Stevens County Mining History

An Introduction to the Geology and Mines of Historic Stevens County
This Presentation includes material from the Stevens County Crossroads on the Columbia Digital Archive a Preserve America Project.
Mining has long been a mainstay of the Stevens County economy.
The United Copper Mine sits on the oldest rocks in Stevens County.
Sitting near the Jumpoff Joe Fault, these rocks in the Belt Supergroup are over half as old as the earth itself. They are part of a techtonic zone named after Belt Montana.
All the rocks west of the Belt Supergroup are younger

About 763 Million years ago the western part of the North American Continent broke away from the rest. It was in a period when most of today’s continents had drifted together in a structure called Rodina.

The channel that opened up was called the Windemere Rift. Today the rock structures it left behind include our Huckleberry Mountains and are called the Kootenay Arc.
A Majority of Mines in Stevens County exist in the Quartzite of the Kootenay Arc.

The green rock in this picture is the Kootenay Arc.
The Cleveland Mine
was established in the center of the Kootenay Arc
Low Grade Quartzite also along the Kootenay Arc

530 Million Year Old Quartzite was formed along the Kootenay Arc after the Metamorphic Argillite that now lies East of it.
The Van Stone Mine
lies on a juncture of the Kootenay Arc and Spirit Granite Pluton

Figure 3. Overview of the North pit (foreground) and West End pit (background) with pit lake. View to the west.
A Metacarbonate or Limestone belt in the north part of the County

The limestone area mostly in the north end of Stevens County contains the biggest producing lead and zinc mines. The Metaline District was the 2\textsuperscript{nd} largest lead and Zinc district in the United States and it continues into Canada where the Teck Cominco is the largest lead processing facility in the world.
The Frisco Standard
mined for copper, lead, zinc and silver
“Younger” 200 MYA
Marine Sedimentary Rock

More limestone rock accreted alongside the earlier formations from terrains that pushed in from the ocean.
US Gypsum Quarry near Evans was a major producer of cement for Grand Coulee Dam.
From 100 to 50 MYA
Igneous Granite Intruded into the base rock

Forced up toward the surface by mounting pressure from the ocean, these granites contain metals not found in the other terrains: Tungsten, Molybdenum, Uranium, Kyanite, Beryl... often in the form of crystals.
Granite is Magma that never broke the surface to become a volcano.
Volcanic Rocks were the last of the bedrocks to arrive.

In the same Eocene period when the volcanoes that formed the huge gold mines of the Republic area were erupting, there were volcanoes forming gold deposits at Orient and between Kettle Falls and Colville.
Areas of the County where bedrock is hard to find are covered in Glacial Till

The ground left in the wake of the glaciers and the ice age floods covers the most fertile parts of the county.

This presentation continues with part 2 on the early mines in Stevens County.