

OMNIBUS UPDATING OF CSR STANDARDS – STATUS REPORT

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Ministry of
Environment

CSR STANDARDS UPDATING – DRAFT PROPOSAL PAPERS

LRS Staff have completed following Draft Proposal Papers detailing proposed CSR Stage 10 Amendment changes to:

Schedule 4 - Generic Human Health and Environmental Health soil standards

Schedule 5 - Matrix Human Health soil standards, Environmental Health soil standards and Soil to Groundwater Protective soil standards

Schedule 6 - Water Quality Standards

Schedule 7 - Contaminated Soil Relocation soil standards

Schedule 9 - Sediment Quality standards

Schedule 10 - Generic Human Health soil standards and Generic Drinking Water standards

Schedule 11 - Vapour Quality standards

Additional Ancillary Draft Proposal Papers completed for:

Omnibus Updating Overview

High Density Residential soil standards

PROPOSAL PAPERS – FORMAT/STYLE

Discussion Document: For Internal Ministry Consultation

CSR OMNIBUS UPDATING: Proposed Amendments to Schedule 4

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Date: January 2015

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

1. Repeal existing CSR Schedule 4 and move existing schedule 4 substances into proposed new single schedule of consolidated schedule 4, 5 and 10 soil standards.
2. Where sufficient toxicological data exists, for each substance listed in schedule 4, derive new human and ecological health matrix soil standards for use in the proposed new single schedule of CSR soil quality standards.
3. Where toxicological data is insufficient to calculate both mandatory matrix soil standards (i.e. Human health protection – Intake of contaminated soil and Environmental protection – Toxicity to soil invertebrates and plants), use the existing schedule 4 soil standard as the mandatory matrix standard.

Introduction

British Columbia Contaminated Sites Regulation (CSR) Schedule 4 contains generic numerical soil standards for five land uses (agricultural, urban park, residential, commercial, and industrial). The current Schedule 4 standards are considered to be generally protective of both human and environmental health.

The existing Schedule 4 soil quality standards were largely sourced from early CCME, 1991 [1] and BC Ministry of Environment, 1995 [2] documents. However, many of the early soil standards [1, 2] actually trace their lineage back through even earlier BC Ministry of

Proposal Papers - Format

All papers follow same general format

- Up-front Summary section on stage 10 amendment proposals
- Rest of Document:
 - Rationale for proposals, and
 - Discussion for “Next Cycle” revisions

CSR STANDARDS UPDATING – “OVERVIEW” PROPOSAL PAPER

Overview Proposal Paper - “Decided Elements”

Soil Quality Standards

- New single schedule “Sch X” of soil standards
 - Combines soil standards of Sch 4, 5 & 10



Schedule X - Matrix Soil Standards

- Two types of Residential Standards
 - Low Density Residential (RL_{LDR}) : single family based
 - High Density Residential (RL_{HDR}) : multiple family based
- Wildlands land use
- New Soil to Groundwater protective standards
 - Calculated using new Groundwater model and default assumptions

CSR STANDARDS UPDATING – DRAFT PROPOSAL PAPERS

Schedule X - Generic Soil Standards

- Derive matrix standards for some Schedule 4 substances
- Update all Schedule 10 standards using current US EPA Soil Screening Values modified per CSST exposure assumptions and BC MoE acceptable risk levels
- Combine remaining Sch 4 and Sch 10 generic standards into:
 - Sch X Part 2 – Listing of Human Health Protective generic soil standards
 - Sch X Part 3 – Listing of Environmental Health protective generic soil standards
 - Use current Sch 4 standard as Environmental Health standard
 - Use “NS” (no standard) as EH standard for current Sch 10 listed substances

[Schedule X Part 2 & 3 Generic soil standards](#)

CSR STANDARDS UPDATING – “DECIDED ELEMENTS”

