

Waters Act

Schedule 4 Application

If Amendment or Renewal: Licence # QZ99-046

1. NAME: Stephen West c/o Hudson Bay Mining & Smelting Co., Limited

2. PERMANENT MAILING ADDRESS:
P.O. Box 1500, Flin Flon, Manitoba R8A 1N9

TELEPHONE: 204-687-2229 FAX: 204-687-2173 EMAIL: STEPH.WEST@HBMS.ca

3. SEASONAL MAILING ADDRESS (if different from permanent) From _____ to _____
(Date) (Date)

TELEPHONE: FAX:

4. LOCATION OF UNDERTAKING:

WATER SOURCE: Sekie Creek #2 Tributary of South Macmillan River

WASTE DEPOSIT: Tom Adit (W5), see attached map Figure 1. (Describe location, attach map, indicate location of waste deposit)

5. QUANTITY OF WATER TO BE USED: 100 m³/day 6. PROPOSED EXPIRY DATE: December 31, 2012

7. TYPE OF UNDERTAKING
- Industrial
 - Placer Mining
 - Quartz Mining
 - Municipal
 - Power
 - Agriculture
 - Conservation
 - Recreational
 - Miscellaneous (attach description)

8. WATER USE:
- To obtain water
 - To divert water
 - To store/alter flow of water
 - To modify the bed or bank of a watercourse
 - To cross a watercourse
 - To deposit waste
 - Other (attach description)

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (attach list)

10. NAME, ADDRESS, TELEPHONE AND FAX NUMBER OF AGENT OR ALTERNATE CONTACT

Kai Woloshyn, AECOM, 2251 2nd Ave. Whitehorse, YT Y1A 5W1, 867-633-6474 EXT.5744, FAX:867-633-6321

