

Maxxam Job #: B737450  
Report Date: 2017/05/18

Cowichan Valley Regional District  
Client Project #: SHAWNIGAN LAKE NORTH WATER SOU  
Site Location: SHAWNIGAN LAKE INTAKE  
Your P.O. #: 18994

**CSR TOTAL METALS IN WATER (DRINKING WATER)**

<b>Maxxam ID</b>					RB6040		
<b>Sampling Date</b>					2017/05/16 09:20		
<b>COG Number</b>					08436484		
	<b>UNITS</b>	<b>MAC</b>	<b>AO</b>	<b>OG</b>	<b>SLNW INTAKE</b>	<b>RDL</b>	<b>QC Batch</b>
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10	8632891
Total Calcium (Ca)	mg/L	-	-	-	6.68	0.050	8631007
Total Magnesium (Mg)	mg/L	-	-	-	1.22	0.050	8631007
Total Potassium (K)	mg/L	-	-	-	0.276	0.050	8631007
Total Sodium (Na)	mg/L	-	200	-	7.55	0.050	8631007
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0	8631007
<b>No Fill</b>	<b>No Exceedance</b>						
<b>Grey</b>	<b>Exceeds 1 criteria policy/level</b>						
<b>Black</b>	<b>Exceeds both criteria/levels</b>						
<b>RDL = Reportable Detection Limit</b>							

MAXXAM ANALYTICS INTERNATIONAL CORPORATION

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**RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER**

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<b>COC Number</b>			08436484		
	<b>UNITS</b>	<b>MAC</b>	<b>SLNW INTAKE</b>	<b>RDL</b>	<b>QC Batch</b>
<b>ANIONS</b>					
Nitrite (N)	mg/L	1	<0.0050	0.0050	8633769
<b>Calculated Parameters</b>					
Nitrate (N)	mg/L	10	0.078	0.020	8632554
<b>Nutrients</b>					
Orthophosphate (P)	mg/L	-	<0.0050	0.0050	8632828
Dissolved Phosphorus (P)	mg/L	-	<0.0050 (1)	0.0050	8634001
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.161	0.020	8632555
Total Ammonia (N)	mg/L	-	<0.0050	0.0050	8633640
Nitrate plus Nitrite (N)	mg/L	-	0.078	0.020	8633768
Total Nitrogen (N)	mg/L	-	0.240	0.020	8633011
Total Phosphorus (P)	mg/L	-	0.0047 (1)	0.0020	8634002
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
(1) Matrix spike exceeds acceptance limits due to matrix interference. Re-analysis yields similar results.					

MAXXAM ANALYTICS - FORTY-FIFTH AVENUE, BURNABY, BC V5G 1K5

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COG Number					08436484		
	UNITS	MAC	AO	OG	SLNW INTAKE	RDL	QC Batch
<b>Calculated Parameters</b>							
Total Hardness (CaCO3)	mg/L	-	-	-	21.7	0.50	8631006
<b>Total Metals by ICPMS</b>							
Total Aluminum (Al)	ug/L	-	-	100	26.1	3.0	8632891
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50	8632891
Total Arsenic (As)	ug/L	10	-	-	0.11	0.10	8632891
Total Barium (Ba)	ug/L	1000	-	-	4.3	1.0	8632891
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10	8632891
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0	8632891
Total Boron (B)	ug/L	5000	-	-	<50	50	8632891
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	0.010	8632891
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0	8632891
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20	8632891
Total Copper (Cu)	ug/L	-	1000	-	1.21	0.50	8632891
Total Iron (Fe)	ug/L	-	300	-	41	10	8632891
Total Lead (Pb)	ug/L	10	-	-	0.24	0.20	8632891
Total Lithium (Li)	ug/L	-	-	-	<2.0	2.0	8632891
Total Manganese (Mn)	ug/L	-	50	-	4.1	1.0	8632891
Total Mercury (Hg)	ug/L	1	-	-	<0.050	0.050	8632891
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0	8632891
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0	8632891
Total Phosphorus (P)	ug/L	-	-	-	<10	10	8632891
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10	8632891
Total Silicon (Si)	ug/L	-	-	-	2900	100	8632891
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020	8632891
Total Strontium (Sr)	ug/L	-	-	-	25.3	1.0	8632891
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010	8632891
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0	8632891
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0	8632891
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10	8632891
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0	8632891
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	5.0	8632891
No Fill	No Exceedance						
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Phytoplankton raw count data for cell density calculations, MAXXAM, Shawnigan Lake 2017.

Client	Lake	Year	Common Name	Phylum	Order	Taxon	Microscope Factor	Fields of View Counted	Subsample Volume (ml)	# of Cells Counted	Cell Density (cells/L)
MAXXAM	Shawnigan Lake	2017	Golden-Brown Algae	Ochrophyta	Chromulinales	Dinobryon sp.	8.04	10	25	1,196	9,613,508
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta	Tabellariales	Asterionella formosa	8.04	10	25	50	401,902
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta	Fragilariales	Fragilaria sp.	8.04	10	25	13	104,495
MAXXAM	Shawnigan Lake	2017	Blue-green Algae	Cyanophyta	Nostocales	Dolichospermum sp.	8.04	10	25	9	72,342
MAXXAM	Shawnigan Lake	2017	Green Algae	Chlorophyta	Chlorellales	Oocystis sp.	8.04	10	25	8	64,304
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta	Cocconeidales	Achnanthyidium sp.	8.04	10	25	3	24,114
MAXXAM	Shawnigan Lake	2017	Green Algae	Charophyta	Klebsormidiales	Elakatothrix sp.	8.04	10	25	3	24,114
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta	Aulacoseirales	Aulacoseira sp.	8.04	10	25	2	16,076
MAXXAM	Shawnigan Lake	2017	Golden-Brown Algae	Haptophyta	Prymnesiophycidae	Chrysochromulina sp.	8.04	10	25	2	16,076
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta	Stephanodiscales	Cyclotella sp.	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta		Naviculoid Diatom	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta		Centric Diatom	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Diatoms	Bacillariophyta		Cymbelloid Diatom	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Dinoflagellates	Pyrrhophyta	Peridinales	Peridinium sp.	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Golden-Brown Algae	Ochrophyta	Chromulinales	Chrysolkykos sp.	8.04	10	25	1	8,038
MAXXAM	Shawnigan Lake	2017	Green Algae	Chlorophyta	Sphaeropleales	Monoraphidium sp.	8.04	10	25	1	8,038