OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
1800 WaterMark Drive
Columbus, OH 43215-1099

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

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

Re: Permit to Install
Portage County
Application No: 16-1774
CEM
TOXIC REVIEW
SYNTHETIC MINOR

CERTIFIED MAIL

July 15, 1998

GENCORP, INC-SPECIALTY POLYMERS DIVISION
ALAN D SAMPSON
165 S CLEVELAND AVENUE
MOGADORE, OH 44260

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 with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's 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

Thomas G. Rigo, Manager
Field Operations & Permit Section
Division of Air Pollution Control

cc: US EPA
AKRON AIR POLLUTION CONTROL

OhioEPA

State of Ohio Environmental Protection Agency

Permit to Install
Terms and Conditions

Application No. 16-1774
APS Premise No. 1667000007
Permit Fee: $1400.00

Name of Facility: GENCORP, INC-SPECIALTY POLYMERS DIVISION

Person to Contact: ALAN D SAMPSON

Address: 165 S CLEVELAND AVENUE
MOGADORE, OH 44260

Location of proposed source(s): 165 S CLEVELAND AVENUE
MOGADORE, OHIO

Description of proposed source(s):
PILOT PLANT - POLYMERIZATION PROCESS - 7 UNITS.

Date of Issuance: July 15, 1998

Effective Date: July 15, 1998

The above named entity is hereby granted a permit to install for the above described source(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 source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described source(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

Donald R Schregardus

Director

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. 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.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCE(S)

The proposed source(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 are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Ohio 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 Ohio Administrative Code (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 prove to be inadequate or cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 15 days of the effective date of this permit to install.

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.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

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.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be made at least 90 days prior to start-up of the source.

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for 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.

Facility Name: **GenCorp, Inc-Specialty Polymers Division**
Application Number: **16-1774**
Date: **July 15, 1998**

AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **GenCorp, Inc-Specialty Polymers Division** located in **Portage** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P110	Pilot plant - polymerization process no. 1	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *
P111	Pilot plant - polymerization process no. 2	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene

Facility Name: **GenCorp, Inc-Specialty Polymers Division**
Application Number: **16-1774**
Date: **July 15, 1998**

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P111 Cont'd				1.81 pounds/hour styrene 5.0 TPY styrene (facility) *
P112	Pilot plant - polymeri-zation process no. 3	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *
P113	Pilot plant - polymeri-zation process no. 4	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *

Facility Name: **GenCorp, Inc-Specialty Polymers Division**
Application Number: **16-1774**
Date: **July 15, 1998**

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P114	Pilot plant - polymerization process no. 5	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *
P115	Pilot plant - polymerization process no. 6	Use of condenser and thermal oxidizer, compliance with the Additional Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x 10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *
P116	Pilot plant - polymerization process no. 7	Use of condenser and thermal oxidizer, compliance with the Additional	3745-31-05 3745-21-07 (G)	5.31 pounds/hour OC 2.15 TPY OC 2.5 pounds/hour NO_x

Facility Name: **GenCorp, Inc-Specialty Polymers Division**
Application Number: **16-1774**
Date: **July 15, 1998**

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P116 Cont'd		Special Terms and Conditions, and with Ohio EPA "Air Toxics Policy"		10.95 TPY NO_x 1.41 pounds/hour butadiene 2.15 TPY butadiene 1.81 pounds/hour styrene 5.0 TPY styrene (facility) *

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons/Year
Styrene (facility)	5.0
Butadiene	2.15
NO_x	10.95
OC	2.15

* Allowable emissions are total for units P110 through P116 at the thermal oxidizer outlet.

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Akron Regional Air Quality, 146 South High Street, Room 904, Akron, OH 44308.**

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Akron Regional Air Quality, 146 South High Street, Room 904, Akron, OH 44308..**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be

accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

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.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

1. The permittee shall vent the emissions of organic compounds from P004, P106, P107, P108, P013, and P110 through P116 to a thermal oxidizer control system which meets the following requirements:

   a. emissions of organic compounds from the thermal oxidizer shall not exceed 2.15 tons per year, based upon a rolling, 12-month summation of the organic compound emissions;

   b. to ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, monthly organic compound (OC) emissions from

the thermal oxidizer shall not exceed 0.179 ton per month;

c. hourly emissions from the thermal oxidizer shall not exceed the following limits:

i. organic compounds, 5.31 pounds per hour;

ii. nitrogen oxides, 2.50 pounds per hour;

iii. butadiene, 1.41 pounds per hour; and,

iv. styrene, 1.81 pounds per hour; and,

d. the thermal oxidizer shall achieve a 98 percent control efficiency for the carbon that is being incinerated to carbon dioxide.

