

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

April 15, 2014

PERMIT TO INSTALL
181-13

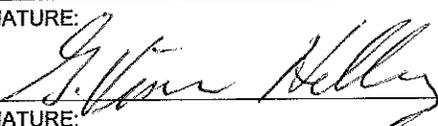
ISSUED TO
Recycling and Treatment Technologies of Detroit, LLC

LOCATED AT
530 South Rouge Street
Detroit, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
B4354

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: January 20, 2014 | |
| DATE PERMIT TO INSTALL APPROVED: April 15, 2014 | SIGNATURE:  |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

| Common Acronyms | | Pollutant / Measurement Abbreviations | |
|-------------------|---|---------------------------------------|--|
| AQD | Air Quality Division | BTU | British Thermal Unit |
| BACT | Best Available Control Technology | °C | Degrees Celsius |
| CAA | Clean Air Act | CO | Carbon Monoxide |
| CEM | Continuous Emission Monitoring | dscf | Dry standard cubic foot |
| CFR | Code of Federal Regulations | dscm | Dry standard cubic meter |
| CO ₂ e | Carbon Dioxide Equivalent | °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 |
| GHGs | Greenhouse Gases | kW | Kilowatt |
| 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 | ng | Nanogram |
| MAP | Malfuction Abatement Plan | NO _x | Oxides of Nitrogen |
| MDEQ | Michigan Department of Environmental Quality (Department) | PM | Particulate Matter |
| MSDS | Material Safety Data Sheet | PM10 | PM with aerodynamic diameter ≤10 microns |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | PM2.5 | PM with aerodynamic diameter ≤ 2.5 microns |
| NSPS | New Source Performance Standards | pph | Pounds per hour |
| NSR | New Source Review | ppm | Parts per million |
| PS | Performance Specification | ppmv | Parts per million by volume |
| PSD | Prevention of Significant Deterioration | ppmw | Parts per million by weight |
| PTE | Permanent Total Enclosure | psia | Pounds per square inch absolute |
| PTI | Permit to Install | psig | Pounds per square inch gauge |
| RACT | Reasonably Available Control Technology | scf | Standard cubic feet |
| ROP | Renewable Operating Permit | sec | Seconds |
| SC | Special Condition | SO ₂ | Sulfur Dioxide |
| SCR | Selective Catalytic Reduction | THC | Total Hydrocarbons |
| SRN | State Registration Number | tpy | Tons per year |
| TAC | Toxic Air Contaminant | µg | Microgram |
| TEQ | Toxicity Equivalence Quotient | VOC | Volatile Organic Compound |
| VE | Visible Emissions | yr | Year |

* 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. **(R 336.1201(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, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(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 R 336.1210, 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. **(R 336.1201(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. **(R 336.1201(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 R 336.1219 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 R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
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. **(R 336.1901)**
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). **(R 336.1912)**
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 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 R 336.1301, 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 R 336.1303. **(R 336.1301)**
 - 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID | Emission Unit Description (Process Equipment & Control Devices) | Flexible Group ID |
|--|---|--------------------------|
| EU-OIL | Used oil, oily waste, and oily wastewater treatment using a variety of processes including gravity phase separation, heated centrifuges, and chemical treatment to produce an oil product. The receiving and processing tanks are located in an enclosed building; emissions from the building are controlled by a packed bed scrubber using sodium hypochlorite and sodium hydroxide. The product is stored outdoors in tanks T12 and T13, which are part of EU-STORAGE. | FGFACILITY |
| EU-WWTMT_POLISH | Wastewater treatment building containing equipment used for final processing of wastewater produced at the facility prior to discharge to the Detroit Water and Sewerage Department sanitary sewer system. This building is not vented to the outside air. | FGFACILITY |
| EU-STORAGE | The finished oil product from EU-OIL is stored in tanks T12 and T13 (each 20,000 gallon capacity). In addition, two other tanks, T60 and T61 (each 365,000 gallon capacity) are used to store non-hazardous oil product produced on site or from off-site locations. These tanks are not heated and are uncontrolled. | FGFACILITY |
| EU-RPP | Recycled petroleum product processing using gravimetric phase separation without addition of heat. Four tanks are used in the process, K1, K2, K3, and K39. K1 and K2 will be used for gravimetric separation and product storage. K3 and K39 may be used as emergency overflow and/or to contain vapors during filling of Tanks K1 and K2. All four tanks are controlled by two stage activated carbon system. | FGFACILITY |
| Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290. | | |

