

Sediment Management Standards Issue Papers Glossary

Area background – means the concentration of hazardous substances that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site. *WAC 173-340-200*

Bioaccumulation - increase in concentration of a pollutant from the environment to the first organism in a food chain.

Biomagnification - increase in concentration of a pollutant from one link in a food chain to another.

Biological Criteria - SMS definition – means biological tests that are used to confirm if sediments have violated the sediment quality standards. These biological tests may override the results of chemical tests. For example, if chemical tests show violations but biological tests for the same sample pass the criteria, then the sediments are considered clean. *WAC 173-204-315*.

BSAF – Biota to Sediment Accumulation Factor – estimate of how a particular chemical will biomagnify in the food chain. BSAF is calculated as a ratio of contaminant concentration in the tissue of biota to the contaminant concentration in the sediment. Sediment locations should reflect the home range of the biota being measured.

Carcinogen – means any substance or agent that produces or tends to produce cancer in humans. For implantation of this chapter (MTCA), the term carcinogen applies to substances on the United States Environmental Protection Agency lists of A (known human) and B (probably human) carcinogens, and any substance that causes a significant increased incidence of benign or malignant tumors in a single, well conducted animal bioassay, consistent with the weight of evidence approach specified in the United States Environmental Protection Agency's Guidelines for Carcinogenic Risk Assessment as set forth in 51 FR 33992 et seq. *WAC 173-340-200*

Cleanup – means implementation of a cleanup action or interim action. *WAC 173-340-200*

Cleanup action – means any remedial action, except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with WAC 173-340-350 through 173-340-390. *WAC 173-340-200*

Cleanup level (MTCA rule definition) – means the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions. *WAC 173-340-200*

Cleanup standards (MTCA rule definition) – means the standards adopted under RCW 70.105D.030 (2)(d). Establishing cleanup standards requires specification of the following:

- Hazardous substance concentrations that protect human health and the environment (cleanup levels).

- The location on the site where those cleanup levels must be attained (points of compliance); and
- Additional regulatory requirements that apply to a cleanup action because of the type of action and/or the location of the site. These requirements are specified in applicable state and federal laws and are generally established in conjunction with the selection of a specific cleanup action. *WAC 173-340-200*

CSL – Cleanup Screening Level – SMS definition – means the maximum level of sediment contamination (determined by either chemical or biological criteria) allowed and used to identify sediment cleanup sites or impaired sediments. This is the level above which minor adverse effects to the benthic community are expected. *WAC 173-204-520*.

Degradation by-products – means chemicals or conditions produced from the degradation of waste material in the aquatic environment. For example, the breakdown of wood waste in the aquatic environment can produce ammonia and sulfides. These chemicals can be toxic to aquatic life if produced in high enough concentrations.

Dermal contact – The exposure of skin to toxic chemicals.

Exposure – means subjection of an organism to the action, influence, or effect of a hazardous substance (chemical agent) or physical agent. *WAC 173-340-200*

Exposure pathway – means the path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site. Each exposure pathway includes an actual or potential source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source of the hazardous substance, the exposure pathway also includes a transport / exposure medium. *WAC 173-340-200*

Food ingestion exposure pathway – exposure to contaminants by ingestion of contaminated food or water. For example, eating fish with toxic contaminants.

HQ or Hazard quotient - means the ratio of the dose of a single hazardous substance over a specified time period to a reference dose for that hazardous substance derived for a similar exposure period. *WAC 173-340-200*

Incidental Ingestion – ingestion exposure by accidental ingestion and incidental residues of soil and sediment. For example, hand to mouth behavior of small children that result in accidental ingestion of soil.

Interim action – means a remedial action conducted under *WAC 173-340-430*.

MCUL – Minimum Cleanup Level - SMS definition – means the maximum allowed chemical concentration and biological effects level to be achieved at all cleanup sites. *WAC 173-204-570*

MDL – Method Detection Limit – means the minimum concentration of a compound that can be measured and reported with 99% confidence that the values is greater than zero.

MTCA act – Model Toxics Control Act – means chapter 70.105D RCW, first passed by the voters in the November 1988 general election as Initiative 97 and since adopted by the legislature.

Narrative Criteria – SMS definition – means criteria that is not defined numerically such as the SMS chemical or biological criteria.

