



Memo

To Will Brits
Facility General Manager
Tantalum Mining Corporation of Canada Ltd

From Wilson, Jennifer

Date October 11, 2013

Document No. 1301661100-MEM-V0001-03

Project Name TANCO Mine

Subject Bernic Lake Narrows Temporary Access Road

This memo presents further information concerning the proposed 1,850 m temporary access road (shown in yellow and green on Figure 1 and 2) and 0.5 ha vehicle turnaround area described in Cabot's letter to Director Braun dated September 23, 2013, the site of which is shown in the attached Figures 1 and 2.

Detailed Project Description

Location and Road Alignment

The proposed routing of the temporary access road initiates at the TANCO mine site and extends to the narrows on Bernic Lake. The first 1,070 m of the route (shown in yellow on Figure 1 and 2) consists of an existing mine road that is used from time to time for maintenance. The other 780 m of the route (shown in green on Figure 1 and 2) is proposed new road that follows alongside the existing Manitoba Hydro right of way. The Manitoba Hydro right of way is occupied by a 78 kV transmission line, which directs power from the Manitoba Hydro grid to the operating site of the mine and, by means of a perpendicular connecting line, to Bird Lake. Tetra Tech met with Manitoba Hydro's Planner for the Lac du Bonnet area to discuss the road and inspect the alignment. Manitoba Hydro expressed no concern about siting the road alongside the transmission line and provided guidance concerning safe work around the transmission line.

The route will end in the 0.5 ha vehicle turnaround area (shown in green on Figure 1 and 2) which will be cleared of vegetation.

The only access to the site of the proposed road (shown in green on Figure 1 and 2) is through a security gate of the existing TANCO mine operation, which is operated 24 hrs a day by TANCO security staff, with entry generally restricted to TANCO and Manitoba Hydro personnel and authorized visitors.

As shown in Figure 1, approximately 75% of the route of the temporary road lies inside a surface lease (shown by red line on Figure 1) held by TANCO. The remaining portion and the temporary vehicle turnaround area lies on Crown land for which TANCO holds the mining claim (Figure 1).

TANCO submitted a work permit application to Manitoba Conservation and Water Stewardship, Lands Branch on September 18, 2013 associated with the proposed works. TANCO also submitted a Crown Land General Use Permit to the Crown Lands and Property Agency on September 23, 2013 to gain tenure to the Crown land necessary to complete the project. Copies of the permit applications are attached. We are advised that these Crown permits will be issued once the environmental approvals branch has completed its approval process.

Road Design

The first 1,070 m section of the existing mine road (shown in yellow on Figure 1 and 2) will be upgraded to a single-lane road with locally quarried material. The maximum width of the cleared ROW will be 25 m. Trail curve radiuses will be adjusted to accommodate vehicular turning radiuses. Construction activities will be comprised of brushing secondary growth along the trail, potential minimal timber clearing at adjusted curves, and the placement of quarried rock (approximately 10,000 m³) in low areas, and surfacing with till. Quarried rock will be obtained from an existing quarry which is registered under Casual Quarry Permit No. CP-2013-1003418 (NW ¼ SEC 15 TWP 017 RGE 015 E1). Quarry material has undergone acid-base-accounting and laboratory analysis has confirmed it is neutral (attached).

The 780 m of new road and vehicle turnaround area (shown in green on Figure 1 and 2) will require timber clearing and brushing in pioneered sections and brushing within the transmission line ROW. Timber and brush will be cleared with chainsaws, bulldozers, and a grader (if required) as per ground conditions. Timbers and brush will be felled and left in place and quarried rock will be end-dumped for a road base. Remaining timber and brush will be windrowed within the ROW for use in road closure.

Locally quarried till will be used for surfacing. TANCO has filed for a timber permit with Manitoba Conservation and Water Stewardship, Forestry Branch who have indicated they will issue the permit once the required fees have been paid and approvals have been issued by the Environmental Approvals Branch for construction of the road. No watercourse crossings are proposed.

In order to maximize use of the existing road and avoid topography unfavorable for road building, a short length (160 m) of the 780 m segment of new road will be constructed across a wetland (low-lying) area. Grubbing will be minimized in order to preserve the root mat and minimize disturbance in the lowland areas. Manual brushing using chainsaws will be conducted in this area to clear the ROW to avoid rutting.

Cross drains will be placed within lowland area as necessary to maintain natural surface drainage patterns.

Mitigation Measures

The following mitigation measures were incorporated in the design of the road to avoid or minimize potential environmental effects:

- Use of existing roads/trails to minimize new road construction.
- Alignment of the road with an existing linear disturbance (Manitoba Hydro ROW) to avoid potential additional effects on wildlife.
- Design specifications that call for minimal (100-300 mm) grubbing depth.
- Use of felled timbers to construct roadbed and further minimize surface disturbance.
- Construction during the non-breeding season to avoid direct impact to wildlife such as breeding birds.
- Grubbing will be minimized in order to preserve the root mat and minimize disturbance in the lowland areas.
- Manual brushing using chainsaws will be conducted in lowland areas to avoid rutting.
- Cross drains will be placed within lowland area as necessary to maintain natural surface drainage patterns.
- An environmental monitor will be on-site during construction to ensure the construction is in compliance with licence conditions, to provide species appropriate mitigation should the unlikely observation of a rare species or sign of a rare species occur and to ensure best management practices are being followed.
- Arrangements have been made with Sagkeeng First Nations coordinator to retain a traditional knowledge holder to also provide environmental monitoring services.

