



Automotive
Materials
Stewardship

2021 ANNUAL REPORT

About Automotive Materials Stewardship

Automotive Materials Stewardship (AMS) is a not-for-profit organization that manages the collection and recycling of used antifreeze, oil filters and oil containers on behalf of producers.

We're industry-led and industry-funded, helping obligated businesses contribute to a circular economy by taking responsibility for the end-of-life management of automotive materials they sell.

AMS creates convenient, environmentally sustainable ways for consumers and businesses to recover valuable resources and divert these materials from landfill.

AMS started managing automotive materials in Ontario in 2017 under an Industry Stewardship Plan (ISP). As of October 1, 2021, producers of automotive materials in Ontario have the option of meeting their regulatory obligations either on their own, or through the services of a producer responsibility organization (PRO). AMS is pleased to offer its services to the industry as a PRO providing a proven, low-risk, cost-effective compliance solution.

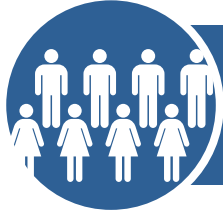
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2021 Industry Stewardship Plan (ISP) Highlights

Figures are for the nine months ended September 30, 2021

AMS began operating as a Producer Responsibility Organization (PRO) on October 1, 2021



165
Members

Representing 92% of antifreeze, 85% of oil containers and 94% of oil filters supplied in Ontario



Antifreeze

1,761
tonnes collected

55%
recycling rate



Oil Containers

2,776
tonnes collected

106%
recycling rate



Oil Filters

5,599
tonnes collected

86%
recycling rate

AMS is the Producers' PRO

- Ontario's Resource Recovery and Circular Economy Act mandates individual producer responsibility (IPR) for material recycling rather than collective responsibility under a program plan
- This new legal framework under the Hazardous and Special Products (HSP) Regulation took effect October 1, 2021
- AMS PRO provides producers with the best-value, low-risk recycling compliance option:
 - Non-profit founded by producers, for producers and governed by volunteer representatives of the Ontario automotive industry
 - Predictable fees directly finance an efficient collection and processing network for diverting automotive waste from landfill
 - Founded in anticipation of the transition to the HSP Regulation, AMS is the only PRO with a history of operating a compliance program for automotive HSP.
 - Producer customers can rely on the proven and secure reporting platform and a Customer Service team to assist with technical and administrative questions.

Message from the Chair

Since 2017, AMS has successfully managed convenient, environmentally sustainable ways for diverting automotive waste from landfill in Ontario on behalf of producers. Our organization was established by producers in anticipation of new regulatory requirements that took effect in 2021, giving producers of used antifreeze and antifreeze containers, oil filters and empty oil containers options for meeting their recycling and reporting obligations.

Our structure and experience meant that AMS was ready to transition from an industry stewardship plan to a producer responsibility organization (PRO) that provides our customers with a low-risk compliance solution.

AMS was created from a solid understanding of producer priorities. Our volunteer board represents the Ontario automotive industry and is focused on doing what's right for producers and the environment. The directors met regularly throughout the year to oversee the development of our new producer responsibility services offering to ensure the needs of the producer community are satisfied.

In 2021, we were pleased to welcome two new board members: Micheline Davies of Canadian Tire Corporation

and David Lawrence of Shell Canada. And we extend thanks to Andrew Davies for his service following his resignation from the board in June.

As part of a broad review for the PRO transition, AMS created the new independent management position of Executive Director. I am

pleased to advise that David Pearce took on the role as of January 3, 2022. Many of you know David from his time as managing director at Canadian Stewardship Services Alliance (CSSA). He is extremely familiar with AMS operations and our partners, and will excel in leading our organization.

I am proud of what AMS has accomplished since its founding and pleased that our transition to PRO services provides producers with a strong, competitive option. If you are a producer and have not yet joined AMS, I encourage you to investigate our benefits and contact us for more information.



David Fifield,
2021 Board Chair
President,
Wakefield Canada

Message from the Executive Director

I welcome the opportunity to serve as the first AMS Executive Director and look forward to delivering efficient and sustainable recycling solutions to producers. While my role is new, I am fortunate to have supported the founding of AMS and gained five years of operational experience prior to my January 2022 appointment.

