

**Site Description**

<b>Study Name</b>	CBWQ-Salmo
<b>Site</b>	NESLM02
<b>Sampling Date</b>	Oct 15 2009
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Selkirk-Bitterroot Foothills EcoRegion
<b>Coordinates (decimal degrees)</b>	49.23348 N, 117.23335 W
<b>Altitude</b>	2319
<b>Local Basin Name</b>	Salmo River
	Columbia
<b>Stream Order</b>	6



Figure 1. Location Map

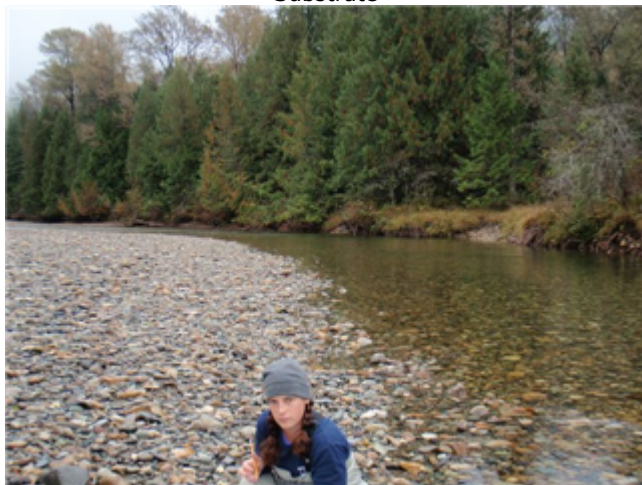
Across Reach  
Aerial (No image found)



Down Stream  
Field Sheet (No image found)  
Miscellaneous (No image found)



Substrate



Up Stream

### Cabin Assessment Results

Reference Model Summary	
<b>Model</b>	Columbia-Okanagan Preliminary March 2010
<b>Analysis Date</b>	August 28, 2017
<b>Taxonomic Level</b>	Family

**Cabin Assessment Results**

<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-SlopeLT30%				
<b>Reference Groups</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Number of Reference Sites</b>	9	43	17	12	33
<b>Group Error Rate</b>	22.2%	24.5%	22.2%	25.0%	32.4%
<b>Overall Model Error Rate</b>	26.4%				
<b>Probability of Group Membership</b>	0.2%	8.9%	10.1%	78.1%	2.6%
<b>CABIN Assessment of NESLM02 on Oct 15, 2009</b>	Mildly Divergent				

