ZENON ENVIRONMENTAL INC.
B.C LABORATORY SERVICES
Report for form 02000872
ATTN SANDBERG, S.

General Public

Sample 91008213

Site: NOSITE LAKE

From : 91/05/21:0000 To : 91/05/21:0000
Depth Range 0.0 0.0 Title :
Sample State: Fresh Water
Sample Comment:

Parameter Description	Result	Units	Analytical Technique
pH	8.2	pH units	Automated pH Meter
Specific Conductance	270	uS/cm	Cond. Meter Siebold
Turbidity	0.3	NTU	Nephel. Single Beam
Alkalinity Total	129	mg/L	Automated Electrometer
Hardness Total	125	mg/L	Calculated Result
Coliform - Total NO COLIFORMS DETECTED.	< 2.0	CFU	Filter-Membrane
Fluoride Dissolved	0.11	mg/L	I.S.E.
Boron	0.02	mg/L	ICP Analysis
Barium	0.04	mg/L	ICP Analysis
Calcium	33.5	mg/L	ICP Analysis
Chromium	< 0.01	mg/L	ICP Analysis
Copper	0.06	mg/L	ICP Analysis
Iron	< 0.01	mg/L	ICP Analysis
Magnesium	10.1	mg/L	ICP Analysis
Manganese	< 0.01	mg/L	ICP Analysis
Zinc	0.02	mg/L	ICP Analysis
Nitrogen NO3+NO2	0.09	mg/L	Auto. Cadmium Reduction
Nitrogen NO3 Dis	0.09	mg/L	Calculated Result
Nitrogen NO2 Dis	< 0.005	mg/L	Auto. Diazotization

Report for form 00300294
General Public ATTN: SANDBERG, SALLY Sample 8800226

Site: NOSITE TYEE LAKE

From : 88/05/10: 0000 To : 88/05/10: 0000
Depth Range : 0.0 0.0 Tide :
Sample State: Fresh Water
Sample Comment:

Parameter Description	Result	Units	Analytical Technique
pH	8.0	pH units	Automated pH Meter
Specific Conductance	265	uS/cm	Cond. Meter Siebold
Turbidity	0.2	NTU	Nephel. Single Beam
Alkalinity Total 4.5	134	mg/L	Automated Electrometer
Hardness Total	127	mg/L	Calculated Result
Coliform - Total	< 2.0	No/100ml	Filter-Membrane Health L
Fluoride Dissolved	< 0.10	mg/L	I.S.E.
Boron	0.07	mg/L	ICP Analysis
Barium	0.04	mg/L	ICP Analysis
Calcium	35.0	mg/L	ICP Analysis
Chromium	0.01	mg/L	ICP Analysis
Copper	0.06	mg/L	ICP Analysis
Iron	0.01	mg/L	ICP Analysis
Magnesium	9.51	mg/L	ICP Analysis
Manganese	0.01	mg/L	ICP Analysis
Zinc	0.03	mg/L	ICP Analysis
Nitrogen NO3+NO2 Dis	0.12	mg/L	Auto. Cadmium Reduction
Nitrogen NO3 Diss(N)	0.12	mg/L	Calculated Result
Nitrogen NO2 Diss(N)	< 0.005	mg/L	Auto. Diazotization

FEBRUARY 16, 1983 ENVIRONMENTAL LABORATORY PAGE 1
MINISTRY OF THE ENVIRONMENT

WATER QUALITY REPORT FOR SAMPLE 300990W

TO: CARL SANDBERG
BOX 248
SMITHERS BC
ATTENTION OF: CARL SANDBERG

FOR SITE: SANDBERG TYEE LK KNOWN AS MCLURE LK TAP WATER

SAMPLING DATE(S): JAN 31/83 0800 HRS
DATE PROCESSED TO COMPUTER: FEB 01/83

PH	7.9 REL UNIT	RESIDUE: FILTERABLE	164. MG/L
SPECIFIC CONDUCTANCE	278. UMHO/CM	TURBIDITY	0.3 N.T.U.
ALKALINITY: TOTAL	136. MG/L	FLUORIDE	0.10 MG/L
HARDNESS	112. MG/L	NITROGEN: NITRATE (NO3)	0.1* MG/L
NITROGEN: NITRITE (NO2)	L 0.005* MG/L	BORON TOTAL	0.02 MG/L
CALCIUM TOTAL	34.4 MG/L	CHROMIUM TOTAL	L 0.01 MG/L
COPPER TOTAL	0.06 MG/L	IRON: TOTAL	0.03 MG/L
MAGNESIUM TOTAL	6.28 MG/L	MANGANESE TOTAL	L 0.01 MG/L
ZINC TOTAL	0.1 MG/L	BARIUM TOTAL	0.03 MG/L
COLIFORMS: TOTAL	L 2.2 M.P.N.		

