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USED OIL RECOVERY

Update on Programs Across Canada

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Environmental Consultant

Competition in the Global Arena
Demonstrating your environmental competence

By David Thorne

Introduction

In a 1998 survey of environmental consultants across Canada, the results showed a significant increase in the number of consultants and the size of their firms. This growth is driven by a number of factors, including the increasing complexity of environmental regulations, the need for specialized expertise, and the growing awareness of environmental issues by the public and government.

The Use of Consultants

As the industry grows, the use of consultants is becoming more widespread. Companies are increasingly turning to consultants for a variety of services, including environmental impact assessments, pollution prevention programs, and emergency response planning. This trend is expected to continue as companies seek to improve their environmental performance and reduce their risk.

Service	Percentage of Firms Offering
Environmental Impact Assessment	85%
Pollution Prevention Programs	75%
Emergency Response Planning	65%
Environmental Audits	55%
Waste Management	45%
Water Quality Monitoring	35%
Soil Remediation	25%
Environmental Consulting	15%

Source: Environmental Consultants Association of Canada (ECA), 1998 Survey of Environmental Consultants.

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USED OIL RECOVERY PROGRAMS EXPAND ACROSS CANADA

Prairie provinces lead the way

by Clarissa Morawski

Roughly one billion litres of lubricating oil are sold in Canada each year. About half the oil is consumed during use; the remainder is either disposed (e.g., burned, used as a dust suppressant on roads or improperly poured down drains) or recovered, reused and recycled through re-refining. In addition to used oil, the transportation sector generates tens of millions of recyclable steel filters and several hundred million HDPE plastic oil bottles and pails — virtually all of which are currently landfilled.

Some Canadian provinces have made significant progress implementing programs to recover used oil, containers and filters in the last four years. The most successful programs to date are in the Prairie provinces, where industry developed, operated and funded programs supported by backdrop regulations are leading the way. In Canada, two different regulatory models are used for used oil collection: the “return-to-seller” model and an industry developed program referred to in this article as the “CPPI model.”

Return-to-seller

British Columbia, Nova Scotia and Prince Edward Island employ the “return-to-seller” program. New Brunswick and Newfoundland will implement it shortly.

The program is supported by a backdrop regulation that mandates that retail vendors of lubricating oil must provide or arrange for facilities for the return of used oil. Arranged return facilities must be within 4 to 5 km of the point of sale.



Photo courtesy of
Safety-Kleen Corp.

Vendors must pay for the proper management of used oil, including the cost of collection tanks and contracting haulers. Most used oil in the Atlantic Provinces is incinerated or used as fuel in space heaters and cement kilns. Most used oil in BC is sent for re-refining to Mohawk Lubricants Ltd.

Return-to-retail establishes a conve-

nient collection infrastructure. However, these programs have had mixed success. First, the haulage fees vary along with fluctuations in the price of crude and aren't necessarily shared equitably between large and small vendors (due to economies of scale). Second, apart from a few voluntary efforts, the retail sector does not collect

or recover containers and filters. Third, there's no ongoing performance evaluation of the programs.

