



State of Ohio Environmental Protection Agency

Street Address:

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

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

Mailing Address:

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

**RE: FINAL PERMIT TO INSTALL  
LICKING COUNTY  
Application No: 01-08339**

**CERTIFIED MAIL**

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

**DATE:** 7/10/2001

G E Quartz Inc  
Lisha Kronmann  
611 ONeill Dr SE  
Hebron, OH 43025

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  
236 East Town Street, Room 300  
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo  
Field Operations and Permit Section  
Division of Air Pollution Control

cc: USEPA

CDO



**Permit To Install  
Terms and Conditions**

**Issue Date: 7/10/2001  
Effective Date: 7/10/2001**

**FINAL PERMIT TO INSTALL 01-08339**

Application Number: 01-08339  
APS Premise Number: 0145000213  
Permit Fee: **\$200**  
Name of Facility: G E Quartz Inc  
Person to Contact: Lisha Kronmann  
Address: 611 ONeill Dr SE  
Hebron, OH 43025

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**611 ONeill Dr SE  
Hebron, Ohio**

Description of proposed emissions unit(s):  
**Automated chemical delivery system, acid etching system and acid scrubber.**

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. State and Federally Enforceable Permit To Install General Terms and Conditions

#### 1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. 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.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written 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. See B.10 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

## **2. 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, i.e., upset, 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

## **3. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

## **4. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

## **5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

## **6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. 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 request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

## **7. 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.

## **8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## **9. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

## 10. Permit To Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 thirty (30) days after commencing operation of the source(s) covered by this permit.

**11. 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.

**B. State Only Enforceable 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 Related to Monitoring and Recordkeeping Requirements**

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable 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 state-only required 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. 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.

**4. 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.

**5. 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.

**6. 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.

**7. 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.

**8. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**9. 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.

**10. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

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.

**C. 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**

<b><u>Pollutant</u></b>	<b><u>Tons Per Year</u></b>
Hydrofluoric Acid	<b>0.66</b>
Hydrogen Peroxide	<b>0.35</b>
Nitric Acid	<b>0.31</b>
Ammonia	<b>3.94</b>

**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

None.

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None.

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

#### A. State and Federally Enforceable Section

##### I. 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>
P037 - Automated crucible cleaning system: chemical delivery system, acid etching system and scrubber	OAC rule 3745-31-05(A)(3)	Hydrogen flouride emissions shall not exceed 0.15 pound per hour and 0.66 ton per year.  See A.I.2.a - b. and A.II.1 below.

##### 2. Additional Terms and Conditions

- 2.a The permittee shall vent the emissions from P037 to a wet caustic scrubber.
- 2.b The hourly and annual limitation(s) for this emissions unit were established to reflect the potential to emit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limit.

##### II. Operational Restrictions

1. The pressure drop across the scrubber shall be continuously maintained at a value of not less than eight inches of water at all times while the emissions unit is in operation.  
  
The scrubber water flow rate shall be continuously maintained at a value of not less than 100 gallons per minute at all times while the emissions unit is in operation.

##### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor and record the water supply pressure and the water flow rate 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 supply pressure, in psig, on a daily basis.
- b. The water flow rate, in gpm, on a daily basis.
- c. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

#### **IV. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
  - a. The static pressure drop across the scrubber.
  - b. The scrubber water flow rate.

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

#### **V. Testing Requirements**

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
Hydrogen flouride emissions shall not exceed 0.15 pound per hour and 0.66 ton per year.

Applicable Compliance Method:

The permittee shall conduct, or have conducted, emission testing for P037 in accordance with the following requirements:

- i. The emission testing shall be conducted within 3 months after emissions unit startup.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for hydrofluoric acid.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): 40CFRPart60, Appendix A, Method 26. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- iv. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Central District Office.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Central District Office.

To demonstrate compliance with the annual limitation, multiply the hourly emission rate (established from the stack test required above) by 8760 and divide by 2000 to convert to tons per year.

## VI. Miscellaneous Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary for hydrofluoric acid because the emissions unit's maximum annual emissions for this toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**B. State Only Enforceable Section**

**I. 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>
P037 - Automated crucible cleaning system: chemical delivery system, acid etching system and scrubber	OAC rule 3745-31-05(D)	Nitric acid emissions shall not exceed 0.07 pound per hour and 0.31 ton per year.  Hydrogen peroxide emissions shall not exceed 0.08 pound per hour and 0.35 ton per year  Ammonia emissions shall not exceed 0.9 pound per hour and 3.94 tons per year.  See A.I.2.a - b and B.1 below.

2. **Additional Terms and Conditions**

- 2.a The permittee shall vent the emissions from P037 to a wet caustic scrubber.
- 2.b The hourly and annual limitation(s) for this emissions unit were established to reflect the potential to emit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limit.