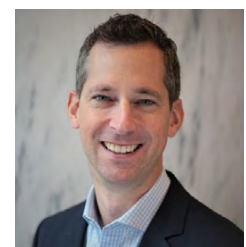
With Ontario's new regulatory landscape, there is a competitive market for resource recovery. Producers of automotive HSP have choice when it comes to how they achieve compliance. AMS has proven its ability to deliver value to our PRO customers with a low-risk, turn-key solution option based on fee predictability and positive environmental outcomes for collected materials.

AMS has developed a robust business model that utilizes a diverse network of service providers that haul and process antifreeze, oil containers and oil filters from more than 15,000 collection sites, servicing every corner of the province. The new regulatory framework places

new demands and administrative requirements on both producers and service providers. Our service offering ensures these complex requirements are met for producers while affording service providers flexibility to innovate and adapt.

As new regulatory requirements take effect, including the more stringent obligations that commence in 2023, I am committed to ensuring AMS remains an effective partner and facilitator that builds on its strengths. Fostering collaboration and maintaining dialogue with all AMS stakeholders are priorities for me, and I encourage you to contact me with your questions, issues and ideas.

Together, we are contributing to resource reutilization and a healthy environment.



David Pearce,
Executive Director

Program Overview and Performance

AMS is a not-for-profit organization, established and financed by industry. Since 2017, we have been responsible for the collection and recycling of three types of automotive waste in Ontario:

- Antifreeze and empty antifreeze containers
- Oil filters
- Empty oil containers that have a capacity of 30 litres or less

Following the introduction of the Hazardous and Special Products (HSP) Regulation in June 2021, AMS completed the work to wind up its ISP and launch its producer responsibility organization (PRO). AMS began offering services as a PRO on October 1, 2021.

Our main role is to deliver efficient and cost-effective regulatory compliance with the collection and environmentally responsible management of automotive HSP on behalf of our customers.

As part of our transition to becoming a PRO, we offered all industry service providers, municipalities and First Nations Communities that supported our ISP an opportunity to participate in the provision of collection, hauling and processing services.

AMS has service agreements with 23 transporters and 17 processors to provide material management solutions. We work with municipalities and First Nations throughout the province to collect automotive HSP from the public at their public depots and special collection events. All of our partners sign service agreements and adhere to vendor standards, policies and procedures established by AMS.

When the AMS ISP ceased operations on September 30, 2021, 165 stewards were part of the AMS program. AMS also provided collection and recycling services under contract to Stewardship Ontario for stewards that remained registered with its MHSW Program.



Antifreeze recycling driven by committed network and modern technologies

There are more than 24 million motor vehicles registered in Canada. Each year, a portion of cars, trucks and vans on the road have their radiators drained and refilled with fresh antifreeze.

In the past, waste auto antifreeze from vehicles was not always properly treated. Today, AMS, with the support of its producers and service providers, ensures an increasing quantity of used automotive antifreeze is collected, processed, and appropriately recycled. Here's how it works:

Used auto antifreeze is collected and temporarily stored in drums and totes at thousands of auto service centres, quick-lube shops, auto dealerships and fleet maintenance sites across the province. An AMS-registered transporter* drives from site to site collecting used antifreeze from drums and totes.

The collected antifreeze is then consolidated and shipped via bulk truck to registered processors. These fully licensed processors then separate and purify the major antifreeze components.

AMS has a network of processors for the antifreeze collected by its transporters. The largest processor of used antifreeze in Canada is Napierville Refineries, located south of Montreal.

Renaud Bussieres, the Operations Director at Napierville, explains that automobile radiator coolant is a water solution that contains approximately 50% ethylene glycol. Glycol lowers the freeze point of water to keep radiators and engine blocks from freezing and cracking in the winter.

"Coolants also contain special additives to enhance the performance and extend the life of the cooling system. With extended use, impurities slowly form in the cooling system, and coolants eventually lose some effectiveness," Bussieres said.

A FLUID SOLUTION...

