

R E P O R T

**TSAWATAINEUK FIRST NATION
(KINGCOME INLET)**

**Assessment Studies of Water and
Wastewater Systems and
Associated Water Management
Practices at Selected
First Nation Communities**



ANALYTICAL SERVICES

07 May 02
Page 2 of 13

ANALYTICAL REPORT
Form 08097071

Client : HEALTH CANADA
Sampling site :
Submitted by : SANDRA GREEN

Philip ID : 12017364 12017365 12017366 12017367
Client ID : OWEEKENO GUILFORD KINGCOME HOPETOWN

| Sparcode | Parameter | Unit | MDL | CDWG | | | | |
|---------------------------|-------------------------------|-----------|--------|---------|---------|---------|----------|---------|
| PHYSICAL | | | | | | | | |
| 00041220 | pH | pH units | 0.1 | 6.5-8.5 | 6.5 | 7.8 | 8.1 | 8.3 |
| 00021300 | Color True | Col. Unit | 5 | 15 | < 5 | 5 | 5 | 5 |
| 00111160 | Specific Conductance | uS/cm | 1 | --- | 61 | 2370 | 231 | 285 |
| SCCACALC | Computed Conductance | uS/cm | --- | --- | 64 | 2780 | 240 | 308 |
| CCPDCALC | Conductance % Diff. | % | --- | --- | 4.3 | 15.8 | 9.7 | 7.9 |
| 00081071 | Residue Nonfilterable (TSS) | mg/L | 4 | --- | < 4 | < 4 | 12 | < 4 |
| 007H1035 | Residue Filterable 1.0u (TDS) | mg/L | 10 | 500 | 44 | 1540 | 150 | 186 |
| CTDSCALC | Computed TDS | mg/L | --- | --- | 33 | 1280 | 122 | 172 |
| TDSRCALC | TDS % Diff. | % | --- | --- | -27.7 | -18.6 | -20.2 | -7.8 |
| 00151149 | Turbidity | NTU | 0.10 | 1.0 | 0.13 | 0.32 | 1.02 | 0.87 |
| 0107CALC | Hardness Total -T | mg/L | --- | 500 | 26.0 | 521 | 104 | 21.3 |
| GENERAL INORGANICS | | | | | | | | |
| 0101211 | Alkalinity Phen. 9.3 as CaCO3 | mg/L | 1 | --- | < 1 | < 1 | < 1 | < 1 |
| 01021210 | Alkalinity Total as CaCO3 | mg/L | 1 | --- | 28 | 95 | 118 | 112 |
| CO3-CALC | Carbonate as CO3= | mg/L | --- | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| HCO3CALC | Bicarbonate as HCO3- | mg/L | --- | --- | 34.1 | 116 | 144 | 137 |
| OH-CALC | Hydroxide as OH- | mg/L | --- | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2105AA04 | Cyanide(SAD) ÷ Thiocyanate | mg/L | 0.0005 | 0.2 | 0.0007 | 0.0005 | < 0.0005 | 0.0005 |
| 0125LLHS | Sulfide Total | mg/L | 0.005 | 0.05 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| ANIONS | | | | | | | | |
| 11041334 | Chloride Dissolved | mg/L | 0.5 | < 250 | 1.1 | 678 | 5.3 | 4.7 |
| 11061341 | Fluoride Dissolved | mg/L | 0.01 | 1.5 | 0.03 | 0.33 | 0.10 | 0.11 |
| IonBCALC | Ion Balance | % | --- | --- | 1.2 | 1.1 | -0.3 | 2.2 |
| AnnCALC | Total Anions | meq/L | --- | --- | 0.65 | 22.42 | 2.52 | 3.00 |
| CnuCALC | Total Cations | meq/L | --- | --- | 0.67 | 21.90 | 2.51 | 3.14 |
| LugCALC | Langelier Index | pH units | --- | --- | -2.6 | 0.4 | 0.2 | -0.3 |
| pHSACALC | Saturation pH | pH units | --- | --- | 9.1 | 7.4 | 7.9 | 8.6 |
| CARBON | | | | | | | | |
| 01030912 | Organic Carbon - Total | mg/L | 0.5 | --- | < 0.5 | 0.6 | 2.3 | 0.6 |

