



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL
ASHTABULA COUNTY**

CERTIFIED MAIL

Street Address:

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

Mailing Address:
Lazarus Gov.
Center

Application No: 02-21877

Fac ID: 0204010192

DATE: 6/8/2006

Detrex Corporation
Thomas W. Steib
1100 State Rd.
Ashtabula, OH 44004

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$850** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

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

CC: USEPA NEDO Eastgate Development & Transportation Study NY PA

ASHTABULA COUNTY

PUBLIC NOTICE

**ISSUANCE OF DRAFT PERMIT TO INSTALL 02-21877 FOR AN AIR CONTAMINANT SOURCE FOR
Detrex Corporation**

On 6/8/2006 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Detrex Corporation**, located at **1100 State Rd., Ashtabula, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 02-21877:

Hydrochloric acid (HCl) reactor, HCl loading operations, and storage tank no. 123 for HCl

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Dennis Bush, Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, OH 44087
[(330)425-9171]



**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 02-21877

Application Number: 02-21877
Facility ID: 0204010192
Permit Fee: **To be entered upon final issuance**
Name of Facility: Detrex Corporation
Person to Contact: Thomas W. Steib
Address: 1100 State Rd.
Ashtabula, OH 44004

Location of proposed air contaminant source(s) [emissions unit(s)]:
**1100 State Rd.
Ashtabula, Ohio**

Description of proposed emissions unit(s):
Hydrochloric acid (HCl) reactor, HCl loading operations, and storage tank no. 123 for HCl

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

Detrex Corporation
PTI Application: 02-21877
Issued: To be entered upon final issuance
Part I - GENERAL TERMS AND CONDITIONS

Facility ID: 0204010192

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

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

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

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

3. Records Retention Requirements

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

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections,

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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.

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9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

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

10. Public Disclosure

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

11. Applicability

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

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available

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Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

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

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

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

15. Fees

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

B. Permit to Install Summary of Allowable Emissions

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

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

<u>Pollutant</u>	<u>Tons Per Year</u>
HCI	2.368

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>
J001 - Hydrochloric acid (HCl) loading operations interlocked with a wet scrubber to control HCl emissions	OAC rule 3745-31-05(A)(3)	The HCl emissions, a hazardous air pollutant (HAP), shall not exceed 1.37 lbs/day from the stack egress. The HCl emissions shall not exceed 0.43 ton/year from the stack and fugitive egress points. See sections B.1, B.2 and F.1.

2. Additional Terms and Conditions

None

B. Operational Restrictions

1. The scrubber water flow rate shall be continuously maintained at the minimum suggested water flow rate of the manufacturer (36.0 gal/min) or the minimum water flow rate maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.
2. The pH of the scrubber liquor shall be continuously maintained at the minimum suggested pH of the manufacturer (6.0 pH) or the minimum pH level maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor and record the water flow rate and the pH while the emissions unit is in operation. The monitoring devices and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the water flow rate, in gpm, on a once/shift basis;
- b. the pH of the scrubber liquor, in pH, on a once/shift basis; and
- c. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time, except during startup, shutdown, maintenance or calibration periods, during which the following scrubber parameters were not maintained at or above the required levels contained in sections B.1 and B.2 of this permit:
 - a. the scrubber water flow rate; and
 - b. the scrubber liquor pH.

E. Testing Requirements

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

- a. Emission Limitation:

1.37 lbs/day of HCl from the stack egress point(s)

Applicable Compliance Method:

The emission rate may be estimated from the following equation:

$$EHCl_stack = V \times EF_HCl \times (1 - CE)$$

where:

EHCI_stack = maximum HCl emissions from the stack egress, which were estimated to be 0.16 lb HCl/day;

V = maximum, daily throughput, which is 18,000 gal HCl/day as noted in the application for this permit;

EF_HCl = the loading loss factor for HCl emissions, which was determined to be 0.9060 lb HCl/1000 gal HCl loaded as estimated from Equation 1 in AP-42 Chapter 5.2(1/95); and

CE = efficiency of control device, which is noted as 99% in the application for this permit.

