



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

10/7/2013

Brent Hylton
COLGATE PALMOLIVE CO.
8800 GUERNSEY INDUSTRIAL BLVD.
CAMBRIDGE, OH 43725

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0630010015
Permit Number: P0111890
Permit Type: Renewal
County: Guernsey

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-SEDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
COLGATE PALMOLIVE CO.**

Facility ID:	0630010015
Permit Number:	P0111890
Permit Type:	Renewal
Issued:	10/7/2013
Effective:	10/7/2013
Expiration:	10/7/2023



Division of Air Pollution Control
Permit-to-Install and Operate
for
COLGATE PALMOLIVE CO.

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Final Permit-to-Install and Operate
COLGATE PALMOLIVE CO.
Permit Number: P0111890
Facility ID: 0630010015
Effective Date: 10/7/2013

Authorization

Facility ID: 0630010015
Application Number(s): A0046028
Permit Number: P0111890
Permit Description: PTIO renewal for P001 (Sulfonation Process No. 1) and P006 (Sulfonation Process No. 2).
Permit Type: Renewal
Permit Fee: \$0.00
Issue Date: 10/7/2013
Effective Date: 10/7/2013
Expiration Date: 10/7/2023
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

COLGATE PALMOLIVE CO.
8800 GUERNSEY INDUSTRIAL BLVD.
CAMBRIDGE, OH 43725

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

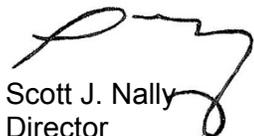
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Southeast District Office
2195 Front Street
Logan, OH 43138
(740)385-8501

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency



Scott J. Nally
Director



Final Permit-to-Install and Operate
COLGATE PALMOLIVE CO.
Permit Number: P0111890
Facility ID: 0630010015
Effective Date: 10/7/2013

Authorization (continued)

Permit Number: P0111890
Permit Description: PTIO renewal for P001 (Sulfonation Process No. 1) and P006 (Sulfonation Process No. 2).

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P001
Company Equipment ID:	Sulfonation Process
Superseded Permit Number:	06-1988
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P006
Company Equipment ID:	Sulfonation Process
Superseded Permit Number:	06-3980
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
COLGATE PALMOLIVE CO.
Permit Number: P0111890
Facility ID: 0630010015
Effective Date: 10/7/2013

A. Standard Terms and Conditions



1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Ohio EPA DAPC, Southeast District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting¹ a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

¹ Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



Final Permit-to-Install and Operate
COLGATE PALMOLIVE CO.
Permit Number: P0111890
Facility ID: 0630010015
Effective Date: 10/7/2013

B. Facility-Wide Terms and Conditions



1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.



Final Permit-to-Install and Operate
COLGATE PALMOLIVE CO.
Permit Number: P0111890
Facility ID: 0630010015
Effective Date: 10/7/2013

C. Emissions Unit Terms and Conditions



1. P001, Sulfonation Process No. 1 - Chemithon

Operations, Property and/or Equipment Description:

Sulfonation Process No. 1 (Sulfur burn rate of 21 lbs/min.) – Chemithon consists of the following equipment: Sulfur burner, SO₂/SO₃ converter, sulfonation reactor, mist eliminator, acid mist cyclonic separator; Controlled by the following: Wet ESP with hexagonal tubes 100% capture and 99% control; SO₂ caustic wet scrubber with 100% capture and 99% control (pH range of 8-14, flow rate of 1,700 lbs/min); SO₃ acid wet scrubber with 100% capture and 99% control (conductivity: 95.5 to 98.5% with a set point of 97%, flow rate of 350 gal/min) (Supersedes PTI 06-1988, issued 6/22/1995)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (As established in PTI 06-1988, issued 6/22/1995)	Sulfur dioxide (SO ₂) emissions shall not exceed 2.5 lbs/hr, except during startup See b)(2)a. below. SO ₂ emissions shall not exceed 12.4 lbs/hr during startup. SO ₂ emissions shall not exceed 11.0 tons per year. Particulate emissions (PE) shall not exceed 3.1 lbs/hr.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		PE emissions shall not exceed 13.6 tons per year. The requirements of this rule also included compliance with the requirements of OAC rule 3745-17-07(A)(1).
b.	OAC rule 3745-17-07(A)(1)	Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-17-11(B)(2) OAC rule 3745-18-06(E)(2)	The emissions limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(A)(3).

(2) Additional Terms and Conditions

a. Startup is defined as the period between when the emissions unit is initially started until the associated SO₂-SO₃ converter beds reach the normal operating temperature of 825 degrees Fahrenheit. For the purpose of this emissions unit, annual hours of startup operation were calculated not to exceed nine hours per year.

c) Operational Restrictions

(1) The emissions from this emissions unit shall be vented to a wet ESP with 100% capture and 99% control, a SO₂ caustic wet scrubber with 100% capture and 99% control, and a SO₃ acid wet scrubber with 100% capture and 99% control.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain records of the total annual hours of operation when the emissions unit is in startup mode per year.

