



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
HAMILTON COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 14-05744

Fac ID: 1431380075

DATE: 5/11/2006

Rohm Haas Chemical LLC
Curt Lambert
2000 West Street
Cincinnati, OH 45215

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging 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 Pollution Prevention at (614) 644-3469.

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, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

HCDES



**Permit To Install
Terms and Conditions**

**Issue Date: 5/11/2006
Effective Date: 5/11/2006**

FINAL PERMIT TO INSTALL 14-05744

Application Number: 14-05744
Facility ID: 1431380075
Permit Fee: **\$1800**
Name of Facility: Rohm Haas Chemical LLC
Person to Contact: Curt Lambert
Address: 2000 West Street
Cincinnati, OH 45215

Location of proposed air contaminant source(s) [emissions unit(s)]:
**2000 West Street
Cincinnati, Ohio**

Description of proposed emissions unit(s):
Synthetic minor permit to limit SO2 and HAPs emissions from boilers and processes.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described emissions unit(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 and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

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

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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)

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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.

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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

Rohm Haas Chemical LLC
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SO2 (B008-B010)	64.35
NOx (B010)	20.53
CO (B010)	11.42
PE (B010)	2.05
PM ₁₀ (B010)	1.03
VOC	11.4
single HAPS <small>facility wide</small>	9.9
combined HAPS <small>facility- wide</small>	24.9

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
B008 - 25.2 mmBtu/hour natural gas and No. 2 fuel oil-fired boiler (Atlas boiler)	OAC rule 3745-31-02(A)(2) (Synthetic minor to avoid title V permitting)	See terms and conditions A.2.a through A.2.c and B.1 through B.3.
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input when burning natural gas or No.2 fuel oil.
	OAC rule 3745-18-06(D)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-02(A)(2).

2. Additional Terms and Conditions

- 2.a The total combined annual emissions from the combustion of natural gas for boilers B008, B009 and B010 shall not exceed the following:

0.19 ton per year (TPY) of sulfur dioxide (SO₂);

The TPY emissions limitations for SO₂ when burning natural gas are based on

the emissions units' potential to emit. Therefore, no operational restrictions, monitoring and/or record keeping and reporting requirements are necessary to demonstrate compliance with this emissions limitation.

- 2.b** The total combined emissions from the combustion of No. 2 fuel oil for boilers B008, B009 and B010 shall not exceed the following emissions limitation, based upon a rolling, 12-month summation:

64.35 TPY of SO₂.

- 2.c** The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production), P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

The permittee has existing records to demonstrate compliance with the limitations in term A.2.c. upon permit issuance.

B. Operational Restrictions

1. The maximum No. 2 fuel oil usage rate for emissions units B008, B009, and B010, combined shall not exceed 1,800,000 gallons per year, based upon a rolling 12-month summation.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the No. 2 fuel oil usage for emissions units B008, B009, and B010, combined as specified in the following table:

<u>Month</u>	<u>Maximum Allowable Cumulative No. 2 Fuel Oil Usage, Gallons</u>
1	300,000
1-2	600,000
1-3	900,000
1-4	1,200,000
1-5	1,500,000
1-6	1,800,000
1-7	1,800,000

1-8	1,800,000
1-9	1,800,000
1-10	1,800,000
1-11	1,800,000
1-12	1,800,000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual No. 2 fuel oil usage limitation shall be based upon a rolling, 12-month summation of the oil usage rates.

2. The permittee shall burn only natural gas and/or No. 2 fuel oil in this emissions unit.
3. The quality of the No. 2 fuel oil burned in this emissions unit shall have a combination of sulfur content and heat content sufficient to comply with a SO₂ emission limitation of 0.55 lb of SO₂ per mmBtu and shall not exceed a maximum sulfur content of 0.5% by weight.

Compliance with the above-mentioned specification shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

C. Monitoring and/or Record keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall maintain records of the oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
 - a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)]. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)].

c. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.

3. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined:

- a. The total volume of natural gas (mmft³) burned in this emissions unit.
- b. The total number of gallons of No. 2 fuel oil used in this boiler for each month.
- c. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the gallons of No. 2 fuel oil used.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative production rate for each calendar month.

4. The permittee shall collect and record the following information each month for emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production) P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units:

- a. For the boilers, the total individual HAP emission factor of each fuel burned in pounds of individual HAP per gallon/cubic foot of fuel burned;
- b. For the boilers, the number of gallons or cubic feet of each fuel burned;

Emissions Unit ID: B008

- c. For the boilers, the total individual HAP emissions from each fuel burned, in pounds or tons per month [the sum of (a) times (b) times the emissions factor (if applicable) for each fuel burned];
- d. For the boilers, the total combined HAP emission factors of all fuels burned in pounds of combined HAPs per gallon/cubic foot of all fuel burned [the sum of all individual HAP emission factors from (a)];
- e. For the boilers, the total combined HAPs emissions from all fuels burned, in pounds or tons per month [the sum of (b) times (d) times the emissions factor (if applicable) for all fuels burned];
- f. For non-boiler operations, the total individual HAP emissions for each HAP, in pounds or tons per month plus individual HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- g. For non-boiler operations, the total combined HAP emissions, in pounds or tons per month plus combined HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- h. The updated rolling, 12-month summation of the individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- i. The updated rolling, 12-month summation of the combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting Hamilton County Department of Environmental Services. This information does not have to be kept on a individual emissions unit basis.

5. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined, in order to monitor compliance with the rolling, 12-month summation emissions limitations for fuel oil:
 - a. The total emissions, in tons, for SO₂; and
 - b. The rolling, 12-monthly summation emissions total, in tons, SO₂ (the total amount of emissions calculated for the current month plus the total amount of emissions for the previous eleven calendar months).

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or No. 2 fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month fuel usage limitations and SO₂ emissions limitations specified in term and condition B.1 and A.2.b of this permit.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content specified in term and condition B.3 of this permit.
4. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any exceedance of the HAP emissions limitations outlined in term and condition A.2.c. If no exceedances occurred, the permittee shall state so in the report. The reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters (October through December, January through March, April through June and July through September, respectively.)
5. Unless specified, the deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:

Emissions Limitation:

Visible particulate emissions shall not exceed 20% percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 as such appendix existed on July 1, 2002.

Emissions Limitation:

Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input when firing natural gas or No. 2 fuel oil.

Applicable Compliance Method:

Emissions Unit ID: B008

When firing natural gas, compliance may be determined by multiplying the maximum hourly gas burning capacity of the emissions unit (0.0252 mm cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 1.9 lbs of filterable PE/mm cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (25.2 mmBtu/hr).

