

MEMO

To: Nunavut Water Board

Re: Ulu Gold Project Water Licence Renewal – Response to AANDC application review comments.

AANDC 1.0 General

The Ulu site was previously used as a satellite mine providing additional mill feed to the Lupin Mine (owned by Lupin Mines Incorporated, also a subsidiary of Elgin).

BCC Clarification:

Ulu never provided additional mill feed to the Lupin Mine.

AANDC 2.1 General

2.1.1 Where the Licence requires the Licensee to provide GPS co-ordinates, AANDC requests that the Licensee also be required to provide the datum source to ensure consistency.

BCC Response:

The datum source is: NAD 1983 UTM zone 12 N.

2.1.2 The application references a hydrological assessment of West Lake, submitted in May 2006 in accordance with Part C, Item 4 of the previous licence NWB1ULU0008. AANDC notes that the concern regarding characterizing the hydrology of West Lake was carried over into Part C, Item 3 of 2BM-ULU0914 that requires the Licensee to submit Terms of Reference for the Hydrological Assessment of West Lake within 6 months following notification that operations will resume.

BCC Response:

The required report entitled Hydrological Assessment of West Lake (GLL, 2006) was submitted in May 2006 to satisfy the licence requirement. Part C Item 4 remained in the licence given that the 2008 application was for a renewal, and does not imply that the study needs to be resubmitted. BCC submits that the condition has been fulfilled and requests that the condition be removed from the licence going forward to clarify the administrative issue.

2.2 Management Plans

2.2.1 Care and Maintenance Plan (May 2014)

- a) *Section 4.2 states that sewage treatment will be carried out with a Rotating Biological Contactor (RBC) and if required, RBC effluent will be pumped to a surface retention pond to allow natural treatment prior to discharge, but during periods of site inactivity, sewage will be either shipped off site or deposited in a latrine pit. The Sewage Treatment Plant Operation and Maintenance Plan and the A&R Plan states that final effluent during start up will be directed to the mine sump containment pond until it meets discharge criteria. The 2012 AANDC Inspection Report, indicates that sewage effluent was to be diverted to the retention pond during operations (July-September 2012) until an alternative method of sewage disposal was implemented because sewage effluent*

was being discharged without sampling to ensure effluent does not exceed effluent quality limits, as required under Part D, Item 3. Additionally, the 2013 AANDC Inspection Report recommends an alternative sewage management system for short term operations due to the time required for start-up. AANDC recommends that:

- a) the C&M plan be revised to clarify sewage management methods during periods of activity (short-term vs. long-term) versus inactivity (C&M);*

BCC Response:

Agreed. BCC will provide an updated C&M Plan within ninety (90) days of licence issuance.

- b) the revised plan include an alternative sewage management plan for short-term operations;*

BCC Response:

Agreed. BCC will provide an updated C&M Plan within ninety (90) days of licence issuance.

- c) the information regarding sewage management is consistent among all relevant management plans;*

BCC Response:

Agreed. In the event updates to the C&M Plan precipitate adjustments to the Sewage Treatment Plant Operations and Maintenance Plan, or other management plans, revisions will be provided to the NWB in accordance with Part B, Item 8(e) of the Licence.

- d) any effluent discharged from the retention pond be required to meet effluent quality limits set both for sewage effluent (Part D, Item 3) and for minewater (Part D, Item 6) should the diversion of sewage effluent to the retention pond be authorized by the Board.*

BCC Response:

Sewage effluent will no longer be pumped to the surface retention pond. BCC is proposing to discharge treated sewage effluent to the land at a location approximately 500 m from East Lake. This approach provides additional natural mitigation in the event of upset conditions at the STP and further protects water by not discharging directly to the lake, and avoids having to mix STP effluent with other contact water sources.

- b) Sections 4.3 and 4.4 state that all effluent will be discharged to land towards East Lake in a manner that will minimize surface erosion. More detail should be provided to explain how surface erosion will be minimized.*

BCC Response:

Best management practices to prevent local surface erosion at the discharge location include options of selecting a location with natural rock features, placement of suitable rock material if needed, controlled discharge (large volumes are not anticipated based on camp occupancy during operations), monitoring the area and moving the outfall as needed.

