



Small Business Assistance Program

Colorado Department of Public Health and Environment
<http://www.cdphe.state.co.us/ap/sbap>

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. Many businesses, including automotive service centers and repair shops, vehicle fleet maintenance shops, car dealerships, and automotive recyclers, operate used oil space heaters to supplement the heating of their facilities. 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.

➤ WHAT IS USED OIL?

In regards to used oil space heaters, the term “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

The term “used oil” does not include:

- antifreeze
- wastewater containing oil
- cooking oils, even if used as lubricants
- oils mixed with hazardous waste

➤ WHY IS THE BURNING OF USED OIL REGULATED?

Used oil picks up contaminants as it moves through the lubricating, transformer, or hydraulic systems in engines and other equipment. Some of these contaminants are known to cause cancer. When used oil is burned, these contaminants are emitted into the air and may be inhaled.

➤ HAZARDOUS WASTE REQUIREMENTS

The Colorado Department of Public Health and Environment (CDPHE) Hazardous Materials and Waste Management Division (Hazardous Materials 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*, which is available through the Hazardous Materials Division and downloadable at <http://www.cdphe.state.co.us/hm/oilgen.pdf>.

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*. The hazardous waste requirements for both sources of used oil are summarized below.

❖ **Burning Your Own Used Oil and Used Oil 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.

In order to burn household used oil in a space heater, the 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).

As long as the above conditions are met, businesses that burn their own used oil or used oil from household do-it-yourselfers are not required to test the oil. In addition, businesses that own facilities at multiple locations may aggregate used oil from their other locations to one facility that is owned by the same business. Used oil that is aggregated from other locations owned by the same business can also be burned in a used oil space heater at the aggregation facility without testing. This used oil must be transported to the aggregation facility in quantities less than 55 gallons at one time in employee-owned vehicles or vehicles owned by the business.

It is acceptable for a shop to have more than one space heater meeting the above requirements. Mixing of different used oils is also acceptable but be aware that burning mixed used oils of significantly different viscosities can cause oil heater feed lines to clog.

❖ **Burning Used 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 shown in Table 1. Although the total halogens regulatory limit is 4000 ppm, if total halogens exceed 1000 ppm, the oil is presumed to be a hazardous waste unless proven otherwise by the generator.

Constituent/property	Allowable level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100 degrees F minimum
Total halogens	4000 ppm maximum (if successfully rebutted)

Used oil that does not meet the used oil specifications in Table 1 may be burned for energy recovery only in an industrial furnace, boiler, or hazardous waste incinerator and not in a used oil space heater. 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.

In order to avoid directing a shipment of off-specification used oil to someone other than an authorized off-specification used oil burner, used oil must first be tested to show that it meets the used oil specifications. Testing of the used oil can be done by either the business that generates the used oil or the

business that wants to accept it to burn in their space heater. The party that conducts the testing and determines if the used oil meets the required specifications is considered to be a “used oil fuel marketer.” The term “marketer” is used whether or not money changes hands with the transfer of the used oil.

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, the quantity shipped, the date of shipment or delivery, and a cross reference of each shipment to the analytical records used to document that the oil was on-specification used oil. All records must be kept for at least three years.

A business that accepts used oil to burn in their space heater needs to make sure that the used oil has been tested before they take it. If they are not the one that makes the determination that the used oil is on-specification, the Hazardous Materials Division strongly advises that they request copies of the laboratory analyses run on the used oil and keep basic records related to receipt of the oil.

To ease the regulatory burden on businesses, each shipment of used oil may not need to be tested. 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. If something in the process changes (e.g., starting to service different types of vehicles or equipment) or if there is a new source of used oil, additional testing will be required.

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

Businesses that want to 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 in Table 1. 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. If something in the process changes or if there is a new source of used oil, additional testing will be required.

The business must keep records of the laboratory 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 used to document that the oil was on-specification used oil. All 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 Test Methods**

Acceptable test methods for determining if used oil is on-specification include those listed in Table 2. 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 (as 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 of these activities.

