

Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

Nunavut Regional Office
P.O. Box 2200
Iqaluit, NU, X0A 0H0

Your file - Votre référence

Our file - Notre référence

February 3, 2006

Philippe di Pizzo
Executive Director
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0E 1J0
tel.: (867) 360-6338
fax.: (867) 360-6369

RE: NWB Permit No. NWB5RES0308 Annual Report

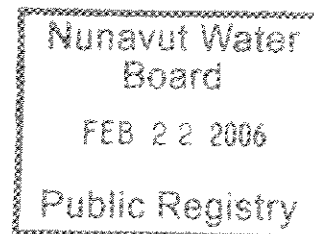
Mr di Pizzo:

Please find enclosed three (3) copies of the annual report prepared in accordance to the General Conditions of the waters licences for the Resolution Island project. A copy of *Summary of Technical Activities 2005 - Resolution Island Project* prepared by QC/QE, supporting the annual report, is also provided. Also as a supporting document, a copy of *Scientific Investigations - Resolution Island 2005* prepared by Queen's University ASU, not yet published, will be provided in the next few weeks.

Should you have any questions regarding the submitted documents, please contact us.

Sincerely,

Lou Spagnuolo
Contaminated Site Project Officer
Tel: 867-979-7936
Fax: 867-975-4939
E-mail: spagnuolo@inac.gc.ca

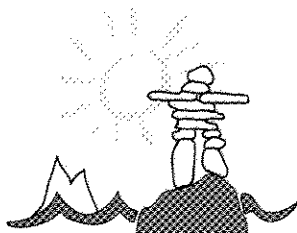


cc. Harry Flaherty, Qikiqtaaluk Corporation
Philippe Simon, Qikiqtaaluk Environmental

ANNUAL REPORT

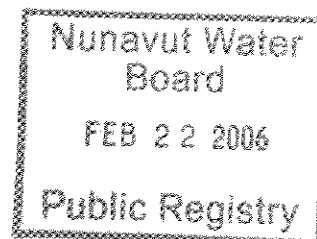
Water Licence No. NWB5RES0308

RESOLUTION ISLAND PROJECT



Resolution Island, Nunavut

Report submitted to:



by:



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada



ᑭᑭᑭᑭᑭᑭ ᑭᑭᑭᑭᑭᑭ
QIQTAALUK CORPORATION



ᑭᑭᑭᑭᑭᑭ ᑭᑭᑭᑭᑭᑭ
QIQTAALUK ENVIRONMENTAL

January 2006

EXECUTIVE SUMMARY

As part of the Resolution Island clean up Project, Qikiqtaaluk Corporation (QC) holds, on behalf of Indian and Northern Affairs Canada (INAC), a Water Licence (NWB5RES0308) from the Nunavut Water Board. The annual report, in compliance with the licence, presents various information in the following sections:

- a. Fresh Water Quantities
- b. Sewage Water Quantities
- c. Waste Discharge
- d. Summary of Construction Work
- e. Surveillance Network Program
- f. Environmental Monitoring Program
- g. Anticipated Work
- h. Studies Requested
- i. Unauthorized Discharges
- j. Communication Exercises
- k. Operation and Maintenance Plan
- l. Contingency Plan Revisions
- m. Trenches and Sumps
- n. Clean Up Procedures
- o. Public Consultation
- p. Concerns Addressed
- q. Other Details
- r. Inuktitut Executive Summary

In reference to this annual report, several documents are appended. In summary, during the 2005 season all conditions of the Water Licence were complied with.

GENERAL CONDITIONS

As licensees, Qikiqtaaluk Corporation (QC) and Indian and Northern Affairs Canada (INAC) have implemented various procedures to comply with conditions described in the Water Licence (issued on August 29, 2003) related to the Resolution Island Project. The following document summarizes water use data and describes various activities conducted on-site as required by the General Conditions of the Permit.

a. Fresh Water Quantities

Lower Lake, used as the water supply, is located in a relatively undisturbed area (Lower Lake borrow pit nearby was last used in 2001) at approximately 3.2 km (in a straight line) from camp and 1.6 km from the nearest traffic and construction activities. During the work season fresh water was pumped from the supply lake into an 11 m³ water truck and delivered to 3 (5,265-litre) polyethylene tanks located in the core camp. Fresh water was mainly used for sanitary and kitchen uses and for fire drills. The following table presents the monthly and annual quantities of fresh water used for the project. Estimates are based on the average number of truck loads per week.

