

**Ecotop. Technology
that puts you
clean ahead
of the rest.**



Fritz Aigner: The sleeper and the ear-blower (detail)

ecoTop™

**Above Grade Oil/Water Separator
The clear idea.**

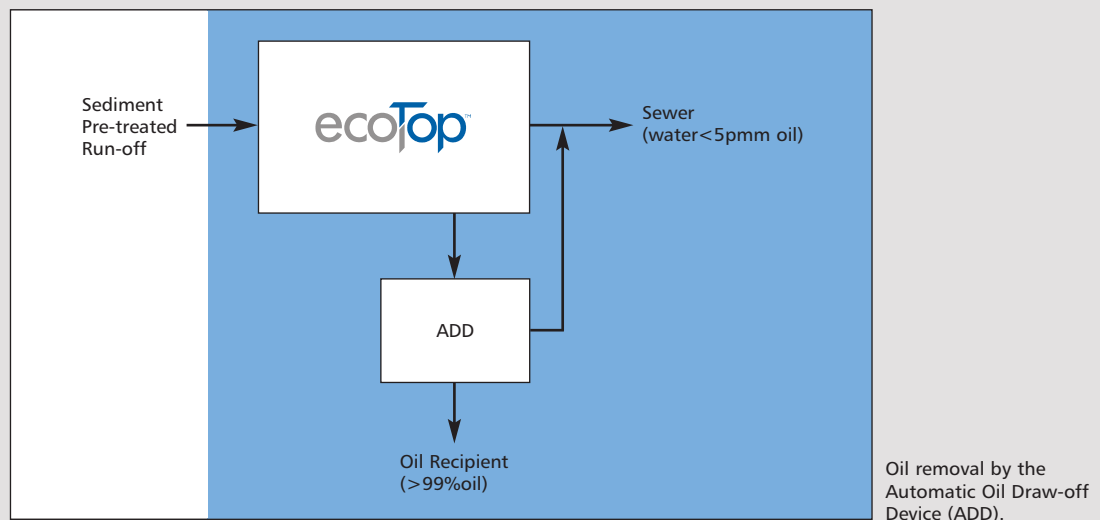


Above Grade Oil/Water Separator The clear idea.

Highly efficient and cost saving oil/water separation is today's challenge. Ecotop is our answer.

Small facilities are frequently hot spots when it comes to treatment of hydrocarbon laden wastewater. The total amount of wastewater generated per day is sometimes too small to justify construction cost for the installation of a below grade oil/water separator. For these applications, an above grade unit provides an acceptable solution. The Ecotop Oil/Water Separator provides the first substantial

cost savings in the form of zero construction site labor. Ecotop is equipped with a removable top panel. This provides full access to all basic elements of the Ecotop system. Routine cleaning and maintenance are then efficient and cost effective. Annual maintenance cost savings range from 30% to 50% lower than that of conventional separator systems.



Today's environmental legislation is hard enough to comply with. Ecotop meets tomorrow's standards today.

It's not just the Ecotop's long maintenance intervals and low waste-disposal costs that make it such a good investment, but the fact that it is designed with future standards in mind. Ecotop permanently separates oil from water and allows virtually no oil emulsion formations to develop. The Ecotop far exceeds the strict European standards (DIN 1999 and EN 858) for performance. The

outstanding independent testing certificates (available upon request) demonstrate that Ecotop will provide clean water that exceeds today's environmental standards. Ecotop also allows for tighter, future environmental discharge compliance guidelines to be met with little or no modification to the system.

Ecotop combines high efficiency oil/water separation with mobile flexibility.

Closed system, waste stream holding tank capacities are pumped when full. Costs of this type of disposal are charged by the gallon. The majority of this pumped volume is water. With Ecotop, these holding tank wastes can be processed. This then allows for the direct discharge of the separated water and the collection of pure product which minimizes disposal costs! Ecotop's stainless steel structural dimensions are reduced to provide compact system design while still maintaining

the industry's highest level of removal efficiencies. Specially designed coalescing media panels provide a large specific surface to support the separation of small oil droplets. If your oil separation application is variable with numerous holding tanks in various locations or space is too limited for a below grade unit, consider Ecotop as your above grade oil/water separator.

General

The Ecotop oil/water separator is designed to separate non-emulsified light liquids or low-water-soluble fluids with a specific gravity below 0.95 (gasoline, diesel, heating oils and other mineral oils) from effluent discharge. The residual hydrocarbon concentration in the effluent will not exceed 5 ppm. The Ecotop Oil/Water Separator meets all of the requirements of strict

European separation standards (DIN 1999 and EN-858). A two-step separation process, gravity separation and removal of small oil particles by coalescing media elements, produce high removal efficiencies. The separated oil is automatically removed from the water surface and collected in an internal or external oil recipient.

Purification Step 1: Gravity Separation

The sediment and solids, pre-treated run-off is gravity fed or pumped (typically with a positive displacement or diaphragm type pump) to the gravity separator through a submerged inlet pipe.

The separation process relies on the fact, that light fluids have a lower specific gravity than water and thus float on the water surface.

Purification Step 2: Coalescing Media

In the residual oil media, fine droplets, that are too small to be separated by gravity alone are accumulated into bigger drops that rise to the surface. This coalescing media is made of reticular (i.e. "net-like") soft polyurethane foam. The media-cartridge is very easy to lift out and reinstall once it is cleaned/rinsed with a garden hose. The separated water that leaves the Ecotop has a residual contamination of free petroleum content to less than 5 ppm.

Automatic oil draw-off device:

The system includes an automatic draw-off device (ADD) for maximum environmental protection. The light fluids are constantly being removed from the water surface and collected in an integrated or external oil recipient. No stable emulsions can be formed. A large amount of the separated light liquid can be recovered without any inter-

An investment that is built to last: Ecotop's high grade stainless steel vessel.



rupting the collection cycle of the Ecotop. The automatic drawoff device will collect the pure petroleum product, and not an oil-water mixture. The costly disposal of large quantities of oil and water mixtures is then eliminated. Facilities that have the ADD actually are paid by waste oil companies that service their Ecotop systems.

Ecotop's fields of application:

- Transportation
- Gasoline stations, car wash and repair workshops
- Industrial process waste water
- Oil production, oil-removal plants
- Reconditioning of cooling water
- Mobile cleaning of oil-contaminated ground water

All clear?



Ecotop at a glance:

- **30% to 50% annual maintenance cost savings**
Removable top panel for full access to all major elements and reduced or no confined space entry requirements for cleaning and maintenance.
- **Small floor space required**
Ecotop is optimized in terms of efficiency and space requirements.
- **High operational reliability**
No external energy supply is required, no electrical parts and constructed only of stainless steel components.
- **Liquid level sensors**
For permanent monitoring of changes in the liquid levels.
- **Automatic oil-drawoff device**
This prevents emulsion from being formed and allows >99% concentrations of light liquids to be collected.
- **Low disposal cost,**
Only the oil is disposed of, not an oil-water mixture.
- **An investment that is built to last**
Thanks to the use of high grade stainless steel vessels.
- **5 ppm separation**
The outstanding test results achieved at noted testing institutions show that Ecotop will be able to meet even tougher future standards.

Freytech, Inc.

Water Treatment for the World

601 Brickell Key Drive, Suite 702, Miami, Florida 33131, USA
Phone.: +1 (305) 372-1104 Fax: +1 (305) 328-9312
e-mail info@freytech.com <http://www.freytech.com>