**Table 2
USED OIL TEST METHODS**

Analyte	Test Method
Arsenic, Cadmium, Chromium, Lead	SW-846* Method 6010 or 6020
Flash point	Pensky-Martens Closed Cup Tester ASTM Standard D-93-79 or D-93-80 (SW-846 1010A) Setaflash Closed Cup Tester ASTM Standard D-3278-78 (SW-846 1020B) Miniflash Continuously Closed Cup Tester ASTM Standard D-6450-99
Total halogens	SW-846 Method 9075 or 9076; if results greater than 1000 ppm total halogens, then also SW-846 Method 8260

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

➤ **AIR EMISSION REQUIREMENTS**

The CDPHE Air Pollution Control Division (APCD) administers air emission reporting and permitting in Colorado. Unlike the hazardous waste regulations, Colorado air regulations do not distinguish between used oil that is generated by the business, a household do-it-yourselfer, or another business. According to the air regulations, businesses that operate used oil heaters 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.

Note that ALL businesses with space heaters must ensure that visual emissions (opacity) from the heater does not exceed 20%. This means that 80% of the light is visible through the stack emissions.

❖ **Air Reporting Requirements**

Businesses with used oil space heaters that do not meet the exemptions listed above must test the used oil as described previously under Hazardous Waste Requirements to determine whether air emission reporting is required. In this case, the testing of used oil must also include testing for *sulfur*, the air pollutant most likely to trigger air reporting requirements for used oil heaters.

Businesses can determine whether they need to report air emissions based on 1) the sulfur content of the used oil (reported in percent by weight) and 2) the cumulative amount of used oil burned at any single business location each year. Table 3 below provides an easy reference tool for determining whether air emission reporting is required. Simply select the sulfur content of the used oil in the left-hand column of Table 3 and then determine the quantity of used oil that can be burned without triggering air reporting requirements. For example, according to Table 3, if analytical results indicate a used oil sulfur content of 0.5 percent weight (%wt) and your facility burns less than 54,422 gallons of used oil each year at any individual business location, you are not required to report your air emissions to the APCD.

The waste oil emission factors listed in Table 3 are based on AP-42, Section 1.11, "Waste Oil Combustion" and are available on the Internet at www.epa.gov/ttn/chief/ap42/ch01/final/c01s11.pdf.

Sulfur Content of Used Oil (Weight %)	Air Emission Factor (pounds/1,000 gallons)	Quantity of Used Oil Requiring the Submission of an APEN¹ (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	110.3	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

¹ Reporting thresholds are based on an air emission threshold of two tons of sulfur emitted per year.

❖ **Air Pollutant Emission Notices (APENs)**

If your used oil consumption exceeds air reporting thresholds, you must report your air emissions by submitting an Air Pollutant Emission Notice (APEN) and the appropriate filing fee to the APCD. The General APEN form is available through the Air Division and may be downloaded at:

<http://www.cdphs.state.co.us/ap/downloadforms.html> The APCD will use the information provided on the APEN to determine if an air permit is also required. If your business requires an air permit, the submission of an APEN will start the permitting process and your APEN will become part of your permit application package.

APENs are valid for five years and each APEN must be renewed at least 30 days before it expires. Additionally, revised APENs must be submitted to the Air Division when certain changes occur at your facility such as a name change, a change in ownership, a change in the business location, a significant change in emissions, or a modification to the emission unit (e.g., space heater).

❖ **Reporting and Permitting Fees**

Each APEN submitted to the Air Division requires a filing fee. In addition, all sources requiring an APEN must pay *annual* fees based on estimated annual emissions of air pollutants. The Air Division bills per ton of criteria pollutants such as NOx and SOx and per ton of non-criteria pollutants such as chorine

and sulfur. Fees are subject to change by the legislature on an annual basis. For sources requiring an air permit, the Air Division assesses an hourly fee for the review of the permit application and processing by an engineer.

Current fee information is available online at: www.cdphe.state.co.us/ap/billing.html.

➤ **HELP IS AVAILABLE**

The Colorado Small Business Assistance Program (SBAP) and Generator Assistance Program (GAP) work together to provide free services to small businesses seeking help in understanding and complying with air, hazardous waste, and other environmental regulations. If you have any questions regarding used oil space heaters or the proper management and disposal of used oil, contact the Small Business Assistance Program or the Generator Assistance Program at the numbers below. The Hazardous Materials Division also operates a technical assistance line for questions regarding solid and hazardous waste management and disposal.

Air Emission Reporting and Permitting:

- Small Business Assistance Program (SBAP) – (303) 692-3175 or (303) 692-3148
- <http://www.cdphe.state.co.us/ap/sbap>

Hazardous and Solid Waste Management:

- Generator Assistance Program (GAP) – (303) 692-3415
- Technical Assistance Hotline – (303) 692-3320 or 1 (888) 569-1831 ext. 3320 toll-free
- <http://www.cdphe.state.co.us/hm/>