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Name of Procedure:

Definitions for Contaminated Sites

Staff affected:

Ministry of Environment and Climate Change Strategy staff responsible for administering the contaminated sites provisions of the *Environmental Management Act* and Contaminated Sites Regulation

Authority:

Environmental Management Act
Contaminated Sites Regulation

Purpose of procedure:

To consolidate for easy reference definitions relating to contaminated sites that are not defined in the *Environmental Management Act* or supporting regulations.

Relationship to previous procedure:

None.

Issued by: Environmental Emergencies and Land Remediation Branch

1.0 General

This document consolidates the contaminated sites related acronyms and definitions used in the ministry's contaminated sites regime.

For clarity, several definitions have been elaborated by adding explanatory text in square brackets. That text should not be considered a formal part of a definition. Also, if a term has an acronym in section 3.0, the applicable acronym is usually provided as part of the definition in square brackets after the term.

The definitions in this document are collected here for the convenience of ministry staff and are to be used in the context of the documents from which they have been taken.

2.0 Definitions

The following definitions are to be used by ministry staff in the preparation of contaminated sites documents.

"affected parcel" means a parcel at which substances are present due to the migration of those substances from one or more neighbouring areas.

"affected site" means a site at which substances are present due to the migration of those substances from one or more neighbouring areas.

"anthropogenic barium" means any form of barium present, stored, used, or disposed of at a site by humans.

"Approved Professional work" means work undertaken by an Approved Professional that is specified in Table 1 of the ministry's Procedures for the Roster of Approved Professionals that:

- (a) is within the scope of the applicable profession of the Approved Professional, and
- (b) is of a type required to be performed by an Approved Professional under the *Environmental Management Act*.

"approving authority" means an approving officer under the *Land Title Act*, a local trust committee under the *Islands Trust Act*, a municipality under the *Local*

Government Act or the council or its delegate under the *Vancouver Charter*.

“aquatic habitat” means habitat defined in a protocol approved by the director or as used by “aquatic life” as defined in the Regulation.

“aquatic life” means any living component of the freshwater, estuarine or marine aquatic ecosystem, including phytoplankton, zooplankton, benthos, macrophytes and fish.

“aquatic receiving environment” means any surface water, watercourse, wetland, sediment or porewater containing aquatic life.

“area wide contamination” means contamination in soil and groundwater caused by the placement of contamination (including fill) from multiple widespread and undetermined historical sources, with no identified responsible person(s) and the site is not part of a designated Environmental Management Area. Parcel owners or operators wishing to attribute contamination to widespread undetermined historical sources must not, by any act or omission, cause or contribute to, or exacerbate (e.g. mobilize), the widespread historical contamination.

“arm’s length review” means Approved Professional work consisting of a review by an Approved Professional of a reviewable document where

- (a) the Approved Professional performing the review and any individual involved in the preparation of the reviewable document did not directly supervise or report to the other either at the time the reviewable document was prepared or at the time of the review, and
- (b) the Approved Professional performing the review did not participate in the preparation of the reviewable document nor give any instructions as to its preparation except through the issuance of general guidance regarding the approach and methodology to be used in relation to the preparation of that document.

“Association” means the Engineers and Geoscientists of BC.

“authorization” refers to one or more approvals under section 15 of the *Environmental Management Act*.

“barite” means the chemical compound, barium sulphate (BaSO₄: CAS No. 7727-43-7, 13462-56-7).

“barite site” means a site at which it can be demonstrated to the satisfaction of the director that anthropogenic barium at the site is exclusively in the form of barite.

“beneficial use” means the use of a material designated by a director as an eligible beneficial use.

“beneficial use contamination” means contamination resulting solely from the release of a substance or substances associated with the beneficial use of a material.

“bioaccumulation” means the progressive increase in the amount of a substance in an organism, or part of an organism, which occurs because the substance’s rate of intake by an organism exceeds the rate at which the organism is able to degrade or eliminate the substance.

“bioconcentration” means the process leading to a higher concentration of a substance in an organism compared to the concentration of the substance in the environmental media to which the organism is exposed.

“biodegradation” refers to the process by which organic substances are biotransformed by organisms.

“biodegradation attenuation adjustment divisor” [BAAD] is a unitless divisor that can be applied to a ministry vertical vapour attenuation factor for a select list of substances that have been demonstrated to biodegrade efficiently under aerobic conditions. A BAAD can only be used when biologically active soil underlies the entire extent of the breathing zone under evaluation.

