

**Table 1: Surface water and groundwater sample locations, field parameters, select anion concentrations, electroneutrality and stable isotope abundance ratios. Values for each parameter are the average value of three sampling campaigns. 'SD' = Standard Deviation. A '-' average value indicates a value was not obtained during any of the sampling campaigns. A '-' SD value indicates one value, or no value was determined during the three sampling campaigns. DO = Dissolved Oxygen. CB = Charge Balance.**

Section	ID	Location		Field Parameters				Anions and Electroneutrality				Stable Isotope Abundance Ratios (‰)									
		N	W	pH ± SD	Temp. (°C) ± SD	Cond. (µS/cm) ± SD	DO (mg/L) ± SD	NO <sub>3</sub> <sup>-</sup> ± SD	SO <sub>4</sub> <sup>2-</sup> ± SD	CB (%) ± SD	δ <sup>18</sup> O <sub>H<sub>2</sub>O</sub> ± SD	δ <sup>2</sup> H <sub>H<sub>2</sub>O</sub> ± SD	δ <sup>15</sup> N <sub>NO<sub>3</sub></sub> ± SD	δ <sup>18</sup> O <sub>NO<sub>3</sub></sub> ± SD	δ <sup>34</sup> S <sub>SO<sub>4</sub></sub> ± SD	δ <sup>18</sup> O <sub>SO<sub>4</sub></sub> ± SD					
<b>Surface Water Samples</b>																					
Below the Confluence	1	49.000°	-118.767°	7.81 0.13	5.7 1.7	99 64	11.8 0.9	0.043 -	4.6 3.6	6.3 4.2	-16.9 0.4	-129 2	3.0 -	8.1 -	0.9 0.7	0.8 2.1					
	2	49.004°	-118.776°	7.93 0.16	4.7 2.0	120 53	12.1 0.9	0.888 1.146	5.7 3.1	3.2 10.0	-16.8 0.4	-128 2	6.8 -	5.7 -	0.7 1.3	1.5 3.1					
	3	49.008°	-118.833°	7.94 0.40	6.1 2.7	96 66	12.6 1.9	0.075 -	4.6 4.4	4.5 2.3	-16.9 0.6	-128 3	- -	- -	0.9 0.8	1.0 2.0					
	4	49.027°	-118.867°	7.90 0.18	5.2 2.2	96 54	12.5 2.0	0.097 -	4.3 3.3	6.0 1.6	-17.0 0.5	-129 3	4.4 -	3.0 -	0.6 1.0	2.6 3.9					
	5	49.043°	-118.877°	7.83 0.24	3.7 2.8	110 51	12.5 1.1	0.115 -	5.0 2.7	1.6 5.2	-16.9 0.4	-128 2	3.5 -	2.3 -	0.2 1.7	1.7 4.1					
	6	49.057°	-118.944°	8.05 0.31	5.0 2.2	108 50	12.3 1.0	0.075 0.017	4.7 2.7	2.4 9.5	-17.0 0.5	-128 2	6.9 -	3.2 -	0.9 0.4	3.0 4.2					
	7	49.060°	-119.002°	7.93 0.30	5.1 2.2	107 41	12.3 0.9	0.019 0.011	4.4 2.4	4.6 6.1	-16.9 0.4	-128 2	- -	- -	0.9 0.4	3.2 4.4					