When firing no. 2 fuel oil, compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (thousand gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 2.0 lbs of filterable PE/1000 gallons, and then dividing by the maximum hourly heat input capacity of the emissions unit (25.2 mmBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(9) while firing no. 2 fuel oil.

Emissions Limitation:

Sulfur dioxide emissions shall not exceed 0.55 lb of SO₂ /mmBtu of actual heat input (fuel oil firing).

Applicable Compliance Method:

Compliance with the allowable sulfur dioxide emissions limitation may be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation in term B.3.

For the use of number 2 fuel oil, the emissions limitation shall be based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (9/98) where SO₂ emissions factor in lb/1000 gallons = 142(S) and S = the percent sulfur content of the oil employed. Compliance with the lb/mmBtu emission limitation shall be based upon the record keeping in term and condition C.2.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 4, and 6.

Emission Limitations:

64.35 TPY of SO₂ for B008-B010, combined, when firing No. 2 fuel oil.

Applicable Compliance Method:

The actual annual emission rate shall be calculated by using the actual fuel oil usages and emission factors specified below. When firing fuel oil, the annual emissions from emission units B008, B009, and B010, combined, shall be summed over the rolling 12 month period to determine compliance with the annual emission limitation for fuel oil.

For SO₂ from No. 2 oil:

SO₂ annual emissions rate = 0.55 lb SO₂/mmBtu x 1,800,000 gal/yr x 0.130 mmBtu/gal divided by 2000 lb/ton = 64.35 TPY SO₂.

Emissions Limitations:

0.19 TPY of SO₂ for B008-B010, combined, when firing natural gas.

Applicable Compliance Method:

For natural gas, the combined annual limit is based upon the emissions units' potential to emit as provided in PTI application 14-05744 submitted on July 5, 2005 and the following calculation:

Annual emissions = 67.1 mmBtu/hr for B008-B010, combined, divided by 950 Btu/cu ft x 0.6 lbs/mm cubic feet of natural gas (per AP-42 Section 1.4 emissions factors) x 8760 hours per year divided by 2000 pounds per ton.

Emissions Limitations:

9.9 TPY of any single HAP and 24.9 TPY of combined HAPs.

Applicable Compliance Method:

Compliance with the allowable HAP emissions limitations in term and condition A.2.c shall be demonstrated by the record keeping in term and condition C.4.

2. Compliance with the fuel usage limitations in term and condition B.1 shall be demonstrated by the record keeping in term and condition C.3.
3. Compliance with the fuel employed limitation in term and condition B.2 shall be demonstrated by the record keeping in term and condition C.1.

F. Miscellaneous Requirements

1. The following terms and conditions of this permit are federally enforceable: A, B, C, D and E.

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
B009 - 12.6 mmBtu/hour natural gas and No. 2 fuel oil-fired boiler, (Ames boiler)	OAC rule 3745-31-02(A)(2) (Synthetic minor to avoid title V permitting)	See terms and conditions A.2.a. through A.2.c and B.1 through B.3.
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input when burning natural gas or No.2 fuel oil.
	OAC rule 3745-18-06(D)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-02(A)(2).

2. Additional Terms and Conditions

- 2.a The total combined annual emissions from the combustion of natural gas for boilers B008, B009 and B010 shall not exceed the following:

0.19 TPY of sulfur dioxide (SO₂);

The TPY emissions limitations for SO₂ when burning natural gas are based on the emissions units' potential to emit. Therefore, no operational restrictions, monitoring and/or record keeping and reporting requirements are necessary to demonstrate compliance with this emissions limitation.

- 2.b** The total combined emissions from the combustion of No. 2 fuel oil for boilers B008, B009 and B010 shall not exceed the following emissions limitation, based upon a rolling, 12-month summation:

64.35 TPY of SO₂.

- 2.c** The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production), P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

The permittee has existing records to demonstrate compliance with the limitations in term A.2.c upon permit issuance.

B. Operational Restrictions

1. The maximum No. 2 fuel oil usage rate for emissions units B008, B009, and B010, combined shall not exceed 1,800,000 gallons per year, based upon a rolling 12-month summation.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the No. 2 fuel oil usage for emissions units B008, B009, and B010, combined as specified in the following table:

<u>Month</u>	<u>Maximum Allowable Cumulative No. 2 Fuel Oil Usage, Gallons</u>
1	300,000
1-2	600,000
1-3	900,000
1-4	1,200,000
1-5	1,500,000
1-6	1,800,000
1-7	1,800,000
1-8	1,800,000

1-9	1,800,000
1-10	1,800,000
1-11	1,800,000
1-12	1,800,000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual No. 2 fuel oil usage limitation shall be based upon a rolling, 12-month summation of the oil usage rates.

2. The permittee shall burn only natural gas and/or No. 2 fuel oil in this emissions unit.
3. The quality of the oil burned in this emissions unit shall have a combination of sulfur content and heat content sufficient to comply with a SO₂ emissions limitation of 0.55 lb of SO₂ per mmBtu and shall not exceed a maximum sulfur content of 0.5% by weight.

Compliance with the above-mentioned specification shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

C. Monitoring and/or Record keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall maintain records of the oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)]. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

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The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)].

- c. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.
3. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined:
 - a. The total volume of natural gas (mmft³) burned in this emissions unit.
 - b. The total number of gallons of No. 2 fuel oil used in this boiler for each month.
 - c. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the gallons of No. 2 fuel oil used.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative production rate for each calendar month.

4. The permittee shall collect and record the following information each month for emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production) P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units:
 - a. For the boilers, the total individual HAP emission factor of each fuel burned in pounds of individual HAP per gallon/cubic foot of fuel burned;
 - b. For the boilers, the number of gallons or cubic feet of each fuel burned;
 - c. For the boilers, the total individual HAP emissions from each fuel burned, in

pounds or tons per month [the sum of (a) times (b) times the emissions factor (if applicable) for each fuel burned;

- d. For the boilers, the total combined HAP emission factors of all fuels burned in pounds of combined HAPs per gallon/cubic foot of all fuel burned [the sum of all individual HAP emission factors from (a)];
- e. For the boilers, the total combined HAPs emissions from all fuels burned, in pounds or tons per month [the sum of (b) times (d) times the emissions factor (if applicable) for all fuels burned;
- f. For non-boiler operations, the total individual HAP emissions for each HAP, in pounds or tons per month plus individual HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- g. For non-boiler operations, the total combined HAP emissions, in pounds or tons per month plus combined HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- h. The updated rolling, 12-month summation of the individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- i. The updated rolling, 12-month summation of the combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting Hamilton County Department of Environmental Services. This information does not have to be kept on a individual emissions unit basis.

5. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined, in order to monitor compliance with the rolling, 12-month summation emissions limitations for fuel oil:
 - a. The total emissions, in tons, for SO₂;
 - b. The rolling, 12-monthly summation emissions total, in tons, SO₂ (the total amount of emissions calculated for the current month plus the total amount of emissions for the previous eleven calendar months).

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or No. 2 fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month fuel usage limitations and SO₂ emissions limitations specified in term and condition B.1 and A.2.b of this permit.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content specified in term and condition B.3 of this permit.
4. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any exceedance of the HAP emissions limitations outlined in term and condition A.2.c. If no exceedances occurred, the permittee shall state so in the report. The reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters (October through December, January through March, April through June and July through September, respectively.)
5. Unless specified, the deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:

Emissions Limitation:

Visible particulate emissions shall not exceed 20% percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 as such appendix existed on July 1, 2002.

Emissions Limitation:

Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input when firing natural gas or No. 2 fuel oil.

Applicable Compliance Method:

When firing natural gas, compliance may be determined by multiplying the maximum hourly gas burning capacity of the emissions unit (0.0126 mm cu. ft/hr) by the AP-42,

Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 1.9 lbs of filterable PE/mm cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (12.6 mmBtu/hr).

When firing no. 2 fuel oil, compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (thousand gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 2.0 lbs of filterable PE/1000 gallons, and then dividing by the maximum hourly heat input capacity of the emissions unit (12.6 mmBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(9) while firing no. 2 fuel oil.

Emissions Limitation:

Sulfur dioxide emissions shall not exceed 0.55 lb of SO₂ /mmBtu of actual heat input (fuel oil firing).

Applicable Compliance Method:

Compliance with the allowable sulfur dioxide emissions limitation may be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation in term B.3.

For the use of number 2 fuel oil, the emissions limitation shall be based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (9/98) where SO₂ emissions factor in lb/1000 gallons = 142(S) and S = the percent sulfur content of the oil employed. Compliance with the lb/mmBtu emission limitation shall be based upon the record keeping in term and condition C.2.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 4, and 6.

Emission Limitations:

64.35 TPY of SO₂ for B008-B010, combined, when firing No. 2 fuel oil.

Applicable Compliance Method:

The actual annual emission rate shall be calculated by using the actual fuel oil usages

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and emission factors specified below. When firing fuel oil, the annual emissions from emission units B008, B009, and B010, combined, shall be summed over the rolling 12 month period to determine compliance with the annual emission limitation for fuel oil.

For SO₂ from No. 2 oil:

SO₂ annual emissions rate = 0.55 lb SO₂/mmBtu x 1,800,000 gal/yr x 0.130 mmBtu/gal divided by 2000 lb/ton = 64.35 TPY SO₂.

Emissions Limitations:

0.19 TPY of SO₂ for B008-B010, combined, when firing natural gas.

Applicable Compliance Method:

For natural gas, the combined annual limit is based upon the emissions units' potential to emit as provided in PTI application 14-05744 submitted on July 5, 2005 and the following calculation:

Annual emissions = 67.1 mmBtu/hr for B008-B010, combined, divided by 950 Btu/cu ft x 0.6 lbs/mm cubic feet of natural gas (per AP-42 Section 1.4 emissions factors) x 8760 hours per year divided by 2000 pounds per ton.

Emissions Limitations:

9.9 TPY of any single HAP and 24.9 TPY of combined HAPs.

Applicable Compliance Method:

Compliance with the allowable Hazardous Air Pollutant (HAP) emissions limitations in term and condition A.2.c shall be demonstrated by the record keeping in term and condition C.4.

2. Compliance with the fuel usage limitations in term and condition B.1 shall be demonstrated by the record keeping in term and condition C.3.
3. Compliance with the fuel employed limitation in term and condition B.2 shall be demonstrated by the record keeping in term and condition C.1.

F. Miscellaneous Requirements

1. The following terms and conditions of this permit are federally enforceable: A, B, C, D, and E.

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

A. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	
B010 - 29.3 mmBtu/hour natural gas and No. 2 fuel oil-fired boiler (Clever Brooks)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-10(B)(1)
		OAC rule 3745-18-06(D)
	OAC rule 3745-35-07(B) (Synthetic minor to avoid title V permitting)	OAC rule 3745-21-08(B)
		OAC rule 3745-23-06(B)
	OAC rule 3745-17-07(A)	

Applicable Emissions
Limitations/Control
Measures

See terms and conditions A.2.a through A.2.d and B.2.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(B), OAC rule 3745-17-10(B), OAC rule 3745-21-08(B), OAC rule 3745-23-06(B), and OAC rule 3745-35-07(B).

The sulfur dioxide (SO₂) emissions based on a rolling 12-month average for boilers B008, B009 and B010 combined shall not exceed the following: 0.19 ton per year (TPY) of SO₂ when burning natural gas; 64.35 TPY of SO₂ when burning oil.

See terms and conditions A.2.e, B.1, and B.3.

Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).

The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).

See term and condition A.2.f.

See term and condition A.2.g.

2. Additional Terms and Conditions

2.a When burning only natural gas, the following emissions limitations shall not be exceeded for this emissions unit:

0.11 lb of nitrogen oxides (NO_x)/mmBtu of actual heat input;
0.089 lb of carbon monoxide (CO)/mmBtu of actual heat input;
0.008 lb of particulate emissions (PE) and particulate emissions ten microns and less in diameter (PM₁₀)/mmBtu of actual heat input;
0.012 lb of organic compounds (OC)/mmBtu of actual heat input; and
0.001 lb of sulfur dioxide (SO₂)/mmBtu of actual heat input.

The lb/mmBtu emissions limitations above are based on the emissions unit's potential to emit. Therefore, no operational restrictions, monitoring and/or record keeping requirements, and reporting requirements are necessary to demonstrate compliance with these emissions limitations.

2.b When burning No. 2 fuel oil, the following emissions limitations shall not be exceeded:

0.16 lb of NO_x/mmBtu of actual heat input;
0.039 lb of CO/mmBtu of actual heat input;
0.016 lb of PE/mmBtu of actual heat input;
0.008 lb of PM₁₀/mmBtu of actual heat input; and
0.002 lb of OC/mmBtu of actual heat input.

The lb/mmBtu emissions limitations for PE, PM₁₀, NO_x, CO, and OC are based on the emissions units potential to emit. Therefore, no operational restrictions, monitoring and/or record keeping requirements, and reporting requirements are necessary to demonstrate compliance with these emissions limitations.

