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PRELIMINARY REPORT
BRYANT GROUP GOLD MINING CLAIMS
SALMON MOUNTAIN MINING DISTRICT
COOS COUNTY, OREGON

O

A C K N O W L E D G M E N T S

The writer is greatly indebted to Mr. E. W. Bryant, of Powers, Oregon, for many courtesies extended during the examination of this property.

O

October 26, 1936.

The writer is greatly indebted to Mr. Frank Palliday for much assistance in the sinking of pits on the Bryant property and for the sketch map and assisting in the sampling of this property.

The assays of these ores were made by Mr. E. Derwent who must assume all of the responsibility in this connection. Mr. Derwent has a long and wide experience in assaying and has been connected, we understand, with some of the large firms of this country, as well as doing some Government or State work.

The writer will not be responsible for any changes in this report nor does he permit marginal notations made upon any page of same nor will he be responsible for any excerpts or copies of this report unless made and checked in his office.

O

PRELIMINARY REPORT
BRYANT GROUP GOLD MINING CLAIMS
SALMON MOUNTAIN MINING DISTRICT
COOS COUNTY, OREGON

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PROPERTY:

The property which is the subject of this report consists at the present time of ten mining claims named as follows:

1--Headquarters	6--Kellogg
2--Jumbo	7--Salmon Gulch
3--Black Cat	8--Nugget Gold
4--Dude	9--Fall Claim
5--Bryner Fraction	10--No Name

LOCATION:

The property is located in Section , Township 32, South of Range 12, West of the Willamette Meridian, in the Salmon Mountain Mining District, Coos County, Oregon and in the Siskiyou Forest Reserve.

The headwaters of Salmon Creek drain the Northern section and Bill's Creek the Southern section of this property. Johnson Creek also has its headwaters in the Salmon Mountain District and flows to the Southeast, while Bill's Creek and Salmon Creek flow Northerly and empty into the South fork of the Coquille River.

Powers, a station on the Coquille branch of the Southern Pacific Railroad, a village of about 300 inhabitants, is located about nine miles in a Northerly direction from the property and is the nearest station where supplies may be obtained and where several large mercantile establishments are found.

TITLES:

The claims are held under the provisions of the Mining laws of the United States and State of Oregon governing the location of mining claims.

TELEPHONE:

Telephone service is extended to within a short distance of the property by the Forest Service lines.

MAIL:

Mail is delivered to Powers Ranch Station, 2½ miles from the property, once daily.

TIMBER:

The claims are covered with sufficient timber for mine timbering purposes. Considerable saw timber is also in evidence upon the property.

BUILDINGS:

There are no buildings or equipment upon the property except one well constructed house suitable for accommodating twelve to fifteen men, including a good mess hall completely furnished.

ROADS AND TRANSPORTATION:

The location of this mine as to roads and favorable transportation is unique in that it has been the first mine of any magnitude examined by the writer in Western Oregon where facilities affecting railroad transportation have been available.

This property is located from two to two and one-half miles Southerly from Powers Ranch which is a station on the Coquille Branch of the Southern Pacific Railroad, guaranteeing a very low freight rate to tide water, a distance of about 45 miles from the mine, or railroad transportation to the smelter at Tacoma, Selma Smelter near San Francisco, or to the smelter at Wallace, Idaho, or Salt Lake Valley Smelters.

The most advantageous point of delivery for the products of this mine would be to the port at Marshfield where the concentrates from the mine could be loaded on ocean-going vessels which are credited as being the cheapest means of transportation.

The road from Powers Ranch Station to the mine has been constructed some years ago at a heavy cost and is now in only fair repair at some points. Our estimate would be from \$500.00 to \$700.00 to recondition the road. The grade would be light except at a few places where the road bed could be changed to reduce the grade. The road extends to the most Southerly point of the mine, follows Bill's Creek from the Powers Ranch Station and crosses the Headquarters claim near the cabin.

Another road could easily be constructed to the Northerly section of the mine from the Powers Ranch Station upon a former railroad grade since a short spur about two to two and one-half miles in length at one time extended from the Powers Ranch Station to within about 2,000' of the Northerly section of the property.. This old railroad bed could be used for cheap construction of a railroad spur to the mine or be used for a road

ROADS AND TRANSPORTATION: (Continued)

bed to the Northerly sections of the property. We, therefore, consider this mine to be exceptionally favored in connection with rail and road transportation.

