

PTI 13-2295  
PREMISE NO. 13 18 00 5977

1

PTI NUMBER: 13-2295  
1800.WPD

FACILITY NAME: Research Oil Company

PREMISE NUMBER: 13 18 00 5977

PRELIMINARY

FINAL

1. CONSTRUCTION STATUS (do not use with # 2, 3A or 3B)  
source name:
2. NSPS REQUIREMENT  
source #: source description: NSPS subpart:
- 3A. NESHAP REQUIREMENTS:  
source #: source description: NESHAP reg.:
- 3B. RADIONUCLIDES REQUIREMENTS:  
source #: source description:
4. PERFORMANCE TEST REQUIREMENTS:  
C. (optional) source: Pollutant(s):  
D. (optional) Tests shall include a determination of the  
uncontrolled mass rate of emissions
5. MONITORING REQUIREMENTS:  
type of monitor: source:
6. PSD REQUIREMENTS.
7. APPENDIX S - EMISSION OFFSET INTERPRETIVE RULING:
- [8]. RECORDS RETENTION AND AVAILABILITY:
- [9]. REPORTING REQUIREMENTS:
- [10]. WASTE DISPOSAL:
- [11]. MAINTENANCE of EQUIPMENT:
- [12]. MALFUNCTION/ABATEMENT:
- [13]. AIR POLLUTION NUISANCES PROHIBITED:
14. NINETY DAY OPERATING PERIOD:
15. GASOLINE DISPENSING FACILITIES:
16. DIESEL AND/OR KEROSENE DISPENSING FACILITIES:
17. GASOLINE DISPENSING OPERATIONS (SUBMERGED FILL ONLY)  
annual limit of throughput (gallons):
18. MISC. STORAGE TANKS:
19. NSPS SUBPART Kb, 40 CODE OF FEDERAL REGULATIONS 60.116b(a) AND (b)  
source number(s): tank size max. vapor pressure

In addition:

- A. 40 CODE OF FEDERAL REGULATIONS 60.116b(a) and (c):  
source number(s): tank size max. vapor pressure
- B. 40 CODE OF FEDERAL REGULATIONS 60.116b(a) and (d):  
source number(s): tank size max. vapor pressure
- C. other applicable rules \_\_\_\_\_:  
source number(s): tank size max. vapor pressure
20. BAT FOR OPEN TOP DEGREASERS:
21. BAT FOR COLD CLEANERS:
22. BAT FOR CONVEYORIZED DEGREASERS:
23. NOTICE of INTENT TO RELOCATE:
24. ADDITIONAL TERMS AND CONDITIONS:  AIR  DSHWM  WW

Revised: January, 1991

1800.WPD

#### AIR EMISSIONS SUMMARY

The air contaminant sources listed below comprise the Permit to Install for Research Oil Company located in Cuyahoga County. The sources 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 <u>No.</u>	Source Identification/ <u>Description</u>	<u>BAT</u> <u>Determination</u>	<u>Applicable Federal</u> <u>and OAC Rule</u>	<u>Permit Allowable</u> <u>Mass Emission</u> <u>and Control and</u> <u>Usage</u> <u>Requirements</u>
P010	A 10,000 lbs/hr closed loop wastewater stripper chiller process No. 2 consists of inert atmosphere stripping tower, 2 heat exchangers, 2 condensers & nitrogen cylinders	The BAT determination is an organic emission capture efficiency of 98% by weight and organic emissions destruction efficiency of 90% by weight*	3745-31-05 3745-21-07 (G) (2)  3745-15-07	0.59 lb OC/hour 1.42 TPY OC  **

\*and the organic emission thermal destruction equipment shall maintain a minimum combustion temperature, maximum organic material content of 30 % by weight in the wastewater materials, maximum vapor pressure of 1.0 pound per square inch (psia) and maximum vapor molecular weight of 130 grams per gram mole. The minimum combustion temperature in Hot Oil Heater, H-201 is 1,100 degrees Fahrenheit and in Hot Oil Heater, H-501 is 1,200 degrees Fahrenheit.

\*\*The emissions unit identified in this permit shall not cause a public nuisance in violation of OAC rule 3745-15-07.

#### SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS SUMMARY	
Pollutant	Tons/Year
OC	1.42

Additional Special Terms and Conditions  
Research Oil Company

A. Applicable Emission Limitation and/or Control Requirements

The OC emission limitations for emissions unit P010 are identified in the Air Emission Summary Section of this Permit to Install (PTI). The limitations are based on Synthetic Minor Determination.