2.c The annual emissions from the combustion of natural gas for boiler B010 shall not exceed the following:

14.12 TPY of NO_x;
11.42 TPY of CO;

1.03 TPY of PE/PM₁₀; and
1.54 TPY of OC.

The TPY emission limitations for PE, PM10, NOx, CO, and OC when burning natural gas are based on the emissions units potential to emit. Therefore, no operational restrictions, monitoring and/or record keeping requirements, and reporting requirements are necessary to demonstrate compliance with these emissions limitations.

- 2.d** The annual emissions from the combustion of No. 2 fuel oil for boilers B010 shall not exceed the following:

20.53 TPY of NOx;
5.01 TPY of CO;
2.05 TPY of PE;
1.03 TPY of PM10; and
0.26 TPY of OC.

- 2.e** The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production) P022 (asphalt additive production), any de minimis emissions units as defined in OAC rule 3745-15-05, any registration status and/or permit exempt emissions units, or future constructed emissions units, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

The permittee has existing records to demonstrate compliance with the emissions limitations in term A.2.e upon permit issuance.

- 2.f** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05744.

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. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating

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practices" still exists as part of the federally-approved SIP for Ohio.

- 2.g** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

On February 15, 2005, OAC rule 3745-23-06 was rescinded and therefore no longer a part of State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-23-06, the requirement to satisfy "latest available control techniques and operational practices" still exists as part of the federally-approved SIP for Ohio.

- 2.h** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the visible emissions limitation, the mass emission limitations, the use of natural gas and/or No. 2 fuel oil and the annual fuel usage restriction.

B. Operational Restrictions

1. The maximum No. 2 fuel oil usage rate for emissions units B008, B009, and B010, combined shall not exceed 1,800,000 gallons per year, based upon a rolling 12-month summation.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the No. 2 fuel oil usage for emissions units B008, B009, and B010, combined as specified in the following table:

<u>Month</u>	<u>Maximum Allowable Cumulative No. 2 Fuel Oil Usage, Gallons</u>
1	300,000
1-2	600,000
1-3	900,000
1-4	1,200,000
1-5	1,500,000
1-6	1,800,000
1-7	1,800,000
1-8	1,800,000
1-9	1,800,000
1-10	1,800,000
1-11	1,800,000
1-12	1,800,000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual No. 2 fuel oil usage limitation shall be based upon a rolling, 12-month summation of the oil usage rates.

2. The permittee shall burn only natural gas and/or No. 2 fuel oil in this emissions unit.
3. The quality of the oil burned in this emissions unit shall have a combination of sulfur content and heat content sufficient to comply with a SO₂ emissions limitation of 0.55 lb of SO₂ per mmBtu and shall not exceed a maximum sulfur content of 0.5% by weight.

Compliance with the above-mentioned specification shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

C. Monitoring and/or Record keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall maintain records of the oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)]. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number

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of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)].

- c. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.
3. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined:
 - a. The total volume of natural gas (mmft³) burned in this emissions unit.
 - b. The total number of gallons of No. 2 fuel oil used in this boiler for each month.
 - c. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the gallons of No. 2 fuel oil used.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative fuel oil usage for each calendar month.

4. The permittee shall collect and record the following information each month for emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production) P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units:
 - a. For the boilers, the total individual HAP emission factor of each fuel burned in pounds of individual HAP per gallon/cubic foot of fuel burned;
 - b. For the boilers, the number of gallons or cubic feet of each fuel burned;
 - c. For the boilers, the total individual HAP emissions from each fuel burned, in pounds or tons per month [the sum of (a) times (b) times the emissions factor (if applicable) for each fuel burned;
 - d. For the boilers, the total combined HAP emission factors of all fuels burned in pounds of combined HAPs per gallon/cubic foot of all fuel burned [the sum of all

individual HAP emission factors from (a)];

- e. For the boilers, the total combined HAPs emissions from all fuels burned, in pounds or tons per month [the sum of (b) times (d) times the emissions factor (if applicable) for all fuels burned];
- f. For non-boiler operations, the total individual HAP emissions for each HAP, in pounds or tons per month plus individual HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- g. For non-boiler operations, the total combined HAP emissions, in pounds or tons per month plus combined HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
- h. The updated rolling, 12-month summation of the individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
- i. The updated rolling, 12-month summation of the combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting Hamilton County Department of Environmental Services. This information does not have to be kept on a individual emissions unit basis.

5. The permittee shall maintain monthly records of the following information for emissions units B008, B009, and B010, combined, in order to monitor compliance with the rolling, 12-month summation emissions limitations for fuel oil:
 - a. The total SO₂ emissions, in tons; and
 - b. The rolling, 12-month summation of SO₂ emissions, in tons(the total amount of emissions calculated for the current month plus the total amount of emissions for the previous eleven calendar months).

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or No. 2 fuel oil was burned in this emissions unit. Each

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report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month fuel usage limitations and SO₂ emissions limitations specified in term and condition B.1 and A.1 of this permit.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the SO₂ emissions limitation and fuel sulfur content specified in term and condition B.3. of this permit.
4. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any exceedance of the HAP emissions limitations outlined in term and condition A.2.c. If no exceedances occurred, the permittee shall state so in the report. The reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters (October through December, January through March, April through June and July through September, respectively.)
5. Unless specified, the deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emissions limitations in Sections A and B of these terms and conditions shall be determined in accordance with the following methods:

Emissions Limitation:

Visible particulate emissions shall not exceed 20% percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 as such appendix existed on July 1, 2002.

Emissions Limitations:

Particulate emissions (PE/PM₁₀) shall not exceed 0.008 lb/mmBtu of actual heat input and 1.03 TPY of PE/PM₁₀ when firing natural gas;
 0.016 lb of PE/mmBtu of actual heat input and 2.05 TPY of PE when firing fuel oil; and
 0.008 lb of PM₁₀/mmBtu of actual heat input and 1.03 TPY of PM₁₀ when firing fuel oil.

Applicable Compliance Method:

For the use of natural gas, compliance shall be determined by multiplying the hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 7.6 lbs of PE/PM₁₀/mm cu. ft, and then dividing by the maximum hourly heat input of the

emissions unit (mmBtu/hr).

When firing No. 2 fuel oil, compliance shall be determined by multiplying the hourly fuel burning capacity of the emissions unit (1000 gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 2.0 lbs of filterable PE/1000 gallons (or for PM10, the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 1.0 lb of PM10/1000 gallons) and then dividing by the maximum hourly heat input of the emissions unit (mmBtu/hr).

Compliance with the annual emissions limitations may be demonstrated by multiplying the lb of PE/PM10/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

Emissions Limitations:

Sulfur dioxide emissions shall not exceed:

0.001 lb of SO₂/mmBtu of actual heat input; and 0.19 TPY of SO₂ for B008-B010, combined, when burning natural gas; and

0.55 lb of SO₂/mmBtu of actual heat input; and 64.35 TPY of SO₂ for B008-B010, combined, when burning fuel oil.