The following conditions apply to: EU-OIL

DESCRIPTION: Used oil, oily waste, and oily wastewater treatment using a variety of processes including gravity phase separation, heated centrifuges, and chemical treatment to produce an oil product. The receiving and processing tanks are located in an enclosed building. The product is stored outdoors in tanks T12 and T13, which are part of EU-STORAGE.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: Packed bed scrubber using sodium hypochlorite and sodium hydroxide

I. EMISSION LIMITS

| Pollutant | Limit ^B | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------------------------|---------------------------|---|-----------|-----------------------------|------------------------------------|
| 1. VOC | 0.7 tpy | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 336.1225 R 336.1702(a) |
| 2. Benzene | 3.9 lb/year ¹ | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 336.1225 |
| 3. 1,1,2,2-tetrachloroethane | 31 lb/year ¹ | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 335.1225 |
| 4. Naphthalene | 56 lb/year ¹ | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 335.1225 |
| 5. Isopropylbenzene | 12.5 lb/year ¹ | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 335.1225 |

^A 12-month rolling time period as determined at the end of each calendar month.
^B These limits apply to the unloading of material into EU-OIL and the processing of material in EU-OIL.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|-----------------------------|--|-----------|-----------------------------|------------------------------------|
| 1. Used oil, oily waste, and oily wastewater received | 13,000,000 gallons per year | 12-month rolling time period as determined at the end of each calendar month | EU-OIL | SC VI.3 | R 336.1225 R 336.1702(a) |

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall only store and process used oil, oily waste, and oily wastewater inside an enclosed building. (R 336.1225, R 336.1702, R 336.1901)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not load any tank in EU-OIL unless the tank is equipped with submerged fill piping. (R 336.1225, R 336.1702, R 336.1901)

2. The permittee shall not receive, process, or store material in EU-OIL unless the scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the scrubber liquid flow rate between 75 and 125 gallons per minute, the pressure drop between 2 and 5 inches, and a minimum pH of 10. Oil product from EU-OIL may be stored in tanks T12 and T13 without the scrubber installed and operating. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910, EPA Consent Order EPA-5-13-113(a)-MI-02)**
3. The permittee shall equip and maintain the scrubber with a liquid flow rate indicator capable of accurately indicating the scrubber liquid flow rate over the entire range of flow rates that constitutes satisfactory operation, as specified by the manufacturer. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910, EPA Consent Order EPA-5-13-113(a)-MI-02)**
4. The permittee shall equip and maintain each heated tank in EU-OIL with a device to monitor the maximum temperature of the tank's contents. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 180 days after the date of this permit, the permittee shall verify VOC, benzene, 1,1,2,2-tetrachloroethane, naphthalene, and isopropylbenzene concentration in the oil product produced in EU-OIL by testing at owner's expense, in accordance with Department requirements.¹ **(R 336.1225)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3), R 336.1225, R 336.1702)**
2. The permittee shall monitor and record, in a satisfactory manner, the scrubber liquid flow rate, the scrubber pressure drop, and the scrubber liquid pH on a daily basis. **(R 336.1225, R 336.1901, R 336.1910, EPA Consent Order EPA-5-13-113(a)-MI-02)**
3. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, amount, in gallons, of used oil, oily waste, and oily wastewater received in EU-OIL and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
4. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, emissions of VOC, benzene, 1,1,2,2-tetrachloroethane, naphthalene and isopropylbenzene from EU-OIL and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
5. The permittee shall monitor and record, in a satisfactory manner, the maximum temperature of the contents of each heated tank during treatment, at least once per shift. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910)**
6. For each load of material received for treatment in EU-OIL, on an as received basis, the permittee shall monitor and record, in a satisfactory manner, the following information. Material is "received for treatment in EU-OIL" at the time the permittee transfers it to equipment on site, and the permittee plans to treat the material in EU-OIL. **(R 336.1225, R 336.1702(a), R 336.1901)**
 - a. The identification of the waste generator
 - b. The date, time, and amount of material received for treatment in EU-OIL

7. The permittee shall monitor and record, in a satisfactory manner, the amount and type of chemicals used in processing material received for treatment in EU-OIL on a daily basis. **(R 336.1225, R 336.1702(a), R 336.1901)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|----------------------------|---|---|---|
| 1. SV-OIL-1 | 10 ¹ | 30 ¹ | R 336.1225 |

