

Natural Background Soil Metals Concentrations in Washington State

The following table was compiled from information in *Natural Background Soil Metals Concentrations in Washington State* (October 1994), Ecology Publication No. 94-115, available at <https://fortress.wa.gov/ecy/publications/summarypages/94115.html>

Chemical	CAS Number	Region/ County	90th percentile (mg/kg)	50th percentile (mg/kg)	mean (mg/kg)	median (mg/kg)
Aluminum	7429-90-5	Statewide	37206.00	19277.87	21956.00	21956.00
		Puget Sound	32581.00	18376.61	20354.00	17900.00
		Clark County	52276.00	32446.91	34355.00	31192.00
		Yakima Basin	33379.00	20892.85	22263.40	20800.00
		Spokane Basin	21376.00	15380.88	15842.10	15000.00
		West (all)	45735.00	21899.36	25460.15	21760.00
		East (all)	28299.00	67234.76	18190.00	16600.00
		Group "W"	62905.00	18748.95	25392.70	21700.00
		Group "E"	25591.00	13525.62	15003.00	14800.00
Arsenic	7440-38-2	Statewide	6.99	3.10	3.82	2.92
		Puget Sound	7.30	3.24	3.96	2.86
		Clark County	5.81	3.26	3.56	3.045
		Yakima Basin	5.13	2.64	3.73	2.64
		Spokane Basin	9.34	4.39	5.02	4.99
		West (all)	6.37	3.19	3.71	2.91
		East (all)	7.61	3.03	3.90	2.95
		Group "W"	8.47	2.80	3.49	2.80
		Group "E"	5.76	2.14	2.70	2.53

Supporting material for Cleanup Levels and Risk Calculation (CLARC)
Washington State Department of Ecology – Toxics Cleanup Program

Chemical	CAS Number	Region/ County	90th percentile (mg/kg)	50th percentile (mg/kg)	mean (mg/kg)	median (mg/kg)
Beryllium	7440-41-7	Statewide	1.44	0.59	0.76	0.67
		Puget Sound	0.61	0.35	0.41	0.36
		Clark County	2.07	1.43	1.43	1.48
		Yakima Basin	1.57	0.97	1.03	0.93
		Spokane Basin	0.84	0.64	0.65	0.66
		West (all)	1.51	0.51	0.75	0.53
		East (all)	1.27	0.70	0.77	0.72
		Group "W"	0.75	0.39	0.39	0.40
		Group "E"	0.61	0.35	0.38	0.31
Cadmium	7440-41-9	Statewide	0.99	0.32	0.63	0.49
		Puget Sound	0.77	0.37	0.80	0.49
		Clark County	0.93	0.49	0.55	0.83
		Yakima Basin	0.93	0.49	0.55	0.49
		Spokane Basin	0.72	0.36	0.40	0.40
		West (all)	1.20	0.40	0.83	0.83
		East (all)	0.81	0.30	0.48	0.48
		Group "W"	0.10	0.10	N/A	N/A
		Group "E"	N/A	N/A	N/A	N/A
Chromium	7440-47-3	Statewide	41.88	18.69	23.37	18.42
		Puget Sound	48.15	22.00	30.29	22.00
		Clark County	26.57	21.99	20.64	21.99
		Yakima Basin	38.27	16.43	21.67	16.42
		Spokane Basin	17.81	11.43	11.95	11.78
		West (all)	47.40	22.00	28.67	22.00
		East (all)	31.88	14.51	17.67	13.15
		Group "W"	78.46	28.18	37.74	26.70
		Group "E"	37.80	14.69	18.92	12.60