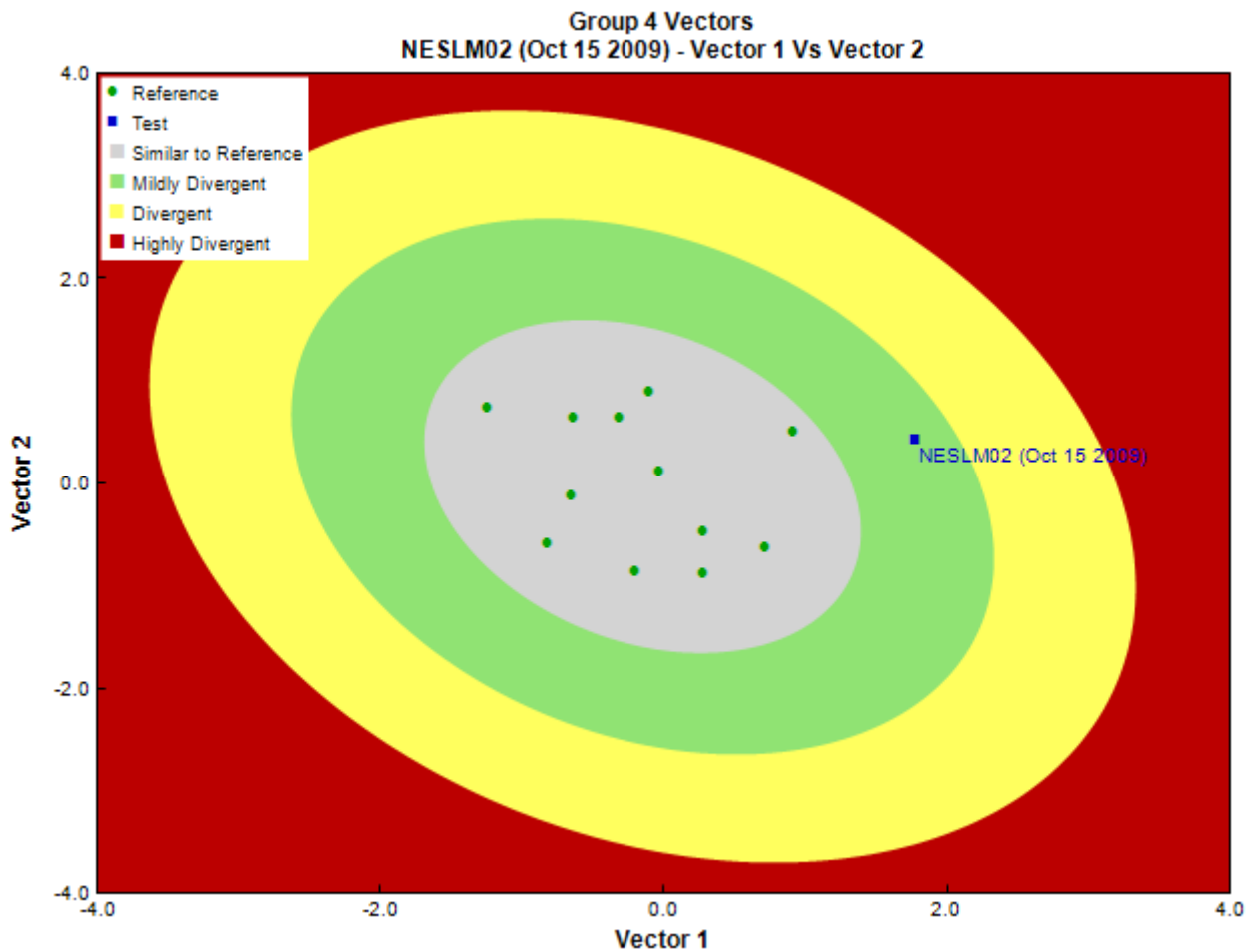


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Eco Analyts, EcoAnalysts
<b>Date Taxonomy Completed</b>	February 26, 2010
	Marchant Box
<b>Sub-Sample Proportion</b>	6/100

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Enchytraeida	Enchytraeidae	1	16.7
Arthropoda	Arachnida	Trombidiformes	Hydryphantidae	1	16.7
			Lebertiidae	2	33.3
			Torrenticolidae	2	33.3
	Insecta	Coleoptera	Elmidae	2	33.3
		Diptera	Ceratopogonidae	1	16.7
			Chironomidae	51	850.0
			Psychodidae	10	166.7
			Tipulidae	1	16.7
		Ephemeroptera	Baetidae	4	66.7
			Ephemerellidae	31	516.7
			Heptageniidae	137	2,283.3
			Leptophlebiidae	2	33.3
		Plecoptera	Chloroperlidae	6	100.0
			Nemouridae	8	133.3
			Perlidae	1	16.7
			Perlodidae	1	16.7
			Taeniopterygidae	7	116.7
		Trichoptera	Apataniidae	3	50.0
			Brachycentridae	1	16.7
			Glossosomatidae	35	583.3
			Hydropsychidae	4	66.7
			Lepidostomatidae	24	400.0
			Rhyacophilidae	5	83.3
			Total	340	5,666.8

## Metrics

Name	NESLM02	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.87	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	3.5	3.2 $\pm$ 0.3
Intolerant taxa	--	
Long-lived taxa	2.0	2.1 $\pm$ 1.0
Tolerant individuals (%)	--	0.8 $\pm$ 0.3
<b>Functional Measures</b>		
% Filterers	1.5	2.2 $\pm$ 1.8
% Gatherers	35.6	38.4 $\pm$ 12.4
% Predatores	21.8	19.0 $\pm$ 8.5
% Scrapers	57.4	63.2 $\pm$ 19.7
% Shredder	13.5	27.6 $\pm$ 15.2
<b>Number Of Individuals</b>		
% Chironomidae	15.0	7.4 $\pm$ 6.4
% Coleoptera	0.6	1.5 $\pm$ 3.9
% Diptera + Non-insects	20.3	10.8 $\pm$ 7.6
% Ephemeroptera	51.2	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	2.3	40.6 $\pm$ 30.0
% EPT Individuals	79.1	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	55.3	57.9 $\pm$ 14.2
% of 5 dominant taxa	81.8	81.6 $\pm$ 7.9
% of dominant taxa	40.3	39.8 $\pm$ 14.9
% Plecoptera	6.8	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	5.6	27.0 $\pm$ 26.2
% Tricoptera	21.2	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.8	0.9 $\pm$ 0.1
Total Abundance	5666.6	587.4 $\pm$ 299.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	1.0	0.4 $\pm$ 0.5
Diptera taxa	4.0	3.3 $\pm$ 1.0