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EU-WWTMT_POLISH

DESCRIPTION: Wastewater treatment building containing equipment used for final processing of wastewater produced at the facility prior to discharge to the Detroit Water and Sewerage Department sanitary sewer system. This building is not vented to the outside air.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

1. The permittee shall not vent EU-WWTMT_POLISH to the outside air. (R 336.1225, R 336.1702)

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EU-STORAGE

DESCRIPTION: The finished oil product from EU-OIL is stored in tanks T12 and T13 (each 20,000 gallon capacity). In addition, two other tanks, T60 and T61 (each 365,000 gallon capacity) are used to store non-hazardous oil product produced on site or from off-site locations.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------|------------------------|---|------------|-----------------------------|------------------------------------|
| 1. VOC | 955 lb/year | 12-month rolling time period ^A | EU-STORAGE | SC VI.3 | R 336.1225 R 336.1702(a) |
| 2. Benzene | 1 lb/year ¹ | 12-month rolling time period ^A | EU-STORAGE | SC VI.3 | R 336.1225 |

^A 12-month rolling time period as determined at the end of each calendar month.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|-----------------------------|--|------------|-----------------------------|------------------------------------|
| 1. Oil product transferred into and out of EU-STORAGE | 29,200,000 gallons per year | 12-month rolling time period as determined at the end of each calendar month | EU-STORAGE | SC VI.2 | R 336.1225 R 336.1702(a) |

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not load any tank in EU-STORAGE unless the tank is equipped with submerged fill piping. **(R 336.1225, R 336.1702, R 336.1901)**
2. The permittee shall not load any tanker truck from EU-STORAGE unless the tanker truck is equipped with submerged fill piping. **(R 336.1225, R 336.1702, R 336.1901)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3), R 336.1225, R 336.1702)**
2. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, amount, in gallons, of oil product transferred into and out of EU-STORAGE and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
3. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, emissions of VOC and benzene from EU-STORAGE and make them available to the Department upon request. **(R 336.1225, R 336.1702)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EU-RPP

DESCRIPTION: Recycled petroleum product processing using gravimetric phase separation without addition of heat. Four tanks are used in the process, K1, K2, K3, and K39. K1 and K2 will be used for gravimetric separation and product storage. K3 and K39 may be used as emergency overflow and/or to contain vapors during filling of Tanks K1 and K2.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: Two stage activated carbon system

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---------------------|--------------------------|---|-----------|-----------------------------|------------------------------------|
| 1. VOC | 4.3 tpy | 12-month rolling time period ^A | EU-RPP | SC VI.4 | R 336.1225 R 336.1702(a) |
| 2. Benzene | 143 lb/year ¹ | 12-month rolling time period ^A | EU-RPP | SC VI.4 | R 336.1225 |
| 3. Isopropylbenzene | 38 lb/year ¹ | 12-month rolling time period ^A | EU-OIL | SC VI.4 | R 335.1225 |

^A 12-month rolling time period as determined at the end of each calendar month.

II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|--|--------------------------|--|-----------|-----------------------------|------------------------------------|
| 1. Recycled petroleum product produced | 610,000 gallons per year | 12-month rolling time period as determined at the end of each calendar month | EU-RPP | SC VI.3 | R 336.1225 R 336.1702(a) |

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not provide heat to any tank located in EU-RPP. (R 336.1225, R 336.1702, R 336.1901)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not load any tank in EU-RPP unless the tank is equipped with submerged fill piping and/or vapor balance. (R 336.1225, R 336.1702, R 336.1901)
2. The permittee shall not load any tanker truck from EU-RPP unless the tanker truck is equipped with submerged fill piping. (R 336.1225, R 336.1702, R 336.1901)
3. The permittee shall not receive, process, or store material in EU-RPP unless the two stage activated carbon system is installed, maintained, and operated in a satisfactory manner. (R 336.1225, R 336.1702, R 336.1901, R 336.1910, EPA Consent Order EPA-5-13-113(a)-MI-02)

