

Errata
Control of Toxic Chemicals in Puget Sound,
Phase 2: Improved Estimates of Loadings from
Dischargers of Municipal and Industrial Wastewater

Tables 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, A-1, B-2, B-4, B-6, B-8, B-10, B-12, and B-14

- (a) Loading calculations were to have used the most recently determined concentrations of copper, lead, zinc, and *bis*(2-ethylhexyl)phthalate. However, for the Bellingham STP (WA0023744) the greatest detected concentrations were used in error. The replacement tables show the corrected loading calculations based upon recent average concentrations for the Bellingham STP.
- (b) The Sumner STP (WA0023353) was listed twice when it should have been listed only once. The replacement tables no longer have the extra incorrect entry for the “City of Sumner.”
- (c) The Gig Harbor STP (WA0023957B) was incorrectly identified as being located in the Main Basin Study Area. The replacement tables show the Gig Harbor STP correctly located in the South Sound (East) Study Area.

Note that this Errata identifies changes only in the tables. **The text and figures of the original report have corresponding errors that have not been changed.**

The conclusions and recommendations of the study remain unchanged.

Table 2. Number of Dischargers in the Database for the 14 Puget Sound Study Areas.

Study Unit	Municipal Dischargers	Industrial Dischargers	Total
Admiralty Inlet	1	3	4
Elliott Bay	0	4	4
Commencement Bay	11	17	28
Hood Canal (north)	1	1	2
Hood Canal (south)	0	0	0
Main Basin	16	8	24
Port Gardner	11	4	15
San Juan Islands	9	3	12
Sinclair-Dyes Inlet	5	5	10
South Sound (east)	9	3	12
South Sound (west)	8	3	11
Strait of Georgia	11	15	26
Strait of Juan de Fuca	6	4	10
Whidbey Basin	16	5	21
Total	104	75	179

Table 4. Reported Wastewater Discharge Volumes for the 14 Puget Sound Study Areas.

Study Unit	Municipal Facilities		Industrial Facilities		Total Discharge (mgy)
	Discharge Volume (mgy)	Number of Facilities Not Reporting Flow (a)	Discharge Volume (mgy)	Number of Facilities Not Reporting Flow (a)	
Admiralty Inlet	338	0	4,380	1	4,718
Elliott Bay	0	0	70	2	70
Commencement Bay	12,126	0	11,510	3	23,636
Hood Canal (north)	4	0	0	1	4
Hood Canal (south)	0	0	0	0	0
Main Basin	77,329	0	1,111	4	78,440
Port Gardner	12,634	1	10,300	3	22,934
San Juan Islands	1,529	1	2,630	1	4,159
Sinclair-Dyes Inlet	3,798	0	2,490	3	6,287
South Sound (east)	7,832	1	2,592	2	10,424
South Sound (west)	4,243	0	6	0	4,249
Strait of Georgia	5,943	4	5,405	2	11,348
Strait of Juan de Fuca	1,160	1	3,151	1	4,311
Whidbey Basin	3,126	2	3	3	3,129
Total	130,061	10	43,647	25	173,709

The precision of the data in this table is only three significant figures.

mgy = Million gallons per year.

(a) = Facilities for which flow data were not reported are not included in the discharge volume.

Table 5. Estimated Annual Loadings of Copper from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	13.2	1	0	82.9	3	2	96.1	not estimated
Elliott Bay	0	0	0	0.33	4	3	0.33	not estimated
Commencement Bay	525	11	0	354	17	10	879	not estimated
Hood Canal (north)	0.16	1	0	0.00	1	1	0.16	not estimated
Hood Canal (south)	0	0	0	0.00	0	0	0	not estimated
Main Basin	3,810	16	0	31.3	8	7	3,840	not estimated
Port Gardner	275	11	1	359	4	3	634	not estimated
San Juan Islands	67.4	9	1	22.3	3	2	89.7	not estimated
Sinclair-Dyes Inlet	60.8	5	0	56.2	5	4	117	not estimated
South Sound (east)	564	9	1	304	3	2	868	not estimated
South Sound (west)	287	8	0	0.0000199	3	2	287	not estimated
Strait of Georgia	493	11	4	29.7	15	9	523	not estimated
Strait of Juan de Fuca	45.4	6	1	30.0	4	2	75.5	not estimated
Whidbey Basin	95.5	16	2	0	5	5	95.5	not estimated
Puget Sound Total	6,230	104	10	1,270	75	52	7,500	7,200

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 6. Estimated Annual Loadings of Lead from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	1.41	1	0	16.6	3	2	18.0	not estimated
Elliott Bay	0	0	0	0	4	4	0.00	not estimated
Commencement Bay	107	11	0	30.2	17	13	137	not estimated
Hood Canal (north)	0.017	1	0	0	1	1	0.017	not estimated
Hood Canal (south)	0	0	0	0	0	0	0.00	not estimated
Main Basin	319	16	0	1.61	8	5	321	not estimated
Port Gardner	153	11	1	409	4	3	562	not estimated
San Juan Islands	3.04	9	1	4.47	3	2	7.51	not estimated
Sinclair-Dyes Inlet	201	5	0	0	5	5	201	not estimated
South Sound (east)	157	9	1	9.81	3	2	167	not estimated
South Sound (west)	10.0	8	0	0	3	3	10.0	not estimated
Strait of Georgia	96.2	11	4	9.73	15	9	105	not estimated
Strait of Juan de Fuca	4.83	6	1	9.32	4	2	14.1	not estimated
Whidbey Basin	10.7	16	2	0	5	5	10.7	not estimated
Puget Sound Total	1,060	104	10	491	75	56	1,550	4,710

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 7. Estimated Annual Loadings of Mercury from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	0.00448	1	0	0.0779	3	2	0.0824	not estimated
Elliott Bay	0.00	0	0	0.00227	4	3	0.00227	not estimated
Commencement Bay	0.203	11	0	0.474	17	13	0.677	not estimated
Hood Canal (north)	0.0000533	1	0	0.00	1	1	0.0000533	not estimated
Hood Canal (south)	0.00	0	0	0.00	0	0	0.00	not estimated
Main Basin	1.34	16	0	0.00	8	8	1.34	not estimated
Port Gardner	0.202	11	1	5.42	4	3	5.62	not estimated
San Juan Islands	0.0310	9	1	0.673	3	1	0.704	not estimated
Sinclair-Dyes Inlet	0.0453	5	0	0.00	5	5	0.0453	not estimated
South Sound (east)	0.100	9	1	0.00	3	3	0.100	not estimated
South Sound (west)	0.0288	8	0	0.00	3	3	0.0288	not estimated
Strait of Georgia	0.194	11	4	0.250	15	12	0.444	not estimated
Strait of Juan de Fuca	0.176	6	1	0.0924	4	3	0.268	not estimated
Whidbey Basin	0.0280	16	2	0.00	5	5	0.0280	not estimated
Puget Sound Total	2.35	104	10	6.99	75	62	9.34	15

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 8. Estimated Annual Loadings of Zinc from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	58.8	1	0	166	3	2	225	not estimated
Elliott Bay	0	0	0	0	4	4	0	not estimated
Commencement Bay	2,030	11	0	1,480	17	12	3,510	not estimated
Hood Canal (north)	0.70	1	0	0	1	1	0.70	not estimated
Hood Canal (south)	0	0	0	0	0	0	0	not estimated
Main Basin	9,290	16	0	99.1	8	7	9,390	not estimated
Port Gardner	1,070	11	1	1,980	4	3	3,050	not estimated
San Juan Islands	171	9	1	223	3	2	394	not estimated
Sinclair-Dyes Inlet	1,120	5	0	5.53	5	4	1,120	not estimated
South Sound (east)	2,190	9	1	589	3	2	2,780	not estimated
South Sound (west)	1,430	8	0	0	3	3	1,430	not estimated
Strait of Georgia	1,380	11	4	644	15	10	2,020	not estimated
Strait of Juan de Fuca	202	6	1	202	4	2	404	not estimated
Whidbey Basin	649	16	2	0	5	5	649	not estimated
Puget Sound Total	19,600	104	10	5,390	75	57	25,000	18,100