CLIMATE:

The climate is mild during most of the year with occasional snow fall at the mine during the winter months but not of sufficient depth to interfere with operations.

TOPOGRAPHY:

The topography of the areas under consideration in this report would be considered as partially rugged. The elevation at the crest of Salmon Mountain near the point where the mining claims are located is about 2800' above sea level.

The elevation at No. 1 tunnel is about 2440' and at No. 2 tunnel about 2240'. The elevation at the lower levels of the mine would be approximately 1600' to 1800' providing favorable locations for economic development of the ore deposits of this mine.

A road is extended to the portal of the No. 2 tunnel. This property is very accessible.

WATER:

Tim's Creek and Salmon Creek which drain the mining areas of this property would supply water in sufficient amounts for large mining development. A reservoir could be constructed by building a 300' brest (4 to 5 feet easily constructed) across Salmon Creek Gulch which would reservoir an area covering 60 to 100 acres.

A favorable mill location would be about 1000' to 1500' Northerly from the reservoir site. The water would have to be pumped to the mill operations. Spring water on the upper areas of the claims would supply sufficient water for camp purposes.

POWER:

Power would be furnished by oil burning engines as in our opinion hydro-electric power could not be had at a reasonable installation cost at present but may be found by an actual survey of the streams.

ECONOMIC NATURAL RESOURCES:

The economic natural resources would include favorable Timber, Road and Railroad Transportation, Water, Climate and a Topography that is adaptable to economic mining operations.

GEOLOGY AND ORE DEPOSITION:

The formations of the Bryant Gold deposits, we find very difficult to analyze geologically. The deposits which are about 1500' in width appear to be encased between serpentine upon the Western exposure and an impure slate or shale (probably Myrtle) upon the Eastern Exposure and is evidently the result of a basic intrusive.

Our opinion is, from observations we were able to make, that the intrusive should be classed as andecitic, probably porphyritic which has intruded a siliceous or altered serpentine. Considerable oxidization of the materials has taken place which has assisted in rendering the materials in part of the deposits, chiefly in the higher elevations, to a partially crushed or broken mass and when handled an almost granular form.

Small quartz veinlets, heavily iron-stained, together with streaks of calcite both carrying gold values are found exposed in the different tunnels of the property. Contained in the mass of material which forms the ore deposits here, is found free gold and chromite in a disseminated form both of which appear to come in commercial quantities, the material having a bluish-brown and at times a bluish-gray cast evidently due to the influence of chrome or the usual coloring of serpentines. The coloring may easily be mistaken for chlorite stain.

The above suggests that the active solutions carrying the major portions of the values appear to have arisen along the apparent porphyry contact and have spread into the adjacent crushed serpentitized mass or areas of the deposit.

Though considerable development work upon the property enables the examining engineer to reach the geological conclusions as above outlines, when major development has been completed we may find that we are mistaken in our conclusions and reserve the right for further determinations upon future examinations.

DEVELOPMENT:

300' Westerly from the cabin located in about the center of the Headquarters Claim, we find a tunnel driven upon a South-westerly course. The length of this tunnel including some cross-cuts totals 900'. The entire tunnel appears to be driven into what would be classed as a low-grade serpentitized ore body carrying fine gold and chromite.

DEVELOPMENT: (Continued)

Most of the tunnel development is found upon the Jumbo claim since the portal of the tunnel described is located only about 100' from the South side line of the Headquarters Claim which would be the North side line of the Jumbo Claim.

At about 200' up the hill from tunnel No. 2, the elevation of which is 2240' or at an elevation of 2440' and Southwesterly from the No. 2 tunnel is found the No. 1 tunnel driven into the mountain mass upon the same course and in the same character of rock as that found in the No. 2 tunnel except that the No. 2 tunnel shows evidence of streaks of sulphides whereas there is little evidence of sulphides shown in the No. 1 tunnel. This development consists of approximately 250' of tunnel and drifts and is located about 300' below the crest of the mountain.

About 600 to 700' Easterly from the No. 1 tunnel located on the Jumbo claim, we find, as indicated by the claim map furnished me, upon the Bryner Fraction an exposure of the ore bodies contained in this mountain in the form of a great open pit, the result of former hydraulic operations. The face of this exposure is probably 200' in width and about 250' vertically which provides evidence of the large ore deposits contained in this property.