“biologically active soil” means soil that has the capability to support the growth and survival of aerobic microorganisms such that aerobic biodegradation of contaminants can occur. Biologically active soil must not contain detectable concentrations of substances listed in CSR Schedule 3.3. The following geologic materials do not qualify as biologically active:

1. coarse sand and gravel with low silt, clay and organic matter content, and a moisture content that is less than two percent;
2. fractured, faulted, or jointed consolidated rock; or consolidated rock

with solution channels (i.e., karst).

Soil samples must be collected and analyzed for soil moisture, which must be greater than two percent to indicate a biologically active soil.

“biomagnification” means the incremental process through a food chain by which progressively higher contaminant concentrations are attained in organisms located at respective higher trophic levels in the food web.

“blend” means to mix or dilute so as to obtain a uniform material of a desired quality, obscuring or harmonizing the individual components.

“breathing zone” means any place where humans could come into direct contact with contaminated vapour, including indoor and outdoor environments that exist at the time of site investigation or have a reasonable potential to exist after a site investigation is complete.

“brownfield” means an underutilized property that is or is perceived to be contaminated and that has a reasonable potential for redevelopment.

“case file” means an application package received by the ministry for a contaminated sites service request under the Act and Regulation.

“casefile worker” means a member of the ministry who reviews reports and plans associated with contaminated sites.

“Chief Inspector” means the Chief Inspector of Mines under the *Mines Act*.

“Client Information Officer” [CIO] means the ministry’s Client Information Officer who receives and does the initial administrative processing for contaminated sites service applications.

“closure plan” means a plan as a requirement under the Health, Safety and Reclamation Code for Mines in British Columbia describing a program for environmental protection and reclamation of the land and watercourses affected by a mine.

“College” means the College of Applied Biology of British Columbia [CABBC].

“commercial quality” means soil that is not suitable for residential, urban park, or agricultural land use, but is suitable for industrial or commercial land

use as specified in the Contaminated Sites Regulation.

“commissioner” has the same meaning as in the *Petroleum and Natural Gas Act*.

“complete exposure pathway” means an exposure pathway for which all of the following five elements are present:

- (a) a source of contamination;
- (b) an environmental medium, and a transport mechanism for the contamination, such as movement through groundwater;
- (c) a point of exposure for the contamination, such as a private well;
- (d) a route of exposure to a receptor, such as drinking, and
- (e) the presence of a receptor to be exposed.

“conceptual site model” means a written description and/or an illustrated diagram of the biologic, geologic, hydrogeologic, and environmental conditions of a site as it relates to actual or potential exposure to contamination which identifies all potential receptors and complete or incomplete exposure pathways for all contaminants of concern.

“constructed ditch” means a regularly maintained human-made trench or furrow dug in the ground for the primary purpose of conveying or draining surface water, storm water or irrigation water that may or may not contain water at all times of the year.

“constructed pond” means a regularly maintained human-made pool of still water for the primary purpose of storing surface water, storm water or irrigation water collected from a constructed ditch or interconnected system of constructed ditches including, without limitation, sedimentation ponds, retention ponds, detention ponds, treatment lagoons and constructed artificial wetland systems.

“contaminant” means a substance causing contamination as defined in Part 4 [of the Act].

“contaminant of concern” [COC] means a substance that is present in media at a site at levels that exceed generic numerical standards prescribed for that media and the applicable land, water, vapour, and sediment use for the purposes of the definition of contaminated sites in CSR s. 11, typically documented in the DSI or other investigation reports.

“contaminant spreading” means the spreading of a contaminant within or between soil, sediment, water or vapour.

“Contaminated Sites Application Tracking system” [CATs] means the Contaminated Sites Application Tracking system, a Microsoft Access computer application for managing contaminated sites service applications received under the contaminated sites provisions of the Act.

“contaminated sites legal instrument” [CSLI] includes an Approval in Principle, Certificate of Compliance, Contaminated Soil Relocation Agreement, Determination of Contaminated Site, Transfer Agreement or Voluntary Remediation Agreement.

“contaminated sites legal regime” means the provisions of the Act, Regulation and supporting protocols that provide the legal basis for the administration, investigation and remediation of contaminated sites in British Columbia.

“contaminated sites service application” means an application for a service to be provided by the ministry typically listed in Schedule 3, Tables 2 and 3, of the CSR.

“CSAP Society” means the Society of Contaminated Sites Approved Professionals of British Columbia.

“dense nonaqueous phase liquid” [DNAPL] means a nonaqueous phase liquid having a specific gravity greater than 1.0.

“Determination of Contaminated Site” means a determination by a director under section 44 of the Act whether a site is a contaminated site.

“ecological risk assessment” means a qualitative or quantitative appraisal of the actual or potential impacts, hazards or risks of contaminants on biota other than humans.

“ecologically active zone” [EAZ] means the top 1 metre of sediment below the sediment/surface water interface where a variety of important ecological and physiochemical conditions and processes occur.