	8	49.110°	-118.979°	7.82 0.26	4.6 1.7	100 50	12.3 0.7	0.037 0.019	4.4 2.4	3.7 6.9	-17.0 0.4	-129 2	3.8 -	-0.6 -	0.8 0.5	1.6 3.4					
Kettle River	9	49.230°	-118.928°	7.62 0.24	4.5 1.8	85 42	12.0 0.6	0.157 0.182	3.6 1.8	3.4 6.2	-17.0 0.4	-129 2	- -	- -	0.5 1.2	0.8 2.3					
	10	49.382°	-118.876°	7.46 0.14	2.5 3.0	79 37	12.5 1.0	- -	3.3 1.6	1.0 6.5	-17.3 0.3	-130 2	- -	- -	0.6 0.6	-1.2 0.9					
	11	49.500°	-118.825°	7.63 0.13	2.7 2.6	72 36	12.3 0.9	0.051 -	3.0 1.5	0.1 9.4	-17.3 0.4	-130 1	- -	- -	0.2 0.6	-0.3 0.5					
	12	49.564°	-118.795°	7.64 0.10	2.1 2.8	69 32	12.6 1.1	0.138 -	2.5 1.1	1.9 5.3	-17.3 0.3	-131 2	- -	- -	-0.4 0.0	-1.5 2.7					
	13	49.632°	-118.775°	7.73 0.12	1.9 3.0	74 34	12.7 1.1	0.022 -	2.6 1.0	4.0 6.3	-17.3 0.3	-131 2	- -	- -	-2.3 1.5	-2.6 1.5					
	14	49.797°	-118.714°	7.76 0.14	2.3 2.9	88 35	12.3 1.1	- -	3.0 1.0	1.8 3.9	-17.3 0.5	-131 2	- -	- -	-2.4 0.7	-2.6 1.0					
	15	49.953°	-118.679°	7.77 0.14	1.9 2.9	73 46	12.4 0.9	0.087 -	2.9 1.2	3.1 5.8	-17.4 0.5	-132 4	- -	- -	1.8 0.2	-4.2 1.2					
	16	50.059°	-118.508°	8.04 0.14	3.2 3.0	152 34	11.7 0.9	0.084 -	5.8 0.7	-0.1 2.6	-17.4 0.3	-132 3	- -	- -	-9.4 0.6	-2.7 0.2					
	17	50.130°	-118.363°	7.93 0.07	4.9 4.7	84 6	11.1 0.3	0.016 -	4.6 0.3	1.0 6.1	-16.9 0.7	-131 5	- -	- -	-11.9 0.2	-3.0 0.7					
West Kettle River	18	49.170°	-118.975°	7.55 0.64	4.3 2.2	123 68	12.4 1.2	0.407 -	5.7 3.6	1.0 5.2	-16.6 0.3	-127 1	- -	- -	1.3 0.6	1.8 1.2					
	19	49.205°	-119.008°	7.54 0.33	2.8 5.5	134 80	12.8 2.1	0.033 -	5.7 3.5	2.5 7.3	-16.6 0.3	-127 1	- -	- -	1.0 0.1	2.9 4.0					
	20	49.256°	-119.011°	7.80 0.08	3.8 4.1	128 76	12.3 1.3	- -	5.8 3.5	4.8 5.7	-16.8 0.2	-128 0	- -	- -	1.7 0.8	-1.2 0.8					
	21	49.378°	-119.097°	7.69 0.16	2.4 3.2	123 68	12.4 1.6	0.076 0.046	5.5 3.4	4.2 5.8	-16.8 0.4	-128 2	7.2 -	0.7 -	0.2 0.3	0.0 1.6					
	22	49.435°	-119.092°	7.70 0.18	1.0 4.2	84 44	12.9 1.9	0.086 -	3.0 1.8	4.3 9.3	-16.8 0.5	-128 3	- -	- -	1.7 0.2	-0.1 3.3					
	23	49.789°	-119.036°	7.67 0.14	1.4 5.2	77 43	13.1 1.9	0.031 0.010	2.7 1.5	2.2 7.9	-16.6 0.1	-127 1	- -	- -	2.1 -	-1.9 -					
	24	49.564°	-119.055°	7.71 0.24	0.4 4.2	58 32	13.2 1.5	0.022 -	1.4 0.6	5.8 11.2	-16.9 0.4	-128 3	- -	- -	2.5 -	-1.5 -					
