

CULLATON LAKE GOLD MINES LTD.

WATER LICENCE 1BR-CUL1828

ANNUAL WATER LICENCE REPORT 2019

PREPARED on behalf of:

BARRICK GOLD INC.

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EXECUTIVE SUMMARY

The Cullaton Lake Gold mine is a recognized closed mine site located in the southern part of the Kivalliq Region in the Nunavut Territory. The property is 645 km north of Thompson, Manitoba and 250 km west of Arviat, Nunavut.

The 2019 site activities consisted of one site visit from September 2nd to September 6th, 2019, to continue airstrip maintenance and perform a general site inspection.

Summarized, the results of the site inspection indicate that:

- The site remains in good condition.
- The tailings storage facility continues to remain stable. The water level in the pond remains low but has recovered slightly compared to 2018.
- The casings on the newly installed thermistors suffered damage during the previous winter. These will be repaired in 2020.

The focus of the 2019 campaign was to continue cutting back encroaching brush on the airstrip. In addition, all remaining fuel drums were removed from the airstrip and backhauled to Thompson Manitoba for proper disposal.

In 2020 a site visit will be performed in early September to conduct the biannual Water License monitoring obligations and continue general site maintenance.

1.0 SITE BACKGROUND / LOCATION

Cullaton Lake Gold Mines Ltd. is a wholly owned subsidiary of Barrick Gold Inc. (Barrick) which in turn is a wholly owned subsidiary of Barrick Gold Corporation.

The Cullaton Lake Gold mine is a recognized closed mine site located in the south central part of the Kivalliq Region in the Nunavut Territory. The property is 250 km west of Arviat, Nunavut, 400 km northwest of Churchill, Manitoba, and 645 km north of Thompson, Manitoba (see Figure 1). The mine was in operation for four years from 1981 to 1985. Following operation, the mine was in a care and maintenance mode from 1985 to 1991.

1.1 CLOSURE AND POST CLOSURE MAINTENANCE HISTORY

Decommissioning was initiated in 1991 with the rehabilitation of Tailings Pond No. 1, which included construction of a spillway in the dam and the covering of exposed tailings with water or till/mine rock. In addition, the water level in Tailings Pond No. 2 (the polishing pond) was lowered by partial removal of the dam (see Figures 2 and 3 for site features and historic monitoring locations).

Between 1991 and 1993, the fresh water intake, pump house and pipelines at the old diamond drill camp on the Kognak River were dismantled and removed. In 1995 and 1996 the mill buildings were dismantled. Some of the inert, non-salvageable material was crushed and placed in the quarry pit. In 1997, additional cover material was placed over the tailings area and the area was seeded and fertilized with a special arctic seed mix, as was the former mill site. During the winter of 1998/99 some salvageable equipment and material was removed from the property.

During the summer of 2001, all remaining inert material was placed in the former quarry pit and covered with till. All waste oils and hydraulic fluids, as well as tires and batteries were removed from equipment prior to burial and subsequently airlifted to Thompson, Manitoba for proper disposal. In addition, low grade waste rock at the Shear Lake Portal area that had been determined to be acid generating was collected and encapsulated in till adjacent to the portal.

During the 2005 annual inspection, minor maintenance items identified during the 2004 inspection were corrected. These included a second application of seed and fertilizer on the Encapsulated Waste Rock (EWR) cover at Shear Lake and erosion repairs to the EWR cover, Tailings Pond No. 1 spillway and the quarry pit landfill cover.

During the 2006 annual inspection, a small above-water exposed section of rubber liner on the upstream side of the tailings dam south of the No.1 Spillway was removed.

In response to a request from Barrick in 2006 to return the property to the crown, Indian and Northern Affairs Canada (now Crown – Indigenous Relations and Northern Affairs Canada (CIRNAC)) initiated a review to assess closure conditions. CIRNAC visited the site in Sept 2006 and commissioned BGC Consulting Ltd. (BGC) to conduct a desk top review of the closure history and monitoring results.