Applicable Compliance Method:

For the use of natural gas, compliance shall be determined by multiplying the hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 0.6 lbs of SO₂/mm cu. ft, and then dividing by the maximum hourly heat input of the emissions unit (mmBtu/hr). For natural gas, the combined annual limit is based upon the emissions units' potential to emit as provided in PTI application 14-05744 submitted on July 5, 2005 and the following calculation:

Annual emissions = 67.1 mmBtu/hr for B008-B010, combined, divided by 950 Btu/cu ft x 0.6 lbs/mm cubic feet of natural gas (per AP-42 Section 1.4 emissions factors) x 8760 hours per year divided by 2000 pounds per ton.

For the use of No. 2 fuel oil, compliance shall be determined by the emissions factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3,

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Table 1.3-1 (9/98), where the SO₂ emissions factor in lb/1000 gallons = 142(S) and S = the percent sulfur content of the oil. Compliance with the lb/mmBtu emissions limitation shall be based upon the record keeping in term and condition C.2.

The annual emissions from emission units B008, B009, and B010, combined, shall be summed over the rolling 12-month period to determine compliance with the annual emissions limitation. SO₂ annual emissions rate = 0.55 lb SO₂/mmBtu x 1,800,000 gal/yr x 0.130 mmBtu/gal divided by 2000 lb/ton = 64.35 TPY SO₂.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 4, and 6.

Emissions Limitations:

0.11 lb of NO_x/mmBtu of actual heat input and 14.12 TPY NO_x when burning natural gas; and

0.16 lb of NO_x/mmBtu of actual heat input and 20.53 TPY NO_x when burning fuel oil.

Applicable Compliance Method:

When burning natural gas, compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu.ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-1 (revised 7/98) emission factor of 100 lbs of NO_x/mm cu. ft of natural gas, and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

When burning No. 2 fuel oil, compliance shall be determined by multiplying the maximum fuel oil capacity of the emissions unit (gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 20 lbs of NO_x/1000 gallons of fuel oil, and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

Compliance with the annual emissions limitations may be demonstrated by multiplying the lb of NO_x/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 4, and 7.

Emissions Limitations:

0.089 lb of CO/mmBtu of actual heat input and 11.42 TPY of CO when burning natural gas; and

0.039 lb of CO/mmBtu of actual heat input and 5.01 TPY of CO when burning No. 2 fuel oil.

Applicable Compliance Method:

When burning natural gas, compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu.ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-1 (revised 7/98) emissions factor of 84 lbs of CO/mm cu. ft of natural gas, and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

When burning No. 2 fuel oil, compliance shall be determined by multiplying the maximum fuel oil capacity of the emissions unit (1000 gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emissions factor of 5 lbs of CO/1000 gallons of fuel oil and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

Compliance with the annual emissions limitations may be demonstrated by multiplying the lb of CO/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitation in accordance with 40 CFR, Part 60, Appendix A, Methods 1- 4, and 10.

Emissions Limitations:

0.012 lb of OC/mmBtu of actual heat input and 1.54 TPY of OC when burning natural gas; and

0.002 lb of OC/mmBtu of actual heat input and 0.26 TPY of OC when burning No. 2 fuel oil.

Applicable Compliance Method:

When burning natural gas, compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-1 (revised 7/98) emission factor of 11 lbs of OC/mm cu. ft of natural gas, and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

When burning No. 2 fuel oil, compliance shall be determined by multiplying the maximum fuel oil capacity of the emissions unit (gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-3 (revised 9/98) emission factor of 0.252 lb of OC/1000 gallons of fuel oil, and then dividing by the maximum hourly heat input capacity of the emissions unit (mmBtu/hr).

Compliance with the annual emissions limitations may be demonstrated by multiplying

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the lb of OC/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emissions limitations in accordance with 40 CFR, Part 60, Appendix A, Methods 1- 4, and 25.

Emissions Limitations:

9.9 TPY of any single HAP and 24.9 TPY of combined HAPs.

Applicable Compliance Method:

Compliance with the allowable Hazardous Air Pollutant (HAP) emissions limitations in term and condition A.2.e. shall be demonstrated by the record keeping in term and condition C.4.

2. Compliance with the fuel usage limitations in term and condition B.1 shall be demonstrated by the record keeping in term and condition C.3.
3. Compliance with the fuel employed limitation in term and condition B.2 shall be demonstrated by the record keeping in term and condition C.1.

F. Miscellaneous Requirements

1. The following terms and conditions of this permit are federally enforceable: A, B, C, D and E.

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

A. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P017 - B-12 organotins production with two stage compression system to condense out volatile organic compounds (modification of PTI 14-05328, issued December 5, 2002.)	OAC rule 3745-31-02(A)(2) (Synthetic minor to avoid 40 CFR 63 Subpart FFFF and Title V permitting)	The volatile organic compound (VOC) emissions shall not exceed the following: 306 lbs/day of VOC based upon a weekly average from Monday through Sunday; and 9.9 tons/year of VOC based on a rolling, 12-month summation for emissions units P017 and P019, combined. See terms and conditions A.2.a., A.2.b, and B.1 through B.3.
	OAC rule 3745-21-09(KK)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-02(A)(2).

2. Additional Terms and Conditions

- Emissions units P017 and P019, which produce methyltin intermediates, shall be equipped with a VOC recovery system which is designed and operated to achieve a control efficiency of at least 85%, by weight, as a weekly average for each 7-day period, extending from Monday through Sunday, inclusive, for the VOC emissions in the process vent gas, as determined under paragraph (C) of rule 3745-21-10 of the Administrative Code.

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- 2.b** The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin

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production), P022 (asphalt additive production), any registration status and/or permit exempt emissions units, or future constructed emissions units, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

B. Operational Restrictions

1. The maximum amount of VOC and HAP (methyl chloride) charged to emissions units P017 and P019, combined, shall not exceed 5000 tons/year based on a rolling, 12-month summation. Under normal conditions, as provided in permit to install application 14-05744 received on July 5, 2005, a throughput of 440 TPY of methyl chloride would equate to a methyl chloride emission rate of 9.9 TPY. A greater throughput is permitted with a corresponding increase in condenser recovery efficiency and/or decrease in excess input of methyl chloride such that the combination of throughput and condenser efficiency result in facility-wide emissions that do not exceed 9.9 tons per year of VOC and HAP (methyl chloride) emissions.