Matrix : Water Water Water Water
Sampled on: 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00

CONTINUED on page 3



ANALYTICAL SERVICES

07-May-02
Page 3 of 13

ANALYTICAL REPORT
Form 08097071

Client : HEALTH CANADA
Sampling site :
Submitted by : SANDRA GREEN

Philip ID : 12017364 12017365 12017366 12017367
Client ID : OWBEKENO GULFPOKD KINGCOMB HOPETOWN

| Sample No | Parameter | Unit | MDL | CDWC | | | | |
|---------------------|--------------------------------|------|---------|-------|-----------|-----------|-----------|-----------|
| NITROGEN | | | | | | | | |
| 11081351 | Ammonia Nitrogen (N) | mg/L | 0.005 | --- | < 0.005 | < 0.005 | 0.006 | < 0.005 |
| 1110CALC | Nitrate Nitrogen Dissolved (N) | mg/L | | 10.0 | 0.34 | 0.04 | < 0.02 | < 0.02 |
| 11091350 | Nitrate+Nitrite (N) | mg/L | 0.02 | 10.0 | 0.34 | 0.05 | < 0.02 | < 0.02 |
| 11111354 | Nitrite Nitrogen (N) | mg/L | 0.005 | 1.0 | < 0.005 | 0.006 | < 0.005 | < 0.005 |
| SULFATE | | | | | | | | |
| 11211403 | Sulfate | mg/L | 0.5 | < 500 | 1.6 | 66.3 | < 0.5 | 29.8 |
| METALS TOTAL | | | | | | | | |
| Al-T0031 | Aluminium | mg/L | 0.02 | --- | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Sb-TMS31 | Antimony | mg/L | 0.001 | --- | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| As-TMS31 | Arsenic | mg/L | 0.001 | 0.025 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Ba-T0031 | Barium | mg/L | 0.001 | 1.0 | 0.005 | 0.004 | 0.002 | < 0.001 |
| B-T0031 | Boron | mg/L | 0.008 | 3.0 | < 0.008 | 0.336 | 0.014 | 0.075 |
| Cd-TMS31 | Cadmium | mg/L | 0.0001 | 0.005 | < 0.0001 | < 0.0001 | < 0.0001 | 0.0001 |
| Ca-T0031 | Calcium | mg/L | 0.05 | --- | 1.22 | 158 | 27.1 | 3.84 |
| Cr-T0031 | Chromium | mg/L | 0.005 | 0.05 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Co-T0031 | Cobalt | mg/L | 0.005 | --- | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Cu-T0031 | Copper | mg/L | 0.005 | 1.0 | 0.306 | 0.011 | 0.016 | < 0.005 |
| Fe-T0031 | Iron | mg/L | 0.005 | 0.3 | < 0.005 | 0.028 | 0.043 | 0.093 |
| Pb-TMS31 | Lead | mg/L | 0.0005 | 0.01 | 0.0012 | 0.0037 | < 0.0005 | < 0.0005 |
| Mg-T0031 | Magnesium | mg/L | 0.05 | --- | 1.33 | 30.6 | 8.77 | 1.63 |
| Mn-T0031 | Manganese | mg/L | 0.001 | 0.05 | < 0.001 | 0.032 | 0.031 | 0.005 |
| Hg-T0310 | Mercury | mg/L | 0.00005 | 0.001 | < 0.00005 | < 0.00005 | < 0.00005 | < 0.00005 |
| Mo-T0031 | Molybdenum | mg/L | 0.005 | --- | < 0.005 | 0.008 | < 0.005 | 0.068 |
| Ni-T0031 | Nickel | mg/L | 0.008 | --- | < 0.008 | < 0.008 | < 0.008 | < 0.008 |
| K_T0031 | Potassium | mg/L | 1 | --- | < 1 | 3 | 2 | 2 |
| Se-TMS31 | Selenium | mg/L | 0.001 | 0.01 | < 0.001 | 0.001 | < 0.001 | < 0.001 |
| Ag-T0031 | Silver | mg/L | 0.01 | --- | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Na_T0031 | Sodium | mg/L | 0.05 | 200 | 2.71 | 285 | 8.39 | 61.0 |
| U-TLLMS | Uranium | mg/L | 0.00001 | 0.1 | < 0.00001 | 0.00039 | < 0.00001 | 0.00023 |
| V-T0031 | Vanadium | mg/L | 0.005 | --- | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Zn-T0031 | Zinc | mg/L | 0.005 | 5.0 | < 0.005 | 0.021 | 0.035 | < 0.005 |