Signature *Robert P. Kay* Date November 13/08

FOR OFFICE USE ONLY

Application Fee Amount \$30.00

Receipt No: 659496

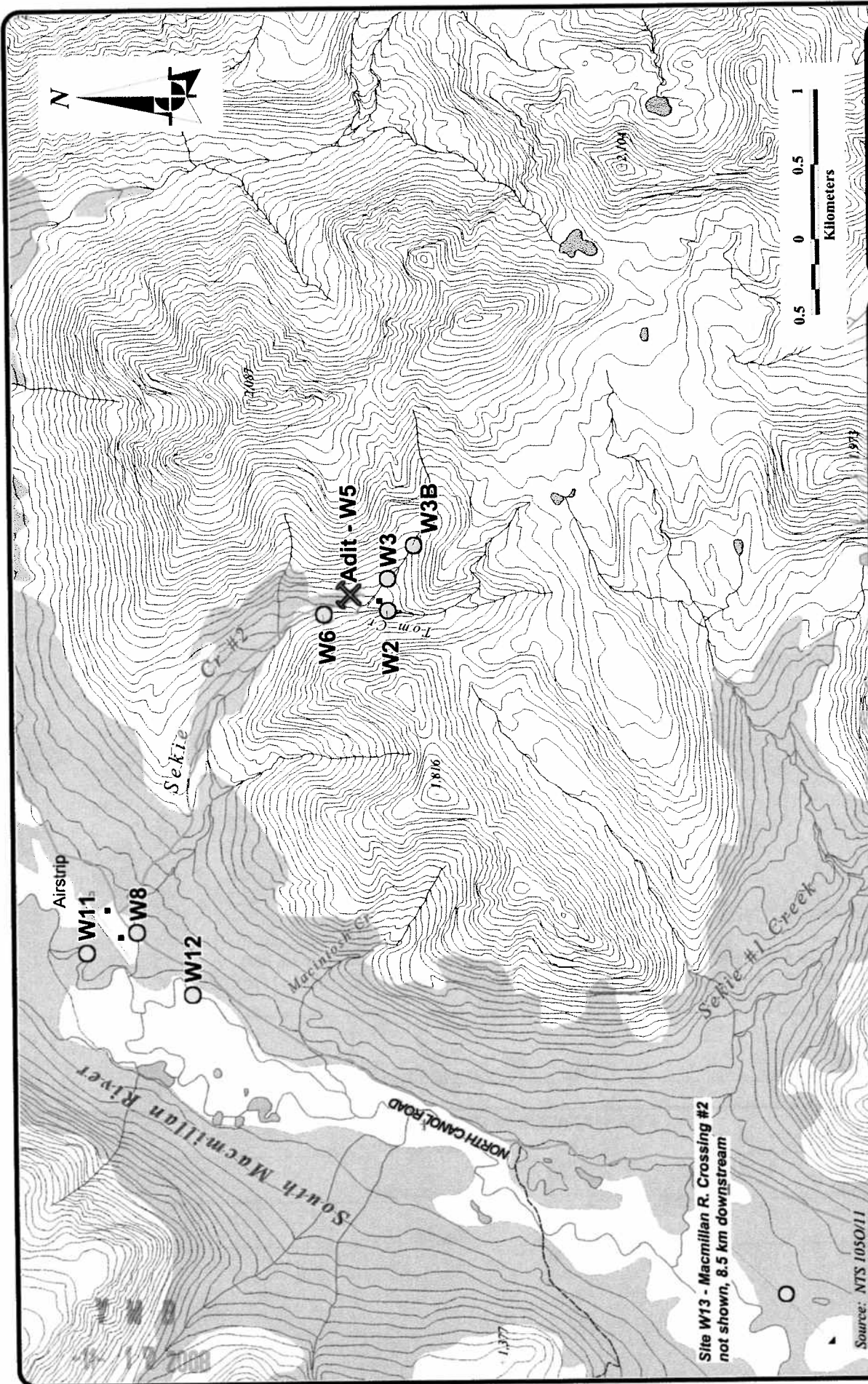
Water Use Deposit Amount _____

Receipt No: _____


MLUR Amount _____
YG (YWB-4) 03/2003

Receipt No: _____

0208-083



Site Name: Macmillan Pass
 File Name: Fig2_23320.WOR

 **Gartner Lee**
 Scale: 1 : 35,000

Hudson Bay Mining & Smelting Co., Limited

Tom Valley Property
2007 Surface Water Monitoring Program
Site Overview and Sample Location Map

Project No: 70380
 Date Issued: March 2007

Figure 1

AECOM

2251 2nd Avenue, Whitehorse, YT, Canada Y1A 5W1
T 867.633.6474 F 867.633.6321 www.aecom.com

November 18, 2008

Project Number: GLL 80-407

Carola Scheu
Manager
Yukon Water Board
Suite 106, 419 Range Road
Whitehorse, Yukon Y1A 3V1

Dear Ms. Scheu:

Re: Amendment for Water Licence QZ08-080 - Project Proposal for Installation of an Adit Plug and Associated Workings at the Tom Valley Property

On behalf of Hudson Bay Mining and Smelting Co., Limited (HBMS), we are please to the submit the attached water licence amendment application to meet the requirements outlined in Water Licence Number QZ08-080. Included in the amendment application are the proposed remediation plan and a proposal for effluent standards for any discharge from the adit to Sekie Creek #2, upon completion of the remediation activities.

The primary objective of the proposed remediation plan is to improve the downstream aquatic environmental quality. The extent of this improvement can only be established through on going monitoring following adit plug installation. We have prepared this application in conjunction with a Yukon Environmental and Socioeconomic Assessment Act (YESAA) application currently in the seeking views and information phase. When a YESAA decision document is received it will be submitted to the Water Board along with any modifications to this application outlined thru the YESAA process.

As per the requirements outlined in Water Licence QZ08-080, HBMS is submitting a proposal for the effluent standard for any discharge from the adit to Sekie Creek #2, upon completion of the remediation activities. To meet this requirement, as part of the proposed project, HBMS are proposing interim effluent discharge water quality targets to apply following the two year post adit installation monitoring period. These are discussed further in Section 4.0 of the application.