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 9. Estimated Annual Loadings of *bis* (2-Ethylhexyl)phthalate from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	4.16	1	0	82.9	3	2	87.0	not estimated
Elliott Bay	0	0	0	0	4	4	0	not estimated
Commencement Bay	185	11	0	181	17	14	366	not estimated
Hood Canal (north)	0.05	1	0	0	1	1	0.05	not estimated
Hood Canal (south)	0	0	0	0	0	0	0	not estimated
Main Basin	558	16	0	1.55	8	7	560	not estimated
Port Gardner	341	11	1	187	4	3	529	not estimated
San Juan Islands	6.73	9	1	7.59	3	2	14.3	not estimated
Sinclair-Dyes Inlet	101	5	0	0	5	5	101	not estimated
South Sound (east)	376	9	1	0	3	3	376	not estimated
South Sound (west)	657	8	0	0	3	3	657	not estimated
Strait of Georgia	304	11	4	765	15	11	1,070	not estimated
Strait of Juan de Fuca	9.98	6	1	31.1	4	3	41.1	not estimated
Whidbey Basin	27.8	16	2	0	5	5	27.8	not estimated
Puget Sound Total	2,570	104	10	1,260	75	63	3,830	82

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 10. Estimated Annual Loadings of Chloroform from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	0.640	1	0	41.4	3	2	42.1	not estimated
Elliott Bay	0	0	0	0	4	4	0	not estimated
Commencement Bay	25.4	11	0	226	17	13	251	not estimated
Hood Canal (north)	0.00761	1	0	0	1	1	0.00761	not estimated
Hood Canal (south)	0	0	0	0	0	0	0	not estimated
Main Basin	153	16	0	0.310	8	7	153	not estimated
Port Gardner	23.9	11	1	390	4	3	414	not estimated
San Juan Islands	10.1	9	1	8.04	3	2	18.2	not estimated
Sinclair-Dyes Inlet	36.2	5	0	0	5	5	36.2	not estimated
South Sound (east)	17.2	9	1	0	3	3	17.2	not estimated
South Sound (west)	64.3	8	0	0	3	3	64.3	not estimated
Strait of Georgia	90.0	11	4	6.99	15	11	97.0	not estimated
Strait of Juan de Fuca	7.69	6	1	8.81	4	3	16.5	not estimated
Whidbey Basin	8.59	16	2	0	5	5	8.59	not estimated
Puget Sound Total	437	104	10	681	75	62	1,120	not estimated

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 11. Estimated Annual Loadings of Total Phenolics from Point Source Wastewater Dischargers.

Study Area Name	Phase 2 Estimate of Loadings (a)						Total Phase 2 Wastewater Loadings (kg/year)	Total Phase 1 Wastewater Loadings (kg/year)
	Municipal Facilities (b)			Industrial Facilities (c)				
	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates	Wastewater Loadings (kg/year)	Total Number of Facilities	Number of Facilities Not Included in Loading Estimates		
Admiralty Inlet	12.8	1	0	2,490	3	2	2,500	not estimated
Elliott Bay	0	0	0	0	4	4	0.00	not estimated
Commencement Bay	955	11	0	1,150	17	15	2,100	not estimated
Hood Canal (north)	0.152	1	0	0	1	1	0.152	not estimated
Hood Canal (south)	0	0	0	0	0	0	0.00	not estimated
Main Basin	2,980	16	0	0	8	8	2,980	not estimated
Port Gardner	868	11	1	0	4	4	868	not estimated
San Juan Islands	66.9	9	1	3.19	3	1	70.1	not estimated
Sinclair-Dyes Inlet	56.1	5	0	0	5	5	56.1	not estimated
South Sound (east)	21.8	9	1	0	3	3	21.8	not estimated
South Sound (west)	161	8	0	0	3	3	161	not estimated
Strait of Georgia	180	11	4	233	15	11	413	not estimated
Strait of Juan de Fuca	43.9	6	1	118	4	3	162	not estimated
Whidbey Basin	106	16	2	0	5	5	106	not estimated
Puget Sound Total	5,450	104	10	3,990	75	65	9,440	not estimated

The precision of the data in this table is only two significant figures.

kg/year = Kilograms per year.

(a) = The estimated loadings were based on replacement of non-detect results with one-half the method detection limit or method reporting limit.

(b) = Municipal loadings included loadings from facilities for which flow and pollutant concentration data were available, as well as loadings estimated for facilities where flow data were available but pollutant concentration data were not.

(c) = Industrial loadings included loadings from only those facilities for which both flow and pollutant concentration data were available.

Table 12. Uncertainty in Loading Rate Estimates Due to Treatment of Non-Detect Values

Chemical of Concern	Total Loading (a) (kg/year)	Absolute Uncertainty (b) (kg/year)	Relative Uncertainty (c)
Copper	7,500	±42	0.56%
Lead	1,550	+492	32%
Mercury	9.3	±0	0%
Zinc	25,000	±48	0.19%
bis(2-Ethylhexyl)phthalate	3,830	+622	16%
Chloroform	1,120	±118	10%
Total Phenolics	9,440	±2,060	22%

The precision of the data in this table is only three significant figures.

kg/year = Kilograms per year.

(a) = Based on assigning one-half of the method reporting limit or detection limit to non-detect values.

(b) = Based on assigning 0 or the method reporting limit or detection limit to non-detect values.

(c) = Absolute uncertainty divided by the total loading.

Table 14. Comparison of Wastewater Loading Estimates and Total Loadings to the Puget Sound Basin

Chemical of Concern (kilograms/year)	Wastewater Loading Estimates People for Puget Sound (a)			Loading Estimates Phase 1 (b)				Wastewater Loading Estimates Phase 2 (c)			Total Loadings to the Puget Sound Basin (h)
	Municipal	Industrial	Total Wastewater	Surface Runoff (d)	Atmospheric Deposition (e)	CSOs (f)	Total Wastewater	Municipal	Industrial (g)	Total Wastewater (g)	
Copper	7,891	846	8,737	100,000 (47,000 to 210,000)	31,000 (3,100 to 150,000)	230	7,200 (7,200 to 7,200)	6,230 (6,220 to 6,240)	1,270 (1,240 to 1,300) (75/53)	7,500 (7,460 to 7,540) (179/63)	139,000 (58,000 to 370,000)
Lead	3,296	252	3,548	84,000 (32,000 to 230,000)	31,000 (3,100 to 150,000)	140	4,700 (380 to 9,100)	1,060 (461 to 1,060)	491 (467 to 515) (75/57)	1,550 (930 to 1,580) (179/67)	117,000 (36,000 to 380,000)
Mercury	No estimate	No estimate	No estimate	490 (180 to 1,400)	31 (6.2 to 160)	0.69	15 (0 to 29)	2.35 (2.35 to 2.35)	6.99 (6.99 to 6.99) (75/63)	9.34 (9.34 to 9.34) (179/73)	530 (200 to 1,600)
Zinc	23,864	4,273	28,137	320,000 (160,000 to 630,000)	60,000 (6,000 to 310,000)	590	18,000 (18,000 to 18,000)	19,600 (19,600 to 19,600)	5,400 (5,350 to 5,440) (75/58)	25,000 (25,000 to 25,000) (179/68)	410,000 (190,000 to 970,000)
bis (2-Ethylhexyl)phthalate	4,247	No estimate	No estimate	70,000 (18,000 to 280,000)	3,100 (310 to 16,000)	47	82 (82 to 82)	2,570 (2,470 to 2,680)	1,260 (740 to 1,770) (75/62)	3,830 (3,210 to 4,450) (179/72)	77,000 (22,000 to 300,000)
Chloroform	No estimate	No estimate	No estimate	no estimate	no estimate	no estimate	no estimate	437 (380 to 493)	681 (620 to 743) (75/63)	1,120 (1,000 to 1,240) (179/73)	no estimate
Total Phenolics	No estimate	No estimate	No estimate	no estimate	no estimate	no estimate	no estimate	5,450 (3,410 to 7,500)	3,990 (3,980 to 4,010) (75/66)	9,440 (7,380 to 11,500) (179/76)	no estimate

The precision of the data in this table is no better than two significant figures.

