State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: FINAL PERMIT TO INSTALL MODIFICATION **CERTIFIED MAIL**

ASHTABULA COUNTY
Application No: 02-09680
Fac ID: 0204010056

	TOXIC REVIEW
	PSD
	SYNTHETIC MINOR
	CEMS
	MACT
	NSPS
E	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 2/28/2006

ASHTA Chemicals, Inc.
John Reese
3509 Middle Rd.
Ashtabula, OH 44004

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: **USEPA** **NEDO**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install **Issue Date: 2/28/2006**

Terms and Conditions **Effective Date: 2/28/2006**

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 02-09680

Application Number: 02-09680

Facility ID: 0204010056

Permit Fee: **$1100**

Name of Facility: ASHTA Chemicals, Inc.

Person to Contact: John Reese

Address: 3509 Middle Rd.
Ashtabula, OH 44004

Location of proposed air contaminant source(s) [emissions unit(s)]:
3509 Middle Rd.
Ashtabula, **Ohio**

Description of proposed emissions unit(s):
Administrative modification to PTI 02-09680 to increase the allowable NOx and CO emission rates.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Joseph P. Koncelik

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and

regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions

may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this

permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year	Tons Per Year Increase
PE	11.82	0
NO_X	3.68	0.57
CO	3.10	1.75
Mercury	0.0438	0
VOC	0.22	0

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
B002 - 8.4 mmBtu/hr natural gas and hydrogen boiler - administrative modification of PTI 02-9680 issued on February 14, 1996	OAC rule 3745-31-05(A)(3)	The particulate emissions (PE) rate shall not exceed 0.05 lb/hr and 0.22 ton/year. The carbon monoxide (CO) emissions shall not exceed 0.71 lb/hr and 3.10 tons/year. The nitrogen oxide(s) (NO_X) emissions shall not exceed 0.84 lb/hr and 3.68 tons/year. The volatile organic compound (VOC) emissions shall not exceed 0.05 lb/hr and 0.22 ton/year. The mercury emissions shall not exceed 100 grams/day and 0.040 ton/year. Natural gas or by-product hydrogen gas shall be employed as the fuel. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-10(B)(1) and with the requirements of 40 CFR 61.50-61.56 and 40 CFR 63.8180-63.8266.

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OAC rule 3745-17-07(A)	The visible PE rate shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 lb/mmBtu. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-08(B)	See additional special term A.2.a.
OAC rule 3745-23-06(B)	See additional special term A.2.b.
40 CFR 61.50 - 61.56	The mercury emissions shall not exceed 2.3 kg (5.1 lb) per 24-hour period from the mercury cell chlor-alkali plant. See additional special term A.2.c.
40 CFR 63.8180 - 63.8266	See additional special term A.2.d.

2. Additional Terms and Conditions

2.a The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established in PTI No. 02-9680. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. This rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.b The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology (BAT) requirements established in PTI No. 02-9680. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

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On February 15, 2005, OAC rule 3745-23-06 was rescinded; therefore, this rule is no longer part of the State regulations. This rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.c Per 40 CFR 63.8182(c), the requirements of sections 61.52(a), 61.53(b), 61.53(c), 61.55(b), 61.55(c) and 61.55(d) of Subpart E 40 CFR Part 61 will not apply to mercury cell chlor-alkali plants as of December 19, 2006.

2.d Per 40 CFR 63.8266 a mercury cell chlor-alkali production facility means an affected source consisting of all cell rooms and ancillary operations used in the manufacture product chlorine, product caustic, and by-product hydrogen at a mercury cell chlor-alkali plant. Since by-product hydrogen is not manufactured at B002, the requirements of 40 CFR 63.8184(a)(1), 40 CFR Part 63 Subpart IIIII, National Emission Standards for Hazardous Air Pollutants for Mercury Emissions from Mercury Cell Chlor-Alkali Plants is not applicable to B002.

B. Operational Restrictions

None.

C. Monitoring and/or Recordkeeping Requirements

1. This facility shall maintain daily records of hydrogen consumption at this emissions unit. The following data shall be included:

   a. date of operation;

   b. hydrogen usage in cubic feet per day; and

   c. an estimate of the mercury emissions at the emission unit**,** in grams per day.

2. These records, as well as any supporting analyses and computations, shall be retained in the company's files for a period of not less than five years and shall be made available to the Director or any authorized representative of the Director for review during normal business hours.

