



**Air Pollution Control Division
Small Business Assistance Program**

A Guide to Hazardous Waste and Air Requirements for Used Oil Space Heaters

A used oil space heater is a unit designed specifically to burn used oil for comfort heating purposes. This document defines “used oil” and provides an overview of the air and hazardous waste requirements that apply to used oil space heaters in Colorado.

In regards to used oil space heaters, “used oil” includes, but is not limited to:

- Vehicle crank case oil
- Transmission fluid
- Gearbox and differential oil
- Hydraulic oil
- Compressor oil
- Transformer (electrical) oil

“Used oil” does not include:

- Antifreeze
- Wastewater containing oil
- Cooking oils, even as lubricants
- Oils mixed with hazardous waste

Burning used oil releases contaminants, some known to be causing cancer, picked up in the lubricating, transformer, or hydraulic systems.

AIR REQUIREMENTS

The Air Pollution Control Division (APCD) administers air emission reporting and permitting in Colorado. Unlike the hazardous waste regulations, air regulations do not distinguish between used oil generated by a business, a household do-it-yourselfer, or another business. Businesses are not required to report air

emissions or obtain an air permit for the heater if:

- the heater is designed to have a maximum capacity of not more than 500,000 Btu/hour, and
- the rate of used oil consumption is less than 10,000 gallons per year.

ALL businesses must ensure that visual emissions (opacity) from the heater do not exceed 20%.

Businesses that do not meet the exemptions above must test the used oil as described under the Hazardous Waste Requirements below to determine whether air emission reporting is required. Testing must also include testing for sulfur.

The table below assists the determination of whether to report air emissions by selecting the sulfur content of the used oil in the left-hand column and then determining the quantity of used oil that can be burned without triggering air reporting requirements.

QUANTITY OF USED OIL REQUIRING AN APEN BASED ON SULFUR EMISSIONS		
Sulfur Content of Used Oil (Weight %)	Air Emission Factor* (pounds/1000 gallons)	Quantity Requiring an APEN** (gallons/year)
0.05	7.4	544,218
0.1	14.7	272,109
0.15	22.1	181,406
0.2	29.4	136,054
0.25	36.8	108,844
0.3	44.1	90,703
0.35	51.5	77,745
0.4	58.8	68,027
0.45	66.2	60,469
0.5	73.5	54,422
0.55	80.9	49,474
0.6	88.2	45,351
0.65	95.6	41,863
0.7	102.9	38,873
0.75	110.63	36,281
0.8	117.6	34,014
0.85	125.0	32,013
0.9	132.3	30,234
0.95	139.7	28,643
1.0	147.0	27,211

* Emission factors are based on AP-42, Section 1.11, “Waste Oil Combustion,” at www.epa.gov/ttn/chief/ap42/ch01/final/c01s11.pdf.

** Reporting thresholds based on an air emission threshold of two tons of sulfur emitted per year.

If used oil consumption exceeds reporting thresholds, an Air Pollutant Emission Notice (APEN) and the appropriate fee must be submitted to the APCD. The General APEN form is available at:

www.colorado.gov/pacific/cdphe/general-apen

Current fee information is available online at:

www.colorado.gov/pacific/cdphe/emissions-and-permitting-fees

The APCD will use the information provided on the APEN to determine if an air permit is also required. If a business requires an air permit, the submission of an APEN will start the permitting process and the APEN will become part of the permit application package.

APENs are valid for five years and must be renewed at least 30 days before expiration. Revised APENs must also be submitted to the APCD when changes occur at your facility such as name, ownership, business location, significant change in emissions, or a modification to the emission unit (e.g., space heater).

HAZARDOUS WASTE REQUIREMENTS

The Hazardous Materials and Waste Management Division administers Colorado's hazardous waste regulations. For more detailed information on hazardous waste requirements for used oil generators, refer to the document *Management Standards for Used Oil Generators*, available at

www.colorado.gov/pacific/cdphe/hazardous-waste-management-used-oil-guidance.

The hazardous waste requirements for businesses burning used oil in a space heater vary depending on whether the business (1) generates the used oil *itself* or obtains the used oil from a *household do-it-yourselfer* or (2) obtains the used oil from another *outside source*.

❖ Your Own or from “Household Do-it-Yourselfers”

Generators of used oil are allowed to burn the oil in a used oil-fired space heater if:

1. the heater burns only used oil generated by the business itself or obtained from household do-it-yourselfers;
2. the heater is designed to have a maximum design capacity of not more than 500,000 Btu/hour; and
3. the combustion gases from the heater are vented to the outside.

Business must obtain the used oil directly from the do-it-yourselfers. Used oil that has been collected from do-it-yourselfers and aggregated by an intermediate party is no longer considered to be household used oil unless the collection center can prove that it accepts used oil only from household do-it-yourselfers.

