

The used oil challenge: action in Canada, hope in U.S.

by Tom Watson
Resource Recycling

Canada has moved forward in used oil recycling, while the U.S. faces tougher going due to a lack of consensus within government and industry.

Bogged down by governmental confusion and a lack of commitment from the private sector, used oil management in the U.S. is neither consistent nor efficient. Perhaps it's time to look to the North for inspiration.

In the past year, government and industry in Canada have taken significant strides toward increased collection and recycling of used lubricating oil. These include:

- A "used oil action plan" approved last March by the board of directors of the Canadian Petroleum Products Institute (CPPI), an oil industry trade group. It outlines a public-private partnership for greatly increased collection of used oil and includes the promise of a \$15 million (Canadian) financial contribution from the industry.
- A meeting held in Toronto last fall by municipal and provincial purchasing officials. Auto industry representatives attended and were asked to explain their companies' positions on the use of re-refined oil in their vehicles. While many in the auto industry have been skeptical of re-refined oil, most of those at the meeting went on record saying that re-refined oils are acceptable if they meet the same performance standards as oils made from virgin base stock.
- Extensive use of re-refined motor oil in provincial and municipal vehicles, especially in Ontario and British Columbia.
- The award of the three doves logo to re-refined motor oil, under the Canadian federal government's Environmental Choice program. The logo signifies that a product has environmental advantages over competing products. Though it's still too early to tell, the logo could provide a healthy boost to consumer sales.

A start but not enough

While Canada — which admittedly has a much smaller population and a smaller oil

industry — appears to be well ahead of the U.S. on this issue, there are some hopeful signs south of the border. Several U.S. states have progressive used oil collection programs (see Table 1), and the emerging trend of point-of-purchase used oil collection by retailers has great potential (see accompanying story). Also, a few U.S. oil companies and others connected with the industry have begun to address the issue of what happens to motor oil after it is drained out of a car's crankcase.

But this is not enough for many recycling leaders involved with this issue. They would like to see a more coherent, effective federal government policy and a sincere commitment from all aspects of the American oil and auto industries to deal with the used oil problem.

The crux of the problem is that millions of gallons of used oil are still being improperly dumped by the "do-it-yourself" (DIY) oil changers. However, an important secondary issue exists, especially for those in the recycling industry: More used oil needs to be re-refined, because that is the only true way to recycle it and the best option environmentally. Today, the vast majority of used oil collected in the U.S. is reprocessed for fuel and then burned. Bad blood between the re-refiners and the fuel processors is just one of the tricky issues in the messy world of used oil management.

Streets black with oil?

The U.S. picture could be clarified soon if several proposed actions in the U.S. Congress come to pass. House Resolution 3735, the long-awaited Resource Conservation and Recovery Act (RCRA) reauthorization, now includes used oil provisions transferred from other bills. One such provision that would boost used oil recycling features a credit system: Producers or importers could comply with the recycling mandate by re-refining themselves, buying re-refined oil in order to

produce lubricating oil, or purchasing credits from oil recyclers.

Another controversial provision now incorporated into HR 3735 would prohibit the federal Environmental Protection Agency (EPA) from listing used oil as a hazardous waste. Often referred to as "the listing issue," this has been a thorn

in the side of EPA for years. At one point the agency announced it would list used oil as a hazardous waste but then decided to study the matter further. EPA researchers have been evaluating more than eight categories of used lubricating oil, with the new intent of having different listings for different categories.

In protest over perceived EPA foot dragging on the listing issue, the Buffalo based Association of Petroleum Refiners and others brought suit against the agency last spring. The re-refining industry strongly favors listing, since it already set up to handle used oil as hazardous waste and it could be an eco

