



Indian and Northern
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Your file - Votre référence

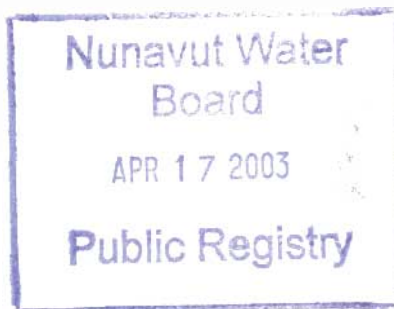
Our file - Notre référence

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March 20, 2003

NWB2HOP0002

Hugh Wilson
Manager, Environmental Affairs
Hope Bay Joint Venture
906 - 595 Howe Street
Vancouver, BC, V6C 2T5



RE: August 20, 2002 Water Licence Inspection - Report

The Water Resources Officer (WRO) appreciates the assistance provided during the tour of Windy Lake's Camp water use and waste disposal facilities. Enclosed for your records is a copy of the Industrial Water Use Inspection Report performed on August 20, 2002. During the inspection the following observations were noted.

- ☐ **Water Supply:** The Water Intake is located 30 meters from the dock on Windy Lake. A gas-powered pump was located on the dock by the Water Intake Structure (Photo 1). There was no spill protection equipment in the vicinity of the gas-powered pump adjacent to the water supply. A spill kit or other form of spill protection should be supplied in this area. The Ultra Violet Water Disinfection System was operational at the time of inspection (Photo 2). Enclosed water samples taken at the dock on Windy Lake indicate that pH (7.74 vs 6.5- 8.5), Colour (<5 TCU vs 15 TCU), Arsenic (<0.001 mg/L vs 0.025 mg/L), Cadmium (<0.0003 mg/L vs 0.005 mg/L), Iron (0.17 mg/L vs 0.3 mg/L), Lead (0.001 mg/L vs 0.01 mg/L), Zinc (<0.01 mg/L vs 5 mg/L) are found to be within the *Guidelines for Canadian Drinking Water Quality*.
- ☐ **Waste Disposal:** Wastewater is collected in a sewage reservoir. Collected wastewater is transferred to (Photo 4) the Rotating Biological Contractor (RBC), where microbial action breaks down the nutrient load in the sewage effluent (Photo 3). After treatment in the RBC the sewage effluent is transferred to a holding tank (Photo 7). When sufficient volume is achieved, the holding tank is discharged on land 120 meters from the camp site (Photo 5). No removal of sewage sludge has occurred from the RBC in 2002. Enclosed samples of

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effluent taken from the RBC indicate that pH (7.13 vs 6.5-8.5) is in compliance with Licence Discharge Criteria. Combustible garbage is burned in the camp incinerator. Non-combustible wastes are stockpiled for shipment out of the camp.

- ☐ **Fuel and Chemical Storage:** The fuel storage area is not fully bermed (Photo 6 & 9). The cleanup of Spill (02-451) 7,000 liters of diesel fuel is well under way. Most of the contaminated soil has been excavated and drummed (Photo 7 & 10). The soil has been removed to the permafrost layer. Samples of water taken from Windy Lake indicated that no fuel oil made its way to the water. All fuel containment and storage equipment will be stored in an area that is equipped with secondary spill protection. This spill protection will include a berm to prevent the unauthorized release of chemical or fuel from all storage and transfer vessels. An impermeable liner will be installed within all berm areas to eliminate the escape of spilled chemicals. All berm areas are to be monitored for snow and water accumulation to insure sufficient spill containment volume (at least %120) of all storage containers. Prior to discharge of snow or water from berm area, contents are to be tested for chemical or oil content and if required berm contents will be drummed and shipped off site for destruction or recycling by a Licenced Hazardous Waste Treatment Facility. (Photo 11 & 12).
- ☐ **Non-Compliance of Act:** Hope Bay Joint Ventures has failed to provide SNP measurements for the 2002 year as required in (Part E Item 4 of) the Industrial Water Licence. No revised Spill Contingency Plan (Part F Item 2) has been submitted for 2002. Hope Bay has caused an unauthorized discharge of Fuel Oil into the environment (Spill 02-451). This is in contravention of Section 12 under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* for the use of water and disposal of waste.

If there are any concerns or questions in regards to this inspection, please contact me at (867) 975 4298 or bodykevichc@inac.gc.ca.