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 180 days after the date of this permit, the permittee shall verify benzene and isopropylbenzene concentration in the recycled petroleum product produced in EU-RPP by testing at owner's expense, in accordance with Department requirements.¹ **(R 336.1225)**
2. The permittee shall test, in a satisfactory manner, the dual-stage activated carbon system for breakthrough of the first canister at least once every week. The permittee shall evaluate breakthrough via Tedlar bag sampling followed by laboratory analysis; by use of a hand-held instrument capable of detecting concentrations at the levels expected; or an equivalent method. The permittee shall conduct an initial test and shall record the initial reading as soon as the process has reached a steady state condition, but not later than 12 hours after start-up of the process. Breakthrough is considered a reading at the point between the first and second canisters that is 20 percent or more of the influent concentration into the first canister. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first canister has been replaced and the operating order of the vessels has been reversed. The permittee shall repeat the initial test each time a carbon canister is replaced and shall use the resulting influent concentration to establish breakthrough. The permittee shall submit any request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3), R 336.1225, R 336.1702)**
2. The permittee shall keep, in a satisfactory manner, all activated carbon breakthrough test results for EU-RPP on file at the facility and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1901, R 336.1910)**
3. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, amount, in gallons, of recycled petroleum product produced in EU-RPP and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
4. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period, as determined at the end of each calendar month, emissions of VOC, benzene, and isopropylbenzene from EU-RPP and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
5. For each load of material received for treatment in EU-RPP, on an as received basis, the permittee shall monitor and record, in a satisfactory manner, the following information. Material is "received for treatment in EU-RPP" at the time the permittee transfers it to equipment on site, and the permittee plans to treat the material in EU-RPP. **(R 336.1225, R 336.1702(a), R 336.1901)**
 - a. The identification of the waste generator
 - b. The date, time, and amount of material received for treatment in EU-RPP from each generator
6. The permittee shall monitor and record, in a satisfactory manner, the amount and type of chemicals used in processing material received for treatment in EU-RPP on a daily basis. **(R 336.1225, R 336.1702(a), R 336.1901)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (inches) | Underlying Applicable Requirements |
|---|---|---|---|
| 1. EU-RPP-1 ^B | 4 ¹ | 42 ¹ | R 336.1225 |
| 2. EU-RPP-2 ^B | 4 ¹ | 42 ¹ | R 336.1225 |
| ^B This stack is not required to discharge unobstructed vertically upwards. | | | |

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|-------------------|--|---|
| FGFACILITY | All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment. | EU-OIL, EU-WWTMT-POLISH, EU-STORAGE, EU-RPP |

The following conditions apply to: FGFACILITY

DESCRIPTION: All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

Emission Units: EU-OIL, EU-WWTMT_POLISH, EU-STORAGE, EU-RPP

POLLUTION CONTROL EQUIPMENT: Scrubber, activated carbon

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

1. The permittee shall not accept any material listed below for processing in FGFACILITY.¹ (R 336.1224, R 336.1225)
 - a. Material regulated as hazardous waste under Michigan or federal law or regulations.
 - b. Material containing polychlorinated biphenyls (PCBs) at a concentration greater than or equal to 50 parts per million by weight.

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate the facility unless the nuisance minimization plan (Plan) in Appendix A, or an alternate plan approved by the AQD District Supervisor, has been implemented and is maintained. If at any time the Plan fails to address or inadequately addresses an event that results in a nuisance, the permittee shall amend the Plan within 45 days after such an event occurs. The permittee shall also amend the Plan within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the Plan and any amendments to the Plan to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the Plan or amended Plan shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to minimize nuisances.¹ (R 336.1901)

