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## **2004 ANNUAL REPORT TO THE NUNAVUT WATER BOARD**

**WATER LICENCE NWB1BOS0106**

**BOSTON GOLD PROJECT**

**SUBMITTED BY:**

**MIRAMAR HOPE BAY LIMITED**

**MARCH 31, 2004**

## 1. INTRODUCTION

This Annual Report fulfills the reporting requirements of Part B; Item 7 (a-p) of License NWB1BOS0106 for the Boston Gold Project, issued to the Miramar Hope Bay Limited (MHBL) dated October 5, 2001 and expiring on December 31 2006.

The Boston Gold Project is located on Aimaogaktag (Spyder) Lake at Latitude 67°39'N and Longitude 106°22' N, approximately 65 kilometers south of Melville Sound. Activities at the Boston camp during 2004 focused on continued exploration drilling on the Boston deposit and regional exploration activities operated out of the Boston camp.

## 2. PERSONNEL

Changes in environmental personnel within the organization had an impact in collection, collating and reporting of data as required for the annual reporting. This issue has now recently (March 7 2005) been resolved with an appointment of an environmental person to ensure MHBL complies with all land use and water use regulatory requirements.

The Boston camp was opened from February 21 with the initial camp start up crew and exploration activities commenced in early March. The camp remained operational until late September when a small crew remained to complete minor maintenance work with camp closure occurring on October 11, 2004.

The number of employees, contractors and visitors spending at least a night at Boston Camp varies during the exploration season. The height of the exploration program is from April to July with the average number of persons at Boston Camp ranged from 40-45 persons. The most (mode) number of people (50) was recorded in June 2004. During the month of August, 27 investors toured the Hope Bay Belt and over night at the camp, thus raising the number of persons at Boston Camp in August to reach a maximum number of 62.

Table 1 provides a summary head count of persons who at least overnight at Boston Camp during 2004 Exploration season.

2004 Boston Camp Occupants	Minimum	Maximum	Average	Median
February	4	12	8	8
March	12	34	27	27
April	33	44	40	41
May	37	44	41	42
June	40	51	45	45
July	36	42	40	40
August	28	62*	37	34
September	2	29	16	13
October	2	9	4	2
Ranges in 2004	2-40	9-62		

\*27 Investors toured the Belt and spend the night at Boston Camp.

## 3. REPORTABLE ENVIRONMENTAL SPILLS

There were no reportable environmental spills reported in 2004 for Boston Camp. Preventive measures taken during 2004 relating to recommendations on reportable environmental spills which occurred in 2003 are explained in Part B Item 7 (h) below.

However, during mid June through to late August, a good number of surface maintenance, exploration, and environmental personnel were relocated to Windy Lake to help with the cleaning and remedial work relating to the fuel spill, which became a fulltime task the preceding months and took precedence over all the other tasks.

4. ANNUAL REPORT AS PER REQUIREMENTS OF PART B – ITEM 7 (A-P) OF NWM1BOS0106

- a) *The monthly and annual quantities in cubic metres of fresh water pumped from Aimaogaktag (Spyder) Lake at SNP station 1652-1a: Metered Potable Water Intake at Station 1652-1a Aimaogaktag (Spyder) Lake.*

MHBL Response: Here is a summary table (Table 2) of the freshwater abstraction from Aimaogaktag (Spyder) Lake for usage at Boston during 2004 Exploration season. There is annual variation in the water usage at Boston camp during 2004 compared with that of 2003 exploration season. In spite of this annual variation, MHBL was in compliance with its freshwater water usage as required by operating licence.

The total volume of water of 259 cubic meters utilized in the month of June is verified to be correct. The figure of 230 cubic meters reported in the July's reported was incorrect due to the typing error.

Table 2 Boston Camp Daily Freshwater usage, 2004

Boston Camp Water Abstraction - Open Season - Daily Rate 150 m <sup>3</sup>	2003 Actual Monthly Volume (m <sup>3</sup> )	2004 Actual Monthly Volume (m <sup>3</sup> )	Monthly Allowable Rate (m <sup>3</sup> )	Annual Variation (m <sup>3</sup> )
March	138	135	4,650	-3
April	185	282	4,500	97
May	162	285	4,650	123
June	221	259	4,500	97
July	268	327	4,650	49
August	292	304	4,650	14
September	225	187*	4,050**	-162
October	140	No Record	4,650	-140
<b>Total water usage in 2004</b>	<b>1,631</b>	<b>1,779</b>	<b>36,300</b>	<b>148</b>
<b>Average use per day</b>	<b>7.1</b>	<b>8.4</b>		

\* The last reading taken on September 27, 2004. \*\* Calculation using 27 days period.

