



**P:** +1 204 884 2400  
**F:** +1 204 884 2211  
**W:** cabotcorp.com

Tantalum Mining Corp. of Canada Ltd.  
Bernic Lake, Box 2000  
Lac du Bonnet, Manitoba R0E 1A0  
CANADA

August 27, 2014

Ms. Tracey Braun, M.Sc.  
Director, Environmental Assessment & Licensing Branch  
Manitoba Conservation and Water Stewardship  
123 Main Street, Suite 160  
Winnipeg, Manitoba  
R3C 1A5

Dear Ms. Braun,

**Regarding: TANCO Mine – Project West**

We write to advise of the plans that Cabot Corporation (Cabot) now intends to implement with respect to the continued operation of the Tantalum Mining Corporation of Canada Limited (TANCO) Mine located near Lac du Bonnet, Manitoba and, specifically, to withdraw the Notice of Alteration (NOA #20) that was filed with you on or about August 19, 2013. We wish as well to explain our approach for continuing operations and to seek your approval of a minor alteration to Manitoba Environment Act License No. 973 for minor surface infrastructure that will be installed at the mine site.

As you are aware, between 2010 and 2013 there were two significant fall of ground (FOG) incidents from the crown pillar of the mine, the majority of which is located directly under Bernic Lake. These FOG events have resulted in Cabot re-assessing mine safety procedures, and as a result prohibiting access to pollucite reserves in specific areas of the mine. Following the second FOG incident, Cabot undertook measures to improve the understanding of the risks associated with this FOG, and also to implement rigorous monitoring as an early warning sign of further activity.

In 2013, with the assistance of consultants, Cabot considered several alternatives to address the concerns at the mine and, based on the advice we received at that time, concluded that the preferred approach would be to isolate the underground mine workings from Bernic Lake by draining the west basin of the lake. NOA #20 was intended to propose that approach on an emergency basis, although, at the time the proposal was filed with you, a number of concerns remained to be addressed. In the course of addressing the remaining concerns, including those raised by your technical advisory committee, Cabot retained AECOM Canada Ltd. (AECOM) to



conduct a gap analysis of the environmental information available to support decision making, with the intention of collecting all the environmental data that would be needed to thoroughly assess the impacts of proposed options and plan mitigation for any feasible alternatives.

At the same time, Cabot retained SRK Consulting (Canada) Ltd. (SRK) to assess all practical options to secure the crown pillar and allow for the continued safe mining of ore from the TANCO Mine. Based on its assessment of the cause of the FOG events, SRK has determined that dewatering of the west basin of Bernic Lake will not mitigate the likelihood of crown pillar failure. Further, SRK is of the view that a collapse of the crown pillar, if it occurs, would be in two stages. The first stage would be a precursor event indicating potential onset of a larger instability, thus allowing time for the safe evacuation of personnel from the mine.

The TANCO Mine is comprised of two primary ore zones, the larger East Zone (where the FOG events occurred) and the smaller West Zone. With the assistance of SRK, Cabot has determined that it can continue safe mining with minimal environmental impact by focussing on the West Zone ("Project West"). Whilst Project West is underway, Cabot, with the assistance of SRK, will continue to study whether there is a technically and economically feasible option to remediate the FOG areas and access the deposits located in the East Zone.

If an economically and technically feasible solution is found for the stabilization of the crown pillar in the area of the FOG, it will not only mitigate the potential for flooding, but also will allow for the safe extraction of additional ore from the East Zone of the mine. If it is determined that stabilisation of the crown pillar and subsequent mining in the East Zone is not feasible, then the existing Closure Plan for the TANCO Mine will be implemented after the completion of mining activities in the West Zone.

We are pleased to advise that neither the planned approach for the West Zone, nor the options under study for the East Zone involve dewatering Bernic Lake. Thus, we are no longer seeking approval of NOA #20, and hereby withdraw NOA #20 from consideration. In addition, because there is now no need to construct works at the Narrows of Bernic Lake, we intend to proceed with decommissioning of a portion of the recently-constructed temporary access road (the "Narrows Road"), in accordance with condition 8 stated in your letter of approval dated October 24, 2013 (File 1906.30).

## 1.1 Project West

Mining in the West Zone will continue with the room and pillar method currently in use in the mine. In accordance with SRK's advice concerning current standards of industry best practice, the "back" (or roof) of the existing underground workings will be secured and stabilized locally within the active mining areas of the West Zone. Mining in this manner will not increase the risk of potential crown pillar failure. In accordance with SRK's advice, TANCO will continue its program of monitoring mine integrity throughout the implementation of Project West to ensure continued safety.

To accomplish the stabilization, workers will need to access the back, portions of which are 20 m to 30 m from the sill (or floor) of the mine. Due to the limitations of commercially available high-lift bolting machines, it will be necessary to reduce the distance between the sill and the back with the placement of backfill.

Underground backfilling is typically completed with mine waste rock produced through the development phases of the mine. However, unlike most mines, the TANCO Mine has consumed all of its previously generated waste rock throughout its 40 year history. Some of the required material will be obtained in the course of decommissioning the portion of the Narrows Road that no longer will be needed.

