

Gasoline and Diesel Soil Concentrations Predicted to be Protective of Upland Ecological Receptors

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To: Interested Persons

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Attachments: None

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1.0 Purpose and Applicability

The purpose of this memorandum is to update gasoline and diesel soil concentrations that are predicted to be protective of plants and soil biota at any Model Toxics Control Act (MTCA) cleanup site. These concentrations may be used to satisfy the literature survey requirements for conducting a Site-Specific Terrestrial Ecological Evaluation (Site-Specific TEE) per Washington Administrative Code (WAC) 173-340-7493(3)(a)(i) and (ii). It is expected that these updated values will be recommended for WAC 173-340, Table 749-3 (gasoline and diesel range organics) when Ecology updates the MTCA regulation.

These updated values should be used by those conducting TEEs at MTCA cleanup sites, including cleanup project managers, consultants, and potentially liable persons (PLPs).

2.0 Background

The predicted protective concentrations provided in this memorandum were derived from the Washington State Department of Ecology (Ecology) study titled, [Toxicity Testing of Soils Contaminated with Gasoline, Diesel, and Heavy Oil: Toxicity Testing of Washington Soils](#) (Ecology 2016, Publication No. 16-03-038). The numeric values were derived from weathered total petroleum hydrocarbon products, and are based on the lowest observed adverse effects level/lowest observed effects concentration for plants and soil biota. These values represent soil concentrations that are predicted to be protective of plants and soil biota at any MTCA site.

3.0 Results

Table 1 lists the updated gasoline and diesel soil concentrations that are recommended to be protective of plants and soil biota, and would satisfy the requirements of the Site-Specific TEE (WAC 173-340-7493) for gasoline and diesel range organics.

Hazardous Substance	Protective Values			
		Plants	Soil Biota	Wildlife (No Changes)
Gasoline Range Organics	Current Value	Not provided	100 mg/kg	5,000 mg/kg except that the concentration shall not exceed residual saturation (1,000 mg/kg) at the soil surface.
	Proposed Values	120 mg/kg	120 mg/kg	
Diesel Range Organics	Current Value	Not provided	200 mg/kg	6,000 mg/kg except that the concentration shall not exceed residual saturation (2,000 mg/kg) at the soil surface.
	Proposed Values	1,600 mg/kg	260 mg/kg	

Table 1: Gasoline and diesel concentrations that are considered protective of plants and soil biota using NWTPH (Gx and Dx) methods. Diesel range organics includes sum of diesel fuels and heavy oils.

4.0 References

Ecology. (2013). Model Toxics Control Act—Cleanup Regulation. WASH. ADMIN CODE § Chapter 173-340 WAC. (2013). Retrieved from: <http://apps.leg.wa.gov/wac/default.aspx?cite=173-340> and <https://fortress.wa.gov/ecy/publications/summarypages/9406.html>

Ecology. (2016). *Toxicity testing of soils contaminated with gasoline, diesel, and heavy oil: toxicity testing of Washington soils*. (Ecology Publication No. 16-03-038.) Olympia, WA: Washington State Department of Ecology, Environmental Assessment Program. Retrieved from: <https://fortress.wa.gov/ecy/publications/SummaryPages/1603038.html>