



SOCIETY OF CONTAMINATED SITES APPROVED  
PROFESSIONALS OF BRITISH COLUMBIA

# Soil Salt Contamination: Challenges & Considerations

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# OVERVIEW



1. Soil standards recap
2. Salt leachate provisions & quick case study
3. Stage 14 changes & exemptions
4. Q&A with Paul Savinkoff, P.Geo., Senior Geoscientist with BC Ministry of Transportation & Infrastructure (MOTI)

# Salt Soil Standards Recap

**MATRIX 8 – NUMERICAL SOIL STANDARDS**  
**CHLORIDE ION (CHEMICAL ABSTRACT SERVICE NUMBER 16887-00-6)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)
<b>HUMAN HEALTH PROTECTION</b> Intake of contaminated soil	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g
Groundwater used for drinking water	100	100	100	100	100	100	100	100
<b>ENVIRONMENTAL PROTECTION</b>								
Toxicity to soil invertebrates and plants	200	350	350	350	350	2 500	2 500	2 500
Livestock ingesting soil and fodder			NS					
Major microbial functional impairment			NS					
Groundwater flow to surface water used by aquatic life, freshwater	600	600	600	600	600	600	600	600
Groundwater used for livestock watering			250					
Groundwater used for irrigation			40	40	40	40		



# Salt Leachate Provisions

## Standards for contaminated soil relocation

**46.1 (1)** The relocation of soil from a source site to a receiving site requires a contaminated soil relocation agreement if the soil that is or will be relocated is contaminated by having any substance with a concentration that, subject to subsections (2) and (3), exceeds the following numerical standards, prescribed for the purposes of section 55 (3) of the Act, for either soil or vapour:

- (a) in respect of the land use of the receiving site, the lowest value of the soil standards set out in Part 1, 2 or 3, as applicable, of Schedule 3.1 of this regulation;
- (b) in respect of the land use, or other use, of the receiving site, the lowest value of the vapour standards set out in Schedule 3.3 of this regulation.

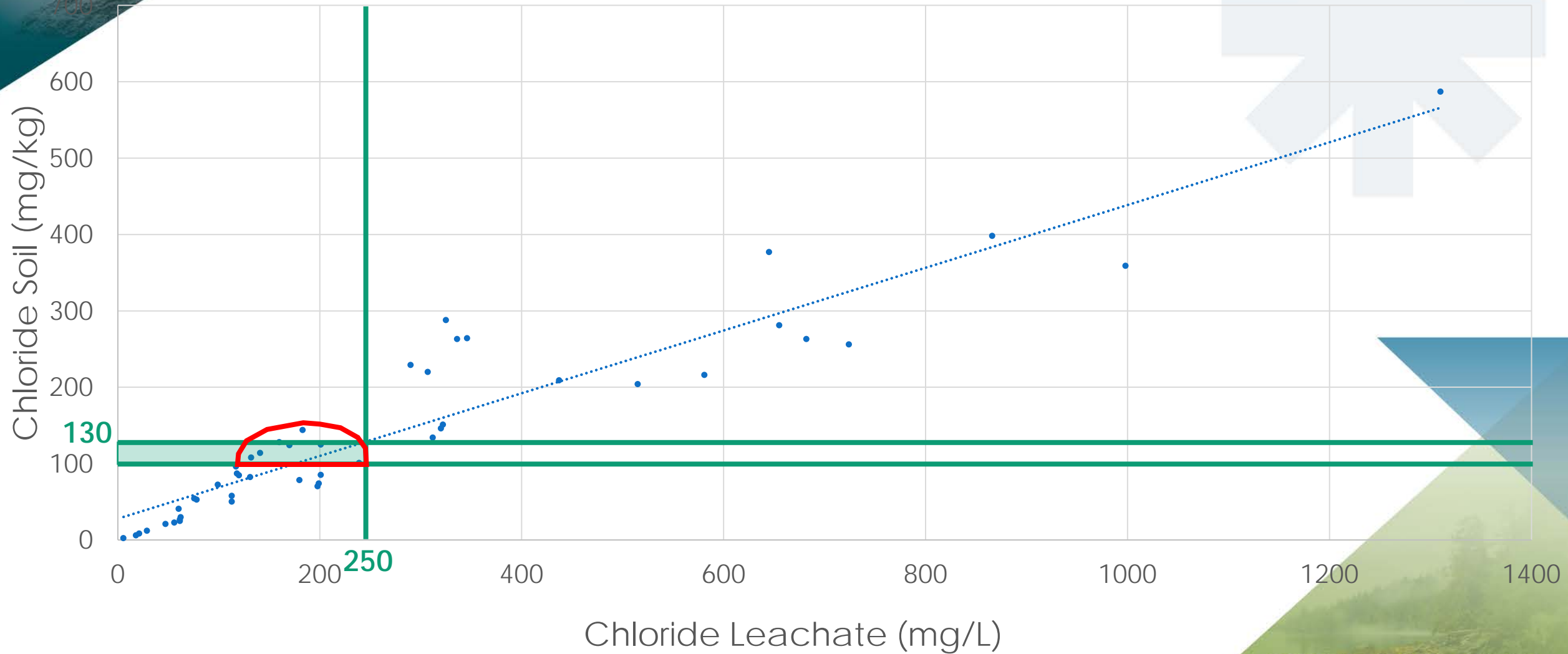
(2) As an exception to subsection (1), if contaminated soil has any substance with a concentration that exceeds a soil standard protective of groundwater in respect of the land use of the receiving site set out in Part 1 of Schedule 3.1 of this regulation, the numerical standards for soil protective of groundwater are not to be considered exceeded if either of the following applies:

(a) the site-specific soil standard protective of groundwater, derived in accordance with a director's protocol, is not exceeded;

(b) the water standard for groundwater set out in Schedule 3.2 of this regulation, based on the concentration resulting from a leachate test conducted in accordance with the director's protocol, is not exceeded.

**Schedule 3.2 DW Standard for Chloride = 250 mg/L**

# Salt Leachate Case Study





# Stage 14 Exemptions



## Division 2 – Removal of Soil

### Removal of soil

- 42** (2) A removal of soil to a receiving site is exempt from section 55 (1.1) of the Act in any of the following circumstances:
- (e) the soil is winter-maintenance sand.

**“winter-maintenance sand”** means sand that is applied to roadways or other surfaces for the purpose of managing icy conditions.

**However:** Any contamination that results from application of winter maintenance sand is still **fully regulated** (no exemptions)

# Stage 14 Changes

- Full repeal and replacement of Part 8 (incl. Section 46.1)
- New Part 8 does not allow for consideration of leachate quality when determining suitability for relocation.
  - Will the forthcoming Soil Characterization Protocol include this?
  - Existing Protocols 2 / 27 provide for leachate-based Site-Specific Standards but are more onerous.

# Q&A / Discussion

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