

001 Case Study:

Water and Cost Savings Solutions

Redpath Sugars and the City of Toronto worked together to find water reducing solutions, which included:

- Reuse of once-through cooling**
 Three areas of once-through cooling were identified in the facility. Prior to the study, the water from once-through cooling was discharged down a drain. The study identified that by re-routing the water it could replace a portion of the boiler makeup water demand.
- Reuse of boiler sampling lines as boiler makeup**
 As part of the boiler monitoring at Redpath Sugars, a small stream of water is drawn off through sampling lines and tested. Prior to the study, the water was discharged to the sewer but it is now re-routed and used to replace a portion of the boiler makeup water demand.
- Water recovery from air compressors**
 The water recovery system reuses the water that was previously used to cool the air compressors for boiler make-up water.

Economic Benefits

Water savings: 212,080 litres per day

Total rebate amount: \$53,020 (based on an incentive of \$0.25 per litre per day of water savings)



Redpath Sugars

Water and cost savings strategies for high-volume water users

"Participating in water reduction programs is a good way to minimize the impact of water rate increases. At Redpath Sugars, we have used the City of Toronto's water efficiency programs to lower water costs."

Brian Hishon, Utility Service Engineer



Analysis

In 1999, Redpath Sugars used 1,400 litres of water to make one tonne of product. Since then, Redpath Sugars has worked proactively to reduce water use to below 1,000 litres of water per tonne of product. Redpath Sugars' goal is to further reduce its water demand to less than 800 litres of water per tonne of product, by mid 2005.

Project Scope

In 2004, Redpath Sugars participated in a water audit study with the City of Toronto to measure where water use and costs could be controlled and reduced. Water use at Redpath Sugars was data-logged and profiled as part of the study.

Findings

The study identified three areas where water use could be reduced by re-using it in other processes. It also identified where Redpath Sugars could reduce the amount of water being discharged to local sewers by reusing water to offset a significant portion of its boiler water makeup demand.

The Business

Redpath Sugars is one of the largest water using facilities in the City of Toronto, using more than two million litres of water per day. Redpath uses water for general cleaning (process), in boilers, for once-through cooling and for domestic purposes.

Redpath Sugars located at 95 Queens Quay East is a completely integrated production centre. The site receives raw sugar, then processes it until it is pure. Redpath Sugars packages a range of products and stores sugar in both granular and liquid forms.

Water Reducing Measures	Project Costs	City of Toronto Rebate	Water and Cost savings		Payback Period
			(measured in litres per day)	(annual cost savings)	
Reuse of once through cooling	\$25,000	\$5,975	23,900 l/d	\$ 13,085	17.5 months
Reuse of sampling lines	\$4,000	\$4,925	19,700 l/d	\$ 10,786	Instant
Air compressor cooling water recovery	\$50,000	\$42,120	168,480 l/d	\$ 92,243	Less than 1 month
Total	\$79,000	\$53,020	212,080 l/d	\$ 116,114	3.0 months