

MEMO TO MR. NIXON:

Subject: Trip to Quartzville District, Sept. 21-25, 1938.

Submitted by: F. W. Libbey

General.

Mr. James Houf of the Oregon Leather Co., Portland, who owns 40 acres of land on Yellowbottom Creek, a tributary of Quartzville Creek, suggested the trip and provided transportation and food.

The Quartzville District is about 27 miles NE of the town of Foster, Linn County, and is reached by means of a good graveled road. There is no town of Quartzville. Along Quartzville Creek and some of its tributaries are scattered cabins occupied by claim owners and a few "snipers" who are working some ~~good~~ gravel bars.

Most of the region is heavily timbered. A considerable area is patented land said to be owned by the Northern Pacific Co., although ownership appears on a county map in the name of the Weyerhauser Timber Co., with a smaller part in the name of Wright-Blodgett Co. It is said that these timber companies own the timber, but that the Northern Pacific holds title to the mineral. This appears to be rather a curious situation, in that the Northern Pacific Co. must have acquired title after the area was known to be mineral land. In order to prospect these areas, it is said to be necessary to get permission of the Northern Pacific Co.

Topography.

The region has steep mountain slopes with elevations ranging from about 1500 feet in Quartzville Creek to about 3500 feet on the ridges, with Gold Peak in the eastern part of the district rising to over 4000 feet and Galena Mtn., in the southern part, to 5000 feet. Drainage is all to Quartzville Creek which joins the Middle Santiam River at a point about half way between the center of the district and Foster.

Geology and Ore Deposits.

The rocks of the area are andesites, rhyolite, and accompanying tuffs in flows. There are andesite dikes and dioritic intrusions. No evidence of major post-mineral faulting was seen.

Extensive shearing and fracturing occurred along northwest and southeast-trending planes. Metallizing solutions deposited gold and silver-bearing sulphides along these planes, forming quartz veins and seams in the fractures of brecciated zones, as well as being disseminated, mainly as pyrite, in less concentrated form in favorable portions of the country rock. Subsequent ~~oxidation~~ oxidation and alteration produced much iron-stained gouge and soft material; and the oxidation of sulphides has resulted in forming ore deposits containing native gold, usually relatively close to the surface. The depth of oxidation varies greatly, and, in places, unaltered rock containing sulphides crops out at the surface. Some of the pre-mineral fault planes have considerable light-colored

clay gouge, with dark streaks of pyrite roughly parallel to the walls. These together with striations on the walls indicate post-mineral movement along the old fault planes.

There is a marked uniformity in the trend of the ore zones. The average strike is N. 40 W. The dip is nearly always steep. While in some cases individual shoots of ore are of rather small dimensions, the shear zone of system to which they belong is usually of considerable lateral extent. Several of these zones ~~may~~ may be traced for several thousand feet, and may be 50 feet or more wide.

Since the district is an old one, there has been considerable underground prospecting in the form of tunneling, but much of this work is now inaccessible. Those tunnels which are open show, mainly, oxidized areas, so that knowledge of sulphide zones is scanty. However, pyritization is widespread, and, ~~in places, rocks containing sulphides outcrop at or near the surface,~~ so that even the oxide ores have a certain proportion of sulphides, which contain gold and silver values. Sphalerite is fairly common and any treatment plant needs to be equipped for concentrating a complex ore in addition to the usual amalgamation of free gold.

Concentrations of metallic gold have occurred at or near the surface; some fairly rich pockets, which held many exceptional specimens of native gold, have been found. Such pockets have been the incentive for much of the prospecting so that development work, except in a few cases, has been principally in following small ore shoots, with practically no systematic crosscutting in order to show the potentialities of the large shear zones. It would appear that such fractured and metallized zones might have possibilities of being developed into economic deposits, but no definite evidence can be presented.

Mining Properties.

On the attached sheets is a tabulation of important features of the properties visited. The following notes are given in the way of additional information.

The largest mine in the district is the Lawler, most of the workings of which are now inaccessible. It produced the bulk of the district's recorded production of about 8400 oz. of gold. There are four main adit-levels with a difference in elevation between the upper and lower of about 500 feet. Considerable stoping was done on an ore shoot said to be 6 to 8 feet wide. A 20-stamp mill with no concentrators was operated in the 1890's and shut down in 1898. It is reported by Mr. Frank Revier, of Quartzville, who worked in the Lawler Mine, that the bottom tunnel penetrated a dark colored basic rock for about 200 feet and that there was only about 8 inches of ore in the shoot before this rock was struck. There is no record of any cross-cutting to the walls of this reported dike.

There is a small pile of tailings left below the Lawler mill, probably less than 2000 tons. A sample of this material pans a small concentrate of an oxidized lead mineral, probably cerrusite, and a few small colors of free gold.

In addition to the eleven lode claims, the Lawler company owns 238 ~~acres~~ acres of placer ground extending for about two miles down Dry Gulch. This ground consists of rubble of unknown depth. Water flows at the surface only during periods of heavy run-off. It is doubtful if any prospecting of this placer ground has been done. Locally, it is considered of considerable value, but no definite information is available.

