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Halifax Regional Council

June 12, 2007

June 19, 2007

TO: Mayor Peter Kelly and Members of Halifax Regional Council

SUBMITTED BY: Julia Haincastle
for Dr. Wayne Stobo, Chair
Halifax Watershed Advisory Board

DATE: May 31, 2007

SUBJECT: Proposed Development of Moose River Gold Mines

ORIGIN

DDV Gold Ltd. (DDVG) has proposed the development of an open pit gold mine at Moose River Gold Mines in District 1 of HRM.

On March 15th, 2007 Nova Scotia Environment and Labour issued a public notice that DDV Gold Ltd. had registered a surface gold mine and processing facility for environmental assessment, in accordance with Part IV of the Environment Act. The 202 page *Environmental Assessment Registration Document for the Touquoy Gold Project* plus extensive appendices was made available for public comment with a closing date of March 30th, 2007. On April 10th, 2007 Minister Mark Parent called for a focus report on possible environmental impacts south-west of the project site.

RECOMMENDATION

It is recommended that the Mayor write to Minister Mark Parent, Department of Environment and Labour, forwarding the comments and concerns with the proposed project as outlined in the Discussion section of this report.

DISCUSSION

- The environmental assessment does not cover all of the project site; a crucial area close to the open pit mine surrounding the Moose River is excluded.
- At the conclusion of the mining, after an estimated 7 years, it is proposed to cover the large (30-40 metres high) arsenic-containing waste rock dump with topsoil and to re-vegetate. The success of the proposed mitigation is critical and needs long term monitoring and maintenance.
- It is proposed to bury the extensive quantities of arsenic-rich sludge from the tailings pond (2,500 tonnes per year) but no information is given about the stability of these dangerous burial sites or their exact location.
- The tailings and polishing ponds are to be contained by a 3km long dam with a maximum height of 20 metres constructed of waste rock and a clay core. The failure of this dam would have catastrophic environmental and possible human health consequences. There needs to be an emergency measures plan for any dam breach and a long term maintenance plan to ensure that erosion does not occur in the years following mine closure.
- It is proposed to discharge treated water from the tailings pond into Scraggy Lake which contains trout, land locked salmon and other fish species. Scraggy Lake ultimately drains via the Fish River watershed into Lake Charlotte which in turn drains into the sea via Weeks Lake at Ship Harbour. The watershed for this area impinges on the boundaries of the Tangier Grand Lake Wilderness Area. It is estimated that treatment of the tailings for discharge will continue for 5 years after the mine's closure. This necessity plus other monitoring and maintenance measures that will be needed long after mine closure make it essential that adequate bonding be in place to ensure that it is done.
- Surface water data have been obtained from 8 sampling points from 2004 to 2007 but it is not clear if this will continue during and after the project. Water should be sampled and analyzed 3 times per year (spring, summer and fall) from Square Lake, Scraggy Lake near the point where effluent will be released, the un-named Moose River tributary south of the wetland on the west side of the dam and from the Moose River upstream and downstream of the project work site. The analysis of phosphorus should use a method with a one microgram/L detection limit not the 100 microgram/L limit in the method used for the environmental assessment.
- The outer margin of the proposed large mine pit is only 30 metres from the Moose River so although current evidence suggests that there is no underground leakage between the existing small pit and the river this may not be the case after extensive blasting. If the underlying rock does fracture the consequences for the river would be very serious.
- Large quantities of several toxic chemicals will be trucked to the site (e.g. 20 tonnes of sodium cyanide per week) over an un-numbered highway that is in a serious state of deterioration. The distance to Moose River Gold Mines along this highway from Highway

7 at Popes Harbour is 25 km. The concern is that the likelihood of a truck leaving the road and discharging its load is much increased due to the crumbling road base. No mention is made of the road being upgraded and although local volunteer fire departments will be informed of the hazardous materials being transported it seems questionable whether they can adequately deal with such major spills.

- The proposal states that an un-named tributary of the Moose River that flows through the middle of the project site will be undisturbed by the project. HWAB recommends that 30 metre buffers be maintained on both sides of this tributary and that bottomless, fish passage capable, culverts be used for all on-site roads crossing the stream.
- The assessment acknowledges that 4 wetlands will be destroyed and one diminished in size by the project. It is crucial that the provisions requiring substitute wetlands be created in compensation elsewhere be enforced, hopefully within HRM.
- The Board feels the timeframe of 2 years to monitor mitigation efforts is inadequate: and that the proponent should be required to post a bond of significant monetary value to ensure that the proponent monitors the site after closure and continues to mitigate adverse environmental effects.

BACKGROUND

As its name suggests Moose River Gold Mines has been the site of many gold mines since the 1860s. The last attempts at gold mining ended with the collapse of a shaft in 1936 that trapped two men who were subsequently rescued. The remaining village has declined to a current year round population of about 8 people. DDVG is in the process of acquiring all remaining properties.

There is a small existing open mine pit on site that is filled with water which the proponent intends to greatly enlarge into a pit 600 metres long by 300 metres wide with a maximum depth of 125 metres. The gold-containing rock will be excavated using explosives before going through a complex modern extraction and purification system on site. Details are given in the assessment document which can be seen at www.gov.ns.ca/enla/ea/MooseRiver.asp The process includes crushing and grinding the rock, addition of sodium cyanide, absorption on activated carbon and finally an electrolytic purification process that isolates the gold.

Over a period of 7 years they propose to extract 27 million metric tonnes of ore and waste rock with a yield of 0.5 million ounces of gold. A tailings management facility will use chemical treatment to convert most of the cyanide into less toxic cyanate; arsenic will be precipitated as ferric arsenate for burial on site. After mining and processing is completed there will be a site reclamation project that will take about 2 years to complete. Large quantities of arsenic-containing waste rock and tailings will be left on site that will require continued monitoring beyond the 2 year reclamation project.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of

Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

No alternatives are suggested.

ATTACHMENTS

None

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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