



# Florida Department of Environmental Regulation

Northwest District • 160 Governmental Center • Pensacola, Florida 32501-5794 • 904-436-8300

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary  
Robert Kriepel, Deputy Assistant Secretary

## PERMITTEE:

Gardinier, Inc.  
8813 Highway 41 South  
Riverview, FL 33569

## PERMIT/CERTIFICATION

Permit No: AO29-146224  
County: Hillsborough  
Expiration Date: 07/23/95  
Project: Phosphoric Acid  
Production System

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

For the operation of a wet-process phosphoric acid production system consisting of the No. 3 (prayon) phosphoric acid plant, No. 4 (Dorrco) phosphoric acid plant (including the reaction tank filter feed hood and recirculating phosphoric acid), a phosphoric acid clarifier, evaporators 1-4, 5-8, 9, and 10, a 300,000 gallon capacity-30% phosphoric acid storage tank, a 30% phosphoric acid feed tank, and two 54% phosphoric acid storage tanks.

Fluoride emissions generated from No. 3 phosphoric acid plant (rock acidulation and slurry filtration), 30% phosphoric acid feed tank, and the two 54% phosphoric acid storage tanks are controlled by a teller packed bed scrubber.

Fluoride emissions generated from No. 4 phosphoric acid plant - reaction tank filter feed hood and recirculating phosphoric acid process - are controlled by a Vescor, Model 2155RL, scrubber.

Fluoride emissions generated from the phosphoric acid clarifier and the 30% phosphoric acid storage tank are controlled by a Micro-Fab, Inc., upflow packed scrubber and a Croll Reynolds, Model 66-24V scrubber, respectively.

Fluoride emissions generated from evaporators 9 and 10 are controlled by a Croll Reynolds, Model 10x10 - 36V, scrubber.

Fluoride emissions generated from evaporators 1-8 are condensed in a closed system and not vented directly to the atmosphere.

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP		ACTION NO	
		ACTION DUE DATE	
1. TO: (NAME, OFFICE, LOCATION)		Initial	
<i>Ms. Cindy Phillips</i>		Date	
2.		Initial	
<i>DARM - BAR</i>		Date	
3.		Initial	
<i>DER - Tallahassee</i>		Date	
4.		Initial	
<i>Twin Towers</i>		Date	
REMARKS:		INFORMATION	
		Review & Return	
<p><i>Attached is a copy of A029-146228 you requested.</i></p> <p><i>Have a good day</i></p> <p><b>RECEIVED</b> OCT 18 1990 DER - BAQM</p>		Review & File	
		Initial & Forward	
		DISPOSITION	
		Review & Respond	
		Prepare Response	
		For My Signature	
		For Your Signature	
		Let's Discuss	
		Set Up Meeting	
		Investigate & Report	
		Initial & Forward	
		Distribute	
		Concurrence	
		For Processing	
FROM:		Initial & Return	
		DATE	<i>10-15-90</i>
<i>Jim McDonald</i>		PHONE	

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System

PROCESS DESCRIPTION: (continued)

The Phosphoric Acid Production System is subject to the requirements of 40 CFR 60, Subpart T - Standards of Performance for the Phosphate Fertilizer Industry: Wet Phosphorus Acid Plants.

Location: 8813 U.S. Highway 41 South, Riverview, Hillsborough County

UTM: 17-362.9 E 3082.5 N Neds No.: 0008 Point ID; 73

Replaces Permit No.: A029-81989  
~~A029-67643~~  
AC29-156206

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SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.
2. The phosphoric acid production system is permitted in accordance with the requirements of 40 CFR 60, Subpart T - Standards of Performance for the Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.
3. Pursuant to 40 CFR 60.202, the permittee shall not cause to be discharged into the atmosphere from the facility (phosphoric acid production system) any gases which contain total fluorides in excess of 0.020 lb F/ton (10.0 g/metric ton) of equivalent  $P_2O_5$  feed.
4. Pursuant to the construction permits, No. AC29-21345 and No. AC29-21343, the maximum allowable emission rate for the phosphoric acid production system shall be 0.020 lb F/ton of  $P_2O_5$  input up to 2.09 lb F/hour based on a maximum process rate of 104.5 TPH of  $P_2O_5$  input.
5. Visible emissions shall not be equal to or greater than 20% opacity in accordance with Rule 17-2.610(2)(a), F.A.C.
6. The phosphoric acid production system may be in service continuously, up to 8760 hours per year.
7. Test the emissions from the scrubber exhausts (5 exhausts) for the following pollutant(s) at intervals of 12 months from December 15, 1990 and submit 2 copies of test data to the Air Section of the Environmental Protection Commission of Hillsborough County office within forty-five days of such testing. Testing procedures shall be consistent with the requirements of Section 17-2.700, F.A.C.:

- |   |   |
|---|---|
| <input type="checkbox"/> Particulates         | <input type="checkbox"/> Sulfur Oxides*       |
| <input checked="" type="checkbox"/> Fluorides | <input type="checkbox"/> Nitrogen Oxides      |
| <input checked="" type="checkbox"/> Opacity   | <input type="checkbox"/> Hydrocarbons         |
|   | <input type="checkbox"/> Total Reduced Sulfur |

\* Fuel analysis may be submitted for required sulfur dioxide emission test.

8. Compliance with the emission limitations of Specific Condition No. 5 shall be determined using EPA Method No. 9 contained in 40 CFR 60, Appendix A and adopted by reference in Section 17-2.700, F.A.C. The Method No. 9 test observation period for this source shall be sixty (60) minutes in duration except for the phosphoric acid clarifier, the 300,000 gallon capacity-30% phosphoric acid storage tank, and the evaporators, 9 and 10, for which the test observation period shall be

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SPECIFIC CONDITIONS: (continued)

thirty (30) minutes in duration. The test shall be conducted within 5 consecutive days and submitted to the Air Section of the Environmental Protection Commission of Hillsborough County as a composite report. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Section 17-2.700, F.A.C. and 40 CFR 60, Appendix A.