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Chemical	CAS Number	Region/ County	90th percentile (mg/kg)	50th percentile (mg/kg)	mean (mg/kg)	median (mg/kg)
Copper	7440-50-8	Statewide	36.01	16.80	20.46	17.07
		Puget Sound	36.36	15.00	24.43	15.00
		Clark County	34.43	20.49	22.04	21.78
		Yakima Basin	26.47	19.23	20.16	19.23
		Spokane Basin	21.61	14.42	14.42	14.14
		West (all)	43.23	17.36	23.15	17.80
		East (all)	28.40	16.22	17.58	16.30
		Group "W"	52.85	12.75	21.24	8.05
		Group "E"	26.42	14.70	17.69	14.70
Iron	Unavailable	Statewide	43106.00	22987.15	25903.72	22033.00
		Puget Sound	36128.00	17050.00	21680.10	17050.00
		Clark County	58665.00	39180.95	40734.60	38508.00
		Yakima Basin	51451.00	27689.82	29780.40	28821.00
		Spokane Basin	25026.00	18278.16	18744.84	18150.00
		West (all)	50125.00	24152.41	28192.00	21433.00
		East (all)	36644.00	21810.59	23471.67	22116.00
		Group "W"	49170.00	21446.18	25557.33	18200.00
		Group "E"	29631.00	19027.40	19935.70	21300.00
Lead	7439-92-1	Statewide	17.09	6.98	10.05	7.90
		Puget Sound	16.83	4.47	15.90	9.80
		Clark County	24.02	9.50	10.65	6.86
		Yakima Basin	11.00	6.56	11.29	6.53
		Spokane Basin	14.91	11.01	7.00	10.80
		West (all)	20.42	5.92	11.90	8.20
		East (all)	13.10	7.84	8.44	7.82
		Group "W"	10.67	4.75	5.63	4.00
		Group "E"	9.85	6.64	6.92	6.40

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Chemical	CAS Number	Region/ County	90th percentile (mg/kg)	50th percentile (mg/kg)	mean (mg/kg)	median (mg/kg)
Manganese	7439-96-5	Statewide	1094.85	492.82	592.60	509.58
		Puget Sound	1146.00	461.62	592.21	474.00
		Clark County	1511.00	924.17	924.20	915.50
		Yakima Basin	1104.84	611.46	669.00	589.00
		Spokane Basin	663.48	494.78	506.5	470.00
		West (all)	1337.27	494.28	646.71	531.25
		East (all)	836.00	491.30	534.40	490.75
		Group "W"	691.75	257.06	329.30	231.00
		Group "E"	526.59	348.73	364.95	345.00
Mercury	7439-97-6	Statewide	0.07	0.02	NO DATA	0.03
		Puget Sound	0.07	0.04	0.05	0.04
		Clark County	0.04	0.03	0.03	0.03
		Yakima Basin	0.05	0.02	0.03	0.02
		Spokane Basin	0.02	0.01	0.02	0.01
		West (all)	0.08	0.04	0.04	0.04
		East (all)	0.04	0.01	0.02	0.01
		Group "W"	0.13	0.03	0.05	0.04
		Group "E"	0.02	0.01	0.01	0.01
Nickel	7440-02-0	Statewide	38.19	16.92	21.49	16.43
		Puget Sound	38.19	23.00	29.82	23.00
		Clark County	21.04	16.23	17.72	16.23
		Yakima Basin	45.89	16.23	24.83	16.30
		Spokane Basin	16.19	10.49	10.96	10.15
		West (all)	44.20	20.57	25.44	19.20
		East (all)	25.54	12.40	17.25	12.50
		Group "W"	54.19	19.12	25.66	19.10
		Group "E"	22.41	12.54	13.77	11.70

Chemical	CAS Number	Region/ County	90th percentile (mg/kg)	50th percentile (mg/kg)	mean (mg/kg)	median (mg/kg)
Zinc	7440-66-6	Statewide	85.82	51.56	55.53	51.12
		Puget Sound	85.06	46.52	51.45	43.65
		Clark County	95.52	78.5	76.01	78.50
		Yakima Basin	78.71	55.66	57.54	52.90
		Spokane Basin	66.40	50.83	51.77	50.90
		West (all)	98.39	52.50	58.34	54.08
		East (all)	80.91	52.29	55.55	50.64
		Group "W"	85.56	42.85	48.41	44.5
Group "E"	67.47	43.40	45.74	41.00		

Definitions	
State Wide	all statewide sampling locations.
Puget Sound	Snohomish, King, Pierce, Thurston, Mason, Jefferson, Island, San Juan, and Clallam Counties.
Clark County	Clark County.
Yakima Basin	Yakima, Kittitas, Chelan, and Grant Counties.
Spokane Basin	Spokane, Lincoln, Adams, Okanogan, and Whitman Counties.
West (all)	all sampling locations west of the Cascade Mountain Range.
East (all)	all sampling locations east of the Cascade Mountain Range.
Group "W"	Whatcom and Skagit Counties, Pacific Coast (Grays Harbor, Lewis, and Pacific Counties).
Group "E"	Benton, Spokane, Lincoln, Adams, Okanogan, and Whitman Counties.

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