applications by reference. The Title V permit will not incorporate the application by reference. For example, if the earlier permit application stated a trade name of a product you produce, and you want to be able to produce similar products without the trade name, the presence of the name on the earlier Application will not prevent you from producing similar products without it pursuant to your Title V permit.

UNIT REFERENCE NUMBER, COMBINATION, OR ACTIVITY to which requirement does not apply - Specify, by identifier (and description if space permits) the unit, work practice, or other activity to which the requirement in question does not apply.

CITATION - Cite the requirement as illustrated above.

BRIEF DESCRIPTION OF REQUIREMENT - Describe what the cited provision requires, as stated above.

WHY THE REQUIREMENT DOES NOT APPLY - Briefly explain why the requirement does not apply to the unit, work practice, or activity in question. Cite the regulation that supersedes (or exempts the unit or activity from) the earlier requirement. This page may be used to support page 17, "Streamlining Applicable Requirements" if you are cleaning up obsolete new source review permit terms or streamlining multiple applicable requirements on a single emissions unit.

PROCESS OPERATION INSTRUCTIONS

Use this page to describe processes and facilities for which a Title V permit is needed. Note: please use this page to begin your description of any volatile organic compound or liquid petroleum storage tanks as well. Note: if you have tanks, you may use the TANKS2 input and fill in appropriate columns on the **tanks worksheets** (optional pages 4-6). These pages may then be used as documentation, where needed, to support the calculations provided with this Application. Do not list loading racks for petroleum products distribution, or oil-water separators. List them on page 7, "**Loading Racks and Oil-Water Separators.**"

UNIT REF. NO. - assign a unique reference number for each entry. If numbers have previously been established for inventory purposes, use those same numbers, or attach a list explaining changes.

PROCESS OR OPERATION NAME AND METHOD OF APPLICATION - specify the type of process or operation, such as: crusher, reactor, press, dryer, storage tank, or something else. Use one line for each process or operation, starting with the initial step in the manufacturing process, followed by succeeding steps. list manufacturing steps until the process is complete. For surface coatings, list the method of application; if the same coating is applied by more than one method, list separately where possible. If the equipment involved is not of a type subject to a New Source Performance Standard (NSPS), there is no need to include the date of manufacture. If the equipment involved would have been subject to an NSPS had it been built or installed at a later date, it is necessary to show the date, or state that the date in question fell prior to the specific applicability date. Be sure that the terminology used on this page is consistent with that used in the process description provided on page 2, "**Title V Operating Permit General Information, Continued**" and in the flow diagram included with the application. The provision of the MSDS, and related items in footnote #1 may not be necessary; check with your Regional Office or examine prior permits applicable to the facility to determine whether these items have already been submitted, and whether there are any changes that should be noted. Finally, in this section, there is no need to list pieces of equipment that are defined as insignificant activities.

ARTICLE BEING PROCESSED, MANUFACTURED, COATED, OR DEGREASED - state the nature of the article to which the processing applies.

EQUIPMENT MANUFACTURER AND MODEL NUMBER - give nameplate information or equivalent. The Title V permit must include a listing of the specific equipment permitted; without such inclusion, the owner may lose the right to operate omitted equipment.

MAXIMUM RATED CAPACITY - This box should provide the maximum amount of feed material that the process element can handle in an hour. Specify units of measurement in accordance with the applicable requirement, or, if that is not instructive, with standard industry practices. If you have a throughput limit in an existing permit that is lower than the rated capacity, or if you are proposing such a limit as a voluntary cap under 9 VAC 5-80-100 of the Regulations, list unrestricted capacity here, but write "restricted" after it in the box. A limit that stems from an applicable requirement needs to be listed on page 14, "**Applicable Requirements.**" Where rated capacities are variable depending on product quality or other characteristics, such as "3 tons per hour at 7% moisture," be sure to explain the relationship, with an attachment if necessary.

INPUT OR OUTPUT? - Some applicable requirements specify an input or an output figure. State here which is the case.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

DEQ-VALLEY

MAY 6 1998

TO FILE

LIQUID AND/OR SOLID WASTE INCINERATORS INSTRUCTIONS

UNIT REF. NO. - assign a unique reference number for each incinerator.

MANUFACTURER AND MODEL - indicate the unit manufacturer and model. Include a diagram of the unit and specify any special features. If the unit is used for energy recovery, provide this information on the "Fuel-Burning Equipment" form (page 3 of this Application).

INCINERATOR TYPE - use Code C from the Code List (reproduced at the end of this Form) to indicate all categories applicable.

WASTE TYPE - use Code D from the Code List (reproduced at the end of this Form) and indicate all types burned.

INCINERATOR MAXIMUM RATED CAPACITY - maximum design input capacity in pounds per hour of waste type disposed of in this unit.

BURNER RATED CAPACITY - maximum rated heat input of primary and secondary chamber burners.

MINIMUM CHAMBER TEMP. - Indicate the minimum temperatures which the burner in the secondary chamber is designed to maintain while incinerating waste.

BURN DOWN CYCLE TIME - time in which the unit will continue to completely incinerate the maximum designed charge rate before shutting down or charging a new batch.

COMPANY NAME	DATE	REGISTRATION NO.
Merck & Co., Inc.	April 30, 1998	20524

TO:	
FILE:	
MAY 6 1998	DOW VALLEY

DEQ Form 805 6/16/97

STACK/FUGITIVE EMISSIONS PARAMETERS AND VENT/EXHAUST DATA INSTRUCTIONS

UNIT REF. NO. - continue the unique assigned reference number(s) from previous pages.

FUGITIVE EMISSIONS - Indicate whether there are any fugitive emissions associated with the units described on this page by writing "yes" or "no." (Fugitive emissions are to be listed on page 12, "**Annual Air Pollutant Emissions.**")

VENT/STACK INFORMATION:

Stack Reference Number - one reference number may have more than one exhaust point, but the converse is also true, and more likely. Assign a unique vent/stack number for each vent or stack through which the process or equipment identified by this unit reference number exhausts. Use the same number in describing air pollution control equipment on Page 10 of this Form.

Configuration - indicate the appropriate configuration by using Code H from the Code List (reproduced at the end of this Form).

Height - list the exit height (in feet) from the ground level.

Diameter - list the inside diameter (in feet) of the vent/stack at its exit. For rectangular vents, provide length and width (in feet) of the vent/stack at its exit.

EXIT GAS PARAMETERS:

Velocity - list the velocity in feet per minute of the stack gas as it exits the vent/stack.

Volume - list the volume of the flow in actual cubic feet per minute.

Temp. - list the temperature in degrees Fahrenheit.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

AIR POLLUTION CONTROL EQUIPMENT								
UNIT REF. NUMBER	VENT/STACK NUMBER	DEVICE REFERENCE NUMBER	CONTROLLED POLLUTANT	MANUFACTURER AND MODEL NUMBER	TYPE (USE CODE I OR CODE J)	% EFFICIENCY		
						CAPTURE	DESIGN	ACTUAL
See note below.								

AIR POLLUTION CONTROL EQUIPMENT INSTRUCTIONS

UNIT REF. NO. - continue assigned reference number(s) from previous page(s).

VENT/STACK NO. - assign a unique vent/stack number for each vent or stack through which the process or equipment identified by this reference number exhausts. This number should correspond with the number used on page 9, "**Stack/Fugitive Emissions Parameters and Vent/Exhaust Data.**"

DEVICE REF. NO. - assign a unique pollution control device reference number(s).

CONTROLLED POLLUTANT - list each pollutant emitted from this unit that is controlled by a control device, using separate lines if more than one pollutant is controlled. Indicate with the word "voluntary" if the control device has been installed voluntarily. If work practices are used to control the pollutant, indicate that by saying "work practice" in the box.

Air Pollution Control Equipment:

MANUFACTURER AND MODEL - list the manufacturer and model of the control equipment associated with the pollutant listed in the preceding column, or other information sufficient to identify the control equipment with reasonable specificity.

TYPE - identify the type of control equipment by using Code I or Code J from the Code List (reproduced at the end of this Form). Code I offers a wide array of control equipment types to choose from, and many will not apply to the situation you have in hand. Merely note the codes for the equipment you have, or propose, and make no reference to the rest. Code J is intended for volatile liquid storage tanks and refers to various seal types.

PERCENT EFFICIENCY - CAPTURE - Provide the percentage of emissions from the emissions unit which is sent to or treated by the control device. (List all emissions which are emitted through the control device (as well as those which are not, including fugitive emissions), on page 12, "**Annual Air Pollutant Emissions.**" In any case, make sure that the listings on page 12 take into account emissions of both types.)

PERCENT EFFICIENCY - DESIGN & ACTUAL - list the design and actual control efficiency for the control equipment and associated pollutant. The percent efficiency should show the collection or destruction rate of captured emissions, not overall collection efficiency. You should give the actual control efficiency if data exist, and in any event if a test was required; otherwise, give the design efficiency. Note: apart from the case of a required test, you may list the control efficiency on this page, OR list the operating parameters on page 11, "**Air Pollution Control Equipment - Supplemental Information.**"

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

☒ **STATEMENT:** "I have reviewed my Calendar Year 1996 Emissions update,¹ and I find that it properly accounts for all emissions units except those specified below. The figures which would otherwise appear on this page are shown in the emissions update specified."