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D. Reporting Requirements

1. The permittee shall submit quarterly reports to the Ohio EPA Northeast District Office which summarize the following information for hydrogen consumption at this emissions unit:

   a. date of operation;

   b. for each day, hydrogen usage in cubic feet per day;

   c. for each day, an estimate of the mercury emissions at this emissions unit**,** in grams per day;

   d. for each day, an estimate of the total mercury emissions at the facility**,** in grams per day;

   e. statement(s) noting the allowable limits of 100 grams per day of mercury emissions at this emissions unit**,** and 2300 grams per day at the facility; and

   f. a description of any corrective actions taken to address any exceedance of any emissions limitations as noted in section D.1.e.

   These reports shall be submitted by February 1, May 1, August 1, and November 1, of each year and shall cover the previous three calendar months (October through December, January through March, April though June, and July through September, respectively).

2. The permittee shall submit annual reports to the Ohio EPA Northeast District Office which summarize the following information for hydrogen consumption at this emissions unit:

   a. for each calendar year, an estimate of the annual mercury emissions, in tons per year; and

   b. statement(s) noting the allowable limit of 0.040 tons per year of mercury emissions.

   The annual reports shall be submitted by February 1 of each year and shall cover the previous calendar year.

E. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A. shall be determined in accordance with the following methods(s):

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a. Emission Limitation: Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method: Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation: The PE rate shall not exceed 0.05 lb/hr.

Applicable Compliance Method: To determine the worst case PE rate the following equation may be used:

EH_PE = Q x EF.

where:
EH_PE = the hourly PE rate, which is 0.016 pound per hour as determined in the permit application.

Q = maximum natural gas fuel inflow rate, 8400 cf/hr as noted in the permit application.

EF_PE = emissions factor for filterable PE, which is 1.9 lbs PE/1,000,000 cf of natural gas as noted in Table 1.4-2 of AP-42 Chap. 1.4 (7/98).

c. Emission Limitation: The PE rate shall not exceed 0.22 ton/year.

Applicable Compliance Method: To determine the maximum PE rate the following equation may be used:

E_PE = EH_PE x HRS/year x ton/2000 lbs.

where:
E_PE = the maximum, annual PE rate, which is 0.07 ton/year.

HRS = hours of operation per year, which could be a maximum of 8760 hrs/year.

d. Emission Limitation: The CO rate shall not exceed 0.71 lb/hr.

Applicable Compliance Method: To determine the worst case CO rate the following equation may be used:

EH_CO = Q x EF_CO.

where:
EH_CO = the hourly CO rate, which is 0.71 pound per hour as determined in the permit application.

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EF_CO = emissions factor for CO, which is 84 lbs CO/1,000,000 cf of natural gas as noted in Table 1.4-1 of AP-42 Chap. 1.4 (7/98).

e. Emission Limitation: The CO rate shall not exceed 3.10 tons/year.

Applicable Compliance Method: To determine the maximum CO rate the following equation may be used:

E_CO = EH_CO x HRS/year x ton/2000 lbs.

where:
E_CO = the maximum, annual CO rate, which is 3.09 tons/year.

f. Emission Limitation: The NO_X rate shall not exceed 0.84 lb/hr.

Applicable Compliance Method: To determine the worst case NO_X rate the following equation may be used:

$EH_NO_X = Q \times EF_NO_X$.

where:
EH_NO_X = the hourly NO_X rate, which is 0.84 pound per hour as determined in the permit application.

EF_NO_X = emissions factor for NO_X, which is 100 lbs NO_X/1,000,000 cf of natural gas as noted in Table 1.4-1 of AP-42 Chap. 1.4 (7/98).

g. Emission Limitation: The NO_X rate shall not exceed 3.68 tons/year.

Applicable Compliance Method: To determine the maximum NO_X rate the following equation may be used:

$E_NO_X = EH_NO_X$ x HRS/year x ton/2000 lbs.

where:
E_NO_X = the maximum, annual NO_X rate, which is 3.68 tons/year.

h. Emission Limitation: The VOC rate shall not exceed 0.05 lb/hr.

Applicable Compliance Method: To determine the worst case VOC rate the following equation may be used:

EH_VOC = Q x EF_VOC.

where:

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EH_VOC = the hourly VOC rate, which is 0.046 pound per hour as determined in the permit application.

EF_VOC = emissions factor for VOC, which is 5.5 lbs VOC/1,000,000 cf of natural gas as noted in Table 1.4-2 of AP-42 Chap. 1.4 (7/98).

i. Emission Limitation: The VOC rate shall not exceed 0.22 ton/year.

Applicable Compliance Method: To determine the maximum VOC rate the following equation may be used:

E_VOC = EH_VOC x HRS/year x ton/2000 lbs.

where:
E_VOC = the maximum, annual VOC rate, which is 0.20 tons/year.

j. Emission Limitation: the mercury (Hg) rate shall not exceed 100 grams/day.