2. The permittee shall not operate the facility unless the malfunction abatement plan (MAP) in Appendix B, or an alternate plan approved by the AQD District Supervisor, as described in Rule 911(2), for the scrubber and activated carbon system, is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1702(a), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not load gasoline from a delivery vessel into a stationary vessel of more than 2,000 gallon capacity unless the following provisions are complied with: **(R 336.1704)**
 - a. The stationary vessel shall be equipped with a permanent submerged fill pipe. **(R 336.1704(1))**
 - b. The stationary vessel shall be controlled by a vapor balance system or an equivalent control system approved by the department. **(R 336.1704(2))**
 - c. The stationary vessel shall be equipped, maintained, or controlled with all of the following: **(R 336.1704(3))**
 - i. An interlocking system or procedure to ensure that the vaportight collection line is connected before any gasoline can be loaded.
 - ii. A device to ensure that the vaportight collection line shall close upon disconnection so as to prevent release of gasoline vapor.
 - iii. Pressure-vacuum relief valves on aboveground stationary vessels that have a minimum pressure valve setting of 8 ounces, if such setting does not exceed the container's maximum pressure rating.
 - d. Any delivery vessel subject to Rule 704(2) shall be vaportight. **(R 336.1704(4))**
 - e. Written procedures for the operation of all control measures specified in Rule 704(3) shall be posted in an accessible, conspicuous location near the stationary vessel. **(R 336.1704(5))**
2. The permittee shall not load gasoline into any delivery vessel unless the following provisions are complied with, if the facility handles less than 5,000,000 gallons per year: **(R 336.1705)**
 - a. The delivery vessel shall be filled by a submerged fill pipe. **(R 336.1705(1))**
 - b. The delivery vessel shall be controlled by a vapor balance system or an equivalent control system approved by the department. **(R 336.1705(2))**
 - c. The delivery vessel shall be equipped, maintained, or controlled with all of the following: **(R 336.1705(3))**
 - i. An interlocking system or procedure to ensure that the vaportight collection line is connected before any gasoline can be loaded.
 - ii. A device to ensure that the vaportight collection line shall close upon disconnection so as to prevent release of gasoline vapor.
 - iii. A device or procedure to accomplish complete drainage before the loading device is disconnected, or a device or procedure to prevent liquid drainage from the loading device when not in use.
 - iv. Pressure-vacuum relief valves that are vaportight and set to prevent the emission of displaced gasoline vapor during the loading of the delivery vessel, except under emergency conditions.
 - v. Hatch openings that are kept closed and vaportight during the loading of the delivery vessel.
 - d. Any delivery vessel subject to Rule 705(2) shall be vaportight. **(R 336.1705(4))**
 - e. Written procedures for the operation of all control measures required by Rule 705 shall be posted in an accessible, conspicuous location near the loading device. **(R 336.1705(5))**

3. The permittee shall not load any organic compound that has a true vapor pressure of more than 1.5 psia at actual conditions from any stationary vessel into any delivery vessel unless the following provisions are complied with, if the facility has of 5,000,000 or more gallons of such compounds per year: **(R 336.1706)**
- a. The delivery vessel shall be filled by a submerged fill pipe. **(R 336.1706(1))**
 - b. The delivery vessel shall be controlled by a vapor recovery system that captures all displaced organic vapor and air by means of a vapor-tight collection line and recovers the organic vapor such that emissions to the atmosphere do not exceed 0.7 pounds of organic vapor per 1,000 gallons of organic compounds loaded. **(R 336.1706(2))**
 - c. The delivery vessel shall be equipped, maintained, or controlled with all of the following: **(R 336.1705(3))**
 - i. An interlocking system or procedure to ensure that the vapor-tight collection line is connected before any organic compound can be loaded.
 - ii. A device to ensure that the vapor-tight collection line shall close upon disconnection so as to prevent release of organic vapor.
 - iii. A device to accomplish complete drainage before the loading device is disconnected, or a device to prevent liquid drainage from the loading device when not in use.
 - iv. Pressure-vacuum relief valves that are vapor-tight and set to prevent the emission of displaced organic vapor during the loading of the delivery vessel, except under emergency conditions.
 - v. Hatch openings that are kept closed and vapor-tight during the loading of the delivery vessel.
 - d. Written procedures for the operation of all control measures required by Rule 706 shall be posted in an accessible, conspicuous location near the loading device. **(R 336.1706(4))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A - Nuisance Minimization Plan

1.0 INTRODUCTION

RTT of Detroit has submitted a Permit to Install (PTI) application to the Michigan Department of Environmental Quality – Air Quality Division (MDEQ-AQD) for their operations located at 530 South Rouge Street, Detroit, Michigan 48127 (“Site”).

As part of the PTI application, this Nuisance Minimization Plan (NMP) has been developed for RTT of Detroit’s process operations for the purpose of preventing objectionable odors, if any are present, from affecting off-Site areas. The NMP addresses the following:

- a. How RTT of Detroit will identify received materials with strong odor potential.
- b. Procedures to prevent the occurrence of objectionable odors off-Site from received materials with strong odor potential.
- c. A list of process operations and other situations that may produce objectionable odors.
- d. Procedures to prevent the occurrence of objectionable odors off-Site from process operations and from other situations that may produce objectionable odors.

2.0 GENERAL FACILITY AND PROCESS DESCRIPTION

The RTT of Detroit facility is located in an industrial area of Detroit, Michigan. The nearest residential area is located at least one-quarter mile away from the Site.