(2) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the acid (SO₃) scrubber water flow rate during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the acid (SO₃) scrubber water flow rate, in gallons per minute, on a daily basis.

Whenever the monitored value for the acid (SO₃) scrubber water flow rate deviates from the value specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:



- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. A description of the corrective action;
- b. The date it was completed;
- c. The date and time the deviation ended;
- d. The total period of time (in minutes) during which there was a deviation;
- e. The flow rate in gallons per minute, immediately after the corrective action;
- f. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable acid (SO_3) scrubber water flow rate, during startup and stand by (non-sulfonation operations), is not less than 350 gallons per minute.

This value is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the value based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the value will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (3) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the conductivity of the acid scrubber liquor, in percent sulfuric acid, on a daily basis.



Whenever the monitored value for the acid scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. A description of the corrective action;
- b. The date it was completed;
- c. The date and time the deviation ended;
- d. The total period of time (in minutes) during which there was a deviation;
- e. The flow rate in gallons per minute, immediately after the corrective action;
- f. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable range of the conductivity of the acid scrubber liquor is 95.5 to 98.5% sulfuric acid.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the range based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (4) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment



shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the caustic (SO₂) scrubber water flow, in lbs/min, on a daily basis.

Whenever the monitored value for the caustic (SO₂) scrubber water flow deviates from the value specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. A description of the corrective action;
- b. The date it was completed;
- c. The date and time the deviation ended;
- d. The total period of time (in minutes) during which there was a deviation;
- e. The flow rate in gallons per minute, immediately after the corrective action;
- f. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable value of the caustic (SO₂) scrubber water flow is not less than 1,700 lbs/min.

This value is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the value based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the value will not



constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (5) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pH of the caustic scrubber liquor on a daily basis.

Whenever the monitored value for the acid scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- a. A description of the corrective action;
- b. The date it was completed;
- c. The date and time the deviation ended;
- d. The total period of time (in minutes) during which there was a deviation;
- e. The flow rate in gallons per minute, immediately after the corrective action;
- f. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable range of the pH of the caustic scrubber liquor is 8.0 to 14.0.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local



air agency. The permittee must request revisions to the range based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (6) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

Note: The presence of water vapor in the plume does not constitute visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

- (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:



a. Emissions Limitation:

SO₂ emissions shall not exceed 2.5 lbs/hr, except during startup.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

SO₂ emissions shall not exceed 12.4 lbs/hr during startup.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emissions Limitation:

SO₂ emissions shall not exceed 11.0 tons per year.

Applicable Compliance Method:

Compliance with the annual emissions limitation may be demonstrated by the following calculation:

(emissions rate of normal operation * hrs/yr of normal operation)+(emissions rate of startup * hrs/yr of startup)/(2,000 lbs/ton)

= (2.5 lbs/hr * 8,751 hrs/yr) + (12.4 lbs/hr * 9 hrs/yr) / (2,000 lbs/ton)= 11.0 tons per year



d. Emissions Limitation:

PE shall not exceed 3.1 lbs/hr.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

e. Emissions Limitation:

PE emissions shall not exceed 13.6 tons per year.

Applicable Compliance Method:

Compliance with the annual emissions limitation may be demonstrated by the following calculation:

(emissions rate * hrs/yr)/(2,000 lbs/ton)

= (3.1 lbs/hr * 8,760 hrs/yr) / (2,000 lbs/ton) = 13.6 tons per year

f. Emissions Limitation:

Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) None.



2. P006, Sulfonation Process No. 2 - Ballestra

Operations, Property and/or Equipment Description:

Sulfonation Process No. 2 (Sulfur burn rate of 18.5 lbs/min.) – Ballestra consists of the following equipment: Sulfur burner, SO₂/SO₃ converter, sulfonation reactor, mist eliminator, acid mist cyclonic separator; Controlled by the following: 2 identical wet ESPs with 227 hexagonal tubes with 100% capture and 98.75% control; SO₂ caustic wet scrubber with 100% capture and 99.5% control (pH range of 8-14, flow rate of 2,980 lbs/min); SO₃ acid wet scrubber with 100% capture and 98.5% control (conductivity range of 95.5 to 98.5% with a set point of 97%, flow rate of 3,700 lbs/min); Brink filter to control PE with 100% capture and 99% control (Supersedes PTI 06-3980, issued 1/12/1994)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (As established in PTI 06-3980, issued 1/12/1994)	Sulfur dioxide (SO ₂) emissions shall not exceed 2.2 lbs/hr except during startup. See b)(2)a. below. SO ₂ emissions shall not exceed 12.4 lbs/hr during startup. SO ₂ emissions shall not exceed 9.7 tons per year. Particulate emissions (PE) shall not



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		exceed 3.1 lbs/hr. PE shall not exceed 13.6 tons per year. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).
b.	OAC rule 3745-17-07(A)(1)	Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-17-11(B)(2) OAC rule 3745-18-06(E)(2)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