(a) = Based on Trim et al., 2008.

(b) = Based on Hart Crowser et al., 2007.

(c) = Best estimate using one-half (MDL or MRL) for non-detect results. (*Low to High estimates*) based on using Zero or (MDL or MRL), respectively, for non-detect results.

See Figures 2 through 8 for illustrations of the effects of using different assumptions for non-detect results.

(d) = Best estimate of the median; (*75% to 25% probability of exceedance*) from Table B-2 of Hart Crowser et al., 2007.

(e) = Best estimate; (*High to Low probability of exceedance*) from pp. 5-6 of Hart Crowser et al., 2007.

(f) = Combined sewer overflows, from Hart Crowser et al., 2007.

(g) = (Total / No Data) means: (Total number of facilities / Number of facilities not reporting results).

(h) = Sum of Phase 1 estimates for surface runoff, atmospheric deposition, and combined sewer overflows, and Phase 2 estimate for wastewater dischargers.

Table A-1: List of Permitted Point Source Facilities in the Database

Study Area	Name of Permitted Discharger	Permit Number	Facility Type	Priority Pollutant Data (a)	Flow Data	Loading Calculated
Admiralty Inlet	Naval Ordnance CTR PAC Div.	WA0021997	Industry	None	None	No
Admiralty Inlet	New Day Fisheries Inc	WA0042048C	Industry	None	Average	No
Admiralty Inlet	Port Townsend Paper	WA0000922B	Industry	Yes	Average	Yes
Admiralty Inlet	Port Townsend Stp	WA0037052C	Municipal	None	Average	Extrapolated
Commencement Bay	Army, Mud Mountain Dam	WA0025623	Industry	None	None	No
Commencement Bay	Birds Eye Foods Inc	WA0037419C	Industry	Limited	Average	Yes
Commencement Bay	Buckley Stp	WA0023361C	Municipal	Yes	Average	Yes
Commencement Bay	Carbonado Stp	WA0020834C	Municipal	None	Average	Extrapolated
Commencement Bay	Cherrywood Mobile Home Manor	WA0037079B	Municipal	None	Average	Extrapolated
Commencement Bay	Concrete Technology Corp	WA0001864C	Industry	None	Average	No
Commencement Bay	Enumclaw STP	WA0020575D	Municipal	Metals only	Average	Yes
Commencement Bay	Fleischmanns Vinegar	WA0038598D	Industry	None	Average	No
Commencement Bay	Graymont Western Us Inc	WA0001007D	Industry	Mercury Only	Average	Yes
Commencement Bay	Kapowsin Meats	WA0042145A	Industry	None	Average	No
Commencement Bay	McChord AFB	WA0025101	Industry	None	None	No
Commencement Bay	Occidental Chemical Corp	WA0037265E	Industry	Limited	Average	Yes
Commencement Bay	Orting Stp	WA0020303C	Municipal	Limited	Average	Yes
Commencement Bay	Pacific Functional Fluids	WA0038679E	Industry	Yes	Permit Limit	Yes
Commencement Bay	Pope Resources	WA0022292C	Industry	None	Average	No
Commencement Bay	Puyallup Stp	WA0037168D	Municipal	Yes	Average	Yes
Commencement Bay	Simpson Tacoma Kraft Co.	WA0000850B	Industry	Yes	Average	Yes
Commencement Bay	Sonoco - Sumner	WA0000884C	Industry	Yes	Average	Yes
Commencement Bay	Sound Refining Tacoma	WA0003204B	Industry	Limited	None	No
Commencement Bay	South Prairie Stp	WA0040479C	Municipal	None	Average	Extrapolated
Commencement Bay	Ssa Containers Inc	WA0040771C	Industry	None	Average	No
Commencement Bay	ST Services	WA0039501C	Industry	Yes	Average	Yes
Commencement Bay	Sumner Stp.	WA0023353	Municipal	Limited	Average	Yes
Commencement Bay	Tacoma Central No. 1	WA0037087B	Municipal	Metals only	Average	Yes
Commencement Bay	Tacoma North No. 3	WA0037214C	Municipal	Metals only	Average	Yes
Commencement Bay	US Oil & Refining Co.	WA001783B	Industry	Yes	Average	Yes
Commencement Bay	Western Wood Preserving Co	WA0040738C	Industry	Limited	Average	Yes
Commencement Bay	Wilkeson Stp	WA0023281C	Municipal	None	Average	Extrapolated
Elliott Bay	ConocoPhillips Renton	WA0001945E	Industry	Limited	None	No
Elliott Bay	Nucor Steel Seattle Inc	WA0031305C	Industry	Limited	Average	Yes
Elliott Bay	Pacific Coast Coal Co	WA0030830B	Industry	None	None	No
Elliott Bay	Seattle Steam	WA0001503D	Industry	Mercury Only	Permit Limit	Yes
Hood Canal (north)	Alderbrook Resort & Spa	WA0037753A	Municipal	None	Average	Extrapolated
Hood Canal (south)	Bangor Naval Submarine Base	WA0025577	Industry	None	None	No
Main Basin	Alderwood Stp	WA0020826D	Municipal	Mercury Only	Average	Extrapolated
Main Basin	Bainbridge Island City Wwtp	WA0020907D	Municipal	Yes	Average	Yes
Main Basin	Bp Oil Service Station #11093	WA0031437C	Industry	Limited	Permit Limit	Yes

