HOMESTAKE



April 28, 1999

Thomas Kudloo, Chair
Nunavut Water board
P.O. Box 119
Gjoa Haven, NT
X0E 1J0

Dear Mr. Kudloo;

Re: Cullaton Lake Water Licence N6L2-0940 – Renewal and Amendment

Homestake Canada Inc. currently holds Water Licence N6L2-0940 on the Cullaton Lake property, which will expire August 31, 1999. Please find enclosed documentation in support of an application for renewal of this Water Licence. As Homestake will have completed the reclamation work outlined in the March 1996 Abandonment and Restoration (A & R) Plan by the end of 1999, the Company will have no further use for water at this site. We are therefore requesting a licence renewal of two (2) years only, in order to compete the water monitoring program.

This application package includes the following:

- a completed Water Licence application form, with the $30.00 application fee,
- two drawings and one map detailing the location of the property and a site plan, and
- a summary document outlining the reasons for renewal and amendment, the history of the site, and past reclamation activities. The Company trusts that this summary document is sufficient information for the licence renewal, as the Water Board already has other information about the site, including the 1996 A & R Plan, annual water licence reports, and yearly inspection reports.

I trust the enclosed documentation is satisfactory. If you have any questions or require clarification regarding the application package, please do not hesitate to contact me.

I understand that a hearing, either written or oral, may be called to address issues raised by this renewal/amendment application. Would you please contact me as soon as possible after a decision regarding a hearing is made, so that I can prepare a presentation for the application review. If an oral hearing is held, late June or August would be the most convenient time for me to travel, due to other commitments.

Yours truly,
HOMESTAKE CANADA INC.

Sharon Meyer

ORIGINAL

Sharon Meyer
Environmental Analyst

enclosures (10 copies of application package)

**Homestake Canada Inc.**
P.O. Box 11115 • 1100 - 1055 West Georgia Street • Vancouver, BC V6E 3P3 • Phone (604) 684-2345 • Fax: (604) 684-9831

# CULLATON LAKE GOLD MINES – WATER LICENCE N6L2-0940
# APPLICATION FOR RENEWAL OF LICENCE

## INTRODUCTION

The Cullaton Lake Gold Mines property is located in the southern part of the Nunavut Territory at 61° 16' north latitude and 98° 30' west longitude. The property is 250 km west of Arviat, 400 km northwest of Churchill, Manitoba and 645 km north of Thompson, Manitoba. Homestake Canada Inc. (Homestake) wholly owns and controls the Cullaton Lake Gold Mines property. The Company holds Water Licence N6L2-0940 on the property and currently conducts a water monitoring program which includes an annual submission of a water licence report to the Nunavut Water Board.

## RECLAMATION HISTORY

The Cullaton Lake mine was in operation for four years, from 1981 to 1985. The mine processed 300 tonnes of ore per day and produced over 100,000 ounces of gold. In September 1985, due to depressed gold prices, the mine entered a care and maintenance program.

Homestake submitted a final Abandonment and Restoration Plan in March 1996 and received approval for the Plan at the July 3, 1996 DIAND-TAC meeting in Yellowknife. The reclamation activities at the site have been completed in accordance with the Plan.

Decommissioning began in 1991/92 with the rehabilitation of the Tailings Pond #1 dam including construction of a spillway in the dam, covering of the exposed tailings with water or with mine-rock/till, and the elimination of Tailings Pond #2 (the polishing pond).

The old diamond drill camp on the Kognak River was dismantled and removed in 1991. By 1993, all debris around the drill camp had been removed. In 1995, portions of the mill buildings were dismantled. Inert, non-salvageable material was crushed and placed in the quarry pit. In 1996 the remaining mill buildings were dismantled. In 1997 additional cover was placed on the tailings impoundment and in 1998 the final reclamation was completed, including removal of culverts and modification of the quarry pit to accept the burial of inert, non-salvageable materials.

All restoration work is now complete, and materials and equipment are being removed from the property. Permits were in place to remove the salvageable equipment from the site in the winter of 1998/99. However, the creation of a park in northern Manitoba has meant rescheduling and rerouting of the ice train. If removal is not completed this winter, it will be completed as soon as possible during the 1999/00 winter season.

Homestake anticipates approval of the restoration work as soon as the salvageable equipment removal is completed.

ORIGINAL

## ENVIRONMENTAL ASPECTS

The 1991 CANMET report on the acid generation potential of the tailings showed that the tailings readily oxidized in the favourable conditions of the laboratory. However, no evidence of acid generation was detected in the tailings area, either in the pore water or the pond water. In order to prevent any acid generation from occurring, reclamation of the tailings area involved two oxygen-limiting methods; a water cover overlying the eastern portion of the tailings impoundment area, and a till/mine rock cover on the remaining western portion of the tailings area. Water monitoring has indicated no acid generation or metal leaching; the parameters monitored have remained stable.

Geotechnical surveys of the tailings pond dams have been conducted by Trow Engineering. Based on their inspections, the dams and spillways remain stable.