☐ The above-referenced emissions data do not agree entirely in regard to unit reference numbers vs. the numbers shown on this form. A list is attached which explains the discrepancies.

[illegible]

ANNUAL AIR POLLUTANT EMISSIONS INSTRUCTIONS

The purpose of this page is to convey, in conjunction with the annual emission inventory, information on the actual annual emissions from your facility. The information is needed by the Department and the applicant to assess permit fees, as required by 9 VAC 5-80-340.B. and -C., and also to allow compliance with 9 VAC 5-80-270.C.1.f., relating to public notification of emissions and fuels used. (See Regulations, 9 VAC 5-80-270.C.1.f.)

Emission Inventory Citation Option - If desired, you may check the statement that the prior calendar year's Emissions Inventory reflects the emissions applied for as the basis of annual emission rates and permit fees in the permit. If the emission inventory is to be used in lieu of new submittal of emissions data in this application, you should first review the data and determine it to be both complete and accurate. Note that most sources with Hazardous Air Pollutant (HAP) emissions will need to supplement the emissions inventory. If the emissions data on file with DEQ are incomplete and/or inaccurate, the box may be still checked, and missing or corrected information added in the spaces provided. The second box is to enable you to point out discrepancies in unit reference numbers between the ones used on the Form and those in the Emissions Inventory. If there are discrepancies, please check this box and attach a list which cross-references the unit reference numbers between the Emissions Inventory and this Form.

UNIT REF. NUMBER(S) - continue assigned reference number(s) from previous page(s). For emissions units with **alternative scenarios**, list each scenario on a separate line, and assign a unique unit reference number and scenario number combination that is unique for each scenario, as before. Explain any alternative scenario relationships, using attachments if necessary. List each emission unit, except those that qualify as insignificant. (To determine whether an emission unit is insignificant, see the "Insignificant Emission Units/Activities" and "Insignificant Activities *Worksheet*" pages of this Application (page 17 and optional page 2), along with 9 VAC 5-80-710 and -720.) Units may be combined, provided the method of quantifying emissions, including any emission factors, is the same for each, and the parts being combined are not subject to differing applicable requirements.

VENT/STACK NO. - use the unique vent/stack number previously assigned for each vent or stack.

POLLUTANT - list each pollutant on a separate line under the heading "Pollutant name," and indicate whether it is fugitive in the column entitled "Check if fugitive." List stack and fugitive emissions separately if calculated by different means, and indicate whether the pollutant is fugitive in the box to the right of the listed name. The following pollutants need to be included:

PM₁₀ (particulate matter ≤ 10 µm aerodynamic diameter) (Do not list opacity as a pollutant on this page.)

Sulfur dioxide (SO₂)

Nitrogen oxides (NO_x)

Volatile organic compounds (VOCs) (see definition in 9 VAC 5-80-20). Do not include acetone as a VOC. Do not include perchloroethylene, but list it as a hazardous air pollutant (HAP). Do not include Title VI pollutants: (a) hydrochlorofluorocarbon, HCFC 225ca, (CAS # 422-56-0); (b) hydrochlorofluorocarbon, HCFC 225cb (CAS # 507-55-1); or (c) hydrofluorocarbon, HCFC 43-10mee (CAS # 138495-42-8).

Carbon monoxide (CO)

Lead (Pb)

Reduced sulfur compounds (TRS)

Sulfuric acid mist (H₂SO₄) (Do not include SO₃ or sulfuric acid mist emissions resulting from fuel combustion, as these are treated as SO₂ in emission factors.

Hazardous air pollutants (HAPs) (Any pollutant subject to a standard promulgated under § 112 or other requirements established under § 112 of the federal Clean Air Act (CAA), particular § 112(b), 112(d), 112(g)(2), and 112(j), but not any pollutant that is a regulated pollutant solely because it is subject to a standard or regulation under § 112(r) of the CAA. **Note:** Hazardous components of PM₁₀ and VOC emissions should be identified separately by component and listed on this page as specific hazardous pollutants, but do not need to be quantified.

CAS # IF HAP - list the Chemical Abstract Services (CAS) number.

ACTUAL EMISSIONS - list the measured or calculated emission of each pollutant in tons per year. **NOTE:** If you have several units emitting the same pollutant but it is difficult to assign a quantity to each, combine the units in the "Unit Reference Number" column and combine the total emissions of the pollutant. For example, one line in the chart may say, under the respective columns, Unit reference numbers: "1-4," pollutant: "SO₂," actual emissions: "120 tons/year." This information should take account of emissions through the control device as well as those which do not go through a control device.

BASIS OF EMISSION ESTIMATES - indicate how emissions listed have been derived by using Code K from the Code List. Attach a sample calculation for each different equation, and emission factor used. Show the source of the emission factor, including the edition number if EPA publication AP-42, or similar works, are used.

EXEMPT FROM FEES? - certain pollutants are not included in the total emissions upon which fees are based. If the pollutant fits one of these categories, mark an "X" in the space.

BASIS FOR BEING EXEMPT FROM FEES - select one of the categories in Code L from the Code List if a fee exemption applies. Note that an emission is not exempt from fees simply because it is fugitive.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

Pollutant name	CAS number if the pollutant is a HAP	Actual emissions -- give total amount per year, if known	Potential to emit - give total per year, if known
Ozone (as VOC) ^c			> 100 TPY
Nitrogen Oxides ^c			> 100 TPY
Sulfur Dioxide ^c			> 100 TPY
Carbon Monoxide ^c			> 100 TPY
Hazardous Air Pollutants			> 25 TPY
Hydrogen Chloride	7647-01-0		
Methanol	67-56-1		
Methyl Chloride	74-87-3		
Hydrogen Fluoride	76-64-393		
Cyanide Compounds	N106		
Methyl tert butyl ether (MTBE)	1634-04-4		
Acetonitrile	75-05-8		
		MAY 6 1998	

Sheet No. 1

POLLUTANTS FOR WHICH THIS SOURCE IS MAJOR INSTRUCTIONS

The Regulations require, as part of the application, a description of all pollutant emissions for which the source is major and all emissions of regulated air pollutants (9 VAC 5-80-90.D.1.). Please note that it is the "potential to emit" quantity which establishes major source applicability for the Title V permit process.

EPA's White Paper II, to which the Department subscribes as a matter of policy, allows sources to stipulate that they are major sources as a means of streamlining the application process. When stipulating, sources need not demonstrate the applicability of the Title V rule, such as by indicating the quantity of annual pollutant emissions (White Paper II, pages 32-34).

To comply with the Regulations and meet the spirit of White Paper II, the Department requires that you indicate the pollutants for which your facility is major on this page (and additional sheets thereof, if needed) and asks that you quantify the actual emissions if possible.

POLLUTANT NAME - Indicate, on each line, the name of a pollutant for which the source is major. Remember the major source emission thresholds mentioned on the form; for regulated pollutants other than criteria pollutants or HAPs, the major threshold is whatever the applicable requirement (typically, but not always, a New Source Performance Standard or NSPS) says it is. In addition to NSPS, other sources of applicable requirements for other regulated pollutants are Title VI of the federal Clean Air Act and regulations promulgated by EPA thereunder, and regulations adopted pursuant to a state law. As indicated on the front of this form, please list the pollutants in the following order: criteria pollutants, HAPs, NSPS pollutants, and Title VI pollutants.

CAS NUMBER IF HAP - If the pollutant named is a HAP, give the CAS number next to it.

ACTUAL EMISSIONS (optional) - Indicate, if known, the actual annual emissions of the pollutant in question. This information may be available from your most recent Emission Inventory submission or from page 12 of this Form, Annual Air Pollutant Emissions.

POTENTIAL TO EMIT (optional) - Indicate the potential to emit for the pollutant in question, if known. Potential to emit is calculated using enforceable emission and throughput limits if such exist or are being created.