Sincerely,



Constantine Bodykevich
Water Resources Officer (WRO)
INAC, Nunavut District

- cc.
- Nunavut Water Board, Gjoa Haven (Dionne Filiatrault)
 - CG&T, Iqaluit (Doug Sitland)
 - Baffin Health & Social Services, Iqaluit (Bruce Trotter)
 - EC Environmental Protection, Yellowknife (Anne Wilson)
 - INAC Water Management, Iqaluit (Michelle Mc Christie)



Indian and Northern
Affairs Canada

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INDUSTRIAL WATER USE INSPECTION REPORT

Date: August 20, 2002 **Company Rep. (Name/Title):** Hugh Wilson/ Manager Environmental Affairs

Licensee: Miramar Hope Bay/ Hope Bay Gold,
Windy Lake

Licence No.: NWB2HOP0002

WATER SUPPLY

Source(s): Windy Lake

Quantity used: Not Recorded

Meter Reading: None

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A **Storage Structure:** A **Treatment Systems:** A **Recycling:** NA

Flow Meas. Device: NA **Conveyance Lines:** A **Pumping Stations:** NA **Modifications:** NA

Comments: Of concern was the presents of a gas powered pump located on Windy Lake on top of the dock within 30 meters of the Water Intake Structure . No spill protection or absorbent equipment was observed in the vicinity of the gas powered pump. A spill kit is required in this area.

WASTE DISPOSAL

Tailings: **Tailings Pond:** **Natural Lake:** **Underground:**

Sewage: **Sewage Treatment System:** RBC **Tailings Pond:** **Natural Water Body:**
Continuous Discharge: Intermittent Discharge: X

Solid Waste: **Open Dump:** **Landfill:** **Burn & Bury:** X **Underground:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: Sampled **Decant Structure:** A **Dyke Inspections:** NA

Conveyance Lines: A **Pond Treatment:** NA **Runoff Diversion:** NA

Discharge Meas. Device: NA **Dams, Dykes:** NA **Erosion:** A

Freeboard: NA **Seepages:** NA **Spills:** 02-451

Effluent Discharge Rate: NI **Samples Collected:** Potable water @ Windy Lake, sewage effluent @ Sewage System discharge

Comments: The Rotating Biological Contractor was operating in accordance with specifications. Final discharge of the Sewage Treatment System is 120 meters from the main camp. The incinerator was operational with non combustible waste being stockpiles for shipment off site for disposal.

GENERAL CONDITIONS

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Ore & Waste Rock Stockpiles: NA **Records & Reporting:** A **SNP:** U

Geotechnical Inspection: NA **Posting/Signage:** U **Contingency Plan:** A

Restoration Activities: NA **New Construction:** A **Fuel Storage:** U

Mine Water Discharge: NA **Chemical Storage:** A **Annual Report:** A

Comments: A large number of drums and stockpile of non combustible waste were located within 30 meters of the high water mark. Any drums or waste should be located no closer than 30 meters from the high water mark. Any and all drums containing chemicals, oil and or fuel oil should be stored within a lined bermed area. No visible SNP signs were observed to indicate sampling locations.

Violations of Act or Licence: The Licencee has caused a unauthorized release into the environment in the form of, Spill (02-451) 7,000 liters of diesel fuel on August 1, 2002. Miramar has failed to submit the following reports, SNP measurements for 2002 as required under (Part E Item 4) a revised Spill Contingency Plan as required under (Part F Item 2) of the Water Licence. Failure to submit required documentation constitutes a breach of the Nunavut Waters and Nunavut Surface Rights Tribunal Act

General Comments: All fuel containment and storage equipment shall be stored in a bermed area that is lined with an impermeable Prior to any discharge of snow or water from within the berm area the contents shall be tested for chemical or oil content, and if required contents shall be stored and handled as hazardous waste. Until the contents are shipped offsite for licenced destruction or recycling.

Constantine Bodykevich

Inspector's Name

Inspector's Signature

Windy Camp Inspection Pictures 2002



Photo # 1. Potable water supply intake on Windy Lake at right of photo, location of drinking water sample.

