

## BURNING USED OIL

The requirements for burning used oil vary depending on what type of oil it is, where the oil came from, and whether it is off-spec, on-spec, or has met “product” conditions. Common situations are identified below. Although it may appear complicated, the Department of Environmental Quality encourages recycling, which includes used oil burning, when possible, and staff are available to discuss your requirements with you. Businesses must also meet applicable fuel storage requirements and have additional requirements if they transport the used oil. There are many different vendors of used oil burning equipment that can be found by searching the Internet. If you are interested in historical information about air emissions from burning used oil, see the 1996 [Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study](#) at [http://www.epa.gov/ttn/catc/dir1/w\\_oilacr.pdf](http://www.epa.gov/ttn/catc/dir1/w_oilacr.pdf).

### 1. Storage and Transportation of Used Oil Before Burning

Storage requirements depend on the type of [oil](#), its flashpoint, how it is stored, and how much oil storage capacity is on-site. The transportation requirements will depend if it is being hauled off-site and by what company. See the [Used Motor Oil Generator Requirements](#) or the [Other Used Oil Generator Requirements](#) guidance for waste storage and transportation requirements, or call 800-662-9278 for referral to staff who can discuss these regulations with you. Also see the [Oil Burning Equipment Aboveground Storage Tank Inspection Checklist \(form EQP3869\)](#) for items the storage tank inspectors look at if the flashpoint of the oil is below 200 degrees Fahrenheit. Contact the Waste and Hazardous Materials Division Storage Tank Unit at 517-335-7211 to discuss storage tank requirements.

### 2. Burning Petroleum or Synthetic Used Oil Generated On-site

Discuss permitting requirements for burning used oil at your facility with the Air Quality Division [District Office](#). The District Office will determine if a permit is required. Permits for small used oil furnaces are relatively easy to obtain. In most cases, facilities may burn used oil without an air permit when the following conditions are met:

1. The used oil being burned is only generated at the geographical site of the business.
2. The used oils being burned do not include any oils that are hauled to the site from other business locations. This includes used oil taken to [collection centers or aggregation points](#) operated at the site that is accepting used oils from other companies or from a business’s own operations at other locations.
3. The burner must have a rated heat input capacity of not more than 500,000 BTU per hour.
4. The fuel burning equipment is used for space heating, service water heating or indirect heating.
5. The business must:
  - Make sure to have any local permits required by fire official, zoning, etc. It is recommended to also check with your insurance company for coverage conditions.
  - Vent the burner to the outdoors to avoid breathing any fumes.
  - Clean and maintain the burner according to the manufacturer’s directions.
  - Burn only used oil generated on-site or received from DIY.
  - Do not burn other wastes including solvents, paints, or antifreeze alone or mixed with oil.
  - Meet air permit exception conditions as listed above, including meeting the following:
    - ✓ Maximum sulfur limits vary, but often 1.0 percent
    - ✓ PCB concentration cannot exceed 1 parts per million (ppm);
    - ✓ The heating value of the oil must be equal or greater than 17,000 BTU per pound (approximately 128,000 BTU per gallon).

Testing is generally not required, but discuss with the Air Quality Division [District Office](#).



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### 3. Burning Petroleum or Synthetic Used Oil Generated Off-site

Facilities burning used oil that was not generated on-site, including any oil from [collection centers or aggregation points](#) that has accepted oils from business operations or from do-it-yourselfers (DIY) have additional requirements. DIY oil is from individuals changing the oil on their own personal vehicles. DIY oil does not include used oil removed from business vehicles. Locations accepting used oil from DIYs and other business locations need to notify the Waste and Hazardous Materials Division that they are operating [collection centers or aggregation points](#).

- Obtain an air permit from the DEQ Air Quality Division to burn any used oil that was not generated on-site. Contact the [District Office](#) about requirements for burning.
- Make sure to have any local permits required by fire official, zoning, etc. It is recommended to also check with your insurance company for coverage conditions.
- Obtain the used oil from a fuel supplier or used oil marketer. A marketer is someone who first claims the oil meets the “on-spec” specifications. If a company wants to provide their used oil to another facility to burn the oil, they will need to meet the marketer requirements. Discuss marketer requirements with the DEQ Waste and Hazardous Materials Division [District Office](#). See the fuel marketer inspection checklist at [www.deq.state.mi.us/documents/deq-whm-hwrrp-egp5181.pdf](http://www.deq.state.mi.us/documents/deq-whm-hwrrp-egp5181.pdf). The waste regulations no longer apply when the fuel marketer demonstrates the used oil meets product conditions (meaning it meets all the limits identified in Sections 2 and 4).

*More violations are being identified when companies want to get used oil to burn in their own space heaters due to higher fuel costs. Problems seen include the following:*

- *Facility burning the oil does not obtain an air permit*
- *Facility operating a collection center or aggregation point to collect the oil does not notify DEQ*
- *Facility burning the oil picks up oil from another company without being a permitted and registered liquid industrial waste transporter*
- *The company providing the used oil (e.g. the company generating the oil) does not meet the used oil marketer requirements*
- *Companies hauling the oil do not meet the used oil transportation and record keeping requirements*

### 4. Burning Petroleum or Synthetic Off-spec Oil

Off-spec petroleum or synthetic oils do not meet the waste limits identified below for “on-spec” oil:

- ✓ maximum arsenic concentration of 5 ppm
- ✓ maximum cadmium concentration of 2 ppm
- ✓ maximum chromium concentration of 10 ppm
- ✓ maximum lead concentration of 100 ppm
- ✓ minimum flash point of 100 degrees Fahrenheit
- ✓ maximum total halogen concentration of 1,000 ppm. “Off spec” recycled used oils can contain up to 4000 ppm total halogens with additional requirements if a single solvent is present at over 100 ppm. Used oil containing over 4,000 ppm total halogens is hazardous waste.