Period	June	July	August	September
Water volume used (m ³)	125	565	565	110
Total volume (m ³)	1365			

The permit stipulates that no more than 600 m³ of fresh water per month be used (*i.e.*, approximately 20 m³/day). This requirement was met.

b. Sewage Water Quantities

Sewage water was discharged from the core camp through a single pipe into the sewage lagoon. Monthly and annual estimates are presented in the following table.

Period	June	July	August	September
Sewage volume generated (m ³)	105	455	455	95
Total volume (m ³)	1110			

c. Waste Discharge

Solid waste produced during on-site activities was transferred to a covered metal vault outside the core camp on a daily basis and incinerated using a double chamber forced-air Westland incinerator. Solid waste mainly originated from the kitchen operations and from discarded packaging of materials and supplies. The following table presents the monthly and annual quantities of solid waste managed during the 2005 field season at Resolution Island. Estimates are based on the assumption that every person in the camp generated, on average, approximately 2.5 kg of solid waste per day.

Period	June	July	August	September
Waste generated (M.T.)	1	3.9	3.9	1
Total (M.T.)	9.8			

d. Summary of Construction Work

Construction activities conducted at Resolution Island during the 2005 season are summarized in a report submitted to Indian and Northern Affairs Canada (INAC) in January 2006 by Qikiqtaaluk Corporation and Qikiqtaaluk Environmental Inc. Inc. (see appended document: *Summary of Technical Activities - 2005 - Resolution Island Project*).

e. Surveillance Network Program

Field activities that could generate environmental impacts have been evaluated and are presented in the document entitled *Environmental Screening Report* submitted with the permit application. As part of the Surveillance Network Program (SNP), water from the new supply lake (sampling station # RES-1) was sampled and analyzed.

The SNP analytical results are presented in Table I at the end of this document. These results can also be found in the document entitled *Resolution Island 2005 - Scientific Investigations* prepared by Queen's University Analytical Services Unit (ASU) (see appended document). Furthermore, the Quality Assurance and Quality Control (QA/QC) program used for the SNP is also included in this appended document.

Because of low pH values in the drinking water, pH adjustment was carried out throughout the season by adding sodium carbonate to the camp water storage tanks thereby increasing the pH value to within the required range of 6.5 - 8.5.

f. Environmental Monitoring Program

Details of the Environmental Monitoring Program conducted during the 2005 season are described in the document entitled *Resolution Island 2005 - Scientific Investigations* prepared by Queen's University ASU (see appended document). The long-term post-construction monitoring program,

submitted to NWB, will be implemented in 2006.

g. Anticipated Work

The tasks anticipated for the 2006 field season are listed below:

Logistics

- Mobilization and demobilization: mobilize mid-July, demobilize mid-August. A smaller crew will be required (20-25),
- Off site Sea lift: off site shipment of all remaining equipment and supplies representing over 5000 m³ of shipment,
- Wranglers and drums will be purchased for the barriers contaminated soils and other waste off site shipment.

Camp conversion

- The training centre will be converted into a small camp,
- The kitchen trailer will be removed from the camp and connected to the small camp,
- The small camp waste water treatment facility will be improved.

Demobilisation

- All construction camp material and supplies will be packaged into seacans,
- Seacans, crates, material and vehicles will be hauled to the beach barging area,

Demolition

- The remaining camp buildings will be demolished and landfilled on site.

Clean Fill

- Production of approximately 1,000 m³ of granular materials as gravel from borrow sources as cover material for the demolished camp buildings and to regrade and landscape the borrow area used in the past.

Tier II landfill

- A final survey will be conducted; UMA/EBA will be provided with the results,
- Based on the results, some type 1 will be added if required,
- The data will be downloaded from the thermistors and sent to UMA/EBA

Other Tasks

- Open roads,
- Continue to implement pH control of drinking water, if necessary,
- Continue Surveillance Network Program (SNP),
- Re-contour site, remove road to water lake and S1/S4 beach,
- Back fill sump and remove sewage piping from old camp

h. Studies Requested

No studies related to waste disposal, water use or reclamation were requested by the Board.

