

CSAP Technical Guidance for:
Selecting ERA Receptors of Concern
Selecting Bioassays
Site Characterization to Support ERA
(MOE Policy Decision Summary Issues 2, 7 & 9)

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Issue Definition

This guidance is proposed to replace the technical basis for Issues 2, 7 and 9 in the 1998 “Tier 1 Policy Decision Summary”¹.

The British Columbia Ministry of Environment (BC MOE) asked CSAP to update the technical basis for a number of policy issues. This CSAP technical guidance addresses:

- Selecting receptors of concern (Issue 2)
- Selecting bioassays (Issue 7)
- Site characterization to support ERA (Issue 9; in Tier 1 policy, this topic focussed on sample size)

Current practice is to address these three topics on a site-to-site basis, in some cases seeking input from MOE. Since these topics are driven more by science than policy, the recommended approach is to rely on recent technical guidance, such as the Science Advisory Board for Contaminated Sites in BC (SAB)’s Detailed Ecological Risk Assessments (DERA) in British Columbia (SAB 2008), the Federal Contaminated Sites Action Plan (FCSAP) site characterization guidance for risk assessment (CCME 2012abc), and Environment Canada’s ecological risk assessment guidance (Environment Canada, 2012).

Disclaimer/Limitation Statement

This document does not constitute regulatory guidance or policy. It is the intent that this document will be used by members of the Society of Contaminated Sites Approved Professionals (CSAP) of British Columbia conducting reviews of sites/reports for which they may be making recommendations in accordance with BC Ministry of Environment (BCMOE) Protocol 6: Eligibility of Applications for Review by Approved Professionals.

The guidance provided in this document reflects what is considered good practice for conditions found at most sites. The guidance is based on the current regulatory regime and scientific methods, and hence may be updated as new information becomes available. Please note that the guidance may not be applicable to all sites, and therefore that sound professional judgment must be applied to ensure that the guidance is applicable to the particular site/report under consideration.

Recommendations

Selecting receptors of concern

Guidance on selecting receptors of concern can be found in:

- Science Advisory Board for Contaminated Sites in British Columbia (SAB) Guidance for Detailed Ecological Risk Assessments (DERA) (Section 3.6, Pages 57-60) (Science Advisory Board for Contaminated Sites in British Columbia (SAB) 2008)

¹ http://www.env.gov.bc.ca/epd/remediation/standards_criteria/standards/tier1policy.htm

- Federal Contaminated Sites Action Plan (FCSAP) Ecological Risk Assessment (Section 2.2.5, Pages 2-21 – 2-30) (Environment Canada 2012)

Risk assessments should document the technical rationale for selection of receptors of concern, in support of the assessment endpoints and project objectives.

Selecting bioassays

Guidance on selecting bioassays for use in risk assessment can be found in:

- SAB Guidance for Detailed Ecological Risk Assessments (DERA) in BC (Section 5.3, Pages 94-99) (Science Advisory Board for Contaminated Sites in British Columbia (SAB) 2008)
- FCSAP Ecological Risk Assessment (Technical Appendix A) (Environment Canada 2012)

Risk assessments should document the technical rationale for selection of bioassays, in support of the assessment endpoints and project objectives.

Site characterization to support ERA

Ideally, the results of the Detailed Site Investigation (DSI) will go a substantial way towards supporting the ERA and, to the extent those data are appropriate, they should be used. However, there are cases where further site characterization is needed to augment the DSI. For example:

- Characterizing surface soils in a manner to support risk estimation for soil invertebrates, plants and mammals
- Characterizing aquatic sediments to support risk estimation for aquatic organisms
- Additional groundwater characterization (seasonal, spatial and/or tidal) in the vicinity of the compliance points and/or adjacent to aquatic ecosystems
- Collecting exposure data (all environmental media) that are representative of exposure conditions for specific receptors of concern

ERA practitioners should use guidance from the CSR regime, the scientific literature and guidance from other jurisdictions develop sampling and analysis plans to support risk assessment, in a manner consistent with the problem formulation. Where possible, the problem formulation and sampling and analysis plan(s) should be reviewed by involved parties, risk managers and decision makers.

Of note is recent guidance for environmental site characterization in support of ERA, as follows:

- Technical Guidance #19 Sediment (MOE 2005)
- Canadian Council of Ministers of the Environment (CCME) Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment.
 - Volume 1 Guidance Manual (CCME 2012a)
 - Volume 2 Checklists (CCME 2012b)
 - Volume 3 Suggested Operating Procedures (CCME 2012c)
- A companion document (CSAP 2013) for characterization of soil quality in ERA

Risk assessments should document the technical rationale for the sample design, in support of the assessment endpoints and objectives.

Literature Cited

BC Ministry of Environment (MOE). 2005. Technical Guidance for Contaminated Sites 19: Assessing and Managing Contaminated Sediments.

CCME (Canadian Council of Ministers of the Environment). 2012a. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment. Volume 1 Guidance Manual. CCME, Winnipeg. In preparation.

CCME. 2012b. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment. Volume 2 Checklists. CCME, Winnipeg. In preparation.

CCME. 2012c. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment. Volume 3 Suggested Operating Procedures. CCME, Winnipeg. In preparation.

CSAP. 2013. CSAP Technical Guidance for Soil Sampling Depth to Characterize Ecological Exposure. July 2013.

Environment Canada. 2012. Federal Contaminated Sites Action Plan (FCSAP) Ecological Risk Assessment Guidance. Vancouver.

Science Advisory Board for Contaminated Sites in British Columbia (SAB). 2008. Detailed Ecological Risk Assessment (DERA) in British Columbia Technical Guidance