- c) *Section 4.4 states that BCC will carry out necessary repairs to the tank farm berms in 2014 as recommended in the 2011 Annual Geotechnical Inspection Report. AANDC is concerned that it took 3 years to respond to the geotechnical engineer's recommendations and thus recommends that the licence require a timeline of one year for the Licensee to implement the plan required under Part D, Item 10.*

BCC Response:

The 2011 Geotechnical Inspection concluded that "the berm appears in generally satisfactory condition" and "Areas of exposed liner to be covered" (adobe pg 10). Small areas of exposed liner occur from time to time and is a minor issue that BCC addresses on an ongoing basis for all lined facilities when fuel is present in storage. There is no need to adjust Part D Item 10 on this basis.

2.2.2 Interim Abandonment and Restoration Plan (March 2013)

- a) *Section 3.2.4 states that contaminated soil will be subjected to in situ landfarming if timing permits and no alternative plan is provided should timing be an issue. AANDC requests:*
- a) *clarification regarding the timeline in which landfarming would and would not be considered; and*

BCC Response:

At this time, landfarming is not required. Hydrocarbon impacted soil is limited and shoveled in to drums for backhaul. Detailed timelines and the need and feasibility of treating hydrocarbon impacted soil at site will be considered accordance with Part I, Item 4 in the event BCC decides to permanently close the site. Part of this consideration may be placement underground.

- b) *that the plan be revised to include an alternative plan for managing contaminated soil should timing not permit landfarming.*

BCC Response:

It is premature to develop an alternative plan for hydrocarbon impacted soil. Options will be dependent on soil type, quantity, contaminant type, and overall timeline for final abandonment and restoration to be addressed in accordance with Part I, Item 4.

- b) *The plan doesn't appear to include reclamation procedures for solid waste and equipment during short-term, temporary (C&M) or final closure.*

BCC Response:

The plan addresses both periods of shutdown and final abandonment and reclamation in sections 4 and 5.

- c) *The plan allows for only 3-5 years for post-closure monitoring. AANDC recommends that post-closure monitoring continue for at least 25 years (consistent with other reclamation projects in Nunavut).*

BCC Response:

BCC disagrees. The post closure monitoring requirements for the Ulu project are not comparable to a full scale mine closure. Post closure monitoring requirements will be further detailed in accordance with Part I, Item 4.

2.2.3 Solid and Hazardous Waste Management Plan (March 2013)

- a) *Section 5 states that waste will be disposed of at onsite facilities or shipped offsite to a third party waste receiver but other plans suggest that there are no plans to dispose waste at an onsite facility and that BCC is not currently authorized to landfill waste at the Ulu site (Section 6.3). AANDC requests clarification on whether there are plans for a landfill at final closure.*

BCC Response:

There are no plans for a landfill at this time. BCC will assess the option of placing some materials underground as part of a final closure plan in accordance with Part I, Item 4 if a decision is made to close the project on a permanent basis.

- b) *Section 6.1 states that clean non-hazardous incinerator ash may be re-usable for onsite reclamation activities but no details are provided on the possible uses for incinerator ash. AANDC requests clarification on the intended uses for clean incinerator ash.*

BCC Response:

Incinerator ash will be placed in drums and backhauled. This will be clarified in the next iteration of the SHWMP.

- c) *Section 6.2 states that BCC plans to install a new incinerator prior to the next planned exploration season and that an addendum to this plan will be submitted for review and approval by the NWB. Since no timeline is provided, AANDC recommends that this addendum is submitted for review and that approval by the Board be obtained prior to commissioning.*

BCC Response:

The plan for the new incinerator will be updated in the next iteration of the SHWMP.

- d) *The plan states that contaminated soils (Section 7.1) and hazardous waste (Section 8.2) will be temporarily stored within the Ulu camp tank farm containment area pending transport to an approved hazardous waste treatment/disposal facility. AANDC is concerned that this plan is not being fully implemented by the Licensee (see 2014 Inspection Report) which increases the risk to the environment, particularly water resources. AANDC recommends that the licence require the Licensee to annually backhaul contaminated soil and hazardous waste from the site to prevent accumulation of hazardous material on site.*

BCC Response:

All drummed soil and hazardous waste that remains on site have now been placed within the containment area as requested. BCC endeavours to backhaul whatever materials it can on each outbound flight. In that regard a significant amount of waste was recently removed from site as backhaul. Manifests are available upon request.