With the removal of the buildings, the contouring of the disturbed building sites and the removal of culverts in the roadways, the land can now return to its pre-mining aspect. There will be no long term environmental impact from the mine structures or roadways.

## WATER LICENCE HISTORY

Cullaton Lake Gold Mines was first granted a 3-year water licence on September 1, 1981 (N6L3-0940) by the Northwest Territories Water Board. The licence was renewed a number of times as Cullaton Lake Gold Mines was acquired by different companies.

Homestake acquired the closed mine property in 1993 and continued with decommissioning activities. Homestake applied for a water licence renewal on April 28, 1995 asking for a reduction in licence requirements as the mine was no longer operating and was in fact undergoing decommissioning. A revised 'B' Licence was granted effective September 1, 1995, expiring August 31, 1999; licence number N6L2-0940. As part of the licence renewal, Homestake submitted a revised Abandonment and Restoration Plan in 1996 to DIAND, to the NWT Water Board and to the Nunavut Water Board. In July 1996 the water licence was transferred to the jurisdiction of the Nunavut Water Board.

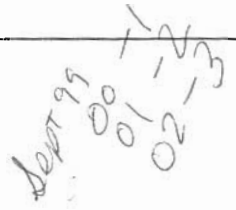
## CURRENT LICENCE RENEWAL

The current water licence will expire on August 31, 1999. There will be no water use at the Cullaton property in the future, as all restoration work is complete. However, as outlined in our Abandonment and Restoration Plan, and as discussed with DIAND and Nunavut Water board representatives, Homestake is prepared to continue with water and thermistor monitoring for a short period post-restoration. Homestake is therefore requesting the renewal of the current "B" licence for a period of 2 years, with changes as outlined in Appendix A.

## APPENDIX A

### Requested Changes for Renewal of Water Licence N6L2-0940

| Requested Change | Explanation |
|---|---|
| TITLE PAGE | |
| Change Licensee to: Homestake Canada Inc.<br>Change Address to: PO Box 11115<br>1100-1055 West Georgia Street<br>Vancouver, BC V6E 3P3 | Change of name and address |
| PART A | |
| 1. Scope<br>Reword "This Licence allows for the monitoring of water in and adjacent to the Tailings Containment Area, and disposal of waste from Tailings Pond No. 1 by *Homestake Canada Inc.* at the Cullaton lake Gold Mine located at Cullaton Lake, *Nunavut Territory*, latitude 61° 16'N and longitude 98° 30'W;" | Change of names |
| 2. No changes<br>3. No changes | |
| PART B | |
| 1. No changes<br>2. No changes<br>3. No changes<br>4. No changes<br>5. No changes | |
| 6. Reword "The Licensee shall ensure a copy of this Licence is maintained at the *Licensee's head office* at all times." | There are no buildings at the "site of operation" to keep a copy of the Licence. |
| PART C | |
| 1. (a-c) No changes | |
| 1. (d) If the inspection of the Tailings Containment Area scheduled for August 1999 is satisfactory, no additional geotechnical inspections shall be required. | Past geotechnical inspections have indicated no concerns with dam failure. All aspects are stable. |
| 2. No changes | |
| PART D | |
| 1. No changes<br>2. No changes | |
| PART E | |
| 1. No changes<br>2. No changes<br>3. No changes | |

| | |
|---|---|
| PART F | |
| 1. Delete this item. | Homestake has already complied with this item. |
| 2. Delete this item. | Homestake has already complied with this item. |
| 3. No changes. The plan has been revised over the past few years. The reclamation work is complete. The final item, the removal of salvageable equipment, is scheduled to be completed in 1999. | |
| 4. No changes | |
| SURVEILLANCE NETWORK PROGRAM | |
| A. Location of Sampling Stations<br>Reduce description of stations to those still in use:<br>940-2, 940-3, 940-18, 940-19, 940-20, 940-21 and 940-22.<br>Add 940-Q for quarry pit sampling station. | These changes reflect the current sampling regime. |
| B. Sampling and Analysis Requirements<br>1. Change dates for sampling to "once each year, after June 1 and before August 31"<br>2. Change dates for sampling to "once each year, after June 1 and before August 31"<br>3. Change dates for sampling to "once each year, after June 1 and before August 31" | Reasons for these changes are twofold.<br>1) To provide harmonization of sampling dates for all sampling stations.<br>2) To reflect the stability of sampling results.<br>Water quality over the past 5 years has been reviewed (see attached tables). pH has remained stable. Although there has been some variability in cyanide and metals levels, all parameters have remained well below permit levels, with lead and mercury consistently below detection. Therefore, reducing the sampling to once per year, from twice per year, will still accurately reflect current conditions. |
| 4. No changes<br>5. No changes<br>6. No changes<br>7. No changes<br>8. No changes |  |
| C. Other Requirements<br>1. Reword "Temperatures at Station Number 940-21 shall be measured and recorded *once each year, after June 1 and before August 31*" | Rewording will ensure harmonization with B (1-3) |

| | |
|---|---|
| 2. Reword "Observations on erosion, dam wall sloughing and general stability, area of acid generation, and seepage shall be recorded *while on site for water sampling.*" | Rewording will ensure harmonization with sampling regime. |
| D. Reports.<br>1. No changes | |

