



State of Ohio Environmental Protection Agency

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

CERTIFIED MAIL

Street Address:

50 West Town Street, Suite 700

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

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 02-22688

Fac ID: 0215090390

DATE: 7/24/2007

Cardinal Pumps and Exchangers, Inc.
Olaf Janitz
1030 Clarke Rd.
London, ON N5V 3B2

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

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

Sincerely,

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

CC: USEPA

NEDO



**Permit To Install
Terms and Conditions**

**Issue Date: 7/24/2007
Effective Date: 7/24/2007**

FINAL PERMIT TO INSTALL 02-22688

Application Number: 02-22688
Facility ID: 0215090390
Permit Fee: **\$200**
Name of Facility: Cardinal Pumps and Exchangers, Inc.
Person to Contact: Olaf Janitz
Address: 1030 Clarke Rd.
London, ON N5V 3B2

Location of proposed air contaminant source(s) [emissions unit(s)]:
**1425 Quaker Court
Salem, Ohio**

Description of proposed emissions unit(s):
Paint spray booth and paint mixing room.

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

Chris Korleski
Director

Cardinal Pumps and Exchangers, Inc.
PTI Application: 02-22688
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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 (i.e., postmarked) quarterly 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

<u>Pollutant</u>	<u>Tons Per Year</u>
VOC	8.2

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

A. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property, and/or Equipment -(K001) - Paint Mixing Room and Paint Booth

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Less than 10 gallons per day of total coating usage.</p> <p>3.1 pounds per day and 0.4 ton per year of VOC emissions from coating and cleanup material usage in the paint mixing room.</p> <p>59.8 pounds per day and 7.8 tons per year of VOC emissions from coating and cleanup material usage in the paint booth.</p>
OAC rule 3745-21-09(U)(2)(e)(iii)	The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a This emissions unit shall be exempt from OAC rule 3745-21-09(U)(1).

B. Operational Restrictions

- 1. A dry filtration system for the paint booth shall be used while the paint booth is in operation.

C. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall collect and record the following information each day for the paint mixing room:
 - a. the name and identification number of each coating and cleanup material employed;

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- b. the volume, in gallons, of each coating and cleanup material employed;
- c. the daily VOC emissions from the paint mixing room, in pound VOC per day, as calculated below:

E = Sum of (B x C) for each coating and cleanup material employed during the day, multiplied by 0.05

where;

E = Emissions of VOC, in pounds per day

B = Volume of coating or cleanup material employed in the paint mixing room, as recorded in C.1.b above

C = VOC content of coating (finished coating after being thinned) or cleanup material employed in the paint mixing room, as recorded in C.1.c above

0.05 = PTI application reports an estimation that 5% of the available VOC in the coatings and cleanup materials is released in the paint mixing room.

- 2. The permittee shall collect and record the following information each day for the paint booth:

- a. the name and identification number of each coating and cleanup material employed;
- b. the volume, in gallons, of each coating and cleanup material employed;
- c. the VOC content, in pounds per gallon, of each coating and cleanup material employed;
- d. the daily VOC emissions from the paint booth, in pounds VOC per day, as calculated below:

E = Sum of (B x C) for each coating and cleanup material employed during the day, multiplied by 0.95

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where;

E = Emissions of VOC, in pounds per day

B = Volume of coating or cleanup material employed in the paint booth, as recorded in C.2.b above

C = VOC content of coating (finished coating after being thinned) or cleanup material employed in the paint booth, as recorded in C.2.c above

0.95 = PTI application reports an estimation that 95% of the available VOC in the coatings and cleanup materials is released in the paint booth; and

- e. whether the dry filtration system was in use while the paint booth was in operation.
3. The permittee shall record the total annual VOC emissions from the paint mixing room from all coatings and cleanup materials employed using the following equation:

$$E \text{ (tons VOC/year)} = \text{Sum of each daily VOC emissions from the paint mixing room, as calculated in C.1.d, during the calendar year, multiplied by (ton/2,000 lbs).}$$

4. The permittee shall record the total annual VOC emissions from the paint booth from all coatings and cleanup materials employed using the following equation.

$$E \text{ (tons VOC/year)} = \text{Sum of each daily VOC emissions from the paint booth, as calculated in C.2.d, during the calendar year, multiplied by (ton/2,000 lbs).}$$

