



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE  
MEETING OF WEDNESDAY 22 SEPTEMBER 2010**

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**SUBJECT**      **REGIONAL SOURCE CONTROL PROGRAM – 2009 ANNUAL REPORT AND RESULTS OF FIVE-YEAR REVIEW (2004–2008)**

**ISSUE**

To present the activities and accomplishments of the Regional Source Control Program (RSCP) in 2009, to present the results of an independent five-year review of the program and to consider next steps and recommendations from the reports.

**BACKGROUND**

The purpose of the RSCP is to reduce the amount of contaminants that industries, businesses, institutions and households discharge into the Capital Regional District's (CRD) sanitary sewer systems in order to protect sewage collection and treatment facilities, biosolids quality, public health and safety, and the receiving environment.

This staff report presents the *Capital Regional District Regional Source Control Program Annual Report 2009*, dated August 2010. A summary of program activities and accomplishments in 2009 is provided in the report's executive summary (Appendix A). A full copy of the report is available from the Environmental Sustainability department upon request.

The Core Area Liquid Waste Management Plan (LWMP) commits to reviewing the effectiveness of the RSCP every five years. A summary of the findings of this independent review is provided in the executive summary of the report *CRD Regional Source Control Program—Five-Year Review (2004-2008)* by Morrison Hershfield Ltd., dated March 2010 (Appendix B). A full copy of this report is also available from the Environmental Sustainability department upon request.

A summary of both the recommendations and next steps from the above reports is presented in Appendix C.

**ALTERNATIVES**

That the Core Area Liquid Waste Management Committee:

1. (a) recommend to the CRD Board that the reports *Regional Source Control Program Annual Report 2009* and *CRD Regional Source Control Program—Five-Year Review (2004-2008)* be received for information and forwarded to the Ministry of Environment;
- (b) direct staff to forward copies of the above reports to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee and the Port Renfrew Utility Services Committee for information and comment; and
- (c) direct staff to bring back a new five-year implementation plan for the RSCP, covering the period 2011–2015, for approval in the spring of 2011; or

2. (a) recommend to the CRD Board that the reports *Regional Source Control Program Annual Report 2009* and *CRD Regional Source Control Program—Five-Year Review (2004-2008)* be received for information and forwarded to the Ministry of Environment;
- (b) direct staff to forward copies of the above reports to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee and the Port Renfrew Utility Services Committee for information and comment; and
- (c) direct staff to continue the RSCP without developing a new five-year implementation plan.

### **ECONOMIC IMPLICATIONS**

Development of a new five-year implementation plan is included in the RSCP budget for 2011.

### **CONCLUSION**

The findings of the five-year review indicate that the RSCP has, over the period of 2004-2008, successfully:

- met or exceeded Canadian Best Management Practices for source control.
- met all source control commitments set out in the Core Area and Saanich Peninsula LWMPs.
- achieved program objectives as defined by three performance measures.
- addressed previous review recommendations.

The accomplishments outlined in the 2009 RSCP annual report highlight the effectiveness of the RSCP's approach to source control. The increased compliance levels attained by businesses in 2009, and the ongoing decreasing trends in contaminant loads, are directly linked to the high levels of consistent inspection, education and follow-up provided by RSCP staff. In addition, the efforts expended by business, industry and institutions in the region play a large part in the program's success.

The 2009 annual report and five-year review, together with the CRD Service Delivery Review and elements in the Environmental Partnerships division business plan, form the basis for the development of a new RSCP implementation plan for the period 2011-2015 designed to prepare for the initiation of core area sewage treatment in 2016.

### **RECOMMENDATIONS**

That the Core Area Liquid Waste Management Committee:

1. recommend to the CRD Board that the reports *Regional Source Control Program Annual Report 2009* and *CRD Regional Source Control Program—Five-Year Review (2004-2008)* be received for information and forwarded to the Ministry of Environment;
2. direct staff to forward copies of the above reports to the Environmental Sustainability Committee; the Saanich Peninsula Wastewater Commission; the Ganges Sewer Local Service Committee; the Highland Water and Sewer Local Services Committee; the Magic Lake Estates Water and Sewer Local Services Committee; and the Port Renfrew Utility Services Committee for information and comment; and
3. direct staff to bring back a new five-year implementation plan for the RSCP, covering the period 2011–2015, for approval in the spring of 2011.