2.2.4 Sewage Treatment Plant Operation and Maintenance Plan (March 2013)

- a) *Section 2 states that design conditions for the sewage treatment unit is based on 40 camp residents while Section 4 states that it is based on 50 residents. Given that the camp can accommodate 60 people, AANDC recommends: a) clarification regarding the design loadings; and b) a plan be included for instances when the camp reaches full capacity.*

BCC Response:

While the camp can accommodate up to 60 person based on overflow bed space, camp occupancy is restricted to 50 persons and has not been an issue for the STP. The manufacturer's system specifications (Seprotech) are attached

- b) *Section 4 states that sewage sludge will be disposed on site in a shallow above ground sump and covered by waste rock that has been determined to be non-acid generating and non-metal leaching. This is inconsistent with Section 5.4 of the A&R Plan which states that sludge will be placed in drums and backhauled to an approved offsite waste disposal facility. AANDC recommends that: a) BCC provide clarification on how sludge will be managed during operations as well as during short-term, temporary, and final closure; and b) the plans be revised so the information is consistent between plans (i.e., C&M Plan, A&R Plan, etc.).*

BCC Response:

To clarify, BCC will continue to place sludge in drums for backhaul.

- c) *Section 5 states that effluent in the sump would be analyzed prior to discharge if mixed with minewater. AANDC recommends that effluent be analyzed (whether or not it is mixed with minewater) and that it is demonstrated to meet discharge criteria prior to discharge.*

BCC Response:

The noted practice was a carryover from when the previous owner when completing an exploration access adit but has never been executed by current owners of Ulu and we do not intend to do so. STP effluent will no longer be pumped to the surface retention pond. BCC proposes to discharge treated effluent to the land over 500m from West Lake to further mitigate water quality.

2.2.5 Spill Contingency Plan (March 2013)

- a) *Sections 1.1 and 4.2 provide contact information for people involved in the event of a spill response. Provided that there have been some changes to the organization of the company, it is recommended that this plan be updated to reflect such changes.*

BCC Response:

Agreed. The contact information will be updated during the next iteration of the plan to be submitted with the 2014 Annual Report. The site is currently closed for the winter.

- b) *Section 2.3.1 does not include alternatives for sewage treatment (see 3.a above). AANDC recommends that the plan be revised: a) to include treatment options during start-up and during periods of site inactivity; b) so the information is consistent between plans (i.e., C&M Plan, Sewage Treatment Plant Operation and Maintenance Plan, etc.).*

BCC Response:

STP start-up procedures are followed and mitigate water quality issues during start up. However, the proposed effluent discharge to land further mitigates any potential effect of poor effluent quality during start up and also during upset conditions. Sewage disposal during periods when the STP is shutdown, will consist of the use of a latrine pit located away from waterbodies. This approach was noted in the 2014 C&M Plan. However, BCC will update the plan for submission with the 2014 Annual Report to clarify any inconsistencies.

- c) *Section 2.3.3 states that the Camp 3 fuel facility does not contain fuel and that there are no plans to use it. Given that this site has not been used since the tank farm at the Ulu camp was commissioned, AANDC requests clarification from BCC whether there are any plans to decommission Camp 3 facilities.*

BCC Response:

The Camp 3 fuel facility does not contain fuel. However, should exploration activities advance and ramp up the facility may need to be upgraded to accommodate fuel storage. Furthermore, if and when the Company decide that the site should be abandoned these fuel storage facilities will likely be required in order to store sufficient fuel to complete the reclamation activities. Therefore at this time, the facility will remain.

