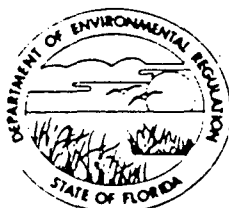


STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Gardinier, Inc.
P. O. Box 3269
Tampa, Florida 33601

Permit Number: AC 29-089696
Expiration Date: October 1, 1987
County: Hillsborough
Latitude/Longitude: 27° 51' 28"N
82° 23' 15"W/
Project: No. 8 Sulfuric Acid
Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4, and 40 CFR 52.21. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

Modifications to the No. 8 sulfuric acid plant that will increase production from 1770 to 2200 TPD. The modifications involve installing parallel gas ducting to the last two catalyst masses, installing larger steam piping from the plant, installing a superheater parallel with the No. 1 boiler, installing a superheater/economizer in the exit of the 3A pass, installing additional catalyst in the main converter, replacing the existing acid cast iron cooling coils with stainless steel heat exchangers, and other major modifications that have prior approval of the department and the Hillsborough County Environmental Protection Commission.

The UTM coordinates of the site are 17-363.3 Km E and 3082.4 Km N.

Construction shall be in accordance with the application for a permit to construct the No. 8 sulfuric acid plant that was signed by Mr. Rudy J. Cabina on July 3, 1984, and the additional information supplied in Gardinier, Inc.'s September 11, 1984, and October 15, 1984, letters except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as specific conditions in the permit to construct.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- (x) Determination of Prevention of Significant Deterioration (PSD)
- (x) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Sulfuric acid production, measured as 100 percent H₂SO₄, shall not exceed 2,200 TPD.
2. Sulfur dioxide emissions shall not exceed 4.0 lb/ton acid and 8,800 lb/day.
3. Acid mist emissions shall not exceed 0.15 lb/ton acid and 330 lb/day.
4. Visible emissions shall not exceed 5 percent opacity, average for any consecutive 6 minute period.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

SPECIFIC CONDITIONS:

5. All compliance tests shall be conducted while the plant is operating within 5 percent of its permitted capacity of 91.7 TPH acid. The test methods and procedures described in 40 CFR 60.85 shall be used to determine the compliance status of the source with the sulfur dioxide and acid mist standards. Method 9, as described in 40 CFR 60, Appendix A, shall be used to determine the compliance status of the source with the visible emissions standard. Hillsborough County Environmental Protection Commission shall be notified in writing 15 days prior to any compliance test.
6. A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated on this plant as specified in 40 CFR 60.84. Excess emissions shall be reported to the Hillsborough County Environmental Protection Commission.
7. The applicant shall comply with all requirements of 40 CFR 60, Subpart H, Standards of Performance for Sulfuric Acid Plants.
8. The plant may operated continuously, 8760 hours per year.
9. This construction permit replaces the current operating permit for this sulfuric acid plant. During the modifications of this plant, the emissions shall not exceed 10 lb SO₂ per ton of acid and 0.15 lb acid mist per ton of acid while the plant is operating commercially.
10. Construction shall reasonably conform to the plans and schedule in the application and October 15, 1984 letter. Bi-annual reports describing the status of the modifications shall be submitted to the state and county regulatory agencies. Gardinier, Inc. shall obtain prior approval from the department and county before proceeding with any construction referred to as "Third Modification" in the October 15, 1984 letter.
11. Gardinier, Inc. shall take precautionary measures to prevent emissions from leaks at the plant. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provisions in Section 17-2.610(3), FAC. These provisions are applicable to any source, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrial related activities such as loading, unloading, storing and handling.

PERMITTEE:
Gardinier, Inc.

Permit Number: AC 29-089696
Expiration Date: October 1, 1987

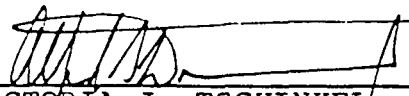
SPECIFIC CONDITIONS:

12. Gardinier, Inc. shall submit a complete application for a permit to operate the sulfuric acid plant, which includes an emissions test report, to the Hillsborough County Environmental Protection Commission at least 90 days prior to the expiration date of this construction permit. Gardinier, Inc. may continue to operate this sulfuric acid plant, if the source is in compliance with the conditions in this permit, until the expiration date of this construction permit or until the expiration date of any permit to operate that is issued for this source.