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John Balogh  
Senior Manager, Environmental Partnerships

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Concurrence

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Kelly Daniels  
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**COMMENTS**

TS:slw  
Attachments: 3

# Regional Source Control Program

## Annual Report 2009

## Executive Summary



The purpose of the Capital Regional District (CRD) Regional Source Control program (RSCP) is to protect sewage collection and treatment facilities, biosolids quality, public health and safety, and the receiving environment by reducing the amount of contaminants that industries, businesses, institutions and households discharge into the district's sanitary sewer systems.

The CRD adopted a Sewer Use Bylaw in 1994 to regulate sanitary sewer discharges. Implementation of a region-wide program began in 1995 with regulation of larger industries under a permit system, followed by adoption of the first regulatory codes of practice (COP) for commercial sectors in 1999. COP were developed, adopted and implemented by the end of 2005 to regulate discharges from approximately 2,000 businesses within 11 sectors. The RSCP works to ensure that the bylaw and its associated policies and procedures are applied consistently within all CRD sewage collection areas.

The annual report demonstrates that the RSCP achieved some significant milestones in 2009. The overall percentage of regulated businesses with proper waste treatment installed reached 95%, the highest level achieved to date. Sectors operating under COP maintained high levels for installation and use of proper waste treatment measures. Permitted industrial facilities and facilities operating under authorizations also maintained high compliance levels. Overall inspection levels for COP and permits were the highest yet recorded.

Results of sewage effluent data collected in the core area since the last trend analysis (2008) suggest that previously reported decreasing trends for key contaminants have continued, or reached a point of no significant change. The percentage of treatment plant biosolids and mixed liquor samples that met Class "A" standards for metals achieved a record high level of 100%. This was a result of significant reductions in metals levels in Ganges wastewater treatment plant mixed liquor.

There were no significant incidents reported at CRD sewage treatment plants in 2009.



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## Industrial, Commercial and Institutional Liquid Waste Regulation

- 100% use of proper waste treatment measures was maintained in seven code sectors (treatment works installed or offsite waste management used): photographic imaging, dental, laboratory, dry cleaning, carpet cleaning, fermentation and recreation.
- A record high level of proper waste treatment was attained in the food services sector (92%); this was a 3% increase over that reported in 2008. Full compliance with the COP (85%) was the highest recorded to date for this sector.
- A new COP inspection plan focusing on businesses discharging priority contaminants to sewer was successfully implemented.
- The overall primary inspection levels for COP in 2009 were higher than those in 2008 and most of the new inspection targets were met or exceeded.
- All permit inspections scheduled at the beginning of 2009 were completed within the year.

## Monitoring

- First year of new monitoring plan focusing on priority sectors and contaminants—all new monitoring targets were met.
- The goal of collecting audit samples from each permitted site twice per year was achieved.
- Higher number of COP and key manhole monitoring events in 2009 than in 2008.

## Enforcement

- Six tickets were issued under the CRD Ticket Information Authorization Bylaw as a result of seven COP sector investigations by bylaw enforcement staff—all within the food services sector.
- No charges were laid under the Sewer Use Bylaw in 2009.

## Contaminants Management

- A mass balance and inventory of priority contaminant discharges to the core area and Saanich Peninsula sewage collection systems was completed in 2009. The results of this study and subsequent investigations into sources of residential contaminants will assist in the preparation of a contaminants management plan in 2010.

Promotion of the residential outreach initiative “Clean Water Begins at Home” was enhanced by the addition of a groundbreaking social media campaign (“Sustainable U” Source Control 101), production of five website videos and development of a hands-on display in partnership with the Shaw Ocean Discovery Centre in Sidney. Information obtained through a telephone survey and from the provincial Medications Return Program has shown that the residential outreach messaging is being successfully delivered.