“electronic Site Registry” means the part of the Site Registry into which

computer-based records are electronically deposited and which is delivered by BC OnLine or other electronic service.

“engineering control” [ENG C] means a risk management measure for controlling risks to human health and the environment resulting from exposure to substances at a site by the use of a technology that:

- (a) controls or contains the migration of a substance, or
- (b) prevents, minimizes or mitigates the release of a substance, and includes, without limitation: soil, sediment caps, solidification methodologies, chemically reactive barriers, impermeable artificial covers, surface water dikes, trenches, leachate collection systems, water treatment systems, vapour barriers, ventilation covers.

“enhanced attenuation” means the use of chemical, biological or physical methods to increase the rate of degradation of contaminants in an environmental medium.

“exposure pathway” means the pathway through an environmental medium by which a contaminant is conveyed to a receptor.

“Exposure Pathway Questionnaire” [EPQ] means the questionnaire which is part of a site risk classification report and which is used to evaluate exposure pathways in conjunction with the risk classification of a site.

“exposure zone” means the zone in which a receptor can come into direct contact with contaminants in the absence of measures to prevent exposure.

“feasibility study” [FS] means a study on the development, screening, and detailed evaluation of alternative remedial actions for a contaminated site.

“financial risk” means the risk to government of incurring financial costs to remediate contaminated sites where a person is unwilling or unable to fund remediation.

“financial security” means one, or a combination, of the following in the amount and under terms as specified by the director:

- irrevocable letters of credit,
- security deposits including short-term deposits,

- registered bonds,
- treasury bill notes,
- bank drafts,
- money orders,
- certified cheques, or
- any other type of fiscal surety acceptable to the director.

“flow through contaminated site” means a site or parcel to which contaminants have migrated from an upgradient source site or parcel through the “flow through” site or parcel without increasing in concentration and from which the contaminants have migrated further downgradient to one or more additional affected sites or parcels.

“FOI request” means a request for records pursuant to the *Freedom of Information and Protection of Privacy Act*.

“food chain” means a sequence of organisms in an ecological community in which each organism uses the next (usually lower trophic level) member of the sequence as a food source.

“food chain modelling” means the quantitative estimation of the dose of contaminant received due to uptake from lower trophic levels within a food chain.

“fractured bedrock” means a rock mass that contains fractures of hydrogeological significance as determined by the presence of any of the following conditions:

- (a) the rock mass is composed of crystalline rocks including most plutonic and metamorphic rocks, non-pyroclastic volcanic rocks, and highly cemented sedimentary rocks,
- (b) the rock mass is brittle and deforms by fracturing,
- (c) the rock mass contains fractures that are visible in surface exposures, core, or well-image logs, or
- (d) the bulk hydraulic conductivity of the rock mass exceeds 10^{-6} m/s.

“free phase liquid” means a nonaqueous liquid that has not been absorbed onto soil, retains its original state and is free to move under prevailing site conditions.

“free product” means a chemical substance at a site, usually liquid petroleum, which has neither dissolved in water nor sorbed onto soil and retains its original physical state.

“freshwater” means natural water in a water body having a natural salinity < 1.5 g/L, but does not include water from an estuarine water body subject to tidal saltwater infiltration.

“groundwater compliance point” means a location where concentrations of substances in groundwater are not greater than the applicable remediation standards.

“groundwater contamination source” means any part of the land surface or subsurface containing substances that are either known, or anticipated, to generate groundwater substance concentrations greater than or equal to the applicable numerical standards.

“groundwater travel time” means the time required for groundwater to travel a given distance by advection. By convention, travel time is calculated using average linear flow velocity.

“halogenated hydrocarbon” means an aliphatic or aromatic hydrocarbon in which one or more hydrogen atoms is substituted by fluorine, chlorine, bromine or iodine.

“HEPHs” means Heavy Extractable Petroleum Hydrocarbons in soil.

“high density urban area” means an area within a municipal boundary, excluding areas that are characterized predominantly by detached single family dwellings or zoned or used for urban parks.

“high priority site” means a site determined to be a high priority by the director based on criteria other than those used for site risk classification.

“high risk pathway” means an exposure pathway for which upper cap concentrations are exceeded or for which the risk-based standards of the Regulation are or may be exceeded as defined in a director’s protocol.

“high risk site” means a site determined to be a high risk site under a director’s

protocol.

“high risk site condition” means a condition at a site as defined under a director’s protocol to be a high risk site condition, including without limitation, the presence of mobile nonaqueous phase liquids and the potential for high risk exposure of humans or other biota to contaminants.

