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**REPORT TO PORT RENFREW UTILITY SERVICES COMMITTEE
MEETING OF THURSDAY 17 SEPTEMBER 2009**

SUBJECT GULF ISLANDS AND PORT RENFREW WASTEWATER AND MARINE ENVIRONMENT PROGRAM – 2008 ANNUAL REPORT

PURPOSE

To present a summary of the activities and accomplishments of the Gulf Islands and Port Renfrew Wastewater and Marine Environment program (WMEP) in 2008.

BACKGROUND

The Capital Regional District (CRD) conducts various annual wastewater monitoring programs at all CRD wastewater treatment plants to ensure compliance with discharge limits stipulated by BC Ministry of Environment permits and registrations under the Municipal Sewage Regulation. Other program components provide information on plant performance to CRD operators, identify potential human health risks from recreational activity in the vicinity of the outfalls, monitor sludge for comparison to BC Organic Matter Recycling regulations and test effluent toxicity to assess potential for impacts in the marine environment.

The executive summary of the report, *Gulf Islands and Port Renfrew Wastewater and Marine Environment Program - 2008 Annual Report*, by the Capital Regional District (CRD) Scientific Programs division, is attached as Appendix A. The complete report is available on request from the CRD Environmental Services department. If you have any questions regarding the program or this report, please contact Chris Lowe, Supervisor, Marine Environmental Program, at 250-360-3296 or clowe@crd.bc.ca.

FINANCIAL IMPLICATIONS

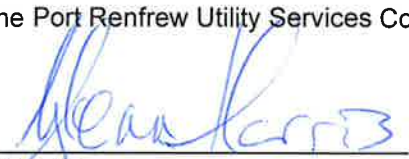
The cost of the WMEP is included in the annual budget.


SUMMARY

The 2008 Port Renfrew flow and effluent quality met operating certificate compliance requirements. General trends suggest that flow has not changed substantially over the past 10 years.

RECOMMENDATION

That the Port Renfrew Utility Services Committee receive this report for information.


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Attachment: 1

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**GULF ISLANDS AND PORT RENFREW
WASTEWATER AND MARINE ENVIRONMENT PROGRAM
2008 ANNUAL REPORT**

EXECUTIVE SUMMARY

This report summarizes the 2008 results of the Wastewater and Marine Environment program (WMEP) for the wastewater treatment plants (WWTP) operated by the Capital Regional District in the Gulf Islands and Port Renfrew. The program includes regular monitoring as stipulated by the British Columbia Ministry of Environment (MOE), formerly Ministry of Water, Land and Air Protection (MWLAP), either through permits or under the Municipal Sewage Regulation (MSR). Two of these WWTP (Ganges Harbour and Schooner Way) discharged disinfected secondary treated effluent, two WWTP (Cannon Crescent and Port Renfrew) discharged undisinfected secondary treated effluent and one (Maliview Estates) discharged undisinfected secondary treated effluent mixed with fine screened effluent during high flows.

All WWTP discharges (effluents) were monitored for conventional parameters such as flow, total suspended solids (TSS), biochemical oxygen demand (BOD) and fecal coliform bacteria, and most for ammonia and pH. All treatment plant influents were monitored for TSS and total BOD (TBOD), and some for fecal coliform bacteria. Effluent toxicity was monitored at Ganges Harbour and Schooner Way. Influent and effluent priority substances and sludge quality were monitored at Ganges Harbour. Results were compared to regulatory requirements relevant to each facility.

Receiving waters at Maliview Estates were monitored for fecal coliform bacteria. Receiving waters at Ganges Harbour and Schooner Way were not monitored for fecal coliform bacteria in 2008, but are subject to conditions included in their MSR registrations, which may require monitoring in the future. Receiving water results have been compared with values set to protect people undertaking primary contact recreational activities.

GANGES HARBOUR

Wastewater

Flow to the Ganges Harbour WWTP was slightly less than 2007 levels. None of the daily flows exceeded the allowable maximum. Effluent quality conformed to permit requirements for TSS, CBOD and fecal coliform bacteria. Ammonia concentrations in the effluent during the first two months of 2008 were similar to the elevated values observed during the last half of 2007, but returned to normal levels for the remainder of the year. Disinfection efficiency was effective and consistent. The disinfection system has been upgraded with monthly cleaning of ultraviolet tubes and annual replacement of these tubes. These upgrades have improved the reliability of the disinfection process relative to previous years. Effluent toxicity conformed to permit requirements, and influent/effluent priority substance concentrations were within the ranges expected for secondary treated effluent. Most substances in effluent were below BC Water Quality Guidelines (BCWQG) even before the minimum initial dilution of 419:1. All predicted receiving environment concentrations of measured parameters were below applicable BCWQG, well within the initial dilution zone.