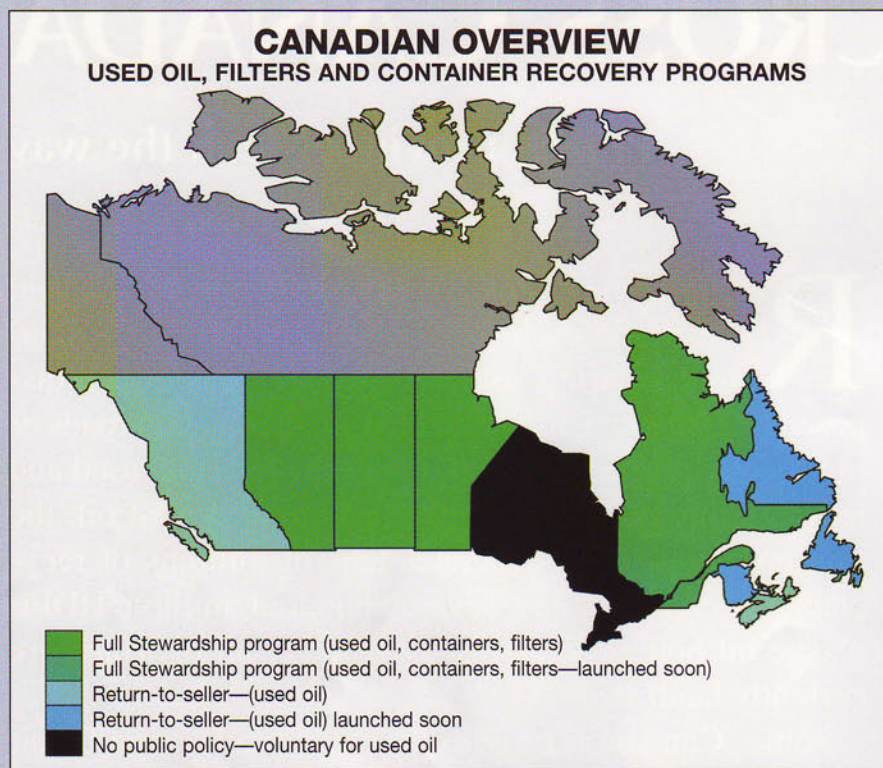
CPPI model

Alberta, Saskatchewan and Manitoba currently operate the "CPPI model" program, which will soon be implemented in Quebec too.

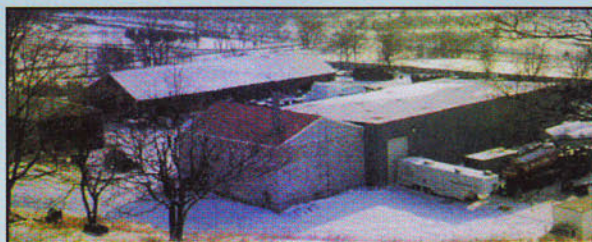
In the late 1980s, in response to a request by the Canadian Council of Ministers of the Environment, the Canadian Petroleum Products Institute (CPPI) volunteered to design a stewardship model that would mitigate some of the inadequacies of the "return-to-retail" system. In consultation with a broad stakeholder group, CPPI worked with the government to draft backdrop regulations for the new model.

The "CPPI model" — which includes used oil, containers and filters — also relies on a backdrop regulation that requires all producers, importers and distributors to contribute fees to a stewardship organization in order to be eligible to sell in that province.

These fees are: 5 cents per litre of oil, 5 cents per litre of container size (up to 20 litres), 50 cents for small filters and one dollar for large filters. Suppliers in the wholesale chain pass these fees onto retail vendors who in turn may pass them along to consumers via an environmental handling charge at



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the cash register or within the price of the product.

The stewardship organization uses the fees to establish a network of collection depots and to pay a "return incentive" to collectors and transporters. This remuneration reflects the transportation distance from the collection depot (pick-up point) to the end-market (drop-off point). In Alberta, return incentives for one litre of recovered used oil range from 8 cents to 17 cents/litre. Plastic oil containers range from 5.8 cents to 7.3 cents/litre and drums of steel oil filters from \$100 to \$160.

Return incentives are only paid to haulers that deliver the oil, containers and filters to "government approved" end-markets. Criteria for approved designation are generally based on whether the end-use is legal in that jurisdiction. (See chart for exceptions.)

Incentives have secured the market so that these materials have a value, which creates an incentive to collect them. Today, hundreds of municipalities, retail outlets, gas stations, car dealerships and even fire halls collect used oil, containers and filters simply

because they generate revenue — far exceeding the number of return centers required by the regulation.

The recovery rate for used oil and filters is now about 70 per cent on average and climbing. Container recovery rates range from 10 to 35 per cent due to limited end-markets and high shipping costs. However, new plastic recycling technologies continue to enter the marketplace. The Prairie provinces have recently increased return incentives and promotional efforts to improve capture rates for containers.

While BC currently maintains the return-to-seller model for used oil, both the provincial government and CPPI are looking to harmonize BC's system with the Prairie provinces' model. Quebec has based its forthcoming used oil, container and filter stewardship program on the CPPI model, and is including mandatory recovery targets and marketing guidelines as key program features.