9. Compliance with the emission limitations of Specific Condition Nos. 3 and 4 shall be determined pursuant to 40 CFR 60.204 - test methods and procedures:

- (a) Reference methods in appendix A of part 60, except as provided in 40 CFR 60.8(b), shall be used to determine compliance with the standard stipulated in Specific Condition No. 3 of this permit as follows:
  - (1) Method 13 A or 13B for the concentration of total fluorides and the associated moisture content,
  - (2) Method 1 for sample and velocity traverses,
  - (3) Method 2 for velocity and volumetric flow rate.
- (b) For Method 13A or 13B, the sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Department.
- (c) Equivalent  $P_2O_5$  feed shall be determined as follows:
  - (1) Determine the total mass rate in ton/hr. of phosphorus-bearing feed during the test using a flow monitoring device meeting the requirements of Specific Condition No. 9.(a) of this permit.
  - (2) Calculate the equivalent  $P_2O_5$  feed by multiplying the percentage  $P_2O_5$  content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9. see 40 CFR 60.17) times that total mass rate of phosphorus-bearing feed. Other test methods may be approved by the Department.
- (d) For each run, emissions expressed in lb./ton of equivalent  $P_2O_5$  feed shall be determined using the following or equivalent equation:

$$E = (C_S Q_S) 10^{-3} / M_{P_2O_5}$$

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SPECIFIC CONDITIONS: (continued)

where:

- $E$  = Emissions of total fluorides in g/metric ton of equivalent  $P_{2}O_{5}$  feed.  
 $C_s$  = Concentration of total fluorides in mg/dscm as determined by Method 13A or 13B.  
 $Q_s$  = Volumetric flow rate of the effluent gas stream in dscm/hr. as determined by Method 2.  
 $10^{-3}$  = Conversion factor for mg to g.  
 $M_{P_{2}O_{5}}$  = Equivalent  $P_{2}O_{5}$  feed in metric tons/hour as determined from Specific Condition No. 9.(c) of this permit.

10. Testing of emissions must be accomplished within  $\pm 10\%$  of the maximum process weight rate. The actual process weight rate of  $P_{2}O_{5}$  input shall be specified in each test result. The five scrubber exhaust stacks shall be tested within 5 consecutive days and submitted to the Air Section of the Environmental Protection Commission of Hillsborough County as a composite report. Failure to include the actual process or production rates in the results may invalidate the test (Rule 17-4.070, F.A.C.).

11. Pursuant to 40 CFR 60.203, Gardinier, Inc., shall comply with the following requirements for the monitoring of the phosphoric acid production system operations:

- (a) The Permittee shall calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus bearing feed material to the process. The monitoring device shall have an accuracy of  $\pm 5\%$  over its operating range.
- (b) The Permittee shall maintain a daily record of equivalent  $P_{2}O_{5}$  feed by first determining the total mass rate in tons/hour of phosphorus bearing feed using a monitoring device for measuring mass flow rate which meets the requirements of Specific Condition No. 11.(a) above and then by proceeding according to Specific Condition No. 9.(c)(2) of this permit.
- (c) The Permittee shall calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubber system. The monitoring devices shall have an accuracy of  $\pm 5\%$  over its operating range.

12. The new scrubbers for the phosphoric acid plant clarifier and the 30% phosphoric storage tank shall be operated at all times except when scrubber down time is necessary for process or maintenance reasons.

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13. Pursuant to the Environmental Protection Commission of Hillsborough County Consent Order, Case No. 00222KLS008, signed on May 1, 1990, any production process served by a process scrubber at the phosphoric acid production system facility shall be shut down during the cleaning of in-line strainers serving the scrubber unless a dual parallel strainer system or other appropriate control device has been installed.

14. Within 45 days of the date of issuance of this permit, Gardinier, Inc., agrees to submit an application, DER Form 17-1.202(1), to the Central Air Permitting Section (CAPS) of the Florida Department of Environmental Regulation for the amendment or modification, whichever is warranted, of construction permits, No. AC29-21345, and AC29-21343, to increase the permitted maximum process rate of 104.5 TPH of  $P_2O_5$  input for the phosphoric acid production system. Until resolution of this condition, compliance with the maximum process rate is waived.

15. The Environmental Protection Commission of Hillsborough County shall be given written notice at least 15 days prior to compliance testing of these sources.

16. Submit for this facility, each calendar year, on or before March 1, an emission report for the preceding calendar year containing the following:

- (A) Annual amount of materials and/or fuels utilized.
- (B) Annual emissions (note calculation basis).
- (C) Any changes in the information contained in the permit application.

Duplicate copies of all reports shall be submitted to the Environmental Protection Commission of Hillsborough County.

17. Pursuant to Chapter 1-3.22(3) of the Rules of the Environmental Protection Commission of Hillsborough County, the Permittee shall not allow the discharge of air pollutants which contribute to an objection odor.

18. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provision in Section 17-2.610(3), F.A.C. 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.

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19. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-2, F.A.C., or any other requirements under federal, state, or local law. Section 17-2.210, F.A.C.

20. Pursuant to Section 17-4.090, F.A.C., an application for renewal of permit to operate this source, completed in quadruplicate, shall be submitted to the Environmental Protection Commission of Hillsborough County at least 60 days prior to its expiration date.

Issued this 31 day of August  
19 90.

STATE OF FLORIDA DEPARTMENT OF  
ENVIRONMENTAL REGULATION

  
For Richard Garrity, Ph.D.  
Deputy Assistant Secretary