Businesses may aggregate their used oil to one facility owned by the same business. This used oil must be transported in quantities less than 55 gallons at one time in employee-owned or business-owned vehicles.

A business may have more than one space heater and mix different used oils but must be aware that burning mixed used oils of significantly different viscosities can cause feed lines to clog.

Businesses burning their own or used oil from household do-it-yourselfers are not required to test the oil.

❖ From an Outside Source

In order to burn used oil obtained from an outside source, other than household do-it-yourselfers, a business must ensure that the oil has been tested and meets the used oil specifications.

USED OIL SPECIFICATIONS	
Constituent/property	Max. allowable level
Arsenic	5 ppm
Cadmium	2 ppm
Chromium	10 ppm
Lead	100 ppm
Flash point	100 °F minimum
Total halogens	4000 ppm (if successfully rebutted)*

* If total halogens exceed 1000 ppm, the oil is presumed to be a hazardous waste unless proven otherwise by the generator.

Testing, as described below, can be done by either the business that generates the used oil or the business that wants to burn it in their space heater. If the business burning the used oil does not make the determination that the used oil is on-specification, the Hazardous Materials Division strongly advises that the business request copies of the laboratory analyses run on the used oil and keep basic records related to receipt of the oil.

On a case-by-case basis, the Hazardous Materials Division may allow testing to be conducted annually as long as the process generating the used oil remains unchanged.

Used oil that does not meet the used oil specifications may be burned for energy recovery only in an industrial furnace, boiler, or hazardous waste incinerator.

Facilities that burn off-specification used oil must notify the Hazardous Materials Division of their used oil activities and meet all applicable requirements of the Colorado hazardous waste regulations.

❖ **Burning in a Space Heater Larger than 500,000 Btu per hour**

Businesses that burn their own used oil in a space heater with a capacity larger than 500,000 Btu/hour must test their used oil to ensure that it meets the used oil specifications. On a case-by-case basis, the Hazardous Materials Division may allow testing to be conducted annually as long as the process generating the used oil remains unchanged.

The business must keep records of the lab analysis or other documentation used to make the determination that their used oil

is on-specification. They must also notify the Hazardous Materials Division that they are a used oil marketer and obtain an EPA identification number. After determining that the used oil meets the specifications, the business must keep records of the quantity of used oil tested/burned and a cross reference to the analytical records documenting the oil was on-specification. Records must be kept for at least three years.

If the business wants to burn used oil from an outside source, the testing and recordkeeping requirements are as specified in the previous section.

❖ **Used Oil Testing**

The party conducting the testing and determining whether the used oil meets the required specifications is considered a “used oil fuel marketer.”

Anyone marketing used oil must keep records of the lab analysis or other documentation used to make the determination that the oil is on-specification. They must also notify the Hazardous Materials Division that they are a used oil marketer and obtain an EPA identification number. After determining that the used oil meets the specifications, the marketer must keep records of each shipment to an on-specification used oil burner including the name and address of the receiving facility, quantity shipped, date of shipment or delivery, and a cross reference of each shipment to the analytical records documenting the oil was on-specification. Records must be kept for at least three years.

Acceptable test methods for determining if used oil is on-specification include those listed below. Other equivalent test methods may be used as approved by the Hazardous Materials Division. Used oil is presumed by EPA to contain quantifiable levels (>2 ppm) of PCBs unless the generator has analytical data or acceptable documentation (defined in 40 CFR Part 761) that proves it does not. If the used oil is from a hydraulic system or transformer, or the source is unknown, then the oil should

also be tested for PCBs using SW-846 Method 8082 or 8270. Used oil containing quantifiable levels of PCBs may only be burned for energy recovery in qualified incinerators or by burners of off-specification used oil that have notified the Hazardous Materials Division.

USED OIL TEST METHODS	
Analyte	Test Method
Arsenic, Cadmium, Chromium, Lead	SW-846* Method 6010 or 6020
Flash point	SW-846 1010A SW-846 1020B Miniflash Continuously Closed Cup Tester ASTM Standard D-6450-99
Total halogens	SW-846 9075 or 9076 SW-846 8260 if results greater than 1000 ppm

* SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, is EPA's official compendium of analytical and sampling methods approved for use in complying with the RCRA regulations.

FOR MORE INFORMATION

Contact the Small Business Assistance Program (SBAP) at the Colorado Department of Public Health and Environment.

SBAP offers free assistance to small businesses with environmental questions.

SBAP: (303) 692-3175 or 3148

Small Business Ombudsman: (303) 692-2135

Website:

www.colorado.gov/pacific/cdphe/small-business-assistance-program-sbap

The Hazardous Materials Division technical assistance line for questions regarding solid and hazardous waste management and disposal.

Generator Assistance Program: 303-692-3415

Technical Assistance Hotline: 303-692-3320 or 1-888-569-1831 ext. 3320

Website:

www.colorado.gov/pacific/cdphe/hazwaste