

## Independent Remediation of Contaminated Sites

This document describes procedures that qualified professionals and persons responsible for sites should follow when undertaking independent remediation. It focuses on requirements under the *Environmental Management Act* (the Act) and Contaminated Sites Regulation (the Regulation) at various stages of site remediation.

The ministry's compliance staff can verify that independent remediation requirements are being met and can follow up on incidents and complaints of potential noncompliance. Penalties for noncompliance with the contaminated sites requirements of the Act and Regulation are provided in [section 120\(17\)](#) of the Act.

### What is independent remediation?

The ministry has defined independent remediation as "remediation carried out without direct ministry involvement other than requirements under sections 54 and 64 of the Act and section 57 of the Regulation". *These sections mainly involve notifications to the ministry.* Independent remediation includes any site activities initiated to improve the environmental quality of a site through the management, treatment or handling of contamination. It is often undertaken by a "responsible person" as part of due diligence efforts.

### What is independent remediation *not*?

There has been confusion about how the independent remediation provisions in the Act work, particularly concerning the effects of Notifications of Independent Remediation.

### Other relevant agencies and issues

A number of issues and requirements under other laws and regulations are mentioned briefly in this guidance. For additional information, readers should contact:

- [BC One Call](#) to find out what is buried on a site and where not to dig;
- the [Provincial Emergency Program](#) to report spills during independent remediation;
- the ministry's [Water Stewardship Division](#) for regulations and requirements on well closure;
- [local governments](#), who deal, for example, with site profiles, development, subdivision, demolition and soil removal permit applications;
- [WorkSafeBC](#) which regulates worker health and safety at sites;
- the [Ministry of Energy, Mines and Petroleum Resources](#) which regulates soil deposit at gravel pits and soil removal;
- the [Agricultural Land Commission](#) which prohibits the relocation of contaminated soil to lands in agricultural reserves;
- the [Ministry of Aboriginal Relations and Reconciliation](#) on First Nations issues,
- the [Office of the Fire Commissioner](#) and [Fact Sheet 32, "Residential Heating Oil Storage Tanks"](#) for underground storage tank requirements
- the [Ministry of Tourism, Culture and the Arts](#) for archaeological site requirements;
- [Environment Canada](#) regarding the Federal [Fisheries Act](#) prohibition on depositing deleterious substances into fish bearing waters;
- Fisheries and Oceans Canada regarding the Federal [Fisheries Act](#) prohibition on harmful alteration of fish habitat; and
- The Ministry of Agriculture and Lands for information about the province's [Brownfield Renewal Strategy](#) and available financial support. Information and links can be found under the [Brownfields and Brownfield Redevelopment](#) key topics section on our website.

A Notification of Independent Remediation is **not**:

- an authorization to undertake remediation at a site,
- an authorization to work at a site,
- an authorization to discharge substances to the environment at or from a site, or
- a certificate that a site has been remediated to environmental quality standards.

### **Why undertake independent remediation?**

At many sites, remediation may be routine, the site risks low, and methods of treatment are readily available. With the assistance of capable environmental consultants, such a site can be remediated with little involvement of the ministry. Independent remediation is often undertaken when a person wants to clean up a site, but does not need, for example, a development permit, or contaminated sites legal instrument such as a Certificate of Compliance.

### **Do the independent remediation provisions of the Act and Regulation apply to all sites?**

Yes. Independent remediation may be conducted across B.C., on private as well as provincial government (Crown) lands. The independent remediation provisions of the Act and Regulation apply to both types of land. For example, they apply to cleanups of underground storage tanks at homes and service stations, as well as to industrial sites such as mining, oil and gas drilling, and forestry operations. They do not apply to lands under Federal jurisdiction, including First Nations lands, unless a First Nation has signed a treaty with the Provincial government making it subject to provincial laws.

### **Use of qualified environmental consultants**

We recommend that owners and operators who intend to independently remediate sites obtain assistance from a qualified environmental consultant. A list of Approved Professionals can

be found on the [Contaminated Sites Approved Professional Society](#) website. Other environmental professionals can be found in the yellow pages under “environmental consultants”.

