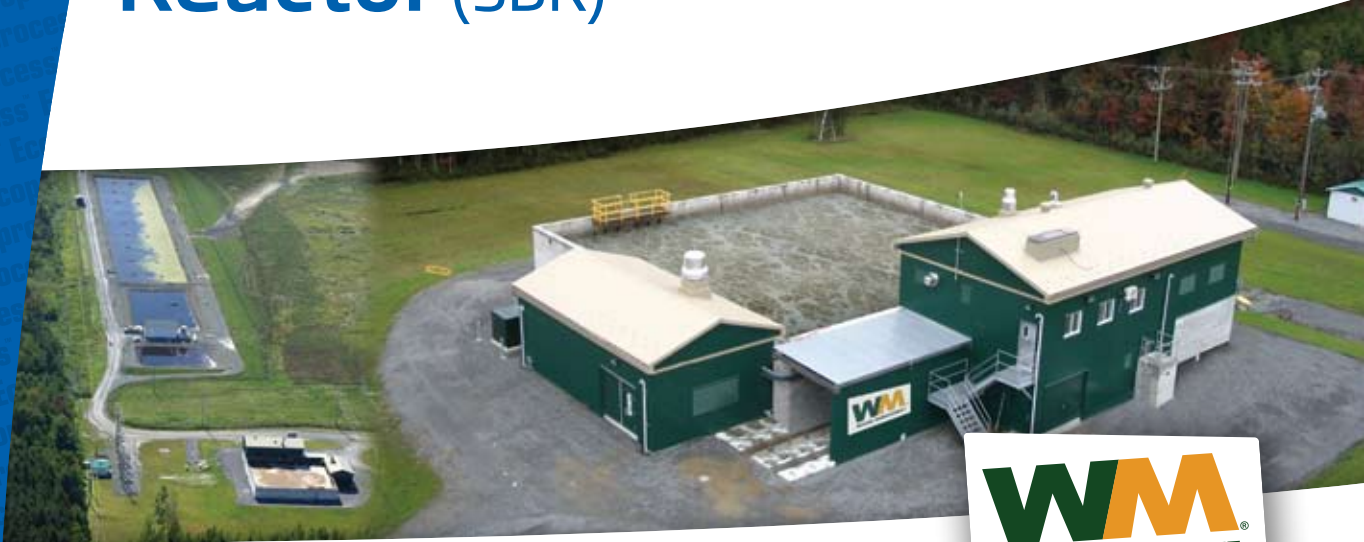


Sequencing Batch Reactor (SBR)



Customer: Waste Management, QC, Canada

Waste Management, Inc. is the leading provider of comprehensive waste and environmental services in North America. The company is strongly committed to a foundation of financial strength, operating excellence and professionalism. Waste Management currently operates ten full-scale waste treatment landfill projects in the U.S. and Canada.

Facts

Waste Management, Inc. is operating the landfill of the Municipality of Ste-Sophie, Quebec, Canada. Located at 50 km (30 mi) north of City of Montreal, the Ste-Sophie Landfill consists of 736 acres. The property is set within a region characterized by agricultural activities, forested land and proximity of wildlife. Until 2006, aerated lagoons were treating leachate from this landfill. With new regulations implemented in 2006 regarding ammonia dosing in wastewater, and the need to extend their exploitation permit, Waste Management had no other choice but to upgrade the existing wastewater treatment plant.

Challenges

The leachate from Ste-Sophie Landfill is heavily contaminated with organic matter and high ammonia concentration. Waste Management evaluated some solutions and finally opted for the Ecoprocess™ SBR solution by Premier Tech Aqua (PTA) in answer to the following:

- **High performance** Ecoprocess™ SBR can meet the new leachate ammonia concentration standards
- **Green technology** Ecoprocess™ SBRs are designed to preserve sensitive areas such as the *Jourdain River*, contributing to protect the environment (river discharge)
- **Ease of operation** Ecoprocess™ SBR system is self controlled (no specialized technicians needed on site)





Solution

PTA designed an Ecoprocess™ SBR treatment plant which was launched during summer 2006. It is operated by PTA.

The solution is composed of an Ecoprocess™ SBR leachate treatment that uses the activated sludge principle and treats 264,100 gpd (1,000 m³/day).

The treatment chain includes an accumulation basin ensuring an anaerobic reduction of organic matter, pre aeration allowing optimisation of the C/N ratio prior to final treatment, and an Ecoprocess™ SBR treatment unit.

Results

This Ecoprocess™ SBR being an indoor treatment plant. Waste Management has successfully been treating since 2006, 365 days a year, which wasn't possible with outdoor aerated lagoons (due to cold temperature in winter time). The volume of the basin has been optimized and the SBR gives excellent results, especially for ammonia. The Jourdain River being a small river, Ste-Sophie is not allowed to treat more than 264,100 gpd (1,000 m³/day) – however the Ecoprocess™ SBR can easily treat up to 396,200 gpd (1,500 m³/day).

Overall, this new Ecoprocess™ SBR treatment plant is showing for:

- A high performance treatment solution – even when facing high organic matter and ammonia concentration
- An automated process – easy to control
- A strong technical and operation service team from PTA

Parameters	Objective	Compliance	Actual
BOD ₅	30 mg/L	65 mg/L	10 mg/L
TSS	30 mg/L	35 mg/L	30 mg/L
Total Amonia	10 mg/L	10 mg/L	3 mg/L

Note – Source: 2008 Treatment results.

Benefits and Perspectives

The system capacity allows for a lot of flexibility to increase the leachate volume to be treated. It's a year-round operational system providing excellent results even when activated sludge characteristics differ from one season to the next.

« I was impressed with Premier Tech Aqua capacity to respond with solutions addressing the different constraints we had regarding engineering. They operate the system and it helps us a lot! »

Simon Mercier

Operation director,
LET Ste-Sophie, Waste Management



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