Contaminated Soil Relocation Standards

- Repeal Sch 7 Contaminated Soil Relocation standards
- Revise language of CSR Part 8 - Contaminated Soil Relocation to eliminate reference to Sch 7 soil standards and substitute reference to “applicable soil standards” to determine when CSRA is required
- “Applicable soil standards” to be the proposed new “Sch X”

Water Quality Standards

- New single schedule of water standards (Combines Sch 6 and 10 DW standards)
- All water standards to be toxicity based
 - derive toxicity based DW standards for substances with aesthetic Canadian Drinking Water Guidelines

CSR STANDARDS UPDATING – “DECIDED ELEMENTS”

Sediment Standards

- Change Sch 9 sediment criteria into legal sediment standards

Vapour Standards

- Derive new Sch 11 standards specific to “parkade” exposure scenario

All standards

- Will be updated based on current TRVs

Emerging Contaminants of Concern

- Some emerging substances of concern (e.g. PFOS, E₂, etc.) will be added as prescribed substances under the CSR

CSR STANDARDS UPDATING – “CONSEQUENTIAL CHANGES”

CSR Consequential Changes

Omnibus changes will also require revisions to:

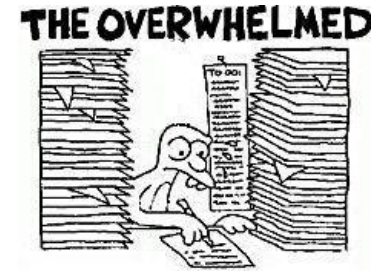
- CSR – (1) Definitions (change to RL definition)
 - (11) Definition of Contaminated Sites (Wildlands & OMAR)
 - (17) Application of numerical standards for remediation (Wildlands)Part 8 – Contaminated Soil Relocation
Instrument templates – (AiP, CoC, CSRA)
- Protocols – P11 Upper Cap Concentrations of Substances (new standards)
 - P2 Site-specific Numerical Soil Standards (GW model)
 - P13 Screening Level Risk Assessment (GW model)

CSR STANDARDS UPDATING – “CONSEQUENTIAL CHANGES”

CSR Consequential Changes

Omnibus changes will also require revisions to:

- Technical Guidance – TG3 Environmental Quality Standards
 - TG4 Vapour Investigation and Remediation
 - TG 13 Groundwater Model
 - TG18 Standards for Substances in Schedule 10 of CSR
 - TG19 Assessing and Managing Contaminated Sediments
- Procedures – Procedure 8 Acronyms and Definitions
 - Procedure 12 Procedures for Preparing and Issuing Contaminated Sites Legal Instruments



Consequential Changes to other EMA Regulations

- Hazardous Waste Regulation (Dioxin & Furans TEFs)
- Organic Matter and Recycling Regulation (soil standards)

CSR STANDARDS UPDATING – PROPOSED TIMELINE

Goal - Implement omnibus update to standards - Late Spring 2016

Date	Task to be completed
July 6 - Aug 31	Draft proposal papers posted to website for comment
July 20 – Aug 21	Draft proposal papers - focussed stakeholder review mtgs
Sept 7 - Oct 2	Proposal papers finalized to incorporate stakeholder review
Oct 26	Final proposal papers posted to web for information
Sept 7 – Nov 30	Calculate revised/updated standards for Minister's approval
Dec 14	Present examples of updated new standards at conference
Jan 15 – Feb 12	Final focussed stakeholder mtgs on final new standards
Jan 4 – April 1	Prep Stage 10 CSR Amendment MO package
April 15 – April 29	Minister's review/approval of Stage 10 CSR amendment
May 6	CSR Stage 10 Amendment – Implemented and in effect

CSR STANDARDS UPDATING – IMPLICATIONS

LRS staff will be dedicated to omnibus standards work over next 9 months!



Expect delays:

- RA reviews,
- RA Protocol 6 preapprovals,
- Background release approvals
(soil, sediment, vapours),
- Communication & assistance

QUESTIONS ?