The BGC report indicated for a variety of reasons that CIRNAC should not accept return of the property. In response, CIRNAC, BGC, Barrick and Trow Consulting personnel met

on the site during the 2007 annual inspection on July 5, to discuss the report findings and confirm a newly identified pH issue at Shear Lake. In addition Barrick volunteered to complete an Ecological Risk Assessment (ERA) to determine a) whether the mitigation efforts at Cullaton Lake have adequately addressed the requirements of the approved 1996 Abandonment and Reclamation Plan, and b) whether the new ARD issue at Shear Lake is having any significant ecological effects.

In 2008 Barrick and Gartner Lee personnel visited the site on 4 occasions to collect field data for completing the ERA. During the August trip, a minor amount of scrap metal was also retrieved from the north bank of the Kognak river and from the former bunkhouse area.

The ERA was finalized and submitted to CIRNAC in August 2009. The report indicated that the surface waters at the site were not significantly impacted by the former mine operation or existing conditions. The findings were not acknowledged by CIRNAC. In April 2014, CIRNAC issued a response letter to Barrick's request to return the property to the Crown, re-stating recommendations outlined by BGC in their March 2007 report. Following a subsequent meeting between the Nunavut Water Board, CIRNAC and Barrick in Iqaluit in April 2015, Barrick proposed by letter dated June 11, 2015 (the June 2015 Letter) to undertake several of the recommendations in the April 2014 letter, including the completion of a Dam Safety Review, a financial assurance review and regular airstrip maintenance; and proposed to initiate an adaptive monitoring plan involving additional water quality and benthic /sediment monitoring aimed at producing additional support for the ERA. Barrick also indicated in the June 2015 letter that it will not be seeking to relinquish the property to the government for the immediate future.

The Dam Safety Review was completed by Thurber Engineering and submitted to CIRNAC and the NWB in August 2016. Airstrip maintenance was initiated in 2015. Additional biological field work to support the adaptive monitoring plan was completed in 2016.

In 2017 a drone aerial survey was conducted to gather additional data for generating up-to-date site plans and remote historic refuse identified proximate to the site by CIRNAC was collected and stored at the airstrip for removal in 2018.

A new Closure and Reclamation Plan (C&R Plan) was developed and Submitted on June 30th, 2017 pursuant to the action plan outlined in the 2016 CIRNAC water license inspection report and based on the adaptive monitoring plan proposed by Barrick in 2015. Following several discussions between Barrick and CIRNAC throughout 2018, principally on the amount of Financial Assurance required to implement the plan, the new C&R Plan was accepted and renewal Water License 1BR-CUL1828 was issued on October 15th, 2018.