### **Other resources on independent remediation**

For a high-level overview of the independent remediation process, please refer to [Fact Sheet 21, “Requirements for Independent Remediation”](#).

### **Contaminated sites legal instruments**

During or after undertaking independent remediation a person may want or be required to obtain a contaminated sites legal instrument from the ministry. Typically a land owner would secure a contaminated sites legal instrument to:

- satisfy Provincial legal requirements;
- improve environmental quality and decrease risks to human health and the environment;
- improve the marketability of property;
- show compliance with contaminated sites requirements to a prospective purchaser;
- help obtain financing for a development;
- limit liability for remediation of a site.

Readers should review Fact Sheet 46, “Contaminated Sites Legal Instruments” for detailed information.

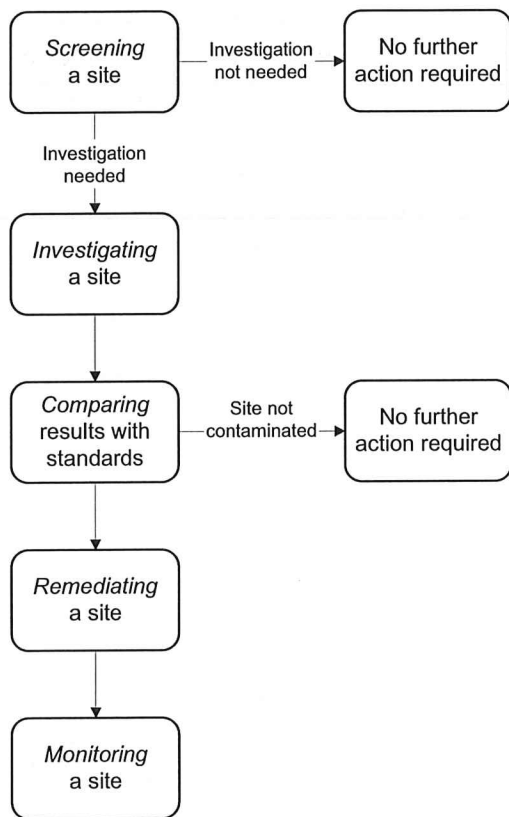
### **What are the steps in site remediation?**

The remainder of this guidance is based on the assumption that a person has decided to investigate and if necessary clean up a site by independent remediation. Readers should note that there are circumstances that could occur during site remediation where additional requirements of the Act and Regulation come into play. These will be explained throughout the text and include requirements, for example, for Notifications of Offsite Migration and site profiles.

The general site remediation process can be described in five simple steps:

- 1) Screening a site
- 2) Investigating a site
- 3) Comparing results with standards
- 4) Remediating a site
- 5) Monitoring a site

The flow chart below shows the stages of the process for identifying, assessing, and cleaning up contaminated sites.



### Screening a site

A site is screened to determine the presence of potential sources of contamination. Screening may be triggered through the Act’s site profile process or done independently by a site owner as part of a due diligence exercise.

### The Site Registry

The [Site Registry](#) is a provincial database that provides public information about site screening, investigation and remediation and is available through [BC OnLine](#). The Site Registrar is required to enter information received by the ministry on sites, including notations on independent remediation.

### Site profiles

Please refer to [Administrative Guidance Document 1, “Completing and Submitting Site Profiles”](#) for detailed information on when site profiles are required and how they must be completed and submitted. A list of supporting information and links can be found under the [Site Profiles](#) key topic section on the ministry’s Land Remediation Section website.

### About site profiles

The site profile process was established under the Act as a uniform process to screen for potentially contaminated sites to determine if site investigation is warranted. Site profiles are forms that require information about the past and present uses of a site, as well as basic land descriptions. Local governments play an integral role in the acceptance and processing of site profiles as the majority of site profile submissions to the ministry are triggered by applications for local government authorizations. Site profile submission requirements should be reviewed before undertaking independent remediation to ensure that a site profile is provided to the ministry, approving officer or local government as required. Note that site profiles often must be provided by vendors of real property to prospective purchasers at least 30 days before a property transfer occurs.