The developments here, aside from those already described, consist of two tunnels, one an exploratory tunnel and another at a lower level driven into the face of the pit in a Southwesterly direction a distance of approximately 250' from which ore of a very fine grade has been extracted. The tunnel shows ore over practically its entire distance. Some sulphide is in evidence in this tunnel.

Many small open cuts and shallow shafts have been made over the entire mountain side upon which the mine is located exposing ore of the same character as that shown in the different tunnels.

At different locations in the tunnels and on the hill-sides we find brecciated rock that would probably, in the form in which they are exposed, be classed as sheared zones cutting the formation in which the ore is found. This rock is of an andecitic character.

The extent of the development, we believe, is sufficient to warrant the opinion that the entire deposit may be mined by one of the cheaper, steam shovel or open pit, mining methods.

VALUES:

The values contained in the ores consist only of free gold and chromite, a very unusual situation developed. The

VALUES: (Continued)

gold coming as free gold and the chromite coming in the form of small grains disseminated through or impregnating apparently in commercial quantities the whole mass or crushed zones of the ore deposits should be the outstanding factor in recommending the development of this mine.

PRELIMINARY REPORT
 BRYANT GROUP GOLD MINING CLAIMS
 SALMON MOUNTAIN MINING DISTRICT
 COOS COUNTY, OREGON.

Description of Assay Samples.

Bryant No. 1--Composite sample of 100' tunnel. Endicott Claim.	Au 0.28
Bryant No. 2--Composite sample No. 1 tunnel. Jumbo Claim.	0.9
Bryant No. 3--Small specimen of sulphides carrying some quartz found in No. 2 tunnel.	0.06
Bryant No. 4-- Composite sample covering 15' from portal Southerly in Tunnel No. 1.	0.05
Bryant No. 5--Composite sample covering 9' South from Sample No. 4 on the East side of No. 1 tunnel.	0.02
Bryant No. 6--Composite sample covering 14' of East cross-cut 40' from portal of No. 1 tunnel.	0.05
Bryant No. 7--Composite sample covering 36' of East cross-cut 40' from portal of No. 1 tunnel.	0.06
Bryant No. 8--Composite sample covering 16' of West cross-cut of No. 1 tunnel.	0.2
Bryant No. 9--Composite sample covering 30' of South drift of Eastern cross-cut No. 1 tunnel.	0.33
Bryant No. 10--Composite sample of ore mined from 12' incline shaft in South drive of East cross-cut in No. 1 tunnel.	2.8
Bryant No. 11--40' composite sample including heavy dilution of waste in 40' West cross-cut in No. 1 tunnel Jumbo claim.	0.05
Bryant No. 12--Surface sample 400' North of cabin on Headquarters claim.	0.025
Bryant No. 13--Composite sample 200' from Portal No. 2 tunnel.	0.05
Bryant No. 14--Composite sample at 500' point in No. 2 tunnel.	0.08
Bryant No. 15--At point 650' (East drift) No. 2 tunnel.	0.1

DERWENT RESEARCH LABORATORY
Analytical-Consulting-Research
Chemist and Metallurgist

GOLD BEACH, OREGON

June 4, 1931.

W. F. Hayden, E. H.
Gold Beach, Oregon

The samples submitted for analysis, contained the following:

Bryant No. 1--Composite sample of gold ore.

Gold 0.80 Ozs. \$16.00 Per ton of ore.

Bryant No. 2--Upper tunnel

Gold 0.90 Ozs. \$18.00 per ton of ore.

Bryant No. 3--Sulphides. Quartz.

Gold 0.06 Ozs. \$ 1.20 per ton of ore.

Bryant No. 4 -

Gold 0.05 Ozs. \$ 1.00 per ton of ore.

Bryant No. 5 -

Gold 0.02 Ozs. \$ 0.40 per ton of ore.

Bryant No. 6 -

Gold 0.05 Ozs. \$ 1.00 per ton of ore.

Bryant No. 7 -

Gold 0.06 Ozs. \$ 1.20 per ton of ore.

Bryant No. 8 -

Gold 0.20 Ozs. \$ 4.00 per ton of ore.

Bryant No. 9 -

Gold 0.33 Ozs. \$ 6.60 per ton of ore.

Bryant No. 10-

Gold 2.80 Ozs. \$56.00 per ton of ore.

W. F. H., ---2

Bryant No. 11--

Gold 0.05 Ozs. \$1.00 per ton of ore.

Bryant No. 12--

Gold 0.025 Ozs. \$0.50 per ton of ore.