13. Upon obtaining a permit to operate, the applicant will be required to submit annual operation reports which shall include, as a minimum, the annual production of the plant and a recent emissions test report.

Issued this 8th day of Feb, 1985

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


for VICTORIA J. TSCHINKEL, Secretary

___ pages attached.

Best Available Control Technology (BACT) Determination
Gardinier, Inc.
Hillsborough County

The applicant plans to increase the product rate from their Number 7 and Number 8 sulfuric acid plants that are located at their Tampa phosphate fertilizer complex. The production of sulfuric acid from the No. 7 plant will be increased from 1750 tons per day (TPD) to 2200 TPD, and the No. 8 plant from 1770 TPD also to 2200 TPD. No restrictions to limit the hours of operation of either plant has been requested.

Increasing the product output from the two sulfuric acid plants will also result in more air pollutants being emitted to the atmosphere. The air pollutants emitted from a sulfuric acid plant are sulfur dioxide (SO₂) and acid mist. The amount of SO₂ emitted to the atmosphere is an inverse function of sulfur conversion efficiency. When sulfur trioxide combines with water vapor at a temperature below the dew point of sulfur trioxide, acid mist is formed. The amount of acid mist is usually dependent upon the type of sulfur feedstock, the strength of acid produced, and the operational parameters in the absorber. Based upon the applicant's data, the net increase in air pollutant emissions would be 2327 tons of SO₂ and 92 tons of acid mist per year.

Under the regulations in Chapter 17-2, Florida Administrative Code, the increase in SO₂ and acid mist emissions exceed the significant emission rates as listed in Table 500-2. A BACT determination, therefore, is required for the regulated air pollutants sulfur dioxide and acid mist.

BACT Determination Requested by the Applicant:

The air pollutant emissions from No. 7 sulfuric acid plant would be limited to 4 pounds of SO₂ and 0.15 pounds of acid mist per ton of 100% acid produced.

The air pollutant emissions from No. 8 sulfuric acid plant would be limited to 10 pounds of SO₂ and 0.30 pounds of acid mist per ton of 100% acid produced.

Date Receipt of a BACT application:

July 6, 1984

Date of Publication in the Florida Administrative Weekly:

July 27, 1984

Review Group Members:

The determination was based upon comments received from the Stationary Source Control Section, Air Modeling and Data Analysis Section, the Southwest District Office, and the Hillsborough County Environmental Protection Commission.

BACT Determined by DER:

Sulfuric Acid Plants No. 7 and No. 8

Pollutant	Emission Limit
Sulfur Dioxide (SO ₂)	Not to exceed 4 pounds per ton of 100% acid produced
Acid Mist ^[1]	Not to exceed 0.15 pounds per ton of 100% acid produced
Visible Emissions	5% opacity maximum

[1] Acid mist means sulfuric acid mist, as measured by Method 8 of 40 CFR 60, Appendix A.

Compliance with the emission limits will be in accordance with the test methods and procedures prescribed in subsection 60.85, Subpart H, New Source Performance Standards.

DER Method 9 (17-2.700(6)(a)9, FAC) will be used to determine compliance with the visible emission limit.

BACT Determination Rationale:

Florida Administrative Code Rule 17-2.100(105) defines "modification" as any physical change in, or addition to a stationary facility which increase the actual emissions of any air pollutant, regulated under this Chapter, including any not previously emitted, from any source within such facility.

If the increase in emissions as a result of the major source modification are equal to or greater than the significant emission rates listed in Table 500-2, Regulated Air Pollutants - Significant Emission Rates; a Best Available Control Technology (BACT) determination is required, Rule 17-2.500(5)(c). In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed under 40 CFR Part 60 - New Source Performance Standards (NSPS), Rule 17-2.630(1)(a).

Sulfuric acid plants are subject to the provisions of the New Source Performance Standards, 40 CFR 60.80, Subpart H. The standards under Subpart H are; 4.0 pounds of SO₂ per ton of acid produced and 0.15 pound of acid mist per ton of acid produced, expressed as 100 percent sulfuric acid. The visible emissions limit is less than 10 percent opacity.