■ Table 1 — Used oil collection programs and legislation in 15 selected states

	Tax or deposit on retail oil?	Retail sign rule? (1)	Partial liability protection for collectors?	Landfill disposal banned? (2)	Program operator; funding	Estimated collection locations	Comments	Contact person
Alabama	No	No	No	No	Project ROSE (University of Alabama); state funding	175	Established 1977; one of first programs to focus on education	Janet Graham (205) 348-1735
California	No	Yes	No	Yes	State operates, funds	700 - 1,000	Used oil considered hazardous waste	Herb Berton (916) 322-2651
Florida	No	No	Yes	Yes	State; federal oil overcharge funds	400	Several innovative local programs, including curbside and mobile collection	Betsy Galocy (904) 488-0300
Georgia	No	No	No	Yes	Project PETRO (state); federal oil overcharge funds	175	Education program emphasizes toll-free phone number for collection locations	Mark Mixon (404) 656-2833
Iowa	No	Yes	No	Yes	No formal program	75	State requires 8% insurance rate discount for underground storage tanks when used oil accepted from public	Robert Craggs (515) 281-8408
Louisiana	No	No	No	Yes	No formal program	25	Some large companies provide collection sites for employees' DIY used oil	Tom Patterson (504) 342-9081
Maryland	No	Yes	Yes	Yes	State operates, funds	320	State provides collection tanks for 120 municipal sites	Pat Tatum (301) 974-7254
Massachusetts	No	(3)	No	Yes	State operates, funds	1,030	State starting to gear up education program; used oil listed as hazardous waste	Cynthia Bellam (617) 292-5841
Michigan	No	No	No	Yes	West Michigan Environmental Action Council; state funding	700	State used oil policy being revised, under legislative mandate	Julie Stonema (616) 451-305
Minnesota	No	Yes	No	Yes	State operates, funds	1,500	State gives counties up to \$5,000 for collection tanks	Randy Hukriek (612) 643-347
Oregon	No	Yes	No	No	No formal program	200 - 300	In addition, 100 cities have curbside programs	Peter Spende (503) 229-525
Rhode Island	Yes; 5¢/quart tax	No	Yes	Yes	State operates, funds; also, federal oil overcharge funds	29	State provides special containers to local governments; used oil listed as hazardous waste	Eugene Pepp (401) 277-343
Vermont	No	No	Yes	Yes	State operates, funds; also, federal oil overcharge funds	40	Used oil collected in state program must be re-refined, not burned for fuel; state subsidizes this	Barb Winters (802) 244-78
Washington	No	Yes	No	No	State operates, funds	250	Education program includes toll-free phone number for collection locations	Steve Barrett (206) 459-62
Wisconsin	No	Yes	No	Yes (4)	State operates, funds	150 - 200	Counties responsible for having collection sites; state offers technical assistance only	Paul Koziar (608) 266-57

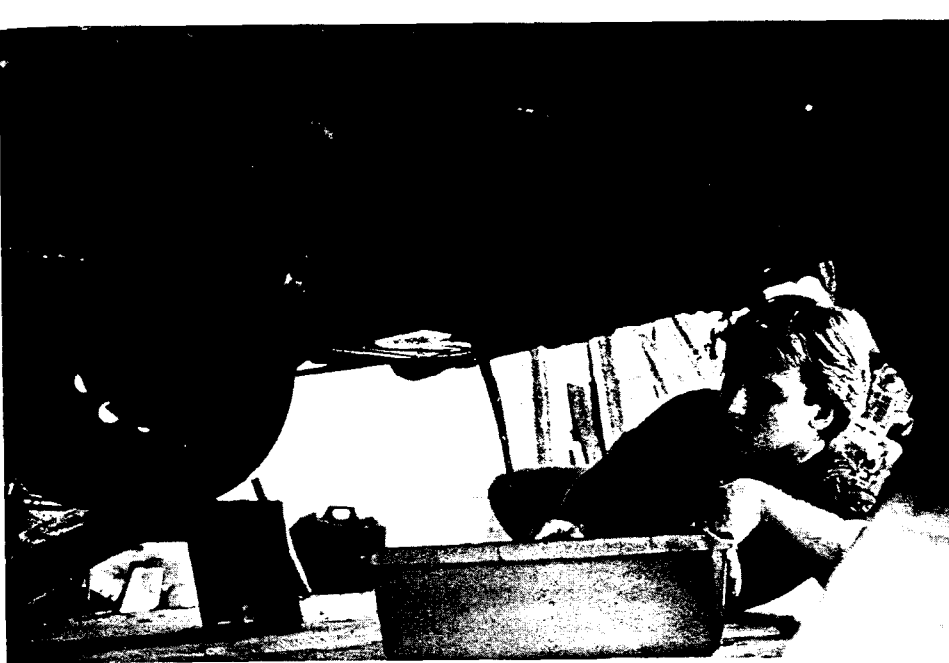
(1) Regulations requiring oil retailers to post signs with recycling information or collection locations.

(2) In most cases, road oiling is also banned; Iowa is one exception.

(3) All Massachusetts oil retailers must accept used oil originally purchased in their store; receipt required.

(4) Effective January 1, 1991.

A do-it-yourselfer changes his motor oil (1).
An oil collection truck at Safety-Kleen's Bres-
Lube Division re-refinery at Breslau, Ontario
(2).



conomic boon. The suit has not yet been resolved.

Opposing the re-refiners on this are the American Petroleum Institute (API) and the National Oil Recyclers Association (NORA), two Washington, D.C.-based trade groups. Its name notwithstanding, NORA represents the fuel processing industry. These groups argue that listing used oil as a hazardous waste would make the burning of used oil more difficult and severely hinder collection efforts, resulting in significantly more improper dumping. "They say the streets will run black with oil," as one re-refining industry official sardonically puts it.