“high water mark” means:

- (a) for freshwater; the visible high water mark of a stream where the presence and action of the water is so common and usual, and typically enduring, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain associated with a site;
- (b) for marine water: the high water mark as defined by the most elevated High Water Mean Tide by Fisheries and Oceans Canada and as mapped on Canadian Hydrographic Services navigational charts; and
- (c) for estuarine water: the high water mark is whichever of the freshwater or marine water high water mark is further inland.

“historical information” means information that the ministry had in its possession before April 1, 1997 relating to the environmental condition of land, water and sediments.

“historical site notification process” means the process required under subsection 43 (3) of the *Environmental Management Act* where regional Environmental Protection managers informed site owners and operators of their intention to request the Site Registrar to deposit into the Site Registry historical information concerning the environmental condition of property, and provide a period for comment.

“human health risk assessment” means the process used to estimate the nature and probability of adverse health effects in humans who may be exposed to substances in contaminated environmental media, now or in the future.

“hydrocarbon contaminated soil” means soil contaminated with a petroleum product, including but not limited to, gasoline, diesel, fuel oil, hydraulic oil and lubricating oil.

“independent remediation” [IR] means remediation procedures carried out in accordance with section 54 of EMA and the CSR.

“industrial quality” means soil or other material that is not suitable for residential, urban park, commercial or agricultural land use, but is suitable for industrial land use as specified in the Contaminated Sites Regulation.

“information order” means an order for information under section 77 of the Act.

“Institute” means the British Columbia Institute of Agrologists [BCIA].

“institutional control” [INSC] means a risk management measure for controlling risks to human health and the environment from exposure to substances at a site or parcel by the imposition of legal or administrative requirements that

- (a) limit the use of soil, water, sediment, vapour or a resource at the site or parcel, or
- (b) limit access or exposure to substances at the site or parcel;

and include, without limitation, fences, signs, easements, covenants, zoning restrictions, contingency or emergency response plans or actions, orders, notices in records, and notifications to persons and government agencies.

“intrinsic control” [INTC] means an inherent feature at a site or parcel which without the use of engineering or institutional controls, controls risks to human health and the environment from exposure to substances and includes, without limitation

- (a) a natural physical barrier, and
- (b) an inherent feature which modifies
 - (i) the physical, chemical or biological behaviour or properties of a substance, or
 - (ii) the environmental media in which a substance is contained.

“lateral attenuation adjustment divisor” [LAAD] is a unitless divisor that can be used to modify a ministry vertical vapour attenuation factor in circumstances where the target breathing zone is offset laterally from the point at which vapours have been characterized.

“legal instrument” means a contaminated sites legal instrument.

“legal parcel” means an area of land the subject of

- (a) a fee simple interest;
- (b) a lease or similar form of tenure respecting real property;
- (c) a licence of occupation under section 39 of the *Land Act*;
- (d) rights granted to occupy land under the *Forest Act* and Forest Practices Code;
- (e) an interest in real property which deals with subsurface rights including a tenure under the *Geothermal Resources Act*, the *Mineral Tenure Act*, and the *Petroleum and Natural Gas Act*.

"LEPHs" means Light Extractable Petroleum Hydrocarbons.

“LEPHw” means Light Extractable Petroleum Hydrocarbons in water.

“letter of comfort” means a letter or other notice issued by the ministry before July 1, 1995 which indicates that the remediation of a site met the ministry's requirements at that time.

“light nonaqueous phase liquid” [LNAPL] means a nonaqueous phase liquid having a specific gravity less than 1.0.

“liner” means a continuous layer of low permeability material, either synthetic or compacted fine-grained soil, constructed to restrict downward or lateral movement of substances.

“maintained watercourse” “maintained watercourse” means a constructed ditch or constructed pond that:

- (a) conveys irrigation water on agricultural land,
- (b) contains, conveys or treats effluent, or
- (c) conveys, drains or stores storm water or surface water on agricultural, residential, commercial, or industrial land;

unless the constructed ditch or constructed pond:

- a) has been designated as critical habitat for aquatic species at risk under the Federal Species at Risk Act, or
- b) constitutes sensitive habitat for designated endangered or threatened aquatic species under the British Columbia Wildlife Act.

“marine or estuarine dredged material” means dredged sediments or other particulate material obtained from a water body other than a freshwater water body.

“medical health officer” means a medical health officer as defined in the *Public Health Act*.

“migration” includes the movement of

- (a) environmental media, and
- (b) substances contained in, or emanating from, environmental media due to the influence of natural forces but does not include the relocation of environmental media or substances by a person.

“ministry” [ENV] means the Ministry of Environment & Climate Change Strategy.

“mobile DNAPL” means dense nonaqueous phase liquid that is capable of moving or is moving in environmental media as defined in a protocol issued by the director.