To ensure enforceability during the first 12 calendar months of operation after the issuance of final PTI 14-05744, the permittee shall not exceed the methyl chloride charge and emissions limitations specified in the following table:

Month(s)	Methyl Chloride Charge (Tons)	Methyl Chloride Emissions (Tons)
1	570	1.65
1-2	1140	3.30
1-3	1710	4.95
1-4	2137	6.60
1-5	2565	8.25
1-6	2992	9.9
1-7	3277	9.9
1-8	3562	9.9
1-9	3847	9.9
1-10	3990	9.9
1-11	4132	9.9
1-12	5000	9.9

After the first 12 calendar months of operation, compliance with the annual usage limitation shall be based upon rolling, 12-month summations.

2. The permittee shall operate and maintain monitoring equipment at the inlet and outlet of the VOC control equipment which is capable of measuring the gas mass flow with a minimum accuracy of one percent and the gas density with a minimum accuracy of ten percent, in accordance with the manufacturer's recommendations, instructions and operating manual(s).

3. The permittee shall operate and maintain equipment capable of detecting compressor shutdowns. The low-pressure set point shall be recorded weekly.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall, on a daily basis for emissions units P017 and P019, determine the amount of VOC vented to, and emitted from, the VOC vapor recovery system. The overall VOC control efficiency shall be calculated each week as one minus the ratio of the total emitted VOC for the 7-day period from Monday through Sunday to the total VOC vented to the VOC recovery system for the same 7-day period. The efficiency shall be expressed as a percentage. The efficiency shall be calculated not later than the Monday following each 7-day period. The amount of nitrogen and methane emitted shall be subtracted from the total emissions to determine the amount of VOC (methyl chloride) emitted.
2. The permittee shall record the number of shutdowns of the emissions unit(s) each week.
3. The permittee shall calculate and record the daily VOC emissions based upon a weekly average of the VOC emissions from P017 and P019, combined from Monday through Sunday.
4. The permittee shall maintain monthly records of the following information:
 - a. The amount of methyl chloride charged to emissions units P017 and P019 combined, in pounds or tons.
 - b. The amount of methyl chloride vented from emissions units P017 and P019 combined to the control equipment, in pounds or tons.
 - c. The amount of methyl chloride emitted from the control equipment to the ambient air from emissions units P017 and P019 combined.
 - d. The rolling, 12-month summation in tons of methyl chloride charged to emissions units P017 and P019 combined.
 - e. The rolling, 12-month summation of VOC* emissions from emissions units P017 and P019 combined, in pounds or tons.

*All VOC emissions are methyl chloride

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5. The permittee shall maintain daily records of the amount of excess methyl chloride from processes P017 and P019 and record this amount and when the excess methyl chloride exceeds 15 percent, by weight.
6. The permittee shall collect and record the following information each month for the emissions units identified in term and condition A.2.b.:
 - a. For the boilers, the total individual HAP emission factor of each fuel burned in pounds of individual HAP per gallon/cubic foot of fuel burned;
 - b. For the boilers, the number of gallons or cubic feet of each fuel burned;
 - c. For the boilers, the total individual HAP emissions from each fuel burned, in pounds or tons per month [the sum of (a) times (b) times the emissions factor (if applicable) for each fuel burned];
 - d. For the boilers, the total combined HAP emission factors of all fuels burned in pounds of combined HAPs per gallon/cubic foot of all fuel burned [the sum of all individual HAP emission factors from (a)];
 - e. For the boilers, the total combined HAPs emissions from all fuels burned, in pounds or tons per month [the sum of (b) times (d) times the emissions factor (if applicable) for all fuels burned];
 - f. For non-boiler operations, the total individual HAP emissions for each HAP, in pounds or tons per month plus individual HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
 - g. For non-boiler operations, the total combined HAP emissions, in pounds or tons per month plus combined HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
 - h. The updated rolling, 12-month summation of the individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
 - i. The updated rolling, 12-month summation of the combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.
7. To ensure compliance with the emissions limitations in Section A of this permit, the

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting Hamilton County Department of Environmental Services. This information does not have to be kept on a individual emissions unit basis.

permittee shall utilize indirect monitoring systems for gas temperature, mass flow and density while the direct monitoring systems are being maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s).

D. Reporting Requirements

1. The permittee shall notify the Hamilton County Department of Environmental Services of any weekly average control efficiency that is less than 85 percent, by weight. A copy of the record showing the noncomplying weekly average control efficiency shall be submitted to the Hamilton County Department of Environmental Services within 30 days of the occurrence.
2. The permittee shall submit deviation (excursion) reports which identify any exceedances of the rolling, 12-month methyl chloride usage limitation in term B.1.
3. The permittee shall submit deviation (excursion) reports which identify any exceedances of the daily VOC emissions limitation in term A.1.
4. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any exceedance of the HAP emissions limitations outlined in term and condition A.2.b. If no exceedances occurred, the permittee shall state so in the report. The reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters (October through December, January through March, April through June and July through September, respectively.)
5. The permittee shall submit annual reports which specify the total VOC emissions from emissions units P017 and P019 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
6. The permittee shall submit deviation (excursion) reports in accordance with the General Terms and Conditions of this Permit to Install.

E. Testing Requirements

1. Compliance with the emissions limitations in Sections A and B of these terms and conditions shall be determined in accordance with the following methods:

Emissions limitation:

Control efficiency of at least 85 percent, by weight, as a weekly average for the 7-day period from Monday through Sunday, for the VOC emissions in the process vent gas.

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Applicable compliance method:

Compliance with the requirements of A.2.a shall be determined based upon the record keeping in term and condition C.1. If required, the permittee shall demonstrate compliance with the VOC recovery system control efficiency through emission tests performed in accordance with the procedures specified in OAC rule 3745-21-10(C). Alternative testing protocols that may be necessary shall receive prior approval from Ohio EPA and U.S. EPA.

Emissions limitation:

306 lbs/day of VOC based upon a weekly average from Monday through Sunday.

Applicable compliance method:

Compliance with the daily VOC emissions limitation shall be determined by the record keeping in term and condition C.2 and C.3. The permittee shall continuously monitor and record the total exit gas mass flow, in pounds per hour, and the total exit gas mass density, in pounds per cubic foot, from the condenser(s) outlet. The permittee may use lookup tables to determine the pounds methyl chloride per hour emitted (reference lookup table formulas and graphs submitted to Hamilton County Department of Environmental Services on April 19, 2005.). Startup and normal operation emissions shall be determined using the mass density and mass flow monitors. Shutdown and fugitive emissions shall be calculated from actual records and added to the continuous monitoring emissions for startup and normal operation.

The weekly average VOC emissions limitation was based on four startup and shutdown periods per week, three days of steady state conditions, stack test result from July 2005, and application information in PTI 14-05744 submitted on July 5, 2005.