APPLICABLE REQUIREMENTS, page 1 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	The Project XL PSD Permit contains both present and future applicable requirements.	Criteria (except lead and PM-2.5)	40 CFR Parts 52.60, 264, and 265 9 VAC 5 Chapter 190	No	1
General	NESHAPS General Provisions	Hg, radionuclides, asbestos, benzene	40 CFR 61 Subpart A 9 VAC 5-60-70 Subpart A	No	2
Sludge Incinerator	Wastewater treatment plant sludge incinerator Hg emission limit: 3,200g/24 hr.	Hg	40 CFR 61 Subpart E 9 VAC 5-60-70 Subpart E	No	3
Sludge Incinerator	Determine sludge incinerator emission rate either by stack sampling or by sludge analysis, unless waived by USEPA per §61.13.	Hg	40 CFR 61 Subpart E 9 VAC 5-60-70 Subpart E	No	4
General	Effective dose limits: 10 mrem/yr (any member of public, from all radionuclides including iodine). 3 mrem/yr (any member of public, from iodine).	Radionuclides	40 CFR 61 Subpart I 9 VAC 5-60-70 Subpart I	No	5
General	Regulates installations of insulation with asbestos - containing materials (ACM) and demolition and renovation in the presence of ACM.	Asbestos	40 CFR 61 Subpart M 9 VAC 5-60-70 Subpart M	No	6
General	Submit initial report on affected waste streams or statement that no benzene on-site in wastes, products, byproducts, or intermediates by April 6, 1993.	Benzene	40 CFR 61 Subpart FF 9 VAC 5-60-70 Subpart FF	No	7

MAY 6 1998

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "Streamlining Applicable Requirements") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "Applicable Requirements" pages and the "Streamlining Applicable Requirements" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "Requirements which do not apply to the source.") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21.7". Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110. If a voluntary cap is being added (see "Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "Streamlining Multiple Applicable Requirements"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

APPLICABLE REQUIREMENTS, page 1 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	Repeat determination of annual benzene waste quantity whenever process change could cause total to exceed 1 Mg/yr	Benzene	40 CFR 61 Subpart FF 9 VAC 5-60-70 Subpart FF	No	8
General	Have risk management plan in place for regulated substances when required.	April 30, 1998	40 CFR 68	No	9
General	Protection of stratospheric ozone: Certification, leak repair, and recordkeeping requirements for Ozone Depleting Substances (ODS)-containing equipment.	ODS	40 CFR 82	No	10
General	Circumvention: Do not conceal or dilute emissions by any means that would violate any regulation set forth by the Director.	Criteria and Toxic Pollutants	9 VAC 5-20-70	No	11
General	Facility and Control Equipment Maintenance or Malfunction: Maintain and operate equipment to minimize emissions and provide notice to the board of excess emissions resultant from facility or control equipment malfunction and scheduled maintenance.	Visible Emissions and Odor Only	9 VAC 5-20-180	No	12
General	Visible emissions standards for point sources and for fugitive dust (including work practices).	Visible Emissions	9 VAC 5 Chapter 40 Part II Article 1	No	13
General	Installation and operation of opacity CEMS on applicable sources with recordkeeping and reporting.	Visible Emissions	9 VAC 5 Chapter 40 Part II Article 1	No	14
General	Standard prohibits emissions causing an objectionable odor; application of controls for odor upon determination that a violation has occurred. (State only)	Odor	9 VAC 5 Chapter 40 Part II Article 2	No	15
General	Open burning only with specifications contained in this section and with permission from the board.	Opacity	9 VAC 5 Chapter 40 Part II Article 40	No	16

DEQ-VALLEY

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "Streamlining Applicable Requirements") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "Applicable Requirements" pages and the "Streamlining Applicable Requirements" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "Requirements which do not apply to the source.") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the next two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110. If a voluntary cap is being added (see "Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "Streamlining Multiple Applicable Requirements"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

Unit Ref. No.	Brief Description of Applicable Requirement Note: if an applicable requirement includes provisions with a future-effective date, during the permit term, indicate the effective date.	Pollutants	Citation	Voluntary Limit? (Yes/No)	Linkage Number to Next Pages
General	Standards of performance, including compliance tests, opacity limits, installation/operation of CEMs (if applicable), notification/reporting	Visible Emissions, Odor	9 VAC 5-50-20	No	17
General	Performance testing for applicable new or modified sources shall be subject to testing guidelines approved by the Board.	Criteria	9 VAC 5-40-30B	No	18
General	Visible emission standards for point sources and fugitive dust; installation of CEMs on applicable sources with recordkeeping and reporting.	Visible Emissions	9 VAC 5 Chapter 50 Part II Article 1	No	19
General	Emission standard for odors; Standards prohibit emissions causing objectionable odor; requires BACT for control of odor upon determination of violation of a standard. [State only]	Odor	9 VAC 5 Chapter 50 Part II Article 2	No	20
General	Federal Operating Permits for Stationary Sources - Submit timely and complete application containing information.	Criteria HAPs	9 VAC 5 Chapter 80 Part II Article 1	No	21
General	Permit Program Fees for Stationary Sources.	Criteria HAPs	9 VAC 5 Chapter 80 Part II Article 2	No	22

Sheet No. 3

APPLICABLE REQUIREMENTS, page 1 of 3 INSTRUCTIONS

This page and the three which follow it will, when completed, provide a concise description of the requirements applicable to your facility, the monitoring done to ensure compliance with those requirements, and (on page 17, "Streamlining Applicable Requirements") any opportunities you have taken to simplify or streamline requirements. The "linkage number" (see instructions below) is intended to aid you and the Department in analyzing these requirements and their monitoring and streamlining throughout these "Applicable Requirements" pages and the "Streamlining Applicable Requirements" page.

Possible sources of applicable requirements include the Regulations, previously issued permits, federal New Source Performance Standards (NSPS), Consent Agreements, and Orders of the State Air Pollution Control Board. Other sources of applicable requirements include, but are not limited to, Title 40 of the Code of Federal Regulations (CFR), Parts 50 through 80. (See also optional page 3, "Requirements which do not apply to the source.") Voluntary emission caps are applicable requirements created through the permit process. Acid rain sources are subject to requirements under Title IV of the Act, which are reflected in 40 CFR Parts 72 through 78, and Rule 8-7 of the Regulations (9 VAC 5-80-360 through 5-80-700).

Use this page to state the applicable requirements. These can apply to part or all of the facility and include emission limits, opacity limits, production throughput or hours of operation limits, regulated specifications of fuels or materials, work practices, emission testing, monitoring, reporting, and other matters. The focus of this page is on emission and operating limits; the next two pages are used for monitoring, record-keeping, and reporting.

UNIT REFERENCE NUMBER - Fill in as appropriate, with numbers or description. You are encouraged to write "general" in this space to cover applicable requirements such as general or specific work practices. For example, "Water the dirt driveway every four hours" is a specific work practice; "Water all dirt roads every day" is a general one. Another example is the application of general requirements such as the opacity rules (Rule 4-1 for existing sources and 5-1 for new or modified sources); these may apply to a group of units ("all units in Process Area A") or to specific units ("reconstructed Unit #6 in Area A").

BRIEF DESCRIPTION OF APPLICABLE REQUIREMENT - Indicate what the cited provision requires in regard to the emission unit or work practice cited. A requirement may apply generically to two or more emission units or work practices, in which case it need be described only once (see above). Note: applicable requirements include those with future-effective dates. Thus if you know of a requirement which has been promulgated, which has compliance deadlines or an effective date during the five-year Title V permit term, please state this requirement and its effective date.

POLLUTANTS - Indicate the pollutants to which the applicable requirement applies. Please indicate each pollutant on a separate line, with the corresponding time frame for measurement of its emission rate.

CITATION - For each emission unit or work practice subject to an applicable requirement, cite the regulatory or legal provision which applies (examples: (1) "Regulations, 9 VAC 5-80-90.1.1." (compliance status); (2) "Virginia Code § 10.1-1314" (permitting authority); (3) "Permit dated x/xx/93, condition #21."). Citation may include reference to an existing permit condition by listing the date of the permit and the condition number of the specific requirement, without quoting its language. However, if an existing permit condition contains language that combines two or more applicable requirements in a single numbered condition, these should be split up into single applicable requirements, and reworded. If a new condition is being added to make an existing condition enforceable or add missing monitoring, record-keeping or reporting requirements, list the citation as an appropriate sub-section of 9 VAC 5-80-110. If a voluntary cap is being added (see "Voluntary Limit" below), list the citation as 9 VAC 5-80-100. When an applicable requirement is derived from a permit condition, it is not necessary to include a citation of the state regulation underlying that condition. However, where the permit condition incorporates a regulatory provision by reference, and the provision articulates an applicable requirement, the citation should be given.

VOLUNTARY LIMIT? - Indicate "yes" if you are applying for a new emission limit or regulatory requirement voluntarily undertaken to (1) enable you to avoid an otherwise applicable requirement, (2) comply with another requirement (as in streamlining multiple applicable requirements), (3) eliminate an obsolete or unnecessary term from a previous permit (see page 18, "Streamlining Multiple Applicable Requirements"), or (4) include an additional state-only requirement as an applicable requirement (as allowed by 9 VAC 5-80-300). Otherwise, indicate "no." The voluntary limit or requirement should, of course, be identified on this page, and addressed appropriately in the following pages.

LINKAGE NUMBER TO NEXT PAGES - Put a code number here that enables you to continue the analysis of these applicable requirements on the next three pages without resorting to a new, duplicative description.