| | |
|---|---|
| PART F | |
| 1. Delete this item. | Homestake has already complied with this item. |
| 2. Delete this item. | Homestake has already complied with this item. |
| 3. No changes. The plan has been revised over the past few years. The reclamation work is complete. The final item, the removal of salvageable equipment, is scheduled to be completed in 1999. | |
| 4. No changes | |
| SURVEILLANCE NETWORK PROGRAM | |
| A. Location of Sampling Stations<br>Reduce description of stations to those still in use:<br>940-2, 940-3, 940-18, 940-19, 940-20, 940-21 and 940-22.<br>Add 940-Q for quarry pit sampling station. | These changes reflect the current sampling regime. |
| B. Sampling and Analysis Requirements<br>1. Change dates for sampling to "once each year, after June 1 and before August 31"<br>2. Change dates for sampling to "once each year, after June 1 and before August 31"<br>3. Change dates for sampling to "once each year, after June 1 and before August 31" | Reasons for these changes are twofold.<br>1) To provide harmonization of sampling dates for all sampling stations.<br>2) To reflect the stability of sampling results.<br>Water quality over the past 5 years has been reviewed (see attached tables). pH has remained stable. Although there has been some variability in cyanide and metals levels, all parameters have remained well below permit levels, with lead and mercury consistently below detection. Therefore, reducing the sampling to once per year, from twice per year, will still accurately reflect current conditions. |
| 4. No changes<br>5. No changes<br>6. No changes<br>7. No changes<br>8. No changes | |
| C. Other Requirements<br>1. Reword "Temperatures at Station Number 940-21 shall be measured and recorded *once each year, after June 1 and before August 31*" | Rewording will ensure harmonization with B (1-3) |

| | |
|---|---|
| 2. Reword "Observations on erosion, dam wall sloughing and general stability, area of acid generation, and seepage shall be recorded *while on site for water sampling*." | Rewording will ensure harmonization with sampling regime. |
| D. Reports.<br>1. No changes | |

## APPENDIX B

### Cullaton Lake Gold Mines
### Studies Undertaken to Date


BEAK International Inc. An Oxygen Consumption Survey of the Sulphide Tailings at Cullaton Lake, NWT. November 1996

CANMET Column Leaching Characteristics of Cullaton Lake B and Shear Zones Tailings. Phase 1: Room Temperature Leaching. September 1991. June 1992. August 1992.

CANMET Column Leaching Characteristics of Cullaton Lake B and Shear Zones Tailings. Phase 2: Cold Temperature Leaching. June 1996.

CANMET Study to Assess Water/Mine Waste Rock Covers at Arctic Decommissioned Tailings Areas. Ongoing Study.

Lemay, A.G. Cold Temperature Leaching Characteristics. University of Waterloo. May, 1992.

Robinson, R. Report on the Water Quality of the Kognak River and Marsh Area at Cullaton Lake Gold Mines. October 1984.

TROW Consulting Engineers Ltd. Summary of 1990 Tailings Area Field Work and Dam Stability Assessment. Cullaton Lake Gold Mines Ltd. January 1991.

TROW Consulting Engineers Ltd. Tailings Assessment Report. February 1995.

TROW Consulting Engineers Ltd. Cullaton Lake Gold Mine – Thermal Analysis. December 1996.

TROW Consulting Engineers Ltd. Tailings Assessment Report. December 1996.

## Water Quality at Cullaton Lake
### 1994-1998

**940-2: POND #1 DISCHARGE**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 07/03/1994 | 7.93 | 1 | 0.019 | 0.0019 | 0.002 |
| 07/31/1994 | 7.89 | 1 | 0.023 | 0.0038 | 0.002 |
| 08/04/1994 | 7.89 | 1 | 0.023 | 0.0038 | 0.002 |
| 09/12/1994 | 7.92 | 57 | 0.017 | 0.0032 | 0.005 |
| 09/27/1995 | 7.93 | <1 | 0.016 | 0.002 | <0.001 |
| 07/04/1996 | 7.84 | 3.5 | 0.007 | <0.1 | <0.01 |
| 07/04/1996 | 7.86 | 3.9 | 0.007 | <0.1 | 0.02 |
| 09/20/1996 | 7.91 | 2.0 | 0.002 | <0.1 | <0.01 |
| 09/20/1996 | 7.81 | 1.5 | 0.002 | <0.1 | <0.01 |
| 07/17/1997 | 7.93 | 1.6 | 0.006 | <0.1 | <0.01 |
| 07/17/1997 | 7.83 | 1.9 | 0.006 | <0.1 | <0.01 |
| 07/17/1997 | 7.86 | 1.8 | 0.006 | <0.1 | <0.01 |
| 09/30/1997 | 7.96 | 2.3 | 0.004 | <0.1 | <0.003 |
| 06/26/1998 | 7.7 | 2 | 0.066 | 0.0020 | 0.003 |
| 06/26/1998 | 7.7 | <2 | 0.072 | 0.0021 | 0.003 |
| 09/23/1998 | 7.7 | 7 | 0.015 | 0.0037 | 0.009 |
| 09/23/1998 | 7.7 | 6 | 0.015 | 0.0038 | 0.008 |
| Mean | 7.84 | 5.7 | 0.018 | 0.0486 | 0.007 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 07/03/1994 | 0.005 | 0.0005 | 0.003 | 0.005 |
| 07/31/1994 | 0.005 | 0.0005 | 0.005 | 0.005 |
| 08/04/1994 | <0.005 | <0.00005 | | <0.005 |
| 09/12/1994 | <0.005 | <0.00005 | | <0.005 |
| 09/27/1995 | <0.005 | <0.00005 | | <0.005 |
| 07/04/1996 | <0.05 | | <0.05 | <0.01 |
| 07/04/1996 | <0.05 | | <0.05 | 0.01 |
| 09/20/1996 | <0.05 | | <0.05 | <0.01 |
| 09/20/1996 | <0.05 | | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 09/30/1997 | <0.05 | <0.00005 | <0.02 | <0.005 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-2: POND #1 DISCHARGE**

