

## Use of Mercury in Placer Mining Operations

### Synopsis

On June 6, 2018, the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) received an anonymous complaint concerning a placer mining operation using mercury in its process to extract gold. After receiving the complaint, EMLI conducted a series of inspections on different placer mining operations in the geographical area.

At one of the placer mining operations, inspectors discovered mercury mixed with ore in an open tote. Mercury was also present in a tumbler used to separate the gold from the ore. Mercury is a known poison and the vapors from the



**FIGURE 1.** Tote containing Mercury

liquid mercury can be inhaled by workers leading to tremors, neuromuscular changes, headaches, poor mental function among other symptoms. Further inspection revealed the company was operating in an area where work had been suspended by a mine inspector on a previous inspection for clearing 1.49 hectares without a *Mines Act* permit. In addition, it was discovered that the company had cleared vegetation within 10 meters of a river contrary to their *Mines Act* permit and conducted works within a stream intersecting the mine site. A subsequent suspension of work order was issued encompassing the entire mine site.

Inspectors attended the mine site seven days after the suspension of work order was issued and found the mine continuing to operate contrary to the order. EMLI and the Ministry of Forests, Compliance and Enforcement Branch conducted a joint investigation regarding the use of mercury in the placer mining operations, unauthorized works outside the permitted area, working within 10 meters of a stream or river, and failing to comply with a suspension of work order at the mine site.

### Findings

The investigation confirmed that mercury was being used to extract gold at the mine site in contravention of a condition of their *Mines Act* Permit.

Additional non-compliances were observed:

- The company had also cleared 1.49 hectares of land in preparation for mining without authorization contrary to the *Mines Act* and contrary to the *Forest and Range Practices Act* for the removal of trees at the site.
- Mining related works were conducted within a stream flowing through the mine site.
- The mine also disregarded two separate suspension of work orders, one before and then after the on-set of the investigation.
- The mine manager was not in attendance at the mine site during operations which is also required under the *Mines Act*.

## Outcome

The mine eventually complied with the suspension of work orders and follow-up inspections were conducted to ensure no further contraventions of the suspension of work orders.

EMLI issued an order for the company to determine the extent of the mercury contamination on site and for the cleanup and removal of the mercury. The order required a hazardous material expert to conduct the tests and properly dispose of the mercury. Field tests determined only a small area of the mine was contaminated with mercury and it did not enter any watercourses. The mercury was removed from the site and disposed of properly.

EMLI issued orders to restore the riparian setback and the stream channel under the guidance of a licensed professional. These orders were complied with and the riparian area along the river and the small stream channel intersecting the mine site was restored.

A recommendation for an administrative penalty naming both the mine manager and the company for conducting mining activities without a permit, failing to comply with a suspension of work order, failing to ensure the mine manager was on site, and allowing a worker to handle a hazardous material without proper training was submitted to a Statutory Decision Maker (SDM). After reviewing the report, the SDM levied an administrative monetary penalty.

Under a separate administrative action, EMLI put forth a recommendation to the Chief Gold Commissioner to suspend the Free Miner's Certificate<sup>1</sup> of the mining company. The Chief Gold Commissioner suspended the mining company's Free Miners Certificate for six months and the directors or officers of the company could not apply for a Free Miners Certificate in that timeframe.

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<sup>1</sup> A Free Miners Certificate is issued under the Mineral Tenures Act (MTA). It allows individuals or corporations to enter mineral lands to explore for minerals or placer minerals, register a mineral title, register exploration and development work under the MTA, revise an expiry date for a mineral title, and/or register a bill of sale for a mineral title.