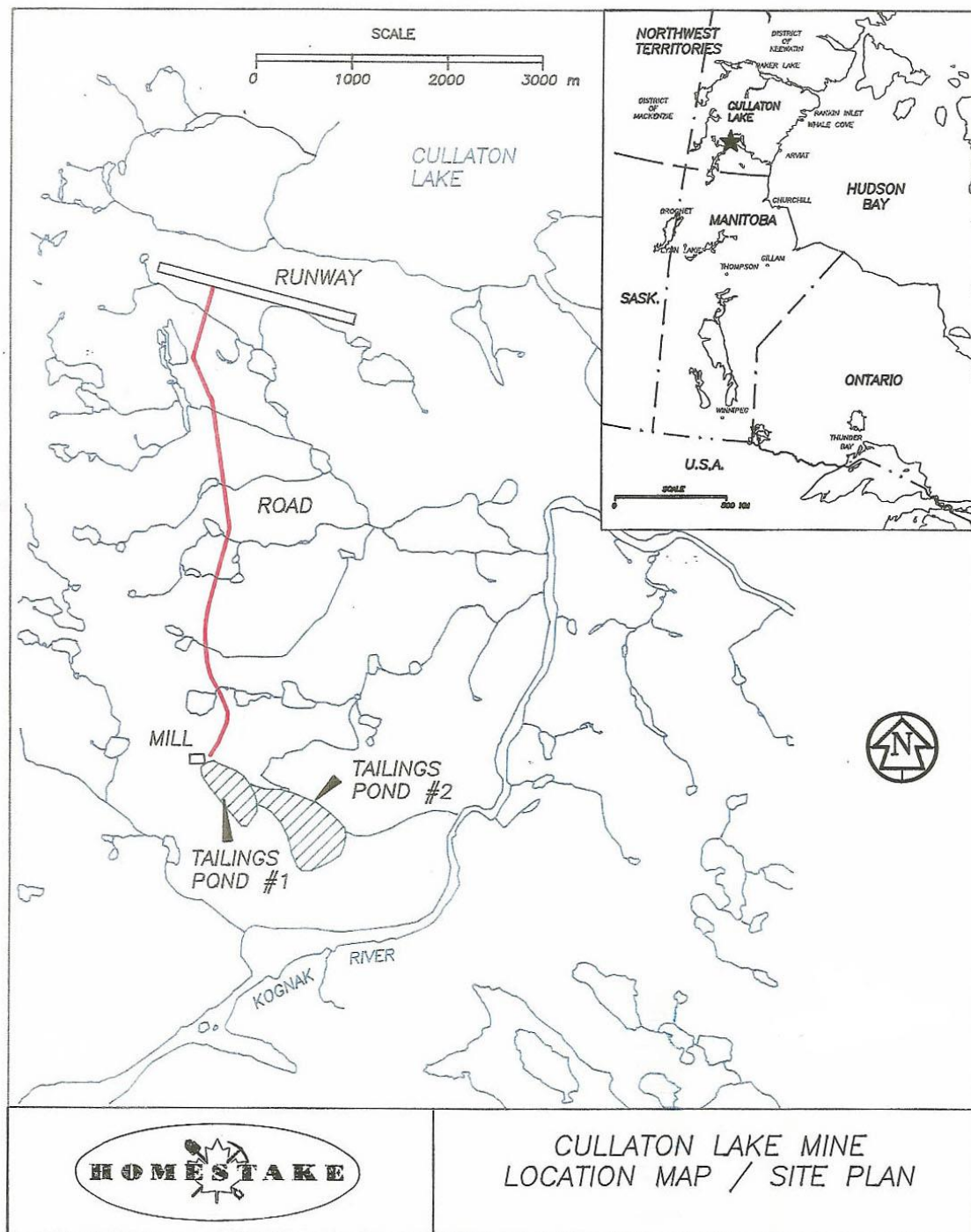
