



Significance of Beach Placers and Environmental Consequences

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DESCRIPTION

Beach placers develop at seashores when wave action and beach currents concentrate lighter materials while shifting heavier ones more slowly. Beach placers are sedimentary rock formations that are generally found where streams or rivers enter big bodies of water. They are made of sand and gravel that has been deposited along the edge of these bodies of water. As a result of constant wave action and currents, materials accumulate as beach placers.

Alluvial deposits—deposits of sand and gravel in current or former stream beds, or rarely glacial reserves—are typically where precious metal deposits and gemstone resources are discovered. Placer mining is frequently employed to extract these deposits. Usually, only a tiny fraction of the entire deposit consists of the metal or gemstones that have been transported by stream flow from an original source, such as a vein. Gems and heavy metals, such as gold, are denser than sand, therefore they naturally tend to assemble at the base of placer deposits.

The Canadian Queen Charlotte Beach gold placer deposits are only a few years old, but the Canadian Elliot Lake uranium paleo placer inside the Huronian Super group is billions of years old.

Although it is conceivable where the earth is constantly frozen, the confining material in an alluvial placer mine may be too loose to be properly mined by tunneling. Where water under pressure is available, hydraulic mining, hydraulic sluicing, or hydraulicking can be used to transport the precious material from the deposit and separate it from it.

The "scrubber portion" of a trommel is made up of a revolving metal tube that is slightly inclined and has a screen at the discharge end. The interior of the scrubber section is secured with lifter bars, which are occasionally bolted-in angles of iron. The high end of the trommel receives the ore. The scrubber and screen sections receive water, frequently under pressure, and when combined with mechanical action, the rich minerals in the ore are liberated. After passing through the screen, the mineral-

bearing ore is further concentrated in smaller machinery like sluices and jigs. Larger ore fragments that are too large to fit past the screen can be transported *via* a conveyor to a waste stack.

Exploitation underground

Underground mining for placer deposits is possible in regions with perennially frozen ground, such as Siberia, Alaska, and the Yukon. In the past, fires were set to thaw the frozen earth before mining it because otherwise, it would be too hard and firm to mine by hand. The use of steam "points" to blast into the frozen deposits is a later technique. By using methods akin to traditional underground mining, deep leads can be reached.

Environment-related effects

The ore from which the desired minerals have been removed (the "tailings") can be recovered, and the process water can be constantly recycled, but it is not necessary to do so. Modern placer mining operations use these recycling and reclamation techniques more frequently, but they are still not always used. Back then, neither the used ore nor the process water was typically recycled. The author likely saw extensive hydraulic mining of the placer deposits because he served as a prosecutor in the area. As an additional point, he mentioned how the mining practices had severely impacted the local lake Carucedo.

When hydraulic mining adds a significant amount of silt to previously clear-running streams, environmentalists label this type of placer mining as environmentally damaging. Nowadays, settling ponds are used by the majority of placer mines, if only to make sure they have enough water to power their sluicing processes.

The Central Valley was lifted by about seven feet in impacted areas because to the massive amount of material that was removed from the gold fields during hydraulicking of placers. Some of the material settled in long bars that were up to 20 feet thick in the San Francisco Bay. The "Anti-Debris Association" formed in opposition to the process.

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