Bryant No. 13--

Gold 0.065 Ozs. \$1.30 per ton of ore.

Bryant No. 14--

Gold 0.08 Ozs. \$1.60 per ton of ore.

Bryant No. 15--

Gold 0.10 Ozs. \$2.00 per ton of ore.

Average silver 0.05 Ozs.

Platinum trace.

E. Derwent
Anal. & Met. Chem.

Average Gold Content per ton - old price	\$20.67	\$7.45
" " " per ton - new price		12.80

PRELIMINARY REPORT
BRYANT GROUP GOLD MINING CLAIMS
SALMON MOUNTAIN MINING DISTRICT
COOS COUNTY, OREGON

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A complete analysis of the materials contained in the ores of the Bryant mine is shown on the opposite page, excepting the gold values contained in the deposit.

The results of the analysis evidences an unusual high percentage of commercial chromium oxide disseminated through this material coming in the form which permits exceptionally easy milling recoveries of the chromite content. This character of ore (disseminated chrome) is a rarity especially since the material in which it is principally found is a soft crushed material, affording the cheapest known methods of mining and milling since the ore may be mined by steam shovel or open pit methods and treated by gravity table concentration.

The ratio of concentration advised would be 7 tons into 1 or a recovery of 78.40% chromite concentrate equivalent to 53.34% chromium per ton of concentrate. An acceptable chromite content containing the necessary percentage of chromite (46% to 51%) for shipment should easily be maintained because of the apparent equal proportions of chromite impregnating the whole mass of the ore deposits.

The gold values are apparently distributed through the whole mass in commercial quantities with streaks and lens commonly called ore shoots found at reasonably close intervals distributed through the ore deposits.

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DERWENT RESEARCH LABORATORY
Analytical-Consulting-Research
Chemist and Metallurgist

GOLD BEACH, OREGON

June 18, 1931

W. F. Hayden, E. M.
Gold Beach, Oregon

The average sample of Samples Nos. 4 to 15 of
Bryant ore, contained the following:

Silica	54.50 Per cent
Alumina	18.00 Per cent
Iron Oxide	8.00 Per cent
Chromium Oxide	11.20 Per cent
Lime	2.18 Per cent
Magnesia	4.13 Per cent
Nickel	None
Chromium	7.66 Per cent
Iron	5.60 Per cent

(Sgd.) E. Derwent
Anal. & Met. Chem.

DERWENT RESEARCH LABORATORY
Analytical-Consulting-Research
Chemist and Metallurgist

GOLD BEACH, OREGON

July 2, 1931.

W. F. Hayden, E. M.
Gold Beach, Oregon

The samples submitted for analysis, contained the following:

Bryant No. 16--Near shaft in South drift No. 1 tunnel.

Gold 1.98 Ozs. \$39.60 Per ton of ore.

Bryant No. 17--Lose ore from 14' shaft ore incline made
from South drift in No. 1 tunnel.

Gold 2.35 Ozs. \$47.00 Per ton of Ore.

Bryant No. 18--Composite sample near face of South
drift No. 1 tunnel.

Gold 0.055 Ozs. \$ 1.10 Per ton of ore.

The above samples contained commercial quantities
of chromite.

(Sgd.) E. Derwent
Anal. & Met. Chem.

TREATMENT:

The treatment advised, therefore, is easily determined since the free gold may be amalgamated and the chrome saved by gravity and possibly flotation concentration.

RECOMMENDATIONS:

Our recommendations in connection with the Bryant deposits would be to make a thorough test of the ores of this property in the following systematic manner.

The development upon the Jumbo, Headquarters, Black Cat, Dude and Bryner fraction claims should be made in the form of open pits where the exposure of the face of the pit would not be less than 8' to 10' and from which samples would then be taken for assay. Would recommend that five pits of this character be made upon each of the above named claims, the cost of each pit should not exceed \$30.00 exclusive of powder and tools.

On additional five claims of the property, it would only be necessary to open the ore at two separate locations using the same class of development as above recommended, therefore, the expense to develop the mine ready for sampling would be:

25 pits at \$30.00 per pit	\$750.00
10 pits at \$30.00 per pit	300.00
Powder and equipment	150.00
Expense of sampling	150.00
Assaying	200.00
	<u>\$1,550.00</u>

The above is exclusive of engineering expense.

It is further recommended that a thorough examination of the water situation be made looking toward establishing a reservoir site, see page 3, within reasonable distance from the mill installation.

