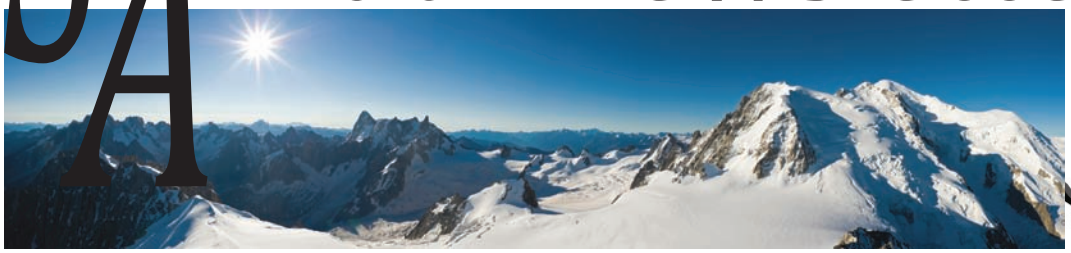
Silverhawk Utilities Inc. Annual Newsletter



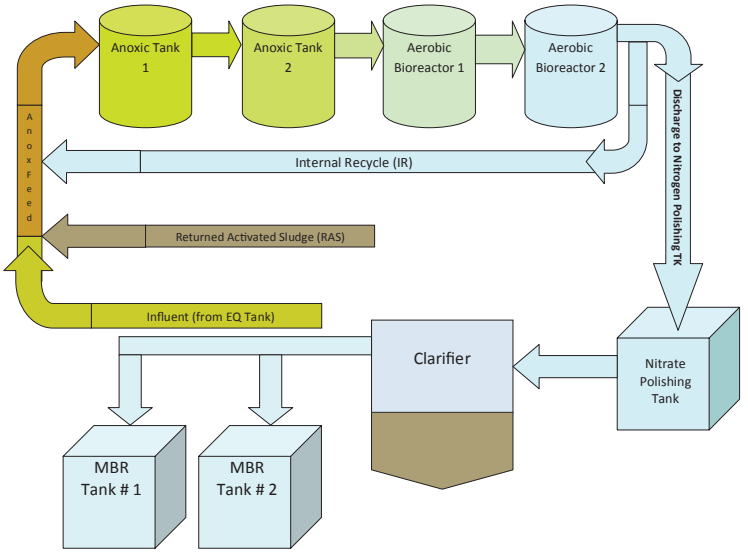
Volume 7, Summer 2014

TREATMENT PLANT UPDGRADE

Silverhawk Utilities is currently finalizing the work on the tertiary upgrade of the Wastewater Treatment Plant (WWTP) at Silver Star Mountain Resort. This is a required upgrade in order to meet the new criteria imposed by the British Columbia Ministry of Environment (MOE) for Nitrogen Removal Levels to further protect the receiving bodies of water in Silver Star Mountain Provincial Park. The WWTP is now required to remove dissolved nitrogen species from the plant effluent and lower the total nitrogen to levels below 10 ppm.

The Treatment Plant upgrade started in the summer of 2012 and was ongoing throughout the spring and summer of 2013. This first stage of the upgrade included the addition of a fully-automated primary solids screening system to substantially reduce the amount of time required by the operators to manually remove the solids. Also installed were four additional bolted steel tanks to help facilitate the nitrogen removal process. Two of these new tanks are Aerobic Bioreactors, which support the growth of autotrophic bacteria. These Aerobic Bioreactors are equipped with air diffusers that produce very fine air bubbles, and help supply the bacteria with dissolved oxygen. These bacteria will then convert the dissolved ammonia to nitrate. The water is then pumped to the other two new Anoxic tanks through a recirculation (Internal Recycle) system. Here in the Anoxic tanks the nitrate can then be converted to nitrogen gas by heterotrophic bacteria. These Anoxic tanks are equipped with low-speed / low-shear mixers to help integrate the incoming flow and better expose the nitrate and food to the bacteria. The nitrogen gas produced can then escape to the atmosphere from these anoxic tanks.

Additional works are currently underway during the summer of 2014 that will further enhance treatment during the peak winter holiday period. Treating wastewater during this winter period is challenging for two main reasons. Firstly, the flows entering the WWTP can peak drastically, very often exceeding several 100% over the average. This is why it is imperative that the WWTP be designed to accommodate this peak amount at any given moment. And secondly, the wastewater entering the WWTP during this time period is much colder, which makes the Nitrogen removal process much more difficult.



The continuing upgrade to the WWTP includes the addition of a new horizontal grit channel to remove material such as gravel, grit and stones from the plant influent and protect the primary screening system from erosion damage. Also being installed this summer are five new concrete tanks; a Clarifier Tank to assist with the removal of solids, an additional Anoxic Tank to assist with more efficient nitrogen removal when the plant receives winter time peak flows of cold water, two Membrane Bioreactor (MBR) tanks to increase the overall efficiency of the WWTP, and a membrane wash tank.