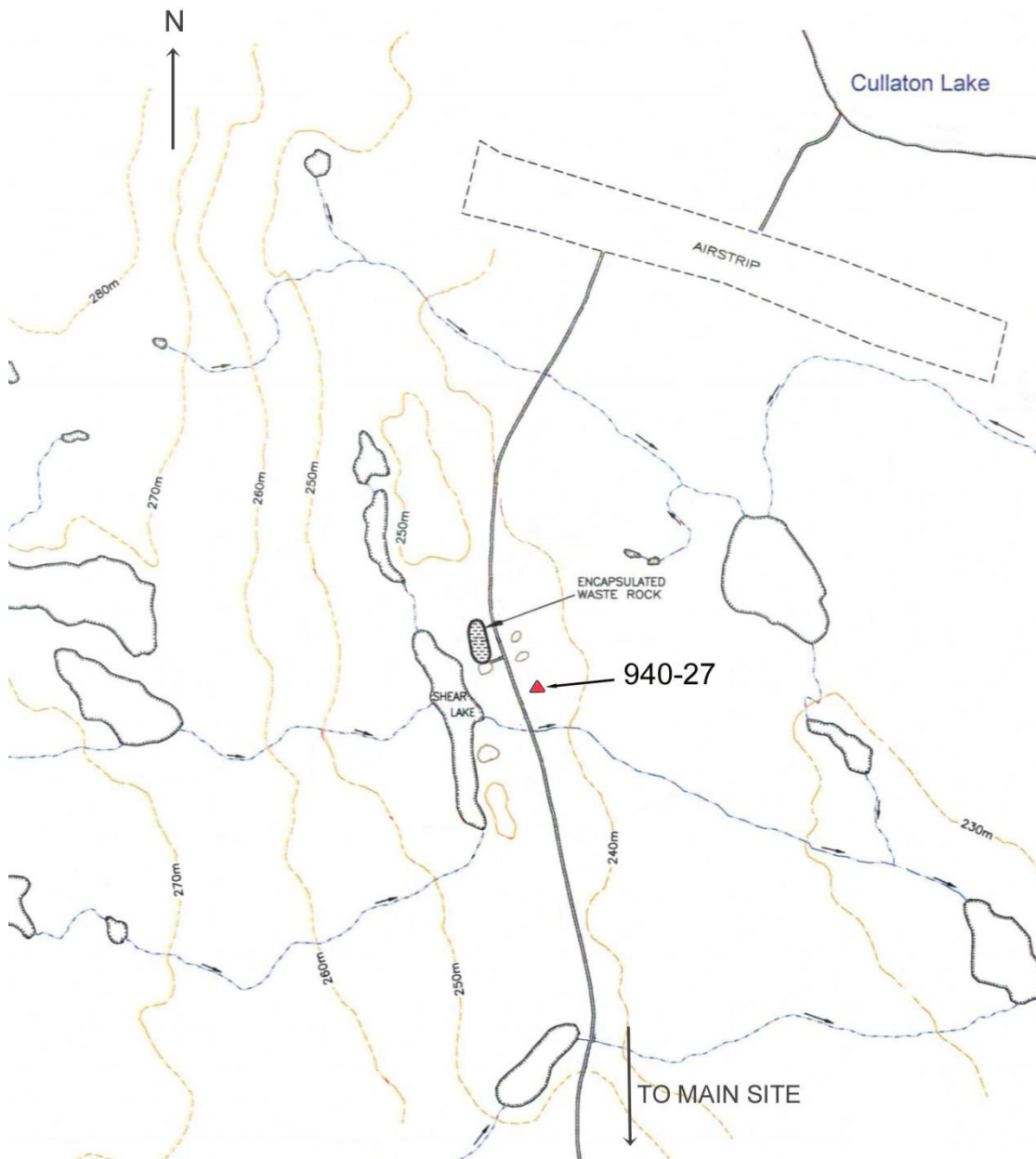