APPLICABLE REQUIREMENTS, page 2 of 3

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Linkage Number from Previous Page	Existing Monitoring Requirement	Existing Monitoring Frequency Requirement	Citation for Required Monitoring	Measured or Estimated Results (Compliance Status)	Basis of Results (Code K)	Subject to CAM? (Yes/No)
1	Requirements contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR Parts 52, 60, 264, and 265 9 VAC 5 Chapter 190	(1)	(1)	No
2	N/A	N/A	N/A	N/A	N/A	No
3	N/A	N/A	N/A	N/A	N/A	No
4	N/A	N/A	N/A	N/A	N/A	No
5	N/A	N/A	N/A	N/A	N/A	No
6	N/A	N/A	N/A	N/A	N/A	No
7	N/A	N/A	N/A	N/A	N/A	No
8	N/A	N/A	N/A	N/A	N/A	No
9	N/A	N/A	N/A	N/A	N/A	No

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

FILED

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "Applicable Requirements, page 1 of 3" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in the preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - Give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC and NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM? - Indicate here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

Linkage Number from Previous Page	Existing Monitoring Method Requirement	Existing Monitoring Frequency Requirement	Citation for Required Monitoring	Measured or Estimated Results (Compliance Status)	Basis of Results (Code K)	Subject to CAM? (Yes/No)
10	N/A	N/A	N/A	N/A	N/A	No
11	N/A	N/A	N/A	N/A	N/A	No
12	Requirements contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR Parts 52, 60, 264, 265 9 VAC 5-20-180	(1)	(1)	No
13	N/A	N/A	N/A	N/A	N/A	No
14	N/A	N/A	N/A	N/A	N/A	No
15	N/A	N/A	N/A	N/A	N/A	No
16	N/A	N/A	N/A	N/A	N/A	No
17	Requirements are contained in Project XL PSD Permit.	Requirements contained in Project XL PSD Permit.	40 CFR 52, 60, 264, 265 9 VAC 5 Chapter 190	(1)	(1)	No
18	N/A	N/A	N/A	N/A	N/A	No

DEVELOP

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "Applicable Requirements, page 1 of 3" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in the preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - Give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC, NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM? - Indicate here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

APPLICABLE REQUIREMENTS, page 2 of 3

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

REQUIREMENTS WHICH APPLY TO THE SOURCE:

[illegible]

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 2 of 3 INSTRUCTIONS

Just as the preceding page is intended to describe the requirements which apply to your facility, this page is intended to describe some of the monitoring provisions which enable you to track compliance with those requirements.

LINKAGE NUMBER FROM PREVIOUS PAGE - Use appropriate numbers from the right column of the table on page 14, "Applicable Requirements, page 1 of 3" to start this page off, enabling yourself and the Department to track the monitoring provisions with the appropriate applicable requirements.

EXISTING MONITORING METHOD REQUIREMENT - Describe the way in which you monitor compliance with each applicable requirement pursuant to the existing permit for your facility.

EXISTING MONITORING FREQUENCY REQUIREMENT - Indicate the frequency of required monitoring for each applicable requirement pursuant to the existing permit for your facility.

CITATION FOR REQUIRED MONITORING - Cite the appropriate regulatory or legal provision which imposes the monitoring requirements described in the preceding columns.

MEASURED OR ESTIMATED RESULTS OR COMPLIANCE STATUS - Give the emission rate, throughput, etc. as measured or calculated, converted if necessary to the same units as the allowable emission rate in the applicable requirement. If the requirement is not quantifiable, indicate whether it is met.

BASIS OF RESULTS - 1. Quantifiable results. If a measurable result is based on a stack test or continuous emission monitor (CEM), and data have previously been provided to DEQ, cite the specific report in which the most recent data are to be found; if data have not previously been submitted, attach a copy of the test report summary, or a summary of the most recent year's CEM data. Similarly, if based on a material balance which has been submitted to the DEQ, cite the appropriate report where the data may be found; if not previously submitted, attach a sample for each separate calculation which uses a different formula. If emission factors are used, be sure to list the source. If the latest available EPA emission factors (found in EPA publication AP-42) are not used, attach documentation to validate the emission factor chosen. For either material balances or emission factor calculations, if one calculation is attached to represent several others, list which stated emissions it represents. In the case of petroleum storage tanks, attach a sample calculation for each type and size of tank (note: Optional Pages 4 through 6 of this Form, "Volatile Organic Compound/Petroleum Liquid Storage Tanks, pages 1 through 3" may be helpful in this regard. It is permissible to submit a predictive model for emissions other than the accepted sources specified above, but in each case the model should be accompanied by sufficient explanation. Finally, convert measured units to the terms used in the applicable requirement. In some cases, it may take more than one line per pollutant, such as when a pre-existing permit condition refers to multiple pollutants or averaging times. An example would be to cite the requirement (e.g., 7/17/92 permit, condition #18), indicate the allowable emission rate(s) (e.g., pounds per hour and tons per year of VOC, NO_x), and indicate the measured rate in appropriate terms. See Code K in the Code List (reproduced at the end of this Form).

2. Non-quantifiable results. Indicate how the compliance was determined. Examples of the use of this page for non-quantifiable applicable requirements: (1) a fuel storage tank has a requirement to be "painted white, silver, or other light color," for which the compliance status, shown in the "Measured or Estimated Results (Status of Compliance)" column, is "met" or "in compliance" and the "Basis of Results or Status" is "Tank is painted white." (2) Another example: a facility has a requirement to perform compliance testing by a certain date or at a certain frequency. While the results of the test would be quantifiable, the act of performing the test(s) over time would not; both results should be reported on this page.

SUBJECT TO CAM? - Indicate here, with "Yes" or "No," whether this specific unit/pollutant/applicable requirement combination is subject to the new EPA Compliance Assurance Monitoring (CAM) Rule (if promulgated at the time of application). If the CAM rule has not been promulgated, leave this box blank.

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

PERIODIC MONITORING									
Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
1	(1)	(1)							
2	N/A	N/A							
3	Records of sludge sampling and other data to be retained 2 years. See 40 CFR 61.54(g)	Notification of sludge sampling test. See 40 CFR 61.54(a) & (b)							
4	Records of sludge sampling and other data to be retained 2 years. See 40 CFR 61.54(g)	Notification of sludge sampling test. See 40 CFR 61.54(a) & (b)							
5	Records to demonstrate compliance to be retained 5 years. 40 CFR 61.105	None							
6	None	40 CFR 61.145(b)							
7	Retain record of initial notification for 2 years. 40 CFR 61.356(a)	40 CFR 61.357(a)							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-2-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate.

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate.

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.		DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	--	---------------------	------------------------

Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	PERIODIC MONITORING						
			Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
8	Retain records of annual determination (if required by process change) for 2 years.	None							
9	N/A	N/A							
10	Retain records related to leak repair, for at least 3 years. 40 CFR 82.166	Report leak repair related items as required by 40 CFR 82.166							
11	N/A	N/A							
12	(1)	Reporting related to facility and control equipment maintenance or malfunction, (Visible Emissions & Odor Only) 9 VAC 5-20-180							
13	(1)	Notification records, and reporting as summarized in 9 VAC 5-40-50							
14	(1)	Notification, records, and reporting as summarized in 9 VAC 5-40-50							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate.

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate.

APPLICABLE REQUIREMENTS, page 3 of 3

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NO. 20524
--------------------------------	---------------------	------------------------

Linkage Number from Previous Page	Record-keeping Requirement	Reporting Requirement	PERIODIC MONITORING						
			Parameter Measured	Method	Frequency	Acceptable Range	Verified by	Required Data Capture (%)	Required Compliance (%)
15	N/A	N/A							
16	N/A	N/A							
17	(1)	(1)							
18	(1)	(1)							
19	(1)	(1)							
20	N/A	N/A							
21	Records required by 9 VAC 5-80-110 F.1.	Reporting required by 9 VAC 5-80-110 F.2.							
22	N/A	N/A							

(1) In accordance with DEQ Guidance Letter dated September 5, 1997, Merck & Co., Inc., is certifying its intent to comply with future applicable requirements of the Project XL PSD Permit, which include monitoring, recordkeeping, and reporting requirements.

DEQ Form 805 6/16/97

Page 16

DEQ-VALLEY

Sheet No. 3

MAY 6 1998

TO: FILE

APPLICABLE REQUIREMENTS, page 3 of 3 INSTRUCTIONS

LINKAGE NUMBER FROM PREVIOUS PAGE - Continue the linkage numbers from the right column of the table on the page 14, "Applicable Requirements, page 1 of 3" and the left column of the table on page 15, "Applicable Requirements, page 2 of 3" to this page, to track record-keeping, reporting, and periodic monitoring requirements applicable to your facility on the basis of the requirements stated in the preceding pages.

RECORD-KEEPING REQUIREMENT - Record-keeping requirements enable you to develop a record of compliance with applicable requirements. They are also the basis for making periodic progress or other reports to the Department or EPA on the state of your facility's compliance (or compliance progress). The requirements stated here may well end up in the Title V permit.

REPORTING REQUIREMENT - Reporting requirements are those things that must be reported, on a periodic basis, to the Department. These, too, are based on applicable requirements in old permits, existing rules, or other standards that may apply.

PERIODIC MONITORING - DEQ is required by regulation to include "periodic monitoring" requirements in the permit to cover each applicable requirement, where continuous demonstration of compliance is not otherwise provided, such as mandated continuous emission monitoring (Regulations, 9 VAC 5-50-110.E.). Periodic monitoring may involve direct emission measurements, but more often is a measurement of related parameters that ensure the proper operation of the control equipment or other method of compliance. While this section is optional, it is strongly recommended that the applicant provide DEQ with this information.