“mobile LNAPL” means light nonaqueous phase liquid that is capable of moving or is moving in environmental media as defined in a protocol issued by the director.

“mobile NAPL” means nonaqueous phase liquid that is capable of moving or is moving in environmental media as defined in in director’s Protocol 16.

“monitored natural attenuation” [MNA] means the use of natural attenuation processes in a carefully controlled and monitored approach to site remediation.

“monitoring plan” means a plan for physical, chemical or biological sampling, analysis and reporting to evaluate environmental conditions at a site.

“muskeg” means a boreal wetland bog, fen or permanent marsh as classified by the Canadian Wetland Classification System¹ and is characterized, without

¹ Environment Canada. The Canadian Wetland Classification System. at: http://www.qc.ec.gc.ca/faune/atlasterreshumides/html/classification_e.html

limitation, by a surface or near-surface water table and a preponderant presence of peat, Sphagnum mosses and sedges.

“natural attenuation” means a variety of naturally occurring physical, chemical, and biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of substances in soil, sediment or groundwater. These processes include biodegradation, dispersion, dilution, sorption, volatilization, radioactive decay, and chemical or biological stabilization, transformation, and destruction of substances.

“natural confining barrier” means an unconsolidated geological unit as determined in accordance with a director's protocol.

“near shore” means the location of land situated above the marine or estuarine high water mark within an area where groundwater quality is or may be under marine tidal influence. Unless groundwater characterization data indicates otherwise, a near shore area is assumed to extend from the marine or estuarine high water mark a distance of 1 kilometre inland.

“negative determination” means a determination by a director under section 44 of the Act that a site is not a contaminated site.

“nonaqueous phase liquid” [NAPL] means a liquid that exist as a separate, immiscible phase when in contact with water.

“non-carcinogenic substance” means a substance other than a carcinogenic substance.

“non-hazardous waste” means media as defined in the Contaminated Sites Regulation, which is not classified as hazardous waste, but contains one or more substances whose concentrations exceed the numerical standards of the Regulation for the applicable land use at the site.

“non-high risk site” means a site which (a) does not meet the criteria defined in Section 4.0 of this director's Protocol for high risk conditions, or (b) was previously classified as a high risk site where all high risk conditions are no longer present.

“notation” means an entry in the Site Registry that repeats, summarizes or

comments on a matter relating to a site, including partial or complete correspondence, reports, plans, notes, and entries for events.

“Notification of Completion of Independent Remediation” means a notification to a director on the completion of independent remediation in accordance with section 54 (2) (b) of EMA.

“Notification of Independent Remediation” [NIR] means a Notification of Initiation of Independent Remediation or a Notification of Completion of Independent Remediation.

“Notification of Initiation of Independent Remediation” means a notification to a director on the initiation of independent remediation in accordance with Section 54 (2) (a) of the Act.

“Notification of Likely or Actual Migration” [NOM] means a notification under sections 57 and 60.1 of the CSR to a director and to the owner of neighbouring parcels which have been or likely have been contaminated by the migration of substances from a source parcel to the neighbouring parcels.

“numerical water standards” means the generic numerical water standards in Schedules 3.2 of the Contaminated Sites Regulation.

“Numerical Standards Approved Professional” means an Approved Professional who has passed an examination sponsored by the Society of Approved Professionals of British Columbia for applicants to qualify as “standards assessment specialists” and whose qualifications and experience:

- (a) represent an application of the knowledge of contaminant sources, fate and transport;
- (b) were gained in an environment where the individual had primary responsibility for the technical and scientific aspects of site assessment and/or remediation;
- (c) show that appropriate regulatory requirements and guidelines for site investigations, management and remediation work were met; and
- (d) span all stages of contaminated sites investigation and remediation.

“one-time capital costs” means those costs associated with purchase of equipment, installation of equipment, construction of buildings and other permanent structures, one-time consultant services, architect services, laboratory

expenses, fencing, hauling, excavation, costs of expert advice, costs of environmental engineers, etc. which normally occur at the beginning of the remediation process.

“operations and maintenance plan” [O&M plan] means a plan for ongoing management and performance verification of risk management works which is typically required for works involving engineered control systems that involve automated or manual inspection, monitoring, operation or maintenance.

“organic soil” means any soil containing at least 30% organic matter by weight and includes most of the soils commonly known as peat, muck or bog soils.

“organoleptic” means affecting or involving a sense organ such as that of taste, smell, or sight.

“paper Site Registry” means the part of the Site Registry into which paper records are deposited.