The observed significant decreasing trends in contaminants are a result of the ongoing consistent application of source control regulations, inspections and promotion of best management practices through program outreach initiatives. This highlights the important role that the source control program plays, and will continue to play, in achieving wastewater contaminant reductions and protecting sewage collection and treatment facilities throughout the region, particularly in view of the initiation of core area sewage treatment in 2016.

The 2009 annual report presents background information, a summary of program activities and accomplishments over the period January to December 2009 and a brief account of initiatives planned for 2010. The main activities and accomplishments of the program in 2009 are outlined as follows.

## Contaminant Reductions

- Preliminary results of Macaulay and Clover Point effluent and Saanich Peninsula wastewater treatment plant influent and effluent monitoring in 2009 generally indicate similar concentrations and loads of contaminants to those reported in the 2008 trend assessment. This suggests that previously reported trends are either continuing or levelling off.
- For the first time since sampling began in 1994, the 2009 Ganges wastewater treatment plant mixed liquor results met the Class “A” criteria for all metals, including mercury. This finding may be related to an increased level of business inspection and compliance in the Ganges collection area in 2009.
- Biosolids quality at Saanich Peninsula wastewater treatment plant continued to meet Class “A” criteria. Mercury concentrations in biosolids were maintained at a very low level, likely as a result of the continued implementation of the dental COP since 2001.
- Five-year contaminant reduction targets have been successfully achieved for all COP sectors with the exception of the vehicle wash sector, one of the last codes to be fully implemented.



## Significant Incident Response

- There were no significant incidents reported at CRD sewage treatment plants in 2009. There were two minor incidents in CRD trunk sewers. Three blockages were reported in municipal sewers that were related to build-up of fats, oils and grease. These incidents were all investigated by RSCP staff.



## Residential Outreach

- RSCP staff continued the promotion of the three “Clean Water Begins at Home” campaigns (Fats, Oils and Grease Reduction, Surfactant Reduction and Medications Return) through print, radio advertisements and events at both schools and downtown shopping malls.
- In 2009, the CRD recorded the highest medication return rate of all regional districts in the province. Almost seven tonnes of medications were collected—representing a 130% increase over the amount collected in 2007, the year before the CRD Medications Return campaign was launched.
- A telephone survey to measure the success of all three “Clean Water Begins at Home” campaigns within the CRD was completed in February 2009. Results of this survey have shown that the residential outreach messaging is being successfully delivered.
- A social media campaign, “Sustainable U” Source Control 101, was developed and initiated in September 2009 to make source control messaging available to males 18–34 years of age throughout the CRD. This was the first social media campaign to be piloted by the CRD.
- The importance of source control as a critical first step in sewage treatment was highlighted at a series of “Wastewater Made Clear” open houses and other events held throughout the core area.
- Five videos highlighting “Clean Water Begins at Home” and general source control information were developed in November 2009 to explain the need for, and importance of, residential source control practices, particularly with the move toward sewage treatment in the core area.
- In November 2009, RSCP staff formed a partnership with the Shaw Ocean Discovery Centre in Sidney to develop a hands-on display linking common household activities with potential impacts on the marine receiving environment and highlighting the protective role of source control. The display will be targeted at school programs and the general public.



## Next Steps—2010/11

The main areas of program development in 2010/2011 include:

- Completion of a contaminants management plan based on the findings of the mass balance report, subsequent investigations into sources of residential contaminants and the RSCP five-year review.
- Implementation of a new COP inspection plan for 2010, including actions to resolve compliance issues within the vehicle wash sector.

## Business Outreach

- A revision of the dental operations guidebook was completed and an “information postcard” designed and mailed to all dentists.
- Local service providers were consulted regarding COP requirements and ongoing maintenance and repair of pre-treatment systems in the dental and printing sectors.
- The 2009 CRD EcoStar award event was co-sponsored by RSCP and staff participated in the evaluation committee for the Waste Reduction, Lifetime Achievement and Youth Achievement categories.



## Data Management

- Development of a combined business database, in collaboration with CRD Water Services, continued in 2009. The completion and implementation of this enhanced, more secure and updated business database is now scheduled for 2010.

## Program Planning and Development

- A second independent review of the program was initiated in 2009. The findings of this review, covering the period 2004 to 2008, will be used to develop a new five-year plan for 2011–2015.