If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the HCl emission limitation of this permit by means of physical testing of the stack exhaust gases from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 26. Additionally, if required, the control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 26 or an alternative test protocol approved by the Ohio EPA.

b. Emission Limitation:

0.43 ton/year of HCl

Applicable Compliance Method:

The emissions may be estimated from the following equations:

- i. Determination of the worst case fugitive HCl emissions rate from valves, flanges, pumps and other pipeline connectors:

$$\text{HCl}_{\text{fugitive}} = \{[(n_i \times \text{Connectors}_i \times \text{EF}_{\text{connector}_i})] \times 8760 \text{ hrs/yr} \times \text{ton HCl}/2000 \text{ lbs HCl}\}$$

where:

Detrex

PTI A

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Emissions Unit ID: J001

HCl_fugitive = the fugitive HCl emissions from pipeline transfer, which is 0.177 ton HCl/yr as determined in the application for a permit to install;

n_i = the number of pipeline type connector_i;

Connectors_i = the type of on-site pipeline connectors, i.e. valves, flanges, pumps and others; and

EF_connector_i = the uncontrolled HCl emission factors for connector type i such as valves, pumps, flanges and other connectors, which are derived from Table 2-4, "Protocol for Equipment Leak Emissions Estimates (EPA 453/R-95-017, 1995)."

- ii. Determination of total HCl emissions may be estimated from the following equation:

$$\text{HCl}_{\text{total}} = (\text{EHCl}_{\text{stack}} \times 365 \text{ days/yr} \times \text{ton HCl}/2000 \text{ lbs HCl}) + \text{HCl}_{\text{fugitive}}$$

where:

HCl_total = maximum, HCl emissions from both stack and fugitive egress points were determined to be 0.21 tons/yr.

F. Miscellaneous Requirements

1. This emissions unit (J001 - loading operation) includes a scrubber interlock system. If the scrubber conditions are not met, the system automatically opens a valve for city water, and the automatic valve that controls the loading operation closes. Once the scrubber conditions of water flow rate at a minimum of 36 gallons per minute and a minimum pH of 6 are maintained, the automatic valve is activated. If the scrubber conditions are not met for ten minutes, the whole system goes into shutdown mode which also shuts down the HCl reactor (P101) and pumps at the storage tanks in addition to the loading operations shutdown. The scrubber interlock system is a physically inherent design limitation so that the potential to emit for this emissions unit is based on the maximum, controlled rate of 0.21 ton/year of HCl emissions.

The Detrex Corp., Ashtabula Plant is an area (minor) source of single HAP emissions and combined HAP emissions. Therefore it is not subject to the National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production in 40 CFR Part

Emissions Unit ID: **J001**

63, Subpart NNNNN (40 CFR 63.8980 -63.9075).

2. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the new emissions units' (J001 and T109) maximum annual emissions for each toxic pollutant (i.e. HCl and chlorine) will be less than 1.0 ton.
3. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
4. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it

Detre:**PTI A**Emissions Unit ID: **J001****Issued: To be entered upon final issuance**

conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of the evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

**Detre:
PTI A**

Emissions Unit ID: **P101**

Issued: To be entered upon final issuance

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>
P101 - Hydrochloric acid (HCl) reactor interlocked with a wet, packed bed scrubber (MW-30) to control HCl and chlorine emissions, and two product absorbers	OAC rule 3745-31-02(A)	The HCl emissions, a hazardous air pollutant (HAP), shall not exceed 0.44 lb/hr and 1.93 tons/year. See sections B.1 and B.2.

2. Additional Terms and Conditions

None

B. Operational Restrictions

1. The scrubber water flow rate shall be continuously maintained at the minimum suggested water flow rate of the manufacturer (36.0 gal/min) or the minimum water flow rate maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.
2. The pH of the scrubber liquor shall be continuously maintained at the minimum suggested pH of the manufacturer (6.0 pH) or the minimum pH level maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor and

Emissions Unit ID: **P101**

record the water flow rate and the pH while the emissions unit is in operation. The monitoring devices and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the water flow rate, in gpm, on a once/shift basis;
- b. the pH of the scrubber liquor, in pH, on a once/shift basis; and
- c. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time, except during startup, shutdown, maintenance or calibration periods, during which the following scrubber parameters were not maintained at or above the required levels contained in sections B.1 and B.2 of this permit:
 - a. the scrubber water flow rate; and
 - b. the scrubber liquor pH.