### Independent site screening

An owner may also choose to screen his or her site voluntarily (independent of the Act) to determine the previous uses at the site and if investigation or remediation will be required in the future. Voluntary screening done appropriately can facilitate the sale of property or a change in land use — it can be part of a due diligence program to show whether a site is contaminated when it is offered for sale.

## Investigating a site

### Site investigations

If potential sources of contamination are identified in the screening process a site owner may decide to follow up by conducting a site investigation. Site investigations are undertaken to assess the nature, concentrations and extent of site contamination relative to the environmental quality standards of the Regulation and to obtain information necessary to plan and conduct remediation. Depending on remediation approach, site investigations may also include the collection of information necessary to conduct a human health or environmental risk assessment.

The ministry expects that remediation (whether or not independent remediation) to be conducted on the basis of appropriate and complete site information obtained through investigations carried out in accordance with the Act, Regulation, Protocols and ministry guidance.

#### Analytical methods

The chemical analysis of samples should be carried out by qualified laboratories using the appropriate analytical methods and measurement parameters referred to in the [analytical methods](#) section of our website.

### Preliminary site investigations

If a preliminary site investigation (PSI) is necessary the Regulation provides for two stages of a PSI. The first stage includes the collection of relevant site information including a review of historical records, site reconnaissance visits and interviews with persons of interest. The second stage enables the general location and degree of any contamination to be determined. It includes sampling of relevant environmental media, laboratory or field analysis of these media, subsurface investigation and assessment of

substances in comparison with Regulation standards. For further information regarding preliminary site investigations refer to [Technical Guidance 10, "Checklist for Reviewing a Preliminary Site Investigation"](#), [section 41 of the Act](#) and [section 58](#) of the Regulation.

### Detailed site investigations

If a site profile or PSI reveals contamination at a site then a detailed site investigation (DSI) is normally required to determine substance concentrations and the extent of contamination and to identify pathways of exposure to humans and ecological receptors. Anyone undertaking a DSI must have completed a PSI.

In general, the data gathered under a DSI should be sufficient to develop a remediation plan or complete a human health or environmental risk assessment or both. For further information regarding detailed site investigations refer to [Technical Guidance 11, "Checklist for Reviewing a Detailed Site Investigation"](#), [section 41 of the Act](#) and [section 59 of the Regulation](#).

### Vapour investigations

As of April 30, 2009 all site investigations are required to consider vapours that may be associated with potential sources of contamination at a site. For detailed information on vapour investigations please refer to [Draft Technical Guidance 4, "Vapour Investigation and Remediation"](#).

### Areas and contaminants of potential concern

If required to conduct a site investigation, a person must ensure that all areas of potential environmental concern (APECs) and potential contaminants of concern (PCOCs) are sufficiently investigated. For more information on investigation guidelines refer to [Technical Guidance Document 1, "Site Characterization](#)

[and Confirmation Testing](#)” and [Technical Guidance 2, “Statistical Criteria for Characterizing a Volume of Contaminated Material](#)”.

#### **Notification of offsite migration (NOM)**

If, during investigation or independent remediation, it is determined that one or more substances have migrated (or are likely to have migrated) to a neighbouring property and are causing (or are likely to cause) contamination of that property, the neighbouring property owner and ministry must be notified within 15 days of the responsible person becoming aware of the situation.

For information about the notification requirements associated with offsite migration of substances, please refer to [Fact Sheet 34, “Requirements for Responding to Offsite Contaminant Migration”](#) and [sections 57 and 60.1](#) of the Regulation.

#### **Groundwater protection during site investigation**

One of the key objectives of the ministry is to keep water supplies safe and reliable. When undertaking a site investigation, a site owner and the owner’s consultant should be aware of the requirements set out in the [Ground Water Protection Regulation](#). It includes detailed groundwater well installation specifications with requirements for proper surface sealing and the installation of well caps and well covers. That regulation also includes requirements for well deactivation and well closure for those wells that have been unused for 5 years.

Please refer to the [ministry’s Water Stewardship Division website](#) for more information on groundwater protection during site investigations.

The Land Remediation Section is also developing guidance for groundwater investigation and characterization as well as groundwater use determinations.

