

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

June 10, 2003



PERMIT TO INSTALL

No. 7-03

ISSUED TO

Comprehensive Environmental

LOCATED AT

6011 Wyoming Avenue
Dearborn, Michigan 48126

IN THE COUNTY OF

Wayne

STATE REGISTRATION NUMBER

B9080

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: 4/9/2003	
DATE PERMIT TO INSTALL APPROVED: 6/10/2003	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

NEW SOURCE REVIEW PERMIT TO INSTALL

Common Abbreviations / Acronyms Used in this Permit to Install

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	HP	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	NO _x	Oxides of Nitrogen
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MDEQ	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns diameter
MIOSHA	Michigan Occupational Safety & Health Administration	pph	Pound per hour
MSDS	Material Safety Data Sheet	ppm	Parts per million
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppmv	Parts per million by volume
NSPS	New Source Performance Standards	ppmw	Parts per million by weight
NSR	New Source Review	psia	Pounds per square inch absolute
PS	Performance Specification	psig	Pounds per square inch gauge
PSD	Prevention of Significant Deterioration	scf	Standard cubic feet
PTE	Permanent Total Enclosure	sec	Seconds
PTI	Permit to Install	SO ₂	Sulfur Dioxide
RACT	Reasonable Available Control Technology	THC	Total Hydrocarbons
SC	Special Condition	tpy	Tons per year
SCR	Selective Catalytic Reduction	µg	Microgram
SRN	State Registration Number	VOC	Volatile Organic Compounds
TAC	Toxic Air Contaminant	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **[R336.1201(1)]**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, PO Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(4)]**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **[R336.1201(6)(b)]**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **[R336.1201(8), Section 5510 of Act 451, PA 1994]**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **[R336.1901]**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **[R336.1912]**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA Act 451, as amended and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301]**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this permit to install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2). **[R336.1370]**
13. Except as allowed by Rule 285 (a), (b), and (c), the permittee shall not substitute any fuels, coatings, nor raw materials for those described in the application and allowed by this permit, nor make changes to the process or process equipment described in the application, without prior notification to and approval by the Air Quality Division. **[R336.1201(1)]**
14. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EUTREATTANK1	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK2	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK3	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK4	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK5	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK6	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK7	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
EUTREATTANK8	17,000 gallon horizontal cylindrical tank used for treating oil/water mix with various chemicals and is controlled by a packed-bed scrubber.	SVSCRUBBER
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGTREATTANKS	EUTREATTANK1, EUTREATTANK2 EUTREATTANK3, EUTREATTANK4 EUTREATTANK5, EUTREATTANK6 EUTREATTANK7, EUTREATTANK8	SVSCRUBBER

The following conditions apply to: FGTREATTANKS

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
1.1	VOC	FGTREATTANKS	11.7 tpy	12-month rolling time period as determined at the end of each calendar month	SC 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16	R336.1702(a)

Material Usage Limits

- 1.2 The permittee shall not process more than 140,000 gallons of waste material through FGTREATTANKS per day or more than 35 million gallons of waste material through FGTREATTANKS per 12-month rolling time period as determined at the end of each calendar month. **[R336.1901]**
- 1.3 The permittee shall perform, or require the generator of the waste material to perform, an F-SCAN test on any waste material to be treated in FGTREATTANKS which contains more than 1000 ppm total halogens, as determined in accordance with 40 CFR Part 279. The test, in addition to the standard generator waste profile, will be used to verify that the waste is exempt from hazardous presumptions. **[R336.1901]**

Process/Operational Limits

- 1.4 The permittee shall keep all doors, windows, etc. of the treatment building closed while processing waste material. The only exception to this condition will be during times of entering or exiting the treatment building or during the loading or unloading of materials, at which times exposure shall be kept to a minimum. **[R336.1901]**
- 1.5 The temperature of the waste material in FGTREATTANKS shall not exceed 180°F, and all heating and chemical additions shall only occur in FGTREATTANKS. **[R336.1901]**
- 1.6 The permittee shall submit to the AQD District Supervisor, for review and approval, a Malfunction Abatement Plan for the packed bed scrubber. The permittee shall not operate FGTREATTANKS unless the approved Malfunction Abatement Plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. **[R336.1901, R336.1910]**

Equipment

- 1.7 The permittee shall not operate FGTREATTANKS unless the packed bed scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining and operating the packed bed scrubber in accordance with the Malfunction Abatement Plan. **[R336.1901, R336.1910]**

Testing

- 1.8 Verification and quantification of odor emissions from FGTREATTANKS, by testing at owner's expense, in accordance with Department requirements, will be required for continued operation. Within 60 days after permit issuance, a complete stack sampling and odor threshold analysis plan using the Dynamic

Dilution Method shall be submitted to the AQD. The stack sampling plan shall include provisions for various plant operating conditions, and odor neutralizer system operation (if any). The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **[R336.1901, R336.2001, R336.2003, R336.2004]**

Monitoring

- 1.9 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the temperature of each waste oil/water treatment tank on a continuous basis. **[R336.1901]**
- 1.10 The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor the following packed bed scrubber operating parameters on a continuous basis. **[R336.1901, R3136.1910]**
 - a.) The scrubber liquid pH,
 - b.) the scrubber liquid hypochlorite concentration, and
 - c.) the scrubber liquid flow rate.