Table A-1: List of Permitted Point Source Facilities in the Database

Study Area	Name of Permitted Discharger	Permit Number	Facility Type	Priority Pollutant Data (a)	Flow Data	Loading Calculated
Main Basin	Edmonds Stp	WA0024058C	Municipal	Yes	Average	Yes
Main Basin	Fish and Wildlife Fisheries Research Center	WA0025798	Industry	None	None	No
Main Basin	Kitsap Cnty Kingston Wwtp	WA0032077A	Municipal	None	Average	Extrapolated
Main Basin	Kitsap Cnty Manchester	WA0023701D	Municipal	None	Average	Extrapolated
Main Basin	Lakota Stp	WA0022624D	Municipal	Metals only	Average	Yes
Main Basin	Lynnwood Stp	WA0024031E	Municipal	None	Average	Extrapolated
Main Basin	Metro Renton (King Co Renton)	WA0029581D	Municipal	Yes	Average	Yes
Main Basin	Metro West Point (King Co West Point)	WA0029181E	Municipal	Yes	Average	Yes
Main Basin	Midway Sewer District	WA0020958D	Municipal	Yes	Average	Yes
Main Basin	Miller Creek Wwtp	WA0022764D	Municipal	Yes	Average	Yes
Main Basin	NOAA-NMFS, NW & ALASKA Fisheries Center	WA0024899	Industry	None	None	No
Main Basin	North Bend Stp	WA0029351D	Municipal	Yes	Average	Yes
Main Basin	Olympus Terrace Stp	WA0023396C	Municipal	None	Average	Extrapolated
Main Basin	Paramount Petroleum	WA0003239D	Industry	Limited	Permit Limit	No
Main Basin	Paramount Petroleum Corp Lust Site	WA0031704B	Industry	Limited	Permit Limit	Yes
Main Basin	Redondo Stp	WA0023451D	Municipal	Yes	Average	Yes
Main Basin	Salmon Creek Wwtp	WA0022772E	Municipal	Yes	Average	Yes
Main Basin	SeaTac Airport	WA0024651E	Industry	Yes	Average	Yes
Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	Municipal	Yes	Average	Yes
Main Basin	Wa UW Medical Ctr	WA0030023E	Industry	None	Average	No
Main Basin	Westfarm Foods - Issaquah	WA0032034A	Industry	None	None	No
Port Gardner	Duvall Stp	WA0029513C	Municipal	Limited	Average	Yes
Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	Municipal	Yes	Average	Yes
Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	Municipal	Yes	Average	Yes
Port Gardner	Fort Lewis Defense Fuel Support Point	WA0025232	Industry	None	None	No
Port Gardner	Kimberly-Clark Worldwide, Inc	WA0000621A	Industry	Yes	Average	Yes
Port Gardner	Lake Stevens Sewer District	WA0020893D	Municipal	Yes	Average	Yes
Port Gardner	Marysville Stp	WA0022497C	Municipal	Yes	Permit Limit	Yes
Port Gardner	Monroe Stp	WA0020486D	Municipal	Yes	Average	Yes
Port Gardner	Naval Station Puget Sound	WAS025755	Industry	None	None	No
Port Gardner	Penn Cove Wwtp	WA0029386C	Municipal	None	Average	Extrapolated
Port Gardner	Snohomish Stp	WA0029548C	Municipal	Yes	Average	Yes
Port Gardner	Snoqualmie Wwtp	WA0022403C	Municipal	Yes	Average	Yes
Port Gardner	Sultan Wwtp	WA0023302D	Municipal	None	Average	Extrapolated
Port Gardner	Tulalip Tribe Big Flats Landfill	WA0025739	Industry	None	None	No
Port Gardner	Tulalip Tribes of Washington, Utilities District #1 WWTP	WA0024805	Municipal	None	None	No
San Juan Islands	Anacortes Wwtp	WA002057E	Municipal	Yes	Average	Yes
San Juan Islands	Eastsound Orcas Village	WA0030911D	Municipal	None	Average	Extrapolated
San Juan Islands	Eastsound Water District	WA0030571C	Municipal	None	Average	Extrapolated
San Juan Islands	Fisherman Bay Stp	WA0030589D	Municipal	None	Average	Extrapolated
San Juan Islands	Friday Harbor Stp	WA0023582D	Municipal	Yes	Average	Yes

Table A-1: List of Permitted Point Source Facilities in the Database

Study Area	Name of Permitted Discharger	Permit Number	Facility Type	Priority Pollutant Data (a)	Flow Data	Loading Calculated
San Juan Islands	Naval Airsta Whidbey Island, Ault Field WWTP	WA0003468	Municipal	None	None	No
San Juan Islands	Naval Airsta. Whidbey Island	WA0022012	Industry	None	None	No
San Juan Islands	Oak Harbor Stp	WA0020567C	Municipal	Yes	Average	Yes
San Juan Islands	Roche Harbor Resort	WA0021822C	Municipal	None	Average	Extrapolated
San Juan Islands	Rosario Utilities	WA0029891D	Municipal	None	Average	Extrapolated
San Juan Islands	Shell Oil Products US	WA002941B	Industry	Limited	Average	Yes
San Juan Islands	Tesoro Refining And Marketing Co	WA0000761C	Industry	Yes	Average	Yes
Sinclair Dyes Inlet	Bremerton Stp	WA0029289E	Municipal	Yes	Average	Yes
Sinclair Dyes Inlet	EPA Manchester Laboratory	WA0025194	Industry	None	None	No
Sinclair Dyes Inlet	Fleet & Industrial Supply Cntr	WA0002780	Industry	Limited	Average	Yes
Sinclair Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	Municipal	Yes	Average	Yes
Sinclair Dyes Inlet	Kitsap Cnty Sewer Dist 7	WA0030317D	Municipal	None	Average	Extrapolated
Sinclair Dyes Inlet	Messenger House Care Center	WA0023469D	Municipal	Metals only	Average	Yes
Sinclair Dyes Inlet	Naval Undersea Warfare Center	WA0026026	Industry	None	None	No
Sinclair Dyes Inlet	Port Orchard Wwtp	WA0020346C	Municipal	Yes	Average	Yes
Sinclair Dyes Inlet	Puget Sound Naval Shipyard	WA0002062	Industry	Limited	Average	Yes
Sinclair Dyes Inlet	Suquamish STP (Kitsap Co.)	WA0023256	Industry	None	None	No
South Sound (east)	Army Defense, Reserve Center	WA0025267	Industry	None	None	No
South Sound (east)	Chambers Creek Stp	WA0039624	Municipal	Yes	Average	Yes
South Sound (east)	Eatonville Stp	WA0037231C	Municipal	None	Average	Extrapolated
South Sound (east)	For Lewis Depat. Of Public Works	WAS026638	Industry	None	None	No
South Sound (east)	Ft Lewis Water Pollution Cntl	WA0021954	Industry	Limited	Average	Yes
South Sound (east)	Gig Harbor Stp	WA0023957B	Municipal	Yes	Average	Yes
South Sound (east)	Rainier State School	WA0037923C	Municipal	Limited	Average	Yes
South Sound (east)	Shelton Stp	WA0023345C	Municipal	Yes	Average	Yes
South Sound (east)	Taylor Bay Stp	WA0037656B	Municipal	None	Average	Extrapolated
South Sound (east)	US NPS Paradise Wastewater Treatment	WA0025569	Municipal	None	None	No
South Sound (east)	WA DOC McNeil Island Stp	WA0040002C	Municipal	Yes	Average	Yes
South Sound (east)	Yelm Stp	WA0040762B	Municipal	Limited	Average	Yes
South Sound (west)	Boston Harbor Stp	WA0040291B	Municipal	None	Average	Extrapolated
South Sound (west)	Carlyon Beach Stp	WA0037915C	Municipal	None	Average	Extrapolated
South Sound (west)	Harstene Pointe Stp	WA0038377B	Municipal	None	Average	Extrapolated
South Sound (west)	LOTT	WA0037061	Municipal	Yes	Average	Yes
South Sound (west)	National Fish & Oyster	WA0038407C	Industry	None	Average	No
South Sound (west)	Olympia Oyster Co	WA0037133C	Industry	None	Average	No
South Sound (west)	Olympia Water & Sewer Inc	WA0021202B	Municipal	None	Average	Extrapolated
South Sound (west)	Port of Olympia Budd Inlet	WA0040533B	Industry	Limited	Average	Yes
South Sound (west)	Rustlewood Stp	WA0038075B	Municipal	Limited	Average	Yes
South Sound (west)	Seashore Villa Stp	WA0037273B	Municipal	None	Average	Extrapolated
South Sound (west)	Tamoshan Stp	WA0037290C	Municipal	None	Average	Extrapolated
Strait of Georgia	Bellingham Stp	WA0023744D	Municipal	Yes	Average	Yes