(2) Additional Terms and Conditions

a. Startup is defined as the period between when the emissions unit is initially started until the associated SO₂-SO₃ converter beds reach the normal operating temperature of 800 degrees Fahrenheit. For the purpose of this emissions unit, annual hours of startup operation were calculated not to exceed nine hours per year.

c) Operational Restrictions

(1) The emissions from this emissions unit shall be vented to two wet ESPs with 100% capture and 98.75% control, a SO₂ caustic wet scrubber with 100% capture and 99.5% control, a SO₃ acid wet scrubber with 100% capture and 98.5% control, and a brink filter with 100% capture and 99% control.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain records of the total annual hours of operation when the emissions unit is in startup mode per year.

(2) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the acid (SO₃) scrubber water flow rate during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the acid (SO₃) scrubber water flow rate, in pounds per minute, on a daily basis.

Whenever the monitored value for the acid (SO₃) scrubber water flow rate deviates from the value specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:



- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. A description of the corrective action;
- g. The date it was completed;
- h. The date and time the deviation ended;
- i. The total period of time (in minutes) during which there was a deviation;
- j. The flow rate in gallons per minute, immediately after the corrective action;
- k. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable acid (SO₃) scrubber water flow rate, during startup and stand by (non-sulfonation operations), is not less than 3,700 lbs/min.

This value is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the value based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the value will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (3) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the conductivity of the acid scrubber liquor, in percent sulfuric acid, on a daily basis.



Whenever the monitored value for the acid scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. A description of the corrective action;
- g. The date it was completed;
- h. The date and time the deviation ended;
- i. The total period of time (in minutes) during which there was a deviation;
- j. The flow rate in gallons per minute, immediately after the corrective action;
- k. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable range of the conductivity of the acid scrubber liquor is 95.5 to 98.5% sulfuric acid.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the range based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (4) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment



shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the caustic (SO₂) scrubber water flow, in lbs/min, on a daily basis.

Whenever the monitored value for the caustic (SO₂) scrubber water flow deviates from the value specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. A description of the corrective action;
- g. The date it was completed;
- h. The date and time the deviation ended;
- i. The total period of time (in minutes) during which there was a deviation;
- j. The flow rate in gallons per minute, immediately after the corrective action;
- k. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable value of the caustic (SO₂) scrubber water flow is not less than 2,980 lbs/min.

This value is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee must request revisions to the value based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the value will not



constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (5) The permittee shall properly install, operate and maintain equipment to continuously monitor and record the conductivity of the acid scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pH of the caustic scrubber liquor on a daily basis.

Whenever the monitored value for the acid scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. The date and time the deviation began;
- b. The magnitude of the deviation at that time;
- c. The date(s) the investigation was conducted;
- d. The names of the personnel who conducted the investigation; and,
- e. The findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable value specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. A description of the corrective action;
- g. The date it was completed;
- h. The date and time the deviation ended;
- i. The total period of time (in minutes) during which there was a deviation;
- j. The flow rate in gallons per minute, immediately after the corrective action;
- k. The names of the personnel who performed the work

Investigation records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The acceptable range of the pH of the caustic scrubber liquor is 8.0 to 14.0.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local



air agency. The permittee must request revisions to the range based upon information obtained during future emissions tests that demonstrate compliance with the allowable emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a permit modification.

- (6) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

Note: The presence of water vapor in the plume does not constitute visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

- (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b)(1) of these terms and conditions shall be determined in accordance with the following methods:



a. Emissions Limitation:

SO₂ emissions shall not exceed 2.2 lbs/hr, except during startup.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

SO₂ emissions shall not exceed 12.4 lbs/hr during startup.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emissions Limitation:

SO₂ emissions shall not exceed 9.7 tons per year.

Applicable Compliance Method:

Compliance with the annual emissions limitation may be demonstrated by the following calculation:

(emissions rate of normal operation * hrs/yr of normal operation)+(emissions rate of startup * hrs/yr of start up)/(2,000 lbs/ton)

= (2.2 lbs/hr * 8,751 hrs/yr) + (12.4 lbs/hr * 9 hrs/yr) / (2,000 lbs/ton)= 11.0 tons per year



d. Emissions Limitation:

PE shall not exceed 3.1 lbs/hr.

Applicable Compliance Method:

Compliance with the hourly emission limitation may be demonstrated through the most recent emission test.

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

e. Emissions Limitation:

PE emissions shall not exceed 13.6 tons per year.

Applicable Compliance Method:

Compliance with the annual emissions limitation may be demonstrated by the following calculation:

(emissions rate * hrs/yr)/(2,000 lbs/ton)

= (3.1 lbs/hr * 8,760 hrs/yr) / (2,000 lbs/ton) = 13.6 tons per year

f. Emissions Limitation:

Visible PE from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) None.