I. Unauthorized Discharges

No unauthorized discharges of liquid or solid waste were observed and/or recorded during the 2005 field season at Resolution Island.

j. Communication Exercises

All site workers (including sub-contractors) were instructed on camp rules and safety requirements. Drills were conducted for fire emergency and spill prevention events. Fire safety and spill contingency plans were implemented.

k. Operation and Maintenance Plan

Details of the operation and maintenance (O&M) plan were initially presented in the project Specifications and Environmental Protection Plan submitted with the first permit application in 1998. No major revisions to the initial plan have been implemented.

l. Contingency Plan Revisions

Details of the contingency plan were initially presented in the project Specifications and Environmental Protection Plan and submitted with the permit application. A Spill Contingency plan was submitted to NWB in September 1998 and was revised at the end of the 1999 field season and resubmitted. Further revisions were added during the 2001 season and an improved version was submitted to the NWB in October 2001.

m. Trenches and Sumps

No new trenches or sumps were excavated during the 2005 season.

n. Clean Up Procedures

During the 2005 season, remedial activities included:

- PCB Clean Up: Excavation and removal of the CEPA PCB soil from the S1/S4 beach and the S1/S4 Valley.
- PCB Containerization and Storage: Screening of CEPA soil from the S1/S4 beach and the S1/S4 Valley behind the B2 building and containerization.
- Tier II Landfill: Gravel production at Radio Hill and Airstrip borrow pits; completed construction of landfill: protective bottom sand layer (Type 4); landfilling of the contaminated soils (Tier II, Tier I and contaminated debris); installation of the final

membrane layers and closure of the landfill: three layers of different grades clean fill.

- Heavy hydrocarbon soils excavation: Heavy hydrocarbon soils were excavated at the Barrel Cache and containerised on 26 small steel containers. In addition 4 similar containers were filled with heavy contaminated soils previously containerised in wooden boxes and 1 was filled with contaminated soils from the POL tank area across the Tier II landfill.
- Other Activities: Covering of S4 slab building with clean soil; landfilling of non-hazardous waste in the non-hazardous waste landfills; incineration of waste POL products; decontamination of the fuel contaminated with water during the winter time; POL tanks dismantling; renovation of the training centre; shred drums and debris at beach non-hazardous landfill.
- PCB Off-Site Shipment and Disposal: Shipment of 339 containers (i.e., 1,812 M.T.) of PCB contaminated soil to the Bennett disposal facility in Québec as well as hazardous waste: PCB and non-PCB debris.

Otherwise, details on these activities are summarized in a report submitted to Indian and Northern Affairs Canada in January 2006 by Qikiqtaaluk Corporation and Qikiqtaaluk Environmental Inc. Inc. (see appended document: *Summary of Technical Activities - 2005 - Resolution Island Project*).

o. Public Consultation

Public consultations/meetings were held with local organizations or residents of Kimmirut, Pangnirtung and Iqaluit in March 2005. The presentation provided to these communities are presented as an appendix to this report.

p. Concerns Addressed

No concerns or deficiencies related to the project were addressed during this past year.

q. Other Details

No other details on water use or waste disposal were requested by the Board.

r. Inuktitut Executive Summary

The executive summary in Inuktitut of *Resolution Island Water Licence Annual Report 2005*, INAC/QC/Qikiqtaaluk Environmental Inc., is presented at the beginning of this report. The executive summary in Inuktitut of *Summary of Technical Activities - 2005 - Resolution Island Project*, QC/Qikiqtaaluk Environmental Inc., is presented as part of that report and attached to the current document. The executive summary of *Resolution Island 2005 - Scientific Investigations*, Queen's University ASU is being translated in Inuktitut and will be forwarded to NWB within the next few

weeks.

