

Copy of R<sup>u</sup>port on Mungers Creek Chrome, submitted by Tomas Heap, 1/10/42.

The Silver Tip Chrome Deposit is located in the Willamette Meridian in sec. 26, t. 38 S., R. 6 W., of the Willamette Meridian, Josephine County, Oregon. The Property consists of 10 unpatented mining claims 1200 feet in width and 7500 feet in length. The title to the property is good.

#### Location

The mine is located about 26 miles from Grants Pass in a southeasterly direction. Grants Pass is the county seat and nearest shipping point. The property is situated on Mungers Mountain and crosses the ridge between Powells Creek and Mungers Creek.

#### Accessibility

There is a good macadamized road that extends from Grants Pass up to the Applegate Valley and thence up Williams Creek Valley to within five miles distance from the mine. The road from this point to the mine is a dirt road and is passable.

#### Geology

The ore body consists of a dyke of serpentized formation which is 1200 feet in width and 7500 feet in length. There are two classes of ore deposition, one class consisting of high grade lenses and stringers of chromite. These bodies are erratic and of an unknown quantity and are magmatic segregations of ore, which is common to all chrome deposits. Class no. two consists of low grade ore and covers the entire serpentized area, with a very apparent even dissemination of Chromite throughout the entire  $\frac{1}{2}$  ore body. This low grade ore has an average chromite content of 17 $\frac{1}{2}$ %. Samples taken compositely in cross section of the deppsite, exclusive of any high grade, yielded by mill test a high grade concentrate of chromite of 17 $\frac{1}{2}$ %. This concentrate has an assay value of 50% chrome. The foot wall of the ore body is post tertiary shale and the hanging wall is a greenstone of tertiary geological time. The strike of the ore body is 15° west of north and 15° east of south. The topography of the ore body is as follows: The dyke crosses the mountain at right angles and reaches an elevation of 1500 feet above the creek level on both sides of the mountain. This would give you a block of ore that could be mined and conveyed by gravity, which would be equivalent to a body of ore 1000 feet in depth, 1200 feet in width and 7500 feet in length, which would contain an approximate tonnage of 506,880,000 tons of low grade ore, yielding 84,480,000 tons of high grade chromite concentrates. These Concentrates would have an actual chrome metal content of 42,240,000 tons.

#### Metallurgy

The metallurgy mill practice flow sheet of this low grade ore has been worked out by the State of California, by the U. S. Bureau of Mines, has been put into production practice at the Jarman mine in California and at the Galconda Mine in Josephine County, Oregon during the World war, and mill tests by the writer upon the ore from the within described property. The practice is as follows: The ore is taken from the mine, is put through a rock crushes, "any type" thence it is put through rolls, thence through a screening type ball mill to pass a 20 mesh screen, thence over table concentrator. We have found that chrome ores do not require fine grinding, for the chromite does not adhere to the gangue minerals in the ore. We also find that the chromite does not slime at all. Due to these facts a very high recovery is made in the milling and concentration operation, practically a complete recovery being made. Mill tests on the ore for the Silver Tip Mine were made by the writer for the H. W. Gould Co., San Francisco, Calif. The engineer in charge

of the Gould Co., was Mr. Hill. The result was as previously stated. Mr. Hill was very much pleased with the results obtained on this ore and considered the mill practice very practical and economical. Our estimates of milling costs per ton on mine run ore based on a minimum daily capacity plant of 150 tons should not exceed seventy-five cents per ton. We find that the Silver Tip Mine ore takes six tons of low grade ore to produce one ton of the high grade finished concentrates, therefore it will cost \$4.50 to mill and produce one ton of concentrates. I will here include the mine operation and cost of the ore per ton delivered at the mill bunker. This property should be worked per open cut method with power shovels and conveyor system. The mining cost of the ore delivered to the mill should not exceed 25 cents per ton. We will therefore conclude that the ore can be mined and milled at a cost of \$6.00 per ton of high grade finished concentrates. If the cost of mine and mill production were stepped up to 1000 ton of mine run ore per day, the production cost should be cut to \$5.00 per ton of finished concentrates.

#### Flux.

I will here state that a good grade of high grade lime is procurable one mile of the Silver Tip Mine.

#### Physical

An abundance of good timber is available on the property. A good mill site and sufficient water for mill purposes is available on the property. There is an electric power line to a point within four miles of the property. Good climatic conditions for a continuous run.

#### Recommendations.

The experience of the writer with chrome in the United States, without fear of contradiction, will state that there are no high grade ore deposits of sufficient size to warrant the installation of a smelting reduction plant of any magnitude and I would not recommend any operation based upon the smelter relying on high grade ore to keep the plant in operation. But on the other hand, if the low grade deposits are taken into consideration, for instance such as the Silver Tip Mine with its disseminated great ore bodies, any one can readily see such an operation is entirely feasible, economical, and practical. With an abundance of ore available, such an operation resolves itself into a manufacturing proposition with all factors as a fixed known quantity.

(signed) Wm. F. Hayden,  
(1936) Consulting Mining Engineer

operation resolves itself into a manufacturing proposition with all factors as a fixed known quantity.

(signed) Wm. F. Hayden,  
(1936) Consulting Mining  
Engineer

John Eliot Allen

CG-446 *Munger's Creek Josephine Co.*

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

ASSAY REPORT

Grants Pass, Oregon  
Baker, Oregon

June 30, 1942

Sample submitted by Ray Treasher, Grants Pass, Oregon

Sample description: Three pounds of 2-inch, dirty, gray, poor-looking chrome ore.  
*Munger's Creek Chrome*

The assay results recorded below are made without charge as provided by Chapter 176, Section 10, Oregon Laws 1937, the sender having complied with the provisions thereof.

NOTICE: The assay results recorded below are from a sample furnished by the above named person. This Department had no part in the taking of the sample and assumes no responsibility, other than the accuracy of the assay of the material as furnished it by the sender.

Sample Number	GOLD		SILVER		(Cr <sub>2</sub> O <sub>3</sub> ) Chrome				Total Value
	Ounces per ton	Value	Ounces per ton	Value	Percent	Value	Percent	Value	
					26.4				

Market Quotations:  
 Gold        \$       per oz.  
 Silver      \$       per oz.  
               \$       per lb.  
               \$       per lb.

STATE ASSAY LABORATORY  
*P. G. Bassett*  
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