2. Emissions of styrene from the facility shall not exceed 5.0 tons per year, based upon a rolling, 12-month summation of the styrene emissions.

3. The emissions of hazardous air pollutants (HAPs) from this facility, as identified in Section 112(b) of Title III of the Clean Air Act, shall not exceed 10 TPY for any single HAP and 25 TPY for any combination of HAPs, based upon rolling, 12-month summations.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, monthly emissions of any single HAP for this facility shall not exceed 0.83 ton per month, except styrene which shall not exceed 0.42 ton per month.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, monthly emissions of the combination of all HAPs for this facility shall not exceed 2.08 tons per month.

4. The permittee shall employ and maintain continuous steam stripping equipment to remove organic compounds from the wastewater exiting the condensate pretreatment tanks. The organic compound emissions from the continuous steam stripping equipment shall be vented to the thermal oxidizer.

A. Operational Restrictions

1. The thermal oxidizer shall be operated whenever organic compounds may be vented to it.

2. The average temperature of the exhaust gases from the thermal oxidizer, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

3. The wastewater "bottoms" stream from the continuous steam stripping equipment shall be piped directly to the county-owned sewer system and shall be discharged below-grade.

B. Monitoring and/or Recordkeeping

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall operate and maintain equipment to continuously monitor and record organic compound (OC) emissions from the thermal oxidizer in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13, and shall have been installed by not later than March 5, 1997.

   The continuous OC monitoring system, which includes the flow monitoring equipment, shall maintain a minimum 95 percent data capture efficiency.

   Prior to the installation of the continuous OC monitoring system, the permittee shall have submitted information

detailing the proposed location of the sampling site, in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 8, for approval by the Ohio EPA, Central Office. The permittee also shall have submitted documentation supporting the proposed OC detection principle (flame ionization (FI), photo ionization (PI), nondispersive infrared absorption (NDIR), or other detection principle) that is appropriate for the organic compound species present in the emission gases and that meets all requirements of 40 CFR Part 60, Appendix B, Performance Specification 8.

Within 60 days of the effective date of this permit, the permittee shall have conducted certification tests of such equipment pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specifications 6 and 8. Personnel from the Akron Air Pollution Control Agency shall have been notified 30 days prior to initiation of the applicable tests and shall have been permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall have been submitted to the Akron Air Pollution Control Agency within 30 days after the test was completed. Copies of the test results shall have been sent to the Akron Air Pollution Control Agency and the Ohio EPA, Central Office. Certification of the continuous OC monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specifications 6 and 8.

Within 180 days of the effective date of this permit, the permittee shall have developed a written quality assurance/quality control plan for the continuous OC monitoring system designed to ensure continuous valid and representative readings of OC. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous OC monitoring system must be kept on site and available for inspection during regular office hours.

To convert the output of the OC monitor from parts per million by volume (ppmv) of methane to ppmv of styrene,

butadiene, and MEK, appropriate response factors for the OC monitor shall be used. The response factor (RF) is defined as the ratio of the known concentration of the target compound (styrene, butadiene, or MEK) to the observed meter reading when the instrument has been calibrated with the reference compound (methane). The response factor is equal to the true concentration divided by the instrument reading. In order for the RF to be acceptable, it must be determined to be less than 10 before the instrument can be used in the monitoring program. The RF for each combination of reference compound and target compound may be determined by testing or may be obtained from a "reference" source.