Figure 1: Cullaton Lake Mine location and general site layout



Legend:
940-27 Water sample station

Figure 2: Cullaton Lake Shear Lake site showing features (not to scale).

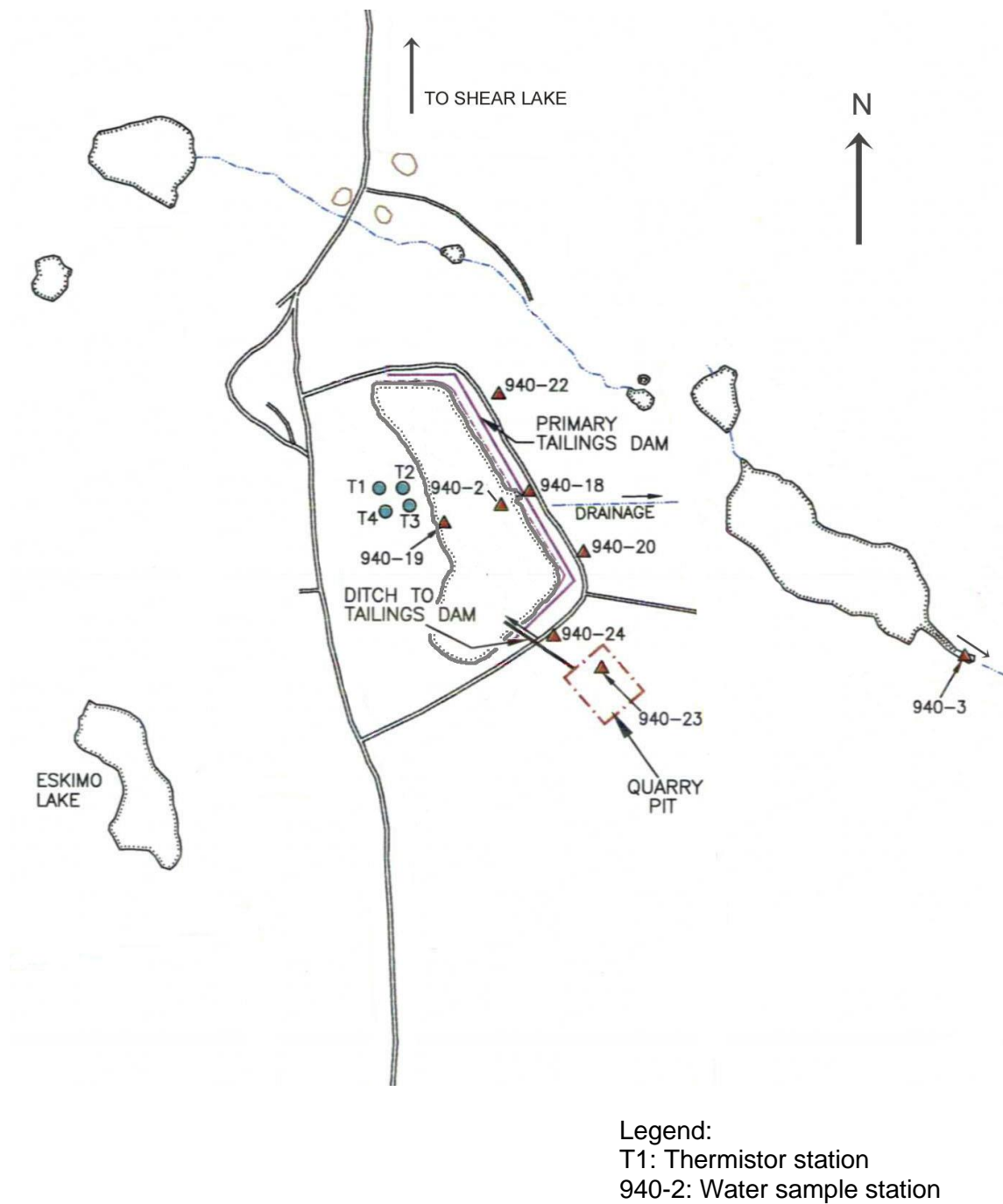


Figure 3: Cullaton Lake main site showing features, water sampling and thermistor stations (not to scale).

2.0 WATER LICENCE SUPPLEMENTAL CONDITIONS AND NOTES

Management of Cullaton Lake was conducted in 2019 pursuant to Water Licence 1BR-CUL1828, which was issued on October 15th, 2018 to renew previously issued license number 1BR-CUL1118. The following provides a historic summary of supplemental conditions and notes pursuant to previous licences:

Name Change:

On November 13, 2003, application was made to the Nunavut Water Board to change the name on Licence NWB1CUL0207 from Homestake Canada Inc. to Barrick Gold Inc. to reflect changes resulting from the 2001 merger of Barrick Gold Corporation and Homestake Mining Company.

Amendment for Encapsulated Waste Rock at Shear Lake:

Part F, Item 5 of Licence NWB1CUL0207 required submission of an application for amendment to the approved Abandonment and Restoration Plan by January 1, 2003 (subsequently extended to March 31, 2003) for the new waste rock disposal area on the shores of Shear Lake. The application for amendment with supporting documentation was submitted to the Nunavut Water Board on March 31, 2003. The amendment was granted on June 6, 2005. In addition, station 940-25 was removed from the monitoring program and replaced with station 940-27, intended to monitor any seepage from the encapsulated waste rock down-gradient to Shear Lake Creek.

