



BCUOMA

British Columbia Used Oil
Management Association

ANNUAL REPORT

2008 CALENDAR YEAR

Submitted to:

David Ranson
Director
Environmental Quality Branch
Ministry of Environment
PO Box 9341, STN PROV GOVT
Victoria, BC V8W 9M1

Prepared by:

Ron Driedger, Executive Director
BCUOMA
Suite 125, #9 – 45905 Yale Road
Chilliwack, BC V2P 8E6

June 30, 2009

TABLE OF CONTENTS

1. Executive Summary..... 3

2. Program Outline..... 3

3. Educational Materials & Strategies..... 5

4. Collection System Information..... 7

5. Life Cycle Management..... 7

6. Pollution Prevention Hierarchy..... 8

7. Recovery Rate..... 11

8. Fee Information..... 12

9. Performance Targets..... 12

BCUOMA Report to Director, Environmental Quality Branch

1. Executive Summary

The Table below is taken from the BCUOMA three year Business Plan and summarizes the sales and recovery numbers for 2008 for oil, filters and oil containers, as well as estimates for 2009 to 2011.

Product	Year	Sales	Recoverable Portion – Millions	Percentage Recovered	Quantity Recovered – Millions
Oil:	2008	96.59 Million L	67.5 L	72.5%*	49.0 L
	2009 projected	91.76 Million L	64.1 L	73.0%*	49.0 L
	2010 projected	96.35 Million L	67.3 L	73.7%*	49.0 L
	2011 projected	100.20 Million L	70.0 L	73.7%*	49.0 L
Oil filters:	2008	5.767 Million (4.351 million kg)	5.767	98.1%	5.235
	2009 projected	5.421 Million (4.090 million kg)	5.421	96.2%	5.270
	2010 projected	5.692 Million (4.294 million kg)	5.692	94.4%	5.301
	2011 projected	5.919 Million (4.465 million kg)	5.919	94.4%	5.332
Oil containers:	2008	36.24 Million L (2.006 million kg)	2.006 kg	73.1%	1.468kg
	2009 projected	34.07 Million L (1.886 million kg)	1.886kg	75.0%	1.415 kg
	2010 projected	35.43 Million L (1.961 million kg)	1.961kg	77.0%	1.511 kg
	2011 projected	36.49 Million L (2.020 million kg)	2.020kg	79.1%	1.597kg

2. Program Outline

The British Columbia Used Oil Management Association (BCUOMA) is a not-for-profit Society formed under the British Columbia *Society Act* in 2003. BCUOMA's role is to perform on behalf of each producer (brand-owner) member of BCUOMA certain duties required under the Regulation. Effective June 8, 2009, there were 186 producer members of BCUOMA. The producer members are listed in alphabetical order on www.usedoilrecycling.com/en/bc/members.

An eight member Board of Directors manages BCUOMA, with representatives from the manufacturing, retailing, local government and a public-at-large. An Executive Director reports to the Board and is responsible for operations management, financial management, communications, staff management and general administrative oversight. In order to streamline operations and minimize costs, BCUOMA shares an office in Edmonton with the Alberta Used Oil Management Association (AUOMA). Contact information for BCUOMA's offices is listed on www.usedoilrecycling.com/en/bc/contactus.

BCUOMA Report to Director, Environmental Quality Branch

Producers, through networks of both company-owned and independently-owned retail and wholesale facilities, bring lubricating oil and filters into the province for sale or distribution. Retail facilities range from self-serve gas bars to mass merchandise marketers, quick lubes and automotive, farm, marine and commercial equipment dealers. Wholesale lubricating oil facilities comprise both branded bulk plants and independently owned and producer warehouses. Oil is sold in containers as small as less than 500 ml bottles, to as large as 50,000 litre rail cars, with the Regulation applying to the containers 30 litres or less in size.

As required by Regulation, BCUOMA has operated a province-wide collection and recycling program for used oil, used oil filters and used oil containers since August 2003 for both the do-it-yourselfer market, as well as the commercial and industrial markets. This is similar to the tire stewardship program but different from some of the other stewardship programs such as Product Care and the Medications Programs, which do not serve the commercial and industrial markets.