B. Operational Restriction

1. The fire box of either Hot Oil Heater H-201 or Hot Oil Heater H-501 is deemed the thermal incinerator for the destruction of organic emissions.
2. The thermal incinerator shall maintain a minimum temperature of 1,100 degrees Fahrenheit in the combustion chamber of Hot Oil Heater H-201 and 1,200 degrees Fahrenheit in Hot Oil Heater H-501. The minimum combustion temperature is based on the minimum destruction efficiency of 90% by weight of OC emissions.
3. The operational restriction for this emissions unit is a maximum allowable volume throughput of 6,000,000 gallons of wastewater materials per year. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the gallon throughput levels specified in the following table:

Month	P010 wastewater material processed, gallons
1	500,000
1-2	1,000,000
1-3	1,500,000
1-4	2,000,000
1-5	2,500,000
1-6	3,000,000
1-7	3,500,000
1-8	4,000,000
1-9	4,500,000
1-10	5,000,000
1-11	5,500,000

Additional Special Terms and Conditions  
Research Oil Company

1-12            6,000,000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual wastewater materials throughput limitations shall be based upon rolling, 12-month summations of the wastewater materials.

C. Monitoring and Record Keeping Requirements

The permittee shall maintain daily, monthly and continuous records of the following information:

1. The total throughput, in gallons, of wastewater materials for each emissions unit and for each month;
2. During the first 12 calendar months of operation following the issuance of this permit, the cumulative total throughput, in gallons, of wastewater materials for each calendar month;
3. Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the total wastewater materials, in gallons;
4. The permittee shall install, operate and maintain a continuous non-resettable elapsed time meter which measures the hours of the fan/blower operation transporting vapor and fume to the thermal incinerator when any emissions unit is in operation. The measurement unit shall be in 0.1 of an hour. The monitoring devices shall be capable of accurately measuring the elapsed time of the fan/blower operation. The elapsed time meter shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee;
5. The permittee shall install, operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when any emissions unit is in operation. Measurement units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the combustion temperature. 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;
6. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any emissions unit is in operation, was

Additional Special Terms and Conditions  
Research Oil Company

more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and

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

D. Reporting Requirements

The permittee shall submit quarterly written reports which identify all deviations (excursions), exceedances and non-compliance periods of time of the following unless specified otherwise below:

1. The rolling, 12-month limitations on the throughput of wastewater materials;
2. For the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative throughput limits;
3. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, 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 this emissions unit was in compliance, the probable cause of such deviations (excursions), and any corrective actions or preventive measures which have been or will be taken;
4. If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit written quarterly report, which states that no deviations (excursions) 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 (excursions) resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)
5. The permittee shall submit written quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions units were in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar

Additional Special Terms and Conditions  
Research Oil Company

quarters; and

6. The permittee shall submit written annual reports of the total throughput, in gallons, for the wastewater materials and other materials processed during the calendar year for this emissions unit. These written annual reports shall be submitted by February 15 of each year.
- E. Testing Requirements and Compliance Method Determinations:  
The following test method(s) shall be employed to demonstrate compliance with the following limits:
1. Emission Limitation:  
0.59 pound OC/hour; a minimum capture efficiency of 98% by weight and a minimum control efficiency of 90% by weight.

The following test methods shall be employed to determine the overall control efficiency of the emission control equipment (i.e., the percent of reduction in mass emissions between the inlet and the outlet of the emission control equipment) serving this emissions unit: OAC rule 3745-21-10 (C), 40 CFR 60, Appendix A, Methods 1 through 4, 25, 25A or 25B, and 40 CFR 51, Appendix M, Method 204 through 204F. If reference methods 18, 25, and/or 25A will be used and the emission control device is an incinerator, the test procedure shall follow the requirements of the June 14, 1993 letter from U.S. EPA, Region V, Air Enforcement Branch to Ohio Environmental Protection Agency.

The overall control efficiency of the emission control equipment serving this emissions unit shall be demonstrated based upon the results of the capture efficiency and control efficiency tests specified above. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's Guidelines for Determining Capture Efficiency" dated January 9, 1995. (The Ohio EPA will consider request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency shall be determined in accordance with the test methods and procedures specified above and OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration

Additional Special Terms and Conditions  
Research Oil Company

of the potential presence of interfering gases.

2. Emission Limitation:

1.42 TPY OC

Calculation of the monthly and rolling 12-month emissions using records of restricted amount of material processed and emission factors using the equations as follows:

OC emissions:

(lbs OC/1000 gallon emission factor) X (material processed,  
gallons/month) X (1 ton/2000 lbs) = tons/month, OC

12

$\sum_{j=1}^{12} E_j \leq 1.42$  tons OC emissions per rolling 12-month period

where:

E = tons/month, OC emissions

3. Applicable Compliance Method(s):

The permittee shall conduct, or have conducted OC emission testing for this emissions unit to demonstrate compliance with the minimum capture efficiency and the minimum control efficiency requirements in accordance with the following requirements:

The test shall be conducted while this emissions unit is venting OC emissions to the thermal incinerator. This emissions unit shall be operated at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central Office.

PTI 13-2295Research Oil Company  
Facility ID: 13 18 00 5977  
Synthetic Minor Determination

- A. Source Description: Research Oil Company has submitted permit to install applications for a wastewater stripper chiller process.
  
