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2004 ANNUAL REPORT TO THE NUNAVUT WATER BOARD

WATER LICENCE NWB2HOP0207

WINDY LAKE CAMP

SUBMITTED BY:

MIRAMAR HOPE BAY LIMITED

MARCH 31, 2004

1. INTRODUCTION

This Annual Report fulfills the reporting requirements of Part B, Item 1 (i-v) of License NWB2HOP0207 for the Windy Lake camp, operated by Miramar Hope Bay Ltd (MHBL) [formerly known as the Hope Bay Joint Venture (HBJV)].

This licence allows water use and waste disposal activities associated with the Windy camp located at Latitude 68 degrees 15 Minutes to 68 degrees 00 Minutes N and Longitude 106 degrees 45 Minutes to 106 degrees 20 Minutes W. MHBL's activities in 2004 consisted of advanced exploration activities using the Windy camp as a base.

2. CAMP AND SUPPORT SERVICES

The camp was initially opened on February 1st, 2004, went into care/maintenance for ice break up on May 23rd, 2004. We had personnel in camp from May 23rd to re-opening on July 20th).

The ice strip opened on February 1st, 2004 and closed on May 26th, 2004 with the camp re-opened on July 20th, 2004 to October 10, 2004. First floatplanes were in July 20th, 2004, with the last float plane departing Windy Lake on October 5th, 2004.

The camp was re-opened on November 2, 2004 for additional drilling and closed on December 14th, 2004. The air strip (lake) was operational from November 22nd, 2004 to December 14th, 2004. The camp occupants' number varied greatly over the exploration season with an average daily population of 36 persons during winter and 34 during summer months. The number actually went up during the June Spill at Windy Lake.

The number of persons for both exploration and support personnel at Windy Lake during November and December was average to about 17 people per day.

3. REPORTABLE ENVIRONMENTAL SPILLS

We had 4 spills during 2004 exploration season, (1 reportable spill that occurred on June 15th, 2004) and (3 non-reportable, a 1 liter spill from broken chain case on snowmobile, a 5 to 10 liter spill while fueling a heater in the shop and about 1.5 liter spill occurred while fueling on of the air planes).

The one (1) reportable environmental spill reported in 2004 for Windy Lake Camp will be discussed further in Clause (ii) of the report. Clean up operations and long-term preventive measures relating to recommendations on the Spill Number #04-388 are explained in Part B Item 1 (I-V) clause (II).

4. WILDLIFE SIGHTINGS

A wildlife sighting log book is keep at Windy camp. There were two (2) reported grizzly bears in camp, a number of numerous sightings of the herd of Muskox (12-13) between Boston/Windy as well as several caribou in the area. Two (2) sightings of a Wolverine just above the camp near the RBC pump.

5. CAMP UPGRADES

A new smoking room was built during the year. Fuel handling upgrades included installation of a new Tidy Tank (Enviro type) for supplying fuel to the generators. Installed (2) Tidy Tanks to supply fuel to several tents. This program will continue in 2005.

6. ENVIRONMENTAL 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.

7. ANNUAL REPORT AS PER REQUIREMENTS OF PART B – ITEM 1 (I-II-III-IV-V) AND PART E, ITEM 4 OF NWB2HOP0207

(i) A summary report of water use and waste disposal activities:

MHBL Response: Here is a summary of the activities that took place at Windy Lake.

- The Aquatic Studies was carried around Doris North and Roberts Bay during the reporting period. Copies of the report are attached for the Board's review [Addendum to: Doris North Project "No Net Loss" Plan – Revision3 & Doris North Project Aquatic Studies, 2004].

(ii) A list of unauthorized discharges and a summary of follow-up actions taken;

MHBL Response: Here is a summary of what happened, and a summary of the follow up action taken. A copy of the report (MHBLENV-04-2005) is attached for the Board's review.