The used oil materials; used oil, used oil filters and used oil containers, are regularly picked up from over 4,000 generators across British Columbia by BCUOMA Registered Collectors (collectors). BCUOMA pays the collectors Return Incentives (RIs) twice a month, as long as the collector has provided BCUOMA with the required supporting information, and has shipped the collected materials to a BCUOMA Registered Processor (processor) for an approved end use. For an approved end use to be eligible, the end use must be environmentally sound and be substantially in compliance with environmental requirements.

The amount of the RIs varies depending upon which zone of the province the used oil materials is generated. The more remote the area of the province, the higher the RI rate which is paid to the collector. Since all members pay the same EHC for the sale of oil, oil filters and oil containers; the intent of the program is that people living in the populated south-west area of the province help support the collection and recycling in the rest of the province. Under most market conditions, the RIs are set high enough for a payment from the collectors to the generators. However, volume, quality, amount of competition and location are all determining factors as to how much, if any of the RI, is passed on to the generator from the collector. The RI zone map and the rates paid per zone for each of the three used oil materials can be found on www.usedoilrecycling.com/en/bc/collectors.

BCUOMA registers the collectors and processors before they are eligible to receive RIs. Under the *Hazardous Waste Regulation*, used oil and used oil filters are considered a hazardous waste; as well, the oil containers often contain a certain amount of new oil. In addition, measures are required to ensure the proper equipment and vehicles are used to pick them up. As a result, it is important that any collectors and processors handling used oil materials are doing so in compliance with the required environmental standards.

BCUOMA requires as a condition of registration, and every two years thereafter, that each collector must engage an independent third party qualified professional to conduct an environmental audit of their operations and state in a Letter of Regulatory Compliance that

BCUOMA Report to Director, Environmental Quality Branch

the operation is in substantial compliance with all applicable provincial and federal environmental Legislation and Regulations. Also, the collector and processor must submit a current Business Licence. If either of these two conditions is not met, BCUOMA will not register the collector or processor.

The Report to the Director will be posted on the BCUOMA website in early July 2009 at www.usedoilrecycling.com/en/bc/aboutus.

3. Educational Materials and Strategies

In the development of a communication and education program there are a number of different key groups that BCUOMA is trying to reach. They include the over 4,000 commercial generators of used oil materials, local governments, and the British Columbians that top-up or change their own oil.

The key elements of the consumer awareness and education program for 2008 included the following:

- a. A partnership with the Recycling Council of BC for the Recycling Hotline and a website to inform the do-it-yourselfers of the nearest location to take back their used oil materials.
- b. A Summer Ambassador Program where a team of young people in a hybrid vehicle toured the province to meet with return collection facility operators, local governments and the general public at special events. The purpose of their visits is to ensure that the return collection facilities are up-to-date with information, brochures and signs, and that local governments and the general public are informed about the program. In 2008 BCUOMA partnered with the Medications Group and Product Care to hand out their brochures and information when meeting with local governments and the general public.

A total of 83 municipalities throughout BC were visited between June 1 and August

31. During that time the team:

- i. visited 423 return collection facilities;
- ii. met with officials from 11 regional districts and 7 municipalities and provided them with brochures and other information about the program;
- iii. secured 39 media hits across the province yielding more than 1.5 million media impressions; and
- iv. attended 7 community events, reaching approximately 5,400 people.

A detailed report on the 2008 program can be accessed at www.usedoilrecycling.com/en/bc/communicationspublicity.

- c. In late 2008, BCUOMA sent out an E-Newsletter in both the spring and late fall to all Regional Districts, collectors, processors and as many return collection facilities and municipalities as possible. The purpose of the newsletter was to inform stakeholders about best practices, available signage and other information about the program, and to receive their input on how the program can be improved. The 2008 newsletter can be accessed at www.usedoilrecycling.com/en/bc/communicationspublicity.
- d. In 2008 BCUOMA aired 2,900 - 30 second radio ad spots as a means of reaching the do-it-yourselfer and the smaller generators of used oil materials who still are not fully aware of how they can have their used oil materials collected and recycled in a responsible way. An important message for British Columbians is to return their uncontaminated used oil materials during regular business hours, since one litre of spilled used oil can contaminate a million litres of drinking water.