Facilities that are burning off-spec oils generated at other sites must meet the following requirements:

1. Make sure to have any local permits required by fire official, zoning, etc. It is recommended to also check with your insurance company for coverage conditions.
2. If burning off spec oil received from another site, the facility must notify DEQ Waste and Hazardous Materials Division and obtain a site identification number if they don't already have one. Apply electronically through MiTAPs at [www.michigan.gov/mitaps](http://www.michigan.gov/mitaps) or submit the form [EQP5150](#) to apply for a new number or if need to update the information that they are burning off-spec oils. There is a fee to obtain a site identification number. Contact the Environmental Assistance Center at 800-662-9278 or the Waste and Hazardous Materials Division [District Office](#) for assistance.

3. If oil is being shipped to the site for burning, keep manifests at least 3 years and submit copy to the Waste and Hazardous Materials Division Manifest Unit according to manifest instructions (link at [www.michigan.gov/degwaste](http://www.michigan.gov/degwaste)). The off-spec used oil burner would be required to sign the manifest as the destination facility. The marketer of the used oil would be considered the generator.
4. Meet other requirements outlined on the "[Used Oil Inspection Form – Burn for Energy Recovery \(form EQP5179\)](#)".
5. Obtain a Part 55 air permit from the Air Quality Division and burn it only in a permitted boiler or industrial furnace. See page 5 of the [January 2005 "About the Air Newsletter"](#) and the "[Additional Technical Information for Waste Oil-Firing Equipment](#)" for air permit information. It will be necessary to provide an analysis for each oil, or other waste, which will be burned including flash point, specific gravity or API gravity, in addition to the following listed used oil property/constituent. The table identifies the allowable air levels of the listed used oil property/constituent.

PROPERTY/CONSTITUENT	ALLOWABLE LEVEL
Higher Heating Value	17,000 Btu per pound, minimum
Arsenic	5.0 ppm, maximum
Cadmium	2.0 ppm, maximum
Chromium	10.0 ppm, maximum
Lead	100.0 ppm, maximum
Sulfur	varies; often 1.0 percent, maximum
Polychlorinated Biphenyls (PCBs)	1.0 ppm, maximum
Total Halogens (Specification/Off-specification RUOs)	1,000 ppm or 4,000 ppm, maximum

6. Meet Compliance Monitoring Plan (CMP) for Facilities Burning Recycled Used Oil (RUO) which is required for all industrial facilities burning RUO as a fuel.
7. Provide supplier with a statement that the fuel will only be burned in boilers and industrial furnaces ([BIFs](#)).
8. Meet additional BIF requirements overseen by the Waste and Hazardous Materials Division and US EPA. Contact the Hazardous Waste Permits Section at 517-373-9875 to discuss BIFs.

## 5. Burning Vegetable Oils or Animal Fats

Make sure to have any local permits required by fire official, zoning, etc. It is recommended to also check with your insurance company for coverage conditions.

Due to proposed changes to Part 121, Liquid Industrial Waste, of Act 451 of 1994 as amended, contact the Waste and Hazardous Materials Division [District Office](#) to discuss requirements for burning used vegetable oils and animal fats for energy recovery including hot water heating.

Businesses also need to discuss permitting requirements with the Air Quality Division [District Office](#) or contact the Air Quality Division permit engineer at 517-373-7081 for more information.



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## 6. Households Burning Used Oil Generated by a Business

Make sure to have any local permits required by fire official, zoning, etc. Also check with your insurance company to ensure you have coverage conditions.

Homeowners are exempt from the air permitting requirements per R 336.1282(c) when used in connection with a structure that is designed and used exclusively as a dwelling for not more than 3 families and the oil is either on-spec or meets product specs. Contact the Air Quality Division permit engineer at 517-373-7081 for more information.

However, the company supplying the used oil to the homeowner for burning in a residential burning unit would be required to:

- ☑ Notify the Waste and Hazardous Materials Division they are a used oil marketer if the supplier is the first company to claim that the fuel is on-spec. Notify electronically through MiTAPs at [www.michigan.gov/mitaps](http://www.michigan.gov/mitaps) or submit the form [EQP5150](#).
- ☑ Test the oil to ensure it was on-spec used oil per R 299.9208(1)(f). Retesting would be required if the oils or processes changed.
- ☑ Meet shipping records if necessary:
  - If the used oil meets all the limits identified in Sections 2 and 4, then the used oil is considered a product and would not need to be manifested as waste.
  - If the fuel is “on-spec” used oil as defined in the hazardous waste rules, the simplest shipping record keeping method would be for the supplier to use a consolidated manifest per [op memo 121-3](#) and give the resident a receipt for the shipment. Thus the resident would not need to obtain a site identification number.
  - If a consolidated manifest is not used, then each shipment would require a waste manifest and the resident would need to obtain a site identification number.



Refer waste management questions to the Waste and Hazardous Materials Division [District Office](#).

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This guidance was developed in May 2007 by the MDEQ Environmental Science and Services, Waste and Hazardous Materials Division and Air Quality Divisions. Regulations are subject to change.

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