APPENDIX E

TANCO OPEN HOUSE DISPLAY BOARDS

Welcome

Tantalum Mining Corporation of Canada Ltd. (TANCO)

Tantalum Mining Corporation of Canada Ltd. (TANCO) is 100% owned by Cabot **Corporation.** Cabot is a global specialty chemicals and performance materials company, headquartered in Boston, MA. Cabot operates 45 manufacturing facilities worldwide. The **Company's primary** products include rubber and specialty grade carbons, fumed silica, activated carbon, inkjet colourants, aerogel, and cesium formate drilling fluids.

Purpose of the Open House

- The facility operates under a Manitoba Environment Act Licence that was issued in 1983
- TANCO experienced a fall of ground in spring 2013 in an area of the mine that is under Bernic Lake where mining activities have not occurred for a number of years
- An investigation concluded that the mine's supporting structure (crown pillar) is potentially unstable and at risk of deteriorating over time
- TANCO is working with engineers and biologists to mitigate the crown pillar instability and ensure the safety of the underground workers, mine workings and the aquatic environment of Bernic Lake
- Isolation of the mine from the lake, involving construction of a dike and dewatering a portion of the lake, has been identified as the best solution to mitigate the risk of water leaking into the mine
- TANCO will be submitting a Notice of Alteration (NOA) to Manitoba

Conservation to enable this process

TANCO has chosen to host this open house to inform the public about the proposed undertaking and to provide an opportunity for the public to speak directly with Company representatives

Please take this opportunity to review the display panels, speak with TANCO and its consultant team, and provide your comments on a comment form.







About the Mine

■ The TANCO mine and mill complex is located approximately 160 km by road northeast of Winnipeg and 70 km northeast of Lac du Bonnet on the northwest shore of Bernic Lake, MB



- Production began in 1969; Cabot purchased in 1993
- Historically, pollucite, tantalum and spodumene have been mined concurrently from the deposit
- Mining and milling capacity is 1,000 tonnes per day
- The operation also includes a Cesium Products Facility (CPF) that produces cesium chemical products which are derived from pollucite









Site Infrastructure

The TANCO mine site covers approximately 85 hectares of Crown land. Surface infrastructure required to support the mine includes:

- headframe and portal
- tantalum/spodumene mill
- cesium products facility
- cesium containment cells and residue stockpile
- tailings management areas
- waste transfer station
- transformer station
- storage facilities
- **quarries**
- access road
- office building
- security building
- warehouse/maintenance shop
- rail siding (located in Molson, MB)











TANCO has been positively contributing to the local economy through employment and spending

Tailings Management

There are two Tailings Management Areas (TMA), the East TMA and the West TMA

on services and taxes for the last 20 years. At peak operation, TANCO employs 150 people, most of whom reside in Lac du Bonnet and Pinawa. We want to continue to support the local community with sustained employment – and we continue to look for longer-term opportunities to expand the scope of work at the site.



The TMA are contained by dams that are inspected weekly by TANCO staff and annually by a third party

Residue Management

Residue produced in manufacturing the cesium compounds is temporarily collected in two double-lined containment cells located in the East TMA

The cells are used to recover the process liquid for reuse back to the Cesium Products Facility

The residue solids are dewatered, removed, and dry-stacked in the designated area in the East TMA

Water Management & Runoff Management

The operation uses approximately 50% recycled water from the polishing pond, with the remainder being drawn from Bernic Lake

Surface runoff within the site is contained by the TMAs

Waste Management

Waste produced at the facility is collected at the waste transfer

station where it is held until it is transported to a licenced facility

Waste Rock Management

Waste rock is generally managed underground; a small stockpile of non-acid generating waste rock is maintained on surface for use in various tasks (e.g., dam construction, road maintenance)

Power

Hydroelectric power is provided to the site via a 78 kV transmission line that is owned and maintained by Manitoba Hydro







Project Plan

TANCO is determining the feasibility of potential options that will allow us to mitigate near-term safety risks to the mine, protect the environment in and around the lake, and create long-term economic opportunities for the community. TANCO is currently assessing the structural and economic feasibility of a phased approach or proceeding directly to construction of the permanent dike.

Temporary Access Road

A temporary access road will be constructed from the mine-site to the temporary dike, making use of existing roads and trails as much as possible

Temporary Dike

If a temporary dike is constructed, it will be located at the narrows of Bernic Lake

This location was chosen because of its short length which will allow for timely construction

It is expected that the temporary dike will be in place for 2-4 years while a permanent structure closer to the mine is built

Temporary Dewatering

The west basin of Bernic Lake will be dewatered via pipeline to Bernic Creek, the Bird River and /or adjacent wetlands

Wetlands will naturally filter to remove silts and clays prior to release to the Bird River

Water Management

While the west basin is dewatered, surface runoff into the east and west basins will be managed by periodically pumping of excess water to the discharge point

Permanent Dike

This permanent dike will be constructed after the west basin of the lake has been dewatered

If the temporary dike is constructed it will be decommissioned and the west basin will be allowed to refill

The permanent dike is located closer to the mine and minimizes the long-term effects of lake dewatering

The permanent dike will be in place to the end of mine life









Cabot has incorporated environmental performance as a critical component of operational excellence. We invest significant capital in our

Hydrology

Bernic Lake is a small, second order lake receiving inflow from headwater streams to the eastern and central parts of the lake as well as surface flow directly from the watershed

Bernic Lake is comprised of two basins of approximately equal size, characterized by relatively steep margins and wide flat bottoms

facilities' process equipment and infrastructure to maintain regulatory compliance, increase our energy efficiency, and minimize our impact on the environment.