Table A-1: List of Permitted Point Source Facilities in the Database

Study Area	Name of Permitted Discharger	Permit Number	Facility Type	Priority Pollutant Data (a)	Flow Data	Loading Calculated
Strait of Georgia	Birch Bay Stp	WA0029556C	Municipal	Yes	Average	Yes
Strait of Georgia	Blaine Seafood Processors	WA0031321C	Industry	None	Average	No
Strait of Georgia	Blaine Stp	WA0022641C	Municipal	Yes	Average	Yes
Strait of Georgia	Blau Oyster Co	WA0029262E	Industry	None	Average	No
Strait of Georgia	BP Cherry Point Refinery	WA0022900B	Industry	Yes	Average	Yes
Strait of Georgia	ConocoPhillips Ferndale Refinery	WA0002984B	Industry	Yes	Average	Yes
Strait of Georgia	Crystal Ocean Seafood Inc.	WA0026077	Industry	None	None	No
Strait of Georgia	Darigold Lynden Plant	WA002470C	Industry	Limited	Average	Yes
Strait of Georgia	Everson Stp	WA0020435D	Municipal	Yes	Average	Yes
Strait of Georgia	Ferndale Stp	WA0022454C	Municipal	Yes	Average	Yes
Strait of Georgia	Intalco Ferndale	WA002950B	Industry	Yes	Average	Yes
Strait of Georgia	Lehigh Northwest Cement Co	WA0001198B	Industry	Limited	Average	Yes
Strait of Georgia	Lummi Bay Sea Ponds	WA0025933	Industry	None	None	No
Strait of Georgia	Lummi Indian Business Council; Gooseberry Point WWTP	WA0025666	Municipal	None	None	No
Strait of Georgia	Lummi Indian Business Council; Sandy Point WWTP	WA0025658	Municipal	None	None	No
Strait of Georgia	Lynden Stp	WA0022578D	Municipal	Yes	Average	Yes
Strait of Georgia	Praxair Inc	WA0030350C	Industry	None	Permit Limit	No
Strait of Georgia	Puget Sound Energy Whitehorn	WA0030601E	Industry	None	Permit Limit	No
Strait of Georgia	SulExtrapolated Inc	WA0031283C	Industry	None	Average	No
Strait of Georgia	Swinomish Indian Tribal Community Industrial District WTP	WA0025062	Municipal	None	None	No
Strait of Georgia	Swinomish Reservation, Shelter Bay WWTP	WA0024422	Municipal	None	None	No
Strait of Georgia	Taylor Shellfish Farms Samish Bay	WA0002607E	Industry	None	Average	No
Strait of Georgia	Tenaska Cogeneration Plant	WA0031291B	Industry	Metals only	Average	Yes
Strait of Georgia	Wa Dfw Bellingham Hatchery	WA0031500B	Industry	None	Average	No
Strait of Georgia	Wa Parks Larrabee	WA0023787D	Municipal	None	Average	Extrapolated
Strait of Juan de Fuca	Battelle Marine Science Lab	WA0040649	Industry	Yes	Permit Limit	Yes
Strait of Juan de Fuca	Clallam Bay Correction Center Stp	WA0039845D	Municipal	None	Average	Extrapolated
Strait of Juan de Fuca	Clallam Bay Stp	WA0024431B	Municipal	None	Average	Extrapolated
Strait of Juan de Fuca	K Ply Inc	WA0038059C	Industry	Mercury Only	None	No
Strait of Juan de Fuca	Makah WWTP	WA0023213	Municipal	None	None	No
Strait of Juan de Fuca	Nippon Paper Industries USA Co.-Outfall 1	WA0002925C	Industry	Yes	Average	Yes
Strait of Juan de Fuca	Port Angeles Stp	WA0023973C	Municipal	Yes	Average	Yes
Strait of Juan de Fuca	Sekiu Stp	WA0024449B	Municipal	None	Average	Extrapolated
Strait of Juan de Fuca	Sequim Stp	WA0022349C	Municipal	Mercury Only	Average	Extrapolated
Strait of Juan de Fuca	Supreme Alaska Seafoods	WA0040720C	Industry	None	Average	No
Whidbey Basin	Arlington Stp	WA0022560E	Municipal	Yes	Average	Yes
Whidbey Basin	Burlington Wwtp	WA0020150C	Municipal	Metals only	Average	Yes
Whidbey Basin	Concrete Stp	WA0020851B	Municipal	None	Average	Extrapolated
Whidbey Basin	Coupeville Stp	WA0029378D	Municipal	None	Average	Extrapolated
Whidbey Basin	Erickson Farms Inc	WA0031771B	Industry	None	Average	No
Whidbey Basin	Granite Falls Stp	WA0021130D	Municipal	Limited	Average	Yes

Table A-1: List of Permitted Point Source Facilities in the Database

Study Area	Name of Permitted Discharger	Permit Number	Facility Type	Priority Pollutant Data (a)	Flow Data	Loading Calculated
Whidbey Basin	La Connor Stp	WA0022446C	Municipal	Metals only	Average	Yes
Whidbey Basin	Langley Stp	WA0020702C	Municipal	None	Average	Extrapolated
Whidbey Basin	Mt Vernon Wwtp	WA0024074D	Municipal	Yes	Average	Yes
Whidbey Basin	Naval Airsta. Whidbey Island	WA0026557	Industry	None	None	No
Whidbey Basin	Seattle City Light Diablo	WA0029858D	Municipal	None	Average	Extrapolated
Whidbey Basin	Seattle City Light Newhalem	WA0029670D	Municipal	None	Average	Extrapolated
Whidbey Basin	Sedro Woolley Stp	WA0023752C	Municipal	Yes	Average	Yes
Whidbey Basin	Skagit Cnty 2 Big Lake	WA0030597C	Municipal	None	Average	Extrapolated
Whidbey Basin	Skagit Co. Sewer District #1 Sneeoosh	WA0029432	Municipal	None	None	No
Whidbey Basin	Skagit Valley Bulb Farm	WA0031763B	Industry	None	None	No
Whidbey Basin	Smith Morrison Farms	WA0031739B	Industry	None	Average	No
Whidbey Basin	Stanwood Stp	WA0020290E	Municipal	None	Average	Extrapolated
Whidbey Basin	Swinomish Indian Reservation	WAS025810	Municipal	None	None	No
Whidbey Basin	Warm Beach Campground	WA0029904C	Municipal	None	Average	Extrapolated
Whidbey Basin	Washington Bulb Co Inc	WA0031721B	Industry	None	None	No

- (a) "Limited" indicates that data were available for ten or fewer priority pollutants.
- "Yes" indicates that priority pollutant data were available for at least 11 pollutants.
- "None" indicates that no priority pollutant data were available.

