

TRIP REPORT: Kennecott Mill Site, June 8-12, 2015

FINDINGS and RECOMMENDATIONS

TRIP REPORT: Arrived at McCarthy June 7, and on June 8 conducted an “Abandoned Explosives Orientation” class for WRST employees who will be working at the Mill site. June 9 through 11 was spent in surface examination of the slopes on both north and south sides of the Mill, removal of found products (roughly 30 lbs of fuses and one cap), and guidance/support of the lumber removal effort (the attempt to “scatter” the lumber was inhibited by the available space, so on both sides it looks more like a linear “stack”). On June 11 emptied the 5 drums on Level 7 (all contained pieces of fuse within their mix of wood, fabric and metal trash), and examined the surface of the contents of the ore bin. On June 12 assisted in disposing of the one cap found, and returned to Palmer that evening.

FINDINGS and RECOMMENDATIONS

North Side Slope

There is a high concentration of fuse and caps throughout the debris slope from the Level 7 log crib-wall to the foot of the Mill, and we must assume it extends full depth to the original native slope line (roughly 5 ft at the upper crib, 8 to 10 ft at midslope and below). The fuse and caps are quite often found in bunches within and beneath old burlap ore sacks, but also occur randomly, and the concentration seems to drop dramatically north of the tram line.⁽¹⁾

Public Safety Risk Mitigation currently consists of fencing off the slope between the upper crib and the foot of the Mill, signing along the fence, and 2 emergency egress paths dug across the slope to the north fenceline; a pipe handrail is to be added this summer along the north fenceline to assist in descending the slope. Short of excavating and screening the entire slope (a volume estimated at 8000 to 9000 cubic yards), the fencing and signing must be considered a permanent feature.⁽²⁾

Work Zone Safety Risk Mitigation must include the following: (1) All excavation work to be visually monitored while in progress to spot any uncovered caps; (2) Only persons trained in the handling of unstable blasting caps to do so; (3) All excavated material to be screened to locate and remove any caps prior to stockpiling or removal from the Mill site (it is a federal felony to deliver any explosive material to a landfill); (4) Workers, including contractors, must be informed of the risk from caps, and should be trained to recognize deteriorated caps and respond appropriately. In order to reduce delay time in work progression, the placement of a “cap collection day-box” within the Mill, which is emptied daily to a magazine, is recommended. (5) All caps *must* be disposed of by detonation, and all fuse found should be collected and burned at an off-site location.

⁽¹⁾ The risk of friction/impact detonation of mercury fulminate caps rises as they dry out; therefore the risk is somewhat higher for caps found on or near the slope surface.

⁽²⁾ This is an unconsolidated debris slope which is gradually moving downhill. Removal of fibrous debris like burlap, rope and rotting wood from the debris mix can be expected to accelerate this downslope movement.

South Side Slope

Several fuse pieces were found on the surface between mid-slope and roughly Level 8, where most were found. These appear to be “random drops”, possibly not associated with mining operations, and I consider the cap risk “low”.

Public Safety Risk Mitigation: Signing near Level 8 may be appropriate.

Work Zone Safety Risk Mitigation should be the same as on the North Side for any excavation.

Upper Mill Perimeter

The north, south and east sides of the Mill above Level 7 are still largely masked by lumber. As it is removed to the 30-foot fire protection line, the ground surface must be carefully examined for fuse and caps. While I believe the risk is very low in these areas, that has yet to be confirmed. Upon removal of the lumber, even if only fuse is found at the surface the **Public and Work Zone Risk Mitigation** measures given for the South Side must apply here as well.

The Ore Bin

One small fuse piece was found on the surface of the Bin contents, which is ore chunks apparently overlain by a thick layer of silty rock dust and containing a few smaller chunks of wood and drill-stem. Considering the mechanical processing that occurred prior to entering the Bin, and that this is NOT a place the company would have wanted any unplanned detonation to occur, I think the cap risk is quite "low" but cannot say it is nonexistent.

Public Safety Risk Mitigation: Sign the Bin access "Keep Out".

Work Zone Safety Risk Mitigation: All material removed from the Bin should be screened for fuse and caps; that should go much faster here than with the North Slope material.

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