E. Testing Requirements

1. Compliance with the emission limitations in section A.1 of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:

0.44 lb/hr of HCl

Applicable Compliance Method:

The emissions may be estimated from the following equation:

Determination of the hourly emissions may be estimated from the following equation:

**Detre
PTI A**

Emissions Unit ID: **P101**

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$$EHCI_{hr} = V \times D \times EF_{HCl} \times \text{ton HCl}_{\text{product}} / 2000 \text{ lbs HCl} \times (1 - CE)$$

where:

$EHCI_{hr}$ = the maximum, HCl emissions, which is estimated to be 0.052 lb HCl/hr;

V = the hourly HCl production rate, which is 600 gal/hr as noted in the application for PTI 02-21877;

D = the maximum product density, in 9.68 lbs HCl/gal. HCl;

EF_{HCl} = the factor for uncontrolled HCl emissions, which is 1.8 lbs HCl_{unctrl}/ton HCl_{product}, as found in AP-42, Table 8.6-1, Chapter 8.6 (7/93); and

CE = efficiency of control device, which is noted as 99% in the application for this permit.

If required pursuant to OAC rule 3745-15-04, the control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 26 or an alternative test protocol approved by the Ohio EPA.

b. Emission Limitation:

1.93 tons/year of HCl

Applicable Compliance Method:

The emissions may be estimated from the following equation:

$$EHCI = EHCI_{hr} \times \text{hrs/yr} \times \text{ton}/2000 \text{ lbs}$$

where:

$EHCI$ = the maximum, annual, HCl emissions, which is 0.23 ton/yr; and

hrs/yr = maximum operating hours, which is 8,760 hrs/yr.

Detre:**PTI A**Emissions Unit ID: **P101****Issued: To be entered upon final issuance****F. Miscellaneous Requirements**

1. This emissions unit (P101 - HCl reactor and product absorbers) includes a scrubber interlock system. If the scrubber conditions are not met, the system automatically opens a valve for city water, and the automatic valve, that controls the HCl reactor and the pumps to the product storage tanks, closes. Once the scrubber conditions of water flow rate at a minimum of 36 gallons per minute and a minimum pH of 6 are maintained, the automatic valve is activated. If the scrubber conditions are not met for ten minutes, the whole system goes into shutdown mode which also shuts down the loading operations (J001). The scrubber interlock system is a physically inherent design limitation so that the potential to emit for this emissions unit is based on the maximum, controlled rate of 0.23 ton/year of HCl emissions.

The Detrex Corp., Ashtabula Plant will be a synthetic minor source and not a major source. Additionally, this source will not be subject to the National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production in 40 CFR Part 63, Subpart NNNNN (40 CFR 63.8980 -63.9075).

2. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because this emissions unit (P101) is an existing source.
3. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
4. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, then the permittee shall obtain a final permit to install

Detre:**PTI A**Emissions Unit ID: **P101****Issued: To be entered upon final issuance**

prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of the evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

Detre

PTI A

Emissions Unit ID: T109

Issued: To be entered upon final issuance

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>
T109 - 15,000 gallon storage tank no. 123 for hydrochloric acid (HCl) interlocked with a wet, packed bed scrubber to control HCl emissions	OAC rule 3745-31-05(A)(3)	The HCl emissions, a hazardous air pollutant (HAP), shall not exceed 0.0018 lb/hr and 0.008 ton/year.

2. Additional Terms and Conditions

None

B. Operational Restrictions

1. The scrubber water flow rate shall be continuously maintained at the minimum suggested water flow rate of the manufacturer (36.0 gal/min) or the minimum water flow rate maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.
2. The pH of the scrubber liquor shall be continuously maintained at the minimum suggested pH of the manufacturer (6.0 pH) or the minimum pH level maintained during the most recent compliant stack test while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor and record the water flow rate and the pH while the emissions unit is in operation. The

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monitoring devices and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the water flow rate, in gpm, on a once/shift basis;
- b. the pH of the scrubber liquor, in pH, on a once/shift basis; and
- c. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time, except during startup, shutdown, maintenance or calibration periods, during which the following scrubber parameters were not maintained at or above the required levels contained in sections B.1 and B.2 of this permit:
 - a. the scrubber water flow rate; and
 - b. the scrubber liquor pH.

