



# AJ Gold Mine

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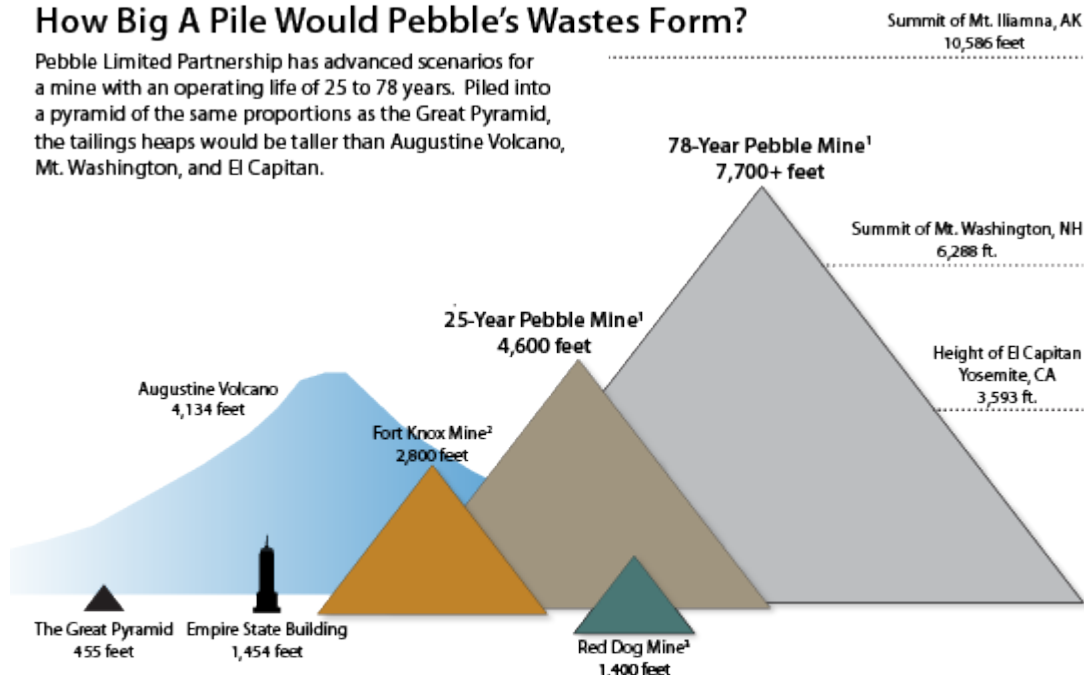
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### Summary

The Alaska Juneau (AJ) mine operated from 1917 to 1944, producing 90 million tons of gold-bearing ore, and was one of the largest mines in the world at the time. Currently, the City and Borough of Juneau controls the land, and is considering re-opening the mine.

## How Big A Pile Would Pebble's Wastes Form?

Pebble Limited Partnership has advanced scenarios for a mine with an operating life of 25 to 78 years. Piled into a pyramid of the same proportions as the Great Pyramid, the tailings heaps would be taller than Augustine Volcano, Mt. Washington, and El Capitan.



About the Calculations: Pyramids are based on the proportions of the Great Pyramid at Giza, with 51.5 degree slopes. Volumes for mine wastes are calculated using a density of 1,800 kilograms per cubic meter - roughly that of broken porphyry ore and compressed clay. Fort Knox and Red Dog tailings piles are for the entire predicted mine lives. The currently extracted rock would form smaller pyramids. Additional tailings from underground mining are not included.

Sources: ¹Wardrop (2011), *Preliminary Assessment of the Pebble Mine, Southwest Alaska*, ²Kinross (2012), *Fort Knox 2012 Annual Activity Report*, ³Ground Truth Trekking (2012), *Red Dog Mine*, and Teck (2012), *Red Dog Mine 4th Quarter & Annual Report 2011 for State of Alaska*.

**PEBBLE'S TAILINGS** (/figures/pebble-mine-tailings-pyramids/) — The relative quantity of Pebble's tailings, formed into pyramids similar to Egypt's, and other natural and man-made objects.

## Background

The historic AJ mine site is right in the middle of present day downtown Juneau, one of the first big gold-rush towns in Alaska. Much of the land under downtown consists of waste rock from the mine. Though the ore in this area is low-grade, the combination of low-cost hydropower and access to timber and water transportation made mining it profitable in the early 20th century.



**AJ “GLORY HOLE”** — “Glory Hole” left over from historical mining in the area — Get Photo (</photos/aj-glory-hole/>)

The Alaska Juneau Gold Mining Company began operations near Juneau in 1912, and the AJ mill itself began operation in 1917. In the 1930’s the AJ mine employed around 1000 people ([http://www.juneau.org/engineering/AJ\\_MINE/documents/AJMineHistory\\_Condensed.pdf](http://www.juneau.org/engineering/AJ_MINE/documents/AJMineHistory_Condensed.pdf)), produced 12,000 tons of ore per day and operated 24 hours a day, 363 days a year. The mine continued operation until it was closed by federal order in 1944 since gold was considered non-essential for the war effort. In total, around 90 million tons of ore were mined, producing millions of ounces of gold.