**II. Operational Restrictions**

1. The pressure drop across the scrubber shall be continuously maintained at a value of not less than eight inches of water at all times while the emissions unit is in operation.  
  
 The scrubber water flow rate shall be continuously maintained at a value of not less than 100 gallons per minute at all times while the emissions unit is in operation.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for this emissions unit P037 was evaluated based on the actual materials the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy

("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ammonia

TLV (mg/m3): 17

Maximum Hourly Emission Rate (lb/hr): 0.15

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m3): 384.3

MAGLC (ug/m3): 404.8

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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- 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.).

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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its 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.
2. The permittee shall properly install, operate and maintain equipment to monitor and record the water supply pressure and the water flow rate 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 supply pressure, in psig, on a daily basis.
- b. The water flow rate, in gpm, on a daily basis.
- c. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

#### **IV. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
  - a. The static pressure drop across the scrubber.
  - b. The scrubber water flow rate.

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

#### **V. Testing Requirements**

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:  
Nitric acid emissions shall not exceed 0.07 pound per hour and 0.31 ton per year.
- Applicable Compliance Method:  
If required, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with an U.S. EPA approved test method that has been pre-approval by the Ohio EPA.
- b. Emission Limitation:  
Hydrogen peroxide emissions shall not exceed 0.08 pound per hour and 0.35 ton per year.
- Applicable Compliance Method:  
If required, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with an U.S. EPA approved test method that has been pre-approval by the Ohio EPA.
- c. Emission Limitation:  
Ammonia emissions shall not exceed 0.9 pound per hour and 3.94 tons per year.
- Applicable Compliance Method:  
If required, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40CFRPart60, Appendix A, modified Method 5. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

## **VI. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary for hydrogen peroxide and nitric acid because the emissions unit's maximum annual emissions for each of these toxic compounds will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**NEW SOURCE REVIEW FORM B**

PTI Number: 01-08339

Facility ID: 0145000213

FACILITY NAME G E Quartz IncFACILITY DESCRIPTION Automated chemical delivery system, acid etching system and acid scrubber. CITY/TWP HebronSIC CODE 3299 SCC CODE 39999993 EMISSIONS UNIT ID P037EMISSIONS UNIT DESCRIPTION Automated Crucible Cleaning System - chemical delivery system, acid etching system and scrubber

DATE INSTALLED \_\_\_\_\_

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter					
PM <sub>10</sub>					
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Ammonia		0.7	3.1	0.9	3.94
Nitric Acid		0.05	0.22	0.07	0.31
Hydrofluoric acid		0.11	0.48	0.15	0.66
Hydrogen peroxide		0.07	0.31	0.08	0.35

APPLICABLE FEDERAL RULES:

NSPS? \_\_\_\_\_ NESHAP? \_\_\_\_\_ PSD? \_\_\_\_\_ OFFSET POLICY? \_\_\_\_\_

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

OAC rule 3745-31-05(A)(3); scrubberIS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? yesOPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$ not submitted**TOXIC AIR CONTAMINANTS**

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED\*? X YES \_\_\_\_\_ NO \_\_\_\_\_IDENTIFY THE AIR CONTAMINANTS: ammonia, hydrofluoric acid, nitric acid and hydrogen peroxide

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**Ohio EPA Permit to Install Information Form**

Please describe below any documentation which is being submitted with this recommendation (must be sent the same day). Electronic items should be submitted with the e-mail transmitting the PTI terms, and in software that CO can utilize. If mailing any hard copy, this section must be printed as a cover page. All items must be clearly labeled indicating the PTI name and number. Submit **hard copy items to Pam McGraner**, AQM&P, DAPC, Central Office, and electronic files to **airpti@epa.state.oh.us**

<i>Please fill out the following. If the checkbox does not work, replace it with an 'X'</i>	<u>Electronic</u>	<u>Additional information File Name Convention (your PTI # plus this letter)</u>	<u>Hard Copy</u>	<u>None</u>
<u>Calculations (required)</u>	<input type="checkbox"/>	0000000c.wpd	<input checked="" type="checkbox"/>	
<u>Modeling form/results</u>	<input checked="" type="checkbox"/>	0000000s.wpd	<input type="checkbox"/>	<input type="checkbox"/>
<u>PTI Application (complete or partial)*</u>	<input checked="" type="checkbox"/>	0000000a.wpd	<input type="checkbox"/>	<input type="checkbox"/>
<u>BAT Study</u>	<input checked="" type="checkbox"/>	0000000b.wpd	<input type="checkbox"/>	<input type="checkbox"/>
<u>Other/misc.</u>	<input checked="" type="checkbox"/>	0000000t.wpd	<input type="checkbox"/>	<input type="checkbox"/>

\* Mandatory for netting, PSD, nonattainment NSR, 112(g), 21-07(G)(9)(g) and 21-09(U)(2)(f) - 2 complete copies.