Sludge

The 2008 results indicate that the Ganges Harbour WWTP sludge had concentrations generally well below the regulations for Class A biosolids. The one exception was mercury, which exceeded Class A biosolids limits in one sample. The CRD is investigating potential sources of the high mercury levels.

Surface Water

Surface water fecal coliform monitoring is subject to conditions included in the MSR registration. None of the conditions that could trigger a re-instatement of a surface water monitoring component were met in 2007 or 2008. Therefore, monitoring was not required in 2008 and will not be required in 2009.

Recommendations

- Maintain effectiveness and reliability of the treatment and disinfection processes.
- Coordinate toxicity sampling with routine compliance and treatment plant performance sampling.

MALIVIEW ESTATES

Wastewater

The Maliview Estates WWTP produces secondary treated effluent when flows are below 60 m³/day. For flows over 60 m³/day, the plant produces a final effluent that is a blend of secondary treated and fine-screened effluents. As such, there are different regulatory limits for this facility depending on whether the flows are above or below 60 m³/day. Total daily flow did not exceed the allowable maximum of 250 m³/day in 2008. Secondary effluent quality (when total flows were below 60 m³/day) exceeded the allowable maximum for TSS in 50% of the samples and for CBOD in 25% of the samples. Fine screened effluent quality (when total flows were greater than 60 m³/day) exceeded the allowable maximum for TSS in 67% of the samples. CRD Operations & Local Services staff are continuously adjusting the operation of this facility in attempts to minimize and prevent these exceedences in the future.

Receiving Water

The seven-station surface fecal coliform monitoring program was undertaken in January and July 2008. All January results were less than 200 CFU/100mL. Three of the seven results in July 2008 exceeded 200 CFU/100mL. The CRD is investigating potential reasons for these exceedences. As a result of the exceedences, surface water monitoring will be required for Maliview Estates in both 2009 and 2010.

Recommendations

- Review the regulatory threshold for high bypass events and consider revising it based on instantaneous peak rather than total daily flow.
- Continue monthly wastewater sampling instead of quarterly sampling as specified in the BC MSR Registration for this facility.
- Ensure that the winter shoreline surface water sampling event is undertaken when fine-screened effluent makes up a substantial portion of the total effluent flow.

SCHOONER WAY

Wastewater

Total annual flow to the Schooner Way WWTP was similar to that in 2007. Three per cent of the daily flows exceeded the allowable maximum. Effluent quality conformed to allowable maximums for TSS and CBOD, but exceeded the maximum for fecal coliforms in one of the samples. Disinfection efficiency was usually effective, but occasionally deteriorated.

Surface Water

All 37 of the surface water receiving water stations around the Schooner Way outfall were below levels that could cause health effects related to primary contact recreational activities. The maximum fecal coliform concentration observed was 7 CFU/100mL.

Surface water monitoring for fecal coliforms is subject to conditions included in the MSR registration. All of these conditions were met in 2008, but one was not in 2007. The conditions require two consecutive years of compliance, so receiving water monitoring for fecal coliforms will be required in 2009.

Recommendations

- Improve effectiveness and reliability of the disinfection process.
- Coordinate toxicity sampling with routine compliance and treatment plant performance sampling.

- Continue surface water fecal coliform monitoring for 2009, as per the conditions stipulated in the MSR registration.

CANNON CRESCENT

Wastewater

Total annual flow to the Cannon Crescent WWTP in 2008 was slightly lower than in 2007. Two per cent of the daily flows exceeded the allowable maximum. The inflow and infiltration program initiated in 2000 has reduced exceedences from the 24% level observed in 2000. Effluent quality met all permit requirements, with no samples exceeding allowable maximums.

Recommendations

- No specific recommendations.

PORT RENFREW

Wastewater

A new flow meter was installed at the Port Renfrew WWTP and readings for the last two were not directly comparable to previous years. However, general trends suggest that flow has not changed substantially over the past 10 years. Two per cent of the daily flows exceeded the allowable maximum. Effluent quality was similar to last year and met all permit requirements.

Recommendations

- No specific recommendations.