- On the morning of Wednesday June 16, 2004, an employee of MHBL on his routine morning inspection noticed a strong smell of hydrocarbon in the air. Further investigation revealed that diesel fuel was siphoning out of a 50,000 litre above ground storage tank (AST) located inside a naturally made berm east of the helipad. The employee quickly notified his immediate supervisor; the site supervisor then activated the MHBL Emergency Response Plan procedures protocols.

- A senior staff representative responsible for Miramar Hope Limited, using the 24-hr NWT Spill Report Line reported the spill on June 16, 2004. An incident report submitted thereafter to regulatory authorities. The reported spill registered as Spill Number 04-388.

Facts relating to incident (Spill Number # 04-388)

- Table 1 provides summary data of the findings into the spill incident. The root causes identified were - (i) failure by operators to utilize the fuel transferring system. The new system for fuel dispensing was installed prior to the incident; and (ii) use of substandard equipment for dispensing fuel from the 50,000 LAST tank. Two pieces of general-purpose hose secured together by a "hose joiner and clamps" that was not suitable for such a task.

Table 1 A summary table giving aspects, impacts, and root cause of the incident.

Aspect	Impact/Activity	Comments
Reported Fuel Siphoned (Spill Number 04-388)	19,000 Litres	Volume derived from last dip reading (evening of June 15 2004)
Total Recovered Fuel	9,062 litres	8,250 Litres immediate and additional 810 litres from unburned absorbent pads. Process continuing.
Incineration (Insitu)	2,750 to 5,500 litres	Estimated volume (range)
Fuel unaccounted	4,438 to 7,185 litres	Lost to burning of absorbent pads and still trap in absorbent pads for further processing
Impacted total surface Area	Estimated 3,500 m^2	Land and Lake surface
Recycle Contaminated fuel	9,062 Litres	Estimated recovered fuel used for camp heating to date
Root cause of incident	(i) Failure to utilize the fuel transferring system.	A new secured system for fuel dispensing was installed prior to the incident.
Root cause of incident	(ii) Use of substandard equipment	(i) Wrong type of joiner and clamps were used in securing 2 fuel lines together; and (ii) 2 hoses were used rather than one.
Immediate Cause	Gust wind blowing that night pulled the hose apart thus letting fuel to siphon out of an AST 50,000 L tank.	Hose was not secured. Improper procedure utilized for fuel transferring. Poor house keeping.

Water Quality

- Two additional sets of water samples were colleted from Windy Lake after the ones collected by EBA consultants in July 2004. Sample collection, preservation, and transportation followed procedure out lined by EBA Engineering consultants. Enviro-Test Laboratory based in Edmonton, supplied specially prepared sample bottles. The samples collected in August and September was from the same location as those collected by EBA in July of 2004 at Windy Lake.

- A comparison of the results made with the Alberta Soil and Water quality guidelines for hydrocarbons at upstream oil and gas facilities in the absences of a Nunavut guideline. All samples analysed were –

    1. below analytical detection limits; and

    2. results were within the Alberta Guidelines for hydrocarbons for the protection of human consumption, wildlife consumption, and use for all parameters tested. This indicates that there is no evidence of fuel seepage from the impacted area into Windy Lake at these selected sampling locations.

Long Term Water and Soil Monitoring

- Also presented is this report is a proposed long-term water and soil quality monitoring work plan for continued impact monitoring at Windy Lake. The

work plan also covers water and soil sampling at Boston Camp with the anticipated implementation starting in 2005.

Land Treatment Area (LTA) Management

- Work will continue with the management of the LTA's at both Windy Lake and Boston Camps. For Windy Lake, this will involve continuation with spreading of the contaminated topsoil within the lined LTA. Previously contaminated topsoil currently stored in 45-gallon barrels will be emptied into the LTA. To accelerate the rate of treatment for the topsoil during aeration process, addition of peat moss and mixing with the contaminated soil is vital.

Fuel Farm Management at Windy Lake

- A secondary lined containment berm will be constructed in 2005 at Windy Lake. The facility will be big enough to contain not only a 50,000 L AST tank and a 70,000 L AST tank but also the Jet B and gas drums. The second 70,000 L AST tanks currently stationed at Windy Lake will be relocated to Patch Lake in the winter of 2005. The 50,000 L tank will be relocated to Patch Lake in the winter of 2006, as it is required at Windy Camp for constructing of the secondary containment there. Once Windy Lake camp has ceased operations, the final tank will be removed as outlined in the Windy Lake A&R Plan.