RTT of Detroit accepts used oil, liquid industrial wastes, and recycled petroleum products (i.e., typically a mixture of gasoline and water). The facility treats the incoming materials by a variety of processes including gravity phase separation, enhanced gravity separation such as heated centrifuges, and chemical treatment (e.g., pH adjustment, and sulfide, lime or polymer precipitation). Processed wastewater is discharged to the DWSD sewer system pursuant to a wastewater discharge permit number 914-92662-IU. The recovered organic phase (i.e., oil) is reprocessed into a recovered product and sold. The solids fraction is collected into covered roll-off boxes and disposed of at a licensed landfill or other treatment/disposal facility.

The RTT of Detroit Site operates 5 days per week, 24-hours per day, 52 weeks per year.

3.0 ODOR PREVENTION PROGRAM

The following paragraphs identify specific processes, emission units, and/or situations in which odors may be generated at RTT of Detroit, and identifies the mitigation procedures that RTT of Detroit has developed to address those issues.

The odor of a specific material will be considered during the initial waste profile evaluation phase, prior to being approved for processing at RTT of Detroit. If the potential for odor issues is either unreasonable/unmanageable, the material will be rejected.

Once a customer’s material is approved for acceptance at RTT of Detroit, further consideration of odor issues is performed when shipments of the material arrive at the facility.

When trucks delivering waste materials arrive at RTT of Detroit, hoses with air-tight camlock connections are used to transfer material from trucks to a pump and piping manifold which transfers material into process tanks via submerged fill lines. Odors and emissions for each emission unit are controlled utilizing process appropriate management procedures as described in the table below.

| Emission Unit | Odor Control Mechanism |
|------------------------|---|
| EU-OIL | Located indoors within the Processing/Warehouse Building and just outside the Processing/Warehouse Building. The entire Building is operated under negative air pressure and building air is exhausted through a packed bed scrubber with sodium hypochlorite and sodium hydroxide solution. |
| EU-STORAGE | Storage tanks 60 and 61 are not vented to odor control equipment. However, these tanks are intended to house non-hazardous oil product and are not expected to materially contribute to nuisance odors. The outdoor finished product tanks (i.e. Tanks 12 and 13) are not vented to the packed bed scrubber; however, these tanks are intended to house finished product and treatment chemicals and are not expected to materially contribute to nuisance odors. |
| EU-RPP | Located outdoors in tanks that are loaded via sealed and submerged fill lines and vented through carbon canisters. These tanks are not expected to materially contribute to nuisance odors. |
| EU-WWTMT_POLISH | Located entirely within the Waste Water Treatment Building and used only intermittently as needed for a final polish prior to discharge of processed water to the DWSD. This operation is not expected to materially contribute to nuisance odors. |

In all cases of received material transfers, operators remain present to monitor all connections during transfer to ensure no releases of material occur that could cause odors. The loading/unloading pads are power washed frequently, weather permitting, as an extra precaution to remove any material that may accumulate and cause odors.

4.0 NUISANCE MINIMIZATION PLAN MODIFICATIONS

RTT of Detroit will evaluate and modify the NMP as necessary if the Plan fails to adequately manage objectionable odors or if additional or upgraded odor management methods become available. RTT of Detroit will submit amendments to the AQD District Supervisor for review and approval. RTT of Detroit shall amend the NMP within 45 days, upon request from the AQD District Supervisor.

APPENDIX B – Malfunction Abatement Plan

1.0 INTRODUCTION

This Malfunction Abatement Plan (MAP) has been developed to accompany the RTT of Detroit Permit to Install application. The MAP is designed to prevent control device malfunction through periodic maintenance and to aid in the detection and correction of malfunctions or equipment failures that could lead to emissions exceeding an applicable emission limitation. The MAP is divided into six sections. The following is a summary of the various sections.

| | |
|-------------|---|
| Section 1.0 | Introduction |
| Section 2.0 | Process and Pollution Control Equipment Description |
| Section 3.0 | Table No. 1 – Key Monitored Process Parameters The table lists the key system variables that are monitored to ensure proper control device operation. |
| Section 4.0 | Table No. 2 – Malfunction Abatement Summary The table describes possible causes for control equipment malfunctions, how the malfunctions are detected, and suggests remedial actions. |
| Section 5.0 | Table No. 3 – Preventative Maintenance Summary The table lists various pollution control systems inspection and maintenance requirements and establishes a suggested inspection and maintenance frequency, as well as the responsible supervisory personnel. |
| Section 6.0 | Table No. 4 – Spare Parts List This table presents a list of spare parts that will be kept on-site to minimize periods of pollution control equipment failure due to required part replacements. |