## Performance Measures

- Highest percentage of regulated businesses with proper waste treatment installed to date (95%).
- Highest percentage of biosolids and mixed liquor samples that meet Class “A” standards for metals to date (100%).
- Percentage of priority contaminants showing no increase in loads to the core area environment (79%)—based on last trend analysis for 1990–2008 data.

- Implementation of a COP monitoring plan focusing on the automotive repair, vehicle wash, dental and food services sectors.
- Stakeholder workshops to plan outreach for the food services and automotive repair sectors.
- Enhanced residential key manhole monitoring program.
- Increased collaboration with municipalities, business groups, institutions and other agencies.
- Implementation of RSCP-related components of the Service Delivery Review:
  - transfer of RSCP to the new Environmental Partnerships division
  - closer collaboration with demand management, cross-connection control, onsite sewage treatment and integrated outreach programs
  - development of a one-window approach to inspections and audits
- Development of a new RSCP five-year plan for the period 2011–2015.

**CRD REGIONAL SOURCE CONTROL PROGRAM – FIVE-YEAR REVIEW (2004–2008)  
BY MORRISON HERSHFIELD LTD., MARCH 2010**

**EXECUTIVE SUMMARY**

The Capital Regional District established a Regional Source Control Program (RSCP) in 1995 to support and administer its Sewer Use Bylaw. Clear source control program objectives and commitments were defined in the 1996 Saanich Peninsula Liquid Waste Management Plan (LWMP) and the 2000 Core Area LWMP. Both of the LWMPs included a commitment to conduct a review of the RSCP every five years. This report documents the results of a five-year review of the program, covering the period 2004-2008.

The objectives of this review include:

- Assess status of LWMP source control commitments;
- Determine if previous review recommendations have been addressed;
- Determine if Canadian Best Management Practices for wastewater source control have been adopted;
- Review progress made in each program component area during the review period focusing on achievements, utility needs, effectiveness and efficiency of delivery;
- Assess progress in meeting program objectives;
- Identify innovative source control programs and regulatory practices in other North American jurisdictions, and assess applicability within the CRD.

The program review is based on an examination and assessment of program annual reports, program planning documents, and related studies conducted by, or for, the RSCP. In determining whether the program was consistent with Canadian Best Management Practices, a comparison was made to the National Guide to Sustainable Municipal Infrastructure, developed in 2003.

Three jurisdictions (Metro Vancouver; King County, Washington; and Orange County, California) were selected to review innovative source control practices specifically in the areas of priority contaminant reduction, emerging contaminant reduction and enhancement of resource recovery opportunities. The jurisdictions were selected based on a combination of factors including similarity in receiving environments, reputation for innovation, and development of linkages between utility resource recovery and source control practices.

The results of the review indicate that the program has been very effective at implementing its mandate as defined in the CRD's LWMPs. Full implementation of the Code of Practice regulatory scheme has been achieved during the review period and overall inspection and compliance levels have steadily improved. A commitment to continual improvement has been demonstrated by successfully addressing previous review recommendations. A new focus on priority contaminant identification and management has strengthened the program's pollution prevention efforts. Finally, significant contaminant reductions measured in wastewater effluent, biosolids and sludge have been directly linked to the successful implementation of the RSCP. Specific findings relative to the review objectives include:

- All LWMP source control commitments have been met;
- All nine recommendations included in the previous five-year review were either completed or "in progress towards completion";
- The RSCP met or exceeded Canadian Best Management Practices (BMPs) in all recommended program areas, with the exception of pollution prevention (P2) planning, which is identified in the BMPs as an alternative approach;

- Progress was achieved in meeting program objectives as defined by three program performance measures as follows:
  - Percentage of regulated businesses with proper waste treatment installed increased from 80% to 93% during the review period;
  - Loadings to the environment for a majority of priority contaminants have remained stable or decreased (since 1990) despite the fact that population and sewage flows have increased by more than 10% during the same time period. Enhanced program efforts will be required to meet the program target of no increase in loads for all priority contaminants;
  - Percentage of biosolids and sludge samples that met Class "A" standards for metals increased from 83% to 93% during the review period.