The amendment required that suitable as-built drawings for the encapsulated waste rock be submitted within 6 months of the date of the amendment. Drawings were submitted on Dec 5, 2005.

The amendment also required that Section 4.4 of the Approved Abandonment and Restoration Plan be revised to incorporate the latest information with respect to the closure of the Shear Lake Waste Rock disposal area. The revision was submitted concurrent with the 2005 Annual Report.

Contingency Plan to Address Seepage Issues at the Encapsulated Waste Rock

Part F, Item 6, Amendment No. 1 of Licence NWB1CUL0207 required the submission of a Contingency Plan to address the potential of the permafrost not to re-aggrade into the waste rock pile / cover as anticipated, the clogging of the passive treatment system due to the relatively flat terrain and the remediation or mitigation of sediments contaminated with levels of metals in excess of CCME guidelines due to seepage from the encapsulated waste rock pile. The contingency plan for clogging of the passive treatment system and contamination remediation was submitted concurrent with the 2005 Annual Report and under separate cover. In the same document Barrick requested that the requirement for a Contingency Plan to address the possibility of permafrost not re-aggrading into the waste rock be deleted from the Licence since this condition was identified as an “added benefit” and not a design parameter as specified by URS ¹.

¹ Assessment of Closure Options and Impacts, Shear Lake Zone Waste Rock Dump, Cullaton Lake Mine Nunavut, March 2003, URS Norecol, Dames & Moore Inc.

Amendment for Encapsulated Waste Rock Thermistors:

Water Licence NWB1CUL0207 required the installation of thermistors in the encapsulated waste rock at Shear Lake. An unsuccessful attempt to install the thermistors was made in July 2003. A report detailing this attempt was submitted to the Nunavut Water Board on November 25, 2003 and requested that this requirement be removed from the Licence. The request was granted on June 6, 2005 and station 940-26 was removed from the monitoring program.

Site Map:

Part G, Item 4a of Licence NWB1CUL0207 required submission to the Board of a Site Map of the Project Environmental Impact Area with active Surveillance Network Program (SNP) Stations within 60 days of issuance of the Licence. The required site map was submitted to the Nunavut Water Board on December 16, 2002.

GPS Coordinates:

Part G, Item 4b of Licence NWB1CUL0207 required submission of GPS coordinates of all surface and subsurface sampling points. The required GPS coordinates were submitted to the Nunavut Water Board on August 29, 2003.

Miscellaneous:

The NWB noted the following in their October 10, 2006 review of the 2005 Annual Water Licence report:

1. While the 2004 reported detection limit for nickel had been lowered as previously requested, the detection limit for arsenic was now higher than previously reported (1 µg/l compared to 0.1 µg/l). To clarify the issue the NWB requested that detection limits proposed for the 2007 monitoring be included in the 2006 annual report.

The variability in detection limits is largely the result of the many recent laboratory acquisitions / mergers and procedure changes. After discussing the issue with the present laboratory and reviewing the associated methods and equipment limitations, the 2007 proposed detection limits were as follows:

Licence Parameter	Method Detection Limit
Total Suspended Solids	1 mg/l
Total Cyanide	0.005 mg/l
Total Arsenic	0.4 µg/l
Total Copper	1 µg/l
Total Lead	0.5 µg/l
Total Mercury	0.00005 mg/l
Total Nickel	1 µg/l
Total Zinc	5 µg/l

Following the 2007 sampling, the lab erroneously used a TSS detection limit of 10mg/l for the 2007 results. According to the lab, a correction to 1mg/l was not possible due the volume of analysis being less than 500ml. In 2008 the license required water samples were collected by Gartner Lee personnel along with the additional samples required for supporting their ERA. The 2008 and subsequent detection limits were equal to or lower than those shown above except for TSS in 2011 when the lab once again used a higher DL of 4mg/l. In addition to the foregoing, the lab also reported Weak Acid Dissociated (WAD) cyanide instead of the requested Total cyanide. Results were corrected for the 2012 monitoring round.