With the exception of the Territories, Ontario stands out as the only province without a regulated collection program in place for either used

oil or the estimated 215 million plastic one-litre containers (which represents 14,000 tonnes of oily HDPE) and 20 million filter units sold in the province each year. Outside of municipal household hazardous waste (HHW) programs and a limited number of collection centers voluntarily operated by select automotive facilities and retailers, there is no systematic recovery system for collecting used oil from "do-it-yourself" used oil generators.

Road oiling was banned in Ontario 20 years ago and the growing practice of burning used oil in space heaters was slowed two years ago through a temporary moratorium on approval certificates for used-oil space heaters. In September of last year, then-Minister of the Environment Tony Clement made the moratorium permanent.

Used oil collected domestically from automotive facilities and shipped to the US is exempt from all of the regulatory due diligence (e.g. manifesting and reporting of final disposition, etc.) required of collectors who collect oil for domestic treatment. It is therefore easier and cheaper to collect oil from

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PROVINCE	Regulation			Program Implementation date	Collection Infrastructure	Fees	Return Incentives	End-Use	Stewardship Organization
	Used Oil	Containers	Filters						
British Columbia	Return of Used Lubricating Oil Regulation	The Provincial government and CPPI are looking into expanding the current program (to a program based on the CPPI - prairie province model) through regulation amendment.		1992-93	The Current regulation requires all sellers of lubricating oil (except industrial sellers) to provide or arrange for facilities for the return of used lubricating oil up to prescribed quantities. Arranged facilities must be within 4 km of seller. Must have promotion if unable to provide collection tank.	none.	none.	Most used oil gets sent to Mohawk re-refiner in BC.	none.
Alberta	Lubricating Oil Material Recycling and Management Regulation			Sep-97	53 Eco-centres and over 600 return centres (service stations, Canadian Tire, Petro, Fire Halls, municipal depots etc.) - Promotion provided by AUOMA.	Environmental Handling Charge (EHC) is paid by the first seller in the province to the management association (stewardship organization).	Recycling Incentives (RIs) are paid to collectors/transporters of materials. RIs for <u>used oil</u> are based on volume collected. (eg. In Alberta, RIs range from 8-17 cents per litre. In Saskatchewan, RIs range from 8-14 cents per litre.)	RIs are not given for road oiling application of used oil and landfilling filters even though these practices are legal in the Province. RIs are only given for re-refining and energy recovery end-uses. End-use breakdown is unavailable.	Alberta Used Oil Management Association AUOMA www.usedoilrecycling.com
Saskatchewan	The Used Oil Collection Regulations			Sep-97	10 Ecocentres with 25 more being developed. They are located around the province and provide guarantee free delivery service. Another 240 free drop-off sights exist for drop-off these include: urban and rural municipal depots, some gas stations, retail centres, Canadian Tire, Walmart etc. Promotion provided by SARRC.	The fee (cost) is passed on to resellers/consumers. Current rates are: 50¢ for small filters \$1.00 for large filters 5¢ per litre of oil sold 5¢ per litre of container sold under 30 litre size.	RIs for <u>filters</u> are based on full drums of filters using an estimate of a mix of sizes. (eg. In Alberta and Saskatchewan RIs range from \$100-\$160/drum.) RIs for <u>containers</u> are based on weight (kg) collected. (eg. In Alberta, RIs range from \$.87-\$1.10/kg. In Saskatchewan, RIs range from \$1.00-\$1.35/kg.)	Used oil is reprocessed into industrial burner fuel, re-refined lubricating oil and other industrial products. End-use breakdown is unavailable.	Saskatchewan Association for Resource Recovery Corp SARRC www.usedoilrecycling.com
Manitoba	Used Oil, Oil Filters and Containers Stewardship Regulation			Mar-98	34 Ecocentres and 60 return centres (service stations, Canadian Tire, Petro, dealerships etc.) Promotion provided by MARRC.			About 60% is sent to an asphalt market in USA. About 2% is burned in approved facilities about 5% is sent to BC's Mohawk for re-refining and the rest is used for and other applications.	Manitoba Association for Resource Recovery MARRC www.usedoilrecycling.com
Ontario		none.		-	Voluntary - municipal HHW depots and service stations (numbers of service stations are unavailable)	none.	none.	About 35% is re-refined through Safety-Kleen, 4% burned in space heaters, 16% exported for incineration, 15% used in cement kilns.	none.
Quebec	Quebec is working on DRAFT regs to be released for comment soon. The program (based on CPPI - prairie province model) will cover used oil, containers and filters. Brandowners (first sellers) will be required to join a used oil management association that will manage the recovery infrastructure or to setup their own recovery infrastructure. Mandatory recovery targets and marketing guidelines are part of the regulation.			DRAFT ready for comment in 2000 with program to begin before 2001.	To be determined by the regulation. (Currently municipal HHW depots and Canadian Tire stores receive used oil voluntarily.)	To be determined by the used oil management association.	To be determined by the used oil management association.	About 60% of recovered used oil is sent to Safety-Kleen for re-refining. The rest is burned in cement kilns or in space heaters used primarily in greenhouses and gas stations.	On May 4, 2000, first steps will be initiated towards the establishment of a Quebec used oil management association.
NB	Regs are in the minister's office waiting for his endorsement. Similar to Atlantic provinces.	none.	none.	SOON	Will be similar to NS and PEI.	none.	none.	Most of the collected oil is burned.	none.
NS	The Used Oil Regulation - Return-to-seller program	The landfill ban on containers was extended to Sept 2001. CPPI working on a recovery and end-use solution.	none.	1997	Sellers are required to take back used oil at their locations. Otherwise they must arrange to have a facility within 5km that can take used oil back.	none.	none.	Most of the collected oil is burned.	none.
PEI	The Used Oil Handling Regulations - Return-to-seller program		none.	1992		none.	none.	Most of the collected oil is burned.	none.
NF	A draft regulation (35 th draft) based on the Atlantic provinces' "return-to-seller" model is waiting for finalization.		none.	SOON - (may be part to new provincial EPA)	Will be similar to NS and PEI.	none.	none.	n/a	none.
Yukon		none.		-	n/a	none.	none.	n/a	none.
NWT	NWT is about to put in a regulation that allows burning of used oil. The reg specifies under what circumstances a generator is allowed to burn oil. There is no stewardship program for used oil, containers or filters.			-	n/a	none.	none.	n/a	none.
Nunavut		none.		-	n/a	none.	none.	n/a	none.