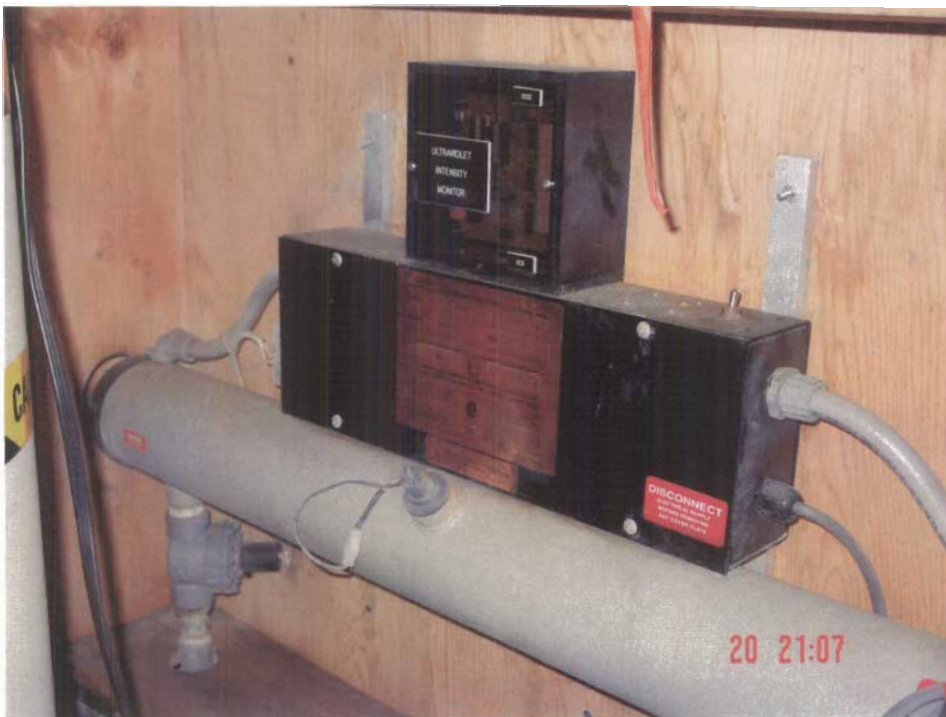


Photo # 2. Ultra Violet Disinfection System for potable water.



Photo # 3. Sewage treatment system Rotating Biological Contactor.



Photo # 4. Interior workings of Rotating Biological Contactor.



Photo # 5. Sewage system effluent discharge on land behind Windy Camp.



Photo # 6. Fuel storage and bulk staging areas.



Photo # 7. Location of sewage reservoir prior to discharge behind Windy Camp.

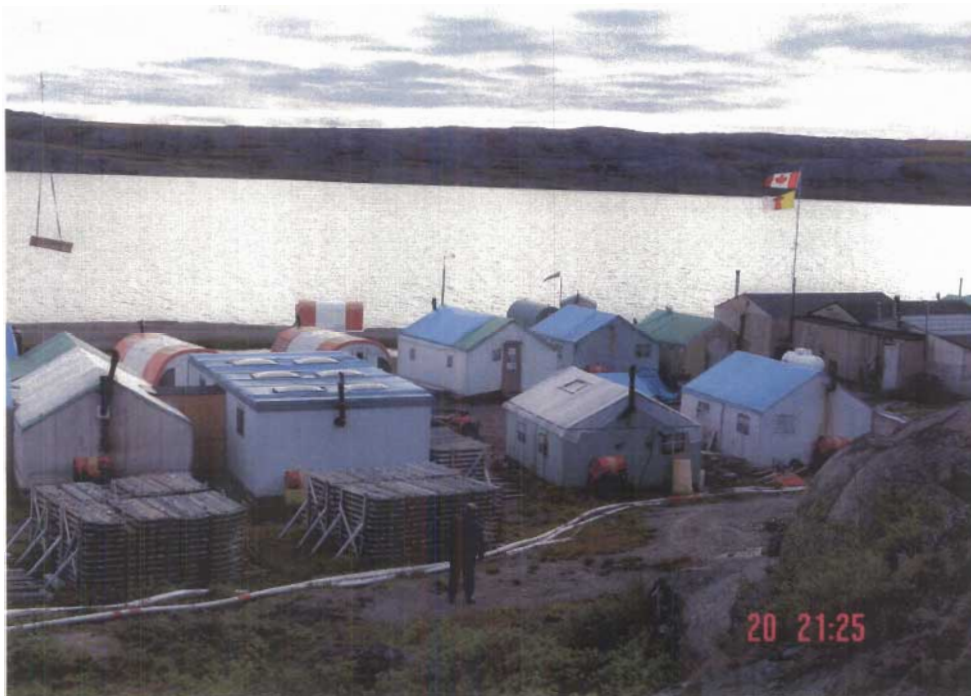


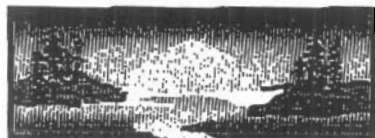
Photo # 8. Sewage lines to holding tank at back of Windy Camp.



Photo # 9. Location of fuel oil spill (02-451) and staging area.



Photo # 10. Spill (02-451) cleanup at Windy Camp.