- **AMS antifreeze processor network includes facilities in Ontario, Quebec, Alberta, Michigan and Illinois**
- **1.5 million litres/year of distilled glycol are produced at Napierville Refineries, the largest processor in Canada**
- **Recochem examines samples for 40 impurity items before shipment**



At Napierville Refineries, more than a dozen transporters from Ontario and Quebec supply used antifreeze and each trailer delivery is inspected and analyzed before unloading. Used antifreeze at Napierville is processed using a multi-step vacuum distillation system to produce distilled glycol, purified distilled water, and residue containing other impurities. The distilled glycol is then further treated in another multi-step filtration system to remove trace impurities, such as organic acids and metals measured in parts per million.

Napierville Refineries is owned by Recochem Inc., Canada's largest producer of automotive coolants with production facilities in several provinces. More than 1.5 million litres of high-purity distilled glycol is produced at Napierville annually and most is shipped by bulk railcar to Recochem's Milton, Ontario, facility to create new antifreeze.

AMS supports the creation of circular economies. Producers wishing to use recovered glycol in their manufacturing processes are encouraged to source from our registered processors.

Samples from every glycol railcar are analyzed by both Napierville Refineries and Recochem's largest coolant laboratory, located in Nisku, Alberta. Railcar samples are analyzed for 40 items before shipment and use.

"Napierville's glycol recycling operations are based on best available technologies and proven methods," added Bussieres. "The proper and reliable way to recycle used antifreeze is likely a lot more complicated than most people would imagine."

* AMS acknowledges and thanks its haulers of waste antifreeze, including: Cool Running Antifreeze, Drain-All, Environmental 360 Solutions, GFL Environmental, Keith R. Thompson (KRT), Recycle West and Veolia, among others.

ACCESSIBILITY AND OPERATIONAL PERFORMANCE

The following performance data and commentary cover the AMS ISP period to September 30, 2021. The producer responsibility services that began operations on October 1, 2021, are excluded, and will form part of the transition period results for October 1, 2021, to December 31, 2022.

Maintaining convenient and accessible collection sites enables consumer participation and maximizes diversion activities. AMS provides financial incentives to its transporters to move material from generation sites to processors for recycling.

The network of public and private collection sites includes quick lubes, automotive dealerships, marinas, fleet management companies and industrial sites, such as mines and quarries. Many municipalities and First Nations communities offer collection services to their residents through permanent or seasonal depots, or special one-day collection events. Some service centres accept automotive materials from do-it-yourself consumers. These locations are shown below as “Return-to-Retail.”

Accessibility by collector type in 2021*

CHANNEL - ACTIVITY	DEPOTS	EVENTS	RETURN-TO-RETAIL**	AUTOMOTIVE INCENTIVE PROGRAM***
Antifreeze	88	169	900	11,540
Oil Containers	88	169	903	10,785
Oil Filters	88	169	960	10,752

* Nine months ended September 30

** There are 992 locations and some collect one, two or all three automotive materials

*** There were a total of 15,203 collection sites and some collect one, two, or all three automotive materials

AMS must meet certain minimum performance requirements each year. For 2021, these targets covered the January 1 to September 30 period. Material collection and processing continued through the operational and economic impacts of the COVID-19 pandemic.

The performance targets expressed in tonnes for 2021 were calculated in 2020 based on the quantities supplied to market in 2019 by AMS members and were not updated to reflect the actual in-year sales quantities, which were negatively impacted by the economic impact of the COVID-19 pandemic. As a result, the targets for oil filters were not achieved.

The ISP contains assumptions for converting supplied tonnes to the quantity available for collection, accounting for changes to quantities and weights such as the dilution of glycol or the weight of residual oil in used oil filters. These assumptions are subject to review and may be changed for future performance periods to align with the requirements of the HSP. The quantity available for collection is multiplied by the collection target rate (%) to calculate the target expressed in tonnes.