REVIEW:

In reviewing the foregoing it would seem there are few obstacles in connection with this mine that would be considered a hindrance in operating same profitably.

Economic Natural Resources: The Economic Natural Resources which include exceptional transportation facilities, low freight rates to seaboard and market, a topography that is favorable to economic development of the mine, a large amount of mine and saw timber, proximity to supplies, etc. are good.

REVIEW: (Continued)

Geology: The geology affecting large ore deposits would be considered as favorable.

Values: The writer's investigation has shown an ore which is easily mined, carrying free gold in commercial quantities and the rarity of finding a disseminated chrome ore deposit lends strength to the values as contained in the ores of this mine since chrome coming in fine grains and in disseminated form through the whole mass, without a doubt, indicates a producer which may be mined by the cheapest known mining methods - open pit or steam shovel.

Mining and Milling Costs: The mining costs while not covered in the body of the report would be extremely low since the values would be recovered simply by amalgamation of the gold and gravity table concentration of the chrome. The Mining and Milling Costs because of the softness and broken condition of the ores should not exceed 80¢ to \$1.00 per ton and possibly lower.

CONCLUSION:

Because of the evidence of commercial ores in sufficiently large quantities to be mined by steam shovel or open pit development, the favorable geological and economic conditions including accessibility and favorable road and railroad transportation and water together with the apparent magnitude of the ore bodies of this mine warrants, we believe, the opinion that this mine is worthy of extensive development.

Respectfully,

(Sgd.) W. F. Hayden

SUPPLEMENT
to
PRELIMINARY REPORT
BRYANT GROUP GOLD MINING CLAIMS
SALMON MOUNTAIN MINING DISTRICT
COOS COUNTY, OREGON
* * * * *

This report is made supplemental to our report upon the Bryant property, June 25, 1931, and is prepared for the purpose of outlining the development work which has been done upon the claims since the above report was completed. The recommendations as to development in our report of June 25, 1931, having been acceptable, a careful sampling of these deposits insofar as possible has been made.

During the development work upon this property four additional claims have been staked and options upon two additional claims have been secured, making now a total of sixteen (16) claims included in the Bryant Group of Gold and Chrome Mining Claims.

The character of development used in the sampling of the ores consisted of surface pits driven into the steep mountain sides over different areas of the mine which cover practically every claim included in the property. Samples were then taken from the face of each pit for assay. Where the ore was exposed in small pits the sample was taken from surface to surface across the basin by digging a small trench. The same plan was carried out at the large Endicott open pit upon the southeastern extension of the mine.

It was found in the surface sampling at higher elevations above the tunnel development areas that the overburden exceeded a depth of eight feet in places, consisting primarily of mud or carboniferous shale (probably Myrtle). This material averages fifty pounds of chromite and 36¢ in gold per ton. It must be remembered, we are speaking entirely of overburden here and that this sampling was made to determine as to whether or not the entire deposit could be mined by the cheapest possible mining method, either power shovel or open pit development. Since the tunnel developments have proven to be, according to assays, possible extensive commercial ore deposits we believe that the surface material dilution would cut down the actual per-ton value to such a small degree in proportion that the estimated two to ten feet of overburden could be mined in conjunction with the regular ore deposits without interfering with the commercial recoveries.

MILL SITE:

One of the most important features in connection with the system of sampling which has been prosecuted at the Bryant Mine during the month of August is that the ore deposits contained in the areas which lie between the portal of No. 2 tunnel and a point about 600 feet northerly at an elevation of 250 feet lower than the portal of this tunnel where a truncated exposure of ore carrying commercial values in free gold and chrome as shown by the assays is exposed. At this point we have found a very satisfactory mill site. The mill would face this body of ore, which pans gold freely and out of which a never-failing spring flows which we believe would fill from a 1½ to a 2 inch pipe.

The location of this mill site is exceptional in that it provides

not only a favorable location for quick and cheap delivery of the ores to the mill, but exceptional transportation facilities, since a road could be extended from the present road to the mine about one-half mile northerly from the cabin near where the forks of this road intersect. The road into the mill would circle the north exposure of a large basin and could be extended from the mill site to the railroad grade at the same level. I am injecting this paragraph into the report at this point for the reason that the mill site location faces the ore body just described and which exposes a face of possible ore probably 200 feet in depth and which extends southerly and would finally envelop the No. 1 and No. 2 Tunnel developments, as well as the Endicott deposit to the southwest, providing an extensive and exceptional tonnage of possible commercial ore, according to assays, suitable for power shovel or open pit development which may finally provide backs of several hundred feet over an area of 3000 to 5000 feet in its different extensions.

