

# **Protocol 13**

## **Screening Level Risk Assessment (SLRA)**

### **Application and Next Steps**

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- Background
- Application
- Next steps

## SLRA - Background

## What is SLRA?

- A simple screening test.
- Assesses whether contamination at a site poses acceptable or unacceptable risks.
- Based on assessment of the presence/absence of exposure pathways and receptors.
- A risk-based approach therefore eligible for certificate of compliance (risk-based standards).

## When can you use SLRA?

- After characterizing site conditions.
- May be used pre or post-remediation for only some or all contaminants.
- High risk sites (once Protocol 12 approved), agricultural and wildlands land use sites (subject to change) and sites with hazardous waste require pre-approval from the Director.
- Assessment of some substances and exposure pathways may be limited by precluding conditions.

## Who may use/apply SLRA?

- Any experienced contaminated sites environmental practitioner.
- Ecological assessment components (Questions TS-4 and TS-5) to be completed by a Registered Professional Biologist. In such cases, report also to be signed by R.P.Bio.
- Use is voluntary.

## What are examples of precluding conditions?

- A long term source of contamination.
  - Presence of LNAPL or DNAPL.
  
- Soil vapours.
  - Presence of volatile and/or semi-volatile substances at non-wildlands land use sites.
  
- Off-site groundwater contamination.
  - At sites where drinking water use standards apply.

## What are examples of precluding conditions?

- Contamination adjacent to surface water.
  - In sediments or surface water except where related to a beneficial use.
  
- Deep rooting plants or trees.
  - Where root structures extend below 1 m depth in areas of contamination.
  
- Complex or uncertain site conditions.
  - Fractured bedrock, preferential flow pathways.

## SLRA - Application

- Presence of surface barriers (building, asphaltic concrete, concrete, geosynthetic liners...).
- Contamination at depth or where cover material may be placed (ensure vertical migration/wicking addressed).
- Large distance from receiving environment (groundwater transport pathway assessment).
- Degradable organic substances [benzene (aerobic conditions), ethylbenzene, toluene, xylenes, VPH, LEPH, naphthalene].
- Non-leachable inorganic substances.

- Applications from August 2008 to June 2009: 5
  - Contamination in soil and at depth.
  - Primarily inorganics and petroleum hydrocarbons (VPH, LEPH, HEPH, PAHs).

## SLRA – Next Steps

- Habitat/receptor assessment:
  - Re-assess linkages between terrestrial habitat, sensitive habitat and wildlife corridors.
  - Re-evaluate definition of sensitive habitat.
  
- Deep-rooting plants and trees:
  - Re-assess 1 m depth precluding condition.
  
- Linkage with DERA:
  - Consistent principles, minimize duplication of effort.

- Biodegradation rates:
  - Update/compile biodegradation rates for organic substances.
  
- Soil vapours:
  - Develop screening mechanism for soil vapours at non-wildlands land use sites.
  
- Integrate/link with CSST groundwater model:
  - Integrate or refine SLRA groundwater model once updated CSST groundwater model is available.
  - Develop spreadsheet version of SLRA model.

- Questions from practitioners...