3. The permittee shall maintain a leak detection and repair program for pumps, valves and flanges in styrene, butadiene, and acrylonitrile service as indicated below:

   a. except as provided in 3.c below, pumps, valves and flanges in styrene, butadiene, and acrylonitrile service shall be inspected for signs of leakage monthly using visual, audible, and/or olfactory methods;

   b. except as provided in 3.c below, pumps and valves in styrene, butadiene, and acrylonitrile service shall be monitored for leaks once each six calendar months in accordance with the method specified in OAC rule 3745-21-10 (F);

   c. excluded from the above monitoring requirements are any pumps in styrene, butadiene, and acrylonitrile service that are equipped with double mechanical seals. Pumps with double mechanical seals will be inspected for signs of leakage monthly as described in 3.a above. Also, valves that are designated as difficult to inspect or monitor (valves which cannot be monitored without elevating the monitoring personnel more than six feet above a support surface) shall be inspected and monitored once each calendar year;

   d. flanges in styrene, butadiene, and acrylonitrile service shall be monitored for leaks once each 12

calendar months in accordance with the method specified in OAC rule 3745-21-10 (F);

e. a leak is defined as visible frost (from butadiene pumps, valves or flanges) or drips (from styrene or acrylonitrile pumps, valves, or flanges), a strong, distinctive odor (from the pump seal, valve or flange), or an organic vapor analyzer reading in excess of 10,000 parts per million by volume ("ppmv") for pumps, 5,000 ppmv for valves, and 1,000 ppmv for flanges;

f. if a leak is discovered, it shall be repaired within 30 calendar days. However, a first attempt at repair shall be made within five calendar days; and,

g. any pump or valve from which a leak has been detected shall be monitored within five working days of being repaired, using an organic vapor analyzer. A reading below 2,000 ppmv for pumps, 1,000 ppmv for valves, and 500 ppmv for flanges indicates a successful repair.

4. The permittee shall collect and record the following information for each day for the control equipment:

a. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation; and,

b. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated that the emissions unit was in compliance.

5. The permittee shall maintain records of all data obtained by the continuous OC monitoring system including, but not limited to, parts per million OC on an instantaneous (one minute) basis, emissions of OC in units of the applicable

standard in the appropriate averaging period (i.e., hourly; rolling, 3-hour average; monthly; and 12-month rolling summation), hourly emissions of butadiene, hourly emissions of styrene, the results of daily zero/span calibration checks, and the magnitudes of manual calibration adjustments.

6. To demonstrate the effectiveness of the leak detection and repair program, the permittee shall maintain the following records:

   a. a list of identification numbers for all pumps, valves, and flanges in styrene, butadiene, and acrylonitrile service shall be recorded in a log that is kept in a readily accessible location;

   b. when a leak is detected as described in B.3.e, the following information shall be recorded in the leak repair log:

      i. the identification number of the leaking equipment;

      ii. the basis for detection of the leak, for example, monitoring, visual inspection, or sensor;

      iii. the date on which the leak was detected and the date of each attempt to repair the leaking equipment;

      iv. the methods of repair applied in each attempt to repair the leaking equipment;

      v. one of the following entries within five working days after each attempt to repair the leaking equipment:

         aa. "not monitored," denoting the leaking equipment was presumed to still be leaking and it was not monitored; or,

         ab. if the leaking equipment was monitored with a leak detection instrument, the

maximum concentration that was measured, in ppmv; and,

vi. if the leak is not repaired within 30 calendar days after the date on which it was detected, record the following:

aa. "repair delayed" and the reason for the delay;

ab. if the repair is being delayed until the next process shutdown due to technical infeasibility of repair, the signature of the owner or operator whose decision it was that repair is technically easible without a process shutdown;

ac. the expected date of successful repair of the leak; and,

ad. the dates of process unit shutdowns that occur while the leaking equipment is unrepaired; and,

vii. the date on which the leak was successfully repaired.

7. The permittee shall maintain monthly records of the total facility emissions of each individual HAP. Beginning after the first 12 months of operation following the issuance of this permit, the permittee also shall maintain monthly records of the rolling, 12-month summation of the total facility emissions of each individual HAP.

8. The permittee shall maintain monthly records of the total facility emissions of all of the HAPs. Beginning after the first 12 months of operation following the issuance of this permit, the permittee also shall maintain monthly records of the rolling, 12-month summation of the total facility emissions of all of the HAPs.

C. **Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent performance test that demonstrated the emissions unit was in compliance.

2. The permittee shall submit deviation (excursion) reports documenting the date, time, duration, magnitude, reason (if known), and corrective action(s) taken (if any), of all instances of OC values in excess of the hourly, monthly and rolling, 12-month emission limitations, butadiene values in excess of the hourly limitation, and styrene values in excess of the hourly limitation.