TUNNEL SAMPLING:

The tunnels, particularly No. 1 and No. 2, were sampled by taking a pound of ore per lineal foot of tunnel development over the entire length of the tunnels in 100-pound composite samples. The 100 pounds of ore were then thoroughly mixed and crushed by hand from which a five-pound sample was taken for assay, the results of which are shown under "Assays."

No. 1 Tunnel: During the development work in No. 1 tunnel an old winze partially caved located in the south drift was exposed and during the process of clearing caved materials and re-timbering same we found streaks of high grade which carried nuggets of pure gold. These streaks found in the face of the winze are very numerous and occupy a width of about twelve inches to sixteen inches in the face of the winze. The streaks vary from the width of a knife blade to as much as one inch in thickness over the twelve-inch to sixteen-inch area and are apparently composed of quartz with an occasional impregnation of spar or calcite carrying gold.

My recent examination of the Bryant Tunnel developments convinces me that these streaks may be found to be numerous and occupy a position apparently at all times at right-angles to the strike of the dike in which they are enclosed with a dip to the southeast, confirming our geological conclusions in our report of June 25, 1931. A confirmation of the extensions of this condition is evidenced upon the Endicott Claim included in this group of claims which lies several hundred feet to the southeast where it is reported they find sheet gold, gold and ore in quartz streaks assuming a width similar to that found in the Bryant Tunnels to the west, samples of which we have. This tunnel formerly hydrauliced and where it is reported a recovery of \$130,000 in gold was made from about one acre of hydrauliced area.

METHOD USED IN ASSAYING CHROME

The Chromium was estimated in the ore by the following method of J. E. Stead, F.R.S., F.I.C., D. Met. of Middlesboro, England.

As Chrome ore is difficult to dissolve, it is important to have the materials in a finely powdered form to offset a rapid and

complete solution of the sample. An agate mortar may be used to advantage in the final pulverizing of the substances.

Method of procedure:

One gram of the finely ground sample is mixed with a flux consisting of five grams of Sodium Carbonate, five grams of Potassium Carbonate, five grams of Magnesium Oxide and placed in a Platinum crucible of 30 to 50 cc. capacity and heated in muffle furnace at red heat for one hour. The fusion is allowed to cool and the fused mass is dissolved out with distilled water and Hydrochloric acid and placed in a 400 cc. beaker. The solution is diluted to 300 cc. with cold water and Standard Ferrous Ammonium Sulphate added until the solution changes from yellow through olive green to deep grass green. After five minutes the excess of this reducing reagent is titrated with Standard Potassium Bi-chromate until a drop of the solution placed on a white glazed surface with a drop of Potassium Ferricyanide reagent no longer gives a blue color.

Calculation:

From the total Ferrous Ammonium Sulphate added, subtract the cc. of Back Titration, the difference gives the cc. of Ferrous Salt required from Chromium reduction.

If the reagents used are N/10, then the cc. Ferrous Ammonium Sulphate is X 0.001733-Cr.

It is, therefore, our present belief that to mine the Bryant deposits by the use of steam shovel may uncover numerous high grade gold veinlets as above referred to. These areas also present the evidence of commercial disseminated chromite impregnating the deposits in which the gold veinlets are encased.

A S S A Y S

September 14, 1931

W. F. Hayden, E. M.,
Gold Beach, Oregon.

The samples submitted for analysis contained the following:

Bryant No. 27 - Surface pit. No. ore. Located near cabin.

Gold	Nil
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

Bryant No. 28 - Surface pit north of Endicott road.

Gold	Nil
Chromium Oxide	2.733 Per Cent
Chromium	1.87

Bryant No. 29 - Surface sample on creek below road.

Gold	Nil
Chromium Oxide	Trace
Chromium	Trace

ASSAYS - Cont'd.

SEPTEMBER 14, 1931.

Bryant No. 30 - On creek northerly from No. 29.

Gold	Trace
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

Bryant No. 31 - 900' northerly on creek from Endicott road.

Gold 0.08 Ozs.	31.60 Per ton of ore
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

Bryant No. 32 - Endicott placer. Surface cut.