TABLE I: SNP Sampling Results

Parameter	Units	CCME Water Quality Guidelines	Station Numbers (top) / Sample ID (bottom)				
			RES-1	RES-2 ¹	RES-3 ¹	RES-4 ²	RES-5 ²
			RI05-W004	-	-	-	-
Copper	mg/L	1	0.018	-	-	-	-
Iron	mg/L	0,3	0.09	-	-	-	-
Lead	mg/L	0,01	< 0.005	-	-	-	-
Manganese	mg/L	0,05	.113	-	-	-	-
Mercury	mg/L	0,001	<0.0001	-	-	-	-
Cadmium	mg/L	0,005	<0.001	-	-	-	-
Nickel	mg/L	-	0.082	-	-	-	-
Chromium	mg/L	0,05	<0.005	-	-	-	-
Cobalt	mg/L	-	0.018	-	-	-	-
Zinc	mg/L	5	0.044	-	-	-	-
Phenols	µg/L	-	<1.0	-	-	-	-
pH	-	6.5-8.5	4.64	-	-	-	-
TSS	mg/L	< 500	<4.0	-	-	-	-
Nitrate	mg/L	< 10 ³	<0.05	-	-	-	-
Nitrite	mg/L	< 1.0 ³	<0.05	-	-	-	-
Oil and Grease	mg/L	-	<1.0	-	-	-	-
BOD	mg/L	-	<3	-	-	-	-
Fecal Coliforms	Cts/100	0 ³	0	-	-	-	-

TSS: Total Suspended Solids

BOD: Biological Oxygen Demand

Notes: Certificate of analysis presented on following page

¹ Sampling and analysis not required

² No sampling and analysis carried out because of absence of runoff water at these sampling locations

³ Ontario Ministry of the Environment (MOE) criteria

Analytical Services Unit

School of Environmental Studies
Biosciences Complex

Queen's University, Kingston, Ontario, Canada K7L 3N6
Tel 613 533-2642 Fax 613 533-2897



ASU #: 8412
Client: DIAND

Report I.D. RI Lake Water ASU8412
Date Submitted: 18-July-05
Date Analysis Initiated: 18-July-05
Date Reported: 4-Aug-05
Matrix: Water

Method: Standard Methods

Parameter	Units	RI05-W004	BLANK	QC	QC TARGET
Copper	mg/L	0.018	<0.005	2.17	2.20
Iron	mg/L	0.09	<0.05	14.9	16.0
Lead	mg/L	<0.005	<0.005	2.23	2.20
Manganese	mg/L	0.113	<0.05	2.23	2.20
Mercury	mg/L	<0.0001	<0.0001	0.0022	0.0020
Cadmium	mg/L	<0.001	<0.001	0.39	0.40
Nickel	mg/L	0.082	<0.005	2.16	2.20
Chromium	mg/L	<0.005	<0.005	0.40	0.40
Cobalt	mg/L	0.018	<0.005	2.16	2.20
Zinc	mg/L	0.044	<0.010	1.23	1.20
Phenols	ug/L	<1.0	<1.0	10.0	10.0
pH	-	4.64	-	7.00	7.00
TSS	mg/L	<4.0	<2.0	-	-
Nitrate	mg/L	<0.05	<0.05	5.21	5.00
Nitrite	mg/L	<0.05	<0.05	5.25	5.00
Oil and Grease	mg/L	<1.0	<1.0	14.9	15.6
BOD	mg/L	<3	<3	142	200
Faecal Coliforms	Cts/100 mL	0	0	-	-

Prepared by:

P. Whaley

Authorization:

A. Rutter

Page 1 of 1

RI lake water ASU8412.doc

Allison Rutter, PhD
Director



PREPARING LEADERS AND CITIZENS FOR A GLOBAL SOCIETY

2005

2005 年 1 月 1 日

መግቢያ

- የጥናቱ ስራ ለማድረግ ለሚያስፈልጉት መረጃዎች ለማግኘት
- የጥናቱ ዓላማ ለማሳሰብ
- የጥናቱ ዓላማ ለማሳሰብ
- የጥናቱ ዓላማ ለማሳሰብ

መግቢያ ስርዓት ለጥያቄ

- የጥያቄውን ዓላማና ዓላማዊ ዓላማዎች ማብራራት
- የጥያቄውን ዓላማዊ ዓላማዎች ማብራራት
- የጥያቄውን ዓላማዊ ዓላማዎች ማብራራት
- የጥያቄውን ዓላማዊ ዓላማዎች ማብራራት
- የጥያቄውን ዓላማዊ ዓላማዎች ማብራራት