#### **Comparing results with standards**

After investigating a site it is necessary to compare site conditions to the applicable environmental quality standards. The environmental quality standards of the Regulation are the “measuring stick” for determining the presence and degree of contamination at a site. They have been developed to ensure adequate protection of human health and the environment and are provided for a large number of substances for a many soil, vapour, groundwater, surface water and sediment uses.

Specific environmental quality standard types in the Regulation include:

- generic numerical standards and criteria;
- matrix numerical standards;
- site-specific numerical standards;
- Director’s interim standards;
- risk-based standards; and
- standards triggering Contaminated Soil Relocation Agreements.

#### **Determinations of Contaminated Site**

An applicant can receive a Determination of Contaminated Site (Determination) from the ministry for a site that has undergone appropriate investigation. Numerical standards are applied when determining whether or not a site is contaminated.

A person can undertake independent remediation in accordance with the regulations whether or not a Determination has been made by the ministry. Please refer to [section 44 of the Act](#) and [section 15 of the Regulation](#) for more information on Determinations of Contaminated Sites.

The [Hazardous Waste Regulation](#) and the [Groundwater Protection Regulation](#) under the

*Water Act* also contain standards which must be observed as part of the remediation of contaminated sites. Please refer to [Fact Sheet 13, “Environmental Quality Standards”](#) and [that Regulation](#) for more information. For detailed information on the application of standards to various types of sites please refer to [Technical Guidance Document 3, “Environmental Quality Standards”](#) and [Technical Guidance Document 6, “Applying Water Quality Standards to Groundwater and Surface Water”](#). Provisions for these standards are in Parts 5, 6 and 8 of [the Regulation](#).

### Remediating a site

If substances encountered during site investigations have concentrations exceeding applicable standards, remediation may be required. Remediation includes actions to eliminate, limit, correct, counteract, mitigate or remove any contaminants from a site.

#### Span of independent remediation activities

The definition of “remediation” is broad and encompasses the range of activities from site investigations, site cleanup and verification that a cleanup complies with the requirements of the Act. The expression “independent remediation” includes the entire span of activities in the meaning of “remediation”. It should be noted that independent remediation notification is not required at the outset of a site investigation even though a site investigation is legally considered remediation. Section 57 (1.2) of the Regulation requires Notifications of Initiation of Independent Remediation within 3 days after the commencement of remediation activity involving the handling, management or treatment of contamination – not when investigation of the site begins.

#### Notification of Independent Remediation (NIR)

The ministry becomes aware of independent remediation when a Notification of Independent Remediation is submitted. In accordance with [section 54 of the Act](#) and [section 57 of the Regulation](#), any person undertaking independent remediation of a

contaminated site must provide written notification to a Director within 3 days after the commencement of any remediation activity. He or she must also notify a Director in writing within 90 days of completion of independent remediation. For the purpose of these notifications, remediation activities include the handling, management or treatment of contamination, but not an activity which obtains results solely for investigative purposes. This includes contamination managed in soil, groundwater, surface water, sediment and vapours.

#### Important note

Unless exempt, *any person* undertaking independent remediation must submit Notifications of Independent Remediation, even if he or she is not a responsible person for remediation of the contamination.

*Note also that an individual who has completed independent remediation and applies for a Certificate of Compliance is still required to provide the ministry with a NIR completion form within 90 days of completion of remediation.*

Applicants should use the [Notification of Independent Remediation form](#) found on the Land Remediation Section website to ensure that all required information is provided when submitting a NIR. There are no fees associated with NIR submissions and NIR forms do not require the endorsement of an Approved Professional. Note that there are significant penalties for failure to provide NIRs as required under the Act – the penalties are described in section [120 \(17\) \(i\)](#) of the Act.

#### NIRs and site risk classification

Effective June 1, 2010, the submission of a NIR initiation to the ministry is a trigger for a site to go through the [Protocol 12, “Site Risk Classification, Reclassification and Reporting”](#) process. Protocol 12 will be used to determine if a site is classified as a high risk site. Reporting requirements for submission of NIR

initiation depend on a site's risk classification and the length of time it will take to remediate any high risk conditions. Minimum reporting requirements include a Site Risk Classification Report and Exposure Pathway Questionnaire. Investigative work done before the submission of a NIR form should take into account the requirements of Protocol 12.