5. The permit to install for this emissions unit (K001) was evaluated based on the actual materials and 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 "Toxic Air Contaminant Statue," ORC 3704.03(F), was applied to this emissions unit for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant emitted at over one tone per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level

Emissions Unit ID: **K001**

concentration results from the use of the SCREEN 3.0 model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant	Maximum hourly rate, and in gram/second	TLV, ug/m ³	MAGLC (TLV/42)	Predicted 1-hr max ground level concentration, ug/m ³ , at 1.0 gram/second (higher than actual maximum)	PASS? (yes, if the predicted 1-hr max ground level concentration is less than MAGLC)
Ethylbenzene	1.45 tpy = 0.33 lb/hr = 0.04 g/s	434,192	10,338	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes
Methyl isobutyl ketone	2.17 tpy = 0.50 lb/hr = 0.06 g/s	204,826	4,877	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes
Isopropyl alcohol	2.17 tpy = 0.50 lb/hr = 0.06 g/s	983,068	23,406	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes
Xylene	5.79 tpy = 1.32 lb/hr = 0.17 g/s	434,192	10,338	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes
Methyl amyl ketone	1.643 tpy = 0.38 lb/hr = 0.05 g/s	233,497	5,560	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes
Butyl acetate	1.095 tpy = 0.25 lb/hr = 0.03 g/s	712,638	16,968	Paint Mix Rm = 1,440 Paint Booth = 479.2	Yes

The above described evaluation determined that the maximum ground level concentration for this emissions unit (at its new location) was less than 80% of the MAGLC.

- The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

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7. Prior to making any physical changes to, or changes in the method of operation of this emissions unit, that could impact the parameters or values that were used in determining the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameter/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, 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.).

If the permittee determines that the "Toxic Air Contaminant Statute" 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 a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification," or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change(s).

8. The permittee shall collect, record and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute:"
 - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change

Emissions Unit ID: **K001**

in stack/exhaust parameters, etc.);

- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit to be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with ORC 3745.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit or the materials applied.

D. Reporting Requirements

1. The permittee shall submit a deviation (excursion) report to the Ohio EPA, Northeast District Office for each calendar quarter. The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30 and October 1 - December 31. These reports shall identify each day within each calendar quarter when the following events occurred:
 - a. any daily record showing that the paint mixing room and the paint booth, in combination, employed more than ten gallons of coating,
 - b. any daily record showing that the VOC emissions from the paint mixing room exceeded the allowable rate of 3.1 pounds per day and the VOC emissions from the paint booth exceeded the allowable rate of 59.8 pounds per day, and
 - c. any daily record showing that the dry filtration system for the paint booth was not in service when the paint booth was in operation.

If no deviations or excursions occurred during a calendar quarter, the permittee shall submit a quarterly report which states that no deviation and excursion occurred during that calendar quarter.

Quarterly reports shall be submitted to the Ohio EPA, Northeast District Office, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarter.

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2. The permittee shall submit an annual report to the Ohio EPA, Northeast District Office, by January 31 of each year and shall cover the previous calendar year. This report shall include the following:
 - a. the calculated annual VOC emissions rate, in tons VOC per year, from the paint mix room and from the paint booth, as recorded in C.3 and C.4; and
 - b. documentation of any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit or the exhaust stack have been made, then the report shall include a statement to this effect. This report may be included with the annual report described in D.2 above.

E. Testing Requirements

1. Emission Limitation:
Less than 10 gallons per day of coating

Applicable Compliance Method:
Compliance shall be based upon the record keeping requirements specified in section C.
2. Emission Limitation:
3.1 pounds VOC per day from coating and cleanup material usage in the paint mixing room.

Applicable Compliance Method:
Compliance shall be based upon the record keeping requirements specified in section C.
3. Emission Limitation:
59.8 pounds VOC per day from coating and cleanup material usage in the paint booth.

Applicable Compliance Method:
Compliance shall be based upon the record keeping requirements specified in section C.
4. Emission Limitation:

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0.4 ton VOC per year from coating and cleanup material usage in the paint mixing room.

Applicable Compliance Method:

Compliance shall be based upon the record keeping requirements specified in section C.

5. Emission Limitation:

7.8 ton VOC per year from coating and cleanup material usage in the paint booth.

Applicable Compliance Method:

Compliance shall be based upon the record keeping requirements specified in section C.

F. Miscellaneous Requirements

None