2021 Tonnes Collected/Recycled (for the nine months ended September 30)

MATERIAL CATEGORY	AVAILABLE FOR COLLECTION*	TARGET RATE (%)	TARGET TONNES**	ACTUAL TONNES	ACTUAL RATE (%)	VARIANCE TO TARGET (TONNES)
Antifreeze	3,188	54%	1,721	1,761	55%	39
Oil Containers	2,617	72%	1,885	2,776	106%	892
Oil Filters	6,521	89%	5,804	5,599	86%	(205)

* Available for Collection is using the quantity supplied to market in Q1- Q3, 2019 as of July 1, 2020, and not adjusted to account for sales declines because of the COVID-19 pandemic

** Annual Collection/ Recycling Target is using the quantity supplied to market in Q1- Q3, 2019 as of July 1, 2020
Actual YTD Collected/ Recycled Tonnes represent AMS portion only for Q1-Q3, 2021

PROMOTION AND EDUCATION

AMS promotion and education activities were designed to increase awareness, drive behavioural change, and support collection channels (such as depot, drop-off events, return-to-retail and incentive partners) to achieve recycling targets.

AMS made use of the Orange Drop brand and logo for consumer communication, under license from Stewardship Ontario, until September 30, 2021, when the Orange Drop public awareness program and website ceased operations. In 2021, there were no campaigns directing residents to the website.

In October 2021, AMS published information and materials for consumers and stakeholders on its website and created new social media accounts.

Social Media

Orange Drop’s Twitter and Facebook accounts provided seasonal tips and reminders to educate residents on proper disposal of materials. In the first nine months of 2021, Orange Drop Twitter and Facebook posts generated over 20,000 impressions, 522 engagements and 275 links clicked.

Orange Drop’s Twitter and Facebook accounts concluded all activity on September 30, 2021, and will be transferred to RPRA in 2022.

Governance

BOARD OF DIRECTORS

The Board of Directors is a volunteer-based leadership group that focuses on governance and oversight. During the first nine months of 2021, it worked to ensure that the program met its performance targets in accordance with its approved Industry Stewardship Plan.

The Board also oversaw AMS' transition from an ISP to a producer responsibility organization (PRO).

At the end of 2021, the Board announced the hiring of a new Executive Director, effective January 3, 2022, with a primary mandate to ensure effective and efficient operations that enable producers to meet their new regulatory obligations in Ontario.

At December 31, 2021, the board had five directors. For further information about AMS governance, please visit www.autostewardship.ca

2021 BOARD MEMBERS

Micheline Davies

Senior Vice President, Automotive
Canadian Tire Corporation
(Elected to the board June 25, 2021)

Andrew Davies

Senior Vice President, Automotive
Canadian Tire Corporation
(Resigned from the board June 25, 2021)

Steve Ellis

Business Development Manager
Mann+Hummel Filtration Technology Canada ULC

David Fifield (Chair)

President
Wakefield Canada

Peter Laing

Director of Sales, National and Retail Accounts
Recochem Inc.

David Lawrence

Director of Sales
Shell Canada Limited
(Elected to the board June 25, 2021)

2021 Board Meetings and Attendance

BOARD MEMBER	MARCH 25	APRIL 19	MAY 31	JUNE 23	JULY 14	SEPTEMBER 23	DECEMBER 9
Micheline Davies*	N/A	N/A	N/A	N/A	Yes	Yes	Yes
Andrew Davies**	Yes	Yes	No	No	N/A	N/A	N/A
Steve Ellis	Yes	Yes	Yes	Yes	Yes	Yes	Yes
David Fifield	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peter Laing	Yes	Yes	Yes	Yes	Yes	Yes	Yes
David Lawrence*	N/A	N/A	N/A	N/A	Yes	No	Yes

* Appointed to board on June 25, 2021

** Resigned from board on June 25, 2021

The Board also participated in strategic planning and working sessions to develop the PRO services offering. The sessions were held:

- January 11, 2021
- January 25, 2021
- February 22, 2021
- March 8, 2021

A city street scene at dusk. In the foreground, tram tracks run down the center of the road. Several cars are visible, some with their headlights on. The background shows a mix of modern and older buildings, with a prominent tower in the distance. The sky is a mix of orange and blue, indicating sunset or sunrise. A white semi-transparent box is overlaid on the upper half of the image, containing text.

Financial Statements

Copies of the audited financial statements covering ISP operations from January 1, 2021, to September 30, 2021, have been included in our annual regulatory filing, available on the [AMS website](#).



**Automotive
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