Matrix : Water Water Water Water
Sampled on: 02/03/25 16:00 02/09/25 16:00 02/03/25 16:00 02/03/25 16:00

CONTINUED on page 4



ANALYTICAL SERVICES

07-May-02
Page 4 of 13

ANALYTICAL REPORT
Form 08097071

Client : HEALTH CANADA
Sampling site :
Submitted by : SANDRA GREEN

Philip ID : 12017364 12017365 12017366 12017367
Client ID : OWEEKENO GUILFORD KJNGCOME HOPETOWN

| Sparcode | Parameter | Unit | MDL | CDWC | | | | |
|---|---------------------------|------|---------|---------|-----------|-----------|-----------|-----------|
| CHLORINATED PHENOLS | | | | | | | | |
| EX9946Z7 | Water Prep for CPs | date | | | 02/04/01 | 02/04/01 | 02/04/01 | 02/04/01 |
| MCP2CPWA | 2-chlorophenol | mg/L | 0.001 | --- | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| MCP3CPWA | 3-chlorophenol | mg/L | 0.001 | --- | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| MCP4CPWA | 4-chlorophenol | mg/L | 0.001 | --- | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| CPB1CPWA | 2,3-Dichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CPH1CPWA | 2,4,6-DiClPhenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CPH2CPWA | 2,5-Dichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP09CPWA | 2,6-Dichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CPB3CPWA | 3,5-Dichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP03CPWA | 2,3,4-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP04CPWA | 2,3,5-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP05CPWA | 2,3,6-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP06CPWA | 2,4,5-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP07CPWA | 2,4,6-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP44CPWA | 3,4,5-Trichlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP02CPWA | 2,3,4,5-Tetrachlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| CP01CPWA | 2,3,4,5-TetraChlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| HU21CPWA | Pentachlorophenol | mg/L | 0.0001 | --- | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| SURROGATE RECOVERY | | | | | | | | |
| DC01SURK | CL2 Phenylaceticacid | % | | | 95 | 90 | 94 | 105 |
| BR3-CPWA | Tri-thromphenol | % | 40 | --- | 85 | 85 | 87 | 106 |
| HERBICIDES | | | | | | | | |
| EX995351 | Prep for Glyphosate | date | | | 02/03/28 | 02/03/28 | 02/03/28 | 02/03/28 |
| A001P012 | AMPA | mg/L | 0.05 | --- | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| HYDROCARBONS | | | | | | | | |
| H099PT11 | VH C6-C10 | mg/L | 0.1 | --- | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| EX995172 | Volat. Wat. Pro-Ser. | date | | | 02/03/28 | 02/03/28 | 02/03/28 | 02/03/28 |
| H09/CALC | VPHW | mg/L | | --- | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| POLYCYCLIC AROMATIC HYDROCARBONS | | | | | | | | |
| EX9946Z4 | PAH Extraction-Water | date | | | 02/04/01 | 02/04/01 | 02/04/01 | 02/04/01 |
| PA05MW02 | Benzo(a)pyrene | mg/L | 0.00002 | 0.00001 | < 0.00002 | < 0.00002 | < 0.00002 | < 0.00002 |

Matrix : Water Water Water Water
Sampler on: 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00

