



BCUOMA

British Columbia Used Oil
Management Association

REPORT TO DIRECTOR

2010 CALENDAR YEAR

Submitted to:

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1. Executive Summary

The Table below is taken from the BCUOMA three year Business Plan and summarizes the sales and recovery numbers for 2010 for oil, filters and oil containers, as well as estimates for 2011 to 2013.

Product	Year	Sales (Millions)	Recoverable Portion – Millions	Percentage Recovered	Quantity Recovered – Millions
Oil:	2010	85.05 L	59.40 L	79.3%	47.10 L
	2011 projected	86.07 L	60.16 L	79.0%	47.53 L
	2012 projected	86.93 L	60.76 L	79.0%	48.00 L
	2013 projected	87.80L	61.37 L	79.0%	48.48 L
Oil filters:	2010	6.098 (4.600 kg)	6.098	85.6%	5.217
	2011 projected	5.973 (4.506 kg)	5.973	90.0%	5.376
	2012 projected	6.033 (4.551 kg)	6.033	90.0%	5.530
	2013 projected	6.093 (4.597 kg)	6.093	90.0%	5.484
Oil containers:	2010	31.72 L (1.736 kg)	1.773 kg	88.3%	1.533 kg
	2011 projected	32.03 L (1.753 million kg)	1.753 kg	85.2%*	1.494 kg
	2012 projected	32.36 L (1.771 kg)	1.771 kg	82.2%*	1.456 kg
	2013 projected	32.69 L (1.789 kg)	1.789 kg	82.2%*	1.471 kg
Antifreeze	2011 (1/2yr) projected)	5.748 L	2.587 L	55%	1.423 L
	2012 projected	11.400 L	5.130 L	57%	2.924 L
	2013 projected	11.200 L	5.045 L	60%	3.027 L
Antifreeze Containers	2011 (1/2yr) projected	2.250 L	2.250 L	47%	1.058 L
	2012 projected	5.400 L	5.400 L	56%	3.024 L
	2013 projected	5.400 L	5.400 L	60%	3.240 L

*Reduction due to antifreeze container recycling as of July 1, 2011.

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 *Recycling Regulation*. Effective April 21, 2011, there were 207 oil, filter and antifreeze producer members of BCUOMA. The producer members are listed in alphabetical order on www.usedoilrecycling.com/en/bc/members.

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A nine member Board of Directors manages BCUOMA, with representatives from manufacturing, retailing, local government and 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.

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 documentation, 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.

In the case of used oil filters, BCUOMA also requires the sign-off by a steel mill or metal broker before BCUOMA will pay the RI to the Collector. This is done to ensure that the filters are actually crushed and delivered to a destination where there is assurance that they are no longer a hazardous waste, and that they will be beneficially recycled into new steel materials.

The amount of the RI varies depending upon which zone of the province the used oil materials are 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 Environmental Handling Charge (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

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enough so that there is no cost 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 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. These same requirements will be in place for all registered antifreeze collectors and processors at the July 1, 2011, program implementation date.

The Report to the Director will be posted on the BCUOMA website in early July 2011 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 generators of used oil materials some of which are return collection facilities for the do-it-yourselfer, 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 2010 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, respond to media

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interview requests, and meet 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 2010, BCUOMA again partnered with the Medications Group to hand out their brochures and information when meeting with local governments and the general public.

During the 16 week summer period, the team travelled to 121 municipalities and:

- i. visited or contacted over 457 return collection facilities;
- ii. met with 17 local government officials and provided them with brochures and other information about the program;
- iii. took part in 41 media interviews;
- iv. attended 8 community events;
- v. recruited 18 new return collection facilities for the do-it-yourselfer to take their used oil materials; and
- vi. advised the return collection facilities of the July 1, 2011, implementation date for the antifreeze program and obtained from them the amount of antifreeze they generate per month.