Cabot Specialty Fluids (CSF) has been recognized for its sustainable business model at the 2010 UNIDO (United Nations Industrial Development Organization) Chemical leasing awards. Bernic Lake discharges into the Bird River via Bernic Creek

The Bird River begins northeast of the TANCO Mine at the west end of Bird Lake and flows west-southwest, discharging approximately 18 km downstream into Lac du Bonnet on the Winnipeg River

Bird River stream flow follows a distinct seasonal pattern. The lowest flow is in March, with spring melt and runoff increasing in April, and maximum flow typically occurring in May

Surface Water Quality

TANCO complies with the Metal Mining Effluent Regulations under the Fisheries Act in order to discharge water from the mining/milling process to Bernic Lake

Water and sediment quality as well as benthic invertebrate communities (bottom dwelling 'bugs') in Bernic Lake are monitored regularly by TANCO



Water quality in Bernic Lake meets Manitoba Water Quality Standards, Objectives and Guidelines for the protection of aquatic life with the exception of total phosphorus

Sediment quality meets Canadian Council of Ministers of the Environment (CCME) guidelines

The water discharged will comply with regulatory requirements









Environmental Assessment

Long term monitoring data has been collected by TANCO between 1969 and 2013. It is used to compare the pre-development environment and the

Fish and Fish habitat

Bernic lake supports a year-round resident fish community of Northern Pike, White Suckers, Cisco, and forage fish – no Walleye

A waterfall on Bernic Creek prevents fish from migrating up from Bird River

current operating environment.



No commercial or traditional Aboriginal fishing on Bernic Lake

The east basin will be preserved to maintain the native fish population

Once the west basin has been refilled, the temporary dike will be removed and the east basin fish will be allowed to recolonize the west basin

Vegetation

As required, wetlands adjacent to the lake will act as a natural physical, biological and chemical filter during the dewatering process

Phosphorus is removed through co-precipitation with iron, aluminum and calcium compounds found in the root bed

Suspended solids are removed as they settle in the wetland or are physically filtered out by plant/root material

Water flow will be managed to preserve the function and structure of the wetland

Socio-Economic

TANCO currently has 86 full-time employees and additional contractors at the mine

The Company spends approximately \$9 million on payroll each year and \$28 million in total annual spending at the site









The deposit at Bernic Lake is believed to contain two-thirds of the world's known reserves of pollucite, which contains cesium. The TANCO Mine is the sole global supplier of cesium formate to the oil and gas industry – a drilling fluid product of choice due to its uniquely benign safety and environmental characteristics.

Water Monitoring

Water quality and quantity in the receiving water body will be monitored during the dewatering period

TANCO will continue to monitor effluent discharge under the Metal Mining Effluent Regulations at a new discharge location

Safety Monitoring

The operation includes robust and proven monitoring systems to ensure accurate monitoring of the structural integrity of the mine including

- Microseismic system
- Stress cells
- Extensometers
- Water conductivity meter

• Cavity monitoring system

• Optimus noise monitor













In recent years, TANCO has conducted a number of studies to determine a successful method for revegetation of the mine tailings and Cesium Products Facility residue. The studies demonstrate that conventional tailings in the East TMA provide a suitable growth medium for natural revegetation. Additional studies are being undertaken and the Mine Closure Plan will be updated as required.

Mine Closure and Reclamation

At closure, the mine site will be left in a state compatible with

Seeding trial on residue stockpile

the surrounding natural environment. TANCO will follow the plans laid out in its Closure Plan which was prepared in accordance with Manitoba Mines Closure Regulation (67/99).

The mine closure plan includes:

- Demolishing and/or removing all buildings and equipment
- Re-grading and re-vegetation of disturbed areas
- Decommissioning of roads, including removal of water crossings as per Manitoba Conservation direction and re-vegetation
- Re-contouring of the shoreline, where it has been altered by road construction, to prevent un-natural erosion into the lake
- Decommissioning and re-vegetation of the tailings



management areas

- Capping and re-vegetation of the CPF residue stockpile
- Dike deconstruction / removal
- Post-closure monitoring











Thank You for Attending

Next Steps

TANCO remains committed to protecting the safety of its employees and the environment

TANCO is working closely with local communities and provincial and federal governments for this project

this Open House

This project will preserve the ability to access the current known cesium reserves and, if recent new finds of cesium are proven, could extend the life of the mine

TANCO will continue to communicate with all stakeholders regarding this project

How You Can Participate in the Process

You can participate in the process by filling out a comment form. Comment forms will be included with the Notice of Alteration (NOA) submission to Manitoba Conservation and concerns or ideas conveyed by the public will be discussed in the report.

You can also contact TANCO directly if you have any questions or concerns.

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