

CASE STUDY

Automotive Brake Components Manufacturer Achieves Wastewater Sustainability Objectives through Innovative Treatment Technology



Project Background

Bendix Commercial Vehicle Systems, LLC is a global manufacturer of leading-edge active safety technologies, engine dampeners, and components for medium and heavy-duty vehicles throughout North America.

Bendix Commercial Vehicle Systems, LLC needed a wastewater treatment technology that would treat alkaline cleaner and alkaline cleaner rinse water. They use an RO System to treat the incoming city water to reduce the conductivity because high conductivity in the wash and rinse waters negatively effects the processing of parts after the washer.

The Distillate coming from the PC F 1.4 AA is very clean and the conductivity so low it gets added directly to the RO Permeate tank and is reused for make-up water in the wash and rinse tanks.

The main goal was to produce a very clean effluent that would enable the company to meet POTW discharge limitations and from a sustainability perspective allow for water reuse with a low carbon footprint. The solution also needed to minimize daily maintenance, be automated, energy efficient, and be compact in size.

The Solution

The main component of the solution that PRAB supplied to Bendix Commercial Vehicle Systems, LLC was an EVALED PC F 1.4 AA Forced Circulation Evaporator. This vacuum distillation technology system was designed to treat low to medium wastewater flow rates and produce maximum distillate quality. The PC F Series Evaporators range from 185-6,340 gallons/day of distillate production. The system also included an equalization tank, solids filtration, tramp oil separator, process pumps, and fully automated controls. This allows distillate to be returned to the parts washing application.

Matching the application and material was critical to selecting an evaporation technology that provides superior reliability. The PC heat pump evaporator's forced circulation and low boiling temperature minimize scaling, fouling, and corrosion. The system produces no air emissions and has low energy consumption. The automated system includes PLC controls and is designed for continuous operation with minimal supervision.

The Results

- Met POTW Discharge Limitations
- Sustainability; 81% Reuse of Wastewater
- Low Maintenance and Automation for Ease of Use

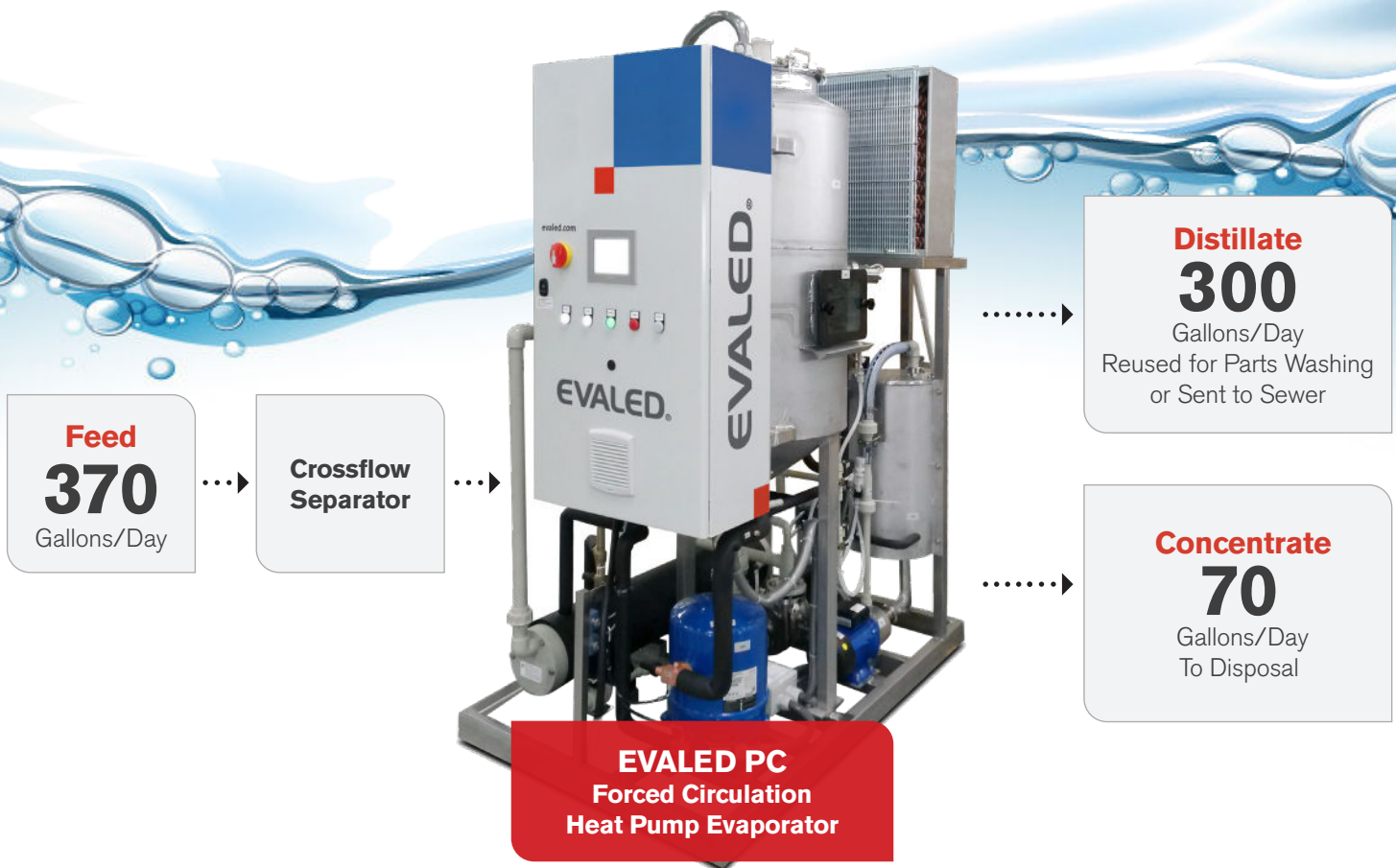
5801 East N Avenue, Kalamazoo, MI 49048
Phone: 1-800-968-7722 | Fax: 1-269-349-2477 | sales@prab.com

prab.com



CASE STUDY

Parameters	um.	Feed	Distillate	Concentrate
COD	ppm	7,110	88	< 56,000
BOD	ppm	1,490	75	
FOG	ppm	972	< 5	
Total Dissolved Solids	ppm	9,020	218	
Zinc	ppm	2.8	< 0.1	< 22
Phosphorous	ppm	816	0.3	
Dry Matter at 105°C	%	1.49		< 12
Conductivity	µS/cm	14,100	325	



About PRAB

PRAB is a leading engineer and manufacturer of conveyors and chip and fluid management systems. Its customized solutions automate metal handling, reduce labor costs, reclaim and recycle expensive cutting fluids/coolants and maximize return on recycling metals. With its expertise honed by more than 4,500 installations for the world's leading OEMs and suppliers, PRAB continuously improves material handling, housekeeping and compliance to environmental rules and regulations within the automotive, aerospace, medical, electronics, defense, off-road and energy markets. For more information about PRAB, visit prab.com.

5801 East N Avenue, Kalamazoo, MI 49048
Phone: 1-800-968-7722 | Fax: 1-269-349-2477 | sales@prab.com

prab.com