More than 20 million impressions were made in the areas where the markets could be measured.

- e. BCUOMA will continue to use the website, brochures, table top displays, other visual displays, and relevant public hand-outs as a means of spreading the message to the public on used oil material recycling. In this messaging, BCUOMA emphasizes that the EHC is not a government tax.

In communication with generators of used oil who charge oil change service fees that are incorrectly termed “environmental handling charges”, BCUOMA will continue to emphasize that if they do show these charges they should fairly represent the EHC that BCUOMA requires the producers to remit. This message is prominently shown on www.usedoilrecycling.com/en/bc/aboutus.

4. Collection System Information

As of December 31, 2008, there were about 500 of the over 4,000 generators that were return collection facilities for the do-it-yourselfer to take back small quantities of used oil materials at no cost. The return collection facilities list can be accessed on www.usedoilrecycling.com or by calling the Recycling Council of BC toll free hotline number.

Most of the province is well served with return collection facilities, with approximately 30 sites that are either run by local government or not-for-profit groups at their landfill sites, transfer stations or recycling centers. All of the Canadian Tire stores, Mr. Lube stores, most Great Canadian Oil Change stores, and many other commercial automotive service centers are included in the locations available to the do-it-yourselfer.

In the 2003 approved stewardship plan it was stated that a minimum of 100 collection facilities will be established and operational by the end of December 2003, and after the first year of operation there will be a minimum of 200 collection facilities. BCUOMA has and continues to exceed that number by about 300 collection facilities.

However, there are a few remote areas of the province where coverage could be improved. In most of these remote areas, there are few automotive service centers that sell oil or service vehicles. BCUOMA will explore options with local governments for collecting the used oil materials and shipping them to the nearest markets. In these instances, BCUOMA will consider providing financial assistance for the purchase of an oil tank or other relevant infrastructure for the collection of the used oil materials. In 2008 BCUOMA assisted the communities of Sayward and Summerland by paying for their purchase of a double-walled oil tank. In addition, BCUOMA provided \$44,420 to the Thompson Nicola Regional District for the purchase of double-walled oil tanks and roll-top containers for nine of their remote transfer stations/landfill sites.

5. Life Cycle Management

a. Oil

With the downturn in the British Columbia's economy in 2008, the number of litres of oil sold dropped from 99.7 million litres in 2007 to 96.6 million litres in 2008. The newer vehicles and industrial engines have a longer driving distance and/or time period between oil changes and they have been designed to consume much less oil.

For motor vehicles that were made since 2000, it is estimated that only 5.3% of the oil is consumed in use. For older vehicles it is almost double that amount at 9.7%. The three main areas where consumed-in-use is high are in the railroad, natural gas and marine industries. These three industries alone consume almost one-half of the total consumed-in-use.

b. Oil Containers

For oil containers, the number sold decreased from 2.19 million kg in 2007 to 2.01 million kg in 2008. In the last several years there has been a trend for oil companies to ship more of their oil in lube cubes, drums and by truck and rail, to the point where about 64% of the oil is shipped in bulk. Given that there are no EHCs on containers larger than 30 litres, this may be a factor in encouraging oil companies to ship more of their oil in bulk. In addition, there is a cost saving in not having to pay for the cost of supplying and handling the bulky, messy oil containers.

c. Oil Filters

For oil filters, the number sold decreased from 6.24 million kg in 2007 to 5.77 million kg in 2008. For many of the newer cars there is a trend to using smaller paper filters that take fewer resources to manufacture and cost less to ship and handle.

6. Pollution Prevention Hierarchy

a. Used Oil

One of the conditions of payment of RIs to collectors is that they only deliver the used oil, used oil filters and oil containers to BCUOMA registered processors that sell them for approved end uses. For used oil, approved end uses include re-refining and using it as a fuel for pulp mills, cement kilns, asphalt plants and other uses that meet the intent of the *Hazardous Waste Regulation* or applicable government standards in other states or provinces, such as for explosives in mining or exploration drilling.