Gold	Nil
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

Bryant No. 33 - 100' north of No. 32. East side of Endicott cut.

Gold	Trace
Chromium Oxide	2.27 Per Cent
Chromium	1.56 " "

Bryant No. 34 - West side Endicott cut.

Gold	Nil
Chromium Oxide	2.27 Per Cent
Chromium	1.56 " "

Bryant No. 35 - 200' north of No. 34. Over 100' as composite sample.

Gold	Trace
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

SEPTEMBER 15, 1931

Bryant No. 36 - 100' north of No. 35 and 150' east. 200' surface composite sample.

Gold	Trace
Chromium Oxide	3.18 Per Cent
Chromium	2.18 " "

Bryant No. 37 - 200' north of No. 36. East of Endicott Road. Composite sample.

Gold	Nil.
Chromium Oxide	3.18 Per Cent
Chromium	2.18 " "

Bryant No. 38 - 500' West of Tunnel No. 2:

Gold	Nil
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

ASSAYS - Cont'd.

Bryant No. 39 - Surface cut above Endicott Tunnel.

Gold 0.072 ozs.	\$1.44 Per ton of ore.
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

Bryant No. 41 - Immediately above Bryant No. 1 Tunnel. Fans 8 to 10 colors to pan.

Gold	Nil
Chromium Oxide	2.29 Per Cent
Chromium	1.56 " "

Bryant No. 42 - East 200' from No. 41.

Gold 0.02 ozs.	\$0.40 Per ton of ore.
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

Bryant No. 47 - Shallow pit showing small amount of ore.

Gold	Nil.
Chromium Oxide	2.733 Per Cent
Chromium	1.87 " "

Bryant No. 49. Shallow pit 300' northerly from cabin on crest of hill. Surface ore.

Gold 0.08 ozs.	\$1.60 Per ton of ore.
Chromium Oxide	Not estimated.

Bryant No. 50 - 200' north of No. 49.

Gold	Nil.
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Bryant No. 51 - 300' east of No. 50.

Gold 0.072 ozs.	\$1.44 per ton of ore.
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Bryant No. 52 - Surface near spring about 600' northerly from cabin and immediately above proposed mill site. In bottom of large open cut.

Gold 0.04 ozs.	\$0.80 Per ton of ore.
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Bryant No. 53 - North side of open cut near No. 52.

Gold 0.072 ozs.	\$1.44 Per ton of ore.
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Bryant No. 54 - West bank near spring.

Gold 0.05 ozs.	\$1.00 Per ton of ore.
Chromium Oxide	7.76 Per Cent
Chromium	5.31 " "

ASSAYS - Cont'd.

Bryant No. 55 - Endicott cut above Endicott No. 1 Tunnel.

Gold 0.05 ozs.	\$1.00 Per ton of ore.
Chromium Oxide	7.29 Per Cent
Chromium	4.99 " "

SEPT. 16, 1931.

Bryant No. 53A - North bank of open cut near spring.

Gold 0.04 ozs.	\$0.80 Per ton of ore.
Chromium Oxide	8.20 Per Cent
Chromium	5.616 " "

Bryant No. 53B - Composite sample across north spring cut.

Gold 0.056 ozs.	\$1.12 Per ton of ore.
Chromium Oxide	8.20 Per Cent
Chromium	5.616 " "

Bryant No. 53C - Composite sample across north spring cut.

Gold 0.08 ozs.	\$1.60 Per ton of ore.
Chromium Oxide	7.76 Per Cent
Chromium	5.31 " "

Bryant No. 53D - Composite sample across north spring cut.

Gold 0.072 ozs.	\$1.44 Per ton of ore.
Chromium Oxide	8.20 Per Cent.
Chromium	5.616 " "

Bryant No. 56 - Endicott Tunnel. Ore in quartz.

Gold 0.06 ozs.	\$1.20 Per ton of ore.
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

Bryant No. 57 - Dump on Bigelow claim south of Bryant claims.

Gold	Trace
Chromium Oxide	7.29 Per Cent
Chromium	4.99 " "

Bryant No. 58 - Old workings north of No. 51.

Gold 0.08 ozs.	\$1.60 Per ton of ore.
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

Bryant No. 59 - 100' composite sample No. 2 Tunnel beginning at portal and extending southerly 100'.

Gold 0.04 ozs.	\$0.80 Per ton of ore.
Chromium Oxide	4.55 Per Cent
Chromium	3.12 " "

ASSAYS - Continued.