Parameter Measured - indicate what is being monitored. Be sure to be specific, such as "temperature downstream of catalytic incinerator," not just "temperature."

Method - if the Compliance Assurance Monitoring method and the applicable requirement are one and the same, citation by regulation or permit condition number is sufficient. If the scheme is not so specified, the test method, instrumentation to be employed, and measurement point location need to be listed, using additional pages as required. Diagrams showing receptor probe location are recommended but not required if the location is adequately described.

Frequency - indicate the time interval at which the measurement will be made, such as "hourly," "daily," "monthly," or "continuously" (in the case of a continuous emission monitoring device, or CEM). If measurements will be made only under certain circumstances (such as while burning coal but not other fuels), or at varying frequencies depending on circumstances, provide all such details as alternative scenarios, if in fact they are being submitted as such.

Acceptable Range - give the range of measured values that would show compliance with the applicable requirement. If measured values have to be plugged into a formula to provide meaningful data, provide the formula.

Verified by - describe how any method that measures a surrogate parameter rather than actual measurement of the applicable requirement relates to it. Attach test data, design specifications, or other data to support the fact that the unit complies with the applicable requirement provided the parameter is maintained in acceptable range. If this documentation has been previously submitted, it may be cited rather than resubmitted.

Required Data Capture (%) - give the minimum acceptable rate of proper functioning of the measurement system, or, alternatively, give the maximum deviation rate.

Required Compliance (%) - give the minimum rate at which measured values must be in acceptable range, or, alternatively, give the maximum deviation rate.

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

[illegible]

3. Insignificant by size or production level (rated capacity)

NY 3 1998

Sheet No. 1

1

INSIGNIFICANT EMISSION UNITS/ACTIVITIES INSTRUCTIONS

Insignificant activities require a three-part analysis pursuant to 9 VAC 5-80-710.A. of the Regulations. Part 1 is to determine whether your facility has any activities or emission units that are named as insignificant in 9 VAC 5-80-720.A. These have been augmented by EPA's list of "trivial" activities in its July 10, 1995 White Paper for Streamlined Development of Part 70 Permit Applications (cited herein as White Paper I). Such named activities need NOT appear in this application, unless they are necessary to help the applicant or the Department determine major source status, determine or impose applicable requirements, or calculate permit fees; but if they are necessary, they must be listed (see Regulations, 9 VAC 5-80-90.D.1.a.(2) and White Paper I, page 8). Part 2 is listing activities or emissions units, other than those named, which are proposed as insignificant by virtue of uncontrolled emissions levels. If these levels fall below the thresholds given in 9 VAC 5-80-720.B., the activity is insignificant and needs no further analysis in the Application. Note: it is not necessary to give the emissions level; it is necessary to indicate the pollutants in question. Part 3 is listing activities or emissions units, other than those named or those with insignificant emissions levels, proposed as insignificant by virtue of their size or production rate. In this instance, the size or production rate (rated capacity) must be given even though it falls below the threshold, which is in 9 VAC 5-80-720.C. (See 9 VAC 5-80-710.A.3.) You may also develop your own proposed list of insignificant activities or emissions units for the Department's consideration. (See White Paper I, pages 8-9.) Note: A worksheet on insignificant activities is found on Optional Page 2 of this Application. The "**Insignificant Activity Worksheet**" need not be turned in with the Application.

If in doubt whether to include an emitting activity or piece of equipment in the application, please include it. The Regulations make clear that you must include emissions from any emissions unit if failure to do so would interfere with the determination or imposition of an applicable requirement or the calculation of fees; see 9 VAC 5-80-90.D.1.a.(2). The Department will determine its insignificance and the fact that it needs no further analysis in the application or the permit process. A catalogue of these three categories of insignificant activities is found in 9 VAC 5-80-720, sub-sections A, B, and C of the Regulations. A list of "trivial activities" is found in the appendix to White Paper I.

UNIT REF. NO. - continue assigned reference number from previous pages insofar as it pertains to insignificant activities, or else assign unit reference numbers to the activities or emission units described. The unit reference number is not necessary for named insignificant activities.

DESCRIPTION OF UNIT - describe the emissions unit that is proposed as insignificant because of emission levels or size/production rate. As indicated above, there is no need to mention emission units named in 9 VAC 5-80-720.A. of the Regulations or in the Appendix to White Paper I unless you are in doubt whether such mention is needed.

EXEMPTION CODE - put a "1" if the unit is a named activity, "2" if it is insignificant because of emission levels, or "3" if it is insignificant because of size or production rate.

POLLUTANTS EMITTED - indicate what criteria pollutants or hazardous air pollutants are emitted by the unit in question, if the unit is proposed as exempt because of emission levels (the reference to code 2 at the bottom of the chart). Pollutants need only be identified, not quantified.

RATED CAPACITY - indicate the rated capacity of the emission unit or activity in question, irrespective of why it is listed on the chart. This is required for emission units or activities to be deemed insignificant because of size or production rate, and serves as a verification of a listing by virtue of emission levels.

COMPLIANCE CERTIFICATION AND PLAN, page 1 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

Compliance Determination. This table of questions and answers, and the compliance steps and compliance schedule information which follows on "Compliance Certification and Plan, pages 2 and 3" (pages 21 and 22 of this Application Form), constitute your compliance certification in accordance with sub-sections 9 VAC 5-80-90.1. and 5-80-90.1.J. of the Regulations. Please read the instructions for these three pages before proceeding.

Questions	Answers (Yes, No, or Not Applicable (N/A))	What to do Next: Additional Instructions
Answer one of the following two questions (1a or 1b): 1a. Is the entire facility in compliance with all applicable requirements?	1a. Yes ⁽¹⁾	Answer question 1a or question 1b, but not both. (That is, if you answered question 1b, then the answer to question 1a is "N/A" or not applicable.) If the answer to either question is "no," complete the table on page 20 ("Compliance Certification and Plan, page 2 of 3"), and then go on to question 2. If "yes" is the answer, go on to question 2. In the case of question 1a, the certification means that all applicable requirements are being met at the time of application, including all requirements for documentation of compliance. In the case of question 1b certification, all applicable requirements are also being met, but the documentation of one or more is accomplished through streamlined methods, as described on page 17, "Streamlining Applicable Requirements." Note that in both cases, certification is for current requirements, not future requirements of the operating permit to be issued.
1b. If you have chosen to streamline your application by taking the most stringent requirements from multiple applicable requirements, as described in the instructions on page 17, "Streamlining Applicable Requirements," are affected portions of your facility in compliance with these streamlined applicable requirements?	1b. N/A	
2. Will the entire facility be in timely compliance with future applicable requirements taking effect during the permit term?	2. Yes	2. If "yes," go on to question 3a. If "no," explain in the table on page 20. Indicate "N/A" (not applicable) if no known future applicable requirements have been promulgated.
3a. Are any of the compliance commitments elicited in questions 1 and 2 above based on a regulation or an applicable requirement that has <u>not</u> received SIP approval from EPA?	3a. Yes Site specific rule not in SIP.	3a. If "yes," go to question 3b. If "no," go on to question 4.
3b. Does compliance with the non-SIP regulation or requirement ensure compliance with the requirement that <u>has</u> received SIP approval?	3b. N/A	3b. If "yes," please provide information to demonstrate the point (see instructions), then go on to question 4. If "N/A," go on to question 4. If "no," then the requirement cannot be relied upon unless it receives SIP approval. Go on to question 4.
4. Will the facility, or affected portions of it, continue to comply with all applicable requirements with which it is now in compliance during the permit term?	4. Yes	4. If "yes," go on to the next page. If "no," explain in the table on page 21 or use a separate sheet of paper.

⁽¹⁾ As stated in the 9/5/97 Title V Guidance Letter from DEQ (Mr. Chewning) to Merck (Mr. Jett): "The Title V application must contain a certification as to the compliance status of all applicable requirements to which Merck is subject on the date of application submittal, with the exception that certification of compliance with requirements to be rescinded as a result of the issuance of the proposed PSD permit need not be provided in the initial Title V application."

DEQ Form 805 6/16/97

DEQ-VAL-1998

MAY 6 1998

COMPLIANCE CERTIFICATION AND PLAN, Page 1 of 3 INSTRUCTIONS

(Compliance Determination)

All sources must address this section ("**Compliance Certification and Plan, pages 1 through 3,**" which are pages 19 through 21) of the Application to indicate compliance status and to make required commitments regarding compliance (see Regulations, sub-sections 9 VAC 5-80-90.1. and 5-80-90.J.). The Compliance Certification pages are not to be used to re-visit earlier decisions on applicability. This first page consists of a number of questions, answered affirmatively or negatively (or as not applicable to your situation), which constitute part of your compliance certification. Please read the instructions for these three pages before proceeding.