Natural background - means the concentration of hazardous substance consistently present in the environment that has not been influenced by localized human activities. For example, several metals and radionuclides naturally occur in the bedrock, sediments, and soils of Washington state due solely to the geologic processes that formed these materials and the concentration of these hazardous substances would be considered natural background. Also, low concentrations of some particularly persistent organic compounds such as polychlorinated biphenyls (PCBs) can be found in the surficial soils and sediment throughout much of the state due to global distribution of these hazardous substances. These low concentrations would be considered natural background. Similarly, concentrations of various radio nuclides that are present at low concentrations throughout the state due to global distribution of fallout from bomb testing and nuclear accidents would be considered natural background. *173-340-200.*

Other Toxic, ..., Deleterious Substances – SMS definition - means contaminants which are not identified in the sediment quality standards chemical criteria of *WAC 173-204-320* through *340*. *WAC 173-204-200, 173-204-310(3).*

Nonanthropogenic background –SMS definition –means that whenever “Nonanthropogenically affected” sediment quality is of lower quality (higher than the chemical or biological criteria) than the SMS criteria, the chemical and biological sediment quality is determined on an area-wide basis and used in place of the sediment quality standards. *WAC 173-204-330.*

Numeric criteria – The SMS has numeric chemical criteria that list maximum chemical concentrations allowed in sediment for marine waters of Puget Sound. Although thousands of chemicals exist, the SMS has numeric criteria for 47 chemicals. *WAC 173-204-320, WAC 173-204-420, WAC 173-204-520.*

PLP – Potentially liable parties – means any person who the department finds, based on credible evidence, to be liable under TCW 70.105D.040. *WAC 173-340-200*

Practicable – means capable of being designed, constructed and implemented in a reliable and effective manner including consideration of cost. When considering cost under this analysis, an alternative shall not be considered practicable if the incremental costs of the alternative are

disproportionate to the incremental degree of benefits provided by the alternative over other lower cost alternatives. *WAC 173-340-200* **OR** – means able to be completed in consideration of environmental effects, technical feasibility and cost. *WAC 173-204-200 (19)*.

PQL - Practical quantitation limit – means the lowest concentration that can be reliably measured within specified limits of precisions, accuracy, representativeness, completeness, and comparability during routine laboratory operation conditions, using department approved methods. *WAC 173-340-200*

Reasonable maximum exposure – means the highest exposure that can be reasonably expected to occur for a human or other living organisms at a site under current and potential future use. *WAC 173-340-200*

Remedy selection – process for selecting cleanup actions – described in MTCA Rule WAC 173-340-360 and SMS Rule WAC 173-204-580.

Remedial action or remedy – means any action or expenditure consistent with the purposed of chapter 70.105D RCW to indentify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment including any investigative and monitoring activities with respect to any release or threatened release of a hazardous substance and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health.

Risk - means the probability that a hazardous substance, when released into the environment will cause an adverse effect in exposed humans or other living organisms.

Sediment cleanup standard –SMS definition – The sediment cleanup standards are established on a site-specific basis within an allowable range of contamination. The lower end of the range is the sediment cleanup objective as defined in 173-204-570 (2). The upper end of the range is the minimum cleanup level as defined in 173-204-570 (3). The site specific cleanup standards shall be as close as practicable to the cleanup objective but in no case shall exceed the minimum cleanup level. For any given cleanup action, either a site-specific sediment cleanup standard shall be defined, or multiple site unit sediment cleanup standards shall be defined. In all cases, the cleanup standards shall be defined in consideration of the net environmental effects (including the potential for natural recovery of the sediment over time), cost and engineering feasibility of different cleanup alternatives, as determined through he cleanup study plan and report standards of WAC 173-204-560. *WAC 173-204-570 (4)*

Sediment Impact Zone – SIZ - SMS definition – means an area where the sediment quality standards of WAC 173-204-320 through – 340 are violated due to ongoing authorized wastewater, storm water, or nonpoint source discharges. These discharges are authorized by the department through a federal or state wastewater or storm water discharge permit. *WAC 173-204-400 through 420*.

Sediment Management Standards - SMS definition — WAC 173-204 Regulations promulgated under the Model Toxics Control Act chapter 70.105D RCW, the Water Pollution Control Act chapter 90.48 RCW. The purpose of the Sediment Management Standards is to reduce and ultimately eliminate adverse effects on biological resources and significant health threats to humans from surface sediment contamination by: (a) Establishing standards for the quality of surface sediments; (b) applying these standards as the basis for management and reduction of pollutant discharges; and (c) providing a management and decision process for the cleanup of contaminated sediments. *WAC 173-204-100(2)*

Sediment Quality Standards - SQS – SMS definition - Sediment Quality Standard of the SMS provide chemical concentration criteria, biological effects criteria, human health criteria, and other toxic, radioactive, biological, or deleterious substances criteria which identify surface sediment that have **no adverse effects**, including no acute or chronic adverse effects on biological resources and no significant health risk to humans, as defined in this regulation. The sediment quality standards provide a regulatory and management goal for the quality of sediments throughout the state.

Water Pollution Control Act - WPCA – means the act that the Sediment Management Standards were promulgated under and provides the state with the regulatory authority to protect waters of the state. *RCW 90.48*.