“parcel” means an area of land the subject of:

- a) a fee simple interest;
- b) a lease or similar form of tenure respecting real property;
- c) a licence of occupation under the *Land Act*;
- d) rights granted to occupy land under the *Forest Act* and Forest Practices Code;
- e) an interest in real property which deals with subsurface rights including a tenure under the *Geothermal Resources Act*, the *Mineral Tenure Act*, and the *Petroleum and Natural Gas Act*;
- f) a description by metes and bounds.

“parkade attenuation adjustment divisor” [PAAD] is a unitless divisor that can be used to modify a ministry vertical vapour attenuation factor in circumstances where reliance is dependent on default conservative assumptions regarding increased air exchange within the parkade due to mechanical ventilation. A PAAD can only be used when the parkade underlies the entire extent of the footprint of the building above it.

“performance verification” [PV] means an activity providing assurance of verification of the performance of an intrinsic, engineering or institutional control.

“performance verification plan” [PVP] means a plan describing the performance verification of an intrinsic, engineering or institutional control and may include, without limitation, scheduled performance verification site inspection or implementation of a monitoring plan for performance verification of requirements related to site environmental media, biological systems or receptors.

“periodic costs” means those costs expected to occur after initial one-time capital costs have been incurred, and at some predictable period or periods, other than annually. Examples of periodic costs include, without limitation, costs such as capital improvements to existing structures, costs of a five year review, payment for external experts and contractors (e.g. engineering advice to maintain the remedial option), laboratory costs, periodic soil testing, inspection, etc.

“point of compliance” means the location on land or in water at which a given substance concentration in an environmental medium must meet applicable standards and criteria.

“positive determination” means a determination by a director under section 44 of the Act that a site is a contaminated site.

“plume front” means the down gradient extent of a contaminant plume that is defined outside its boundary by:

- (a) the absence of detectable contaminant concentrations; or
- (b) substance concentrations below the applicable numerical standards.

“pollution abatement order” means an order issued by a director under section 83 of the Act.

“pollution prevention order” means an order issued by a director under section 81 of the Act.

“porewater” means the interstitial water within sediment.

“potential contaminant of concern” [PCOC], any contaminant which might be expected to occur at a site based on the historical use of the site, whether or not that substance has been measured in any environmental medium or determined to exceed the numerical standards of the Contaminated Sites Regulation (CSR).

“potential terrestrial habitat” means land that satisfies any of the following conditions:

- (a) urban park or wildlands land use classification applies;
- (b) contains over 50 m² (where residential land use applies at the site) or over 1,000 m² (where commercial or industrial land use applies at the site) of contiguous undeveloped land; or
- (c) lies within 300 m (where residential, commercial or industrial land use applies at the site) of sensitive habitat.

“preferential flow pathway” and “preferential pathway” means a pathway that is significantly (greater than 1 order of magnitude) more water or gas permeable than the soil media that surrounds it and may be anthropogenic (including pathways such as underground utilities for sewers, water and gas lines) or natural (including pathways such as fractured bedrock, surface depressions, streambeds and ditches that intersect and drain shallow aquifers).

“probabilistic risk assessment” means the use of a mathematical model based on probability distribution functions, as opposed to fixed point estimates, to characterize exposure and quantify risk and hazard in a risk assessment.

“qualified professional” [QP] means a registrant of a regulatory body under the *Professional Governance Act*, who may be reasonably relied on to provide advice or services within their regulated practice.

“receiving environment” means any air, land, water, sediment (including porewater), wetland, or muskeg containing receptors, excluding artificial watercourses or impoundments that are maintained and whose primary purpose is to convey or contain storm water or treat and convey effluent, or natural water courses in circumstances approved by the director.

“receptor” means a living organism that may be exposed to a substance.

“record keeping” means maintaining records of monitoring, inspections, operation and maintenance and contingency actions, conditions and performance.

“recurring costs” means those costs for management and monitoring, labour, materials, ongoing contract services, performance and site monitoring, treatment

and disposal, project management, insurance, technical support, etc., that may recur from year to year and are expressed on an annual basis.

“regional estimate of background concentration in soil” means a background concentration in soil for a substance, for a region, as listed in a protocol established by a director.

“Regulation” means the Contaminated Sites Regulation.

“remediation concentration goal” means a concentration of a substance in soil, water, sediment or vapour which must be met in order for a site to be considered to meet the remediation standards of the Contaminated Sites Regulation and includes:

- (a) a numerical standard,
- (b) a site-specific numerical standard,
- (c) a background concentration for the site, and
- (d) a site-specific risk-based concentration.

“remediation liability” means the liability held by a responsible person for remediating a contaminated site under Part 4 of the Act.

“residential/urban park quality” means soil or other material that is not suitable for agricultural land use, but is suitable for residential, urban park, commercial or industrial land use as specified in the Contaminated Sites Regulation.