#### ***NIR submissions for parts of sites***

Applicants have the option of submitting one NIR that encompasses a multiple phase independent remediation project or multiple NIRs representing each phase of a multi-phase project. The NIR(s) must contain information that is representative of the current status of the site and remedial activities at the time of submission.

A NIR should also be submitted to the ministry if contamination is inadvertently encountered during exploratory or excavation work that involves the handling or management of soils. This includes activities such as, but not limited to, utility repair, installation or replacement, underground storage tank removal and building redevelopment. Any contaminated soil that is encountered should be managed as described in the Contaminated Soil Management section of this document below. Failure to do so may incur penalties.

#### ***Ministry role during independent remediation***

At any time during the independent remediation process the Director may inspect and monitor any aspect of the remediation to determine compliance with the Regulation. The Director may also impose requirements or issue a Remediation Order if it is considered necessary to achieve successful remediation (see [section 54 \(3\) \(d\)](#) of the Act).

Please note that the ministry does not normally *accept* NIRs; they are simply *received*. Any acknowledgement is limited to notice that we have received the notification and the ministry does not provide endorsement of the remedial strategies used. Please refer to [Fact Sheet 21, "Requirements for Independent Remediation"](#) for further information on NIR submissions.

#### **Approvals in Principle**

An Approval in Principle (AiP) of a remediation plan can be issued when a remediation plan has been reviewed and approved by the Director. When applying for an AiP, along with a remediation plan, an applicant should also include copies of any preliminary or detailed site investigations and any other site investigation and assessment reports prepared for the site. Please refer to [section 53 of the Act](#) and [sections 47 and 51 of the Regulation](#) for more information on Approvals in Principle.

#### **Contaminated soil management**

There are both onsite and offsite treatment and relocation options for managing soils that exceed environmental quality standards. Their availability depends on site-specific factors such as geographical conditions and the type of contaminants present.

#### **Important note**

Those wishing to relocate contaminated soil should be aware of the requirements of [local governments](#), who often have bylaws dealing with soil removal and deposit and the [Ministry of Energy, Mines and Petroleum Resources](#) that regulates soil deposit at gravel pits and soil removal.

#### **Onsite soil treatment and storage**

In some cases contaminated soils should not be redeposited onsite after disturbance due to the risks they pose to human health and the environment. The onsite treatment of contaminated soils may require the approval and management of an appropriately designed facility. Onsite treatment facilities designed to remediate soils that exceed [Hazardous Waste](#)

[Regulation](#) (HWR) standards require approval from a Director. Please refer to the HWR for detailed information on hazardous waste treatment facility requirements. Contaminated soils that do not qualify as hazardous wastes may be redeposited onsite and managed under the risk-based standards of the Regulation.

#### **Offsite soil treatment**

Contaminated soil can be excavated during independent remediation and transported offsite for treatment or deposit at a facility authorized under the Act to accept contaminated soil. If the receiving site is not authorized to accept soil that exceeds the applicable environmental quality standards a Contaminated Soil Relocation Agreement (CSRA) may be required.

#### **Contaminated Soil Relocation Agreements**

A Contaminated Soil Relocation Agreement is an agreement between the owner of a source site, the owner or operator of a receiving site, and the Director of Waste Management, authorizing the relocation of soil from a contaminated site to a suitable deposit site. Note that the penalties for contravening CSRA requirements are provided in [section 120 \(17\) \(i\)](#) of the Act. Consult [Fact Sheet 41, "Relocation of Soils from Contaminated Sites"](#) for more information.

CSRAs eligible under [Protocol 6, "Eligibility of Applications for Review by Approved Professionals"](#) must be submitted to an Approved Professional for review. All other applications must be submitted directly to the ministry for review. An example of an application requiring direct ministry review is the relocation of soils to a soil treatment facility where the soil to be treated does not meet the applicable numerical land use standards for the proposed receiving site.

A complete list of supporting information and links can be found under the [Contaminated Soil Relocation Agreement](#) key topics section on the Land Remediation Section website.