The Albany property is next in size and in quantity of production to the Lawler, although production was very much less (something in excess of 693 oz., which is the recorded production for 1890, 1892, and 1893.) Outcrops of the two main veins, the Bonanza and Mountain Queen, produced several valuable pockets. As described by Stowell in 1921, the ore shoots were small and there was little in the way of exposed ore at the time of his examination. A lower tunnel called the Crosscut, 400 feet vertically below the upper or Bonanza tunnel, was ^{driven} down 680 feet into the mountain to intercept both the Bonanza and Mountain Queen veins. Stowell believed that the Bonanza vein was cut. The Mountain Queen vein was not reached. Apparently development of this property was, to a great extent, ill-advised.

The Bob and Betty, formerly called the Smith-McClary, is another old property with considerable tunnel work, much of it now inaccessible. In one tunnel, one foot of solid galena is exposed containing sphalerite. The owner is considering mining and shipping this material.

Properties in the southern part of the district near Galena Mountain are said to show a considerable tonnage of sulphide ore, mainly galena and sphalerite. They were not visited. Transportation difficulties would be an obstacle to economic production.

There is a bold quartz outcrop from 10 to over 50 feet wide, with a uniform, steeply dipping hanging wall, striking northwest across several claims. This is the so-called Mammoth ledge. It is said to carry gold values, and at one place on the hanging wall side there is a caved shaft said to have had, near the collar, a rich pocket of gold. In a shallow open-cut on this ledge at the top of Red Heifer Butte, on the Calkins claim, a sample was taken across a section of the quartz, containing a small amount of residual pyrite, 8 feet wide. It assayed 0.02 oz. Au and trace Ag.

In the bed of Quartzville creek at Packers Gulch is an exposure of altered and iron-stained dike rock which was said to have returned an assay of \$19.00. This was sampled across a width of about 10 feet. The assay result was Au-trace, Ag-blank.

Assays of two specimens from a pyritized zone in Yellowbottom creek on the Houf property returned traces in gold and no silver.

Several of the properties, mainly relocations of claims which were worked many years ago, are active in a small way, some by men who are evidently making a living from returns on ore. These operators have small mills - some home-made - which amalgamate a part of the gold present. It would appear that they are recovering a relatively small part of the total gold in the ore.

Custom-Mill.

Probably a small custom mill, say of 25 tons daily capacity, equipped to recover the values in the sulphides as well as the metallic gold, and operated by an experienced person, who, in addition, had his own small ore supply, would be a profitable venture. The present operators could each supply a few tons regularly, and undoubtedly such a mill would encourage new prospecting and increase activity.

Conclusions.

Barring new discoveries, it seems now as if the only hope for the district is to determine the possibilities in the shear zones, that is, rather than attempting to make a commercial operation out of the small individual ore shoots, to develop a favorable zone as a unit, with the idea of making a large tonnage project. There is no definite evidence to give concerning possible average assay values of these large zones.

Quartzville Properties Inspected Sept. 21-25, 1938

Owner	Area	Location	Active	Development	Present	Treatment	Production	Geology and Ore Deposit
:	:	(Linn County)	:	:	Working	Plant	:	:
F. McCallister	1 claim	NE $\frac{1}{4}$ sec. 22, T. 11 S. R. 4 E., on Quartzville road	Yes	Large open-cut	Open cut	No	About \$2000	NW & SE shear zone in altered andesite. MN & FE stained quartz material and soft seams surrounding hard pieces country rock. Reported \$2000 pocket here. No assays.
W. B. Irvine	1 claim	NW $\frac{1}{4}$ sec. 23, T. 11 S. R. 4 E., on Quartzville road	No	10' cut & 4' tunnel	-	No	-	Similar to McCallister's, less oxidized material-disseminated pyrite in silicified rock, bottom of face. No assays.
W. H. Martin	1 claim	Mainly NW $\frac{1}{4}$ sec. 23 T. 11 S., R. 4 E., 0.5 mi. NW of Quartzville road	No	Cuts	-	No	-	Shear zone in rhyolite with iron stained gouge and crushed qtz. in well defined fissure 16"-18" wide. Silicified outcrop can be traced several hundred feet. Upper open cut shows bunches quartz with pyrite and sphalerite in silicified breccia.
W. H. Perkins	1 claim	Mainly SW $\frac{1}{4}$ sec. 14 T. 11 S., R. 4 E., at top and N. slope of Red Haifer Butte	no	Tunnels & cuts	-	No	?	Country rock is andesite and tuff fractured and brecciated. There is a massive quartz zone up to 50' wide sometimes oxidized & iron stained. Bold outcrop top of butte. Quartz with small amount disseminated pyrite, striking NW dipping NE. Mammoth pocket.
W. H. Heeler	1 claim	On line sec. 14 & 23 T. 11 S. R. 4 E. on Detroit trail, N. slope RH Butte	Yes	Tunnels & cuts	Tunnel & raise	Yes-amalgamation small hammer mill	?	NW-SE shear zone in tuff. Much altered & iron-stained soft & quartz material. Some Mn oxide, some soft gouge contains considerable pyrite. Some oxidized material pans gold. USGS bull. 893 has sample specimen ox. matl. Au 0.92 oz., Ag. 6.2 oz.