**Metrics**

Name	NESLM02	Predicted Group Reference Mean $\pm$ SD
Ephemeroptera taxa	4.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	4483.3	526.0 $\pm$ 285.8
EPT taxa (no)	15.0	13.3 $\pm$ 2.7
Odonata taxa	--	0.0 $\pm$ 0.0
Pielou's Evenness	0.7	0.7 $\pm$ 0.1
Plecoptera taxa	5.0	6.3 $\pm$ 1.1
Shannon-Wiener Diversity	2.1	1.9 $\pm$ 0.4
Simpson's Diversity	0.8	0.8 $\pm$ 0.1
Simpson's Evenness	0.2	0.3 $\pm$ 0.1
Total No. of Taxa	24.0	19.3 $\pm$ 3.7
Trichoptera taxa	6.0	3.2 $\pm$ 1.4

**Frequency and Probability of Taxa Occurrence**

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NESLM02
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.84
Chironomidae	100%	100%	100%	100%	95%	1.00
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.90
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.89
Perlodidae	78%	78%	89%	92%	81%	0.90
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.89

**RIVPACS Ratios**

RIVPACS : Expected taxa P>0.50	14.34
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	0.98
RIVPACS : Expected taxa P>0.70	11.38
RIVPACS : Observed taxa P>0.70	11.00
RIVPACS : O:E (p > 0.7)	0.97

**Habitat Description**

Variable	NESLM02	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	39.10051	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	37.68921	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	23.21029	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	32.5	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	100.00	51.38 $\pm$ 29.42
Depth-Max (cm)	45.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	1	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	2	4 $\pm$ 1
Reach-Pools (Binary)	0	1 $\pm$ 0
Reach-Rapids (Binary)	0	0 $\pm$ 0
Reach-Riffles (Binary)	1	1 $\pm$ 0
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0200000	0.0546683 $\pm$ 0.0376269
Veg-Coniferous (Binary)	1	1 $\pm$ 0

## Habitat Description

Variable	NESLM02	Predicted Group Reference Mean $\pm$ SD
Veg-Deciduous (Binary)	1	1 $\pm$ 0
Veg-GrassesFerns (Binary)	1	1 $\pm$ 0
Veg-Shrubs (Binary)	1	1 $\pm$ 0
Velocity-Avg (m/s)	0.43	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.68	0.76 $\pm$ 0.36
Width-Bankfull (m)	44.0	13.4 $\pm$ 9.9
Width-Wetted (m)	15.9	8.5 $\pm$ 5.8
XSEC-VelInstrumentDirect (Category (1-3))	3	0 $\pm$ 0
XSEC-VelMethod (Category (1-3))	3	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	129.75000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	111.25000	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	105.00000	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	129.75000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	94.62500	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	96.00000	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	71.62500	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	66.12500	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	67.75000	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	80.25000	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	134.00000	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	146.00000	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1191.62500	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.25000	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.00000	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.62500	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.25000	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	1.75000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.62500	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	6.62500	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.25000	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.37500	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	1.00000	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.00000	15.72500 $\pm$ 3.40030
Temp06_JUNMin (Degrees Celsius)	4.25000	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.00000	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.87500	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.62500	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.50000	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.37500	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.37500	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.12500	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-1.00000	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.12500	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.50000	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-9.50000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.37500	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.12500	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.62500	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	420.29652	124.42081 $\pm$ 200.99192
Perimeter (Km)	146.56897	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	1881.59468	2246.06682 $\pm$ 604.89962
StreamLength (m)	790827.69	302226.63 $\pm$ 500983.26
<b>Landcover</b>		
Natl-AnnCrops (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Barren (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafOpen (%)	0.93300	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000