- All topsoil identified as contaminated with petroleum products from these areas will be removed and treated in the lined LTA. A trench will be dug around the fuel farm to divert water runoffs into the lined trench around the LTA for treatment before being release via the sewage line onto the tundra.

(iii) Revision to the Contingency Plan;

MHBL Response: Comments have been relieved from the Board in relation to MHBL Spill Contingency Plan. The Plan will be updated and submitted to the Board in 2005 for review.

A separate Plan has been developed for Patch Lake inline with the anticipated building of a lined secondary containment berm in 2005. A copy of the document is attached for Boards review. A similar site specific Plan is currently being considered for Windy Lake.

(iv) Progressive Reclamation work undertaken;

- Routine site cleanup continued during the year. All non-hazardous material was placed in barrels for ultimate transport and disposal in the Solid Waste Disposal Site proposed for the Boston site, which is currently under review by the NWB. It is expected that the Solid Waste Disposal Site will be constructed and operational in 2004. Contaminated soil that has been collected and stored at the Windy Lake camp area will be transported to the Boston site and disposed of in the land farm constructed there in 2003.

- However, due the recent spill, approval was granted to construct a Land Treatment Area (LTA) at Windy Lake. The LTA was constructed in June and most of the contaminated are now placed in the LTA. Details of the

management of the LTA are provided in the report mentioned in Section 7 (ii) of this report.

- Other activities include managing the non-combustible waste, by separating non-combustible spoil waste from combustibles.
- Waste timbers were burnt in half drums welded on iron stands.

(v) Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

MHBL Response: The industrial water use inspection report dated July 15 2004 issued to MHBL is currently being acted upon. Pending approval from KIA, MHBL is building a lined secondary containment berms at Patch Lake to store seven 70,000 L AST in 2005. A new A&R Plan for Patch Lake has been developed to accommodate this change. A copy of attached for Board's review.

8. AS PER PART E, ITEM 4

MHBL Response: We provide the following tabular summary of water quality taken during the open water season. In the licence amendment sampling of the RBC discharge and Windy Lake down slope from the RBC discharge location are provided, which take the place of previously required sampling as follows:

Table 1 provides information for the RBC Sewage Discharge Point and Table 2 provides data on the "Windy Lake – Down-slope from RBC Sewage Discharge."

MHBL is not in compliance with permitting requirements, in particular that TSS and Fecal Coliforms. Results of the fecal coliforms from End of Pipe discharge have been high over the years at Windy. 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 1	**Rotating Biological Contactor (RBC) Sewage Discharge Point**				
Parameters					
Sample Date	*August 11*	*August 16*	*September*		
Physical Tests					
pH		7.5	NS		
Total Suspended Solids (mg/l)		**380**	NS		
Bacteriological Tests					
Coliforms – Fecal (Cfu/100ml)		**23,000,000**	NS		
Extractable					
Oil and Grease (mg/l)		**Visible**	NS		
Organic Parameters					
BOD-5 (mg/l)		313	NS		

*Note: * Not done: Holding time exceeded in Lab.*

Table 2	**WINDY LAKE -DOWN SLOPE FROM RBC-SEWAGE DISCHARGE**				
Parameters					
Sample Date	*August 11*	*August 16*	*September*		
Physical Tests					
pH	7.92	7.91	NS		
Total Suspended Solids (mg/l)	<3	4	NS		
Bacteriological Tests					
Coliforms – Fecal (Cfu/100ml)	<1	<1	NS		
Extractable					
Oil and Grease (mg/l)	Non-Visible	Non-Visible	NS		
Organic Parameters					
BOD-5 (mg/l)	<2	<2	NS		

NS- Sample no collected

This concludes the 2004 Annual Report to meet the conditions of Water Licence NWB2HOP0207.