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Owner	Area	Location (Linn County)	Active	Development	Present Working	Treatment Plant	Production	Geology and Ore Deposit
Graves & Bush	35 acres	Mainly sec.22, T.11S.,R.4 E. just N. of Quartzville road	Yes	650' tunnel several cuts	Tunnel	Building mill	-	NW-SE shear zone in rhyolite, tuff, and andesite in ascending series. Crushed & altered rock with MN and FE stained seams & quartz frag- ments. Ore shoot being worked about 3' wide. Crushed & soft material pans gold. Lowest tunnel (Bell) has 4" seam assays 1.72 oz. Au, 33.3 oz. Ag. (Stowell)
McChesney & Hammer	6 claims (3 patented)	Mainly sec.23, T.11S.,R.4E., on road in Dry Gulch	No	Something over 1100' of tunnels besides cuts	-	10-stamp mill in ruins. Unus- ed Lane mill.	In excess of 653. oz. Au	Country rock includes andesite, rhyolite and volcanic breccia. Moun- tain Queen tunnel in altered & iron stained rhyolite about 30' below outcrop. Stops carried to surface where pockets valued at several hun- dred dollars were taken out. Bonanza Tunnel reported to have ore of milling grade.
Frank Bevier	2 claims	Sec.23 T.11 S. R.4E., S. of Al- bany group on SE slope	Yes	Several tunnels & cuts-300' tun- nels by present owner since 1931.	Tunnel	Home made 2- stamp mill & converted cem- ent mixer	? Owner has lived off production.	NW-SE shear zone in andesite & rhy- olite. Fissures filled with iron- stained gouge & quartz containing bunches of sulphides- vein material pans free gold. So-called Becket ledge being prospected contains white gouge. with black pyritifer- ous streaks-red crushed rock
W.S. Risley	2 claims	Mainly sec.14 T.11 S. R.4E. near sec.23. N.W. slope from Detroit trail.	Yes	Several tunnels a shaft (caved) and cuts	Building trail	No	?	A wide NW trending shear zone in andesite & tuff silicified iron oxide seams & vein fillings of stained & white quartz. Crosscut tunnel NW of cabin has drift & 8' winze on vein consisting of 12' near- ly solid galena & sphalerite with add'l 24" of oxidized rock with few small bunches galena.

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Owner	Area	Location (Linn County)	Active	Development	Present Working	Treatment Plant	Production	Geology and Ore Deposit
Howard ,107 Broad London land	238 acres placer & 165 lode 11 claims All pat- ented	Secs.21-22-23-26 & 27, T.11S.,R.4E., White Bull Mtn. to Silver Cr.	No	Over 2000' tun- nels & raises, several stopes. Caved shaft	-	20-stamp mill in ruins	? Most of dis- trict produ- tion of 8400 oz. from Lawler	Country rock is rhyolite, tuff & breccia. Ore deposit consists of brecciated rock with soft iron stained quartz material with comb. quartz. Stopes are 6-8' wide. Rake of deposit said to be NE. Bottom level said to be in dark colored basic rock with no ore. Possibly a dioritic dike.
reover	1 claim	Sec.27 T.11S. R.4 E. near sec.26 line & j just S. of Lawler ground & under River- side tract	No	50' tunnel & cut	-	No	-	Country rock is andesite. Vein forms prominent outcrop of silici- fied andesite. As exposed in tun- nel whole face is siliceous and contains bunches of galena and sphalerite. Tunnel follows wall on W. side which has seams of irony soft gouge.
Oakley	4 claims	SE 1/4 sec.27, T.11S. R.4 E., reached from Gov't trail on quartz- ville Cr. or trail from Lawler	Yes	Over 400' of tunnels besides cuts. 700' skid way.	Upper Tunnel	Gibson pros- pectors mill	Something over 50 oz.	Persistent deposit of brecciated and altered andesite containing quartz & sulphides together with free gold. Present working tunnel has 40" vein matter in face showing gouge, iron stained quartz & bun- ches of sulphides said to assay \$8 to \$50.00.
	3 claims	W. 1/2 sec.26, T.11S., R.4 E., reached by trail from Gov't trail on Quartzville Creek	Yes	A tunnel 115' long with 20' crosscut plus opencuts.	Tunnel	Building mill	-	Fractured zone with iron-stained gouge & siliceous mat'l trending from N.40W to nearly N. at 85 ft. in tunnel. 6' of material said to assay 0.6 oz. Au. at face value said to be low. Face shows dissem- inated sulphides mainly sphalerite.

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Owner	Area	Location (Linn County)	Active	Development	Present Working	Treatment Plant	Production	Geology and Ore Deposit
James Houf	40 acres patented timber land	SW _{1/4} sec. 19 T.11 S. R.4 E. on Quartz- ville road at Yel- lowbottom creek	No	None except cabin (Develop- ment work is planned)	-	-	-	Wide zone of pyritized andesite on one side of rholite dike. Speci- mens of andesite said to assay 0.07 oz. Au. Exposure in bed of Yellowbottom creek. Heavily timbered area.