

Site Risk Classification

The ministry's most recent Service Plans required the Land Remediation Section to manage the remediation of high risk contaminated sites and regulate the remediation of all contaminated sites. To carry out these duties, the ministry must know which sites pose high risks and those which do not.

Previous site risk classification method

Section 64 of the *Environmental Management Act* (the Act) provides powers to the Director of Waste Management to establish protocols for the classification of sites based on an evaluation of risks to human health and the environment. In the past, site risk classification for contaminated sites was done in [Protocol 6, "Eligibility of Applications for Review by Approved Professionals"](#). It used administrative criteria to classify site risk and Approved Professionals were eligible to make recommendations to the ministry for low and moderate risk sites.

Current site risk classification method

Following extensive consultations, the ministry subsequently developed a site risk classification method based directly on the risks sites pose to human health and the environment.

[Protocol 12, "Site Risk Classification, Reclassification and Reporting"](#) identifies:

- conditions for classifying sites as high risk,
- notification procedures for all sites, and
- reporting and reclassification requirements for high risk sites.

[Protocols 11, "Upper Cap Concentrations for Substances Listed in the Contaminated Sites Regulation"](#) and [16, "Determining the Presence and Mobility of Nonaqueous Phase Liquids and Odorous Substances"](#) are used in Protocol 12 to establish whether high risk conditions exist at a site.

Does Protocol 12 apply to all sites in B.C.?

No, it does not apply to certain sites used for oil and gas drilling. The Oil and Gas Commission has developed a new "[Upstream Oil and Gas Site Classification Tool](#)," and sites classified as high priority under that document will be referred to this ministry and would be subject to Protocol 12.

Protocol 12 also does not apply to sites under Federal jurisdiction.

Why would a site be considered high risk?

High risk sites pose serious risks to human health and the environment. They require high standards of care and responsiveness in site investigation and remediation.

Who oversees high risk sites?

High risk sites require ministry involvement and sometimes ministry oversight to ensure that appropriate and timely action takes place. In general, the investigation and remediation of non-high risk sites may be done by qualified persons such as Approved Professionals.

When would a site be considered high risk?

A site is considered high risk under Protocol 12 if either or both of two conditions exist at a site: if mobile nonaqueous phase liquids (NAPLs) are present or if high risk exposure to contaminants is likely.

Condition 1. Mobile NAPLs are present

Protocol 16 describes when NAPL is present at a site, as well as when it is mobile. Mobile NAPL indicates the potential for current and future high risk exposures to contaminants as well as increasing complexity, cost and effort in remediating sites.

Condition 2. Potential high risk exposure exists

For a site to qualify as high risk under condition 2 upper cap concentrations must be exceeded and at least one complete exposure pathway must be present.

Upper cap concentrations must be exceeded

Upper cap concentrations of substances are derived from the environmental quality standards (numerical standards) in the Contaminated Sites Regulation (the Regulation) and are listed in Protocol 11. Usually they are 10 times their corresponding numerical standards although the upper cap concentrations are the same for drinking water standards.

If upper cap concentrations are exceeded, exposure pathways must be evaluated as described below. If they are not exceeded then an exposure pathway analysis need not be done.

Complete exposure pathways must be present

An exposure pathway analysis must be carried out if upper cap concentrations are exceeded at a site. The analysis involves simple assessments for each of the eight exposure pathways considered in this protocol:

Human health

- Soil exposure
- Vapour exposure
- Water exposure

Environmental health

- Soil exposure – terrestrial life
- Water exposure – aquatic life
- Sediment exposure – aquatic life
- Water exposure – livestock watering
- Water exposure – irrigation of crops

Each exposure pathway consists of a series of risk criteria evaluated in a step-wise fashion. The risk criteria vary by exposure pathway, but generally comprise criteria related to contaminant concentrations, contaminant extent, and distance from the exposure zone. All exposure pathways for which upper cap concentrations have been identified must be evaluated with the use of an Exposure Pathway Questionnaire. Where the combined risk criteria of one or more exposure pathways are met a site is classified high risk.

What information must be provided?

Depending on the trigger for reporting and the type and duration of remediation, one or more of the following must be provided to the Director:

- a Site Risk Classification Report
- an Exposure Pathway Questionnaire
- a Summary of Site Condition

There are additional reporting requirements for high risk sites undergoing independent remediation.

When would the ministry be informed about high risk sites?

Protocol 12 contains a number of triggers for sending the ministry information about the risk classification of a site. Information must be provided with, or in response to the following:

- Submission to the Director of a Notification of Independent Remediation initiation.
- Submission to the Director of a site investigation report required or ordered by a Director.
- Submission of a Notification of Offsite Migration to the Director.
- Application to a Director for a contaminated sites service listed in Table 2 or 3 of Schedule 3 of the Regulation.
- Imposition of the requirement for a Site Risk Classification Report submission by the Director.
- Potential or actual high risk conditions at a neighbouring parcel or area are indicated in the Site Risk Classification Report submitted to the Director for a source site under any of the preceding notification triggers.

What would happen when the ministry is informed that a site is high risk?

It depends on the trigger for sending site risk classification information to the Director. For example, for a high risk site classification triggered by a Notification of Offsite Migration, the Director may send a letter to the site owner inquiring about the owner's plans to remediate the site. For sites which are already being cleaned up the Director may require the submission of a report after the site has been cleaned up, or an interim report on remediation. Depending on the response and supporting information, the Director may indicate that the remediation is satisfactory, or if it is not appropriate, may impose requirements to ensure environmental and human health protection at the site.

How does risk reclassification work?

Once all high risk site conditions have been removed or otherwise satisfactorily addressed, a person may apply to the Director to have a site reclassified. A site where high risk conditions are removed (whether or not it continues to be contaminated) would be reclassified as a non-high risk site. A site where high risk conditions are risk managed would continue to be contaminated and would be reclassified as a risk managed high risk site. It is not necessary to wait until the remediation of all the contamination at the site is completed.

Reporting requirements for obtaining a decision on reclassification generally are as follows:

- A Site Risk Classification Report confirming that no high risk conditions remain onsite;
- A Summary of Site Condition where remedial actions to address all high risk site conditions exceeded 90 calendar days in duration; and
- Approved Professional signoff of the above reports.

Would high risk sites be recorded on the Site Registry?

Yes. When the Director receives information indicating that a site is classified as high risk, this would be recorded on the Site Registry together with notations on other relevant information such as the receipt of a Site Risk Classification Report for the site. When the Director reclassifies a site this would also be recorded on the Site Registry.

Note: This summary is solely for the convenience of the reader. The current legislation and regulations should be consulted for complete information.

For more information, contact the Environmental Management Branch at siteclassification@gov.bc.ca.