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/26/1998 | <0.005 | <0.0002 | 0.002 | 0.041 |
| 06/26/1998 | <0.005 | <0.0002 | <0.002 | 0.029 |
| 09/23/1998 | <0.005 | <0.0002 | 0.005 | 0.048 |
| 09/23/1998 | <0.005 | <0.0002 | <0.002 | 0.016 |
| Mean | 0.026 | 0.00017 | 0.028 | 0.014 |

# Water Quality at Cullaton Lake
## 1994-1998

### 940-3: POND #2 DISCHARGE

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 07/03/1994 | 7.73 | 1 | 0.002 | 0.0020 | 0.007 |
| 07/31/1994 | 8.63 | 5 | 0.004 | 0.0049 | 0.005 |
| 08/04/1994 | 8.63 | 5 | 0.004 | 0.0049 | 0.005 |
| 09/12/1994 | 7.82 | 26 | 0.004 | 0.0047 | 0.007 |
| 09/27/1995 | 7.84 | 3 | 0.004 | 0.0017 | 0.003 |
| 07/04/1996 | 7.88 | 1.5 | 0.002 | <0.1 | 0.14 |
| 09/20/1996 | 7.70 | 1.6 | 0.001 | <0.1 | <0.01 |
| 06/27/1997 | 7.60 | 1.5 | 0.001 | <0.1 | <0.01 |
| 06/27/1997 | 7.64 | 1.0 | 0.001 | <0.1 | <0.01 |
| 09/30/1997 | 7.84 | 2.2 | 0.001 | <0.1 | 0.003 |
| 09/30/1997 | 7.88 | 2.0 | 0.001 | <0.1 | <0.003 |
| 06/26/1998 | 7.7 | <2 | 0.002 | 0.0042 | 0.006 |
| 06/26/1998 | 7.7 | <2 | 0.002 | 0.0042 | 0.005 |
| 09/23/1998 | 7.6 | 5 | 0.002 | 0.0040 | 0.006 |
| 09/23/1998 | 7.7 | 5 | 0.002 | 0.0023 | 0.007 |
| Mean | 7.86 | 4.3 | 0.002 | 0.0422 | 0.015 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 07/03/1994 | 0.005 | 0.00005 | 0.007 | 0.005 |
| 07/31/1994 | 0.005 | 0.00005 | 0.009 | 0.007 |
| 08/04/1994 | <0.005 | <0.00005 | | 0.007 |
| 09/12/1994 | <0.005 | <0.00005 | | 0.011 |
| 09/27/1995 | <0.005 | <0.00005 | | <0.005 |
| 07/04/1996 | 0.16 | | <0.05 | 0.04 |
| 09/20/1996 | <0.05 | | <0.05 | 0.02 |
| 06/27/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 06/27/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 09/30/1997 | <0.05 | <0.00005 | <0.02 | <0.005 |
| 09/30/1997 | <0.05 | <0.00005 | <0.02 | <0.005 |
| 06/26/1998 | <0.005 | <0.0002 | 0.005 | 0.024 |
| 06/26/1998 | <0.005 | <0.0002 | 0.005 | 0.017 |
| 09/23/1998 | <0.005 | <0.0002 | <0.002 | 0.034 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-3: POND #2 DISCHARGE**