A detailed report on the 2010 program can be accessed at:
www.usedoilrecycling.com/en/bc/communicationspublicity

- c. In 2010, BCUOMA partnered with seven other BC Stewards to produce British Columbia's Recycling Handbook. In addition to the Handbook, BCUOMA brochures and oil spouts were handed out to local government officials, members of the public and return collection facility operators. All of this information references the toll free hotline number and the website as the source of the nearest return collection facility for the do-it-yourselfer.

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 and in the BCUOMA Brochure It also emphasizes that this is not a government tax.

4. Collection System Information

As of December 31, 2010, there were about 488 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.

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Most of the province is well served with return collection facilities, with approximately 40 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 April 15, 2011, approved stewardship plan for both used oil and antifreeze materials, it was indicated that BCUOMA would like to maintain between 400 to 500 return collection facilities for the used oil material do-it-yourselfers and approximately 350 return collection facilities for antifreeze do-it-yourselfers when the program commences on July 1, 2011.

However, there continues to be 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 does have a policy to provide financial assistance to local governments for the purchase of an oil tank or other relevant infrastructure for the collection of the used oil materials. As well, as of July 1, 2011, BCUOMA will pay the return collection facility operators \$0.10/l for their used oil if they collect used oil, oil filters and oil containers and \$0.15/l for their used antifreeze if they collect used antifreeze and antifreeze containers.

BCUOMA is seldom notified by the operator when a return collection facility shuts down, relocates, changes ownership or decides they will no longer accept used oil materials from the do-it-yourselfers. As a result, BCUOMA has the Ambassador Team visit or contact most of the operators each year to ensure that they are still with the program and have the necessary signage, brochures and other information about the program. The list of return collection facilities is regularly updated based on this information, as well as other information from the Recycling Hotline, local governments and members of the public. Another important factor in keeping the return collection facility list current is the twice/year payments that BCUOMA will make directly to the facility operators as of July 1, 2011.

5. Life Cycle Management

a. Oil

In 2010 the sales of lubricating oil rebounded slightly to 85.05 million litres from the low point of 83.55 million litres in 2009 and a high of 101.8 million litres in 2005. Approximately 75% of the oil sales in British Columbia in 2010 are for industrial and commercial uses and only 25% is for passenger cars and light trucks. 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 in use.

Only a portion of every litre of oil sold is available for recovery because approximately 30.1 per cent of the oil is consumed during use. Of the 59.4 million

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litres available for recovery, 47.1 million litres were collected and recycled, with a recovery rate of 79.3 per cent, compared to 76.9 per cent the previous year. The remaining 12.3 million litres did not come back through the BCUOMA collection and recycling program. Rather, much of it was used in processes such as manufacturing explosives, oil space heaters, chain oil, and other industrial applications. After over seven years of operation, much more used oil is being recovered by the program when compared to the first few years. In addition, less of the used oil is disposed of in an unsafe manner than occurred before the program commenced in mid 2003.

b. Oil Containers

For oil containers, the number sold slightly decreased from 1.776 million kg in 2009 to 1.736 million kg in 2010. Since the program began in mid-2003 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 only about 37.3% of the oil is shipped in containers of 30 litres or less in size. The companies shipping the other 62.7% of the oil in bulk save money by not having to pay for the cost of manufacturing, supplying and handling the bulky, messy oil containers.

c. Oil Filters

For oil filters, the number sold slightly increased from 5.658 million filters (4.268 million kg) in 2009 to 6.098 million filters (4.600 kg) in 2010.

6. Pollution Prevention Hierarchy

a. Used Oil

One of the conditions of payment of RIs to registered BCUOMA 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.

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 end use. In addition, there are no emission controls on used oil furnaces (space heaters), 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.

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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 2010.

END USES OF PROCESSED USED OIL

END USES	AMOUNT IN MILLIONS OF LITRES
Re-refined Into New Oil	31,127,000
Pulp Mills	6,093,000
Cement Plants	0
Asphalt Plants	6,701,00
Other Approved End Uses	3,179,000
TOTAL	47,100,000

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.

As mentioned in the previous Report to the Director, a 2008 study 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.