Under a credit system or hazardous waste listing, re-refineries could suddenly be in the driver's seat. One concern with this scenario is the near-monopoly in the re-refining industry. Only seven re-refineries are currently operating in all of North America, according to the re-refiners' association. Of these, only three are sizable operations with the latest technology: the Evergreen Oil, Inc. plant in Newark, California, near San Francisco; the Mohawk Oil Co. Ltd. facility in North Vancouver, British Columbia; and the BresLube re-refinery — the largest in the world — at Breslau, Ontario.

BresLube was purchased in 1987 by Safety-Kleen Corp., of Elgin, Illinois. Safety-Kleen is building an even larger refinery in East Chicago, Indiana that is expected to begin operation in 1991, says Dale Schofield, a senior vice president of Safety-Kleen Canada. The East Chicago plant will handle 75 million gallons of used oil a year. The existing Bres-



Lube plant takes in 35 million gallons a year. Evergreen's re-refinery processes about 12 million gallons annually, while Mohawk handles nearly eight million. The volume of re-refined base stock produced is normally about 60 percent of the incoming feedstock. Safety-Kleen and Evergreen both have tentative plans to build new re-refineries, in the Philadelphia/Baltimore area and Southern California, respectively.

Contrasting philosophies

While certainly not devoid of self-interest, the Canadian petroleum industry is taking

a higher road than its U.S. counterpart on the used oil issue. Shell Canada's John Birchall, a member of the Canadian Petroleum Products Institute's used oil task force, says CPPI is moving toward the concept of "product stewardship," which involves a manufacturer taking "cradle-to-grave" responsibility for its product. Birchall is a product manager for private label lubricants for Shell Canada, working out of the company's North York office in the Toronto area.

Contrast that approach with the comments of Hap Thompson, an American Petroleum Institute official who has

worked with the used oil issue. API strongly opposes the concept of cradle-to-grave product responsibility, Thompson says, "We don't hold chemical manufacturers responsible for their products," he says, so why should oil companies be accountable for theirs? If manufacturers did have to take responsibility for the disposal or recycling of their products, America would become "more of a controlled society" and prices would soar, Thompson adds.

CPPI outlines its vision of product stewardship in the comprehensive used oil action plan issued by its task force and approved by its board in March. Elements of the plan include:

- Government would help implement an extensive public collection system consisting of both drop-off facilities and curbside pickup. Curbside oil collection would be added to the existing curbside programs for other materials that have flourished across Canada.
- The oil industry would contribute up to \$15 million over five years, to help cover costs of setting up this collection system.
- A tax would be placed on over-the-counter sales of lube oil of up to 50

cents per liter (the equivalent of 13 cents, Canadian, per U.S. gallon) to help governments with their share of collection costs. The tax would be significantly lower for larger quantities of oil purchased by farmers.

- The oil industry and its customers would assume full responsibility for proper management of all oil used in the industrial and commercial sectors, with the exception of farmers.

While not all of CPPI's proposals have been warmly received by government officials or even by some of its own members, Birchall says he believes most aspects of the plan will eventually receive the support of the federal and provincial governments.

U.S. firms get into the act

Even though the U.S. oil industry has no industry-wide agenda for used oil management, a few companies have taken steps on their own. Under a pilot program that began last spring, 32 Amoco service stations in central Illinois accept used oil from the public. The Chicago-based Amoco Corp. ships the oil to its Whiting, Indiana refinery. The refinery presently burns this oil for fuel, but an Amoco

spokesperson says the company is studying the possibility of reprocessing it.

Among the companies specializing in motor oil, Pennzoil Co. of Houston leads the industry with a market share of more than 20 percent. Pennzoil recently purchased controlling interest in Jiffy Lube International, a large chain of quick lube service centers. Some Jiffy Lubes accept used oil from the public, and Pennzoil is considering recommending that all its Jiffy Lube franchises follow suit, says Frank Verrastro, Pennzoil's vice president in charge of government affairs. The company firmly opposes listing used oil as a hazardous waste, favors public collection systems such as curbside and drop-off programs, and would support a tax or fee on used oil only if no other means were available to fund collection programs, according to Verrastro and other company officials.

Another industry leader, Quaker State Corp. of Oil City, Pennsylvania, is in favor of a five-cent-per-quart tax on oil to fund collection programs and is trying to gain the support of other manufacturers for the plan. Mary Jo White, corporate environmental manager for Quaker State, says the company supports the philosophy of cradle-to-grave product resp

bility, but believes the costs of this have to be reflected in the price of the product.

"Our government is making product stewardship very difficult," she adds, referring to the still-unresolved hazardous waste listing issue and current regulations stipulating that used oil collectors may be held responsible for contamination problems that occur further down the handling chain.

In the current economic climate, re-refining of motor oil is "inefficient and illogical," in the opinion of Benton Faulkner, Quaker State's manager of public relations. He believes used oil should be burned for fuel or used in asphalt until the price of crude oil rises, making re-refining more economically viable.

