

## **CONTAMINATED SITES REGULATION OMNIBUS UPDATING: Overview<sup>1</sup>**

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### **Summary of Proposed Updates for 2015/2016 Stage 10 amendment to CSR**

Based on advances related to the science of deriving environmental quality standards, the ministry proposes to:

1. Update existing, and for some substances (e.g. emerging toxicants of regulatory concern), derive new environmental quality standards for use under the CSR.
2. Derive new environmental quality standards for the following new land uses:
  - a. Wildlands (WL), and
  - b. High Density Residential (RL<sub>HDR</sub>).
3. Amend the CSR to require the Director to update the environmental quality standards of the Regulation on a fixed term cycle of time (e.g. every 5 years).

### **Introduction**

The numerical standards of the Contaminated Sites Regulation (CSR) British Columbia, 2014 [1], vary in their method of derivation, date of derivation and environmental media for which they were derived. Many of the numerical standards (e.g. the Schedule 4 soil standards and the Schedule 6 aquatic life standards) have not been updated since they were originally derived (circa 1995/96). The only standards which have been routinely updated since the Regulation came into effect (April 1, 1997) are the Schedule 6 drinking water standards. Although all but one (i.e. the Stage 3 amendment) of the nine *ad hoc* amendments to the Regulation to date have included changes to the numerical standards, these changes have generally reflected the addition of new standards to address new environmental media (e.g. addition of sediment quality criteria in 2004 and vapour standards in 2009) or the addition of new substances (e.g. new human health soil quality standards and drinking water standards in CSR Schedule 10).

<sup>1</sup> This Draft Discussion Document provides a high level overview of some of the major changes and revisions proposed by the ministry to update the environmental quality standards of the Contaminated Sites Regulation. For full details of the proposed revisions and new aspects related to the updating of the standards, the reader is directed to the various companion CSR Omnibus Updating Draft Discussion Documents.

As a result, many of the numerical standards of the Regulation are now significantly outdated and require comprehensive updating to ensure the standards reflect current best science, including consideration of pertinent new:

- a. toxicological derivational methodology for environmental quality standards,
- b. human and ecological toxicology modifiers (e.g. bioavailability, genotoxicity, etc.),
- c. human and ecological health toxicity reference values,
- d. hydrogeological soil to groundwater modelling advances,
- e. categories of receptor - exposure/land use scenarios (e.g. high density residential, and wildlands), and
- f. emerging toxicants of regulatory concern (e.g. 17  $\alpha$  ethinylestradiol, tributyltin, perfluorooctane sulfonate (PFOS), bisphenol A, alkylated PAHs, etc.).

In addition, the existing standards require a number of formatting and administrative updates to further standardize, enhance consistency and streamline the manner in which the standards are presented and used in the Regulation<sup>2</sup>.

Finally, to ensure the standards of the Regulation continue to remain pertinent and current to their purpose and to provide greater certainty to stakeholders related to the timing of future changes to the standards, the ministry proposes to amend the Regulation to require the Director to update and revise the numerical standards in accordance within a repeating fixed term of time (e.g. a fixed 5 year cycle).

### **Draft Discussion Documents – (Draft Proposal Papers)**

The ministry wishes to accomplish the 2015 omnibus updating of the numerical standards as a component of the planned Stage 10 amendment to the Regulation to be completed by late Spring 2016. Initial Draft Discussion Documents (draft proposal papers) detailing the changes comprising the 2015 Omnibus Updating of the numerical standards and presenting some of the longer term aspects (Next Cycle Revisions) likely to move forward if a fixed cycle for updating the standards is adopted, have been prepared for each of the existing schedules of standards comprising the CSR.

The intent is to post these Draft Proposal Papers, circa July 6, 2015 to the ministry [Site Remediation website](#) for a two month period of public review and stakeholder comment (comment period to close circa August 28, 2015). During the public review and stakeholder comment period, the Land Remediation Section will also engage in focussed stakeholder review meetings with selected stakeholders with particular interests or concerns related to the proposals of the various Draft Discussion Documents.

<sup>2</sup> Some of the changes resulting from the proposed CSR Omnibus Updating of the standards will also trigger consequential amendments to other regulations under the Environmental Management Act (e.g. the Hazardous Waste Regulation and the Organic Matter Recycling Regulation).