E. Testing Requirements

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

- a. Emission Limitation:

0.0018 lb/hr of HCl

Applicable Compliance Method:

The emissions rate may be estimated from the following equation(s):

- i. Determination of the maximum, uncontrolled, breathing loss emissions may be estimated from the following equation:

$$L_B = 2.26 \times 10^{-2} \times M_V \times [P/(P_A - P)]^{0.68} \times D^{1.73} \times H^{0.51} \times \Delta T^{0.50} \times F_P \times C \times K_C$$

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where:

L_B = maximum, uncontrolled fixed roof breathing loss, as estimated from Equation 1 in former AP-42 Chapter 4.3(9/85), which is 113.9 lbs/yr;

M_V = molecular weight of vapor in storage tank, 36.5 lb/lb-mole;

P_A = average atmospheric pressure at tank location, 14.7 psia;

P = true vapor pressure at bulk liquid conditions, 1.7 psia;

D = tank diameter, 11.8 ft. (vertical tank);

H = average vapor space height, including roof volume correction, 9 ft;

ΔT = average ambient diurnal temperature change, 16.4 °F;

F_P = paint factor for white, HDPE shell in good condition, 1.00;

C = adjustment factor for small diameter tanks, 0.62; and

K_C = product factor, 1.0.

- ii. Determination of the maximum, uncontrolled, working loss emissions may be estimated from the following equation:

$$L_W = 2.40 \times 10^{-5} \times M_V \times P \times V \times N \times K_N \times K_C$$

where:

L_W = uncontrolled, fixed roof working loss, as estimated from Equation 2 in former AP-42 Chapter 4.3(9/85), which is 1,465.6 lbs/yr;

V = tank capacity, 15,000 gallons;

N = number of turnovers per year, total throughput (gal)/tank capacity), 243, based on a maximum throughput of 10,000 gal/day; and

K_N = turnover factor, 0.27.

- iii. Determination of the total, maximum, uncontrolled emissions may be estimated from the following equation:

$$EHCI_unctrl_year = L_B + L_W$$

where:

$EHCI_unctrl_year$ = total, maximum, uncontrolled emissions, which are

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1,579.5 lbs HCl_unctrl/yr.

- iv. Determination of average, controlled, hourly HCl emissions may be estimated from the following equation:

$$\text{EHCl_ctrl_hr} = \text{EHCl_unctrl_year} / \text{HRS} \times (1 - \text{CE})$$

where:

EHCl_ctrl_hr = the average, controlled, hourly HCl emissions, which are 0.0018 lb HCl/hr;

HRS = the maximum hours of operation, which is 8,760 hrs/yr; and

CE = efficiency of the scrubber control device, which is noted as 99% in the application for this permit.

b. Emission Limitation:

0.008 ton/year of HCl

Applicable Compliance Method:

The emissions may be estimated from the following equation:

$$EHCl_ctrl_year = EHCl_unctrl_year \times \text{ton HCl}/2,000 \text{ lbs HCl} \times (1 - CE)$$

where:

EHCl_ctrl_year = the total, maximum, controlled HCl emissions, which is estimated to be 0.0079 ton HCl/yr.

F. Miscellaneous Requirements

1. This emissions unit (T109 - 15,000 gallon storage tank no. 123 for hydrochloric acid) includes a scrubber interlock system. If the scrubber conditions are not met, the system automatically opens a valve for city water, and the automatic valve, that controls the pumps to the product storage tanks, closes. Once the scrubber conditions of water flow rate at a minimum of 36 gallons per minute and a minimum pH of 6 are maintained, the automatic valve is activated. If the scrubber conditions are not met for ten minutes, the whole system goes into shutdown mode which also shuts down the loading operations (J001) and the HCl reactor (P101). The scrubber interlock system is a physically inherent design limitation so that the potential to emit for this emissions unit is based on the maximum, controlled rate of 0.0079 ton/year of HCl emissions.

The Detrex Corp., Ashtabula Plant will be a synthetic minor source and not a major source. Additionally, this source will not be subject to the National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production in 40 CFR Part 63, Subpart NNNNN (40 CFR 63.8980 -63.9075).

2. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the new emissions units' (J001 and T109) maximum annual

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emissions for each toxic pollutant (i.e. HCl and chlorine) will be less than 1.0 ton.

3. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
 - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).
4. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. a description of the parameters changed (composition of materials, new

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pollutants emitted, change in stack/exhaust parameters, etc.);

- b. documentation of the evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.