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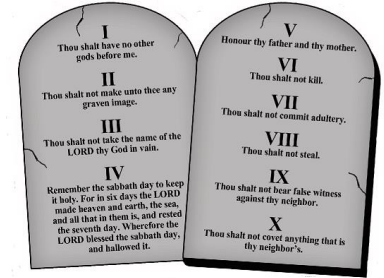
CSR STANDARDS - UPDATING PROPOSED PLAN

LRS staff	CSR Schedule	Updating elements
GRF	Project lead	Overall responsibility - project & implementation
Lizzy	4 (Generic soil)	“Dual column” Sch 4 (discrete Human and Ecological Health stds) “migrate” Sch 4 substances into Sch 5
Lizzy Remi George Peter	5 (Matrix soil)	Human Health std revisions - recent TRVs, update D&F for WHO TEQs Ecological Health std revisions - develop protocol for Wildlands Re-calc Sch 5 soil to water stds using new GW model, consider need for new soil to water stds Develop protocol for High Density Residential stds
Heather	6 (Water)	Derive DW stds for substances lacking Can. DW Guidelines, Update AQ Life, Livestock and Irrigation stds
GRF	7 (CSRA	Consider major revision, replacement or elimination
Lizzy	9 (Sediments)	Convert criteria into standards, Update existing standards, consider adding new substances
Peter/GRF	10 (generic soil/ water)	Update/add new substances and standards
Peter	11 (vapour)	Update existing substances – recent TRVs, Consider need for new standards to address semi-volatile substances

CSR STANDARDS – WHY UPDATE ?

Many CSR standards have never been updated:

- Soil/water standards date from 1996/97,
- Sediment standards date from 2004,
- Vapour standards date from 2009.



Ad hoc amendments to standards have focused on:

- Updating for “high profile” substances (arsenic, iron/manganese, lead),
- Keeping drinking water standards current with Canadian drinking water guidelines,
- Introducing standards for “new” categories of substances (non-prescribed substances – Schedule 10) and,
- “new” environmental media (vapours – Schedule 11).



CSR STANDARDS – NEW ISSUES FOR STANDARDS

Need to address new science related to the derivation of standards



- new BC MoE groundwater model,
- new toxicology
(bioaccumulation, genotoxicity, immunoactive/hormonal agents, toxic interactions),
- new TRVs
(cadmium, dioxins & furans/PCB TEQs, lead, TCE),
- new toxicity derivation protocols
(CCME, US EPA, WHO/EU, Health Canada, SABCS),
- new exposure/landuse scenarios
(high density residential, wildlands).

CSR STANDARDS – NEW ISSUES FOR STANDARDS

Need to address new emerging toxicants of concern:

Class	Substance	Toxicity
Antibacterials	triclosan	Aquatic toxicity
Antioxidants/preservatives Heterocyclic/organosilicons	1,4-dioxane, siloxanes, alkylated PAHs	Carcinogens
Endocrine disruptors	E2, BHA/BHT, nonoxinol, paraben alkylates, TBT	Infertility, intersex, congenital defects
Fire retardants	PBDEs, PFCs (e.g. PFOS)	Immunosuppression, neonatal mortality, thyroid/estrogen disruption
Plasticizers	Bisphenol A, alkylated phthalates	Estrogen mimic, neurotoxin, leukemia
Nanomaterials	nanosilver, nanocopper, carbon nanotubes	Physical/chemical toxicity at: molecular, cell, organ and physiological system levels

CSR STANDARDS – NEED FOR SCHEDULED MAINTENANCE



Need to provide certainty for maintenance of standards

Stage 10 amendment to CSR will propose incorporating a fixed schedule for standards updating (e.g. 5 year cycle?) to provide:

- Regulatory commitment to ensure standards are maintained and reflect current best science, and
- Temporal certainty for responsible persons, environment consultants and public regarding when changes to standards would occur