CONTINUED on page 5



ANALYTICAL SERVICES

07-May-02
Page 5 of 15

ANALYTICAL REPORT
Form 08097071

Client : HEALTH CANADA
Sampling site :
Submitted by : SANDRA GREEN

Philip ID : 12017364 12017365 12017366 12017367
Client ID : OWDDKDCNO GUILFORD KINGCOME HOPETOWN

| Spurcode | Parameter | Unit | MDL | CDWC | | | | |
|--|---------------------------|------|-----|-------|-------|-------|-------|-------|
| VOLATILE ORGANICS-MAH | | | | | | | | |
| B020MS11 | Benzene | ug/L | 0.5 | 5.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V919MS11 | Chlorobenzene | ug/L | 0.5 | 80.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V924MS11 | 1,2-Dichlorobenzene | ug/L | 0.5 | 200.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V925MS11 | 1,3-Dichlorobenzene | ug/L | 0.3 | --- | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| V926MS11 | 1,4-Dichlorobenzene | ug/L | 0.4 | 5.0 | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| B021MS11 | Ethylbenzene | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V921MS11 | Styrene | ug/L | 0.4 | --- | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| T001MS11 | Toluene | ug/L | 0.5 | 24.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| X RR42_5 | Xylenes | ug/L | 0.5 | 300.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| X003MS11 | m,p - Xylene | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| X002MS11 | o - Xylene | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| MTBEMS11 | Methyl t-butyl ether | ug/L | 5 | --- | < 5 | < 5 | < 5 | < 5 |
| VOLATILE ORGANICS-CHLORINATED ALIPHATIC | | | | | | | | |
| V903MS11 | Bromomethane | ug/L | 9 | --- | < 9 | < 9 | < 9 | < 9 |
| C034MS11 | Carbon tetrachloride | ug/L | 1 | --- | < 1 | < 1 | < 1 | < 1 |
| V904MS11 | Chloroethane | ug/L | 4 | --- | < 4 | < 4 | < 4 | < 4 |
| V914MS11 | 2-chloroethylvinylether | ug/L | 2 | --- | < 2 | < 2 | < 2 | < 2 |
| V901MS11 | Chloromethane | ug/L | 1 | --- | < 1 | < 1 | < 1 | < 1 |
| V909MS11 | 1,1-Dichloroethane | ug/L | 0.7 | --- | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| V912MS11 | 1,2-Dichloroethane | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V906MS11 | 1,1-Dichloroethane | ug/L | 0.4 | --- | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| V910MS11 | cis-1,2-Dichloroethane | ug/L | 0.4 | --- | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| V908MS11 | trans-1,2-Dichloroethane | ug/L | 0.7 | --- | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| V907MS11 | Dichloromethane | ug/L | 0.9 | --- | < 0.9 | < 0.9 | < 0.9 | < 0.9 |
| V913MS11 | 1,2-Dichloropropane | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V915MS11 | cis-1,3-Dichloropropene | ug/L | 0.4 | --- | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| V916MS11 | trans-1,3-Dichloropropene | ug/L | 0.3 | --- | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| V918MS11 | 1,2-Dibromoethane | ug/L | 1 | --- | < 1 | < 1 | < 1 | < 1 |
| V923MS11 | 1,1,2,2-Tetrachloroethane | ug/L | 0.5 | --- | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| T030MS11 | Tetrachloroethane | ug/L | 0.5 | 30.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| V911MS11 | 1,1,1-Trichloroethane | ug/L | 0.7 | --- | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| V917MS11 | 1,1,2-Trichloroethane | ug/L | 0.3 | --- | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| T029MS11 | Trichloroethene | ug/L | 0.6 | 50.0 | < 0.6 | < 0.6 | < 0.6 | < 0.6 |
| V905MS11 | Trichlorofluoromethane | ug/L | 4 | --- | < 4 | < 4 | < 4 | < 4 |

Matrix : Water Water Water Water
Sampled on: 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00 02/03/25 16:00

CONTINUED on page 6



ANALYTICAL SERVICES

07-May-02
Page 6 of 19

ANALYTICAL REPORT
Form 08097071

Client : HEALTH CANADA
Sampling site :
Submitted by : SANDRA GREEN

Philip ID : 12017364 12017365 12017366 12017367
Client ID : OWBEMENO GUILFORD KINGCOME HOPSTOWN