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Cover Story

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automotive facilities in Ontario is trucked to Buffalo N.Y. to be used as fuel in industrial boilers and on ships. (Needless to say, many of these have little or no pollution abatement equipment.) It's estimated that in 1998, well over 50 million litres of used oil was shipped into the US for incineration in facilities. Ironically, Safety-Kleen's re-refinery in Breslau, Ontario must import into Ontario used oil collected from the United States in order to meet its needs.

Maximizing the benefits

The markets for recovered oil are numerous. Most of the oil from BC, about 60 per cent of used oil from Quebec and 35 per cent of the oil from Ontario is re-refined into base oil and/or finished lubricants. Other end-markets include: fuel for energy and/or heat, dust suppressant, asphalt extender, incineration and deep well injection.

The environmental profiles of these end-uses vary drastically. From a lifecycle perspective, re-refining offers the

greatest potential for energy savings and reduced environmental impacts, second only to source reduction. This is especially true in Ontario, where re-refining capacity exists close to the point of generation. In Ontario alone, re-refining could reduce greenhouse gas emissions by 200,000 tonnes each year.

While recovery mechanisms exist and efforts are being made to keep used oil out of the environment, the potential benefits associated with the recovery of used oil are not always realized in the oil's final disposition.

Finally, Ontario has made progress on the final disposition of used oil (with significant re-refining capacity and a moratorium on burning used oil in space heaters), but it still lacks a formal, self-financed collection infrastructure with specific recovery performance targets. ♦

Clarissa Morawski is principal of CM Consulting, based in Toronto, Ontario.



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