$[(3 \text{ days/week at } 2.84 \text{ lbs. methyl chloride emitted /hour of normal operation} * 24 \text{ hrs/day}) + (4 \text{ days/week with one startup \& shutdown per day at } 479.48 \text{ lbs/day}) + (7 \text{ days/wk} * 3.13 \text{ lbs. /day fugitive emissions from material handling and storage})] / 7 \text{ days per week} = 306 \text{ lbs VOC/day as a weekly average.}$

Emissions limitation:

9.9 tons/year VOC based upon a rolling, 12-month summation for emissions units P017 and P019 combined

Applicable compliance method:

Compliance with the rolling, 12-month VOC emissions limitation in Section A.1. shall be determined by the record keeping in term and condition C.4.

Actual VOC (methyl chloride) emissions for P017 and P019 shall be determined based on the following equation from the information in PTI application 14-05744 submitted on July 5, 2005:

$E = W + X + (EF * Y)$, where:

W represents the methyl chloride emissions from the condensers including startup emissions, in tons.

X represents the emissions from shutdown operation.

EF is the emissions factor for fugitive emissions and is 1.42×10^{-4} tons of methyl chloride emitted /ton of methyl chloride employed (or 0.284 lbs. Methyl chloride/ ton methyl chloride employed); this emissions factor covers fugitive emissions from compressor dryer cycles, equipment connections, storage tanks, and maintenance and material handling of methyl chloride.

Y represents the tons of methyl chloride input to P017 and P019.

Emissions limitations:

9.9 TPY for any single HAP and 24.9 TPY for combined HAPs.

Applicable compliance method:

Compliance with the HAP emissions limitations in term A.2.b shall be demonstrated by the record keeping requirements specified in term and condition C.6.

2. Compliance with the rolling, 12-month methyl chloride usage limitation in term and condition B.1 shall be determined by the record keeping in term and condition C.4.

F. Miscellaneous Requirements

1. The terms and conditions of this permit shall supercede the terms and conditions of PTI 14-05238, issued December 5, 2002.
2. The following terms and conditions of this permit are federally enforceable: A, B, C, D and E.

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

A. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P019 - B-11 organotins production with two stage compression system to condense volatile organic compounds (VOC) (modification of PTI 14-05238, issued 12/5/02 and PTI 14-297 issued May 18, 1980)	OAC rule 3745-31-02(A)(2) (Synthetic minor to avoid 40 CFR 63 Subpart FFFF and Title V permitting)	The volatile organic compound (VOC) emissions shall not exceed the following: 306 lbs/day of VOC based upon a weekly average from Monday through Sunday; and 9.9 tons/year of VOC based on a rolling, 12-month summation for emissions units P017 and P019, combined. See terms and conditions A.2.a, A.2.b and B.1 through B.3.
	OAC rule 3745-21-09(KK)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-02(A)(2).

2. Additional Terms and Conditions

- Emissions units P017 and P019, which produce methyltin intermediates, shall be equipped with a VOC recovery system which is designed and operated to achieve a control efficiency of at least 85%, by weight, as a weekly average for each 7-day period, extending from Monday through Sunday, inclusive, for the VOC emissions in the process vent gas, as determined under paragraph (C) of rule 3745-21-10 of the Administrative Code.
- The actual emissions of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act from emissions units B008 (Atlas boiler), B009 (Ames boiler), B010 (Cleaves Brook boiler), P004 (chemical pilot plant), P016 (phosphonium production), P017 (organotin production), P019 (organotin production), P022 (asphalt additive production), any registration

status and/or permit exempt emissions units, or future constructed emissions units, shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

B. Operational Restrictions

1. The maximum amount of VOC and HAP (methyl chloride) charged to emissions units P017 and P019, combined, shall not exceed 5000 tons/year based on a rolling, 12-month summation. Under normal conditions, as provided in permit to install application 14-05744 received on July 5, 2005, a throughput of 440 TPY of methyl chloride would equate to a methyl chloride emission rate of 9.9 TPY. A greater throughput is permitted with a corresponding increase in condenser recovery efficiency and/or decrease in excess input of methyl chloride such that the combination of throughput and condenser efficiency result in facility-wide emissions that do not exceed 9.9 tons per year of VOC and HAP (methyl chloride) emissions.

To ensure enforceability during the first 12 calendar months of operation after the issuance of final PTI 14-05744, the permittee shall not exceed the methyl chloride charge and emissions limitations specified in the following table:

Month(s)	Methyl Chloride Charge (Tons)	Methyl Chloride Emissions (Tons)
1	570	1.65
1-2	1140	3.30
1-3	1710	4.95
1-4	2137	6.60
1-5	2565	8.25
1-6	2992	9.9
1-7	3277	9.9
1-8	3562	9.9
1-9	3847	9.9
1-10	3990	9.9
1-11	4132	9.9
1-12	5000	9.9

After the first 12 calendar months of operation, compliance with the annual usage limitation shall be based upon rolling, 12-month summations.

2. The permittee shall operate and maintain monitoring equipment at the inlet and outlet

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of the VOC control equipment which is capable of measuring the gas mass flow with a minimum accuracy of one percent and the gas density with a minimum accuracy of ten percent, in accordance with the manufacturer's recommendations, instructions and operating manual(s).

3. The permittee shall operate and maintain equipment capable of detecting compressor shutdowns. The low-pressure set point shall be recorded weekly.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall, on a daily basis for emissions units P017 and P019, determine the amount of VOC vented to, and emitted from, the VOC vapor recovery system. The overall VOC control efficiency shall be calculated each week as one minus the ratio of the total emitted VOC for the 7-day period from Monday through Sunday to the total VOC vented to the VOC recovery system for the same 7-day period. The efficiency shall be expressed as a percentage. The efficiency shall be calculated not later than the Monday following each 7-day period. The amount of nitrogen and methane emitted shall be subtracted from the total emissions to determine the amount of VOC (methyl chloride) emitted.
2. The permittee shall record the number of shutdowns of the emissions unit(s) each week.
3. The permittee shall calculate and record the daily VOC emissions based upon a weekly average of the VOC emissions from P017 and P019, combined from Monday through Sunday.
4. The permittee shall maintain monthly records of the following information:
 - a. The amount of methyl chloride charged to emissions units P017 and P019 combined, in pounds or tons.
 - b. The amount of methyl chloride vented from emissions units P017 and P019 combined to the control equipment, in pounds or tons.
 - c. The amount of methyl chloride emitted from the control equipment to the ambient air from emissions units P017 and P019 combined.
 - d. The rolling, 12-month summation in tons of methyl chloride charged to emissions units P017 and P019 combined.
 - e. The rolling, 12-month summation of VOC* emissions from emissions units P017 and P019 combined, in pounds or tons.

