

**Table 2-1. Cleanup Levels for 200-UP-1 OU COCs**

COCs	Units	90 <sup>th</sup> Percentile Groundwater Concentrations	Federal DWS <sup>a</sup>	MTCA Method B Cleanup Levels		Cleanup Level
				Non-carcinogens at HQ = 1	Carcinogens at $1 \times 10^{-6}$ Risk Level	
Iodine-129	pCi/L	3.5	1	—	—	1 <sup>e</sup>
Technetium-99	pCi/L	4,150	900	—	—	900
Tritium	pCi/L	51,150	20,000	—	—	20,000
Uranium	&#181g/L	206	30	—	—	30
Nitrate <sup>b</sup> (as NO <sub>3</sub> )	mg/L	133	45 <sup>b</sup>	113.6	—	45
Nitrate <sup>b</sup> (as N)	mg/L	30.1	10 <sup>b</sup>	25.6	—	10
Total chromium <sup>c</sup>	&#181g/L	99	100	24,000	—	100
Hexavalent chromium <sup>c</sup>	&#181g/L	52	— <sup>d</sup>	48	—	48
Carbon tetrachloride	&#181g/L	189	5	5.6	0.34 <sup>f</sup>	3.4 <sup>g</sup>

Source: Table 14 of the *Record of Decision for Interim Remedial Action, Hanford 200 Area Superfund Site, 200-UP-1 Operable Unit* (EPA et al., 2012).

a. Federal DWS from 40 CFR 141, “National Primary Drinking Water Regulations,” with iodine-129 and technetium-99 values from EPA 816-F-00-002, *Implementation Guide for Radionuclides*.

b. Nitrate (NO<sub>3</sub>) may be expressed as the ion NO<sub>3</sub> (NO<sub>3</sub><sup>-</sup> NO<sub>3</sub>) or as nitrogen (NO<sub>3</sub>-N). The federal DWS for nitrate is published as 10 mg/L expressed as N, which is equivalent to 45 mg/L expressed as NO<sub>3</sub><sup>-</sup> (rounded to the nearest 5 μg/L). The Washington State cleanup level is 25.6 mg/L, as nitrogen.

c. The mobile form of chromium in Hanford Site groundwater is hexavalent chromium. Groundwater samples have been analyzed for chromium by the analytical laboratories as either total chromium or hexavalent chromium. Both methods yield similar results, although there can be differences caused by normal analytical variability or sample turbidity. So, although total chromium and hexavalent chromium as listed as separate COCs, they represent the same constituent in Hanford groundwater. The effective cleanup level for chromium is the hexavalent chromium standard of 48 &#181g/L because it is more restrictive.

d. There is no federal DWS for hexavalent chromium.

e. Currently identified groundwater treatment technology is insufficient to reach the 1 pCi/L DWS.

f. This value is represents estimated risk from an individual contaminant, at  $1 \times 10^{-6}$  risk level.

g. This cleanup level is a risk-based calculation for carbon tetrachloride. This value represents a cumulative  $1 \times 10^{-5}$  risk in accordance with WAC 173-340-720(7)(a), “Model Toxics Control Act—Cleanup,” “Groundwater Cleanup Standards.”

COC = contaminant of concern

HQ = hazard quotient

DWS = drinking water standard

MTCA = *Model Toxics Control Act*