REMARKS: "COLIFORMS:TOTAL" - TEST PERFORMED BY DIVISION OF LABORATORIES, MINISTRY OF HEALTH

THE SYMBOL "L" REPRESENTS LESS THAN
THE SYMBOL "G" REPRESENTS GREATER THAN

FOR ENVIRONMENTAL LABORATORY

Water Quality Check Program - Guide to the Interpretation of Analyses

The report that you have received from the Environmental Laboratory shows several analytical results. This booklet is intended to help you understand that report. Included in this booklet are the "Canadian Drinking Water Standards" to enable you to compare your results. If your analyses are above the Canadian standards, we recommend that you contact your local Health Unit for further recommendations.

Concentration Levels may vary according to the time of the year (season and climatic conditions) that your sample was taken. Spring run off and fall rains can have an effect on some tests; the turbidity of the water could be high after a rain storm as the rain washes silt and dirt into the streams and increases the turbidity; in the summer, if there is no water flow (stagnant conditions) and the temperature is warm, then conditions could be optimal for bacterial growth. The limits for the tests that we report are:

Canadian Drinking Water Guidelines

	Test	Maximum Acceptable Level (see note 1)	Objective Level (see note 2)
1	pH	6.5 to 8.5	(no limit set)
2	Conductance Specific	(no limit set)	(no limit set)
3	Turbidity	5 NTU (see note 3)	< 1 NTU (see note 3)
4	Alkalinity Tot. 4.5	30 to 500 mg/L (see note 4)	(no limit set)
5	Hardness Total *	(no limit set - see below) *	(no limit set)
6	Coliform Total	< 2 per 100 ml (see note 5)	< 2 per 100 ml (see note 5)
7	Fluoride Dissolved	< 1.5 mg/L	< 1.0 mg/L
8	Boron	5.0 mg/L	< 0.01 mg/L
9	Barium	1.0 mg/L	< 0.10 mg/L
10	Calcium	(no limit set - see below) *	(no limit set)
11	Chromium	0.05 mg/L	< 0.0002 mg/L
12	Copper	1.0 mg/L	< 1.0 mg/L
13	Iron	< 0.3 mg/L	< 0.05 mg/L
14	Magnesium	(no limit set-see below)*	(no limit set)
15	Manganese	0.05 mg/L	< 0.01 mg/L
16	Zinc	5.0 mg/L	< 5.0 mg/L
17	Nitrogen:Nitrate + Nitrite (as N)	10.0 mg/L	< 0.001 mg/L
18	Nitrogen:Nitrate (as N)	< 10.0 mg/L	< 0.001 mg/L
19	Nitrogen:Nitrite (as N)	< 1.0 mg/L	< 0.001 mg/L
	* Hardness	< 120 mg/L	< 120 mg/L
	* Calcium	< 200 mg/L	< 75 mg/L
	* Magnesium	< 150 mg/L	< 50 mg/L
	Reference:	Water Quality Sourcebook-Inland Waters Directorate, Environment Canada (1979)	

Notes:

1 Maximum Acceptable Level for health or aesthetic reasons
2 Objective Level is a desired level to be attained
3 "NTU" is Nephelometric Turbidity Units
4 "mg/L" is milligrams per liter
5 Coliform count per 100 ml sample

The following notes are brief descriptions of the tests and what the results could mean:

1 pH

Definition: This is the measurement of the hydrogen ion concentration in the water. A pH between 0 and 7 is acidic (the lower the number, the more acidic the water is) and a pH between 7 and 14 is basic (the higher the number, the more basic the water is). A pH of 7 is considered to be neutral.

Importance: The acceptable level for drinking water is between 6.5 and 8.5. Corrosion of metal plumbing may occur at both low and high pH values. "Scaling" or encrustation of metal pipes may also occur at high pH values.

2 Conductance Specific

Definition: This is the measurement of the ability of the water to conduct an electric current - the greater the content of the ions in the water, the more current the water can carry. Ions are dissolved metals and other dissolved materials. Conductance is reported in terms of microsiemens per centimeter (uS/cm). There is no standard recommended level for this test. Natural waters are found to vary between 50 and 1500 uS/cm.

Importance: Specific Conductance may be used to estimate the total ion concentration of the water.

3 Turbidity

Definition: This is the measurement of the suspended particulate matter in the water, which interferes with the passage of a beam of light through the water. The material suspended in the water could be silt, clay, organic material, or micro-organisms.

Importance: Turbidity values may be high during and after periods of high rainfall due to the possibility of silt being washed into streams and wells. High levels of turbidity may protect micro-organisms from the effects of attempted disinfection procedures. It may also stimulate the growth of bacteria and thus increase the 'chlorine demand' (bleach) that may be required to disinfect the water.

4 Alkalinity Total at pH 4.5

Definition: This is the measurement of the water's ability to neutralize acids. It usually indicates the presence of carbonate, bicarbonates, or hydroxides. Alkalinity results are expressed in terms of an equivalent amount of calcium carbonate. Note that this does not mean that calcium carbonate was found in the sample.

Importance: Natural waters rarely have levels that exceed 500 mg/L. A range of 30 to 500 mg/L is acceptable. However, extreme variations or high levels may cause gastrointestinal problems in humans.