- d) *The plan states that various measures will be undertaken to prevent spills, response procedures will be followed including reporting and action (Executive Summary) and that all spills will be cleaned, tracked and documented (Section 4). AANDC is concerned that this plan is not being fully implemented by the Licensee (see 2014 Inspection Report) which increases the risk to the environment, particularly water resources.*

BCC Response:

BCC is unclear on any specific circumstance being referred to. BCC has responded to the comments noted in inspection reports, which have been provided to the NWB in Annual Reports. BCC will continue to work with the Inspector to address potential concerns.

- e) *Table 1 in Section 5.1 lists all equipment readily available for a spill response. It is noted that no vehicles were operational during the July 2013 inspection. AANDC requests clarification from BCC: a) whether the equipment identified in this section are operational; b) whether there are any plans for progressive reclamation of equipment no longer operational (removal from site vs. disposal onsite); and c) whether there are sufficient working vehicles on site to carry out reclamation as required under the water licence and A&R.*

BCC Response:

The equipment at site is operational. In accordance with the C&M and routine safety procedures, batteries and fluids are removed from vehicles during shutdown periods. A heavy equipment mechanic is available to return vehicles to service as needed. During the 2012 exploration program such vehicles as necessary were brought back into operation without issue.

2.3 Operation and Maintenance

2.3.1 *There are currently no definitions for ‘care and maintenance’ or ‘operation’ in the licence. Considering that the Ulu site has the potential to switch between operations and care and maintenance status, it would be pertinent to include definitions in the renewed licence to ensure consistency and clarity. AANDC recommends adopting a definition for care and maintenance consistent with the Mine Site Reclamation Guidelines for the Northwest Territories (INAC, 2007). Refer to Section 1.4 of the guidelines for measures that should be implemented during Care and Maintenance, and should be incorporated as licence requirements. The Licencee should be required to ensure that sufficient staff, equipment and supplies will be at the site for any maintenance or reclamation activities that may need to take place.*

BCC Response:

BCC has not found a definition of Operations in the referenced document. However, BCC generally agrees with the following definitions provided in the referenced document:

Care and Maintenance: A term to describe the status of a mine when it undergoes a Temporary Closure.

Temporary Closure: When a mine ceases operations with the intent to resume mining activities in the future. Temporary closures can last for a period of weeks, or for several years, based on economical, environmental, political, or social factors.

It is important to note that BCC does not agree with the Guide’s suggestion that a site in care and maintenance be staffed on an ongoing basis. This is not required or safe for remote sites. Facilities are inspected by a geotechnical engineer and work is carried out annually as needed to ensure the site is safe for wildlife and the environment. To date there have been no effects to water resources as a result of care and maintenance status.

2.3.2 *On May, 8, 2012, BCC provided notification that they would resume exploration activity at the Ulu site in 60 days. On September 11, 2012, BCC advised the NWB of the completion of the 2012 exploration program but it was not clear whether the Ulu site was being closed for the winter season or returned to care and maintenance. Upon review of the 2013 Annual Report, it is stated that “the facility has been in care and maintenance since September 2012”. While notification was provided in an annual report, AANDC recommends that the letter of notification of any intended operational change (as required under Part H, Item 1) be clear on the type of closure (i.e., seasonal or short term, long term, final, etc.).*

BCC Response:

Agreed. BCC will clarify camp status openings and closings going forward. BCC office contacts are always available to clarify as well upon request.

2.3.3 *It is unclear whether BCC intends to leave the Ulu site in care and maintenance or whether they intend to resume operations during the 10 year licence term requested. AANDC recommends that BCC clarify their intentions for the Ulu site. Should the flexibility to resume operations remain in the renewed licence, AANDC recommends that:*

a) *commencement of operations be subject to Board approval; and*

BCC Response:

As per the AANDC guide, care and maintenance can last for a period of weeks, or for several years, based on economical, environmental, political, or social factors. BCC intends to resume activities as soon as possible. There is no reason to suggest that the licence be modified to prevent a return to operations. Such a modification would be unacceptable to BCC.