2.0 PROCESS AND POLLUTION CONTROL EQUIPMENT DESCRIPTION

RTT of Detroit is a liquid industrial waste treatment and used-oil recycling facility. RTT of Detroit accepts used oil, liquid industrial wastes, and recycled petroleum products (i.e., typically a mixture of gasoline and water). The facility treats the incoming materials by a variety of processes including gravity phase separation, enhanced gravity separation such as heated centrifuges, and chemical treatment (e.g., pH adjustment, and sulfide, lime or polymer precipitation). Processed wastewater is discharged to the DWSD sewer system pursuant to a wastewater discharge permit number 914-92662-IU. The recovered organic phase (i.e., oil) is reprocessed into a recovered product and sold. The solids fraction is collected into covered roll-off boxes and disposed of at a licensed landfill or other treatment/disposal facility.

When trucks delivering waste materials arrive at RTT of Detroit, hoses with air-tight camlock connections are used to transfer material from trucks to a pump and piping manifold which transfers material into process tanks via submerged fill lines. Odors and emissions for each non-exempt emission unit are controlled utilizing process appropriate management procedures as described in the table below.

| Emission Unit | Emission Control Mechanism |
|---------------|---|
| EU-OIL | Located indoors within the Processing/Warehouse Building and just outside the Processing/Warehouse Building. The entire Building is operated under negative air pressure and building air is exhausted through a packed bed scrubber with sodium hypochlorite and sodium hydroxide solution. |
| EU-RPP | Consists of two tanks utilized for gravimetric separation and/or storage of recycled petroleum product (i.e., gasoline) and water, located outdoors within a secondary containment area. These tanks are not heated and are passively vented to a 55-gallon carbon canister with a visual breakthrough monitor. |

As described in the table above, emissions from the EU-OIL emission unit are controlled using a packed bed caustic scrubber. The packed bed caustic scrubber operation includes the following process flow:

- a. Emissions enter the side of the horizontally oriented scrubber where they pass through packing wetted by a sodium hypochlorite/sodium hydroxide mixture to absorb and oxidize odorous compounds.
- b. After passing through the packing, the treated emissions pass horizontally through the sodium hypochlorite/sodium hydroxide sprays, providing additional scrubbing.
- c. After the sprays, the remaining emissions pass through a mist eliminator, to remove entrained liquids.

Emissions from the EU-RPP emission unit is controlled by passive venting through two 55-gallon carbon canisters located in series. Emissions pass through the bottom of the 55-gallon drum and the volatile components are removed and absorbed by the carbon. A portable LDL monitor is used weekly to check for breakthrough on the carbon canister indicating when the carbon has reached its absorptive capacity and must be replaced. The first carbon canister is replaced with the second in the series and a new canister is added as the new second in the series.

This malfunction abatement plan is designed to be a living document and may be updated as appropriate to improve the operation and maintenance of the facility to better control/reduce odors from the facility.

3.0 KEY MONITORED PROCESS PARAMETERS

Table No. 1 – Key Monitored Process Parameters

| Process | Control Device | Permit Limit or Operating Variable | Monitoring Method | Normal Operating Range | Malfunction Range |
|---------|---------------------|------------------------------------|----------------------|------------------------------------|--------------------|
| EU-OIL | Packed Bed Scrubber | pH | pH Meter | 10.0 to 12.0 | <10.0 |
| EU-OIL | Packed Bed Scrubber | Sodium Hypochlorite Concentration | Test | 1.5% to 4.0% by weight | < 1.5% by weight |
| EU-OIL | Packed Bed Scrubber | Scrubber Liquid Flow Rate | Flow Meter | 75 to 125 gallons per minute (gpm) | < 75 gpm |
| EU-OIL | Packed Bed Scrubber | Material Processing Temperature | Thermometer | 150 to 200 Degrees Fahrenheit (F) | > 200 Degrees F |
| EU-RPP | Carbon Canister | Carbon Breakthrough | Portable LDL Monitor | < 90% Breakthrough | > 90% Breakthrough |