Table B-2. Estimated Copper Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgy)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	7.39	6.21	6.21	6.21
Municipal	Commencement Bay	Enumclaw STP	WA0020575D	618	10.7	25.0	25.0	25.0
Municipal	Commencement Bay	Orting Stp	WA0020303C	204	10.0	7.72	7.72	7.72
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	8.30	47.8	47.8	47.8
Municipal	Commencement Bay	Sumner Stp	WA0023353C	690	15.0	39.2	39.2	39.2
Municipal	Commencement Bay	Tacoma Central No. 1	WA0037087B	7,190	13.1	357	357	357
Municipal	Commencement Bay	Tacoma North No. 3	WA0037214C	1,650	6.60	41.2	41.2	41.2
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	17.0	12.6	12.6	12.6
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	12.0	94.5	94.5	94.5
Municipal	Main Basin	Lakota Stp	WA0022624D	1,680	20.0	127	127	127
Municipal	Main Basin	Metro Renton (King Co Renton)	WA0029581D	28,100	14.6	1,550	1,550	1,550
Municipal	Main Basin	Metro West Point (King Co West Point)	WA0029181E	37,400	11.0	1,560	1,560	1,560
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	26.0	154	154	154
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	1.00	4.16	2.08	0.00
Municipal	Main Basin	North Bend Stp	WA0029351D	170	20.0	12.9	12.9	12.9
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	44.0	168	168	168
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	2.00	6.62	6.62	6.62
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43	6.10	1.00	1.00	1.00
Municipal	Port Gardner	Duvall Stp	WA0029513C	180	12.0	8.18	8.18	8.18
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	7.20	113	113	113
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	4.80	84.0	84.0	84.0
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	6.77	18.6	18.6	18.6
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	2.00	12.8	12.8	12.8
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	7.00	14.3	14.3	14.3
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	7.00	9.09	9.09	9.09
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	8.00	20.0	20.0	20.0
Municipal	San Juan Islands	Friday Harbor Stp	WA0023582D	116	31.0	13.6	13.6	13.6
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	12.0	31.3	31.3	31.3
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	1.00	6.95	3.47	0.000
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	8.30	42.1	42.1	42.1
Municipal	Sinclair/Dyes Inlet	Messenger House Care Center	WA0023469D	2	39.0	0.322	0.322	0.322
Municipal	Sinclair/Dyes Inlet	Port Orchard Wwtp	WA0020346C	595	6.20	14.0	14.0	14.0
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	22.0	540	540	540
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	6.00	6.63	3.32	0.000
Municipal	South Sound (east)	Rainier State School	WA0037923C	43	41.0	6.67	6.67	6.67
Municipal	South Sound (east)	Shelton Stp	WA0023345C	776	0.020	0.0587	0.0294	0.000
Municipal	South Sound (east)	WA DOC McNeil Island Stp	WA0040002C	83	23.5	7.38	7.38	7.38
Municipal	South Sound (east)	Yelm Stp	WA0040762B	78	13.0	3.82	3.82	3.82

Table B-2 (Continued). Estimated Copper Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgy)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	South Sound (west)	LOTT	WA0037061	4,020	18.1	275	275	275
Municipal	South Sound (west)	Rustlewood Stp	WA0038075B	9.52	2.00	0.0721	0.0721	0.0721
Municipal	South Sound (west)	Seashore Villa Stp	WA0037273B	86.0	20.0	6.51	6.51	6.51
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	22.9	383	383	383
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	7.00	7.71	7.71	7.71
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	26.0	20.4	20.4	20.4
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	5.00	1.74	1.74	1.74
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	33.0	67.2	67.2	67.2
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	5.00	7.23	7.23	7.23
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	18.0	29.3	29.3	29.3
Municipal	Whidbey Basin	Burlington Wwtp	WA0020150C	569	5.00	10.8	10.8	10.8
Municipal	Whidbey Basin	Granite Falls Stp	WA0021130D	96.3	5.20	1.90	1.90	1.90
Municipal	Whidbey Basin	La Connor Stp	WA0022446C	90.6	20.0	6.86	3.43	0.000
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	5.00	24.8	24.8	24.8
Municipal	Whidbey Basin	Sedro Woolley Stp	WA0023752C	269	11.0	11.2	11.2	11.2

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mgy = Million gallons per year.

ug/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-4. Estimated Lead Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	150	126	63.0	0.000
Municipal	Commencement Bay	Enumclaw STP	WA0020575D	618	0.800	1.87	1.87	1.87
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	0.550	3.16	3.16	3.16
Municipal	Commencement Bay	Sumner Stp	WA0023353C	690	2.00	5.22	5.22	5.22
Municipal	Commencement Bay	Tacoma Central No. 1	WA0037087B	7,190	1.10	29.9	29.9	29.9
Municipal	Commencement Bay	Tacoma North No. 3	WA0037214C	1,650	0.440	2.75	2.75	2.75
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	1.00	0.742	0.371	0.000
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	20.0	157	78.7	0.000
Municipal	Main Basin	Lakota Stp	WA0022624D	1,680	10.0	63.6	31.8	0.000
Municipal	Main Basin	Metro Renton (King Co Renton)	WA0029581D	28,100	0.460	48.9	48.9	48.9
Municipal	Main Basin	Metro West Point (King Co West Point)	WA0029181E	37,400	0.720	102	102	102
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	1.00	5.90	5.90	5.90
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	3.00	12.5	12.5	12.5
Municipal	Main Basin	North Bend Stp	WA0029351D	170	1.00	0.643	0.322	0.000
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	10.0	38.2	19.1	0.000
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	2.00	6.62	6.62	6.62
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43.2	0.290	0.0474	0.0474	0.0474
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	3.20	50.2	50.2	50.2
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	1.80	31.5	31.5	31.5
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	1.00	2.75	1.37	0.000
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	20.0	128	63.9	0.000
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	1.00	2.04	1.02	0.000
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	4.00	5.19	2.60	0.000
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	1.00	2.49	1.25	0.000
Municipal	San Juan Islands	Friday Harbor Stp	WA0023582D	116	1.00	0.439	0.220	0.000
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	1.00	2.61	1.30	0.000
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	1.00	6.95	3.47	0.000
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	5.60	28.4	28.4	28.4
Municipal	Sinclair/Dyes Inlet	Messenger House Care Center	WA0023469D	2.18	4.00	0.0330	0.0165	0.000
Municipal	Sinclair/Dyes Inlet	Port Orchard Wwtp	WA0020346C	595	150	338	169	0.000
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	6.00	147	147	147
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	16.2	17.9	8.96	0.000
Municipal	South Sound (east)	Shelton Stp	WA0023345C	776	0.002	0.00587	0.00294	0.000
Municipal	South Sound (east)	WA DOC McNeil Island Stp	WA0040002C	83.0	1.27	0.399	0.399	0.399
Municipal	South Sound (east)	Yelm Stp	WA0040762B	77.7	1.00	0.294	0.294	0.294
Municipal	South Sound (west)	LOTT	WA0037061	4,020	0.483	7.35	7.35	7.35
Municipal	South Sound (west)	Rustlewood Stp	WA0038075B	9.52	50.0	1.80	1.80	1.80

Table B-4 (Continued). Estimated Lead Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	3.40	57.0	57.0	57.0
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	1.00	1.10	1.10	1.10
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	16.2	12.7	6.35	0.000
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	1.00	0.347	0.347	0.347
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	9.50	19.3	19.3	19.3
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	16.2	23.5	11.7	0.000
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	1.00	1.63	0.814	0.000
Municipal	Whidbey Basin	Burlington Wwtp	WA0020150C	569	2.00	4.31	4.31	4.31
Municipal	Whidbey Basin	La Connor Stp	WA0022446C	90.6	1.00	0.343	0.171	0.000
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	1.00	4.96	2.48	0.000
Municipal	Whidbey Basin	Sedro Woolley Stp	WA0023752C	269	1.00	1.02	1.02	1.02

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mgd = Million gallons per year.