*All VOC emissions are methyl chloride

5. The permittee shall maintain daily records of the amount of excess methyl chloride from processes P017 and P019 and record this amount and when the excess methyl chloride exceeds 15 percent, by weight.

6. The permittee shall collect and record the following information each month for the emissions units identified in term and condition A.2.b.:
 - a. For the boilers, the total individual HAP emission factor of each fuel burned in pounds of individual HAP per gallon/cubic foot of fuel burned;
 - b. For the boilers, the number of gallons or cubic feet of each fuel burned;
 - c. For the boilers, the total individual HAP emissions from each fuel burned, in pounds or tons per month [the sum of (a) times (b) times the emissions factor (if applicable) for each fuel burned];
 - d. For the boilers, the total combined HAP emission factors of all fuels burned in pounds of combined HAPs per gallon/cubic foot of all fuel burned [the sum of all individual HAP emission factors from (a)];
 - e. For the boilers, the total combined HAPs emissions from all fuels burned, in pounds or tons per month [the sum of (b) times (d) times the emissions factor (if applicable) for all fuels burned];
 - f. For non-boiler operations, the total individual HAP emissions for each HAP, in pounds or tons per month plus individual HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
 - g. For non-boiler operations, the total combined HAP emissions, in pounds or tons per month plus combined HAP emissions from any de minimis, registration status and/or permit exempt emissions unit at the facility];
 - h. The updated rolling, 12-month summation of the individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months; and
 - i. The updated rolling, 12-month summation of the combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting Hamilton County Department of Environmental Services. This information does not have to be kept on a individual emissions unit basis.

7. To ensure compliance with the emissions limitations in Section A of this permit, the permittee shall utilize indirect monitoring systems for gas temperature, mass flow and density while the direct monitoring systems are being maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s).

D. Reporting Requirements

1. The permittee shall notify the Hamilton County Department of Environmental Services of any weekly average control efficiency that is less than 85 percent, by weight. A copy of the record showing the noncomplying weekly average control efficiency shall be submitted to the Hamilton County Department of Environmental Services within 30 days of the occurrence.
2. The permittee shall submit deviation (excursion) reports which identify any exceedances of the rolling, 12-month methyl chloride usage limitation in term B.1.
3. The permittee shall submit deviation (excursion) reports which identify any exceedances of the daily VOC emissions limitation in term A.1.
4. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any exceedance of the HAP emissions limitations outlined in term and condition A.2.b. If no exceedances occurred, the permittee shall state so in the report. The reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters (October through December, January through March, April through June and July through September, respectively.)
5. The permittee shall submit annual reports which specify the total VOC emissions from emissions units P017 and P019 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
6. The permittee shall submit deviation (excursion) reports in accordance with the General Terms and Conditions of this Permit to Install.

E. Testing Requirements

1. Compliance with the emissions limitations in Sections A. and B. of these terms and conditions shall be determined in accordance with the following methods:

Emissions limitation:

Control efficiency of at least 85 percent, by weight, as a weekly average for the 7-day period from Monday through Sunday, for the VOC emissions in the process vent gas

Applicable compliance method:

Compliance with the requirements of A.2.a. shall be determined based upon the record keeping in term and condition C.1. If required, the permittee shall demonstrate

compliance with the VOC recovery system control efficiency through emission tests performed in accordance with the procedures specified in OAC rule 3745-21-10(C). Alternative testing protocols that may be necessary shall receive prior approval from Ohio EPA and U.S. EPA.

Emissions limitation:

306 lbs/day VOC based upon a weekly average from Monday through Sunday.

Applicable compliance method:

Compliance with the daily VOC emissions limitation shall be determined by the record keeping in term and condition C.2. and C.3. The permittee shall continuously monitor and record the total exit gas mass flow, in pounds per hour, and the total exit gas mass density, in pounds per cubic foot, from the condenser(s) outlet. The permittee may use lookup tables to determine the pounds methyl chloride per hour emitted (reference lookup table formulas and graphs submitted to Hamilton County Department of Environmental Services on April 19, 2005.). Startup and normal operation emissions shall be determined using the mass density and mass flow monitors. Shutdown and fugitive emissions shall be calculated from actual records and added to the continuous monitoring emissions for startup and normal operation.

The weekly average VOC emissions limitation was based on four startup and shutdown periods per week, three days of steady state conditions, stack test result from July 2005, and application information in PTI 14-05744 submitted on July 5, 2005.

$$[(3 \text{ days/week at } 2.84 \text{ lbs. methyl chloride emitted /hour of normal operation} * 24 \text{ hrs/day}) + (4 \text{ days/week with one startup \& shutdown per day at } 479.48 \text{ lbs/day}) + (7 \text{ days/wk} * 3.13 \text{ lbs. /day fugitive emissions from material handling and storage})] / 7 \text{ days per week} = 306 \text{ lbs VOC/day as a weekly average.}$$

Emissions limitation:

9.9 tons/year VOC based upon a rolling, 12-month summation for emissions units P017 and P019 combined

Applicable compliance method:

Compliance with the rolling, 12-month VOC emissions limitation in Section A.1. shall be determined by the record keeping in term and condition C.4.

Actual VOC (methyl chloride) emissions for P017 and P019 shall be determined based on the following equation from the information in PTI application 14-05744 submitted on July 5, 2005:

$$E = W + X + (EF * Y), \text{ where:}$$

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W represents the methyl chloride emissions from the condensers including startup emissions, in tons.

X represents the emissions from shutdown operation.

EF is the emissions factor for fugitive emissions and is 1.42×10^{-4} tons of methyl chloride emitted /ton of methyl chloride employed (or 0.284 lbs. Methyl chloride/ ton methyl chloride employed); this emissions factor covers fugitive emissions from compressor dryer cycles, equipment connections, storage tanks, and maintenance and material handling of methyl chloride.

Y represents the tons of methyl chloride input to P017 and P019.

Emissions limitations:

9.9 TPY for any single HAP and 24.9 TPY for combined HAPs

Applicable compliance method:

Compliance with the HAP emissions limitations in term A.2.b. shall be demonstrated by the record keeping requirements specified in term and condition C.6.

2. Compliance with the rolling, 12-month methyl chloride usage limitation in term and condition B.1. shall be determined by the record keeping in term and condition C.4.

F. Miscellaneous Requirements

1. The terms and conditions of this permit shall supercede the terms and conditions of permit to install 14-05238, issued December 5, 2002 and permit to install 14-297, issued May 16, 1980.
2. The following terms and conditions of this permit are federally enforceable: A, B, C, D and E.

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Rohm

PTI A

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