A new lab (ALS Environmental) was engaged in 2014 for logistical reasons and is the lab going forward for the foreseeable future. As a result detection limits have been adjusted slightly to reflect their standard. The new detection limits are:

Licence Parameter	Method Detection Limit
Total Suspended Solids	2 mg/l
Total Cyanide	0.002 mg/l
Total Arsenic	1 µg/l
Total Copper	1 µg/l
Total Lead	1 µg/l
Total Mercury	0.00001 mg/l
Total Nickel	2 µg/l
Total Zinc	3 µg/l

The 2018 surface water samples report detection limits were equal to or lower than the above.

2. The NWB commented on the 2005 anomalous zinc value at station 940-23 (.065 mg/l). Follow-up monitoring is summarized in the following table:

Station	Year	Zn (mg/l)
940-23 (Quarry Pit)	2005	0.065
	2006	0.012
	2007	0.006
	2008	0.009
	2009	0.023
	2010	0.030
	2011	0.014
	2012	0.0504
	2013	0.0119
	2014	0.0140
	2015	0.024
	2016	0.032
	2017	0.0079
	2018	0.0101

3. The NWB requested that the Spill Response Plan contact number for the INAC Water Resources Inspector be changed.

The required change was made to the 2006 and subsequent versions.

On review of the 2008 annual report, the NWB requested that the NT-NU spill report form be included with the spill contingency plan. The form was included with the 2009 plan and subsequent plans.

4. The NWB requested that water quality and thermistor data be also provided in Excel format, in order to allow for easier data analysis.

The 2006 data was provided in Excel format via e-mail on October 12, 2006. Subsequent results in Excel format are provided concurrent with the annual reports for years in which monitoring takes place.

Water Licence 1BR-CUL1118 included a recommendation by Environment Canada and INAC to replace the non-functioning tailings cover thermistors. The 4 thermistors on the tailings cover were replaced in September 2018.

Part C, Item 1 of Water Licence 1BR-CUL1828 required the submission of security in the amount of \$3,702,660 by November 15th, 2018. The security was submitted to the NWB and CIRNAC as a bond on November 15th, but with subsequent revisions requested by CIRNAC, it was approved as an amendment to the original Standby Letter of Credit on June 20th, 2019.

3.0 2019 ACTIVITIES

The 2019 site visit was conducted from September 2nd - 6th, 2019. Personnel attending the site during this trip included:

Allison Brown, P. Geo., Canadian Closed Sites Manager, Barrick Gold Inc.

Paul Brugger, P. Eng., Closed Properties Manager, Eastern Canada, Barrick Gold Inc.

2 Labourers provided by McCreedy Campground, Thompson, Manitoba

Access during the trip was provided by a Wings over Kississing Cessna Grand Caravan chartered from Thompson Manitoba. During this campaign the following activities were performed:

- Ms. Brown and Mr. Brugger completed a general site inspection.
- McCreedy Campground personnel continued removing brush from the airstrip.
- All remaining empty and full fuel barrels were removed to Thompson Manitoba with Wings over Kississing take possession on arrival in Thompson.

Ms. Brown left the site on September 2nd. Mr. Brugger and McCreedy support labour remained until September 6th to work on clearing shrub vegetation from the airstrip and general site maintenance.

3.1 SITE INSPECTION GENERAL FINDINGS

The site inspection performed on September 2nd, 2019 indicated that the site remains undisturbed, stable and generally in good condition. The following findings were noted:

The minor subsidence found on the B-Zone fresh air raise remained unchanged from 2018 and was filled in (See Photos 11 and 12 in Appendix 1). The affected area will be monitored during future inspections until stability is confirmed.