µg/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-6. Estimated Mercury Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	0.00090	0.000756	0.000756	0.000756
Municipal	Commencement Bay	Enumclaw STP	WA0020575D	618	0.0198	0.0463	0.0463	0.0463
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	0.00350	0.0201	0.0201	0.0201
Municipal	Commencement Bay	Sumner Stp	WA0023353C	690	0.00594	0.0155	0.0155	0.0155
Municipal	Main Basin	Alderwood Stp	WA0020826D	787	0.00618	0.0184	0.0184	0.0184
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	0.00180	0.00134	0.00134	0.00134
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	0.0162	0.128	0.128	0.128
Municipal	Main Basin	Lakota Stp	WA0022624D	1,680	0.0098	0.0621	0.0621	0.0621
Municipal	Main Basin	Lynnwood Stp	WA0024031E	1,560	0.0147	0.0868	0.0868	0.0868
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	0.0144	0.0850	0.0850	0.0850
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	0.00331	0.0138	0.0138	0.0138
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	0.0154	0.0589	0.0589	0.0589
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	0.00104	0.00344	0.00344	0.00344
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	0.0125	0.0344	0.0344	0.0344
Municipal	Port Gardner	Marysville Stp	WA0022497C	unknown	0.00142	Estimate was not possible.		
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	0.00319	0.0065	0.0065	0.0065
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	0.0117	0.0152	0.0152	0.0152
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	0.00782	0.0195	0.0195	0.0195
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	0.00251	0.0127	0.0127	0.0127
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	unknown	0.0255	Estimate was not possible.		
Municipal	South Sound (west)	LOTT	WA0037061	4,020	0.00170	0.0259	0.0259	0.0259
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	0.0107	0.179	0.179	0.179
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	0.00130	0.00143	0.00143	0.00143
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	0.00123	0.00178	0.00178	0.00178
Municipal	Strait of Juan de Fuca	Port Angeles Stp	WA0023973C	907	0.0509	0.175	0.175	0.175
Municipal	Strait of Juan de Fuca	Sequim Stp	WA0022349C	171	0.0000030	0.00000194	0.00000194	0.00000194
Municipal	Whidbey Basin	Burlington Wwtp	WA0020150C	569	0.00050	0.00108	0.00108	0.00108
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	0.00228	0.0113	0.0113	0.0113
Municipal	Whidbey Basin	Stanwood Stp	WA0020290E	174	0.00210	0.00138	0.00138	0.00138

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mgd = Million gallons per year.

µg/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-8. Estimated Zinc Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	52.7	44.3	44.3	44.3
Municipal	Commencement Bay	Enumclaw STP	WA0020575D	618	31.3	73.2	73.2	73.2
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	43.3	249	249	249
Municipal	Commencement Bay	Sumner Stp	WA0023353C	690	62.0	162	162	162
Municipal	Commencement Bay	Tacoma Central No. 1	WA0037087B	7,190	49.2	1,340	1,340	1,340
Municipal	Commencement Bay	Tacoma North No. 3	WA0037214C	1,650	19.0	119	119	119
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	11.0	8.16	8.16	8.16
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	60.0	472	472	472
Municipal	Main Basin	Lakota Stp	WA0022624D	1,680	25.0	159	159	159
Municipal	Main Basin	Metro Renton (King Co Renton)	WA0029581D	28,100	31.2	3,320	3,320	3,320
Municipal	Main Basin	Metro West Point (King Co West Point)	WA0029181E	37,400	28.3	4,010	4,010	4,010
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	70.0	413	413	413
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	8.00	33.3	33.3	33.3
Municipal	Main Basin	North Bend Stp	WA0029351D	170	37.0	23.8	23.8	23.8
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	62.0	237	237	237
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	22.0	72.8	72.8	72.8
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43.2	27.7	4.53	4.53	4.53
Municipal	Port Gardner	Duvall Stp	WA0029513C	180	47.0	32.0	32.0	32.0
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	17.0	266	266	266
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	20.0	350	350	350
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	45.1	124	124	124
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	15.0	95.8	95.8	95.8
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	56.0	114	114	114
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	14.0	18.2	18.2	18.2
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	28.0	69.8	69.8	69.8
Municipal	San Juan Islands	Friday Harbor Stp	WA0023582D	116	56.0	24.6	24.6	24.6
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	25.0	65.2	65.2	65.2
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	19.5	135	135	135
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	36.1	183	183	183
Municipal	Sinclair/Dyes Inlet	Messenger House Care Center	WA0023469D	2.18	121	1.00	1.00	1.00
Municipal	Sinclair/Dyes Inlet	Port Orchard Wwtp	WA0020346C	595	353	795	795	795
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	83.0	2,040	2,040	2,040
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	52.0	57.5	57.5	57.5
Municipal	South Sound (east)	Rainier State School	WA0037923C	43.0	58.0	9.44	9.44	9.44
Municipal	South Sound (east)	Shelton Stp	WA0023345C	776	0.070	0.206	0.206	0.206
Municipal	South Sound (east)	WA DOC McNeil Island Stp	WA0040002C	83.0	196	61.6	61.6	61.6
Municipal	South Sound (east)	Yelm Stp	WA0040762B	77.7	42.0	12.4	12.4	12.4
Municipal	South Sound (west)	LOTT	WA0037061	4,020	91.7	1,400	1,400	1,400
Municipal	South Sound (west)	Rustlewood Stp	WA0038075B	9.52	2.00	0.0721	0.0721	0.0721

Table B-8 (Continued). Estimated Zinc Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	64.5	1,080	1,080	1,080
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	38.0	41.9	41.9	41.9
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	98.0	76.8	76.8	76.8
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	8.91	3.10	1.55	0.00
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	55.0	112	112	112
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	47.0	68.0	68.0	68.0
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	76.0	124	124	124
Municipal	Whidbey Basin	Burlington Wwtp	WA0020150C	569	85.0	183	183	183
Municipal	Whidbey Basin	Granite Falls Stp	WA0021130D	96.3	46.8	17.1	17.1	17.1
Municipal	Whidbey Basin	La Connor Stp	WA0022446C	90.6	48.0	16.5	16.5	16.5
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	35.0	174	174	174
Municipal	Whidbey Basin	Sedro Woolley Stp	WA0023752C	269	71.0	72.3	72.3	72.3

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mgd = Million gallons per year.

µg/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-10. Estimated bis (2-Ethylhexyl)phthalate Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mg/y)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	29.7	25.0	25.0	25.0
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	5.60	32.2	32.2	32.2
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	72.0	53.4	53.4	53.4
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	1.60	12.6	12.6	12.6
Municipal	Main Basin	Metro Renton (King Co Renton)	WA0029581D	28,100	1.25	133	133	133
Municipal	Main Basin	Metro West Point (King Co West Point)	WA0029181E	37,400	1.17	166	166	166
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	4.80	28.3	28.3	28.3
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	2.60	10.8	10.8	10.8
Municipal	Main Basin	North Bend Stp	WA0029351D	170	2.00	1.29	0.64	0.000
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	24.0	91.7	91.7	91.7
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	2.00	6.62	3.31	0.000
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43.2	1.51	0.247	0.247	0.247
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	6.80	107	107	107
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	2.00	35.0	35.0	35.0
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	50.0	137	68.7	0.000
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	12.0	76.7	76.7	76.7
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	2.00	4.07	2.04	0.000
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	37.0	48.0	48.0	48.0
Municipal	Port Gardner	Snoqualmie Wwtp	WA0022403C	260	1.00	0.984	0.492	0.000
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	1.70	4.24	4.24	4.24
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	0.20	0.522	0.261	0.000
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	11.0	76.4	76.4	76.4
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	6.50	33.0	16.5	0.000
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	14.6	358	358	358
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	10.0	11.1	5.53	0.000
Municipal	South Sound (west)	LOTT	WA0037061	4,020	43.0	654	654	654
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	16.8	282	282	282
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	3.40	2.66	2.66	2.66
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	0.10	0.0347	0.0347	0.0347
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	4.50	9.16	9.16	9.16
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	4.50	6.51	6.51	6.51
Municipal	Strait of Juan de Fuca	Port Angeles Stp	WA0023973C	907	4.00	13.7	6.87	0.000
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	2.00	3.26	1.63	0.000
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	2.10	10.4	10.4	10.4
Municipal	Whidbey Basin	Sedro Woolley Stp	WA0023752C	269	2.00	2.04	2.04	2.04