- b) *The monthly and annual quantities in cubic metres of mine water pumped from underground:*

MHBL Response: There was no discharge from the underground workings in 2004.

- c) *The monthly and annual quantities in cubic meters of treated Minewater discharged at Station Number 1652-2:*

MHBL Response: There was no Minewater discharged at Station Number 1652-2 in 2004.

- d) *The monthly and annual quantities in cubic meters of treated Sewage effluent discharged at Station Number 1652-3:*

MHBL Response: As all water used at the site reports to the Rotating Biological Contractor (RBC) unit and the difficulty in metering a sewage discharge due to the elevated solids, where flow meters become inaccurate we have estimated that the discharge from the RBC approximates the water usage which for 2004 was 1,779 m<sup>3</sup>.

*MHBL will investigate methods that can accurately measure the flows from the RBC and include this in the 2004 Annual report [2003 Annual Report].* This was not done in 2004, but will be considered in 2005. Once a method has been identified and tested to be reliable, MHBL will advice Nunavut Water Board accordingly.

e) *The monthly and annual quantities in cubic meters of Sludge removed from the Sewage Disposal Facility:*

MHBL Response: No sludge removed from the RBC during plant winterization in 2004. The RBC was flushed a number of times which was then discharged through the existing pipeline.

f) *Tabular summaries of all data generated under the "Surveillance Network Program":*

MHBL Response: MHBL is not compliance with permits requires, in particular that TSS for June and August; BOD<sub>5</sub> and Fecal Coliforms for April through to August. Table 3 summaries the 2004 water quality analytical results. Results of the fecal Coliforms from SNP Station 1652-3 have been high over the years at Boston. This is due to two factors namely:

- (i) elevated Total Suspended Solids (TSS) in the waste water being released onto the tundra, and
- (ii) lack of chlorine as a treatment agent for the waste water. MHBL was advised by Department of Fisheries and Oceans not to use chlorine in its sewer treatment system.

MHBL will urgently investigate methods that could help reduce the number of fecal coliforms in the waste water released from the RBC and include this in the 2005 Annual report. Once a method has been identified and tested to be reliable, MHBL will advice Nunavut Water Board accordingly.

Table 3 SNP Station 1652-3 2004 water quality analytical results

Parameters	SNP STATION 1652-3 SEWAGE -END OF PIPE						
Sample Date	Mar	April29	May20	June3	July8	Aug12	Sept
Physical Tests							
pH	NS*	7.71	7.41	7.27	7.17	7.43	NS
Total Suspended Solids (mg/l)	NS*	67	95	180	190	135	NS
Bacteriological Tests							
Coliforms - Fecal (Cfu/100ml)	NS*	330,000	630,000	610,000	510,000	1,290,000	NS
Extractable							
Oil and Grease (mg/l)	NS*	Non-visible	Non-visible	Non-visible	Non-visible	Non-visible	NS
Organic Parameters							
BOD <sub>5</sub> (mg/l)	NS*	83	143	460	380	330	NS

NS\*- No sample collected due to high snow cover over the discharge end-pile. .MR- Missing data

Water samples collected and analyzed from SNP Station 1652-4 and 1652-5 are in compliance with the regulatory requirements. This indicates that natural processes within the tundra is aiding in the breaking down of the nutritious wastewater before it reaches the lake.

The water quality analytical results for SNP 1652-4 and SNP 1652-5 are tabulated in Tables 4 & 5 respectively. September water samples were not collected due to unavailability of an environmental personal.

