

Collaborative Approach Yields State of the Art Treatment Plant

Most people take fresh air for granted, but odour control was top of mind for Roger Warren, P.Eng., and his project team at Dayton & Knight Ltd. in their Stage IIIB upgrade to the City of Salmon Arm's Water Pollution Control Centre.

Andria Ink, APEGBC

In partnership with the City of Salmon Arm, the Stage IIIB upgrade to the city's water pollution control is now complete and is the winner of the Association of Professional Engineers and Geoscientists 2006 Environmental Award in the Design, Construction and Monitoring Phase Category.

The Water Pollution Control Centre (WPPC) provides the city with environmental, economic and social sustainability benefits. "The City of Salmon Arm has a state of the art plant that they should be proud of," says Roger Warren, P.Eng., Team Leader and Project Engineer. "They should be complimented on their project management."

Environmental benefits of the WPPC include the protection of Shuswap Lake, surrounding wildlife and fragile ecosystems. The WPPC provides reclamation and recycling opportunities for the treated wastewater and for solid by-products of treatment (Class A pasteurized biosolids). These by-products are separated and then reused in topsoil. The enhanced quality of the WPPC discharge surpasses the requirements of federal and provincial guidelines for public health,

Societal concerns about odour were also paramount for this particular project as the treatment plant is close to a commercial area that includes a fast food restaurant. "Odour issues have always prevailed and we were really motivated to reduce them. We first used this innovation in a project in Colorado and were pleased to design and build on this technology," says Harlan Kelly, P.Eng., as Vice President, Technology, Dayton & Knight.

While all of the Environmental Award nominations were of high quality, the collaborative aspect of this project made it stand out. "This project won because of its innovative, cost-effective approach that included many stakeholders in the community," says John Holland, P.Eng., APEGBC Environment Committee Chair.

The public's needs were continually addressed through stakeholder engagement, with many public consultations to collaborate on the development of wastewater solutions that would be supported by community, government and regulatory agencies. "The Liquid Waste Management Plan Committee was a cross section of the community and we

were grateful for their participation," says Al Gibb, P.Eng., PhD, Process Specialist.

The community was a large part of the project's development through the Liquid Waste Management Plan. Kelly emphasizes that community involvement will continue to be important to the success of the project by way of odour management and continued monitoring of plant performance.

The cost for the Stage IIIB upgrade was \$7.36 million, with \$2.8 million provided by a federal/provincial infrastructure grant. The advanced wastewater treatment has an operating cost of less than \$0.28 per cubic metre, and is funded from sewer utility revenue. This makes the WPPC an economically sustainable operation. The project finished on time and under budget, largely through project evolution, Kelly says.

Since 1976, Dayton & Knight has provided the City of Salmon Arm with wastewater consultation and with previous upgrades to wastewater systems in 1986 (Stage II) and in 1999 (Stage IIIA). To Kelly, the APEGBC Environmental Award represents a culmination of 20

years in the industry and innovation of three environmental solutions: the trickling filter, autothermal thermophilic aerobic digestion (ATAD) and UV disinfection with the addition of disk filtration.

Looking ahead, the project team hopes to continue to build on its collaborative approach, which recognizes the impact of future projects on the broader community as well as the client.



The Stage IIIB upgrade to the City of Salmon Arm's Water Pollution Control Centre includes multi-stage odour treatment.

PHOTOS: Dayton & Knight