Because of the composition of the ore deposit, acid mine drainage (</Issues/MetalsMining/AcidMineDrainage.html>) has not been a problem at the site. Some remnants of the mine have lingered, most notably a large tank of petroleum sludge (<http://www.dec.state.ak.us/spar/csp/sites/thanebunker.htm>) which was removed in 2007, but the majority of the infrastructure is long gone.

Since closure, several parties have owned the land, with periodic discussions about re-opening the mine. The Echo Bay Mining Company spent \$100 million on the idea, from 1985-1997, before abandoning it in the face of falling gold prices and local opposition. The Juneau community itself was deeply divided over the issue of re-opening the mine.

## Current Status

The City and Borough of Juneau (CBJ) owns rights to most of AJ mine through a unit agreement ([http://www.juneau.org/engineering/AJ\\_MINE/documents/Comm\\_Charge.pdf](http://www.juneau.org/engineering/AJ_MINE/documents/Comm_Charge.pdf)) with AJT Mining Properties (which also owns Alaska Electric Light & Power (AEL&P)).

The CBJ's "AJ Mine Advisory Committee", tasked with examining the feasibility of re-opening the mine, reported their finding ([http://www.juneau.org/engineering/AJ\\_MINE/documents/AJMAC\\_Final\\_Report.pdf](http://www.juneau.org/engineering/AJ_MINE/documents/AJMAC_Final_Report.pdf)) (10.5 MB) in May 2011. A public hearing was held (<http://juneauempire.com/local/2011-04-21/citizens-split-mine-issue>) on the issue in Juneau on April 21st, 2011, with residents split about equally between



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supporting and opposing the mine. Currently the city has decided (<http://www.ktoo.org/2011/08/23/cbj-assembly-creates-aj-mine-fund/>) to spend \$250,000 examining the feasibility of the project, primarily on examining potential water pollution issues.

Whereas Echo Bay had considered a large mine, of 15,000-22,000 tons per day, the city is focusing on a smaller mine ([http://www.juneau.org/engineering/AJ\\_MINE/documents/SmallMineConcept\\_Pierce.pdf](http://www.juneau.org/engineering/AJ_MINE/documents/SmallMineConcept_Pierce.pdf)), of around 3,500 tons per day (about the size of Green's Creek (</Issues/MetalsMining/GreensCreekMine.html>) or Kensington (</Issues/MetalsMining/KensingtonGoldMine.html>)). The proposal includes an unusual plan to perform the milling, and store tailings, underground.



**GOLD CREEK** — Water quality at Gold Creek is one of the major issues about re-opening the AJ mine — Get Photo (</photos/gold-creek/>)

AEL&P has stated that there is currently no surplus power available for a mine. The [mine facility would have to generate power \(/Issues/MetalsMining/Powering-Large-Mines-In-Alaska.html\)](/Issues/MetalsMining/Powering-Large-Mines-In-Alaska.html) on-site, from diesel, or potentially from natural gas. AEL&P has also [raised the possibility \(http://juneauempire.com/stories/022411/loc\\_790464502.shtml\)](http://juneauempire.com/stories/022411/loc_790464502.shtml) of having the mine operator partner with AEL&P to expand the [Lake Dorothy hydropower project \(http://www.aelp.com/Lake%20Dorothy/lakedorothy.htm\)](http://www.aelp.com/Lake%20Dorothy/lakedorothy.htm).

Some residents have already expressed concerns (<http://seacc.org/mining/proposed-southeast-mines/a-j/AJ%20Website%20Fact%20Sheet.pdf>) about re-opening the mine, citing pollution, noise, increased traffic, and the risk of water contamination (<http://juneauempire.com/opinion/2011-04-18/my-turn-city-must-protect-water-quality-if-aj-mine-reopened>). In April 2011, the Southeast Alaska Conservation Council (SEACC) released a report called “Minimum Operating Conditions for Re-Opening the A-J Mine” (<http://seacc.org/mining/proposed-southeast-mines/a-j/A-J%20Conditions.pdf>), which includes numerous suggestions for a socially and environmentally responsible version of a possible mine. These include guaranteeing water supply safety, protecting city infrastructure, shielding consumers from increased electricity prices due to the mine, and miscellaneous environmental and economic protections.

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## Further Reading

- > SEACC website on A-J Mine (<http://seacc.org/mining/a-j>)
- > CBJ AJ Mine Advisory Committee webpage (with meeting minutes) ([http://www.juneau.org/engineering/AJ\\_MINE/index.php](http://www.juneau.org/engineering/AJ_MINE/index.php))
- > AJ Mine Advisory Committee, Report to the City and Borough Assembly (2011) ([http://www.juneau.org/engineering/AJ\\_MINE/documents/AJMAC\\_Final\\_Report.pdf](http://www.juneau.org/engineering/AJ_MINE/documents/AJMAC_Final_Report.pdf))