| Spccode | Parameter | Unit | MML | CDWC | | | | |
|--|----------------------|------|-----|-------|----------------------------|----------------|----------------|----------------|
| V902MS11 | Vinyl Chloride | ug/L | 1 | 2.0 | < 1 | < 1 | < 1 | < 1 |
| VOLATILE ORGANICS-TRIHALOMETHANES | | | | | | | | |
| B012MS11 | Bromodichloromethane | ug/L | 0.5 | 100.0 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| B013MS11 | Bromoform | ug/L | 0.4 | 100.0 | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| C032MS11 | Chloroform | ug/L | 0.6 | 100.0 | < 0.6 | < 0.6 | < 0.6 | < 0.6 |
| C033MS11 | Dibromochloromethane | ug/L | 0.4 | 100.0 | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| VOC SURROGATE RECOVERY | | | | | | | | |
| VS01VSUR | Bromofluorobenzene | % | 0 | --- | 85 | 93 | 86 | 85 |
| VS02VSUR | 1,1,2-dichloroethane | % | 0 | --- | 107 | 99 | 103 | 101 |
| VS03VSUR | m-Toluene | % | 0 | --- | 91 | 94 | 89 | 81 |
| | | | | | Matrix : Water | Water | Water | Water |
| | | | | | Sampled on: 02/03/25 16:00 | 02/03/25 16:00 | 02/03/25 16:00 | 02/03/25 16:00 |

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BCCDC LABORATORY SERVICES
655 12th Avenue West
Vancouver, B.C. V5Z 4R4

Fax: (604) 660-6073

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2001 MAR 9

HEALTH CANADA (CAMPBELL RIVER) - 342
OCCUPATIONAL & ENVIRONMENTAL HEALTH
1180 IRONWOOD ST SUITE 119
CAMPBELL RIVER BC V9W 5P7

Requisition : A0WW052866
Submitter Ref :

Specimen Submitter

: 342-HEALTH CANADA (CAMPBELL RI)

Site Information

Code/Name : 02N3190 - 02N3190
Site Desc : 4105, KINGCOME, HEALTH CENTER BAND, TAP, KINGCOME INLET
City/Area : Type : COM.W.S.
Source : Well

Specimen

Treatment : UNTREATED Ph Level : Free Chlorine Level : ppm
Nature : WATER Exams Req : Total Coliform
LHO : CAROL MACRAE : Fecal Coliform

Collected : 2001 MAR 6
Received : 2001 MAR 8

RESULTS

Reported on 2001 MAR 9

| <u>Test</u> | <u>Result</u> | <u>Units</u> |
|---|---------------|----------------|
| 1. Total Coliform (Membrane Filtration) | L1 | TC Count/100ml |
| 2. Fecal Coliform (Membrane Filtration) | L1 | FC Count/100ml |
| L: LESS THAN | | |

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Specimen was 48 hours in transit

BCCDC LABORATORY SERVICES

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**ENVIRONMENTAL
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Phone Number :

Printed : 2001 JUL 3

HEALTH CANADA (CAMPBELL RIVER) - 342
OPERATIONAL & ENVIRONMENTAL HEALTH
1150 BROADWOOD ST SUITE 119
CAMPBELL RIVER BC V9W 5P7

Requisition : A1WW016493
Submitter Ref :

Specimen Submitter

: 342-HEALTH CANADA (CAMPBELL RIVER)

Site Information

Code/Name : 0209629 - 0209629
Site Desc : DRINKING FOUNTAIN, KINGCOME SCHOOL, 4110
City/Area : Type : Public Waterworks System
Source : Well

Specimen

Treatment : UNTREATED Ph Level : Free Chlorine Level : ppm
Nature : WATER Exams Req : Total Coliform

BHO : CAROL MACRAE : Fecal Coliform

Collected : 2001 JUN 26
Received : 2001 JUN 28

RESULTS

Reported on 2001 JUL 3

| Test | Result | Units |
|---|--------|----------------|
| 1. Total Coliform (Membrane Filtration) | L1 | TC Count/100ml |
| 2. Fecal Coliform (Membrane Filtration) | L1 | FC Count/100ml |

L: LESS THAN

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please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit

**ENVIRONMENTAL
BACTERIOLOGY**

Phone Number :

Printed : 2001 JUL 3

HEALTH CANADA (CAMPBELL RIVER) - 342
OCCUPATIONAL & ENVIRONMENTAL HEALTH
1180 IRONWOOD ST SUITE 119
CAMPBELL RIVER BC V9W 5P7

