

## INSPECTION RECORD

**Region:** III

**Inspection Report No.** 2018001

**License No.** 21-26748-01

**Docket No.** 030-34221

**Licensee:** Tilden Mining Company L.C.  
PO Box 2000  
Ishpeming, MI 49849

**Locations Inspected:** Tilden Mine, County Road PEE, Marquette County, MI

**Licensee Contact:** Lawrence Gray, RSO **Telephone No.** 906-475-3521

**Program Code:** 03120 **Priority:** 5

**Type of Inspection:**      ☐ Initial      ☐ Routine      ☐ Announced  
   ☐ Special      ☒ Unannounced

**Last Inspection Date:** 8/17/2017      **Date of This Inspection:** 8/22/2018; Exit 1/8/2019

**Next Inspection Date:** 8/22/2023      ☒ Normal      ☐ Reduced

### Summary of Findings and Actions:

- ☐ No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- ☐ Non-cited violations (NCVs)
- ☐ Violation(s), Form 591 issued
- ☒ Violation(s), regional letter issued
- ☒ Follow-up on previous violations

**Inspector:** Edward Harvey, Health Physicist

/RA/

*Signature*

**Date:** 2/04/2019

**Approved:** Aaron T. McCraw, Chief, MIB

/RA/

*Signature*

**Date:** 2/05/2019

## **PART I - LICENSE, INSPECTION, INCIDENT/EVENT AND ENFORCEMENT HISTORY**

### **1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:**

There were no license amendments nor program changes since the last inspection.

### **2. INSPECTION AND ENFORCEMENT HISTORY:**

The last inspection of this licensee was an enforcement follow-up inspection conducted on August 17, 2017. The purpose of this inspection was to verify the completion and assess the effectiveness of corrective actions for multiple violations of security-related requirements identified during a special inspection conducted on September 12-13, 2016. No violations of NRC requirements were identified.

The previous inspection of this licensee was a special inspection conducted on September 12-13, 2016. During this inspection, multiple security-related violations were identified. As a result, a Confirmatory Order (CO) was issued on June 14, 2017. The inspector verified the licensee's compliance with the conditions of this CO and discussed its plans to continue complying with the order for the remainder of its duration.

### **3. INCIDENT/EVENT HISTORY:**

EN53582, EN53713, and EN53727 reporting inoperable fixed gauge shutters are described in Part II Section 4 of this report. These events are closed.

## **PART II - INSPECTION DOCUMENTATION**

### **1. ORGANIZATION AND SCOPE OF PROGRAM:**

Tilden Mining Company, L.C. is authorized by NRC Materials License No. 21-26748-01 to use licensed material in a variety of fixed gauging devices as part of its ore concentrator process control system. The licensee conducts 24-hour operations at the Tilden Mine, located outside Ishpeming, Michigan. At the time of the inspection, the licensee possessed 143 fixed gauging devices, five of which were in storage.

The radiation safety program at the Tilden Mine maintains two tiers of authorized users: Level I personnel are provided the necessary training to perform and/or supervise licensed activities. Level II personnel are provided the necessary training to conduct licensed activities, but only under the supervision of Level I personnel. At the time of the inspection, the licensee employed approximately 11 authorized users.

### **2. SCOPE OF INSPECTION:**

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The inspector toured the concentrator facility and reviewed the programmatic elements of the licensee's radiation safety program with the Radiation Safety Officer (RSO). The inspector observed the condition, labeling, and posting of a sample of fixed gauges. The

inspector reviewed licensee procedures for leak testing, receipt of licensed material and emergency response, as well as a selection of records for gauge installation, leak testing, shutter checks, inventories and authorized user training.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

The inspector conducted independent surveys at various locations around the ore processing facility and found no readings which would indicate residual contamination or exposures to members of the public in excess of regulatory limits.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

During a routine inspection on August 22, 2018, the inspector identified a work order to clean a fixed gauge shutter that was rendered inoperable due to a buildup of iron fines. The shutter was determined to be inoperable during a routine shutter check performed on August 12, 2017. The inoperable fixed gauge was a Ronan Model RLL1 that contained 0.9 mCi of Cs-137 (Serial No. 317287A). The inspector inquired as to whether or not the licensee submitted a notification to the NRC that shutter was inoperable and the RSO stated that no notification was made because the gauge was not physically damaged, but only needed to be cleaned of the fines. The licensee made the decision to wait until the next time the plant was down for maintenance to clean the gauge because the gauge normally operates in the open position. After the inspection, the inspector determined that the gauge is not required to be shutter checked for its Sealed Source and Device Registry, therefore, this incident was not reportable.

The inspector requested that the licensee perform an in-depth review of all shutter checks performed since the last inspection to determine if similar incidents had occurred. On October 5, 2018, the RSO notified the inspector that a Kay Ray Model 7050 (Serial No. 1406), containing 200 mCi of Cs-137, was determined to be inoperable due to a broken handle during a routine shutter check performed on March 19, 2015. The inspector asked the RSO if this event had been reported to the NRC, but the RSO was away on leave until October 29, 2018. Following the return of the RSO, a 24-hour notification was made to the NRC on November 2, 2018 (EN53713) and a written report was submitted on November 30, 2018 (ML18355A924). This gauge was replaced on July 22, 2015, when the plant went down for maintenance. The inspector determined that the licensee's failure to make a timely notification to the NRC of damaged or inoperable safety equipment was a violation of Title 10 of *The Code of Federal Regulations* (CFR) 30.50(b)(2).

The root cause of the violation was a misunderstanding of the reporting requirement on behalf of the RSO. As corrective action, the licensee submitted the required report, as described above. As long-term corrective action to prevent recurrence, the RSO added language to the fixed gauge inspection template used by authorized users when performing routine shutter checks and inventories that the RSO must be immediately notified of any equipment failures such that the appropriate subsequent notifications to the NRC can be made.

A third shutter failure on a fixed gauge containing 200 mCi of Cs-137 was discovered on November 9, 2018, and reported to the NRC on the same day (EN53727). The written report for this event was received on December 6, 2018 (ML18346A543). The licensee intends to replace this fixed gauge with a new one when the plant goes down for

maintenance in April 2019. This equipment failure was reported timely pursuant to 10 CFR 30.50(b)(2) and 10 CFR 30.50(c)(2).

5. PERSONNEL CONTACTED:

# Lawrence Gray, RSO  
Justin LaMere, IT Site Administrator

# Attended exit meeting on January 8, 2019

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