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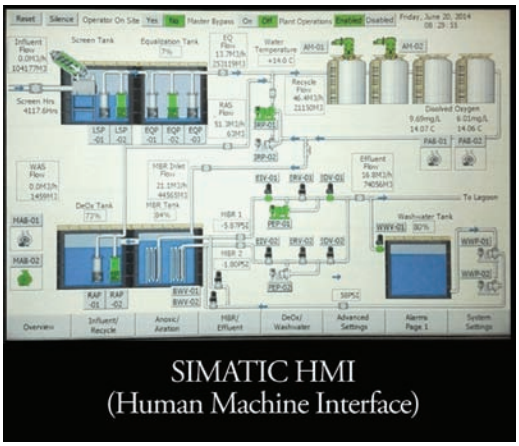
ELECTRONIC CONTROL & AUTOMATION

Up to and including 2012 the Treatment Plant was essentially a manually operated plant with only simple control equipment such as level controls. As part of the upgrading to the new process/plant a central PLC (programmable logic controller) was installed. It takes input from a large number of sensors including level, dissolved oxygen, flow, all pumps and mechanical systems. All operations can be viewed through an HMI (Human Machine Interface) which enables the plant to be operated through this interface. The automation system also includes a telemetry system whereby if any one of numerous alarms is triggered the control system will via cell phone call the operators in a given order. The operator who receives the call can then go to a computer and view the details of the alarm. For critical issues that need immediate attention, the operator will then travel to the treatment plant , 24/7.



SIMATIC HMI
(Human Machine Interface)

2013 SERVICE YEAR RATES

The Sewer Rates for the 2013 Service Year have increased over the previous year. Some of the items associated with higher operating costs for the 2013 Service Year are:

- Increased operational costs associated with a more advanced treatment plant.
- Higher than normal repair and maintenance was required for existing sewer lines and treatment ponds.
- Sampling & Testing costs increased due to MOE requirements, even though our third party testing has decreased.
- Reduced flows resulting in less flow to average costs over.

CAPITAL UPGRADE

The 2013 CURF invoice was sent out earlier this year to all customers, and represents the second of three installments of this fee. Customers can expect the third installment to be sent in the spring of 2015. Silverhawk Utilities would like to thank all of our customers who have promptly paid their CURF invoice. We would like to remind you that this fund is being used to directly finance the costs associated with this upgrading project and is not being used to facilitate any new development at Silver Star Mountain.

PROTECT OUR WATER

Please do your part by not pouring any chemicals, cooking oil, grease or materials down the sink or toilet that can be harmful to the environment. A list of restricted materials can be found on our website at www.silverhawkutilities.com, or if in doubt please contact our utility at (250) 558-9877.

TERTIARY TREATMENT NOW AT SILVERSTAR

With the completed upgrading to the Wastewater Treatment Plant, Silverhawk Utilities will be providing an advanced Tertiary level of wastewater treatment to the community of Silver Star. The Biological Nutrient Removal (BNR) Tertiary treatment plant also includes Membrane Bio Reactors (MBR's) and will be one of the best and most modern of its kind within the region, having the least impact environmentally. The plant will also be one of very few that will produce such high quality effluent that it can be used for irrigating the green space on the mountain during the dry season. When comparing the level of wastewater treatment provided by Silverhawk Utilities to major cities across Canada, only a very small percentage have achieved this standard.

CLASS III CERTIFICATION

Silverhawk Utilities is pleased to announce that the Waste Water Treatment Plant at Silver Star Mountain has been re-classified by the Environmental Operators Certification Program (EOCP) as a Class III Wastewater Treatment Facility. Out of all Municipal Waste Water Treatment plants certified with the EOCP, only 12% have achieved a Class III classification.

LABORATORY

The new Laboratory has been operating now through most of 2013 and enables Silverhawk Utilities to conduct critical in-house testing to facilitate timely adjustments, and for MOE reporting. The MOE's requirement for treatment levels has continued to increase over recent years. Sampling & Testing costs in recent years have been 700% higher than in the early 2000's. Last year SHU began doing some internal testing to help reduce costs. The new Tertiary plant has a need for additional tests of other parameters that were not required generally in the past. To accommodate these extra testing requirements, more sophisticated testing and lab equipment was needed. Silverhawk purchased a customized container to house the highly sensitive and fragile equipment. This new laboratory has significantly reduced our third party testing costs, though as a result of performing our own tests, labour costs for in-house testing has increased.

CONSTRUCTION ZONE

Please be aware that there is still an active construction zone in the vicinity of the WWTP. No traffic or unauthorized entry into this area is permitted. If you have questions please call (250) 558-9877

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