Requisition : A1WW016498
Submitter Ref :

Specimen Submitter

: 342-HEALTH CANADA (CAMPBELL RI*

Site Information s.19(1)

Code/Name : 0209634 - 0209634

Site Desc : HOUSE OF

City/Area :

Type : Public Waterworks System

Source : Well

Specimen

Treatment :

Ph Level : Free Chlorine Level : ppm

Nature : WATER

Exams Req : Total Coliform

IHO : CAROL MACRAE

: Fecal Coliform

Collected : 2001 JUN 26

Received : 2001 JUN 28

RESULTS

Reported on 2001 JUL 3

| <u>Test</u> | <u>Result</u> | <u>Units</u> |
|---|---------------|----------------|
| 1. Total Coliform (Membrane Filtration) | L1 | TC Count/100ml |
| 2. Fecal Coliform (Membrane Filtration) | L1 | FC Count/100ml |
| L: LESS THAN | | |

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please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit

Centre for
Disease Control
Oxley

BCCDC LABORATORY SERVICES
655 13th Avenue West
Vancouver, B.C. V5Z 4R4

Fax: (604)660-6073

**ENVIRONMENTAL
BACTERIOLOGY**

Phone Number :

Printed :2001 JUL 3

HEALTH CANADA (CAMPBELL RIVER) - 342
OCCUPATIONAL & ENVIRONMENTAL HEALTH
1180 IRONWOOD ST SUITE 112
CAMPBELL RIVER BC V9W 5P7

Requisition :A1WW016499
Submitter Ref :

Specimen Submitter

:342-HEALTH CANADA (CAMPBELL RI*

s.19(1)

Site Information

Code/Name :0209635 - 0209635

Site Desc :4106, HOUSE OF (KITCHEN-COPIED FROM SAMPLE BOTTLE LABEL)

City/Area : Type :Public Waterworks System
Source :Well

Specimen

Treatment :UNTREATED Ph Level :Free Chlorine Level :ppm
Nature :WATER Exams Req :Total Coliform

EHO :CAROL MACRAE :Fecal Coliform

Collected :2001 JUN 26

Received :2001 JUN 28

RESULTS

Reported on 2001 JUL 3

| Test | Result | Units |
|---|--------|----------------|
| 1. Total Coliform (Membrane Filtration) | L1 | TC Count/100ml |
| 2. Fecal Coliform (Membrane Filtration) | L1 | FC Count/100ml |
| L:LESS THAN | | |

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For inquiries from medical personnel regarding laboratory results, please contact the Central Inquiry Line at 604-660-5200.

Specimen was 48 hours in transit

BCCDC LABORATORY SERVICES

The Province's center of expertise in communicable disease control and provider of specialty health support services.

ENVIRONMENTAL
BACTERIOLOGY

Phone Number :

Printed : 2002 JAN 14

Requisition : A1WW052105

Submitter Ref :

HEALTH CANADA (CAMPBELL RIVER) - 342
OCCUPATIONAL & ENVIRONMENTAL HEALTH
1180 IRONWOOD ST SUITE 119
CAMPBELL RIVER BC V9W 5P7

Specimen Submitter

: 342-HEALTH CANADA (CAMPBELL RI*

Site Information

Code/Name : 02S1851 - 02S1851
Site Desc : KINGCOME INLET, HEALTH CENTER, KINGCOME
City/Area : Type :
Source : Well

Specimen

Treatment: UNTREATED Ph Level: Free Chlorine Level: ppm
Nature : WATER Exams Req : Total Coliform
HO : S.GREEN : Fecal Coliform

Collected: 2002 JAN 8
Received: 2002 JAN 10

RESULTS

Reported on 2002 JAN 14

| <u>Test</u> | <u>Result</u> | <u>Units</u> |
|---|---------------|----------------|
| 1. Total Coliform (Membrane Filtration) | L1 | TC Count/100ml |
| 2. Fecal Coliform (Membrane Filtration) | L1 | FC Count/100ml |
| L: LESS THAN | | |

For inquiries from medical personnel regarding laboratory results,
please contact the Central Inquiry Line at 604-660-5100.