Question 1 - enables you to certify current compliance for your Title V permit application, as well as indicating where compliance is not complete; in such case you are referred to the table on page 20, "**Compliance Certification and Plan, page 2 of 3.**" After entering information in the table on page 21, make sure that remaining questions on page 19 are addressed. (See page 17, "**Streamlining Applicable Requirements,**" and its instructions for more information on streamlining multiple applicable requirements.) Note: Remember that applicable requirements can be found in previous permits and federal regulations as well as in the Regulations for the Control and Abatement of Air Pollution.

Question 2 - enables you to certify that you are on track to comply with applicable requirements that will take effect during the permit term. (A number of Maximum Achievable Control Technology (MACT) requirements, pursuant to § 112 of the federal Clean Air Act, will be promulgated by EPA in the next few years; this is mainly what we have in mind here.) If you do not anticipate being able to meet future compliance deadlines, please explain on page 20 ("**Compliance Certification and Plan, page 2 of 3**") or on attached sheets. Identify whether you are streamlining the application by combining the elements of multiple applicable requirements (for any unit, group of units, work practices, or for monitoring, record-keeping, or reporting requirements) and proposing the most stringent of these (or a hybrid requirement that ensures the most stringent limits or requirements are observed) as a means of eliminating duplication in the application and permit. (Again, see page 17, "**Streamlining Applicable Requirements,**" and its instructions.) In the event you are not yet in compliance with one or more of these requirements, you are referred to the table on page 20. If, on the other hand, you have no reason to believe that any new requirements will be promulgated during the permit term, indicate "N/A."

Question 3 - indicate whether you wish to base your compliance certification on new rules adopted by the State Air Pollution Control Board but not yet approved into the State Implementation Plan by the EPA. If you do, you have to show that compliance with the new rule will ensure compliance with its predecessor. If the new rule has emission limits, reporting requirements, record-keeping requirements, monitoring requirements, or operating requirements that are the same or more stringent than in the earlier rule, this demonstration is readily accomplished. If the new rule has less stringent requirements, you may not seek this basis for the certification.

Question 4 - a "yes" answer indicates your commitment to stay in compliance.

Additional instructions are presented with each question.

General Note - The above certification is based on normal operation, using methodology described on pages 14 through 16, "**Applicable Requirements, pages 1 through 3.**" During start-up, shut-down, and malfunction, certification is based on use of good air pollution control practices for minimizing air pollution in accordance with 9 VAC 5-20-180.A. (formerly § 120-02-34.A.) of the Regulations. All facilities are covered by the malfunction rule (9 VAC 5-20-180, the entire section) as a generally applicable requirement. This, too, must be listed among the applicable requirements on page 14. On the same page, list any special malfunction, start-up, or shutdown requirements applicable to your facility.

COMPLIANCE CERTIFICATION AND PLAN, page 2 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
---------------------------------------	----------------------------	----------------------------------

Compliance Plan. Please use this table to indicate how compliance with applicable requirements, effective now or in the future, will be achieved. A detailed compliance schedule, prepared in accordance with the applicable requirements, is required here or in an attachment (Regulations, 9 VAC 5-80-90.1.3.b.). Return to the questions on page 19 when finished.

Unit reference number	Applicable requirement **	Future- effective require- ment? (Yes/No)	How will compliance be achieved? Please describe below.	
			Compliance step (Note: progress reports must be provided at least every six months for sources required to have a schedule of compliance to remedy a deficiency.)	Date completion expected
	N/A			

** Citation may make reference to the listings on pages 14-16 ("Applicable Requirements, pages 1 through 3 of 3"), or page 17 ("Streamlining Applicable Requirements" of this Form.

MAY 6 1998

COPIES
FILED

COPIES
FILED

COMPLIANCE CERTIFICATION AND PLAN, page 2 of 3 INSTRUCTIONS

(Compliance Plan)

This table, the "Compliance Plan," is to be used to explain "no" answers to questions 1a, 1b, 2, or 4 on page 19, "Compliance Certification and Plan, page 1 of 3." Please be sure to return to these questions and check your answers against your explanations. In addition, please address questions 3a and 3b before proceeding to the acknowledgments regarding Title VI and section 112(r) pollutants on page 21, "Compliance Certification and Plan, page 3 of 3."

UNIT REF. NO. - continue assigned reference number from previous pages.

APPLICABLE REQUIREMENT - indicate the requirement with which compliance is being discussed. A citation or reference to the "Applicable Requirements" pages (pages 14-16) or to page 17, "Streamlining Applicable Requirements" is acceptable, provided it is clear.

FUTURE-EFFECTIVE REQUIREMENT? - indicate whether the requirement in question is a "future-effective" requirement as defined above. Note: for risk management plan requirements under § 112(r) of the Clean Air Act, compliance dates are found in 40 CFR Part 68, § 68.10(a) as promulgated in the June 20, 1996 Federal Register (page 31717). (See also "Compliance Step" instructions below.)

HOW COMPLIANCE WILL BE ACHIEVED - this may refer to the addition of control equipment, changes in operations, or other means by which compliance will be achieved.

Compliance step - Where the source is out of compliance, it must have a schedule to achieve compliance, and must file progress reports with the Department at least every six months (Regulations, 9 VAC 5-80-90.1.4.) Identify each step toward compliance for each unit not in compliance at the time of application (or not in compliance with a known or anticipated future-effective requirement). Detailed steps toward compliance with known future-applicable requirements are optional, not required; the certification on page 21, "Compliance Certification and Plan, page 3 of 3," commits you only to timely compliance with such requirements.

Date by which completion expected - for each step, give a projected date of completion.

COMPLIANCE CERTIFICATION AND PLAN, page 3 of 3:

COMPANY NAME Merck & Co., Inc.	DATE April 30, 1998	REGISTRATION NUMBER 20524
--------------------------------	---------------------	---------------------------

Compliance Schedule, Acknowledgments, and Certification:

SCHEDULE: Use the box(es) and/or the chart below as your proposed schedule for compliance certifications during the term of the permit.

- ☒ Check here if compliance certifications will be submitted annually.
☐ Check here if compliance certifications will be submitted more often than annually, and fill in the table below.

Unit Ref. No(s).	Frequency of submission	Starting time	Methods Used to Determine Compliance
	N/A		

ACKNOWLEDGMENTS:

☒ I acknowledge that this facility handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI of the federal Clean Air Act (CAA) concerning stratospheric ozone protection.

☒ I acknowledge that this facility has on-site storage and/or processing of chemicals subject to § 112(r) of the CAA (those for which a risk management plan for accidental releases of substances identified in § 112(r)(7) is required). The facility is in compliance with these requirements, and will comply in timely fashion with requirements taking effect in the future, except as indicated in the compliance schedule on page 20 of this Form ("Compliance Schedule and Plan, page 2 of 3.")

COMPLIANCE CERTIFICATION: Except as indicated on this and other "Compliance Plan and Certification" pages in this Application, I hereby certify that, based on information and belief form after reasonable inquiry, the air contaminant source identified in this application is in compliance, or will comply on time, with all applicable requirements, including but not limited to compliance assurance monitoring requirements. With respect to emission units for which there are no monitoring requirements, I have no reason to believe that the source is not in compliance.

Signature: Donald T. Kremer

Typed/printed name: Donald T. Kremer

Date: 5/1/98

VALLEY

MAY 6 1998

100
RTA

COMPLIANCE CERTIFICATION AND PLAN, page 3 of 3 INSTRUCTIONS

(Compliance Schedule, Acknowledgments, and Certification)

If compliance certifications will be submitted annually, the table need not be filled out. If these certifications are to be submitted more frequently, as called for by some applicable requirements, then the table should be filled out according to the guidance below. In either case, please check the appropriate box above the table to indicate annual submission or more frequent submission of compliance certifications.

Proposed Schedule for Submission of Compliance Certifications During the term of the Air Permit - this schedule is to be filled in if it is dictated by underlying applicable requirements known to the applicant. If that is not the case, the applicant may propose a schedule of compliance certifications, provided that they are scheduled at least once a year. (Regulations, 9 VAC 5-80-90.J.3.). Attach duplicates of this form page as necessary.

UNIT REFERENCE NUMBER - Use the unit reference number being addressed by the certification of compliance.

FREQUENCY OF SUBMISSION - State how often the certification is to be submitted.

STARTING TIME - This can be a set time following permit issuance, which is preferred, or a specified date, which may or may not be appropriate depending on when the permit is issued.

METHODS USED TO DETERMINE COMPLIANCE - Indicate the methods used to determine whether the source is in compliance with applicable requirements (See Regulations, 9 VAC 5-80-90.J.2.).

Acknowledgement regarding handling of Class I or II substances under Title VI: Check this acknowledgment if it applies to you. If it does not apply, do not check it. Note: if your facility includes air conditioning or refrigeration units of any kind which use these substances, you should check the box.