## **Finalized Proposal Papers**

Following the ministry's review of both broader public and focussed stakeholder comment, Final Proposal Papers detailing the changes to be made related to the CSR Omnibus Updating of the standards for the Stage 10 amendment to the Regulation will be posted for the information of the public and stakeholders circa October 23, 2015.

## **Proposed Updates - Stage 10 Amendments**

Based on the changes detailed in the Finalized Proposal Papers, the ministry plans to calculate the new and updated standards of the Stage 10 amendment to the Contaminated Sites Regulation by, circa December 18, 2015. These new and updated standards proposed for the Stage 10 amendment to the Contaminated Sites Regulation will be provided to the minister for the minister's consideration to possibility approve and implement in the late Spring of 2016 (e.g. April/May, 2016).

## **Overview of Some Major Proposed Aspects of the CSR Omnibus Updating of Standards**

Some (typically more administrative) elements of the 2015 omnibus updating of the CSR standards have already been determined. For example, the ministry proposes:

1. To establish a new standardized format for listing and identifying substances in all of the Regulation's schedules. Specifically, substances will be listed alphabetically along with their respective Chemical Abstract Service (CAS) numbers (e.g. as is currently done in CSR Schedule 11).
2. All existing schedules which currently provide soil quality standards (e.g. Schedules 4, 5 and 10 but excluding schedule 7) will be consolidated into a single new schedule (Schedule "X") under the CSR. The format for Schedule "X" will include three parts:
  - a. Part 1 – Matrix soil quality standards
  - b. Part 2 – Generic Human Health Protective soil quality standards, and
  - c. Part 3 – Generic Environmental Health Protective soil quality standards.
3. The soil standards of Schedule "X", will include purpose-derived new soil standards for two new land uses:
  - a. Wildlands (WL) and
  - b. High Density Residential (RL<sub>HDR</sub>).The existing RL standards of the Regulation will become Low Density Residential (RL<sub>LDR</sub>) land use standards.
4. The CSST, 1996 [2] Protocol by which the existing human health and environmental health protective matrix soil standards of CSR Schedule 5 are derived will be updated to include new derivational procedures to calculate Wildlands (WL) and High Density Residential (RL<sub>HDR</sub>) soil quality standards for use in Schedule "X".

5. The CSST, 1996 [2] Protocol by which the existing human health and environmental health protective matrix soil standards of CSR Schedule 5 are derived will be updated and modified to reflect advances in toxicological derivational methodology for environmental quality standards. The resulting new CSST protocol will be used to calculate new human health and environmental health protective matrix soil standards for use in Schedule “X” Part 1.
6. Where toxicological data is sufficient, the existing Schedule 4 generic soil quality standards, considered to be protective of both human and environmental health, will be replaced by discreet toxicologically derived human health generic soil standards for Schedule “X” Part 2 and environmental health protective generic soil standards for Schedule “X” Part 3.
7. The ministry’s existing Groundwater model, BC MoE, 2009 [3] will be updated to reflect current science related to hydrogeological soil to groundwater modelling. The new Groundwater model will be used to back-calculate new Soil to Groundwater Protective matrix soil standards for use in Schedule X, Part 1.
8. Aspects of the new Groundwater model will be used to update elements of CSR Protocol 2 Site-Specific Numerical Soil Standards, BC MoE, 1998 [4] and CSR Protocol 13 Screening Level Risk Assessment, BC MoE, 2008 [5].
9. The soil and water standards of schedule 10 will be updated to reflect current US EPA, 2015 [6] Region 3, 6 and 9 soil and water screening values, modified as necessary to reflect the ministry’s levels of acceptable risk and derivational assumptions related to human exposure.
10. The updated human health protective soil standards of CSR Schedule 10 will be consolidated into Schedule “X” Part 2.
11. The existing CSR Schedule 6 Aquatic life, Irrigation and Livestock Watering protective water quality standards will be updated to reflect current ministry, BC MoE, 2015 [7, 8] and CCME, 1999 [9] Aquatic life, Irrigation and Livestock Watering water quality criteria and guidelines, modified as necessary to reflect the ministry’s Protocol for the derivation of CSR water quality standards.
12. The existing CSR Schedule 6 Drinking water protective standards that are not based on Health Canada aesthetic/organoleptic based drinking water guidelines will be updated to reflect current Health Canada, 2014 [10] water quality guidelines, modified as necessary to reflect the ministry’s Protocol for the derivation of CSR water quality standards.
13. New *de novo* toxicologically-based CSR Drinking water protective standards will be derived for existing CSR Schedule 6 Drinking water protective standards that are based on Health Canada, 2014 [10] aesthetic/organoleptic based drinking water guidelines.