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mg/y = Million gallons per year.

ug/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-12. Estimated Chloroform Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mg/y)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	3.37	2.83	2.83	2.83
Municipal	Commencement Bay	Puyallup Stp	WA0037168D	1,520	1.00	5.75	2.88	0.000
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	1.00	0.742	0.371	0.000
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	1.40	11.0	11.0	11.0
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	1.00	5.90	2.95	0.000
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	1.00	4.16	2.08	0.000
Municipal	Main Basin	North Bend Stp	WA0029351D	170	1.00	0.643	0.322	0.000
Municipal	Main Basin	Redondo Stp	WA0023451D	1,010	1.00	3.82	1.91	0.000
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	1.00	3.31	1.65	0.000
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43.2	2.00	0.327	0.164	0.000
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	1.00	15.7	7.84	0.000
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	1.00	17.5	8.75	0.000
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	1.00	2.75	1.37	0.000
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	1.00	6.39	3.19	0.000
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	1.00	2.04	1.02	0.000
Municipal	Port Gardner	Snohomish Stp	WA0029548C	343	1.00	1.30	0.649	0.000
Municipal	Port Gardner	Snoqualmie Wwtp	WA0022403C	260	1.00	0.984	0.492	0.000
Municipal	San Juan Islands	Anacortes Wwtp	WA002057E	659	2.70	6.73	6.73	6.73
Municipal	San Juan Islands	Friday Harbor Stp	WA0023582D	116	1.50	0.659	0.659	0.659
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	1.00	2.61	2.61	2.61
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	4.50	31.3	31.3	31.3
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	1.50	7.61	3.80	0.000
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	1.00	24.5	12.3	0.000
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	1.00	1.11	0.553	0.000
Municipal	South Sound (east)	Shelton Stp	WA0023345C	776	1.30	3.82	3.82	3.82
Municipal	South Sound (east)	WA DOC McNeil Island Stp	WA0040002C	83.0	1.00	0.314	0.157	0.000
Municipal	South Sound (west)	LOTT	WA0037061	4,020	4.20	63.9	63.9	63.9
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	4.80	80.5	80.5	80.5
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	1.45	1.60	0.800	0.000
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	1.20	0.940	0.940	0.940
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	15.0	5.21	5.21	5.21
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	1.45	2.96	1.48	0.000
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	1.45	2.10	1.05	0.000
Municipal	Strait of Juan de Fuca	Port Angeles Stp	WA0023973C	907	2.10	7.21	7.21	7.21
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	1.00	1.63	0.814	0.000
Municipal	Whidbey Basin	Mt Vernon Wwtp	WA0024074D	1,310	1.10	5.45	5.45	5.45
Municipal	Whidbey Basin	Sedro Woolley Stp	WA0023752C	269	0.40	0.407	0.204	0.000

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

(a) = See the text for an explanation of "average flow."

(b) = Non-detect results were replaced with the method detection limit or method reporting limit. If no limit was available, non-detect results were replaced with the average of the method limits for other dischargers.

(c) = In most cases, the estimated loading may be an overestimate.

(d) = In most cases, the estimated loading may be an underestimate.

mg/y = Million gallons per year.

ug/L = Micrograms per liter.

kg/year = Kilograms per year.

ND = Not detected.

MDL = Method detection limit.

MRL = Method reporting limit.

Table B-14. Estimated Total Phenolics Loadings from Municipal Dischargers with Pollutant Concentration and Flow Data.

Source Type	Study Area	Permitted Discharger	Permit Number	Average Flow (a) (mgd)	Concentration (b) (µg/L)	Estimated Average Loading (kg/year)		
						ND = MDL or MRL (c)	ND = 1/2 (MDL or MRL)	ND = 0 (d)
Municipal	Commencement Bay	Buckley Stp	WA0023361C	222	5.0	4.20	2.10	0.000
Municipal	Commencement Bay	Tacoma Central No. 1	WA0037087B	7,190	50.0	1,361	680	0.000
Municipal	Commencement Bay	Tacoma North No. 3	WA0037214C	1,650	50.0	312	156	0.000
Municipal	Main Basin	Bainbridge Island City Wwtp	WA0020907D	196	5.0	3.71	1.85	0.000
Municipal	Main Basin	Edmonds Stp	WA0024058C	2,080	40.0	315	157	0.000
Municipal	Main Basin	Midway Sewer District	WA0020958D	1,560	15.0	88.6	88.6	88.6
Municipal	Main Basin	Miller Creek Wwtp	WA0022764D	1,100	5.0	20.8	10.4	0.000
Municipal	Main Basin	North Bend Stp	WA0029351D	170	5.0	3.22	1.61	0.000
Municipal	Main Basin	Salmon Creek Wwtp	WA0022772E	874	7.0	23.2	23.2	23.2
Municipal	Main Basin	Vashon Stp (King Co-Vashon)	WA0022527E	43.2	5.0	0.818	0.409	0.000
Municipal	Port Gardner	Everett Stp BA52223 Outfall 015	WA0024490C	4,140	40.0	627	313	0.000
Municipal	Port Gardner	Everett Stp BA52224 Outfall 100 (deep)	WA0024490C	4,620	40.0	700	350	0.000
Municipal	Port Gardner	Lake Stevens Sewer District	WA0020893D	726	20.0	55.0	27.5	0.000
Municipal	Port Gardner	Marysville Stp	WA0022497C	1,690	40.0	256	128	0.000
Municipal	Port Gardner	Monroe Stp	WA0020486D	538	5.0	10.2	5.09	0.000
Municipal	Port Gardner	Snoqualmie Wwtp	WA0022403C	260	40.0	39.4	19.7	0.000
Municipal	San Juan Islands	Oak Harbor Stp	WA0020567C	689	26.9	70.2	35.1	0.000
Municipal	Sinclair/Dyes Inlet	Bremerton Stp	WA0029289E	1,840	5.0	34.7	17.4	0.000
Municipal	Sinclair/Dyes Inlet	Kitsap Cnty Central Kitsap	WA0030520E	1,340	6.0	30.4	15.2	0.000
Municipal	South Sound (east)	Chambers Creek Stp	WA0039624	6,480	5.0	123	61.3	0.000
Municipal	South Sound (east)	Gig Harbor Stp	WA0023957B	292	10.0	11.1	11.1	11.1
Municipal	South Sound (east)	Shelton Stp	WA0023345C	776	0.10	0.29	0.147	0.000
Municipal	Strait of Georgia	Bellingham Stp	WA0023744D	4,430	0.60	10.1	10.1	10.1
Municipal	Strait of Georgia	Birch Bay Stp	WA0029556C	291	50.0	55.1	27.5	0.000
Municipal	Strait of Georgia	Blaine Stp	WA0022641C	207	60.0	47.0	47.0	47.0
Municipal	Strait of Georgia	Everson Stp	WA0020435D	91.8	50.0	17.4	8.69	0.000
Municipal	Strait of Georgia	Ferndale Stp	WA0022454C	538	50.0	102	50.9	0.000
Municipal	Strait of Georgia	Lynden Stp	WA0022578D	382	50.0	72.3	36.1	0.000
Municipal	Whidbey Basin	Arlington Stp	WA0022560E	430	5.0	8.14	4.07	0.000

The precision of the data in this table is only two significant figures.

Since the concentrations of toxic chemicals in wastewater are often highly variable, a single set of values may not accurately represent the character of a particular discharge.

To the extent that individual analytical results were not representative of typical concentrations, the loading estimates for individual facilities probably differed from the actual average loadings.

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