Acknowledgement regarding § 112(r) risk management plan: Check this acknowledgement and initial it to indicate that it applies to your facility and that you are in compliance with current applicable requirements and intend to comply with requirements taking effect in the future, except as indicated on page 20, "Compliance Certification and Plan, Page 2 of 3." If you are not subject to the accidental release risk management plan requirements of § 112(r), do not check this box. Please note that sources which do not check the box, yet are later found to be subject to the risk management plan requirements of § 112(r), will not have the protection of the permit shield in this regard. (Note: The applicability of this requirement is based on the degree to which these substances are handled or stored, not necessarily on whether they are emitted. In other words, the use in a process, or storage, of a threshold quantity of a regulated substance determines applicability of this 112(r) requirement; see 40 CFR Part 68, § 68.115 for threshold quantity determination and § 68.10(a) for compliance dates.)

COMPLIANCE CERTIFICATION - To certify the compliance status associated with the application, fill in and sign as indicated. (Regulations, 9 VAC 5-80-90.J.1.).

VA DEQ FORM 805 APPLICATION CODES

Code A - Equipment

BOILER TYPE:

1. Pulverized coal - wet bottom
2. Pulverized coal - dry bottom
3. Pulverized coal - cyclone furnace
4. Spreader stoker
5. Chain or traveling grate stoker
6. Underfeed stoker
7. Hand-fired coal
8. Oil, tangentially fired
9. Oil, horizontally fired (except rotary cup)
10. Gas, tangentially fired
11. Gas, horizontally fired
12. Wood with flyash reinjection
13. Wood without flyash reinjection
14. Other (specify)

STATIONARY ENGINE TYPE:

15. Combustion turbine
16. Internal combustion engine
17. Other (specify)

OTHER COMBUSTION UNITS:

18. Oven/kiln
19. Rotary kiln
20. Process furnace
99. Other (specify)

Code B - Usage

1. Steam production
2. Drying/curing
3. Space heating
4. Process heat
5. Food processing
6. Electrical generation
7. Mechanical work
99. Other (specify)

Code C - Incinerator Type

1. Rotary kiln
2. Mass burn/refuse-derived fuel
3. Crematory
4. Single chamber
5. Multiple chamber
99. Other (specify)

Code D - Waste Type

1. Paper
2. Regulated medical waste
3. Municipal
4. Animal
5. Crematory
6. Industrial
99. Other (specify)

Code E - Type of Loading

1. Overhead loading - splash fill, normal service
2. Overhead loading - submerged fill, normal service
3. Bottom loading - normal service
4. Overhead loading - splash fill, balanced service
5. Overhead loading - submerged fill, balanced service
6. Bottom loading - balanced service

Code F - Hatch Vapor Closure

1. None, open to air
2. Emco - Wheaton
3. OPW

Code F - Hatch Vapor Closure (continued)

4. Chiksan - LTV
99. Other (specify)

Code G - Type of Enclosure

1. Open
2. Partially open
3. Floating roof
4. Sealed cover

Code H - Vent/Stack Configuration

1. Unobstructed vertical discharge
2. Obstructed vertical discharge (e.g., raincap)
3. Horizontal or downward discharge (e.g., T-stack)
99. Other (specify)

Code I - Air Pollution Control Equipment Type

1. Settling chamber
2. Cyclone
3. Multicyclone
4. Cyclone scrubber
5. Orifice scrubber
6. Mechanical scrubber
7. Venturi scrubber
 - a. fixed throat
 - b. variable throat
8. Mist eliminator
9. Electrostatic precipitator
 - a. hot side
 - b. cold side
 - c. high voltage
 - d. low voltage
 - e. single stage
 - f. two stage
 - g. other (specify)
10. Filter
 - a. baghouse
 - b. other (specify)
11. Catalytic afterburner
12. Direct flame afterburner
13. Absorber
 - a. packed tower
 - b. spray tower
 - c. tray tower
 - d. venturi
 - e. other (specify)
14. Adsorber
 - a. activated carbon
 - b. molecular sieve
 - c. activated alumina
 - d. silica gel
 - e. other (specify)
15. Condenser (specify)
99. Other (specify)

Code J - Seal Type

EXTERNAL

1. Metallic shoe
 - a. primary only
 - b. shoe-mounted secondary
 - c. rim-mounted secondary
2. Liquid-mounted resilient, weather shield
3. Vapor-mounted resilient, primary only
4. Liquid-mounted resilient, primary only
 - a. external

DEPT. OF VALLEY

MAY 6 1998

FOR: _____
FILE: _____

Code J - Seal Type (continued)

- b. internal
- 5. Liquid-mounted resilient secondary
 - a. external
 - b. internal
- 6. Vapor-mounted resilient, primary only
 - a. external
 - b. internal
- 7. Vapor-mounted resilient, rim-mounted secondary
 - a. external
 - b. internal
- 99. Other (specify)

Code K - Emission Estimate Method

(provide sample calculations including assumed control efficiency of control equipment to support reported values)

- 1. Stack test (include a copy, or reference by date a report previously provided to DEQ)
- 2. Material balance (cite previously submitted data or include sample of calculations)
- 3. Emission factor (identify source and include sample of calculations)
- 4. Predictive emission model
- 5. CEM data (cite previously submitted data or include a copy of summary)
- 99. Other (describe)

Code L - Fee Exemption Basis

- 1. Carbon monoxide emissions
- 2. VOC HAP emissions already included as VOC emissions for this unit
- 3. PM₁₀ HAP emissions already included as PM₁₀ emissions for this unit
- 4. PM₁₀-sized lead emissions already included as PM₁₀ emissions for this unit
- 5. Title VI pollutants (chlorofluorocarbons and other stratospheric ozone-depleting substances), not also classified as VOCs or HAPs
- 6. Air pollutant regulated only under § 112(r) of the CAA. Listing of these pollutants on page __, "Annual Air Pollutant Emissions" is optional.

Code M - Coating Use

- 1. Large appliance coatings
- 2. Magnet wire coatings
- 3. Auto and light duty truck coatings
 - a. Prime coat
 - b. Guidecoat
 - c. Topcoat
 - d. Final repair
 - e. Anti-chip
 - f. Anti-chip extreme performance
 - g. Anti-chip visible surface
- 4. Aerospace industries coating
- 5. Magnetic tape coating
- 6. Can coatings
 - a. Base/overvarnish
 - b. Internal body/external ends
 - c. Three-piece can, side seam
 - d. End seals
- 7. Metal coil coating
- 8. Non-printing paper/fabric coating
- 9. Publication printing inks and coatings
- 10. Packaging printing inks and coatings

- 11. Vinyl coatings
- 12. Metal furniture coatings
- 13. Plastic parts and products coating
- 14. Miscellaneous metal parts coatings

Code M - Coating Use (continued)

- a. Clear coatings
- b. Air-dried coatings
- c. Extreme performance coatings
- d. Other coatings
- 15. Flatwood paneling coatings
 - a. printed hardwood/particleboard
 - b. Natural finish hardwood/plywood
 - c. Class II hardboard
- 16. Paper and other webs
- 17. Shipbuilding and ship repair coating
- 18. Wood furniture coating
- 19. Flexographic ink
- 20. Lithographic ink
- 21. Rotogravure ink
- 22. Adhesives - describe:
- 23. Other coatings

Code N - Storage Tank Type

- 1. Vertical, fixed roof
- 2. Horizontal
- 3. External, floating roof
- 4. Internal, floating roof
- 5. Underground

Code O - Source of Tank Contents

- 1. Pipeline
- 2. Rail car
- 3. Tank truck
- 4. Ship or barge
- 5. Process
- 6. Other (specify)

Code P - VOC Control Method

- 1. Low-VOC coatings
 - a. High solids coatings
 - b. Low solvent coatings
 - c. Waterborne coatings
 - d. Powder coatings
 - e. UV light/electron beam-cured coatings
 - f. Electrodeposited waterborne coatings
- 2. Increased solids transfer efficiency
- 3. Carbon adsorption
- 4. Incineration
- 5. Enclosures - partial ____ %
or capture efficiency ____ %
- 6. Other (describe)

Source Location Map
Merck and Co., Inc.

The map displays the Merck Stonewall Plant complex, situated near the intersection of Western and Norfolk roads. Key features include the Hawksbill River, Giants Grave, and the Hawksbill National Park. The map also shows the location of the Merck and Co., Inc. plant, the Merck and Co., Inc. plant, and the Merck and Co., Inc. plant. The map includes a scale bar indicating 0.3 miles to U.S. 340. The map is oriented with North at the top, and the scale bar is located in the upper right corner. The map is titled "Source Location Map" and "Merck and Co., Inc." in the upper left corner. The map is oriented with North at the top, and the scale bar is located in the upper right corner. The map is titled "Source Location Map" and "Merck and Co., Inc." in the upper left corner.

SCALE 1:24 000

10. VIRGINIA

Revisions shown in purple and woodland compiled in cooperation with Commonwealth of Virginia agencies from aerial photographs taken 1964 and online sources. This information is not a field check.