- B. Facility Emissions and Attainment Status: This facility has 51 emissions units which consist mostly storage tanks, loading racks, treatment tanks, centrifuges, decanters, one distillation column, vibrating screens, wastewater treatment units, non-hazardous waste material treatment system, and hazardous waste material treatment system. Cuyahoga County is designated as attainment for carbon monoxide, ozone, and nitrogen oxides.
  
- C. New Source Emissions: Based upon 8760 hours per year, 100 percent OC contents, this new emissions unit has a maximum potential to emit OC emissions greatly exceeded the controlled emissions of 1.42 tons OC per

year. Based upon the maximum potential to emit, this emissions unit combined with the emissions generated by the existing emissions units would subject the facility to Title V permit requirements. However, this emissions unit will be limited to a maximum annual volume throughput of 6,000,000 gallons, a maximum OC vapor pressure of 1.0 pound per square inch, a maximum OC vapor molecular weight of 130 grams per gram mole, and a maximum OC content of 30 % in wastewater material and requirements of a minimum emission capture efficiency of 98% and a minimum emission destruction efficiency of 90% as listed in the permit.

The permittee shall submit semi-annual written reports with rolling monthly volume throughput of this wastewater stripper chiller process, all periods when organic emissions generated by this emissions unit is not captured and/or not controlled or destroyed and the combustion temperature deviation (excursion) of thermal incinerator which consists of either one of the fire box of Hot Oil Heater H-201 or Hot Oil Heater H-501.

- D. Conclusion: With the federally enforceable permit terms and conditions limiting a maximum volume throughput, a maximum vapor pressure, a maximum vapor molecular weight, a maximum OC contents in wastewater materials, a minimum emission capture efficiency and a minimum emission destruction efficiency, this emissions unit is a "Synthetic Minor" and, therefore, not subject to the Title V permit requirements.

NEW SOURCE REVIEW FORM B

(REVISED 5/1/89)

PTI 13-2295

PREMISE NO. 13 18 00 5977

FACILITY NAME Research Oil Company

COUNTY CUYAHOGA  
CITY/TWP Cleveland

FACILITY DESCRIPTION: 4953 hazardous wastes treatment and non-hazardous waste treatment and reclaimed fuel oil

SIC CODE 4953 SCC CODE 3-99-999-94, stripping organic chemicals from wastewater

START UP DATE April 1991

EMISSIONS:	Air Quality Designation	Actual Emissions		Allowable Emissions	
		lbs/hr	TPY	lbs/hr	TPY
Pollutants					

Particulate matter	Non attainment				
PM <sub>10</sub>	Non attainment				
Sulfur dioxide	Non attainment				
Organic Compounds	Attainment	0.44	0.71	0.59	1.42
Nitrogen Oxides	Attainment				
Carbon Monoxide	Attainment				
Lead	Attainment				
Other: Air Toxics: (See Other side)	Unclassified				

APPLICABLE FEDERAL RULES: \_\_\_\_\_ NSPS \_\_\_\_\_ NESHAPS \_\_\_\_\_ PSD \_\_\_\_\_ OFFSET POLICY

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

The BAT determination for this emissions unit, P010, is organic emission capture efficiency of 98% by weight, organic emission destruction efficiency of 90% by weight, maximum organic material content of 30 % by weight in the wastewater materials, maximum vapor pressure of 1.0 pound per square inch (psia) and maximum vapor molecular weight of 130 grams per gram mole.

OPTIONAL: WHAT IS THE CAPITAL COST of CONTROL EQUIPMENT? \_\_\_\_\_

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? \_\_\_\_\_ YES \_\_\_\_\_ X \_\_\_\_\_ NO  
(If yes, turn to other side and complete "Toxic Air Contaminants" Section)

PERSON COMPLETING FORM A. L. Ang DATE: October 30, 1998  
revised: February 4, 1999

ADDITIONAL COMMENTS

-----

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.

WAS AIR TOXICS MODELING PERFORMED? \_\_\_\_\_ YES        X   NO

\*IF YES, ATTACH MODELING RESULTS              IF NO, ATTACH NEW SOURCE CODING FORM

IDENTIFY AIR CONTAMINANTS:

HAP	avg. #/hr	max. #/hr	avg. gram/sec	max. gram/sec
-----	--------------	--------------	------------------	------------------

sources at Research Oil

	as of October 16, 1998	1800.WPD
16	processes: P001, P002, P003, P004, P005, P006, P007, P008, P010, P011, P013, P014, P016, P018, P021, P023	
29	storage tanks: T001, T002, T003, T004, T005, T006, T007, T009, T013, T014, T015, T016, T017, T021, T022, T023, T024, T025, T026, T027, T028, T029, T031, T032, T033, T034, T035, T036, T037	
6	boilers: B002, B003, B004, B005, B006, B008, <del>B009</del>	
51		