#### **Hazardous waste soil manifests**

If soil that is being transported offsite to a designated hazardous waste treatment facility exceeds the HWR standards then a manifest must be completed. The manifest tracks the shipment of hazardous waste soil and travels with the soil from the point of generation, through transportation, to reception at an approved facility. It documents the type and the amount of waste, who shipped it (consignor), who transported it (carrier), who received it (consignee) and how it was handled. Each party is required to complete their section of the manifest, sign, distribute and keep the appropriate copies. For further information on manifests or hazardous waste please refer to our [Hazardous Waste website](#).

#### **Waste discharge authorizations**

A waste discharge authorization from the ministry may be required where independent remediation work involves the discharge of waste to the environment. Authorizations can be in the form of a permit or an approval depending on the proposed duration of the discharge and can be for effluent, soil, sediment or air discharges. Generally the ministry will not approve the discharge of a hazardous waste to the environment.

There are a number of treatment methods available for removing contamination in water and air prior to its discharge to the environment. The appropriate treatment method used depends on the waste being treated and site-specific conditions. Options can include carbon filtration, air stripping, air sparging, soil vapour extraction, thermal or



**What is waste?**

Waste has a specific definition under the Act. It includes:

- (a) air contaminants,
- (b) litter,
- (c) effluent,
- (d) refuse,
- (e) biomedical waste,
- (f) hazardous waste, and
- (g) any other substance prescribed by the Lieutenant Governor in Council, or the minister under section 22 [*minister's regulations – codes of practice*], or, if either of them prescribes circumstances in which a substance is a waste, a substance that is present in those circumstances, whether or not the type of waste referred to in paragraphs (a) to (f) or prescribed under paragraph (g) has any commercial

catalytic oxidation, in situ chemical treatment, and other techniques. New or experimental treatment options may require test applications before the ministry approves a discharge authorization using that approach.

The waste discharge permit or approval application process may involve some or all of the following steps:

- a pre-application meeting between the ministry and the applicant,
- public notification, consultation and a comment period,
- the production of a technical assessment for ministry review,
- a formal submission and review of a final application.

Discharges from treatment works at sites in B.C. usually involve small, short term treatment systems which are authorized under an approval under the Act. Consultation is discretionary for an approval and can be quite limited. It may involve consultation with potentially affected parties and could include First Nations, Federal government agencies (such as the Department of Fisheries and

Oceans), local government agencies and neighbouring property owners.

Please refer to the [Waste Discharge Regulation](#), the [Public Notification Regulation](#), the Federal [Fisheries Act](#) and [part 2 of the Act](#) for more information on waste discharge authorizations.

**Site decommissioning and UST removal**

Independent remediation often occurs when a site is decommissioned. Site decommissioning involves the treatment or removal of soil, or deconstruction of equipment, buildings or storage tanks, in order to stop or reduce a significant portion of the operations at a site or to significantly change the use of a site. Contamination found during decommissioning could trigger the submission of a Notification of Independent Remediation or Notification of Offsite Migration.

Please refer to [Fact Sheet 43, "Site Profile Requirements for Site Decommissioning"](#) for site profile requirements and related information.

Decommissioning may also involve the removal of underground (UST) or above ground (AST) chemical or fuel storage tanks. All underground fuel and chemical storage tanks over 2500 L on properties under provincial jurisdiction are regulated by the B.C. Fire Code. Although the ministry does not specifically regulate residential heating oil storage tanks, all property owners in B.C. under provincial jurisdiction are legally responsible for complying with relevant sections of the Act, the Contaminated Sites Regulation and the Hazardous Waste Regulation. Property owners should also note that local governments may have bylaws for storage tanks that fuel oil-burning equipment.

Please refer to [Fact Sheet 32, “Residential Heating Oil Storage Tanks”](#) for more information on residential underground storage tank removal.

### **Contaminant removal and delineation during independent remediation**

Independent remediation often includes the removal of contaminated soils by excavation. Contaminated soils are removed from the site and transported to a designated treatment facility, transported to a suitable receiving site under a CSRA or treated onsite by using an approved treatment method.

Residual materials should be sampled and tested to verify that all contaminants have been properly removed from sites with remedial excavations. If confirmation testing indicates a site meets the numerical standards under the Regulation, the site is eligible for a Certificate of Compliance – numerical standards.