   The permittee shall submit quarterly reports which include a log of the downtime for the capture (collection) system, control equipment, temperature monitoring device, and emissions monitoring equipment, when the associated emissions unit was in operation (date, time, duration and reason), along with any corrective action(s) taken. The total operating time for the emissions unit and the total operating time of the monitors while the emissions unit was on line shall also be included in the quarterly report.

3. Semiannual reports shall be submitted by the first day of February and August, that include the following information for each month during the preceding semiannual period:

   a. the number of pumps in styrene, butadiene, and acrylonitrile service for which leaks were detected as described in B.3.e;

   b. the number of valves in styrene, butadiene, and acrylonitrile service for which leaks were not repaired within 30 calendar days after detection of the leak; and,

   c. the facts that explain the delay of each repair.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the monthly limitation for each individual HAP and, beginning after the first 12 calendar months of operation following the issuance of this permit, all exceedances of the rolling, 12-month emission limitation for each individual HAP.

5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the monthly limitation for the total emissions of all of the HAPs and, beginning after the first 12 calendar months of operation following the issuance of this permit, all exceedances of the rolling, 12-month emission limitation for the total emissions of all of the HAPs.

6. Beginning after the first 12 months of operation following the issuance of this permit, the permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for styrene.

7. The permittee shall submit annual reports which identify the following:

   a. the total actual emissions of organic compounds from the thermal oxidizer;

   b. the total actual emissions of each individual HAP from the facility; and,

   c. the total actual emissions of all of the HAPs from the facility.

   The reports shall be submitted by January 31 of each year, and shall cover the previous calendar year.

8. The permittee shall submit the required deviation (excursion) reports in the following manner:

   a. reports of any required monitoring and/or record keeping information shall be submitted to the Akron Air Pollution Control Agency; and,

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 record keeping 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 Akron Air Pollution Control 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.)

D. Testing Requirements

1. Monthly styrene emissions from the facility shall be determined in accordance with the methodology specified in the document dated December 31, 1995 and entitled, "Methodology for Determining Monthly Styrene Emissions from the GenCorp, Inc. Facility in Mogadore," prepared by the Ohio EPA and GenCorp, Inc., and any subsequent modifications that are mutually agreeable to the Ohio EPA, the Akron Regional Air Quality Management District, and GenCorp, Inc.

2. Compliance with the hourly, monthly, and annual emission limitations for organic compounds and the hourly emission limitations for 1,3-butadiene and styrene shall be determined by means of the OC continuous emission monitoring system operated in accordance with 40 CFR Part 60.13 and 40 CFR Part 60, Appendix F requirements. Compliance with the hourly emission limitations for organic compounds, 1,3-butadiene, and styrene shall also be determined in accordance with the emission tests described in D.6 below.

3. To demonstrate compliance with the monthly and annual HAP limitations for 1,3-butadiene, the hourly average concentration of organic compounds from the thermal oxidizer (measured as methane) will be converted to the equivalent concentration of 1,3-butadiene by employing an appropriate response factor (see the procedures in C.2). The resulting concentration of 1,3-butadiene, in parts per million by volume (ppmv), will be multiplied by the hourly average stack gas flow rate. Using the ideal gas law, the hourly mass emissions of 1,3-butadiene will then be calculated. The monthly and annual mass emissions from the thermal oxidizer will be the sum of all the hourly mass emission values for the calendar month and calendar year. Fugitive emissions of 1,3-butadiene will be determined using the EPA Correlation Approach, as described in Section 2.3.3 (Page 2-24) of the reference document, "Protocol for Equipment Leak Emission Estimates" (the Protocol), dated November, 1995 (Report No. EPA-453/R-95-017), and monitoring results from the leak detection and repair program detailed in sections B.3 and B.6 of this permit. The thermal oxidizer emissions and fugitive emissions will be summed to obtain the total facility emissions of 1,3-butadiene for each month and each year. Should more accurate emission factors be developed during the current permit cycle, the permittee shall use them, provided the new emission factors are mutually agreeable to the Ohio EPA, the Akron Regional Air Quality Management District, and GenCorp, Inc.