	25	49.495°	-119.122°	7.94 0.40	0.0 3.9	35 25	14.5 3.9	- -	1.2 0.4	3.5 5.1	-16.9 0.3	-128 4	- -	- -	2.3 -	-0.8 -					
<b>Groundwater Samples</b>																					
Below the Confluence	26	49.002°	-118.765°	7.36 0.05	7.3 0.7	488 49	5.3 2.8	18.600 22.110	38.3 1.2	-2.3 1.7	-17.0 0.0	-131 2	5.9 0.7	-4.4 2.3	1.2 0.0	-5.1 0.5					
	27	49.011°	-118.845°	7.28 0.10	6.4 0.7	262 28	1.9 1.4	15.878 20.573	17.1 0.1	-1.4 5.1	-17.1 0.3	-130 0	14.3 0.5	1.6 0.5	0.7 0.2	-4.2 0.2					
	28	49.028°	-118.866°	7.31 0.00	8.0 0.7	351 33	4.3 4.2	33.525 -	16.9 0.3	-2.1 5.8	-16.7 0.0	-127 0	12.8 0.1	3.2 0.1	-0.3 1.1	-1.1 1.6					
	29	49.035°	-118.863°	8.47 0.04	9.1 0.8	675 76	1.3 0.2	- -	111.7 0.7	1.3 5.3	-17.9 0.2	-142 0	- -	- -	-3.2 0.3	-5.7 0.3					
	30	49.047°	-118.896°	7.54 0.13	5.2 0.3	356 28	5.6 1.8	15.932 11.227	15.9 0.4	-0.5 1.4	-17.4 0.2	-131 1	5.4 0.3	-3.9 0.3	0.7 0.3	-3.7 1.3					
	31	49.061°	-118.905°	7.39 0.10	8.8 1.6	625 98	9.4 0.3	0.060 -	39.6 0.7	0.2 1.9	-16.5 0.2	-128 1	4.5 -	-4.8 -	3.5 0.4	-1.9 0.3					
	32	49.055°	-118.949°	8.07 0.01	5.8 0.6	311 6	5.5 2.3	16.803 14.817	14.9 0.1	-1.1 4.9	-17.1 0.2	-130 0	2.8 0.5	-4.8 0.6	0.6 0.2	-6.0 1.2					
	33	49.050°	-118.965°	7.73 -	7.3 -	374 -	6.5 -	3.483 -	15.2 -	2.2 -	-17.3 -	-131 -	7.4 -	-7.0 -	0.8 -	-4.9 -					
	34	49.052°	-118.957°	7.91 0.01	8.1 1.7	294 1	4.4 1.7	21.649 27.819	10.7 0.3	-0.6 2.7	-17.0 0.2	-130 1	6.5 -	-5.2 -	0.9 0.1	-5.5 0.3					
	35	49.048°	-118.975°	8.12 0.31	9.4 0.9	706 168	5.5 0.7	6.406 -	142.5 4.3	1.5 1.3	-18.1 0.3	-140 1	9.7 6.5	-8.1 0.7	1.7 1.0	-3.2 0.9					
	36	49.056°	-118.998°	7.13 0.06	5.1 0.4	233 3	6.4 2.1	23.826 -	15.7 1.9	0.0 7.9	-16.6 0.4	-124 0	4.8 1.7	-6.4 0.3	1.2 0.4	-3.2 0.8					

Table 1 continued

Section	ID	Location		Field Parameters				Anions and Electroneutrality				Stable Isotope Abundance Ratios (‰)											
		N	W	pH ± SD	Temp. (°C) ± SD	Cond. (µS/cm) ± SD	DO (mg/L) ± SD	NO <sub>3</sub> <sup>-</sup> ± SD	SO <sub>4</sub> <sup>2-</sup> ± SD	CB (%) ± SD	δ <sup>18</sup> O <sub>H<sub>2</sub>O</sub> ± SD	δ <sup>2</sup> H <sub>H<sub>2</sub>O</sub> ± SD	δ <sup>15</sup> N <sub>NO<sub>3</sub></sub> ± SD	δ <sup>18</sup> O <sub>NO<sub>3</sub></sub> ± SD	δ <sup>34</sup> S <sub>SO<sub>4</sub></sub> ± SD	δ <sup>18</sup> O <sub>SO<sub>4</sub></sub> ± SD							