An additional source of backfill will be required to meet the backfill requirements. Cabot therefore will be establishing a new quarry, an application for which has been made pursuant to the Quarry Minerals Regulation. We note that a quarry is not a "development" for which an environmental license is required pursuant to *The Environment Act*, but we enclose for your information a copy of the quarry lease application filed in that regard with the Manitoba Mineral Resources Branch.

In addition to the quarry, minor supporting surface components will need to be developed at the site. These upgrades represent a minor alteration at the TANCO Mine, and by this letter we seek your approval for the installation of these upgrades as a minor alteration to Manitoba Environment Act License No. 973.

## 1.2 Description of New Surface Components

There are four (4) primary surface components associated with the implementation of Project West:

1. Backfill Raise
2. Temporary Crusher
3. Ore Storage Buildings
4. Fuel Storage and Construction Trailers

## 1.2.1 Backfill Raise

Rock will be transferred to the underground workings via a backfill raise located on surface within close proximity to the existing mill as shown on **Figure 1**. The backfill raise will be a near vertical shaft connecting the existing underground workings to the surface with approximate dimensions of 2.5 m x 2.5 m x 100 m deep. It will be developed by either the proprietary Alimak or raise bore technology, with the rock generated during development to be used as backfill.

Surface facilities at the backfill raise will include a concrete collar and a “grizzly” (steel grid) to prevent oversize material from entering the raise. Haul trucks transporting rock to the backfill raise will reverse towards the grizzly and end dump their loads onto the grizzly. Oversize material captured by the grizzly will be loaded off as required and backhauled to the crusher for re-sizing or to the quarry and placed into the oversize stockpile.

## 1.2.2 Temporary Crusher

A portable crusher (or possibly two smaller crushers depending on the size of crushers available) will be located on surface in a previously cleared area approximately 180 m northeast of Containment Cell #2 within the active mine site (**Figure 1**). This crusher will be used to crush the rock obtained from the quarry and rock salvaged from the Narrows Access Road to the size required for backfilling operations.

The proposed crusher will be diesel powered, and equipped with a jaw crusher, screen and portable conveyors. The anticipated production rate is 400 tonnes/h. A stockpile area will be located immediately adjacent to the crusher to allow for the temporary storage of rock prior to and following crushing.

## 1.2.3 Ore Storage Buildings

In implementation of Project West, there will be a need to increase the volume of pollucite ore stockpiled on surface at the TANCO Mine. To accommodate this additional volume of ore on surface, two (2) ore storage buildings will be required in order to protect the ore from precipitation and avoid moisture pick-up (which would cause problems in processing the ore in the mill and Chemical Plant). Each building will be a pre-fabricated structure, composed of stressed membrane, with an approximate size of 2,880 m<sup>2</sup> (40 m by 72 m) and 15 m high. It should be noted that final length and height of the buildings may vary slightly depending upon the final selection of the supplier.

The two buildings will be constructed on a single foundation within an inactive tailings storage area as shown on **Figure 1**, directly across from the temporary crusher. The tailings surface will be levelled and overlain by a layer of crushed rock (approximately 12,000 cubic meters) recovered from the existing Narrows Access Road, with an average thickness of 1 meter. The rock pad will include a geo-membrane that will prevent water from wicking up from the underlying tailings and into the stockpile of ore.

#### 1.2.4 Fuel Storage and Construction Trailers

A small temporary fuel storage facility will be installed on site to supplement fuel needs during construction and implementation activities during Project West. One double-walled (self-contained) fuel tank, equipped with overflow protection and spill kit, will be installed and operated in compliance with the *Storage and Handling of Petroleum Products and Allied Products Regulation*.

Four (4) portable ATCO-style trailers will be located on site for the duration of the project to provide office space, lunchroom facilities and “dry” facility with washrooms and showers (**Figure 1**). These trailers will be equipped with grey water storage tanks, and there will be no requirement for the installation of additional water treatment facilities on site. Potable water will be brought onto site by a contractor, and the wastewater/grey water will be trucked off site by a licensed contractor and disposed of at a licensed facility.

### 1.3 Mining Methodology

Once the back has been secured and stabilized, mining will resume in the West Zone applying the room and pillar method, with the mining rate not exceeding 1,000 tonnes/day.

### 1.4 Decommissioning

The decommissioning of the backfill raise, crusher, ore storage buildings and fuel storage area will take place either before or during the final decommissioning of the TANCO Mine. Decommissioning and closure activities will be carried out in accordance with *The Mining and Minerals Act* and the approved Closure Plan that has been developed for the site.



### **1.5 Environmental Impact**

In accordance with our instructions, AECOM has considered the potential environmental impact of the new surface components described above. We enclose for your consideration a copy of the letter they have provided to us in this regard.

### **1.6 Schedule**

Cabot expects to initiate quarrying activities by mid-October 2014. In order to meet this target date, Cabot will be seeking issuance of the quarry lease by September 5, 2014.

The construction work will begin in October 2014, and is expected to be complete by May 2015. Thereafter, Cabot will proceed with mining in the West Zone.

We look forward to hearing from you with any comments you may have regarding this project, and we would be pleased to provide any other information that you may require.

Thank you very much for your attention.

Sincerely,

TANTALUM MINING CORPORATION OF CANADA LIMITED



Wentzel Coetzer

Facility General Manager

Enclosures