The NSPS standards, Subpart H, were reviewed by EPA in 1979 and EPA concluded that from the standpoint of technology, and considering costs, and the small quantity of emissions in question, that it did not appear necessary to revise the standards. The department has reviewed the test results obtained from several different sulfuric acid plants and concurs with EPA's conclusion. The provisions of Subpart H are judged to be BACT.

The visible emissions limitation determined as BACT is equal to Hillsborough County's requirement as per Chapter 1-3.03 VI.C - visible emissions shall not exceed 5% opacity except for 30 minute periods during plant startups when opacity shall be no greater than 40%.

The air quality impact of the proposed emissions has been analyzed. Atmospheric dispersion modeling has been completed and used in conjunction with an analysis of existing air quality to determine maximum ground-level ambient concentrations of the pollutants subject to BACT. Based on these analyses, the department has reasonable assurance that the proposed sulfuric acid plant modifications, subject to the these BACT emission limitations, will not cause or contribute to a violation of the PSD increment or ambient air quality standard.

Details of the Analysis may be Obtained by Contacting:

Ed Palagyi
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

C. H. Fancy

C. H. Fancy, Deputy Bureau Chief

Date: 2/8/85

Approved by:

Victoria J. Tschinkel

Victoria J. Tschinkel, Secretary

Date: 2/12/85

APPENDIX B

Previous BACT Determinations for H₂SO₄ Plants

Source: BACT/LAER Clearinghouse: A Compilation
of Control Technology Determinations
May 1986. PB 86-226974

APPENDIX -- DETAILED SOURCE LISTING

05/21/1985

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SOURCE TYPE/SIZE          FERTILIZER PLANTS                      1.80 MMT/YR
-----
COMPANY NAME/SITE LOCATION CHEVRON CO., USA                      ROCK SPRINGS, WY
-----
DETERMINATION IS BACT FOR A NEW SOURCE.          DATE OF PERMIT ISSUANCE-- 06/13/84
PERMIT NO. CT-550                                ESTIMATED DATE OF START-UP-- 1986
DETERMINATION MADE BY   WYOMING AQD              CHUCK COLLINS
                        (AGENCY)                (AGENCY CONTACT PERSON)
                                                (307)-777-7391
                                                (PHONE)
=====
    
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PROCESSES SUBJECT TO THIS PERMIT	THROUGHPUT CAPACITY	POLLUTANT EMITTED	EMISSION LIMITS CONTROL EQUIPMENT OR PROCESS MODIFICATION	... & BASIS ... PCT EFF
ACID PLANT, PHOSPHORIC, 2 EA	880.00 T/D EQUIV. *	F	0.0200 LB/T EQUIV. P205 REACTOR/EVAP/PACKED TOWER SCRUB H2SIF6 BAROMETRIC CONDEN/FILTRATE RECEIVERS	NSPS 99.90
ACID PLANT, SUPERPHOSPHORIC	300.00 T/D EQUIV. *	F	0.0100 LB/T EQUIV. P205 68% EVAP/H2SIF6 SCRUB/BAROMETRIC CONDE./PACKED* STOR TANK/VAC FILTER + FALLING CURTAIN SCRUB	NSPS 99.90
BOILER, 2 EA	105.60 MMBTU/H	NOX	0.2000 LB/MMBTU FUEL	SIP
DRYER, CONCENTRATE	2300.00 T/D	PM	0.0070 GR/ACF VENTURI SCRUBBERS	BACT 99.00
CONCENTRATE HANDLING		PM	0.0200 GR/ACF BAGHOUSE	BACT 99.50
CONCENTRATE LOADOUT		PM	0.0200 GR/ACF HOOD & BAGHOUSE	BACT 99.50
ACID PLANT, SULFURIC, 2 EA	1900.00 T/D	SO2	4.0000 LB/T ACID DESIGN	NSPS
		H2S*	0.1500 LB/T ACID DESIGN	NSPS

(*) INDICATES DATUM WAS TRUNCATED FOR THIS TABLE.