In all cases, the oil must be analyzed in accordance with government-approved methods and shown to meet the required industry and/or government specifications. Application of used oil to any land for the purpose of road construction, repair or dust suppression is prohibited by the *Hazardous Waste Regulation* and is not considered a BCUOMA approved use. In addition, there are no emission controls on used oil furnaces, and the operators in almost all cases do not analyze the used oil to ensure it meets Ministry standards. As a result, the use of used oil in oil-fired furnaces is not considered a BCUOMA approved end use.

Based on most life-cycle analysis studies around the world, re-refining and using the used oil as a fuel for industrial operations like cement kilns and pulp mills, is considered to be very similar. It was also found that in a few European countries that favored re-refining over fuel use, they had lower overall collection rates.

Below is a table that summarizes the end uses for the used oil for 2008.

END USES OF PROCESSED USED OIL

END USES	AMOUNT IN MILLIONS OF LITRES
Re-refined Into New Oil	29.7
Pulp Mills	8.6
Cement Plants	0.2
Asphalt Plants	9.7
Other Approved End Uses	0.7
TOTAL	48.9

b. Used Oil Containers

The plastic oil containers are processed at approved facilities in both British Columbia and Alberta. The main challenge in processing oil containers is separating the oil from the plastic. This is achieved by first shredding the containers, followed by centrifuging and washing the shredded plastic. Once a sufficient amount of oil has been removed from the shred, it can be pelletized to make new oil containers, drainage tile, parking curbs and other plastic products. The other option is to use unwashed plastic shred to make items such as plastic lumber where some of the oil is still encased in the finished product and can't be leached out.

In 2008 a consultant was engaged to conduct a study of the oil container collection program. Of the two categories of plastic containers collected, approximately 30% of the weight of plastic is comprised of 20 litre pails. The remaining 70% consisted of oil containers ranging in size from 5.0 litres down to less than 500 ml, which are collected in large clear plastic bags. The company who performed the study surveyed 1,000 of these bags, located at the two largest plastic processors.

It was determined that the average weight of the bags was 6.4 kg, of which 4.6 kg (72 per cent) was composed of eligible oil containers; nearly all the remaining 28 per cent was composed of other automotive fluid containers, such as antifreeze, windshield washer and oil/fuel additive containers. These other "ineligible" plastic containers are naturally used in conjunction with the eligible containers, and are found at the same generators sites. Rather than force the generators to sort these plastic containers out of the clear plastic bags, the preferred option is to continue collecting these containers until the Ministry of Environment can amend the *Recycling Regulation* to include them in the Schedule.

The study also determined that about 1 per cent of the oil bottles are made of a PET plastic resin marketed by one company. Since the rest of the oil bottles are made from HDPE plastic resin, the PET bottles have to be hand sorted and separately recycled at an extra cost of about \$0.07/litre of container. A further review will be

undertaken to determine if an extra EHC should be assessed on this incompatible plastic oil bottle.

c. Used Oil Filters

Since used oil filters are considered a hazardous waste and are quite costly to crush for use in a steel mill, BCUOMA does not pay the collector the RI until either a steel mill or a metal broker has signed off that they have received the crushed oil filters. BCUOMA wants to avoid the situation where a processor will simply sign-off the shipment as received, have the collector receive the RI and then simply store the un-crushed filters.

If the processor sufficiently crushes the filters to the point where there is less than 3% oil by weight and the Ministry of Environment no longer considers them a hazardous waste, BCUOMA considers sign-off by the metal broker as sufficient to warrant payment of the RI to the collector. However, if the Ministry hasn't granted the exemption under the *Hazardous Waste Regulation*, and the crushed filters are still considered a hazardous waste, BCUOMA won't pay the RI to the collector until the steel mill has signed off as having received the crushed filters.

Most of the filters are mainly constructed of steel, and are highly recyclable by the steel mills for recycling into reinforcing steel, nails and other steel products. However, a filter study undertaken in 2007 has shown that about 8% of the filters recovered are made of paper. For nearly all of the filter processors, they are still able to mix most of the paper filters in with the crushed steel filters. However, a major Lower Mainland filter processor has too many paper filters so that they have to be hand-sorted, crushed separately to less than 3% oil by weight and shipped to a waste to energy facility as a fuel source.