[Technical Guidance Document 1, “Site Characterization and Confirmation Testing”](#) can be used to guide sampling and testing during remedial excavations to ensure that contamination has been properly classified and delineated.

### **Independent remediation using the risk-based approach**

Numerical soil, water, sediment and soil vapour standards are most often used to determine when substance concentrations have been reduced to acceptable levels. During independent remediation at some sites, removing all contaminated materials is not possible or practical because of technological, physical, or financial constraints. In these cases, the substances must be managed onsite to ensure they do not pose a hazard to human health or the environment.

Using the risk-based approach allows a site owner (or contracted qualified professional on the owner’s behalf) to estimate the risks associated with leaving substances in place. When a risk-based approach during independent remediation is used it is normally supported with a risk assessment. Please refer to [Fact Sheet 14, “Demystifying Risk Assessment”](#) for a summary of the risk assessment approach.

### **Screening level risk assessment**

The intention of a screening level risk assessment (SLRA) is to provide an expedited evaluation of whether contamination left in place at a specific site poses acceptable or unacceptable risks to human health and the environment. Such an evaluation includes a simple assessment of exposure pathways and receptors.

Contaminated sites with no unacceptable risks (i.e., pass SLRA) satisfy the Regulation’s risk-based standards and are eligible for a Certificate of Compliance – risk-based standards. No further remediation is required at these sites as long as site conditions do not change. If an Approval in Principle or Certificate of Compliance is sought for a site remediated using SLRA, the application should be submitted under the Approved Professional review process outlined in [Protocol 6](#).

Those sites which fail (or are expected to fail) a SLRA must complete a detailed ecological risk assessment (DERA) and human health risk assessment in order to satisfy the remediation requirements of the Regulation and become eligible for a Certificate. Please refer to [Protocol 13, “Screening Level Risk Assessment”](#) for further information on SLRAs.

### **Detailed risk assessments**

Human health risk assessments (HHRAs) estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media, now or in the future.

Detailed ecological risk assessments (DERAs) comprehensively evaluate potential risks to non-human organisms associated with contaminants. They outline in detail how contaminants may pose a risk to organisms through exposure pathways and what combination of factors is required to reduce risks to within acceptable levels under the Regulation.

The ministry and approved risk assessment professionals currently evaluate SLRAs, HHRAs and DERAs using a number of internal and external technical guidance documents. These documents include the [Tier 1 Ecological Risk Assessment Protocol](#) and [Policy Design Summary, Guidance for Detailed Ecological Risk Assessments in British Columbia](#), Health Canada risk assessment guidance documents and US Environmental Protection Agency guidance. Please refer to [Technical Guidance 7, "Supplemental Guidance for Risk Assessments"](#) for detailed information on guidance documents used during review of risk assessments.

### **Certificates of Compliance**

A Certificate of Compliance (CoC) can be issued by the Director when a site meets either the numerical or risk-based standards following remediation. Issuance of a CoC demonstrates compliance with the remediation standards. Please refer to [section 53 of the Act](#) and [sections 49 through 52 of the Regulation](#).

### **Monitoring a site**

#### **Voluntary monitoring**

After site investigation or independent remediation, an owner may choose to voluntarily monitor his or her site in order to continuously study site conditions. This due diligence approach can most often be an effective way of preventing further contamination, monitoring the effectiveness of independent remediation already underway, or ensuring there is no offsite migration of contaminants.

#### **Monitoring for risk-based remediation**

When a site has been remediated using the risk-based approach, the responsible person for the site should develop and implement an appropriate site monitoring plan for containing, controlling and monitoring any substances that remain onsite. Such a monitoring plan should be based on the type and concentration of contaminants left in place, vegetation, wildlife and human presence onsite, the proximity of contaminants to receptors and other factors.

*Note: This document does not replace the Environmental Management Act or its regulations. It does not list all provisions relating to independent remediation. If there are differences or omissions in this document, the Act and regulations apply.*

*For more information, contact the Environmental Management Branch at [site@gov.bc.ca](mailto:site@gov.bc.ca).*