“reviewable document” means a preliminary or detailed site investigation report, a human health or ecological risk assessment report, a remediation plan, a confirmation of remediation report, a site monitoring report, a report respecting local background concentrations of substances or any other document required to be reviewed by an Approved Professional to perform any of the types of Approved Professional work described in Table 1 of Procedures for the Roster of Approved Professionals.

“risk-based standards” means the standards prescribed in CSR sections 18 and 18.1.

“Risk-based Standards Approved Professional” means an Approved Professional who has passed an examination sponsored by the Society of Approved Professionals of British Columbia for applicants to qualify as “risk assessment specialists” and whose qualifications and experience:

- (a) represent an application of the knowledge of contaminant sources, fate, exposure and effects on biota (including humans);
- (b) were gained in an environment where the individual had primary responsibility for the technical and scientific aspects of the human health and/or ecological risk assessment;
- (c) show evidence that the accomplishment required a synthesis capability that only those who fully appreciate the topics of their discipline would have; and
- (d) show that appropriate regulatory requirements and guidelines for risk assessment work and the application of risk-based standards were met.

“risk control”, an institutional control, intrinsic control, engineering control or monitoring which exists or is implemented to mitigate, eliminate or observe risks from the exposure of receptors to contaminants.

“risk-managed high risk site” [RMHR] means a high risk site where high risk conditions are addressed through risk management.

“risk management control” means an engineering control, institutional control or monitoring implemented to mitigate, eliminate or observe risks from the exposure of humans, animals and plants to contaminants.

“routine release” means the release of records which are available to the public without a request for access pursuant to the *Freedom of Information and Protection of Privacy Act*.

“screening level risk assessment” [SLRA] means a screening level risk assessment and report made in accordance with Protocol 13.

“security” means the guarantee of an undertaking to address actual and potential impacts at a contaminated site, and may include financial security, and real and personal property.

“sediment porewater”, the interstitial water within the uppermost 1 metre of sediment within an aquatic receiving environment.

“sensitive habitat” includes:

- (a) national, provincial, regional and municipal parks;
- (b) sensitive ecosystems identified by Federal, Provincial Sensitive Ecosystem

- Inventories, or local governments;
- (c) habitat supporting red and blue listed species identified via BC Species and Ecosystem Explorer;
 - (d) habitat used for sensitive sediment use as defined in the Regulation; and
 - (e) riparian assessment areas as defined in the Riparian Areas Protection Regulation.

“sentinel well” means a monitoring well established between a plume front and a receptor to detect whether a plume has migrated beyond predicted boundaries and which is used to ensure there will be time for remedial actions to prevent contamination reaching the receptor.

“single family residential” means the type of housing at a residence which houses a single person or family in a common unit, including a private home, cabin, shack, hut or tent.

“SITE” means the ministry's electronic database recording information in the possession of the ministry relating to the environmental condition of property.

“Site ID” means a unique identification number assigned by the ministry to a site listed in the site registry.

“site information request” [SIR] means means a request for information to be provided by ministry staff pursuant to items 2 and 3 in Table 1 of Schedule 3 of the Regulation.

“site investigation order” means an order issued by a director under section 41 (1) of the Act.

“site monitoring report” means a report which describes work intended:

- (a) to gather information on basic site characteristics to establish current or baseline conditions;
- (b) to establish long term trends in natural unperturbed systems to establish natural baselines at a site;
- (c) to estimate inherent variation within environmental media at a site, which can be compared with the variation observed in another specific area;
- (d) to make comparisons between different situations at a site (e.g., pre-development and post development; pre-remediation and post remediation; upstream and downstream; at different distances from a

- source) to detect changes; and
- (e) to make comparisons against a standard applicable to a site.

“site risk classification” means the categorization of a site based on the risks it poses to human health and the environment pursuant to director's Protocol 12.

“Site Risk Classification Report” [SRCR] means a report providing information about the risk classification of a site, the form and content of which are specified in director’s Protocol 12.

“site-specific risk-based concentration” means a concentration of a substance in an environmental medium back-calculated in a risk assessment completed for a specific site, such that exposure to that substance in all environmental media for which all complete exposure pathways exist at that site would not exceed

- (a) for a carcinogenic substance, a calculated human lifetime cancer risk of one in 100,000, and
- (b) for a non-carcinogenic substance, a hazard index of one.

“Society” means the Society of the Contaminated Sites Approved Professionals of British Columbia established to administer the work of the Roster of Approved Professionals on behalf of the director [also referred to as the “CSAP Society”].

“soil surface” means the upper surface of the soil layer below open air or constructed surface covers other than buildings.

“source parcel” means a site or parcel which has now, or had in the past, substances which migrated to one or more neighbouring sites or areas.