Specimen was 48 hours in transit
Coliform test may NOT be valid if specimen was more than 30 hrs in transit



August 25, 2000

Health Canada
Inuit & Native Health Br
119-1180 Ironwood St.
Campbell River, B.C. V9W 5P7

Your file Votre référence

Our file Notre référence

FAXED

Tsawataineuk Band Council
General Delivery
Kingcome Inlet, B.C. V0N 2B0

Attn: Band Council

During a visit to the village of Kingcome on Aug. 22/00, Environmental Health Officer Denis Hayes and I observed the following conditions that are a health & safety concern to the community.

WATER

1. All fire hydrants except the one closest to the pumphouse are inoperative. It is recommended to install hoses, hydrant wrench and adequate lighting by each of the fire hydrants to ensure they are in proper working condition.
2. The automatic controls on the pumphouse are not working and in the present state need to be set manually. It is recommended to put the automatic controls back into working order to ensure a consistent flow of water.
3. Some concerns were raised regarding the taste of the water. As this system produces a large volume of water, the water may sit in the distribution pipes during periods of low consumption. As a result the water distribution lines should be flushed on a regular basis. This will help to provide a fresh supply of water to the homes. Routine water samples were taken for bacteriological and chemical analysis. The results will be forwarded to you once tests are completed.

SEWAGE DISPOSAL

1. The pump out of the septic tanks and the disposal of the contents has once again fallen behind schedule.
The septic tanks should be pumped out on routine basis. Ideally, as a minimum one third of the houses should be pumped out each year. This will ensure each house is on a scheduled pump out at least once every three years. More may be required depending on usage.

File No. N9728

RESULTS OF ANALYSIS - Water



Sample ID Kingcome
Inlet
Sample Date 02 01 08
Sample Time 13:00
ALS ID 1

Physical Tests

| | | |
|------------------------|------------|------|
| Colour | (CU) | 11 |
| Conductivity | (umhos/cm) | 218 |
| Total Dissolved Solids | | 144 |
| Hardness | CaCO3 | 94.6 |
| pH | | 8.30 |
| Turbidity | (NTU) | 0.5 |

Dissolved Anions

| | | | |
|------------------|-----|-------|------|
| Alkalinity-Total | | CaCO3 | 107 |
| Chloride | Cl | | 5.4 |
| Fluoride | F | | 0.11 |
| Sulphate | SO4 | | <1 |

Nutrients

| | | | |
|------------------|--|---|------|
| Nitrate Nitrogen | | N | <0.1 |
| Nitrite Nitrogen | | N | <0.1 |

Remarks regarding the analyses appear at the beginning of this report.
Results are expressed as milligrams per litre except for pH, Colour (CU),
Conductivity (umhos/cm), and Turbidity (NTU).
< = Less than the detection limit indicated.

Analysis Report

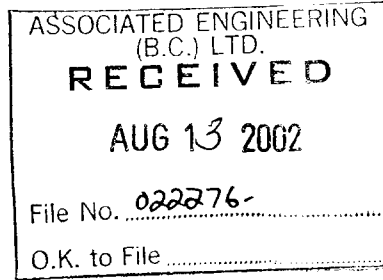
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REPORT ON: Analysis of Water Samples

Professional
Analytical
Services

REPORTED TO: Associated Engineering Ltd.
Suite 300
4940 Canada Way
Burnaby, B.C.
V5G 4M5



4606 Canada Way
Burnaby, B.C.
V5G 1K5

Fax: 604 731 2386

Tel: 604 734 7276

1 800 665 8566

Att'n: Mr. Rob Blakeney

CHAIN OF CUSTODY: 55606
PROJECT NAME: Tsawtaineuk (Kingcome Inlet)

NUMBER OF SAMPLES: 2

REPORT DATE: August 6, 2002

DATE SUBMITTED: July 26, 2002

GROUP NUMBER: 30726051

SAMPLE TYPE: Water

NOTE: Test results contained in this report refer only to the testing of samples submitted.

TEST METHODS:

pH, Laboratory - pH analysis was performed in the laboratory using a pH meter. It must be recognized that the B.C. Ministry of Environment and other regulatory agencies recommend that pH be analyzed immediately upon sample collection. In light of this, pH measurements should be performed in the field.