Table 4 SNP Station 1652-4 2004 water quality analytical results

SNP STATION 1652-4 - SEWAGE EFFLUENT POINT DISCHARGE INTO SPYDER (AIMAOGAKTAG) LAKE							
Parameters							
Sample Date	Jul	Aug 12	Sept				
Physical Tests							
pH	7.79	7.02	NS				
Total Suspended Solids (mg/l)	4	<3	NS				
Bacteriological Tests							
Coliforms - Fecal (Cfu/100ml)	<1	<1	NS				
Extractable							
Oil and Grease (mg/l)	Non-vis	Non-Vis	NS				
Organic Parameters							
BOD <sub>5</sub> (mg/l)	5	<2	NS				

Table 5 SNP 1652-5 2004 water quality analytical results

SNP STATION 1652-5 SEWAGE EFFLUENT POINT DISCHARGE INTO SPYDER (AIMAOGAKTAG) LAKE							
Parameters							
Sample Date	Jul	Aug 12	Sept				
Physical Tests							
pH	7.85	7.01	NS				
Total Suspended Solids (mg/l)	5	<3	NS				
Bacteriological Tests							
Coliforms - Fecal (Cfu/100ml)	<1	ND	NS				
Extractable							
Oil and Grease (mg/l)	Non-vis	Non-vis	NS				
Organic Parameters							
BOD <sub>5</sub> (mg/l)	4	AE	NS				

Note: AE Analytical error, Taiga unable to repeat measurement. ND- Not determined by the Lab. NS-No sample collected

- h) A summary of modifications and/or major maintenance work carried out on the Water Supply and the Waste Disposal Facilities. Including all associated structures, and an outline of any work anticipated for the next year:*

MHBL Response: Modifications and major maintenance work carried out on facilities at Boston in 2004 included:

- Repair and maintenance of the camp and Procon Shop generators.
- Building of a new smoking shack and a new tent. The old crusher was dismantled to provide much needed space for storing of spill emergency supplies and other maintenance supplies previously being stored outside in the yard.
- A small crusher was built in between the Procon Shop and the portal area. The crushing is being used to crush harden bags of salts required for drilling purposes, thereby eliminating the need to bring more salts onto the Belt and occupying spaces in the laydown area.

- i) A list of unauthorized discharges and follow-up action taken:*

MHBL Response: There were no unauthorized discharges reported for Boston in 2004. However, work is continuing with the remedial actives on spills that occurred in 2003. The three (3) 2003 spills are; Spills #03-452, #03-457, and #03-457. The proposed long-term monitoring and management strategy for the LTA for implementation in 2005 is contained in the MHBL report # MHBL ENV-04-2005. A copy of the report of attached.

- Work will continue with the management of the Land Treatment Area (LTA) at Boston Camp. Once the contaminated soil has been tested and confirmed as safe for use, the treated soil will be removed from the bio cells and spread over identified areas that needed reclamation, such as old drill sites and specific areas along the land airstrip. Contaminated soil from other areas on the Belt currently stored in 45-gallon drums at Boston will be emptied and spread into the LTA for treatment.
- The Abandonment and Reclamation Plan (A&R) for Boston Camp will be amended and updated to reflect closure options for the LTA. This will include removal of the liners and pushing back of the berm to cover the area. A detail plan of the closure scenario for the LTA will be outlined in the Boston Camp A&R Plan.
- Refer to MHBL Document # MHBL ENV-04-2005 report for long-term strategy for water, contaminated soil, and LTA management strategy proposed for implementation during 2005 exploration season.

- i) Updates or revisions to the approved Abandonment and Restoration Plans, QA/QC, Waste Rock Disposal Plan, and/or Spill Contingency Plan:*

MHBL Response: The following documents are currently in use at Boston Camp.

- A revised QA/QC Plan dated June 2004 was submitted to the Board for approval is considered valid for the 2004 reporting period. This document will be updated in 2005 and resubmitted for Board's review.
- A revised Spill Contingency Plan dated July 2004 was submitted for Board's review. The comments have since been received and will be used as the bases for the next update in 2005. It will be resubmitted for Board's review.
- There was no waste rock extracted from the Boston underground in 2004 and therefore, the existing plan is deemed satisfactory and remains in effect.
- The Abandonment and Restoration Plan will be updated to include closure components of the Land Treatment Plan and resubmitted for Board's review in 2005.
- In light of the recent environmental spill that occurred at Windy Lake in June 2004, a new surface Maintenance Standard Operating Procedure for fuel and gas dispensing was developed for use on the Hope Bay Belt. The procedure is now in place at Boston Camp. A copy of the SMOP is attached for Board's review.