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 09/23/1998 | <0.005 | <0.0002 | 0.002 | 0.017 |
| Mean | 0.030 | 0.00010 | 0.022 | 0.014 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-18: TAILINGS POND #1 SPILLWAY**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 06/21/1994 | 7.9 | | 0.004 | 0.002 | 0.002 |
| 08/09/1994 | 8.3 | | 0.005 | 0.0014 | 0.007 |
| 07/04/1996 | 7.78 | 2.8 | 0.007 | <0.1 | <0.01 |
| 09/20/1996 | 7.84 | 1.0 | 0.002 | <0.1 | <0.01 |
| 06/27/1997 | 7.26 | 1.1 | 0.003 | <0.1 | <0.01 |
| 07/17/1997 | 7.82 | 1.5 | 0.003 | <0.1 | <0.01 |
| 09/10/1997 | 8.09 | 3.5 | 0.1 | <0.1 | 0.017 |
| 09/10/1997 | 8.08 | 5.6 | 0.09 | <0.1 | 0.019 |
| 09/10/1997 | 8.09 | 3.7 | 0.1 | <0.1 | 0.013 |
| 06/26/1998 | 7.8 | 3 | 0.024 | 0.0019 | 0.012 |
| 06/26/1998 | 7.8 | <2 | 0.025 | 0.0018 | 0.003 |
| 09/23/1998 | 7.9 | 6 | 0.050 | 0.0022 | 0.008 |
| 09/23/1998 | 7.9 | 3 | 0.047 | 0.0035 | 0.002 |
| Mean | 7.89 | 3.0 | 0.035 | 0.0548 | 0.009 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/21/1994 | 0.003 | 0.00002 | 0.004 | <0.005 |
| 08/09/1994 | 0.001 | 0.00002 | 0.005 | <0.005 |
| 07/04/1996 | <0.05 | | <0.05 | <0.01 |
| 09/20/1996 | <0.05 | | <0.05 | <0.01 |
| 06/27/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 09/10/1997 | <0.05 | <0.00005 | <0.05 | <0.005 |
| 09/10/1997 | <0.05 | 0.00010 | <0.05 | <0.005 |
| 09/10/1997 | <0.05 | <0.00005 | <0.05 | <0.005 |
| 06/26/1998 | <0.005 | <0.0002 | <0.002 | 0.025 |
| 06/26/1998 | <0.005 | <0.0002 | <0.002 | 0.017 |
| 09/23/1998 | <0.005 | <0.0002 | 0.015 | 0.030 |
| 09/23/1998 | <0.005 | <0.0002 | 0.010 | 0.034 |
| Mean | 0.029 | 0.00010 | 0.030 | 0.013 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-19: TAILINGS POND #1 PIESOMETER**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 06/21/1994 | 7.9 | | 0.004 | 0.002 | 0.002 |
| 07/03/1994 | 8.0 | 1.0 | 0.016 | 0.004 | 0.001 |
| 07/31/1994 | 7.9 | 1.0 | 0.022 | 0.003 | 0.003 |
| 08/04/1994 | 7.86 | 1 | 0.022 | 0.0043 | 0.003 |
| 08/09/1994 | 8.3 | | 0.005 | 0.001 | 0.007 |
| 09/06/1994 | 8.0 | 2.0 | 0.013 | 0.003 | 0.002 |
| 09/12/1994 | 7.97 | 2 | 0.013 | 0.0033 | 0.002 |
| 09/27/1995 | 7.89 | <1 | 0.017 | 0.0017 | 0.001 |
| 07/04/1996 | 7.96 | 12.4 | 0.007 | <0.1 | <0.01 |
| 09/20/1996 | 7.87 | 1.2 | 0.002 | <0.1 | <0.01 |
| 06/27/1997 | 7.39 | 1.1 | 0.004 | <0.1 | <0.01 |
| 07/17/1997 | 7.59 | 6.6 | 0.006 | <0.1 | <0.01 |
| 07/17/1997 | 7.68 | 6.7 | 0.005 | <0.1 | <0.01 |
| 09/10/1997 | 7.99 | 1.1 | 0.003 | <0.1 | <0.003 |
| 09/10/1997 | 7.96 | 2.6 | 0.003 | <0.1 | 0.007 |
| 09/30/1997 | 7.93 | 6.4 | 0.004 | <0.1 | <0.003 |
| 06/26/1998 | 7.7 | 19 | 0.080 | 0.0070 | 0.005 |
| 06/26/1998 | 7.7 | 18 | 0.080 | 0.0031 | 0.003 |
| 09/23/1998 | 7.8 | <2 | 0.015 | 0.0038 | 0.003 |
| 09/23/1998 | 7.8 | 3 | 0.015 | 0.0033 | 0.004 |
| Mean | 7.86 | 4.9 | 0.017 | 0.0420 | 0.005 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/21/1994 | 0.003 | 0.00002 | 0.004 | 0.005 |
| 07/03/1994 | 0.005 | 0.00005 | 0.002 | 0.005 |
| 07/31/1994 | 0.005 | 0.00005 | 0.004 | 0.009 |
| 08/04/1994 | <0.005 | <0.00005 | | 0.009 |
| 08/09/1994 | 0.001 | 0.00002 | 0.005 | 0.005 |
| 09/06/1994 | 0.005 | 0.00008 | 0.001 | 0.022 |
| 09/12/1994 | <0.005 | 0.00008 | | 0.022 |
| 09/27/1995 | <0.005 | <0.00005 | | <0.005 |
| 07/04/1996 | <0.05 | | <0.05 | <0.01 |
| 09/20/1996 | <0.05 | | <0.05 | <0.01 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-19: TAILINGS POND #1 PIESOMETER**

