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SOCIETY OF CONTAMINATED SITES APPROVED PROFESSIONALS OF BRITISH COLUMBIA

# Developing a Compliance Strategy for Stage 14 – An Industry Perspective

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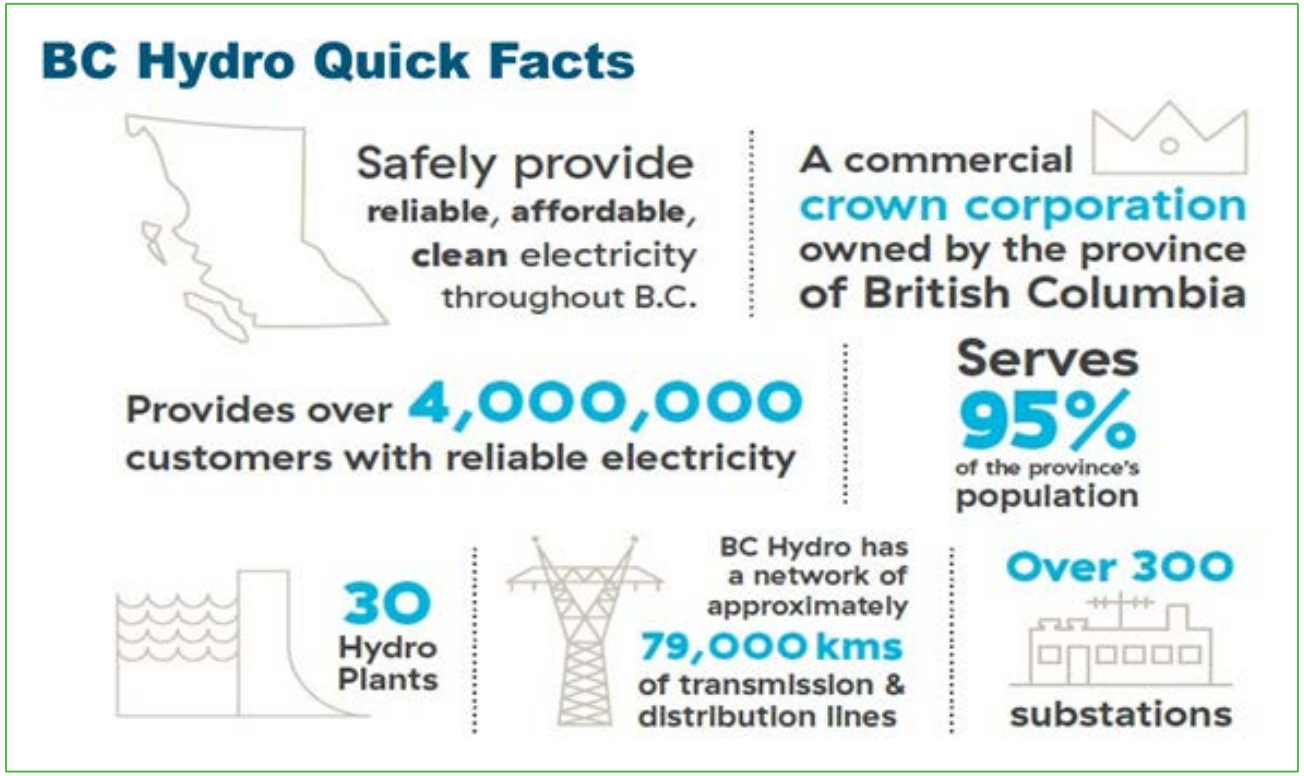
# A little bit about BC Hydro

**We have a lot of property throughout BC**

Crown corporation – created in 1964

Many historic sites from predecessor entities

Over 700 facilities: substations, hydroelectric and thermal generating stations, district offices plus rights of way

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# Identifying Operational Impacts

**How did we determine how big an issue this is for us?**

- Communication with environmental personnel on projects and supporting maintenance
- Collecting applicable examples
- What is impact of extra testing, consultants, notifications on budget and timing on work
- Maximize exemption for volumes, reuse on site

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# Identifying Resourcing Impacts

**Who will do the tasks related to clean soil relocation?**

- Soil testing
- Vapour testing
- Notifications
- Tracking of notifications and movement of clean soil

What is role of: consultants, BC Hydro QPs, other environmental support


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# Leveraging Existing Environmental Processes

**What existing environmental risk mitigation processes can we use?**

- Good awareness of contaminated soil management
- BC Hydro Environment is already involved in capital projects and operations and maintenance activities
- Soil disturbance is a flag for archaeology issues
- Screening checklists are used in the work planning process, which ID environmental issues including soil contamination

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# Determining Strategy Format and Rollout

**How do we respond to the new requirements and communicate this?**

- Environment has a change management committee
- Environmental representatives are assigned to identify processes
- Format of the strategy – procedure and tracking system?
- Modify existing processes to include clean soil relocation requirements
- An Implementation Plan is prepared to indicate audience and method of rollout

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# Managing Uncertainty

## What do we still not know?

- Do our existing processes capture all clean soil relocation?
- Details of the regulatory requirements
- Receiving sites acceptance requirements
- Will we have to send some clean soil to permitted facilities
- Access to ministry's notification database
- Extent of soil vapour issue

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# Soil Vapour for Clean Soil Relocation

# Assisting with the process

**SLR was retained by BC Hydro to help determine:**

- Which sites will get captured (Schedule 2 uses)
- What PCOCs to analyze
- When will soil vapour sampling be required
- How to communicate the information

# Typical Schedule 2 Uses

## Step 1 – Develop a list of typical Schedule 2 uses for BC Hydro Sites

- Section B: Electrical equipment and activities
  - Many of the activities listed apply at operating sites
- Section E: Miscellaneous industries, operations or activities:
  - appliance, equipment or engine maintenance, repair, reconditioning, cleaning or salvage (vehicle services)
  - coal gasification (historical)
- Section H: Waste disposal and recycling operations and activities:
  - electrical equipment recycling
  - hazardous waste storage
- any other known CSR Schedule 2 Industrial or Commercial use – primarily historical

# Typical Activities

## Step 2 – For sites with Schedule 2 uses - determine typical activities

- ❑ battery fluid handling
- ❑ burning of oil / historical fires
- ❑ storage and handling of diesel fuels and lubricants
- ❑ importing fill of unknown origin or quality
- ❑ storage and handling of insulating or hydraulic oil
- ❑ fuelling and vehicle maintenance
- ❑ presence of galvanized metal structures
- ❑ historical use of PCB-oil
- ❑ presence of pole storage yards
- ❑ improperly stored or used pesticides
- ❑ other?

# Next Steps

- Develop a site-specific list of PCOCs for soil and soil vapour
- Determine sampling frequency based on volumes planned for removal
- Based on soil results, determine need for vapour analysis
  - Are soil concentrations below the low-density residential land use standard ($RL_{LD}$)?
  - Are there detectable chlorinated substances?

# Next Steps

- Review BC Hydro database of soil and soil vapour data
- Determine the likelihood of detection of chlorinated substances or vapour PCOCs
- Develop flow charts and checklists for BC Hydro staff

# Challenges

- Lack of confirmed sampling guidance/protocol
- Unclear wording in OIC*
- Difficult to plan, soil data needed to determine if vapour sampling required

* i.e., is soil vapour assessment required if arsenic in soil is above the low-density residential land use standards?

# Challenges

- Unknown requirements / future industry standard for frequency of analysis of less common PCOCs
  - approx. $1700 per sample for full suite of potential soil PCOCs
  - need to use professional judgement in selection/frequency of PCOCs

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