1900-1901, 1902-1903, 1903-1904

ROAD CLASSIFICATION		Stat
Heavy-duty	Light-duty	
Medium-duty	Unimproved	U. S. Route

Attachment I
Merck & Co., Inc.
Virginia Title V Permit Application
List of Referenced Documents¹

1. Project XL PSD Permit, 1/7/98.
2. Project XL PSD Permit Support Document, 9/26/97.
3. Registration and Support Information dated 4/18/96 for Carbidopa.
4. Project XL Federal Site-Specific Rule, 62 FR 52622-52642; 10/8/97.
5. Project XL SAPCB Order Granting a Variance, 9/11/97.
6. Project XL Variance Regulation for Merck Stonewall Plant (9 VAC 5 Chapter 190)
7. Title V Implementation Issues Letter, VADEQ (Mr. Chewning) to Merck (Mr. Jett), 9/5/97.
8. Letter, Tedd H. Jett to Sharon Foley, "1996 Emissions for Title V Fee Assessment," 6/23/97.

H:\lammary\Title V\Title V Attachment I.doc

VADEQ-VALLEY

MAY 6 1998

TO: _____
FILE: _____

¹ For the purposes of submission of this Title V Permit Application, Merck & Co., Inc., deems any and all confidential supporting information previously submitted to the VADEQ in conjunction with these referenced documents as confidential and exempt from the Freedom of Information Act, Chapter 21, Section 2.1-3.40.

Attachment II
Merck & Co., Inc.
Virginia Title V Permit Application
Sample Calculations
HCl and HF Emissions from Coal Combustion

1. HCl Emissions from Coal Combustion

Emission factor for spreader-stoker boilers = 1.9 lb HCl emitted per ton of coal combusted (a).

$$\frac{1.9 \text{ lb HCl}}{1 \text{ ton coal}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 46,800 \text{ tons burned in 1996} = 44.5 \text{ tons HCl emitted}$$

2. HF Emissions from Coal Combustion

Emission factor for spreader-stoker boilers = 0.23 lb HF emitted per ton of coal combusted (a).

$$\frac{0.23 \text{ lb HF}}{1 \text{ ton coal}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times 46,800 \text{ tons burned in 1996} = 5.4 \text{ tons HF emitted}$$

DEQ-VALLEY

MAY 6 1998

FILE

(a) EPA Guidance Document 600/7-85-041, "Hydrogen Chloride and Hydrogen Fluoride Emission Factors for the NAPAP Emission Inventory", October, 1985.

APPENDIX G

CHECKLIST FOR A COMPLETE APPLICATION

This checklist does not need to be included with the application being submitted to the VDEQ. It should be noted that circumstances may arise during the permit review process which require the Department to request additional information from the applicant prior to the application being considered complete. Therefore, the Department reserves the right to request additional information as needed during the permit review process.

- ☒ 1. Was document signed by a responsible official? (Form 805 page i)
- ☒ 2. Were the calculations upon which emission estimates and process rates are based included with application? (Form 805 pages 3-9)

The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.b.(4)). Other sample calculations are attached (Attachment II) which supplement those calculations not otherwise addressed in XL supporting documentation.

- ☒ 3. Was an equipment listing of significant units, including size, type and rated capacity included with application? (Form 805 pages 3-9)

The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.b.(2)).

- ☒ 4. Was pollution control equipment listed with efficiency or operational parameters? (Form 805 pages 10-11)

For equipment used to control criteria pollutants the Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.c). Existing equipment used to control non-criteria pollutants for which there is an existing [state only] applicable requirement (HCL) is addressed on page 10.

- ☒ 5. Are all emissions for which a source is major and all emissions of regulated air pollutants listed? (Form 805 pages 12-13)

Page 12 of the application cites a letter dated 6/23/97 from Jett to Foley attesting to the accuracy of the 1996 air emissions update for Title V fee assessment. Page 13 provides the list of criteria pollutants and hazardous air pollutants for which the source is major.

- ☒ 6. Was a list insignificant activities provided? (Form 805 page 18)

The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.b.(3)).

- ☒ 7. If any compliance certification questions on Form 805 page 19 are answered "NO," is the compliance plan section filled out? (Form 805 pages 20-21)

All certification questions were answered "yes".

DEO-VALLEY

MAY 6 1998

APPENDIX G
CHECKLIST FOR A COMPLETE APPLICATION (Continued)

- ☒ 8. Is the compliance certification signed by a responsible official? (Form 805 page 21)
- ☒ 9. Was general facility information provided? (Form 805 pages 1-2)
- Page 1 provides all the requested general information. For the additional general information requested on Page 2, the Project XL PSD Permit and associated support materials are substituted in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.c.).*
- ☒ 10. If any pages are marked "confidential information," was justification provided for determining that the information is confidential? (Form 805 page iv)
- There are no items marked "confidential information" in the Title V application. Confidential documents previously submitted to DEQ which are referenced in the application, however, remain confidential and exempt from the Freedom of Information Act, Chapter 21, Section 2.1-3.40.*
- ☒ 11. Enclosed site map with latitude and longitude or UTM coordinates? (Form 805 page iii)
- A source location map is attached to the application.*
- ☒ 12. Enclosed site plan with building dimensions, property and fence lines, and vent and stack locations? (Form 805 page iii)
- The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.c.).*
- ☒ 13. Enclosed process flow diagram? (Form 805 page iii)
- The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.c.).*
- ☒ 14. Was a description of all monitoring devices and activities, reporting requirements provided? (if required) Form 805 page 15-17
- The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.a. - 2.c.).*
- ☒ 15. Provided a description of or reference to any applicable test method for determining compliance with an applicable requirement (i.e., monitoring, recordkeeping, and reporting requirements)?
- The Project XL PSD Permit and associated support materials are substituted for this information in accordance with DEQ guidance letter dated September 5, 1997 (see Item 2.a. - 2.c.).*

DEQ-VALLEY

MAY 6 1998

FILED

APPENDIX G
CHECKLIST FOR A COMPLETE APPLICATION (Continued)

- ☒ 16. Completed the general information section of the form by indicating the quantities of copies of each page attached to the final application package? (Form 805 page i)

Completed.

- ☒ 17. If this is an affected source, have you included the use of nationally standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under Title IV of the CAA. (Form 805 page 2)

Not Applicable.

- ☒ 18. Was the emission data verified in regards to the permitting fees? (Form 805 page 12)

Page 12 of the application cites a letter dated 6/23/97 from Jett to Foley attesting to the accuracy of the 1996 air emissions update for Title V fee assessment. Page 13 provides the list of criteria pollutants and hazardous air pollutants for which the source is major.

- ☒ 19. Was all pertinent information provided which showed how compliance was demonstrated for each applicable requirement?

The XL PSD Permit is the set of future applicable requirements to which the site will be demonstrating compliance in accordance with its terms and conditions. The basis for compliance for listed applicable requirements for which the XL PSD Permit does not constitute compliance is indicated on page 16 (Section 1 through 3).

- ☒ 20. Was information on work practice standards, limitations on source operations for regulated air pollutants provided? (Form 805 pages 3-4, 7-8, 10, 14, 19)

As indicated above, each of the above cited pages in Form 805 was completed in accordance with DEQ guidance letter dated September 5, 1997.

- ☒ 21. Was information related to stack height provided? (Form 805 page 9)

The Project XL PSD Permit and associated support materials are substituted for this information in accordance with the DEQ guidance letter dated September 5, 1997 (see Item 2.c.).

- ☒ 22. Was an explanation of any proposed exemptions from otherwise applicable requirements, as well as from streamlined requirements provided? (Form 805 pages 12, 18)

Pages 12 and 18 provide an explanation and reference for the information addressed in accordance with the DEQ guidance letter dated September 5, 1997 (see Items 2.b.(4) and 2.b.(3), respectively.

- ☒ 23. Was a statement of methods used for determining compliance, including monitoring, recordkeeping, and reporting requirements and test methods, provided? (Form 805 pages 19-21)

The facility is certifying compliance with applicable requirements in accordance with the DEQ guidance letter dated September 5, 1997 (see Items 4.a. - 4.c.).

DEQ-VALLEY

APPENDIX G
CHECKLIST FOR A COMPLETE APPLICATION (Continued)

- ☒ 24. Was a schedule of submission of compliance certified progress reports during the permit term provided? (Form 805 pages 19-21)

Not Applicable.

- ☒ 25. Included information on alternative operating scenarios? (if applicable) (Form 805 page 2)

The facility is not requesting alternative operating scenarios.

- ☒ 26. Provided the following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules? (Form 805 pages 3-9)

As indicated above, each of the above cited pages in Form 805 was completed in accordance with the DEQ guidance letter dated September 5, 1997 (see Item 2.b.(2), and 2.c..

- ☒ 27. Included a brief description, for all applicable requirements that will become effective during the permit term, including the effective date that the source will meet such requirements on a timely basis? (Form 805 page 14)

Page 14 (sheets 1 through 3) was completed in accordance with the DEQ guidance letter dated September 5, 1997 (see Item 3.).

- ☒ 28. Completed all appropriate pages of the permit application, according to the instructions?

All appropriate pages have been completed.

- ☒ 29. Has the source's Title V fee been paid for the currently applicable term?

The facility has paid Title V fees for the current term.

H:\nammary\Title V\TitleVAppG.doc

DEQ-VALLEY

MAY 6 1998

FILE