4. To demonstrate compliance with the monthly and annual HAP limitations for all other individual HAPs, except 1,3-butadiene, MEK, and styrene, the monthly and annual potential to emit for each of these other HAPs shall be used and shall be calculated as indicated in the document entitled, "Mogadore Air Emissions Inventory", as submitted to the Akron RAQMD on August 28, 1996 (or the latest update to that document).

5. To demonstrate compliance with the monthly and annual limitations for all of the HAPs combined, the mass emissions of each HAP, as described above in (1), (3), and (4), shall be summed to obtain the total facility emissions, except that stack emissions from the thermal

oxidizer shall be counted as 1,3-butadiene or MEK or styrene, whichever mass quantity is greatest.

6. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

   a. the emission testing shall be conducted every three years (by July 31 of each test year). The stack was originally tested in July 1997, so future testing dates shall be based subsequent to that date;

   b. the emission testing shall be conducted to demonstrate compliance with the 98 percent control efficiency and the allowable mass emission rates for organic compounds, 1,3-butadiene, styrene, and nitrogen oxides. The control efficiency shall be determined in accordance with the test methods and procedures specified in Method 25A, with the results expressed as carbon; and,

   c. the following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

POLLUTANT	TEST METHOD	LOCATION
Organic compounds	Method 25A	40 CFR Part 60, Appendix A
1,3-butadiene	Method 18	40 CFR Part 60, Appendix A
Styrene	Method 18	40 CFR Part 60, Appendix A
Nitrogen oxides	Method 7E	40 CFR Part 60, Appendix A

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 Akron Air Pollution Control Agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Akron Air Pollution Control Agency. 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 Akron Air Pollution Control Agency's refusal to accept the results of the emission test(s).

Personnel from the Akron Air Pollution Control Agency 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 Akron Air Pollution Control Agency within 30 days following completion of the test(s).

E. Miscellaneous Requirements

1. This permit allows the use of the coatings and cleanup materials specified by the permittee in the application for PTI number 16-1774. In conjunction with the best available technology requirements of OAC rule 3745-31-05, the methyl methacrylate, styrene, vinyl acetate, ethyl acrylate, butadiene, and acrylonitrile emission limitations specified in this permit were established in accordance with the Ohio EPA's "Air Toxics Policy" and are based on both the formulation data and the design parameters of the emissions unit's exhaust system, as specified in the application. Compliance with the Ohio EPA's "Air Toxics Policy" was demonstrated for each pollutant based on the Screen3 model and a comparison of the predicted 1 hour maximum ground-level concentration to the MAGLC. The following summarizes the results of the modeling for each pollutant:

   Pollutant: methyl methacrylate

   TLV (ug/m3): 9761.9
   Maximum Hourly Emission Rate (lbs/hr): 0.491
   Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726

Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 9761.9

Pollutant: styrene

TLV (ug/m3): 2023.8
Maximum Hourly Emission Rate (lbs/hr): 0.491
Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 2023.8

Pollutant: vinyl acetate

TLV (ug/m3): 833.3
Maximum Hourly Emission Rate (lbs/hr): 0.491
Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 833.3

Pollutant: ethyl acrylate

TLV (ug/m3): 476.19
Maximum Hourly Emission Rate (lbs/hr): 0.491
Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 476.19

Pollutant: butadiene

TLV (ug/m3): 104.8
Maximum Hourly Emission Rate (lbs/hr): 0.491
Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 104.8

Pollutant: acrylonitrile

TLV (ug/m3): 102.38
Maximum Hourly Emission Rate (lbs/hr): 0.491
Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 4.726
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 102.38

2. Any of the following changes may be deemed a "modification" to the emissions unit and, as such, prior notification to and approval from the Akron Air Pollution Control Agency are required, including the possible issuance of modifications to PTI number 16-1774 and the operating permit:

   a. any changes in the composition of the 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 specified in the above table;

   b. any change to the emissions unit or its exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height) that would result in an exceedance of any MAGLC specified in the above table;

   c. any change to the emissions unit or its method of operation that would either require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01;

   d. any change in the composition of the materials, or use of new materials, that would result in the emission of any of the exempted organic compounds included in the definition of "VOC" [OAC rule 3745-21-01(B)(6)]; and,

e. any change in the composition of the materials, or use of new materials, that would result in an increase in emissions of any "Hazardous Air Pollutants" (HAPS) as defined in OAC rule 3745-77-01(V).