The Tailings Pond No. 1 water level has risen a few centimeters compared to 2018 (See Photos 15 and 16 in Appendix 1).

The minor subsidence areas on the quarry pit landfill remain largely unchanged. Most of the affected areas are occupied by arctic ground squirrels (See Photo 17 in Appendix 1).

Two of the recently installed thermistors were found with cracked casings, from either wildlife activity or frost damage (See Photo 18 in Appendix 1).

The survival shed suffered bear damage and needed considerable repairs (See Photo 22 in Appendix 1).

The site access road continues to be difficult to negotiate as shrub vegetation continues to fill in the trail.

Additional select photos are included in Appendix 1.

3.2 WATER QUALITY MONITORING

Pursuant to the approved Adaptive Management Plan monitoring program, surface water quality monitoring was not performed in 2019.

3.3 THERMISTOR MONITORING

The new thermistors have been calibrated and first readings will be recorded in 2020 as per the biannual monitoring schedule outlined in Water License 1BR-CUL1828.

3.4 GEOTECHNICAL INSPECTION

Pursuant to the approved Adaptive Management Plan monitoring program, a geotechnical inspection was not performed in 2019.

4.0 IMPLEMENTATION OF SPILL RESPONSE PLAN

Pursuant to Part I, Article 1 of Water Licence 1BR- CUL1828, the 2018 Spill Response Plan has been reviewed and will remain implemented for 2020.

5.0 REVIEW OF ABANDONMENT AND RESTORATION PLAN

Pursuant to Part J, Article 2 of the Water Licence, a review of the Closure and Restoration Plan (CRP) was performed in March 2020. There was no Progressive Rehabilitation conducted during the year and there are no current changes to the CRP.

6.0 IMPLEMENTATION OF QUALITY ASSURANCE / QUALTY CONTROL

Pursuant to Part K, Article 2 of the Water License, the Cullaton Lake Water Quality Monitoring QA/QC Plan dated March 25, 2011 remains implemented. A QA/QC was not conducted since no water quality monitoring was required in 2019.

7.0 2020 PROPOSED PROGRAM

A 5-day campaign is planned for early September 2020 to complete the following Water License obligations:

- Perform the biannual geotechnical inspection
- Perform the biannual surface water quality program
- Install monitoring location signage in the official languages of Nunavut.

During this campaign a general site inspection will also be performed and airstrip and access road shrub removal will continue.

Appendix 1
Cullaton Lake September 4th, 2019 Site Photos



Photo 1: Cullaton Lake main site, looking south east (September 2017 photo).



Photo 2: Shear Lake site, looking southeast (Sept 2018).



Photo 3: Access road to Shear lake with Encapsulated Waste Rock in distance.



Photo 4: Former Shear Lake Portal.



Photo 5: Encapsulated Waste Rock cover top looking north.



Photo 6: Shear Lake low pH pool area.



Photo 7: Healthy vegetation downstream of low pH pool.



Photo 8: Shear Creek at access road crossing.



Photo 9: Tailings Pond No 1 cover vegetation, looking southwest.



Photo 10: Tailings cover vegetation looking southeast.



Photo 11: Small area of subsidence at B-zone Vent Raise.



Photo 12: Affected area filled in.



Photo 13: Tailings Pond No. 1 spillway (dry) looking downstream.



Photo 14 Tailings Pond No 1 looking northwest.



Photo 15: Exposed tailings beach on west side of pond in September 2018.



Photo 16: Exposed beach in September 2019. Water level is slightly higher.



Photo 17: Quarry Pit main subsidence area – no change from previous years.



Photo 18: Thermistor T-4 casing damage.



Photo 19: Airstrip brushing, mid-section looking east.



Photo 20: Airstrip east approach, looking west.



Photo 21: Airstrip west approach looking east.



Photo 22: Cabin bear damage.