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/27/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 09/10/1997 | <0.05 | <0.00005 | <0.05 | <0.005 |
| 09/10/1997 | <0.05 | <0.00005 | <0.05 | <0.005 |
| 09/30/1997 | <0.05 | 0.00007 | <0.02 | <0.005 |
| 06/26/1998 | <0.005 | <0.0002 | 0.005 | 0.022 |
| 06/26/1998 | <0.005 | <0.0002 | 0.002 | 0.011 |
| 09/23/1998 | <0.005 | <0.0002 | <0.002 | 0.038 |
| 09/23/1998 | <0.005 | <0.0002 | 0.010 | 0.033 |
| Mean | 0.023 | 0.00008 | 0.024 | 0.013 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-20: EAST SIDE OF TAILINGS POND #1**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 06/21/1994 | 7.9 | | 0.081 | 0.002 | 0.005 |
| 07/03/1994 | 7.9 | 1.0 | 0.017 | 0.003 | 0.002 |
| 07/31/1994 | 8.1 | 3.0 | 0.005 | 0.002 | 0.008 |
| 08/04/1994 | 8.06 | 3 | 0.005 | 0.0016 | 0.008 |
| 08/09/1994 | 8.4 | | 0.004 | 0.002 | 0.010 |
| 09/06/1994 | 8.0 | 13.0 | 0.008 | 0.004 | 0.009 |
| 09/12/1994 | 7.98 | 13 | 0.008 | 0.0036 | 0.009 |
| 07/04/1996 | 7.79 | 4.3 | 0.007 | <0.1 | <0.01 |
| 09/20/1996 | 7.90 | 2.7 | 0.001 | <0.1 | <0.01 |
| 07/08/1997 | 7.93 | 2.5 | 0.004 | <0.1 | <0.01 |
| 07/08/1997 | 7.95 | 2.0 | 0.004 | <0.1 | <0.01 |
| 07/17/1997 | 7.87 | 2.0 | 0.002 | <0.1 | <0.01 |
| 06/26/1998 | 8.2 | 3 | 0.005 | 0.0026 | 0.008 |
| 06/26/1998 | 8.2 | 5 | 0.005 | 0.0028 | 0.007 |
| 09/23/1998 | 7.8 | 8 | 0.015 | 0.0037 | 0.003 |
| 09/23/1998 | 7.7 | 11 | 0.006 | 0.0037 | 0.009 |
| Mean | 7.98 | 5.2 | 0.011 | 0.0332 | 0.008 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/21/1994 | 0.003 | | 0.011 | 0.005 |
| 07/03/1994 | 0.005 | 0.05 | 0.004 | 0.005 |
| 07/31/1994 | 0.005 | 0.05 | 0.009 | 0.005 |
| 08/04/1994 | <0.005 | <0.00005 | | <0.005 |
| 08/09/1994 | 0.001 | 0.02 | 0.011 | 0.005 |
| 09/06/1994 | 0.005 | 0.05 | 0.008 | 0.005 |
| 09/12/1994 | <0.005 | <0.00005 | | <0.005 |
| 07/04/1996 | <0.05 | | <0.05 | 0.01 |
| 09/20/1996 | <0.05 | | <0.05 | 0.02 |
| 07/08/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/08/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 07/17/1997 | <0.05 | <0.00005 | <0.05 | <0.01 |
| 06/26/1998 | <0.005 | <0.0002 | 0.009 | 0.096 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-20: EAST SIDE OF TAILINGS POND #1**

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 06/26/1998 | <0.005 | <0.0002 | 0.005 | 0.010 |
| 09/23/1998 | <0.005 | <0.0002 | 0.013 | 0.033 |
| 09/23/1998 | <0.005 | <0.0002 | 0.013 | 0.017 |
| Mean | 0.019 | 0.01316 | 0.024 | 0.016 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-22: TAILINGS POND #1 NE CORNER**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 07/04/1996 | 7.85 | 3.8 | 0.007 | <0.1 | <0.01 |
| Mean | 7.85 | 3.8 | 0.007 | 0.1 | 0.01 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 07/04/1996 | <0.05 | | <0.05 | <0.01 |
| Mean | 0.05 | | 0.05 | 0.01 |

## Water Quality at Cullaton Lake
**1994-1998**

**940-Q**

| DATE | LAB PH pH unit | SUSPENDED SOLIDS mg/l | TOTAL CYANIDE mg/l | TOTAL ARSENIC mg/l | TOTAL COPPER mg/l |
|---|---|---|---|---|---|
| 07/08/1997 | 8.49 | 39.0 | 0.003 | <0.1 | 0.02 |
| 09/10/1997 | | | 0.001 | <0.1 | 0.013 |
| 09/10/1997 | 8.12 | 0.5 | 0.001 | <0.1 | 0.010 |
| 09/30/1997 | 7.99 | 35.6 | 0.004 | <0.1 | 0.009 |
| 06/26/1998 | 7.6 | 10 | 0.001 | 0.0053 | 0.007 |
| 06/26/1998 | 7.6 | 14 | 0.001 | 0.0056 | 0.008 |
| 09/23/1998 | 8.0 | 17 | 0.006 | 0.0091 | 0.008 |
| 09/23/1998 | 8.0 | 25 | 0.006 | 0.0085 | 0.008 |
| Mean | 7.97 | 20.2 | 0.003 | 0.0536 | 0.010 |