Valvoline Oil Co., the Lexington, Kentucky-based division of Ashland Oil, Inc., has been especially active on the used oil issue. Its 270 Valvoline Instant Oil Change centers accept used oil from the public, and Valvoline offers used oil collection services for some retailers who accept used oil (see accompanying story).

Out of the closet

Re-refined oil could conceivably be used as a base stock by any oil manufacturer.

In fact several companies, mostly in Canada, now use re-refined oil as a base stock in their motor oil, according to industry sources. Of those companies, only Chevron has "come out of the closet" and acknowledged its use of re-refined oil, says Don O'Connor, vice president of supply and manufacturing for Mohawk Oil, which has its main office in Burnaby, British Columbia. O'Connor says Mohawk presently sells its re-refined base stock to Chevron and three other major oil companies.

The unwillingness of the other companies to admit they use re-refined oil illustrates the perception that consumers consider re-refined oil an inferior product. To combat this perception, a number of local, state and provincial governments have become interested in using re-refined oil in their own vehicles, to support recycling and set an example for the consumer.

Purchasing re-refined oil is not a risky move. New York State has bought more than 76,000 gallons of re-refined oil for its vehicles in the past year, with no problems reported, says Steve Pryor, purchasing officer for the state division of purchasing in Albany. To allay any fears, BresLube

has even provided a complimentary insurance policy. In this case, the state awarded a contract last summer to a distributor of BresLube oil because it was the lowest bid, not because of any preference for re-refined oil.

The EPA has procurement guidelines for re-refined oil but has not yet approved any vendors on its qualified products list. In the 1970s, the U.S. Army did extensive research on re-refined oil and concluded that it could be processed in such a way to achieve the same performance in Army vehicles as virgin oil. Some re-refined oil has been on the Army's qualified products list in the past, but no products have applied for the listing recently, says Tom Bowen, a chemist for the Army's Belvoir Research, Development and Engineering Center at Fort Belvoir, Virginia.

Let's procure one for the GIPPER

While government procurement of re-refined oil has barely gotten off the ground in the U.S., the Canadian military and several large local and provincial government agencies in Canada now use BresLube or Mohawk re-refined motor oil. One hang-up with procurement of re-refined oil is that some auto makers have discour-

aged its use in their cars, in some cases saying warranties might not be honored. Addressing this problem directly, a Canadian group called GIPPER (Governments Incorporating Procurement Policies to Eliminate Refuse) invited auto industry representatives to a meeting in Toronto last October to clear the air.

In addition to numerous government officials and several from the re-refining industry, the meeting was attended by officials from Chrysler, Ford of Canada, General Motors of Canada, Toyota Canada, Honda Canada, Cummins Engine, Detroit Diesel and Mack Canada. Several other firms sent statements.

The consensus of the manufacturers, according to the official summary of the meeting, "was that the use of re-refined oils would be permitted providing that the product met the viscosity and performance standards as stipulated within their individual product specification requirements. The same requirements applied to oils manufactured from virgin base stock."

Despite constructive meetings such as this, it will be difficult, if not impossible, to eliminate auto industry bias against re-

refined oil. For example, even though a Ford official said at the meeting that Ford does not differentiate between virgin and re-refined oil, a company spokesperson in Dearborn, Michigan recently criticized the re-refined product.

"There's some hesitancy to say it [re-refined oil] is good enough to go back into a car," says Jim Traynor, assistant manager of public affairs for Ford's parts and service division. "We can't give it 100 percent backing."

Among those auto industry officials still nervous about re-refined oil, the chief concern appears to be whether re-refineries can produce a consistent product. In the old days when many small, primitive re-refineries existed, this was a problem. However, BresLube, Mohawk and Evergreen all use high-tech processing that they say produces a product at least as good as that from virgin crude, and perhaps better.

Dear Mr. Iacocca

Chrysler Motors' Francis Duffey says his company has been trying to remove roadblocks to the use of re-refined oil.

However, he adds that he would like to see more data proving that consistency is no longer an issue, even with the current state-of-the-art re-refining techniques. A product development specialist for the fuel and lubrication group in Chrysler materials engineering department, Duffey works out of Highland Park, Michigan.

Gregory Ray, a director of Irvine, California-based re-refining company Evergreen Oil, challenges the auto industry to provide a single example of an engine problem that can be linked to engine-tested re-refined oil. Ray recently wrote to Chrysler Chairman Lee Iacocca complaining about negative statements made about re-refined oil by another Chrysler official.

Ray explained in his letter that modern re-refining takes a material contaminated with lead and other heavy metals and makes a new product using a process involving very little waste or pollution (heavy metals and other contaminants are captured in an inert by-product used by the asphalt roofing industry).

"In this respect," Ray wrote Iacocca, "re-refining is cleaning up pollution that is created during the operation of the vehicles you manufacture."