The company selling oil in these PET containers were again notified in writing in May, 2011, of these extra costs and were given an option of a proposal to the membership to increase the EHC on these containers by \$0.07 per litre of container to reflect these higher costs, or to phase out these containers. The company recently advised BCUOMA that these containers will be phased out in 2012. This is an example of where "design for environment", can work if companies are given choices that reflect the true costs of recycling.

The 2008 study also determined that about 19% of all containers collected are composed of other automotive fluid containers, such as antifreeze, windshield washer and oil/fuel additive containers, plus a small amount of other plastics and garbage. These "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 and toss them in the garbage, the preferred option is to continue collecting these containers.

With the December 2009 amendment to the *Recycling Regulation* to include automotive antifreeze containers in a stewardship program effective July 1, 2011, this will reduce the number of ineligible containers. The Ministry of Environment is being encouraged to bring in a further amendment to the *Recycling Regulation* to include all automotive fluid containers.

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 does not 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.

7. Recovery Rate

a. Oil

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 2010, 85.05 million litres of oil was sold and based on the above report, 59.4 million litres was considered available for collection. Of the 59.4 million litres, 47.1 million litres was collected and recycled through the BCUOMA system for a recovery rate of 79.3%.

It is expected that another Consumed-in-Used Study will be undertaken in 2012, at the same time as a similar study will be undertaken for antifreeze. In addition, BCUOMA has agreed to undertake another Unaccounted for Used Oil Study to determine the uses for the oil that is not going through the BCUOMA program. While this amount of oil has dropped significantly since program inception, there is still about 12.3 million litres that is used for such things as space heaters, making explosives at coal mines, chain oil and other on-site industrial uses. Also, a small portion of these 12.3 million litres is oil being soaked up by oily rags, floor dry material and oil that remains with the discarded oil containers and filters.

b. Oil Containers

Of the 1.736 million kg of oil containers sold in 2010, 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 88.3% in 2010.

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 6.098 million oil filters (4.600 million kgs) sold in 2010, all of them are potentially recoverable. The recovery rate for 2010 was 85.6%.

d. Population by Zone and Regional District

In the Table below, the litres of used oil, kg of filters and kg of oil containers collected in each of the Regional Districts in 2010 are shown. In addition, the per capita amounts of litres of oil, kg of filters and kg of oil containers are also outlined for each of the Regional Districts.

In making these determinations, BCUOMA divides the province up into eleven zones and determines the amount collected in each of these zones. BCUOMA then uses

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these numbers to calculate the amount collected in each Regional District by knowing the population of each Regional District as a percentage of the total population of the zone. The assumption is then made that the per capita generation rate in a particular zone is the same for each of the Regional Districts located within that zone. In a few instances, a Regional District is located within two of the eleven zones. In several Regional Districts, where there is a heavy concentration of industry and a low population, the per capita generation rate of used oil materials is very high.