Taiga Environmental Laboratory
1601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2R3

Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

Attn: Constantine Bodykev1

Sample ID: windy camp pot water

Taiga Sample ID: 222510

Client Project:

Sample Type:

potable

Received Date: 26-Aug-02

Location:

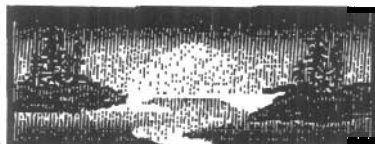
Windy Camp

Sampling Date: 19-Aug-02

Report Status: Amended

Approved by: _____

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Physicals					
Alkalinity	47.2	mg/L	0.3	16-Sep-02	10
Colour	<5		5	16-Sep-02	
Conductivity, Specific	421	µS/cm	0.3	16-Sep-02	
pH	7.74	pH units	0.05	16-Sep-02	
Major Ions					
Calcium	10.9	mg/L	0.05	29-Aug-02	
Chloride	91.0	mg/L	0.2	29-Oct-02	
Hardness as CaCO ₃	67.9	mg/L	0.17	29-Aug-02	
Magnesium	9.88	mg/L	0.02	29-Aug-02	
Potassium	4.00	mg/L	0.03	28-Aug-02	
Silica, Reactive	0.62	mg/L	0.02	12-Sep-02	
Sodium	53.5	mg/L	0.02	28-Aug-02	
Metals, Total					
Aluminum	122	µg/L	30	30-Aug-02	
Antimony	1.2	µg/L	0.5	30-Aug-02	



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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

Attn: Constantine Bodykevi

Sample ID: windy camp pot water

Taiga Sample ID: 222510

Arsenic	<1.0	µg/L	1	24-Oct-02
Barium	3	µg/L	1	30-Aug-02
Beryllium	<2	µg/L	2	30-Aug-02
Cadmium	<0.3	µg/L	0.3	30-Aug-02
Cesium -	<0.4	µg/L	0.4	30-Aug-02
Chromium	<3	µg/L	3	30-Aug-02
Cobalt	<1	µg/L	1	30-Aug-02
Copper	3	µg/L	2	30-Aug-02
Iron	170	µg/L	30	25-Oct-02
Lead	1	µg/L	1	30-Aug-02
Lithium	4	µg/L	3	30-Aug-02
Manganese	4	µg/L	1	30-Aug-02
Molybdenum	<1	µg/L	1	30-Aug-02
Nickel	<1	µg/L	1	30-Aug-02
Rubidium	2.3	µg/L	0.5	30-Aug-02
Selenium	<10	µg/L	10	30-Aug-02
Silver	<0.3	µg/L	0.3	30-Aug-02
Strontium	53	µg/L	1	30-Aug-02
Thallium	0.4	µg/L	0.4	30-Aug-02
Titanium	6	µg/L	3	30-Aug-02
Uranium	<0.3	µg/L	0.3	30-Aug-02
Vanadium	<1	µg/L	1	30-Aug-02
Zinc	<10	µg/L	10	30-Aug-02



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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

Attn: Constantine Bodykevi

Sample ID: windy camp pot water

Taiga Sample ID: 222510

Data Qualifier Descriptions:

10 Analyst error, unable to repeat measurement



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Tel: (867)-669-2788
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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

Attn: Constantine Bodykevi

Sample ID: windy camp sewage

Taiga Sample ID: 222511

Client Project:

Sample Type: sewage

Received Date: 26-Aug-02

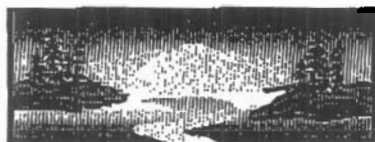
Location: windy Camp

Sampling Date: 19-Aug-02

Report Status: Amended

Approved by: _____

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
<u>Physicals</u>					
Alkalinity		mg/L	0.3	16-Sep-02	10
Colour	400		5	16-Sep-02	
Conductivity, Specific	1440	µS/cm	0.3	16-Sep-02	
pH	7.13	pH units	0.05	16-Sep-02	
<u>Major Ions</u>					
Calcium	3.48	mg/L	0.05	29-Aug-02	
Chloride	181	mg/L	0.2	06-Sep-02	
Hardness as CaCO ₃	19.6	mg/L	0.17	29-Aug-02	
Magnesium	2.65	mg/L	0.02	29-Aug-02	
Potassium	26.0	mg/L	0.03	28-Aug-02	
Silica, Reactive	8.24	mg/L	0.02	12-Sep-02	
Sodium	124	mg/L	0.02	28-Aug-02	



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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

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Sample ID: windy camp sewage

Taiga Sample ID: 222511

Data Qualifier Descriptions:

10 Analyst error, unable to repeat measurement