## Habitat Description

Variable	NESLM02	Predicted Group Reference Mean $\pm$ SD
Natl-ConiferousDense (%)	0.24499	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	69.37592	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	0.00000	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	2.99208	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	9.76779	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.00000	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.06490	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	9.44371	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00000	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.11508	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.00420	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00950	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	0	9 $\pm$ 9
%Cobble (%)	44	51 $\pm$ 15
%Gravel (%)	4	3 $\pm$ 3
%Pebble (%)	48	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	4	0 $\pm$ 0
D50 (cm)	5.45	15.12 $\pm$ 14.26
Dg (cm)	4.5	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	5	7 $\pm$ 1
Dominant-2nd (Category(0-9))	6	7 $\pm$ 1
PeriphytonCoverage (Category(1-5))	1	1 $\pm$ 0
<b>Topography</b>		
ElevationMax (m)	2356.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	686.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	344.34665	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	23.42325	18.88386 $\pm$ 9.29866
Slope30-50% (%)	35.27680	29.00215 $\pm$ 6.33837
Slope50-60% (%)	14.55723	13.91808 $\pm$ 1.91315
SlopeAvg (%)	45.11876	52.79851 $\pm$ 8.68755
SlopeGT60% (%)	23.65401	35.47207 $\pm$ 13.39684
SlopeLT30% (%)	26.51196	21.60770 $\pm$ 8.54172
SlopeMax (%)	204.50665	298.94390 $\pm$ 146.30679
SlopeMin (%)	0.00000	0.19777 $\pm$ 0.29213
SlopeStdev (%)	21.96144	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
Ag (mg/L)	0.0000200	0.0000050
Al (mg/L)	0.0140000	0.0049000
As (mg/L)	0.0003000	0.0002700
B (mg/L)	0.0250000	0.0500000
Ba (mg/L)	0.0160000	0.0682000
Be (mg/L)	0.0000500	0.0000100
Bi (mg/L)	0.0005000	0.0000050
Ca (mg/L)	22.2000000	21.1083333 $\pm$ 16.8005659
Cd (mg/L)	0.0002500	0.0000050
Co (mg/L)	0.0002500	0.0000100
Cr (mg/L)	0.0005000	0.0001000

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Variable	NESLM02	Predicted Group Reference Mean $\pm$ SD
Cu (mg/L)	0.0003000	0.0001000
Fe (mg/L)	0.0180000	0.0080000
General-Alkalinity (mg/L)	48.0000000	71.7000000 $\pm$ 53.9231440
General-Conductivity ( $\mu$ S/cm)	112.0000000	121.8083333 $\pm$ 87.6800844
General-DO (mg/L)	13.0000000	11.4175000 $\pm$ 0.7986708
General-Hardness (mg/L)	50.7000000	84.2750000 $\pm$ 70.6251066
General-pH (pH)	8.3	7.9 $\pm$ 0.4
General-SolidsTSS (mg/L)	2.0000000	0.8849836 $\pm$ 1.2378575
General-SpCond ( $\mu$ S/cm)	132.0000000	168.9833333 $\pm$ 123.7858182
General-TempAir (Degrees Celsius)	8.0	26.0
General-TempWater (Degrees Celsius)	5.7000000	7.3183333 $\pm$ 2.7240839
Hg (ng/L)	0.0000100	0.0000000 $\pm$ 0.0000000
K (mg/L)	0.9000000	0.6141667 $\pm$ 0.4056971
Li (mg/L)	0.0025000	0.0011000
Mg (mg/L)	1.9000000	7.6666667 $\pm$ 7.9748848
Mn (mg/L)	0.0010000	0.0006100
Mo (mg/L)	0.0010000	0.0006900
Na (mg/L)	1.5900000	1.5383333 $\pm$ 1.2751459
Ni (mg/L)	0.0005000	0.0003000
Nitrogen-TN (mg/L)	0.0800000	0.0883333 $\pm$ 0.0521943
Pb (mg/L)	0.0002000	0.0000520
Phosphorus-TP (mg/L)	0.0080000	0.0045833 $\pm$ 0.0049992
S (mg/L)	1.5000000	5.0000000
Sb (mg/L)	0.0002500	0.0000700
Se (mg/L)	0.0004000	0.0001200
Si (mg/L)	3.9500000	3.1516667 $\pm$ 1.2277017
Sn (mg/L)	0.0025000	0.0000100
Sr (mg/L)	0.1090000	0.0443000
Ti (mg/L)	0.0025000	0.0005000
Tl (mg/L)	0.0000250	0.0000020
U (mg/L)	0.0002000	0.0011700
V (mg/L)	0.0025000	0.0002000
Zn (mg/L)	0.0060000	0.0010000
Zr (mg/L)	0.0002500	0.0000000 $\pm$ 0.0000000