- b) *notification of intention to resume activity on site (required under Part H, Item 1 of 2BM-ULU0914) must be provided at least 90 days before the anticipated start date, and that the notice include: i) updated management plans for review and approval by the NWB; ii) an updated reclamation cost estimate for review and approval by the NWB; iii) any change in the amount of water use; and iv) a schedule of planned activities.*

BCC Response:

BCC disagrees with the suggested timeframe. 90 days is not aligned with typical 10-day notification periods across the North in accordance with land use permits and 10-day notification for planned discharges from water licensed facilities. Updated management plans have been provided to the NWB in 2013 and 2014 and BCC has committed to revise key plans based on comments received during the renewal process to be submitted to the NWB with the 2014 Annual Report.

2.3.4 *The Licensee is required, under the current licence, to submit a number of plans within 60 days following notification to the Board of the intent to resume operations, including:*

- *a proposal for the disposal of effluent from the retention pond and settling/neutralization ponds*
- *a plan for ongoing acid rock drainage and geochemical characterization*
- *a waste rock and ore storage plan*
- *an Operation and Maintenance Plan for the Sewage Treatment Facility*

The timeframe appears to allow operations to resume without plans being approved. Notification is required 60 days prior to resuming operations and plans are due within 60 days of notification so there appears to be no time for review and approval. AANDC recommends that the management plans must be provided with the notification to resume on-site activities 90 days prior to the anticipated start date to allow time for review by interested parties and approval by the NWB.

BCC Response:

Management plans have been revised in 2013 and 2014 and BCC has further committed to update plans for submission with the 2014 Annual Report considering the input received during the renewal process. Therefore management plans will not likely need to be revised prior to resuming activities and the 90 day submission period is not warranted.

2.4 Monitoring

2.4.1 *The C&M Plan indicates that inspections will be carried out when the site is occupied and at minimum of twice annually during the open water season when the site is inactive. AANDC is concerned that limited presence on site would increase the risk of unplanned events that could*

lead to contamination of the environment and recommends that the licence require regular inspections and monitoring during the open water season, even during care and maintenance.

BCC Response:

Posting personnel at the Ulu site during care and maintenance is not required or safe considering the remote location. Facilities are inspected by a geotechnical engineer and work is carried out annually as needed to ensure the site is safe for wildlife and the environment. There have been no effects on water resources during care and maintenance periods.

2.4.2 Section 4.6 of the C&M Plan states that BCC will carry out an “appropriately scaled” monitoring program outlined in Table 5. Section 1.4 of the Mine Site Reclamation Guidelines for the Northwest Territories (INAC, 2007) requires that monitoring programs must continue, even during care and maintenance (or temporary mine closure) . Please refer to Table 1 for a detailed AANDC response to BCC’s proposed changes to the monitoring program.

BCC Response:

Monitoring must be scaled to the level of activity at a site. During periods when water is not used and waste is not deposited at site, monitoring should be in the form of geotechnical engineer inspection to ensure facilities are secure, and water sampling prior to decants when decanting is needed. The issue noted by AANDC is an issue of administrative interpretation of the licence conditions during care and maintenance periods. BCC is requesting clarity from the NWB that the full monitoring program does not apply during periods of care and maintenance and temporary shutdown.

2.5 Reclamation Cost Estimate

2.5.1 In Box 21 of the application, BCC references an updated restoration liability estimate submitted to the NWB on August 25, 2011. AANDC submitted comments and recommendations on December 30, 2011 (see Appendix 1).

The total reclamation cost estimate submitted by Elgin on August 25, 2011 was \$1,861,462. AANDC noted that the submission (an Excel spreadsheet) was lacking in detail, specifically in the following:

- the model used was not identified.*
- there is no rationale provided for any of the calculations in the spreadsheet.*
- the proponent did not provide any information regarding fuel volume, condition of*
- existing equipment, amount of waste rock that is potential acid generating and metal leaching, levels of contamination of hydrocarbon impacted soil, water drainage patterns, present site conditions, etc.*
- the proponent made a number of assumptions that are problematic, including the extensive use of equipment on site, no accounting for potential PAG waste rock underground, no costs associated with project management and engineering, and only a 15% contingency. For more detail please refer to Appendix 2.*

The Mine Site Reclamation Policy for Nunavut (INAC, 2002) requires that security at any time during the life of the mine should be equal to the outstanding reclamation liability. A third party

review, based on available documentation and site photographs (see Appendix 2), suggests that the total reclamation liability was closer to \$3,363,140.