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The proposed discharge water quality targets are based on the expectation that adit discharge water is expected to improve as a result of remediation activities to background levels and have been developed consistent with the approach presented in Section 7.1 of the YESAA Project Proposal (Appendix A). The proposed two year monitoring period after the adit plug is installed, will allow for the confirmation and/or development of the effluent water quality targets.

Sincerely,



Kai Woloshyn
Environmental Scientist
kai.woloshyn@aecom.com

KW:gc
Encl.
cc: File

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-11- 18 2008
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1. Amendment to Water Licence QZ08-080

Hudson Bay Mining and Smelting Co. Limited is requesting the following amendments to the current conditions of Water Use Licence QZ08-080 as follows (the requested changes in bold):

Part D – Effluent Quality Standards

17. After **September 30, 2011** a grab sample of any waste discharge at Station W5, and any other point of entry of a waste discharge into receiving waters, shall meet the following effluent quality standards:

PARAMETER	CONCENTRATION
Arsenic (dissolved)	1.0 mg/L
Copper (total)	1.4 mg/L
Lead (total)	0.4 mg/L
Nickel (total)	2.1 mg/L
Zinc (total)	12.6 mg/L

20. Frequency of Sampling:

Sampling shall be carried out at each monitoring station in **June, July, August and September in 2010, 2011 and 2012. Additionally in 2009 following initial adit discharge subsequent to the plugging of the adit sampling shall be carried out in October and November, weather permitting.**

The rationale for these proposed amendments are as follows:

- Extension of the date for EQS to come into effect to September 30, 2011

As outlined in Section 4.1 and in Section 7.1 of Appendix A, it is anticipated that after plug installation there are three phases for the evolution of water quality discharging from location W5: Flushing, Short Term and Long Term. The predicted water quality for each phase is presented in Table 4-1 (see Section 4).

As outlined in Section 3.5, it is estimated that at a minimum 30 days after plugging of the adit, water will begin to flow out of the pressure relief drift, based solely on the volume of workings to be flooded and the median adit flow rate. This does not include any storage of water within the void spaces of the host rock, which could result in a delay in the timing. Taking this additional storage in to consideration, it is estimated that the flushing phase could last for up to 60 days (Mid November 2009). During this phase, as a result of increasing water levels in the underground workings and flushing of oxidation products, metal concentrations in the adit discharge are anticipated to temporarily increase.

The Short-Term phase is for the interim period of incomplete mixing and removal of oxidation products from exposed surfaces, fractures and pores spaces, prior to the system reaching geochemical and

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hydrostatic equilibrium. Although only definitely characterized through the ongoing monitoring following plug installation, the time frame for this phase is anticipated to be a maximum of two years following plug installation (September 2011).

The Long-Term phase refers to the period of time after the system has stabilized and reached geochemical and hydrostatic equilibrium, September 2011. At this time the water quality in the adit discharge is expected to improve to background levels found in the surface waters draining from the rich pyrite shales of the Tom Sequence (Section 4.1). This time period also allows for the ongoing monitoring of the adit discharge and site water quality data to provide sufficient data for confirmation of the proposed EQS.

- Modifications for the EQS for total copper, nickel and zinc:

As outlined above after the system stabilizes, the water quality in the adit discharge is expected to be similar to background levels found in the surface waters draining the Tom Sequence. A statistical summary of the background water quality data (2000 to 2008) is presented in Table 4.2. The 95th percentile of the background data for total copper, nickel and zinc have been adopted for the modified EQS for these parameters.

- Modifications for sampling frequency:

Sampling frequency requirements has been modified to collect sufficient site water quality data to confirm the proposed EQS. The month of May has been removed from the sampling requirements due to difficult site access at this time and the Health and Safety risks due to avalanches.

In addition, we are requesting that the licence be amended to include the activities and infrastructure associated with the Adit Plug installation including:

- **Summer 2009 Adit Plug Installation activities;**
- **Post adit plug installation monitoring (2010 and 2011); and**
- **Confirmation of the proposed Effluent Quality Standards (EQS).**

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QZ08 - 080