Applicable Compliance Method: To determine the actual Hg emission rate the following equation may be used:

ED_Hg_B002 = Q x EF_Hg.

Where the following applies:
ED_Hg_B002 = the actual daily Hg emissions, in grams/day.

Q = actual hydrogen fuel inflow rate, in cf/day, as required by the record keeping requirements in Section C.1.

EF_Hg = the mercury concentration of hydrogen fuel, which is 0.000247 gram Hg/dscf, as calculated from the 8710 micrograms Hg/dscm concentration, found during U.S. EPA Method 102 emissions testing conducted on April 15, 1997 on the hydrogen vent exhaust associated with P001, and divided by 35.3147 dscf/dscm. A revised mercury concentration value shall be employed whenever the hydrogen vent exhaust associated with P001 is re-tested in accordance with the applicable requirements of 40 CFR Part 63 Subpart IIIII.

k. Emission Limitation: the Hg rate shall not exceed 2.3 kg/day from the mercury cell chlor-alkali plant.

Applicable Compliance Method: To determine the actual Hg emission rate the mercury emissions from the by-product hydrogen stream (hydrogen stack emissions associated with P001, and the hydrogen stack emissions associated

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with B001 & B002), the end box ventilation system stack emissions associated with P001, and the cell-room floor fugitive emissions associated with P001 will be recorded as required by the respective record keeping requirements for P001, B001 and B002.

F. Miscellaneous Requirements

None.

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P006 - Anhydrous potassium carbonate plant - administrative modification of PTI 02-9680 issued on February 14, 1996	OAC rule 3745-31-05(A)(3)	The particulate emissions (PE) shall not exceed 2.65 lbs/hr and 11.6 tons/year. The mercury emissions shall not exceed 6.52 grams/day and 0.0026 tons/year. See additional special terms A.2.a. through A.2.c. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A).
	OAC rule 3745-17-07(A)	The visible PE rate shall not exceed 20% opacity, as a 6-minute average, except a specified by rule.
	OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The emissions of mercury are separate from the particulate emissions, which consist of potassium carbonate.

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2.b A cyclone and a venturi scrubber shall be employed to limit PE from the fluidized bed reactor, screen and crusher operations. The PE shall be limited to 0.0128 grains/dscf from the final scrubber exhaust.

2.c A baghouse shall be employed to limit PE from the product capture silos and truck loading operations. The PE shall be limited to 0.02 grains/dscf from the baghouse exhaust.

B. Operational Restrictions

None.

C. Monitoring and/or Recordkeeping Requirements

None.

D. Reporting Requirements

None.

E. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A. shall be determined in accordance with the following methods(s):

   a. Emission Limitation: Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

      Applicable Compliance Method: Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

   b. Emission Limitation: The PE rate shall not exceed 2.65 lbs/hr.

      Applicable Compliance Method: Compliance may be based on the following:

      i. Determination of the actual worst case rate for PE from the reactor, screen and crusher operations, E(PE_SCRBR):

         EH(PE_SCRBR) = Q_SCRBR x 60 min/hr x CONC(PE_SCBR) x 1 lb/7000 grain.

         Where the following applies:
         E (PE_SCRBR) = PE from the scrubber exhaust, which may be 1.868 lbs/hr.

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Q_SCRBR = volumetric flow of scrubber exhaust, which is 17,026.34 dscf/min as noted in the permit application.

CONC(PE_SCBR) = maximum PE grain outlet concentration from the scrubber exhaust, which is 0.0128 grain/dscf per manufacturer's guarantee.

ii. Determination of the actual worst case rate for PE from the product capture and product loadout operations, EH(PE_BAGHS):

EH(PE_BAGHS) = Q_BAGHS x 60 min/hr x CONC(PE_BAGHS) x 1 lb/7000 grain.

Where the following applies:
EH(PE_BAGHS) = PE from the baghouse exhaust, which may be 0.34 lb/hr.

Q_BAGHS = volumetric flow of baghouse exhaust, which is 1,991.46 dscf/min as noted in the permit application.

CONC(PE_BAGHS) = maximum PE grain outlet concentration from the baghouse exhaust, which is 0.02 grain/dscf per manufacturer's guarantee.

iii. Determination of total PE, EH(PE_TOTAL):

EH(PE_TOTAL) = EH(PE_SCRBR) + EH(PE_BAGHS), which may be 2.21 lbs/hr.

c. Emission Limitation: The PE rate shall not exceed 11.6 tons/year.

Applicable Compliance Method: To determine the maximum PE rate the following equation may be used:

E_PE = EH_PE x HRS/year x ton/2000 lbs.

where:
E_PE = the maximum, annual PE rate, which may be 9.68 tons/year.