14. Updated existing CSR Schedule 10 and existing updated or newly derived CSR Schedule 6 water quality standards will be consolidated into a new single schedule of water quality standards (Schedule “W”).
15. The existing sediment quality criteria of schedule 9 will be converted into sediment quality standards.
16. New human health protective vapour quality standards specific to “Parkade” exposure will be derived.
17. New Wildlands (WL) vapour quality standards to protect human health will be derived.
18. Updated Schedule ‘X’ soil quality standards, updated Schedule “W” water quality standards and updated Schedule 11 vapour standards will be used to update and revise CSR Protocol 11 – Upper Cap Concentrations for Substances Listed in the Contaminated Sites Regulation, BC MoE, 2014 [11]. The revised and updated CSR Protocol 11 will be implemented concurrent with the implementation of the Stage 10 amendment to the Regulation.
19. All existing soil, water and vapour standards will be updated/revised to reflect current toxicity reference values.
20. For each environmental media, new emerging toxicants of regulatory concern will be identified and where sufficient toxicological data is available corresponding environmental quality standards will be derived.

Additional proposed changes and revisions related to the 2015 omnibus updating of the CSR standards are contemplated for the proposed Stage 10 Amendment to the Regulation. The reader is directed to the respective companion Draft Discussion Papers for each of the existing CSR schedules for further details.

#### **Other Issues - Next Cycle Revisions**

Addition longer term considerations related to “Next Cycle” modification, revision, updating, *de novo* derivation and other issues for possible future (e.g. 2020) standards updating related amendments to the Regulation are proposed for all of the existing CSR schedules of standards. The reader is directed to the respective companion Draft Discussion Papers for each of the existing CSR schedules for further details.

#### **References**

- [1] British Columbia. (2014). [\*Contaminated Sites Regulation. B.C. Reg. 375/96\*](#). A regulation under the *Environmental Management Act*.

- [2] British Columbia. (1996). [Overview of Contaminated Sites Soil Task Group \(CSST\) Procedures for the Derivation of Soil Quality Matrix Standards for Contaminated Sites](#). Ministry of Environment, Lands and Parks. January 31, 1996
- [3] BC Ministry of Environment. (2009). [Groundwater Model](#). Ministry of Environment. 2009.
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- [5] British Columbia. (2008). [Protocol 13 for Contaminated Sites. Screening Level Risk Assessment](#). Ministry of Environment. August 1, 2008.
- [6] United States Environmental Protection Agency. (2015). [Region 9 Regional Screening Levels \(PRGs\)](#). January 2015.
- [7] BC Ministry of Environment. (2015). [British Columbia Approved Water Quality Guidelines; Summary Report](#). Water Protection & Sustainability Branch. Ministry of Environment. May, 2015
- [8] BC Ministry of Environment. (2015). [Working Water Quality Guidelines for British Columbia](#). Water Protection & Sustainability Branch. Ministry of Environment. 2015
- [9] CCME, (1999). [Canadian Environmental Quality Guidelines](#). Canadian Council of Ministers of the Environment. Winnipeg, Manitoba, 1999.
- [10] Health Canada. (2014). [Guidelines for Canadian Drinking Water – Summary Table](#). Water and Air Quality Bureau. Health Environments and Consumer Safety Branch. Health Canada. Ottawa, Ontario. 2024.
- [11] BC Ministry of Environment. (2014). [CSR Protocol 11. Upper Cap Concentrations for Substances Listed in the Contaminated Sites Regulation](#). Version 2.1. BC Ministry of Environment. February, 5, 2014.

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