Despite December 2011 comments from AANDC and the Kitikmeot Inuit Association (KIA) identifying deficiencies in the reclamation cost estimate and indicating that the security held under the licence was insufficient to cover the total reclamation liability of the site, there has been no change to the amount of security required under 2BM-ULU0914. It is important, therefore, that the security requirement be updated as part of the licence renewal.

AANDC recommends that BCC submit an updated reclamation cost estimate for review by parties prior to the Board issuing a licence renewal, and that the revised estimate: a) use the most current version of RECLAIM (Version 7), adjusted for unit costs applicable to the site; b) account for the deficiencies identified in 2011; c) be based on a more detailed and robust Abandonment and Restoration Plan (completed and stamped by a licensed P. ENG with expertise in earthworks and reclamation, and using established methodology); and d) be for the reclamation of the Ulu site independent of the Lupin Site since they are owned by separate legal entities.

BCC Response:

An updated reclamation security estimate is attached using RECLAIM.

2.6 Compliance

2.6.1 The Compliance Plan proposes changes to terms and conditions of the water licence. Please refer to Table 2 for AANDC responses. AANDC recommends that the Compliance Plan: a) be updated to reflect actual conditions on site and to detail how the Licensee will address all noncompliance both with the Act and with water licence; and b) require approval from the Inspector and the Board.

BCC Response:

No issues of non compliance with the Act or water licence have been brought forward to BCC's attention. Comments noted in inspections reports have been addressed and there have been no unauthorized discharges. The issue noted by AANDC is an issue of administrative interpretation of the licence during care and maintenance periods.

2.6.2 The Ulu site was last inspected on July 12, 2014 and results can be found in the Water Licence Inspection Form (see Appendix 3). Some of the main concerns that may pose an increasing risk to the environment include:

- *hazardous waste has not been backhauled since 2012;*
 - **BCC Response:** This is incorrect. A significant amount of backhaul has occurred and manifests are available if requested. Management strive to have backhaul of waste on each and every flight.
- *hazardous waste is not being stored within secondary containment;*
 - **BCC Response:** This has been corrected.
- *spills are not being remediated as per the Spill Contingency Plan;*

- **BCC Response:** We are unaware of any spills that have not been remediated.
- *the monitoring plan is not being implemented;*
 - **BCC Response:** *We disagree with this statement. Implementing the full monitoring program during care and maintenance and temporary shutdown is not reasonable given there is no water use or waste deposited to water. This is an administrative issue concerning the interpretation of the licence during periods of care and maintenance and temporary shutdown that we request the NWB clarify.*
- *reporting (annual and monthly) is deficient.*
 - **BCC Response:** *BCC has filed the monthly and annual reports as required and has not received feedback on the contents. Reporting requirements*

BCC has fallen short of providing proper site maintenance during C&M, and has failed to fully respond to Inspector's instructions. AANDC recommends that the Board, in setting terms and conditions for the licence renewal, consider the increase in environmental risks at the mine site and the Licensee's failure to meet licence requirements over the term of the previous licence.

BCC Response:

BCC has carried out inspections and maintenance work annually during periods of care and maintenance and temporary shutdown and will continue to do so. There have been no unauthorized discharges or effects to water during operations in 2012 or care and maintenance/temporary shutdown periods. All of the Inspector's comments have been addressed with the exception of AANDC's interpretation of the monitoring program requirements during care and maintenance/temporary shutdown. On this point BCC disagrees with AANDC seeking to apply the full extent of the licence conditions, particularly the water monitoring program, regardless of whether any activities are taking place and regardless of the fact that no water is used or no waste is deposited to water during these periods. The intent of the water licence monitoring program is to ensure that the discharge limits are not exceeded for the protection of the receiving environment. The approach suggested by AANDC whereby monitoring is required at all times regardless of activity status leads to monitoring for the sake of monitoring. BCC has addressed this by submitting a proposed monitoring approach for care and maintenance/temporary shutdown periods. BCC will apply the full monitoring program when activities resume as they did in 2012.