

WAC 173-340-357 Quantitative risk assessment of cleanup action alternatives. (1) **Purpose.** A cleanup action must protect human health and the environment, including likely vulnerable populations and overburdened communities (see WAC 173-340-360 (3)(a)(i)). A quantitative site-specific risk assessment may be conducted to help determine whether cleanup action alternatives, including those relying on engineered or institutional controls to limit exposure to contamination remaining at a site, protect human health and the environment. Other methods may be used in addition to, or instead of, a quantitative site-specific risk assessment to determine whether a cleanup action alternative is protective.

(2) **Human health risk assessment.** A quantitative site-specific human health risk assessment may be conducted to help determine whether cleanup action alternatives, including those relying on engineered or institutional controls to limit exposure, protect human health. This subsection defines the framework for assessing cleanup action alternatives relying on engineered or institutional controls to limit exposure. References to Method C in this subsection apply to an environmental medium only if the medium for which a remediation level is being established qualifies for a Method C cleanup level under WAC 173-340-706.

(a) **Reasonable maximum exposure.** Standard reasonable maximum exposures and corresponding Method B and C equations in WAC 173-340-720 through 173-340-750 may be modified as provided under WAC 173-340-708 (3)(d). For example, land uses other than residential and industrial may be used as the basis for an alternative reasonable maximum exposure scenario for the purpose of assessing the protectiveness of a cleanup action alternative that relies on engineered or institutional controls (such as containment) to limit exposure to contaminated soil.

(b) **Exposure parameters.** Exposure parameters for the standard Method B and C equations in WAC 173-340-720 through 173-340-750 may be modified as provided in WAC 173-340-708(10).

(c) **Acceptable risk level.** The acceptable risk level used to establish a remediation level for a hazardous substance must be the same as that used to establish the cleanup level for the substance.

(d) **Soil to groundwater pathway.** The methods specified in WAC 173-340-747 to develop soil concentrations that are protective of groundwater beneficial uses may also be used to help assess whether a cleanup action alternative that relies on engineered or institutional controls (such as containment) will protect groundwater.

(e) **Burden of proof, new science, and quality of information.** Any modification of the default assumptions in the standard Method B and C equations, including modification of the standard reasonable maximum exposures and exposure parameters, or any modification of default assumptions or methods specified in WAC 173-340-747 requires compliance with WAC 173-340-702 (14), (15) and (16).

(f) **Commercial gas station scenario.** At active commercial gas stations, where there are retail sales of gasoline or diesel, one of the following may be done to demonstrate when a cap is protective of the soil ingestion and dermal pathways:

(i) Equations 740-3 and 740-5 may be modified by reducing the exposure frequency to 0.25. This exposure frequency is intended to be a conservative estimate of a child trespasser scenario at a commercial gas station where contaminated soil has been excavated and stockpiled or soil is otherwise accessible. To rely on this exposure frequency:

(A) The cleanup action must include institutional controls that prevent uses that could result in a higher level of exposure; and

(B) Other exposure pathways (e.g., soil vapors and soil to groundwater) must be assessed to determine whether they are protective; or

(ii) Equations 740-3 and 740-5 may be modified on a site-specific basis as described in WAC 173-340-740 (3) (c).

(3) **Ecological risk assessment.** A quantitative site-specific ecological risk assessment may be used to help determine whether cleanup action alternatives, including those relying on engineered or institutional controls to limit exposure, protect the environment.

[Statutory Authority: Chapters 70A.305 and 70A.355 RCW. WSR 23-17-159 (Order 18-09), § 173-340-357, filed 8/23/23, effective 1/1/24. Statutory Authority: Chapter 70.105D RCW. WSR 01-05-024 (Order 97-09A), § 173-340-357, filed 2/12/01, effective 8/15/01.]