<b>Groundwater Samples</b>																							
Below the Confluence	37	49.058 °	-119.000 °	7.50 0.04	6.7 0.3	625 46	8.5 0.7	24.437 8.719	23.7 1.6	5.0 6.3	-17.2 0.1	-130 1	9.8 0.1	-5.7 0.2	1.6 0.1	-4.5 1.6							
	38	49.086 °	-119.001 °	7.50 0.07	8.2 0.2	434 49	3.4 1.3	35.651 -	32.2 1.4	-2.6 3.5	-17.1 0.1	-131 0	6.2 0.8	-4.6 1.3	-0.4 0.2	-6.2 0.7							
	39	49.120 °	-118.998 °	7.53 0.28	6.6 1.1	458 21	9.6 2.3	18.343 10.134	19.0 0.4	0.7 2.3	-15.9 0.3	-123 0	4.1 0.3	-3.3 0.4	2.9 0.2	-0.9 0.7							
	40	49.150 °	-118.983 °	7.36 0.08	7.0 0.2	325 20	8.3 2.4	22.141 11.716	8.6 0.6	-1.2 3.2	-16.9 0.3	-128 0	6.7 0.7	-5.5 1.1	1.9 0.1	-4.1 0.3							
Kettle River	41	49.175 °	-118.972 °	7.47 0.02	6.5 0.7	560 43	5.5 0.7	- -	4.5 0.2	-0.6 0.4	-16.4 0.0	-127 1	6.4 0.6	-3.3 0.0	3.4 0.9	-3.9 2.1							
	42	49.313 °	-118.882 °	6.83 0.04	4.6 0.9	191 13	5.8 3.2	14.248 12.982	6.3 0.2	-5.2 2.7	-16.0 0.0	-123 1	4.1 -	-2.1 -	1.6 0.3	-3.8 0.9							
	43	49.333 °	-118.876 °	7.07 0.16	5.1 1.8	198 46	10.6 1.1	0.329 -	9.4 0.5	1.9 3.8	-16.2 0.1	-124 1	3.0 -	-6.3 -	-2.7 0.5	-5.9 1.0							
	44	49.364 °	-118.874 °	6.80 0.00	7.3 1.9	224 13	5.4 3.1	19.222 26.679	8.7 0.4	-6.6 8.8	-16.9 0.0	-128 1	3.6 0.6	-6.5 0.3	1.8 0.2	-6.4 0.4							
West Kettle River	45	49.257 °	-119.010 °	7.08 0.35	7.6 0.9	257 91	8.4 3.1	18.564 17.213	10.6 3.8	-2.0 9.1	-16.4 0.1	-125 0	15.5 4.7	2.0 4.9	1.1 0.8	-2.8 0.1							
	46	49.271 °	-119.021 °	7.69 0.03	8.2 2.1	296 12	3.1 1.6	- -	35.1 5.8	-0.2 1.4	-17.3 0.3	-132 1	4.7 -	-2.5 -	7.3 0.9	-2.0 1.7							
	47	49.408 °	-119.105 °	7.14 0.00	5.5 1.3	386 83	4.0 2.3	17.178 15.477	24.3 0.8	-1.1 0.4	-17.2 0.3	-131 1	8.7 -	-1.5 -	-0.8 0.4	-6.3 0.2							
	48	49.411 °	-119.105 °	6.97 0.11	5.0 0.1	362 57	7.1 1.6	15.117 2.748	24.8 0.3	-1.7 2.0	-17.1 0.3	-130 0	5.5 0.3	-4.0 2.3	0.4 0.0	-6.9 1.0							
	49	49.412 °	-119.104 °	7.07 0.15	5.8 1.0	357 67	8.5 0.1	12.842 12.129	24.8 0.2	1.6 0.9	-17.0 0.0	-130 0	5.7 -	-3.6 -	0.2 0.1	-6.9 0.7							