Decommissioning

The road will remain in place for approximately 4 to 6 years which will allow for the following activities to occur:

- Construction of a permanent dike
- Water management of the east basin
- Water quality monitoring in the east basin
- Monitoring of the temporary dike during operation
- Decommissioning of the temporary dike; and
- Water quality monitoring post-decommissioning of the dike and refilling of the lake.

Decommissioning activities for the road will be initiated once the road is no longer required or at mine closure as per Manitoba Mine Closure Regulation 67/99. At that time, windrowed materials will be pulled over the roadbed and cross drains will be removed making it impassable to vehicular traffic. It is expected that natural encroachment of surrounding vegetation will occur rapidly. If necessary, re-vegetation by artificial means will be carried out.

If the road is required for a longer period of time, TANCO will prepare a subsequent application to Manitoba Conservation and Water Stewardship, Environmental Approvals Branch and ensure all applicable permits are obtained.

Assessment of Environmental Effects

General Overview

This road is very similar to the many temporary access roads commonly constructed in the mineral exploration, mining and forestry-industries. Best management practices, such as Manitoba's Forestry Road Management Guidebook (Manitoba Conservation and Water Stewardship 2012) have evolved over time so that companies constructing these roads understand the potential effects of construction/operation and how to minimize or avoid environmental effects. Tetra Tech will provide construction management services during the construction of the road to ensure that best management practices are followed and the contractor will also be required to monitor their work for compliance with all permits and approvals and with TANCO's Health and Safety Plan. By incorporating known mitigative measures and best management practices, no significant adverse effects are expected from the construction of the temporary access road.

Vegetation

A small amount of merchantable and non-merchantable timber will be lost as a result of clearing for road construction. Manitoba Conservation and Water Stewardship, Forestry Branch has confirmed that there is no commercial demand for the timber in that area; therefore, the timber will be used to construct the road bed and minimize surface disturbance during construction. As stated, disturbance of the wetland will be minimized by clearing the area manually to avoid rutting.

At closure, the roadbed and its right of way will be re-vegetated by natural or artificial means. Considering the temporary nature of the road and that once the need for it passes it will be decommissioned and allowed to re-vegetate to its natural state, effects on vegetation are insignificant.

Wildlife

Effects on wildlife resulting from habitat loss and/or noise are also considered to be insignificant due to the road's alignment alongside an existing linear disturbance and its proximity to an operating mine. Effects on wildlife are not expected as road access and usage will be managed by the mine. In other words, access to the area will not be increased for public hunting and trapping.

TANCO is currently conducting a habitat assessment along the road alignment to ground-truth and categorize existing terrestrial data and determine the potential habitation of these areas by wildlife, including species of conservation concern. In the unlikely event that a listed species does occur in the area, it is our professional opinion that the small amount of habitat loss is unlikely to have an adverse impact. TANCO will have an environmental monitor (biologist) on-site during construction to provide species appropriate mitigation should a rare species or sign of a rare species be observed.

Aquatic Environment

No watercourse crossings are proposed. Standard best management practices will be followed with respect to installation of silt fencing, where required. Fuel storage and the fuelling of vehicles will not be permitted within 10 m of the lake or wetland. A 15 m vegetated buffer will be maintained between the right of way and the lake at the narrows until such time that approval for the temporary dike is obtained.

Heritage Resources

Manitoba Conservation and Water Stewardship, Heritage Branch conducted a review of known archaeological sites in the vicinity of Bernic Lake. No archaeological sites have been recorded in the area proposed for road construction. A Heritage Resources Impact Assessment was conducted along the proposed temporary road alignment on October 7 – 10, 2013. No archaeological sites were recorded and the potential for finding archeological sites in the area was considered low due to traditionally limited resources (i.e., fish) available in Bernic Lake compared to other lakes in the area.

Resource Use

Manitoba Conservation and Water Stewardship, Forestry Branch has confirmed that there is no commercial demand for timber in the TANCO area. There is a registered trapline in the area; however TANCO is unaware of any hunting or trapping in the area proposed for road construction as it is in such close proximity to the mine site. No adverse effects are expected on any wildlife in the area that could be used for hunting or trapping.

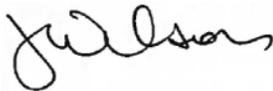
Conclusion

Effects to the terrestrial environment associated with construction of the temporary roads and vehicle turnaround areas are insignificant given the temporary nature of the road, the mitigative measures that have been incorporated in project design, and the best management practices for road construction that will be followed. The required clearing of 2.45 ha of vegetation to construct the new road and vehicle turnaround area and the proximity of the new road to the existing facility will not produce a significant cumulative effect to the environment.

If you have any questions, please feel free to call the undersigned at (204) 954-6800.

Sincerely

Tetra Tech WEI Inc.



Jennifer Wilson, B.Sc. (Hons), R.P.F.
Environmental Project Manager