INITIAL REVIEW POST STARTUP
REVIEW STATUS:

APPENDIX -- DETAILED SOURCE LISTING

05/21/1985

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=====
SOURCE TYPE/SIZE          FERTILIZER PLANTS
-----
COMPANY NAME/SITE LOCATION  CONSERV, INC.                NICHOLS, FL 33863
                             P.O. BOX 314                POLK COUNTY
-----
DETERMINATION IS BACT FOR A MODIFIED SOURCE.
PERMIT NO. FL-076
DETERMINATION MADE BY     FLORIDA DER                WILLARD HANKS
                             (AGENCY)                   (AGENCY CONTACT PERSON)
                                           DATE OF PERMIT ISSUANCE-- 10/02/81
                                           ESTIMATED DATE OF START-UP-- 1983
                                           (904)-488-1344
                                           (PHONE)
=====
    
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PROCESSES SUBJECT TO THIS PERMIT	THROUGHPUT CAPACITY	POLLUTANT EMITTED	EMISSION LIMITS CONTROL EQUIPMENT OR PROCESS MODIFICATION	... & BASIS ... PCT EFF
SULFURIC ACID PLANT	2000.00 T/D	SO2	333.4000 LB/H DOUBLE ADSORPTION	NSPS 98.00
		ACI*	12.5000 LB/H ACID MIST ELIMINATION	NSPS

(*) INDICATES DATUM WAS TRUNCATED FOR THIS TABLE.

INITIAL REVIEW POST STARTUP
 REVIEW STATUS: 04/01/1983 01/25/1984

APPENDIX -- DETAILED SOURCE LISTING

05/21/1985

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=====
SOURCE TYPE/SIZE          FERTILIZER PLANTS          484000.00 T/YR PHOSPHORIC FERT
-----
COMPANY NAME/SITE LOCATION  USS AGRI-CHEMICALS          BARTON (FT. MEADE COMPLEX), FL 38830
                           P. O. BOX 150                POLK COUNTY
=====
  
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DETERMINATION IS BACT FOR A MODIFIED SOURCE.          DATE OF PERMIT ISSUANCE-- 04/01/81
PERMIT NO. PSD-FL-064                                ESTIMATED DATE OF START-UP-- 1981
DETERMINATION MADE BY  FLORIDA DER                WILLARD HANKS                (904)-488-1344
                           (AGENCY)                (AGENCY CONTACT PERSON)      (PHONE)
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=====
PROCESSES SUBJECT          THROUGHPUT          POLLUTANT          EMISSION LIMITS          ... & BASIS
TO THIS PERMIT            CAPACITY           EMITTED            CONTROL EQUIPMENT OR PROCESS MODIFICATION ... PCT EFF
-----
SULFURIC ACID PROD.      1.35 MMT/YR
                           SO2                40.0000 LB/T 100% H2SO4
                                           DOUBLE ADSORPTION          NSPS
                                                                         70.00
PHOSPHORIC ACID PROD.    484000.00 T/YR
                           0.0200 LB/T P2O5
                                           SCRUBBERS                  NSPS
                                                                         95.00
=====
  
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(*) INDICATES DATUM WAS TRUNCATED FOR THIS TABLE.

INITIAL REVIEW POST STARTUP
 REVIEW STATUS: 04/01/1983 01/25/1984

APPENDIX C

No. 8 Sulfuric Acid Plant Construction Permit
and BACT Determination, February 8, 1985

Best Available Copy

16 15
21 22

15 14
22 23

RIVERVIEW

Surge Pond

Uranium
Recovery
Plant

Triple Mfg. Bldg.

Wet Rock
Storage

Employee
Parking Lot

Super Bldg.

#3 Storage Bldg.

#4 DAP Storage Bldg.

#5 DAP Storage Bldg.

#6 Storage Bldg.

Sump
#15

No. 9
CAP

No. 8
CAP

No. 7
CAP

ALAFIA

KEY

- 1 H₂SO₄, 7
- 2 H₂SO₄, 8
- 3 H₂SO₄, 9
- 4 AUX. BOILER
- 8 RM 5, CTMD 3-4
- 9 QTSP
- 10 DM 1-2
- 11 DM 3-4
- 12 DM 5
- 13 SSF

1" = 400'

GARDINIER, INC.
E. TAMPA PLANT
PLOT PLAN

41

00