

Turning Waste Oil into Profit

An innovative waste management company creates a high-grade fuel oil made from waste oil, using a self-cleaning filter that reduces labor by 75%, maintenance by 50%, in 60% less production space

"In the United States alone, an estimated 200 million gallons of used motor oil are improperly disposed of by being dumped on the ground, tossed in the trash (ending up in landfills), and poured down storm sewers and drains," states the EPA document titled "Collecting Used Oil for Recycling/Reuse."

"If all of the used oil that is improperly disposed of were properly managed, the United States could save thousands of barrels of oil each day," the EPA document continues. "Used oil that is properly handled can be re-refined into lubricants, processed into fuel oils, and used as raw materials for the refining and petrochemical industries."

Through waste oil recovery and reuse programs, pro-active nations such as the U.S. and Canada, as well as many municipalities are looking to turn the hazard of improper waste oil disposal into a valuable resource. In this effort, savvy companies are taking advantage of a new generation of self-cleaning filter technology that can process waste oil into quality products more effectively, with less downtime and labor than possible with traditional equipment.

Capturing a New Market

Global Recuperation, a waste management recycling company based in Quebec, Canada, reclaims used motor oil and filters, along with other industrial commodities. Though waste oil is mandated for reuse in much of Canada, Eric Poisson, the company's President, wanted to capture an underserved market niche for a higher grade of fuel oil, made from processed waste oil.

"A number of industrial clients required a simpler, cleaner burning fuel oil than the market offered from filtered waste oil," says Poisson. "Before burning, typical filtered waste oil has to be pre-screened by the user in several steps, and it leaves more residue than desired."

Traditionally, Global Recuperation and other processors in the Quebec-area filtered waste oil with static filter cartridges at 20-mesh (900 micron). But there were production challenges with this approach.



Self-Cleaning Russell Eco Filter®

- Replacing static cartridge filters with the Self-Cleaning Russell Eco Filter® makes cleaning between batches quick and easy with minimal disruption.
- Due to its unique self-cleaning design, filtration at finer apertures is possible.
- With its in-line design the Russell Eco Filter® fits neatly into any process line.

"The waste oil contained a variable percentage of solids that rapidly clogged our static filters," says Poisson. "A dedicated operator had to manually clean the filters every 10 to 60 minutes, depending on the concentration of solids. Each time, he had to remove the filter cartridge, clean and replace it, then restart production. It was too slow, labor intensive, and costly."

To produce a cleaner, higher-grade fuel oil from waste oil and to streamline production, Global Recuperation turned to a state-of-the-art, self-cleaning filtration system from Russell Finex.

"With the self-cleaning filter screening at 150-microns, our process removes more foreign particulate from waste oil, including tiny ice crystals that can form in winter, resulting in a cleaner burning fuel oil with less residue," says Poisson. "Because there are fewer particulates, our high-grade fuel product only needs to be pre-screened once before use, unlike inferior fuel oil which needs to be pre-screened several times. Fuel pumps last longer too, due to the better filtration."

"My customers pay for fuel oil, not impurities or water, and that's what they get," adds Poisson.

Since the Self-Cleaning Russell Eco Filter® system integrates directly into the pipeline, it eliminates labor-intensive manual cleaning tasks such as changing filter bags or cleaning filtration baskets. The filter element is kept continuously clean via a unique spiral wiper design, ensuring optimum filtration efficiency. Because of its design, cleaning the filter between batch runs is quick and easy with minimal disruption during production changeovers. Additionally, a unique Q-Tap valve allows the sampling of freshly filtered material so quality can be easily monitored on the fly without interrupting production.

Compared to previous manually-cleaned filters, the new filter system is saving the company a substantial amount of labor and downtime.

"The automatic wiper removes all solids that stick to the filter so it's always clean," says Poisson. "An operator just keeps an eye on the system and spends his time on other shop tasks. Eliminating the downtime of cartridge cleaning and replacement has dramatically improved production workflow. We've reduced labor by 75% and cut maintenance by 50%."

Because the self-cleaning filter is totally enclosed, it also prevents outside pollutants from contaminating product and protects operators from any spillage or fumes. Users see substantial improvement in product purity, throughput and waste elimination; and a choice of easily swapped filter elements can give additional flexibility to meet the quality demands of customers.

As companies like Global Recuperation are discovering, the Self-Cleaning Russell Eco Filter® fits neatly into existing production lines, in many instances adding significant capacity without requiring excessive space. "The self cleaning filter takes up 60% less space than our old static filters," says Poisson. "This has freed up production space that will help us expand within our existing facilities as business grows."

"Since my operators don't need to remove filter cartridges, they don't expose themselves to vapors or waste oil contaminants," says Poisson. "My operators are happier, and there's no smell of waste oil in the shop."

Poisson sums up the benefit of switching to the self-cleaning filter: a safer environment for his operators and business, as well as for society.

"With higher margins on a higher-quality fuel oil product, along with significantly lower labor costs, we'll achieve ROI on the Eco Filter within a year," he says.

For over 75 years Russell Finex has manufactured and supplied filters, screeners, and separators to improve product quality, enhance productivity, safeguard worker health, and ensure powders and liquids are contamination-free. Throughout the world, Russell Finex serves a variety of industries with applications including coatings, food, pharmaceuticals, chemicals, adhesives, plastisols, paint, metal powders and ceramics.

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