Please complete (see comment bubble to the left for additional instructions):

**NSR Discussion**

CDO New Source Review Discussion

PTI 01-08339

The General Electric Newark Quartz Plant (GEN) has submitted a permit-to-install application for an automated crucible cleaning system. The system will have the capabilities of using two types of acid washes to etch the crucibles. GEN will initially use an ammonium bifluoride cleaning solution, but wants the option to use a Tri-Mix cleaning solution if desired. The Tri-Mix cleaning solution contains hydrofluoric acid (HF), nitric acid (HNO<sub>3</sub>) and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>).

System Components

Chemical delivery system - chemicals are introduced into the system here. The ammonium bifluoride solution will be formulated off-site and delivered in 55 gallon drums. A nozzle will be used to suck the acid solution out of the drums. Except for the vent system that is part of the drum design, the acid solution is not exposed to air at this point. The Tri-Mix solution will require on-site formulation. This process will consist of GEN receiving a 55 gallon drum of each reagent (HF, HNO<sub>3</sub>, and H<sub>2</sub>O<sub>2</sub>). The reagents will be blended in a separate tank with deionized (DI) water. The reagents will be pumped from their individual tanks into a 8,000 gallon blending tank. The drums and tank are closed to air except for their individual vent systems. The blending tank will be heated with in-line heaters to allow the mixture to achieve the appropriate etch removal. The heaters are electric.

Crucible Cleaning System - the crucibles are cleaned in this system. The system includes a load module, six sequential acid etch / DI water rinse modules, two drying modules and an unload module. The load and unload modules are the only part of the system that is open to the air. Once the crucible is loaded in, it goes into a closed loop where it is

**NEW SOURCE REVIEW FORM B**

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washed in the acid and then rinsed with DI water. The drying modules consist of infrared lamps and air/nitrogen flow to dry the crucible.

Acid vapors and possibly ammonia vapors from the spraying of the cleaning solutions onto the crucible, from the DI water rinse and from the drying modules are ducted to a wet caustic scrubber.

The pollutants ducted to the scrubber are  $\text{NH}_4\text{HF}_2$ , HF,  $\text{HNO}_3$ ,  $\text{H}_2\text{O}$  and  $\text{H}_2\text{O}_2$ . A caustic solution of NaOH will be used to chemically react with the reagents that are less soluble in water. For the ammonium bifluoride, it is assumed that the scrubber will not effectively control ammonia emissions ( $\text{NH}_3$ ). The HF is left to react with the NaOH and form NaF and  $\text{H}_2\text{O}$ . NaF is highly soluble in water. For the Tri-Mix, the HF will react with the NaOH to form NaF and  $\text{H}_2\text{O}$ . Again, NaF is highly soluble in water.  $\text{HNO}_3$  will react with NaOH to form  $\text{NaNO}_3$  and  $\text{H}_2\text{O}$ . Sodium nitrate is highly soluble.  $\text{H}_2\text{O}_2$  is also highly soluble in water. The contaminated water from the scrubber and the crucible cleaning system will be drummed and sent to an off-site waste disposal facility. The company estimated the overall design efficiency to be about 99% and the operating efficiency of the scrubber to be about 99%.

**Applicable Federal Rules and Regulations**

(1) NSPS - n/a

(2) NESHAPS - n/a

(3) PSD -

Attainment Area - YESFacility on 28 Source Category PSD Rule List - NOCurrent Facility Potential Emissions  $\geq$  250 tpy - NO

- Facility is not a PSD Facility

New Source Emissions  $\geq$  250 tpy - NO

- Not a Major Modification - No PSD Permit Needed

**Applicable State Rules and Regulations**

The pollutants of concern from the crucible cleaning system are  $\text{NH}_3$ , HF,  $\text{HNO}_3$ , and  $\text{H}_2\text{O}_2$ . These pollutants will be regulated under OAC rule 3745-31-05(A)(3). Also, since these pollutants are inorganic, the blending tank falls under one of the two exemptions - OAC rule 3745-31-03(A)(1)(i) - (ii).

**New Source Modeling**

As applied here, "potential emissions" refers to controlled emissions including any operating rate restrictions. Therefore, the operating efficiency of the scrubber can be included in the potential emissions for this emissions unit. Potential emissions for all pollutants are under 1 tpy, except for the ammonia which will be modeled under the Air Toxics Policy since it has a TLV.

**Air Toxics Policy**

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All of the pollutants of concern have low TLV values. However, only ammonia will be modeled because its potential emissions are above 1 tpy.

**PLEASE PROVIDE ADDITIONAL NOTES OR COMMENTS AS NECESSARY:**

**NONE**

**Please complete:**

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

<u>Pollutant</u>	<u>Tons Per Year</u>
Hydrofluoric Acid	<b>0.66</b>
Hydrogen Peroxide	<b>0.35</b>
Nitric Acid	<b>0.31</b>
Ammonia	<b>3.94</b>

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