Wastewater Treatment

BIOSOLIDS PRODUCTION REPORT

Capital Regional District | February 2025

Long-Term Biosolids Management Strategy

In June 2024, the CRD Board approved the long-term biosolids management strategy. The options in the long-term strategy follow a tiered prioritization structure. More information on the CRD's long-term biosolids management strategy can be found here.

Summary of Biosolids Production and End Use

In February, 75 tonnes of Class A Biosolids produced at the Residuals Treatment Facility (RTF) were shipped to the Richmond cement manufacturing facility for use as alternative fuel. In addition, 204 tonnes of biosolids were mixed with sand at Hartland Landfill and shipped to the Cassidy quarry, for use in site reclamation. No biosolids were landfilled.

Biosolids production and end use data for February 2025 is as follows:

Biosolids Type	Produced		Tier 1 [b]	Tier 2			Tier 3 [f]	Hartland Landfill [g]
			N/A	Cement Kiln [c]	Quarry [d]	Nursery [e]	N/A	
Dried [a] Class A	This month	324 t	0 t	75 t	249 t	0 t	0 t	0 t
	Year to date	628 t	0 t	175 t	453 t	0 t	0 t	0 t
Non-Class A	This month	0 t						0 t
	Year to date	0 t						0 t

[a] Greater than 90% solids.

[b] Tier 1 advanced thermal option under development.

[c] Used as an alternative fuel at the Lafarge cement manufacturing facility in Richmond, BC

[d] Mixed with sand at Hartland Landfill and shipped to Cassidy BC for use in quarry reclamation.

[e] Mixed with wood to form a growing medium used for potted cedar trees at a nursery in the Fraser Valley.

[f] No Tier 3 contingency options currently available.

[g] Class A Biosolids are rendered inert by mixing with soil and landfilled within leachate containment areas, and Non-Class A Biosolids are landfilled as a controlled waste.

Compliance Monitoring

The CRD's contractor, Hartland Resource Management Group (HRMG), tests biosolids produced at the RTF to ensure the biosolids are Class A, as defined by the British Columbia *Organic Matter Recycling Regulation* (OMRR). Testing is performed by CARO Analytical Services. OMRR specifies that for Class A biosolids, metals concentrations must not exceed "those specified in Trade Memorandum T-4-93 (September 1997), Standards for Metals in Fertilizers and Supplements, as amended from time to time." The latest version of OMRR can be found here and the latest version of Trade Memorandum T-4-93 can be found here. In June 2022, The Ministry of Environment and Climate Change Strategy announced the intention to amend OMRR, including new standards for Class A biosolids. Regulatory amendments are expected in 2025. The proposed OMRR Standards have been included in the table for reference. All biosolids met OMRR Class A criteria.

Substance	OMRR Standard [a] (mg/kg dry weight)	Proposed OMRR Standard [b] (mg/kg dry weight)	Biosolids (mg/kg dry weight)		
			Average	Minimum	Maximum
Metals					
Arsenic (As)	666	41	1.99	1.85	2.18
Cadmium (Cd)	177	15	1.34	1.23	1.49
Chromium (Cr)	9,333	1000	41.8	40.0	46.4

Cobalt (Co)	1,333	150	3.55	3.38	3.88
Copper (Cu)	6,666	1500	410	376	455
Mercury (Hg)	44	4	0.537	0.470	0.593
Molybdenum (Mo)	177	20	7.26	6.71	8.24
Nickel (Ni)	1,600	180	17.4	16.5	19.3
Lead (Pb)	4,444	300	27.5	26.0	30.0
Selenium (Se)	124	25	5.36	5.04	5.73
Thallium (Tl)	44	ns	<0.10	<0.10	<0.10
Vanadium (V)	5,777	ns	17.8	16.6	19.3
Zinc (Zn)	16,444	1820	777	708	859
Fecal Coliforms					
MPN	1,000	1000	<3.0	<3.0	<3.0

[a] For metals, the maximum allowable concentrations for Class A biosolids are calculated based on a 500 kg/ha annual application rate; for fecal coliforms, the maximum allowable concentration is a fixed value

[b] Proposed OMRR standards are tabled for reference - standards subject to change once final OMRR amendment is published.

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On October 18, 2024, the Canadian Food Inspection Agency (CFIA) began enforcing an interim standard for per-fluorooctane sulfonate (PFOS) in biosolids imported or sold in Canada as fertilizers. PFOS is used as an indicator for per-and polyfluoroalkyl substances (PFAS). The notice to industry is available here. The CRD tests biosolids produced at the RTF bi-annually to ensure biosolids are compliant with this standard. The most recent sample was taken September 10, 2024. Testing is performed by SGS AXYS Analytical Services.

Substance	CFIA Interim standard (µg/kg dry weight)	Biosolids (µg/kg dry weight)
PFOS	50	4.67