Conventional Parameters - analyses were performed using procedures based on those described in "British Columbia Environmental Laboratory Manual For the Analysis of Water, Wastewater, Sediment and Biological Materials" (1994 Edition), Province of British Columbia and "Standard Methods for the Examination of Water and Wastewater" 20th Edition, (1998), published by the American Public Health Association.

Metals in Water - analysis was performed using Inductively Coupled Plasma Optical Emission Spectroscopy (ICP), Inductively Coupled Plasma-Mass Spectroscopy (ICP/MS) or Graphite Furnace Atomic Absorption Spectrophotometry.

TEST RESULTS:

(See following pages)

CANTEST LTD.

Richard S. Jornitz
Supervisor, Inorganic Testing

REPORTED TO: Associated Engineering Ltd.

REPORT DATE: August 6, 2002

GROUP NUMBER: 30726051



Conventional Parameters in Water

| CLIENT SAMPLE IDENTIFICATION: | Well | Verona Residence | | |
|-------------------------------|-----------|------------------|-----------------|------------|
| DATE SAMPLED: | Jul 25/02 | Jul 25/02 | | |
| CANTEST ID: | 207260173 | 207260175 | DETECTION LIMIT | UNITS |
| pH, Laboratory | 8.04 | 7.76 | - | pH units |
| Conductivity | 203 | 214 | 1 | μ S/cm |
| True Color | 5 | 5 | 5 | CU |
| Turbidity | 0.22 | 0.45 | 0.1 | NTU |
| Hardness CaCO3 | 97 | 96 | 1 | mg/L |
| Total Dissolved Solids | 150 | 158 | 10 | mg/L |

μ S/cm = microsiemens per centimeter
NTU = nephelometric turbidity units

CU = color units
mg/L = milligrams per liter

REPORTED TO: Associated Engineering Ltd.

REPORT DATE: August 6, 2002

GROUP NUMBER: 30726051



Metals Analysis in Water

| CLIENT SAMPLE IDENTIFICATION: | | Well | Verona Residence | |
|-------------------------------|------|-----------|------------------|-----------------|
| SAMPLE PREPARATION: | | TOTAL | TOTAL | |
| DATE SAMPLED: | | Jul 25/02 | Jul 25/02 | |
| CANTEST ID: | | 207260173 | 207260175 | DETECTION LIMIT |
| Aluminum | Al | < | < | 0.05 |
| Antimony | Sb | < | < | 0.2 |
| Arsenic | As | < | < | 0.03 |
| Barium | Ba | 0.001 | 0.001 | 0.001 |
| Beryllium | Be | < | < | 0.003 |
| Boron | B | 0.01 | 0.01 | 0.01 |
| Cadmium | Cd | < | < | 0.025 |
| Calcium | Ca | 28.3 | 28.9 | 0.01 |
| Chromium | Cr | < | < | 0.03 |
| Cobalt | Co | < | < | 0.02 |
| Copper | Cu | < | < | 0.02 |
| Iron | Fe | 0.03 | 0.04 | 0.01 |
| Lead | Pb | < | < | 0.03 |
| Magnesium | Mg | 8.53 | 8.57 | 0.05 |
| Manganese | Mn | 0.045 | 0.046 | 0.003 |
| Molybdenum | Mo | < | < | 0.04 |
| Nickel | Ni | < | < | 0.03 |
| Phosphorus | PO4 | < | < | 0.4 |
| Potassium | K | 2.2 | 2.4 | 0.25 |
| Silicon | SiO2 | 32.1 | 32.5 | 0.1 |
| Silver | Ag | < | < | 0.03 |
| Sodium | Na | 7.7 | 7.7 | 0.1 |
| Strontium | Sr | 0.098 | 0.098 | 0.001 |
| Tin | Sn | < | < | 0.03 |
| Titanium | Ti | < | < | 0.006 |
| Vanadium | V | < | < | 0.01 |
| Zinc | Zn | < | < | 0.005 |
| Zirconium | Zr | < | < | 0.02 |

Results expressed as milligrams per liter (mg/L)
 < = Less than detection limit