HRS = hours of operation per year, which could be a maximum of 8760 hrs/year.

d. Emission Limitation: The mercury rate shall not exceed 6.52 grams/day.

Applicable Compliance Method: To determine the actual worst case emission rate for mercury (Hg) the following equation may be used:

ED_Hg = {(P_KOH50 x Hg_K0H50) - [(P_K2O3 x Hg_K2O3)

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+ (P_WW x Hg_WW)]} x 453.59 grams Hg/lbs Hg x 24 hr/day.

Where the following applies:
ED_Hg = mercury emissions from the scrubber exhaust, which may be 5.43 grams per day.

P_KOH50 = maximum process rate of 50% potassium hydroxide, which is 11,412 lbs/hr as noted in the permit application.

P_K2C03 = maximum production rate of potassium carbonate, which is 7,206 lbs/hr as noted in the permit application.

P_WW = maximum production rate of scrubber wastewater, which is 1,734 lbs/hr as noted in the permit application.

Hg_K0H50 = maximum mercury concentration of 50% potassium hydroxide, which is 0.050 ppm (by weight) as noted in the permit application.

Hg_K2CO3 = maximum mercury concentration of potassium carbonate, which is 0.009 ppm (by weight) as noted in the permit application.

Hg_WW = maximum mercury concentration of scrubber wastewater, which is 0.004 ppm (by weight) as noted in the permit application.

An equivalent, alternative method, as approved by Ohio EPA, may be employed to determine the daily mercury emissions from this emissions unit.

e. Emission Limitation: The mercury rate shall not exceed 0.0026 tons/year.

Applicable Compliance Method: To determine the maximum Hg rate the following equation may be used:

E_Hg = ED_Hg x lbs/453.59 grams Hg x DAYS/year x ton/2000 lbs.

where:
E_Hg = the maximum, annual Hg rate, which may be 0.0022 tons/year.

DAYS = days of operation per year, which could be a maximum of 365 days.

F. Miscellaneous Requirements

None.

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PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P007 - Potassium hydroxide solution concentrator - administrative modification of PTI 02-9680 issued on February 14, 1996	OAC rule 3745-31-05(A)(3)	The mercury emissions shall not exceed 3.0 grams/day and 0.0012 tons/year. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A).
	OAC rule 3745-17-07(A)	The visible PE rate shall not exceed 20% opacity, as a 6-minute average, except a specified by rule.
	OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

None.

B. Operational Restrictions

None.

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C. Monitoring and/or Recordkeeping Requirements

None.

D. Reporting Requirements

None.

E. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A. shall be determined in accordance with the following methods(s):

   a. Emission Limitation: Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

      Applicable Compliance Method: Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

   b. Emission Limitation: The mercury rate shall not exceed 3.0 grams/day.

      Applicable Compliance Method: To determine the actual worst case emission rate for mercury (Hg) the following equation may be used:

      ED_Hg = {(P_KOH45 x Hg_K0H45) - [(P_KOH50 x Hg_K0H50) + (P_WW x Hg_WW)]} x 453.59 grams Hg/lbs Hg x 24 hr/day.

      Where the following applies:
      ED_Hg = mercury emissions from the pump vent of the potassium hydroxide concentrator, which may be 1.36 grams per day.

      P_KOH45 = maximum process rate of 45% potassium hydroxide, which is 27,782 lbs/hr as noted in the permit application.

      P_KOH50 = maximum production rate of 50% potassium hydroxide, which is 25,058 lbs/hr as noted in the permit application.

      P_WW = maximum production rate of evaporator wastewater, which is 2703 lbs/hr as noted in the permit application.

      Hg_K0H45 = maximum mercury concentration of 45% potassium hydroxide, which is 0.050 ppm (by weight) as noted in the permit application.

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Hg_K0H50 = maximum mercury concentration of 50% potassium hydroxide, which is 0.050 ppm (by weight) as noted in the permit application.

Hg_WW = maximum mercury concentration of evaporator wastewater, which is 0.004 ppm (by weight) as noted in the permit application.

An equivalent, alternative method, as approved by Ohio EPA, may be employed to determine the daily mercury emissions from this emissions unit.

c. Emission Limitation: The mercury rate shall not exceed 0.0012 ton/year.

Applicable Compliance Method: To determine the maximum Hg rate the following equation may be used:

E_Hg = ED_Hg x lbs/453.59 grams Hg x DAYS/year x ton/2000 lbs.

where:
E_Hg = the maximum, annual Hg rate, which may be 0.00055 tons/year.

DAYS = days of operation per year, which could be a maximum of 365 days.

F. Miscellaneous Requirements

None.

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