| DATE | TOTAL LEAD mg/l | TOTAL MERCURY mg/l | TOTAL NICKEL mg/l | TOTAL ZINC mg/l |
|---|---|---|---|---|
| 07/08/1997 | <0.05 | <0.00005 | <0.05 | 0.09 |
| 09/10/1997 | <0.05 | 0.00007 | <0.05 | 0.099 |
| 09/10/1997 | <0.05 | <0.00005 | <0.05 | 0.102 |
| 09/30/1997 | <0.05 | <0.00005 | <0.02 | 0.177 |
| 06/26/1998 | <0.005 | <0.0002 | 0.009 | 0.219 |
| 06/26/1998 | <0.005 | <0.0002 | 0.009 | 0.252 |
| 09/23/1998 | <0.005 | <0.0002 | 0.022 | 0.105 |
| 09/23/1998 | <0.005 | <0.0002 | 0.015 | 0.101 |
| Mean | 0.027 | 0.00013 | 0.028 | 0.143 |

ORIGINAL



# WATER LICENCE APPLICATION FORM

Application for: (check one)
☐ New ☐ Amendment ☒ Renewal ☐ Assignment

**LICENCE NO:** (for NWB use only) NWB1CUL

**1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE**

**HOMESTAKE CANADA INC.**
**PO Box 11115**
**1100-1055 West Georgia Street**
**Vancouver, BC V6E 3P3**
Phone: (604) 684-2345
Fax: (604) 684-9831
e-mail: smeyer@homestake.com

**2. ADDRESS OF CORPORATE OFFICE IN CANADA** (if applicable)

**SAME**

Phone:
Fax:
e-mail:

**3. LOCATION OF UNDERTAKING** (describe and attach a topographical map, indicating the main components of the undertaking)

**Cullaton Lake Property (see attached maps).**

Latitude: 61° 16" N Longitude: 98° 30" W NTS Map No. 65G/8 Scale 1:50,000

**4. DESCRIPTION OF UNDERTAKING** (attach plans and drawings)

**Renewal of existing water licence at a closed and reclaimed mine site.**

**5. TYPE OF UNDERTAKING** (A supplementary questionnaire must be submitted with the application for undertakings listed in **"bold"**)

☐ Industrial
☐ **Mine Development**
☐ **Advanced Exploration**
☐ **Exploratory Drilling**
☐ **Remote/Tourism Camps**
☐ **Municipal**
☐ Power
☒ Other (describe): **Inspection and Water Monitoring of Closed Mine Site**

**6. WATER USE**

☐ To obtain water
☐ To modify the bed or bank of a watercourse
☐ To alter the flow of , or store, water
☐ To cross a watercourse
☐ To divert a watercourse
☐ Flood control
☒ Other (describe): **None – monitoring only**

**13. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN**

Supplementary Questionnaire (where applicable: see section 5) ☐ Yes ☒ No If no, date expected N/A

Inuktitut/English Summary of Project ☒ Yes ☐ No If no, date expected _____

Application fee $30.00 (c/o of Receiver General for Canada) ☒ Yes ☐ No If no, date expected _____

**14. PROPOSED TIME SCHEDULE**

☐ Annual (or) ☒ Multi Year

Start Date: Water monitoring is ongoing as per Surveillance Network Program of current water licence.
Completion Date: Water monitoring will cease at end of licence period.

| **Vernon Betts** | **Manager,EnvironmentalAffairs** | | **April27, 1999** |
|---|---|---|---|
| **Name (Print)** | **Title (Print)** | **Signature** | **Date** |

**For Nunavut Water Board use only**

**APPLICATION FEE** **Amount: $**_____ **Receipt No.:**_____

**WATER USE DEPOSIT Amount: $**_____ **Receipt No.:**_____

7. **QUANTITY OF WATER INVOLVED** (litres per second, litres per day or cubic metres per year, including both quantity to be used and quality to be returned to source)

**None – no water use; water monitoring only (samples taken for water quality analysis)**

8. **WASTE** (for each type of waste describe: composition, quantity, methods of treatment and disposal, etc.)

| | |
|---|---|
| ☐ Sewage | ☐ Waste oil |
| ☐ Solid Waste | ☐ Greywater |
| ☐ Hazardous | ☐ Sludges |
| ☐ Bulky Items/Scrap Metal | ☒ Other (describe) Mine tailings were deposited within tailings impoundment between fall 1981 and fall 1985. No additional tailings will be deposited. Inspection and monitoring activities only. |

9. **PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING** (give name, mailing address and location; attach if necessary)

**Land Use Permit**

| | |
|---|---|
| DIAND | ☒ Yes ☐ No If no, date expected _____ |
| Regional Inuit Association | ☐ Yes ☒ No If no, date expected N/A |
| Commissioner | ☐ Yes ☒ No If no, date expected N/A |

10. **PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES** (direct, indirect, cumulative impacts, etc.)