“supplemental environmental project” means an environmentally beneficial project that a responsible person agrees to undertake which the responsible person is otherwise not legally required to perform.

“terrestrial habitat” means land on any part of the contaminated site (the source parcel or the off-site affected parcel(s)) that satisfies any of the following conditions:

- (a) the agriculture, wildlands, or urban park land use classification applies;

- (b) contains terrestrial sensitive habitat;
- (c) contains over 50 m² (where residential land use applies at the site) or over 1,000 m² (where commercial or industrial land use applies at the site) of contiguous undeveloped land; or
- (d) lies within 300 m of sensitive habitat where residential, commercial or industrial land use applies at the site.

“theoretical solubility limit” means the maximum [i.e. saturation] concentration of a chemical compound in water at 25 degrees Celsius and 1 atmosphere of pressure.

“toxicity reference value” [TRV] means a maximal estimate of exposure to a substance which would not elicit an unacceptable adverse toxicological effect in an organism, including without limitation; acceptable daily intake (ADI), benchmark dose [BMD], cancer potency slope factor [CPSF], ecological soil screening level [Eco-SSL], lowest observed adverse effect level [LOAEL], minimum risk level [MRL], no observed adverse effect level [NOAEL], reference dose [RfD], reference concentration [RfC], risk specific dose [RSD], tolerable daily intake [TDI], tumorigenic concentration 05 [TC05], tumorigenic dose 05 [TD05] and unit risk [UR].

“undeveloped land” means any bare or vegetated soil, excluding

- (a) gravelled walkways,
- (b) roadways or highways and associated roadside or highway margins,
- (c) parking areas,
- (d) soil contained and isolated in planters and similar structures, and
- (e) storage areas at active commercial and industrial operations.

“upland” means land located inland of the near shore of a water body.

“upper cap concentration” [UCC] means a concentration established by the director for a substance with a numerical standard in the CSR and which, when present in the exposure zone of soil, water, sediment or vapour, poses a high risk to environmental or human health.

“VHw₆₋₁₀” means Volatile Hydrocarbons (nC₆-nC₁₀) in water

“vapour attenuation factor” means the ratio of the breathing zone concentration of a volatile substance to the subsurface concentration of that substance.

“volatile substance” means a substance with the following physicochemical properties:

- (a) a Henry’s Law Constant $> 1 \times 10^{-5}$ atm-m³/mol, and
- (b) a vapour Pressure > 0.05 Torr @ 1 atm, 25 °C.

“VPHv” means volatile petroleum hydrocarbons in vapour and includes the sum of those compounds that elute on a 100% polydimethylsiloxane gas chromatographic column between the retention times for n-hexane (nC6) and n-tridecane (nC13) minus the sum of benzene, ethylbenzene, n-decane, n-hexane, styrene, toluene and xylenes.

“VPHw” means Volatile Petroleum Hydrocarbons in water

“VPHs” means Volatile Petroleum Hydrocarbons

“waste discharge authorization” means an authorization listed in section 6 (5) (a) of the Act and an Approval in Principle in accordance with section 47 (6) of the Regulation.

“waste quality” means soil that is not suitable for wildlands agricultural, urban park, residential, commercial, industrial or any other land use specified in the Contaminated Sites Regulation.

“weight-of-evidence” means a structured framework approach for evaluating and assigning the relative or proportional contributions or weightings to each of multiple lines of evidence influencing the qualitative or quantitative estimation of risk or hazard in a risk assessment.

“wide area contamination” means contamination which

- (a) is associated with specific substances from known sources;
- (b) is associated with one or more identified responsible persons; and
- (c) covers an extensive geographic area comprising many individual sites or parcels, many or all of which are contaminated with one or more of the specific substances.

“wildlife corridors” means segments of undeveloped land connected to additional undeveloped lands at or away from a site or parcel, and may consist of:

- (a) above-ground utility rights-of-way, hedges, and vegetated road rights-of-way; or
 (b) closely spaced (< 10 m separation) small areas (> 1 m²) of undeveloped land.

Revision history

Approved Date	Effective Date	Document Version	Notes
November 12, 2009	October 20, 2009	1.0	
January 7, 2011	January 7, 2011	1.1	
February 28, 2013	April 1, 2013	2.0	
January 14, 2014	February 1, 2014	2.1	New definitions included: natural confining barrier, risk control, risk management control, Type 1A, 1B, 2 and 3 sites
November 20, 2015	February 1, 2016	2.2	New definitions included:
	November 1, 2017	3	Updated to reflect Stage 10/11 CSR amendments
	February 1, 2021	4	Removed definitions located in the <i>Environmental Management Act</i> and supporting Regulations; revised select definitions to reflect Stage 13 amendments