



October 15, 2021

Kimberley Murray
Regulatory Specialist
Mackenzie Valley Land and Water Board
7th Floor, 4922 48th ST. / PO Box 2130 / Yellowknife, NT X1A 2P6

Ptarmigan Mine Fencing Project – Land Use Permit MV2016X0026 Closure Request

The Government of the Northwest Territories Departments of Environment and Natural Resources (ENR) and Lands (DOL), secured a Land Use Permit (MV2016X0026) in 2016 to install fencing at the abandoned Ptarmigan and Tom Mine sites. The fencing mitigates risks to public safety at these sites.

A request for closure of this Land Use Permit is being submitted to the Mackenzie Valley Land and Water Board. A summary document of the Ptarmigan and Tom Mine Fencing Project has been attached for your review and consideration.

If there are any questions or concerns with regard to the document or this letter, please contact myself at (867) 767-9236 ext. 53181 or by e-mail at dave.abernethy@gov.nt.ca.

Sincerely,

Dave Abernethy
Contaminated Sites Project Manager
Contaminated Sites
Environmental Protection and Waste Management Division
Environment and Natural Resources

Attachment

- c. Jennifer Spencer-Hazenberg
ENR-EPWM-CS Contaminated Sites Advisor

Ptarmigan and Tom Mine Project Update MV2016X0026

The Government of the Northwest Territories (GNWT) presently has a Land Use Permit (LUP) with the MVLWB, MV2016X0026 that is scheduled to expire on October 19, 2021.

The Department of Environment and Natural Resources (ENR), GNWT constructed wire mesh fences, gates, and completed road improvements for access at the Ptarmigan and Tom Mines during the winter of 2016-17. The reason for the work was to prevent or restrict public access to the mine sites.

Site Description and Location

Ptarmigan Mine and Tom Mine are former gold exploration sites, located on the Ingraham Trail, 15 kilometers northeast of Yellowknife. Coordinates of the Ptarmigan Mine shaft are N 62° 31' 10", W 114° 11' 51" (N62.519444, W114.1975), NTS Sheet 85 J-9, **Figures 1-3**. Both sites are located on GNWT Commissioner's Land and are classified as Excepted Waste Sites in the Northwest Territories Lands and Resources Devolution Agreement, whereby responsibility for waste sites created prior to devolution shall be determined pursuant to separate negotiations between the Government of Canada and the GNWT.

The Ptarmigan Mine is located southeast of the Ingraham Trail and west of Lily Pad Lake. The current land use south of the Site is undeveloped land, made up of rocky outcrops and marshy areas typical of the Canadian Shield. The Ptarmigan Mine Tailings Containment Area is located west of Ingraham Trail, west of the mine site. Tom Mine is located approximately 1 km north of Ptarmigan Mine.

The Tom Mine is located west of the Cassidy Point access road between Jerry Lake to the west and Tom Lake to the east. The Aurora Village tourism site is located west of the Tom Mine. The current land use immediately north of the mine site is undeveloped land. Prosperous Lake is located approximately 800 m north. A transmission line crosses the site in a north-south direction.

Both sites are abandoned and no mining activities are taking place at the Tom or Ptarmigan Mines.

Hazards at the Mine Sites

The mine sites pose potential safety hazards to anyone venturing onto the sites. As seen in **Figures 4 - 7**, the Ptarmigan Mine includes tall structures such as a head frame, crusher building and gallery. Anyone climbing these structures is in danger of falling from height. Standing near the structures exposes one to hazards of falling objects.

The Tom mine has underground workings that are accessible from the surface, see **Figure 8**. Past efforts to secure these mine openings are proving inadequate as shown in **Figure 9**. The underground workings that are filled with groundwater are accessible from the surface. Anyone venturing underground through these openings is exposed to drowning, and other hazards, see **Figure 10**.

Construction of the Fence

Heavy equipment such as a RC Interoc AN 109 drill rig, air compressor, D6 dozer, and C3 Cat excavator were used for drilling of the fence post holes and access road upgrades and maintenance activities. The wire mesh fence and gate is supported using metal posts inserted into the ground. Soil conditions at the Ptarmigan and Tom Mines are gravel and exposed bedrock. This type of terrain required the use of an Air Track drill to drill the holes and the posts were secured in ground using a suitable cement paste.

A 10 foot high wire mesh fence was constructed and completed at the Ptarmigan and Tom Mines during the winter of 2016/17. As shown in **Figures 2 and 3**, the Ptarmigan mine head frame was enclosed in one fenced area and the crusher, gallery and mill buildings in another. A fence section and gate was installed at the Ptarmigan Mine point of entry to deter access to the site. See **Figure 2**.

A 10 foot high wire mesh fence section and gate was installed at the Tom Mine to deter access to the site. See **Figure 3**. Wire mesh fencing was grouted into place over hole on one side of the previously barricaded mine shaft opening. See Figure 12.

The total length of fencing and gates installed was 916 yards for both Ptarmigan and Tom Mines. The top sections of the fences at both sites have barbed wire to deter access to the mine sites. The 10 foot high fence was a recommendation that would help prevent wildlife from entering the enclosed area and becoming trapped.

An example of the fence construction at Ptarmigan Mine is shown in **Figure 11**.

Road Upgrades and Restricting Site Access

The project team worked with the GNWT Department of Infrastructure to ensure activities within the right-of-way complied with their regulations and guidance.

The work included the installation of a culvert to maintain appropriate drainage along the highway ditch. There is currently no existing watercourse in the ditch. This work occurred in the area along the Ingraham Trail as shown in **Figure 2** and saw improvements totaling 0.03 ha.

Existing roads on site had boulders and bollards placed on and alongside them to prevent vehicular access. Vegetation clearing of the existing roads and fence line was done to ensure safe operation of equipment and easy installation of the fence.

No road upgrades or drainage enhancement were required at the Tom Mine.

Summary of fence and access road enhancements

- Ptarmigan Mine Headframe Fence 372 yards
- Ptarmigan Mine Mill Fence 465 yards
- Ptarmigan Mine Gate and Bollards 54 yards

- Tom Mine Gate 25 yards
- Ptarmigan Road Access Enhancement 0.03 hectares

Closure of LUP MV2016X0026

The fence and enhancements to restrict access to both the Ptarmigan and Tom Mines has been completed. There is no further requirement to maintain or extend the LUP at this time. Closure of this permit is being requested by ENR.



Figure 1 – Ptarmigan and Tom Mines along the Ingraham Trail, near Yellowknife, NT



Figure 2 – The Ptarmigan Mine safety fence alignment and road improvements (red lines)



Figure 3 – Tom Mine safety fence and gate (red lines)



Figure 4 – Ptarmigan Mine headframe



Figure 5 – Ptarmigan mineshaft elevators



Figure 6 – Ptarmigan Mine mill building and gallery



Figure 7 – Ptarmigan Mine crusher plant building



Figure 8 – Tom Mine decline portal



Figure 9 – Tom Mine second shaft entrance



Figure 10 - Tom Mine flooded decline portal



Figure 11 - Fence installation at Ptarmigan Mine



Figure 12 - Grouted wire mesh fence over mine opening at Tom Mine