NIRB Screening ☐ Yes ☒ No If no, date expected N/A

**Please see attached summary document**

11. **CONTRACTORS AND SUB-CONTRACTORS** (name, address and functions)

Decommissioning and restoration work was completed by DRI/Kimex, 25 Kenwood Hills Drive, North Bay, ON P1C 1M1

12. **STUDIES UNDERTAKEN TO DATE** (list and attach copies of studies, reports, research, etc.)

**Please see attached summary document.**

HOMESTAKE

March 26, 1999



Mr. Philippe di Pizzo, Executive Director
Nunavut Water Board
Gjoa Haven, Nunavut
X0E 1J0

Dear Mr. di Pizzo;

Re: Homestake Mining Company - Annual Environmental Report

The Homestake Mining Company (HMC) produces an annual Environment, Health and Safety Report. This report includes information on all of HMC's operations, including those of Homestake Canada Inc. Our Canadian operations include Snip and Eskay Creek mines in northwestern BC, the Nickel Plate mine in the Okanagan, and Williams and David Bell mines in Ontario. Homestake Canada Inc. also has a number of non-operating properties, including the Cullaton Lake mine. Homestake felt that you might like to some copies of the 1998 report, for the Water Board and for yourself.

If you have any questions about this yearly report, please contact me.

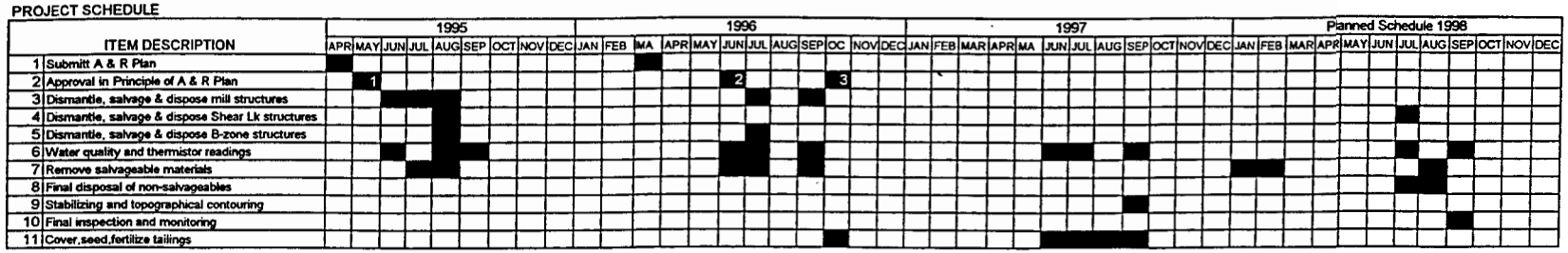
Yours truly,
HOMESTAKE CANADA INC.

Vernon Betts
Manager, Environmental Affairs

enclosure

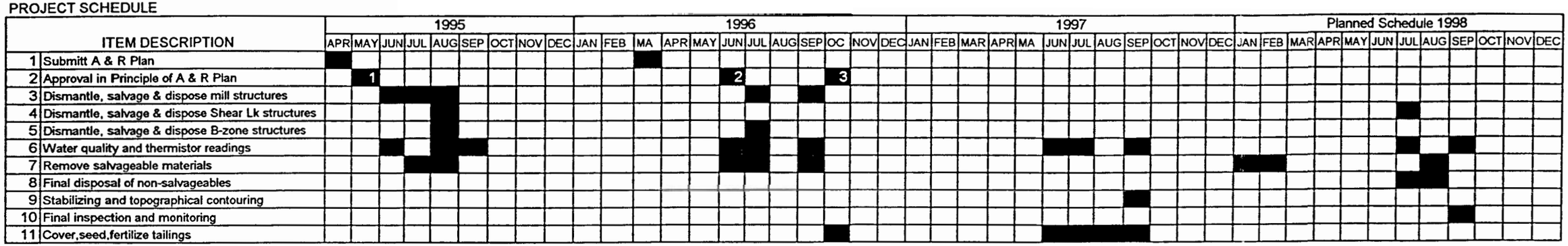
**Homestake Canada Inc.**
P.O. Box 11115 • 1100 - 1055 West Georgia Street • Vancouver, BC V6E 3P3 • Phone (604) 684-2345 • Fax: (604) 684-9831

CULLATON LAKE GOLD MINES LTD
FINAL ABANDONMENT AND RESTORATION PLAN
PROJECT SCHEDULE




1. Meeting with DIAND to review plan-minor revisions required
2. Meeting with DIAND to review revised plan
3. Meeting with Nunavut Water Board to review revised plan

CULLATON LAKE GOLD MINES LTD
FINAL ABANDONMENT AND RESTORATION PLAN
PROJECT SCHEDULE




1. Meeting with DIAND to review plan-minor revisions required
2. Meeting with DIAND to review revised plan
3. Meeting with Nunavut Water Board to review revised plan