



ITT

Water & Wastewater
Case story | Dewatering

26 millions gallons per day Sewage Bypass for JAMES Wastewater Treatment Plant needed to replace solid contact tank old aerators with Sanitaire aerators.

The Joint Abbotsford Mission Environmental Systems Wastewater Treatment Plant (JAMES Plant) in Abbotsford, BC was constructed in 1981 and has gone through a number of expansions over the years to serve the increased population growth. The service area of JAMES Plant includes the City of Abbotsford, the District of Mission, East Langley (Aldergrove and Gloucester Industrial park), and the City of Sumas, Washington, USA.

When JAMES Wastewater Treatment plant wanted to upgrade their "solids contact tank" with Sanitaire (an ITT Water & Wastewater product) fine bubble aerators, they awarded the project to Westport Construction Group Inc. from Burnaby, BC with Sanitaire products unquestionably specified in the tender specs.

The function of a Solids Contact Tank is to facilitate aggregation of finely divided microbes in the trickling filter effluent into heavier and easily settleable microbes. The trickling filter effluent and settled solids from secondary clarifiers are combined in the solids contact tank and aerated for microbes' aggregation.



Sanitaire fine bubble aeration system.



Skid-mounted ENVIROPRIME® Diesel Driven Thompson pumps and fuel tank.

Replacement of existing aerators in the solids contact tank required draining the tanks and bypassing the sewage. This was a critical bypass with flows up to 12,000 usgpm (as specified by the engineer). The contractor had to present a primary and backup sewage bypass plan and have it approved by the plant authorities before having it commissioned. The contractor, who is valued for his esteemed reputation, wanted a fool proof plan.

At this point, the Westport Construction Group Inc. contacted Kamal Singh Passi, Dewatering Specialist at ITT Water and Wastewater. After a site visit, he observed that no power supply was available, and because of the size of the bypass, the contractor requested 24/7 monitoring, commissioning and decommissioning of equipment.

Mr. Passi proposed the use of 3 X 12" Diesel Driven Thompson pumps. Each pump would deliver 6,000 usgpm at 50 feet at 1,800 rpm. Two pumps were designated as primary pumps and the third pump was desig-

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nated as the back up pump. And a combination of 12 steel piping and discharge hose was proposed for each pump. These pumps had an exclusive ENVIROPRIME® priming system, which prevents blow-by, achieves prime without filling the casing with water.

The ITT Water and Wastewater dewatering specialist also observed that the pumps had to operate 24/7. To achieve this, he suggested the use of a 3,000 litre fuel tank. The system was proposed and rapidly accepted by the management of JAMES Wastewater Treatment Plant. Crews began to put steel piping together, install the pumps and situating the reducers and increasers.

Unfortunately due to an unexpected rainfall, there was a substantial increase of inflow. This was a surprise for the plant design engineers, but the contractor was able to handle total flows up to 18,000 usgpm by putting the third standby pump in operation. The sewage bypass system operated flawlessly and at finest levels as forecasted. Within four weeks, the contractor was able to replace the aerators in the solids contact tank and was very thankful to ITT Water & Wastewater for proposing this practical solution.

Kamal Singh, ITT Water & Wastewater, Dewatering Specialist, Vancouver at (604) 941-6664



Unloading of Thompson Diesel Driven pumps and assembling of discharge pipes on site.



12 inch Kwik-Lok steel piping discharging bypassed sewage.

ITT Water & Wastewater - Dewatering division

Created to meet the increasing demands for a full fledged solution driven company, the Dewatering division mandate is to engineer, manage and supply major temporary site dewatering and sewage bypass projects in the municipal, construction, industrial and mining sectors. On-site project supervision, technical expertise and equipment maintenance services are also offered.

Built on ITT's 50 years of Canadian water handling experience, the Dewatering division specializes in effective and environmentally secure water and wastewater transfer applications such as Sewage Bypass, Excavation Dewatering, Flood Drainage, Surface Irrigation and Mining Dewatering.

ITT W&WW also offers a full service rentals program. A complete line of submersible pumps, engine-driven suction pumps, generators, piping and complementary accessories are available for either long or short-term rental. With 14 coast to coast service locations, ITT W&WW is the only nation-wide company to offer complete turn-key water handling solutions, expertise and products.