There are a small percentage of paper filters from a few processors with plastic inner tubes which can't be mixed in with the steel filters. These filters are currently being sent to a secure landfill in Alberta. BCUOMA will work with these filter processors to determine if they can be used as an energy source like some processors are currently doing.

7. Recovery Rate

a. Oil

For used oil in 2008, it is estimated that 30.1% of the oil sold is consumed-in-use and not available for collection. This number was determined by a Consumed-In-Use Study that was undertaken on behalf of BCUOMA by a consultant in 2005, and the report is available on www.usedoilrecycling.com/en/bc/aboutus. In 2008, 96.6

million litres of oil was sold and based on the above report, 67.5 million litres was considered available for collection. Of the 67.5 million litres, 48.9 million litres was collected and recycled through the BCUOMA system.

In order to better determine where the unaccounted for used oil was going, BCUOMA engaged a consultant to make that determination. In April 2006, an Unaccounted Used Oil Study was released that gave estimated uses of 18.75 million litres. A copy of this report is posted on www.usedoilrecycling.com/en/bc/aboutus.

Approximately 15.5 million litres of this used oil was estimated to be used as burner fuel for used oil furnaces, other energy uses in industrial facilities and ships, explosives manufacturing, and other industrial uses. A total of 3.25 million litres was estimated to be soaked in floor dry and rags, road oiling, weed control, fire starter, ground pits, and illegal dumping by do-it-yourselfers and others.

Based on the above information, there does not appear to be much potential to increase the recovery rate a significant amount above the current rate, unless the use of used oil in used oil furnaces ceases. Only about 24% of the oil sold in the province is for passenger car and light trucks, and of that amount only about 25% of motorists change their own oil. Therefore, the amount of used oil generated by the do-it-yourselfer market that is available for collection is about 3.6 million litres per year.

b. Oil Containers

Of the 2.01 million kg of oil containers sold in 2008, all of them are potentially recoverable. There has been a steady increase in the recovery rate since the program began in August 2003, from 12% to 73.1% in 2008.

There may be a small percentage of the 20 litre pails that are re-used by some of the farmers, fishers and loggers, although the percentage of use is unknown at this time.

c. Oil Filters

Of the 5.767 million oil filters (4.351 million kgs) sold in 2008, all of them are potentially recoverable. As with oil containers, there has been a steady increase in the recovery rate since the program began, from 18% to 98.1%. It should be noted that this recovery rate is slightly skewed due to the sharp drop in sales in 2008 and the collection in 2008 of the higher number of filters sold in 2007.

d. Amount Collected by Zone

In the Table below the amount of used oil, used oil filters and oil containers collected by zone is shown. The zone map can be accessed by going to www.usedoilrecycling.com/en/bc/collectors. However, it is only possible to

BCUOMA Report to Director, Environmental Quality Branch

determine recovery rate by province since the sales can only be determined province-wide. In almost all of the zones there is more than 1 Regional District. To determine the amount collected in a particular Regional District, you can multiply the percentage of the population for that Regional District in that zone, by the amount collected for that zone.

Summary of Collections Jan - December 2008						
	Oil		Filters		Containers	
	<i>in litres</i>	<i>%</i>	<i>in kilograms</i>	<i>%</i>	<i>in kilograms</i>	<i>%</i>
Zone 1	21,761,054	44.50%	2,004,461	47.91%	678,057	46.20%
Zone 2	2,509,129	5.13%	217,174	5.09%	107,597	7.33%
Zone 3	3,404,462	6.96%	160,474	3.76%	74,004	5.04%
Zone 4	8,250,576	16.87%	754,384	17.68%	275,785	18.79%
Zone 5	1,450,753	2.97%	55,656	1.30%	10,224	0.70%
Zone 6	2,672,031	5.46%	241,176	5.65%	80,492	5.48%
Zone 7	4,467,803	9.14%	422,996	9.91%	109,531	7.46%
Zone 8	2,696,835	5.51%	227,858	5.34%	80,448	5.48%
Zone 9	1,231,503	2.52%	112,878	2.65%	40,717	2.77%
Zone 10	454,394	0.93%	30,260	0.71%	7,245	0.49%
Zone 11	7,049	0.01%	220	0.01%	3,420	0.23%
Total	48,905,589	100.00%	4,267,537	100.00%	1,467,520	100.00%