Recordkeeping/Reporting/Notification

- 1.11 The permittee shall keep, in a satisfactory manner, records of the analysis of each waste material processed in FGTREATTANKS. The records will consist of generator waste profiles and onsite verification records for waste containing less than 1000 ppm total halogens, and the addition of F-SCAN test records for waste above 1000 ppm total halogens. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1702(a), R336.1901]**
- 1.12 The permittee shall keep, in a satisfactory manner, daily and 12-month rolling time period, as determined at the end of each calendar month, records of the amount of waste material processed in FGTREATTANKS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901]**
- 1.13 The permittee shall keep, in a satisfactory manner, records of the monitored maximum temperature of each batch in each FGTREATTANKS tank. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901]**
- 1.14 The permittee shall keep, in a satisfactory manner, records of the following monitored packed bed scrubber operating parameters once per every four hours of operation. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901, R3136.1910]**
 - a.) The scrubber liquid pH,
 - b.) the scrubber liquid hypochlorite concentration,
 - c.) the scrubber liquid flow rate, and
 - d.) a visual evaluation of the scrubber blowdown.
- 1.15 The permittee shall keep, in a satisfactory manner, a log of the parameters listed below for each FGTREATTANKS batch, on a per batch basis. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901]**
 - a.) Which FGTREATTANKS tanks are processing material,
 - b.) times at which each tank is filled, emptied, heated, or dosed with chemicals,
 - c.) what chemicals are added to each tank and amounts of chemicals, and
 - d.) type of material being treated in each tank.

1.16 The permittee shall calculate the VOC emission rate from FGTREATTANKS for each month and 12-month rolling time period, using the method described in Appendix A or an alternative method acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1702(a)]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.17	SVSCRUBBER	18	23.5	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

Appendix A

Estimated HAP and VOC Emission Rate from Primary Oil Treatment							
Assumptions							
1. Average VOC concentration is 500 ppm by weight.							
2. All waste oil is treated in eight tanks each have a 17,000-gallon capacity.							
3. Emissions of light end solvents are considered HAPs.							
4. VP of light end solvents at average temperature of 150 F is 1 atm.							
5. VP of oil at average temperature of 150 F is .005 atm.							
6. Surficial area of treatment tank is 145 ft ² (29 ft x 5 ft) and is doubled to account for agitation effect							
7. For a gallon of waste oil with 8 lb./gal density:							
Treatment Tank's typical mixture							
Parameter		wt. %	MW	lb/gal	Moles		Xi
Water		75%	18	4.8		0.33	0.97
Oil		25%	180	3.2		0.01	0.03
Light end solvents		0.05%	85	0.004		0.00	1.37E-04
Q = M K Xi Psat / R T							
Q = Evaporation rate, lb/min ft ²							
M = Molecular weight of volatile substance							
K = Mass transfer coefficient, ft/min							
Xi = Mole fraction of substance in liquid phase							
Psat = Saturation vapor pressure at temperature of liquid.							
R = Ideal gas law constant							
T = Absolute temperature of liquid							
Treatment Tanks = 136,000 gallon volume (8x17,000)							
			Light Solvents			Oil	
M (lb/mol)			85			180	
Xi			1.37E-04			0.03	
K (ft/min)			1			0.8	
Psat (atm)			1			5.3E-03	
R(ft ³ atm/lbmol deg R)			0.7302			0.7302	
T (deg R)			610			610	
Q (lb/min ft ²)			2.61E-05			5.53E-05	
A (ft ²)			290			290	
Q (lb/min)			7.56E-03			1.60E-02	
Q (lb/hr)			4.54E-01			9.62E-01	
Batch time, hrs			12			12	
Q/Batch, lbs			5.44E+00			1.15E+01	
Annual throughput, gal			35,000,000			18,000,000	
Batch capacity, gal			17,000			17,000	
# of batches / yr.			2058.8235			1058.823529	
VOCs (lb/yr.)			11,206			12,218	
VOCs (ton/yr.)			5.60			6.108994812	
HAPs (lb/yr)			11,206			N/A	
HAPs (ton/yr)			5.60			N/A	
Total HAP (tpy)			5.6031				
Total VOC (tpy)			11.7				