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INFORMATION REPORT TO GANGES SEWER LOCAL SERVICE COMMISSION
FRIDAY 03 JUNE 2011

SUBJECT **GANGES WASTEWATER TREATMENT PLANT – OUTFALL MONITORING PROGRAM**

BACKGROUND

The Ganges wastewater treatment plant (GWWTP) is located on the east side of Salt Spring Island. It discharges disinfected, secondary treated effluent into Ganges Harbour through a 4,800 metre long outfall at a depth of 16 metres below sea level.

The operation of the GWWTP is regulated under the BC Municipal Sewage Regulation (MSR) under Registration No. RE-05521, granted in 2005. Under this registration, in order to discharge effluent to the marine receiving environment, disinfected effluent and environmental monitoring are required at the frequency outlined in Appendix A (attached).

In addition to the required regulatory monitoring, treatment plant performance monitoring is conducted on influent and effluent (prior to disinfection) to assist operators in maintaining the facility at optimum efficiency. Staff undertake the operational monitoring at a frequency outlined in Appendix B (attached).

The 2011 annual budget for annually scheduled GWWTP monitoring and reporting is $6,220 with routine compliance monitoring analytical costs of $5,860, for a total of $12,080. These budget numbers include all analytical costs and staff time to collect samples and write the annual summary report, but are exclusive of general administration costs shared across the monitoring budgets for all eight CRD marine outfalls. In addition, the 2011 budget does not include funds to conduct a receiving environment monitoring program. Receiving environment monitoring for the GWWTP is triggered if any of the following conditions are met:

- fecal coliform concentrations in disinfected effluent exceed 200 CFU/100 mL in two consecutive samples or in three samples in a calendar year; or
- maximum flow exceeds 1,090 m^3/day; or
- the UV disinfection process is not functioning.

Such a program has not been required at the GWWTP since 2005.

The BC Ministry of Environment (MOE) has direct regulatory authority over sewage discharges to the marine receiving environment through the MSR. As such, MOE periodically reviews all outfall monitoring programs throughout the province.. On 09 December 2010, MOE presented the results of its most recent review of the GWWTP and other Capital Region District (CRD) Gulf Island and Port Renfrew outfall monitoring programs at a meeting with staff. MOE indicated they want the CRD to revise the GWWTP and other Gulf Island and Port Renfrew outfall receiving environment sampling programs from the triggered processes (e.g., as described above) to sampling programs that would occur regardless of effluent quality or flow volume. The proposed monitoring changes would involve sampling five times in 30 days, twice per year at each outfall, and would include enterococci in addition to fecal coliforms. The results from the revised monitoring would be directly comparable to human health guidelines which is not the case with the current monitoring programs. Similar monitoring requirements are being considered by MOE for all wastewater outfalls in BC.

Preliminary cost estimates to revise the marine receiving environment monitoring at the GWWTP to a five in 30 day sampling regime could increase the budget by an additional $12,000 per year, if sampling is

required twice per year. Upcoming discussions with MOE will involve this need for semi-annual monitoring and/or the potential to undertake monitoring on a less-than-annual basis. MOE staff initially indicated they would like the CRD to commence this increased monitoring at the GWWTP and other CRD outfalls in 2011. However, staff indicated 2011 budgets were already set for the GWWTP and that potential additional funds for monitoring would not be available until 2012. In the interim, staff have committed to working with MOE to develop a receiving environment monitoring program for this facility that is acceptable to both parties from the perspective of protecting the environment and human health, as well as respecting potential budgetary constraints.

For reference, the CRD's facilities at Maliview Estates (Salt Spring Island) and Schooner Way (Pender Island) have ongoing receiving environment monitoring programs that consist of semi-annual shoreline sampling at Maliview and surface water sampling at Schooner. These programs are insufficient to meet BC water quality guideline requirements under the Municipal Sewage Regulation. Following December's meeting, staff agreed to undertake a sampling program that would meet these guidelines (i.e., five samples collected within 30 days) at both of these locations for 2011. CRD staff are currently working with MOE staff to determine monitoring requirements for all Gulf Island (and Port Renfrew) facilities in 2012 and beyond, and it is likely that these facilities will require expanded monitoring budgets after the current year.

ECONOMIC IMPLICATIONS

An increase in marine receiving environment monitoring for the GWWTP, as per MOE expectations, could result in an annual increase of up to $12,000 in 2012 and future years, (above costs currently associated with wastewater monitoring) depending upon upcoming discussions with MOE.

RECOMMENDATION

That the Ganges Sewer Local Service Commission receive this report for information.

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Concurrence

SL/CL:km
Attachments: **2**

Ganges Wastewater Monitoring Program

	Regulation Limit	Required Sampling Frequency
Flow		
• daily total	1,090 m^3/day	twice per week
Disinfected Effluent Requirements		
• biological oxygen demand	25 mg/L	monthly
• total suspended solids	25 mg/L	monthly
• fecal coliforms	1,000 CFU/100 mL	six (6) times a year
• 96 hour LC_{50}	pass	annually
• ammonia	no limit	quarterly
• pH	no limit	weekly
• priority pollutants*	no limit	annually
Receiving Environment Monitoring		
• fecal coliforms	not required unless triggered**	twice per year (summer and winter)

* heavy metals and organic parameters (PCBs, pesticides, phthalates and volatile organics)

** trigger:

- if fecal coliform concentrations in disinfected effluent exceed 200 CFU/100 mL in two consecutive samples or in three samples in a calendar; or
- if maximum flow exceeds 1,090 m^3/day; or
- if the UV disinfection process is not functioning.

Ganges Wastewater Treatment Plant Performance Program

	Sampling Frequency
Influent	
• flow	daily
• biological oxygen demand	monthly
• total suspended solids	monthly
• fecal coliforms	monthly
• pH	monthly
Undisinfected Effluent	
• total suspended solids	monthly
• fecal coliforms	monthly