*j) A list of unauthorized discharges and follow up action taken:*

MHBL Response: Our responses in Clause (h) apply to Clause (J) as well. However, few items needed mentioning as well.

- The gas refueling station (Tidy tanks previously without a secondary containment berm is now being contained within a lined berm.
- A Tidy tank was installed to supply fuel for heating purposes to the main accommodation complex, replacing previously installed 45-gallon drums. The helps reduce the frequency of refilling the smaller containers during the winter months, thus minimizing the likelihood of a spill during winter months.
- A dispensing pump previously installed adjacent to the Procon Shop was dismantled and the whole set-up is relocated to within the main fuel farm area. The ULC approved 50,000 L AST located near the Procon Shop is the prime source fuel for the generator. A fuel line is connected directly from the AST tank to a fuel tank inside the Procon Shop which supplies fuel for the generator. Plans are underway to construct another lined secondary

contained berm at Boston Camp for the 50,000 L AST tank, gasoline, and Jet B drums.

- k) *A brief description of follow-up action taken to address concerns detailed in inspection and compliance reports prepared by the Inspector:*

MHBL Response: Inspections by both KIA Lands and DIAND occurred during the summer period. Concerns raised in the various inspections have been addressed as necessary. It is expected that follow up inspections by KIA and DIAND in 2004 will enable closure of the spill files.

- l) *A summary of drilling activities and progressive reclamation of drill sites:*

MHBL Response: Drilling activities included approximately 20,929 meters of core drilling at Boston and 19,898 meters of RC drilling based out of the Boston and Windy camps. No reclamation of drill sites was done in 2004, although visual monitoring of historical sites continues and it is evident that natural rehabilitation is working well. This level of effort is expected to continue in 2005.

- m) *A public consultation/participation report describing consultation with local organizations and residents of the nearby communities, if any were conducted:*

MHBL Response: As reported last year, Miramar Hope Bay's activities in the Hope Bay Project area is one of advanced exploration and our public consultation report/program can be summarized as follows:

The project focuses on the communities of interest (Bathurst Inlet, Umingmaktok and Cambridge Bay), which will be the communities that will be the focus for potential job and business opportunities related to the project. Other communities of influence including Kugluktuk, Gjoa Haven, Taloyoak and Pelly Bay, may benefit from the project in the areas of employment and business opportunities.

The following lists the consultations undertaken with stakeholders as part of preparing the responses to the deficiencies identified by NIRB contained in this document. In addition to the references made to meetings held with community representatives, reference is also made to contact made with individuals for information.

Records of these contacts have been filed electronically and are available upon request. Copies of the notes taken at meetings held during the first week of October 2004 in the Hamlets of Kugluktuk, Cambridge Bay, Gjoa Haven and Taloyoak were distributed to representatives of the respective hamlets. An itemized copy of the various meeting undertaken (*2004 Public Consultation*) in 2004 is attached.

MHBL will undertake a similar consultation program in 2005.

- n) *A summary of any abandonment and restoration work undertaken during the year and an outline of any work anticipated for the next year; and*



MHBL Response: There was minimal progressive reclamation work at Boston as more resources were dispatched to Windy Lake to help with the clean-up and remedial work relating to the June fuel spill. Limited work at Boston was focused at relocating the contaminated soil fuel closer to the LTA and separating non-combustible solid refuse from combustible wastes. Considerable efforts will be made in 2005 to relocate all non hazardous material to the Boston site for ultimate disposal into the Solid Waste Disposal Site at Boston and currently under review by the NWB.

A work plan has been developed to manage the LTA at Boston. This will involve testing of the contaminated soil currently placed in the LTA. If analytical results indicates that the soil have been treated and are ready to be used for reclamation, areas on the property will be identified for spreading of the treated soil. Contaminated soils currently stored in 45 gallon drums will be emptied and spread in the LTA.

A section of the LTA will be subdivided so that the remaining drums will be placed within the LTA. Empty drums will be crushed, packed, and transported to Yellowknife for recycle purposes.

*o) A summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed;*

MHBL Response: There were no requests received from the Board therefore there is nothing to report.

*p) Any other details on water use or Waste disposal requested by the Board by November 1st of the year being reported:*

MHBL Response: There were no requests received from the Board. However, some requests were received in early 2005 and will be addressed accordingly. Progressive report of these requests will reported together with the monthly water quality report a need to be basis.