4.0 MALFUNCTION ABATEMENT SUMMARY

Table No. 2 - Malfunction Abatement Summary

| Malfunction Condition | Possible Cause | Means of Detection | Remedial Action |
|---------------------------------------|---|---|--|
| Low Scrubber Water Flow Rate | Plugged water sprays | Visual observation through Plexiglas viewport | Unplug or replace sprays. |
| | Worn or plugged scrubber pump | Disassemble and inspect scrubber pump | Repair or replace scrubber pump. |
| Low Scrubber Liquid pH | Sodium Hypochlorite/Sodium Hydroxide addition pump not working properly | Check pump operation | Repair or replace pump. |
| | pH meter is malfunctioning | Check pH using another calibrated pH meter | Clean and recalibrate pH meter. Check water softener to ensure it is working. |
| | Out of sodium hypochlorite/sodium hydroxide | Check tank levels | Shut down process and obtain new chemicals, adjust pH and sodium hypochlorite concentration and restart process. |
| Low Sodium Hypochlorite Concentration | Sodium hypochlorite/sodium hydroxide addition pump not working properly | Check pump operation | Repair or replace pump. |
| | pH meter is malfunctioning | Check pH using another calibrated pH meter | Clean and recalibrate pH meter. Check water softener to ensure it is working. |
| | Out of sodium hypochlorite/sodium hydroxide | Check tank level | Shut down process and obtain new chemicals, adjust pH and sodium hypochlorite concentration and restart process. |
| Poor Spray Pattern | Nozzle missing | Visual observation through Plexiglas viewport | Replace nozzle. |
| | Plugged spray(s) | Visual observation through Plexiglas viewport | Unplug or replace sprays. |
| | Header broken/out of alignment | Visual observation through Plexiglas viewport | Realign or repair spray header. |

| | | | |
|----------------------------------|-------------------------------------|--------------------------------------|---|
| Dirty Mist Eliminator or Packing | Normal buildup of material | Visual observation through Plexiglas | Clean mist eliminator and/or packing. |
| | Malfunctioning water softener | Review operation of water softener | Clean mist eliminator and/or packing. Fix water softener. |
| Manifold Pressure Alarm | Power failure, circuit breaker trip | Check circuit breaker and power | Check for electrical faults and reset breaker. |
| | Fan malfunction | Low static pressure in ductwork | Check fan for wear. |
| | Too many dampers open | Visual check | Close/adjust dampers on tanks/vessels. |
| Carbon Canister Breakthrough | Exceeded capacity of carbon filter | Portable LDL Monitor | Replace carbon canister. |

5.0 PREVENTATIVE MAINTENANCE SUMMARY

Table No. 3 – Preventative Maintenance Summary

| Device Description | Equipment Name | Preventative Maintenance Task | Frequency | Responsible Supervisor |
|------------------------------|---|--|---------------------------------------|------------------------|
| Packed Bed Caustic Scrubber | Scrubber Liquid Flow Rate | Monitor Scrubber Liquid Flow Rate | Once per shift during plant operation | Plant Supervisor |
| | Scrubber Liquid Sodium Hypochlorite Concentration | Monitor Scrubber Liquid Hypochlorite Concentration | Once per shift during plant operation | Plant Supervisor |
| | Scrubber Liquid pH | Monitor Scrubber Liquid pH | Continuously during operation | Plant Supervisor |
| | Water Sprays | Check Sprays for Plugging and Proper Spray Pattern | Daily | Plant Supervisor |
| | Scrubber Packing | Inspect and Clean as Necessary | Annually | Plant Supervisor |
| Carbon Canister | Portable LDL Monitor | Check for Breakthrough | Weekly | Plant Supervisor |
| Storage and Processing Tanks | Storage and Processing Tanks | Check Tank Vents and Piping | Weekly | Plant Supervisor |
| Monitoring Equipment | pH Meter | Calibrate or Replace | Annually | Plant Supervisor |
| | Flow Meter | Calibrate or Replace | Annually | Plant Supervisor |
| | Static Pressure Gauges | Calibrate or Replace | Annually | Plant Supervisor |
| | Thermometers | Calibrate or Replace | Annually | Plant Supervisor |

6.0 SPARE PARTS LIST

Table No. 4 – Spare Parts List

| Equipment Name | Description of Spare Part | Recommended Quantity |
|--|--|-----------------------------|
| <i>DEVICE: Packed Bed Caustic Scrubber</i> | | |
| Chemical Addition System | Scrubber Sodium Hypochlorite Metering Pump | 1 |
| Scrubber Internals | Scrubber Spray Nozzles | 2 |
| | Scrubber Packing | 2 Boxes |
| Monitoring Devices | Scrubber Liquid Flow Meter | 1 |
| | Static Pressure Gauge | 1 |
| | Thermometer | 1 |
| | Scrubber pH Meter | 1 |
| <i>DEVICE: Carbon Canister</i> | | |
| Carbon Canister | Carbon Canister | 2 |