2010 COLLECTIONS BY REGIONAL DISTRICT						
REGIONAL DISTRICT	Oil - Litres	Oil - Litres Per Capita	Filters - kg	Filters kg per Capita	Containers - kg	Containers kg Per Capita
Alberni-Clayoquot	403,290	12.75	35,429	1.12	14,355	0.45
Bulkley-Nechako	510,419	13.03	47,928	1.22	20,604	0.53
Capital	2,831,375	7.60	252,991	0.68	88,602	0.24
Cariboo	982,460	15.01	77,528	1.18	36,760	0.56
Central Coast	49,238	15.51	2,485	0.78	871	0.27
Central Kootenay	1,021,574	16.92	77,379	1.28	25,597	0.42
Central Okanagan	2,296,463	12.38	173,986	0.94	86,700	0.47
Columbia-Shuswap	756,196	14.09	57,285	1.07	24,218	0.45
Comox Valley	824,071	12.75	72,394	1.12	29,333	0.45
Cowichan Valley	630,175	7.60	56,308	0.68	19,720	0.24
East Kootenay	1,019,696	16.92	77,236	1.28	25,550	0.42
Fraser Valley	2,275,815	7.99	208,179	0.73	77,896	0.27
Fraser-Fort George	1,741,037	18.03	141,728	1.47	64,678	0.67
Metro Vancouver	18,962,487	7.99	1,734,586	0.73	649,041	0.27
Kitimat-Stikine	637,662	16.09	52,504	1.32	20,549	0.52
Kootenay-Boundary	539,483	16.92	40,863	1.28	13,518	0.42
Mount Waddington	153,705	12.75	13,503	1.12	5,471	0.45
Nanaimo	1,324,614	8.85	117,663	0.79	43,438	0.29
North Okanagan	1,029,565	12.38	78,003	0.94	38,870	0.47
Northern Rockies	1,114,310	179.47	46,922	7.56	10,040	1.62
Okanagan Similkameen	1,024,872	12.38	77,647	0.94	38,693	0.47
Peace River	3,260,845	51.46	164,069	2.59	68,380	1.08
Powell River	317,318	15.51	16,012	0.78	5,614	0.27
Skeena-Queen Charlotte	193,635	9.93	19,087	0.98	8,049	0.41
Squamish-Lillooet	499,755	12.38	37,863	0.94	18,868	0.47
Stikine	110,193	179.47	4,640	7.56	993	1.62
Strathcona	565,843	12.75	49,709	1.12	20,141	0.45
Sunshine Coast	371,312	12.38	28,132	0.94	14,018	0.47
Thompson-Nicola	1,630,197	12.38	123,508	0.94	61,546	0.47
TOTAL	47,077,607		3,885,564		1,532,112	

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8. 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 to cover the costs of the collection and recycling program. In 2010, the EHC for oil was \$0.05/litre, \$0.10/litre for oil containers, \$0.55/filter for filters 8 inches or less in size, and \$1.25 for filters 8 inches or larger. As of July 1, 2011, the EHC on both concentrate and pre-mix antifreeze will be \$0.20/litre and for the antifreeze containers it will be \$0.10/litre of container.

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 2010 Annual Report, including the independently audited financial statements, has been posted on www.usedoilrecycling.com/en/bc/aboutus.

9. Performance Targets

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 2011 to 2013 Annual Business Plan has been posted 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.

2010 Target Set in Business Plan	2010 Target Achieved
Projected EHC revenue = \$10,991 million	Actual EHC revenue = \$11,159 million
Projected Administration costs as a % of EHC revenue = 4.78%	Actual Administration costs as a % of EHC revenue = 4.62%
Projected Oil Sales = 85.22 million litres	Actual Oil Sales = 85.05 million litres
Projected Oil Recovery Rate = 74.0%	Actual Oil Recovery Rate = 79 %
Projected Filter Sales = 5.914 million	Actual Filter Sales = 6.098 million
Projected Filter Recovery Rate = 92%	Actual Filter Recovery Rate = 86%
Projected Oil Container Sales = 1.755 million kg	Actual Oil Container Sales = 1.736 million kg

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Projected Oil Container Recovery Rate = 83%	Actual Oil Container Recovery Rate = 88%
Projected Number of Return Collection Facilities = 500	Actual Number of Return Collection Facilities = 488
Projected Number of Registered Collectors & Processors = 37	Actual Number of Registered Collectors & Processors = 37
Projected Excess Revenue Over Expenditures = \$1,203,000	Actual Excess Revenue Over Expenditures = \$1,230,000

In 2010, the average program cost to collect and recycle a litre of oil was \$0.077 compared to \$0.076 in 2009, for a filter in 2010 it was \$0.569 compared to \$0.565 in 2009 and for a kg of oil container in 2010 it was \$1.62 compared to the same \$1.62 in 2009. The program is structured in such a way that all British Columbians pay the same EHC when they buy the oil, filters and containers, but the costs for collection are much higher in the remote locations of the province.

10. Green House Gas Savings

In 2010, BCUOMA engaged Conestoga Rovers to undertake a Green House Gas (GHG) Savings Study. In their report, released in August 2010, they determined that 2.47 kg CO₂ savings per litre of oil collected and recycled, 1.09 kg CO₂ savings per kg of filters collected and recycled and 2.11 kg CO₂ savings per kg of oil container collected and recycled.