7. Fee Information

The BCUOMA program is funded by an Environmental Handling Charge (EHC). It is a condition of membership in BCUOMA that producer members remit quarterly to BCUOMA an EHC of \$0.05/litre for oil, \$0.05/litre of oil container and \$0.50 for a filter less than 8 inches and \$1.00 if the filter is 8 inches or longer. Whether or not the producer passes on the EHC down the distribution chain to the wholesaler, retailer and consumer is up to the producer member. An explanation about the EHC is found on www.usedoilrecycling.com/en/bc/aboutus.

The 2008 Annual Report, including the independently audited financial statements, has been posted on www.usedoilrecycling.com/en/bc/aboutus.

8. Performance Targets

BCUOMA Report to Director, Environmental Quality Branch

Each June, BCUOMA finalizes a new three year Business Plan that summarizes the performance for the previous year and projects the recovery rates, financial performance, and other targets for the current year and following two years. The 2009 to 2011 Annual Business Plan is posted shortly on www.usedoilrecycling.com/en/bc/members.

The key BCUOMA performance measures are recovery rates, number of Return Collection Facilities for the do-it-yourselfer, an adequate number of collectors & processors, amount of EHCs collected, and the ratio of the flow-through of EHC to the payment of RIs to collectors. Each of these performance measures will continue to be tracked and reported in the Annual Business Plan.

2008 Target Set in Business Plan	2008 Target Achieved
Projected EHC revenue = \$10.26 million	Actual EHC revenue = \$9.93 million
Projected Administration costs as a % of EHC revenue = 5.38%	Actual Administration costs as a % of EHC revenue = 4.67%
Projected Oil Sales = 99.0 million litres	Actual Oil Sales = 96.6 million litres
Projected Oil Recovery Rate = 70.5%	Actual Recovery Oil Rate = 72.5%
Projected Filter Sales = 6.2 million	Actual Filter Sales = 5.8 million
Projected Filter Recovery Rate = 85.0%	Actual Filter Recovery Rate = 98.1%
Projected Oil Container Sales = 2.10 million kg	Actual Oil Container Sales = 2.01 million kg
Projected Oil Container Recovery Rate = 66.0%	Actual Oil Container Recovery Rate = 73.1%
Projected Number of Return Collection Facilities = 520	Actual Number of Return Collection Facilities = 500
Projected Number of Registered Collectors & Processors = 40	Actual Number of Registered Collectors & Processors = 37
Projected Excess Revenue Over Expenditures = \$283,000	Actual Excess Revenue Over Expenditures = (\$284,000)

The targets relating to recovery rates for oil, filters and oil containers were all exceeded in 2008, while sales of oil, filters and oil containers were all less than expected. Actual administration costs, as a percentage of EHC revenue, was less than projected. There was a drop of 20 Return Collection Facilities from 520 in 2007 to 500 in 2008; however,

BCUOMA Report to Director, Environmental Quality Branch

BCUOMA is still well above the 2003 approved Stewardship Plan target of 200 after the first year of operation. The main reason for this drop is due to an increasing number of auto servicing centers being converted to gas bars and grocery stores. The Ambassador Team regularly visits most of the sites each year to confirm whether or not they are still accepting used oil materials from the do-it-yourselfer to insure that the list is as current as possible.

The number of collectors & processors has dropped slightly from the 40 to 37. However, almost all areas of the province are adequately covered with registered collectors who regularly pick up used oil, filters and oil containers. Experience has shown that the requirement for an initial environmental audit, and every two years thereafter, by a third party qualified professional has resulted in some of the very small Collectors & Processors opting out of the Program.

The difference in excess revenue over expenditures was just over 5% of what was projected. The main reason for the loss of \$284,000 in 2008, compared to a predicted surplus of \$283,000, was due to the significantly higher recovery rates for all three used oil materials.