A wide range of innovative source control practices of potential applicability to the CRD were identified during the jurisdictional review. These practices and programs included:

- Development of a P2 planning regulatory approach for facilities discharging medical and chemical laboratory-type waste (Metro Vancouver);
- Establishment of a partnership with the Building Owners and Managers Association for the purpose of reducing molybdenum discharges to sewer (Metro Vancouver);
- Energy recovery feasibility studies and demonstration projects using trucked liquid wastes instead of disposal within wastewater treatment plants (Metro Vancouver);
- Comprehensive source control management system that addresses public health risks associated with reuse of treated wastewater (Orange County);
- Outreach program which prioritizes efforts in geographic areas of greatest environmental sensitivity (King County).

Program recommendations generated during the review include:

- Maintain existing program components to ensure ongoing LWMP commitments are met.
- Develop a program performance measure that indicates degree of public awareness, attitudes and behaviours regarding contaminant source reduction. Additionally, develop performance measures linked to the remaining three program objectives (that don't currently have an associated measure) and establish targets associated with each performance measure. These objectives are:
  - Protection of sewage facilities belonging to the CRD and its member municipalities;
  - Protection of the health and safety of sewage workers and general public;
  - Protection of treatment processes.
- Complete the implementation of a Contaminants Management Plan including setting clear monitoring, inspection and contaminant reduction objectives. This new subprogram will enhance the RSCP's pollution prevention focus and should play a key role in the reduction of priority contaminants discharged to sewer.
- Increase municipal staff participation in the incident reporting and management system through an outreach initiative that regularly reviews and updates program objectives, program results and potential benefits available to municipalities. Incidents reported by municipalities should be incorporated within the RSCP incident management system and included in annual reporting.
- Capitalize on opportunities to promote water reduction in education and outreach efforts.
- Consider adopting a P2 planning approach for regulating the medical and chemical laboratory sectors.

- In preparation for the implementation of a new LWMP for the core area consider revising the discharge fee structure and conducting a review of the Sewer Use Bylaw, regulatory framework, regulated parameters and associated limits.
- Develop a new five-year implementation plan for the RSCP for the period 2011–2015. Link the five-year plan to program performance measures and associated targets and report results of key performance measures in annual reports.

**SUMMARY OF REGIONAL SOURCE CONTROL PROGRAM (RSCP)  
FIVE-YEAR REVIEW RECOMMENDATIONS  
AND ANNUAL REPORT NEXT STEPS**

RSCP Five-Year Review Recommendations	RSCP Annual Report 2009—Next Steps
Maintain existing program components to ensure ongoing LWMP commitments are met.	
	Enhanced residential key manhole monitoring program.
	Implementation of a new code of practice (COP) inspection plan, including resolution of compliance issues in the vehicle wash sector.
	Stakeholder workshops to plan outreach for the food services and automotive repair sectors.
	Implementation of a COP monitoring plan focusing on the automotive repair, vehicle wash, dental and food services sectors.
Develop a new five-year RSCP implementation plan for the period 2011-2015.	Develop a new RSCP five-year plan for the period 2011-2015.
Complete implementation of a contaminants management plan.	Complete contaminants management plan.
Develop additional program performance measures and targets. Report results in RSCP annual reports.	(Note: Three performance measures were reported in 2009 annual report)
Increase municipal staff participation in the incident reporting system. Report municipal incidents in RSCP annual reports.	Increased collaboration with municipalities, business groups, institutions and other agencies. (Note: Municipal incidents were reported in 2009 annual report)
Capitalize on opportunities to promote water reduction in outreach efforts.	Implementation of RSCP-related components of the Service Delivery Review: <ul style="list-style-type: none"> <li>• transfer of RSCP to the new Environmental Partnerships division</li> <li>• closer collaboration between Environmental Partnerships programs</li> <li>• development of a one-window approach to inspections and audits</li> </ul>
Consider adopting a pollution prevention planning approach for regulating the medical and chemical laboratory sectors.	
Consider revising the discharge fee structure and reviewing the Sewer Use Bylaw parameters and limits.	