Bryant No. 60 - Beginning 100' southerly from portal No.22 Tunnel and extending 100' southerly. Composite sample.

Gold 0.033 ozs.	\$0.66 Fer ton of ore.
Chromium Oxide	4.72 Fer Cent
Chromium	3.232 " "

Bryant No. 61 - Beginning 200' southerly from portal No. 2 Tunnel and extending 100' southerly. Composite sample.

Gold 0.047 ozs.	\$0.94 Fer ton of ore.
Chromium Oxide	7.71 Fer Cent
Chromium	5.11 " "

Bryant No. 62 - Beginning 300' southerly from portal No. 2 Tunnel and extending 100' southerly. Composite sample.

Gold 0.033 ozs.	\$0.66 Fer ton of ore.
Chromium Oxide	8.20 Fer Cent
Chromium	5.616 " "

Bryant No. 63 - Beginning 400' southerly from portal No. 2 Tunnel and extending 100' southerly. Composite sample.

Gold 0.033 ozs.	\$0.66 Fer ton of ore.
Chromium Oxide	6.38 Fer Cent
Chromium	4.368 " "

Bryant No. 64 - Beginning 500' southerly from portal No. 2 Tunnel and extending 100' southerly. Composite sample.

Gold 0.027 ozs.	\$0.54 Fer ton of ore.
Chromium Oxide	8.20 Fer Cent
Chromium	5.616 " "

Bryant No. 65 - Beginning 600' from portal No. 2 Tunnel and extending 100' southerly. Composite sample.

Gold 0.04 ozs.	\$0.80 Fer ton of ore.
Chromium Oxide	8.20 Fer Cent
Chromium	5.616 " "

Bryant No. 66 - Composite sample from 700' point in No. 2 Tunnel.

Gold 0.02 ozs.	\$0.40 Fer ton of ore.
Chromium Oxide	7.76 Fer Cent
Chromium	5.31 " "

Bryant No. 67 - Composite sample from a 98' East drift at a point 460' from portal No. 2 Tunnel.

Gold 0.066 ozs.	\$1.32 Fer ton of ore.
Chromium Oxide	8.20 Fer Cent
Chromium	5.616 " "

ASSAYS - Cont'd:

Bryant No. 68 - Composite sample taken from 73' ore exposure beginning at portal of No. 1 Tunnel and extending southerly.

Gold 0.07 ozs.	\$1.40 Fer ton of ore.
Chromium Oxide	7.76 Fer Cent
Chromium	5.31 " "

Bryant No. 69 - Composite sample taken from 49' ore exposure. West drift in No. 1 Tunnel.

Gold 0.06 ozs.	\$1.20 Fer ton of ore.
Chromium Oxide	8.20 Fer Cent
Chromium	5.616 " "

Bryant No. 70 - Composite sample from 59' ore exposure No. 2 drift in No. 1 Tunnel.

Gold 0.05 ozs.	\$1.00 Fer ton of ore.
Chromium Oxide	6.38 Fer Cent
Chromium	4.368 " "

Bryant No. 71 - Sample taken from 2' vein mostly quartz in winze in Drift 1, Tunnel 1.

Gold 0.256 ozs.	\$5.12 Fer ton of ore.
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Bryant No. 72 - Composite sample Endicott Tunnels.

Gold 0.17 ozs.	\$3.40 Fer ton of ore.
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Bryant No. 73 - Surface ores, mostly float.

Gold 0.07 ozs.	\$1.40 Fer ton of ore.
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Bryant No. 74 - Surface Quartz.

Gold 0.01 ozs.	\$0.20 Fer ton of ore.
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Bryant No. 75 - Endicott No. 1 Tunnel on brown porphyry.

Gold 0.40 ozs.	\$8.00 Fer ton of ore.
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Bryant No. 76 - Endicott solid formation in face of large cut.

Gold 0.16 ozs.	\$3.20 Fer ton of ore.
Chromium	Trace
Copper	0.20 Fer Cent

(Signed) E. Derwent
analytical and Metallurgical Chemist.

COMMENT - ASSAY AVERAGES.

Assays Nos. 27 to 51 inclusive are surface samples from pits located in the overburden on the mountain side southerly and above the present development of the No. 1 and No. 2 Tunnels and the development upon the Endicott claim.

The pits in no case attain a depth in excess of eight feet and in almost every instance the material resembled a mud shale, but when panned all but two of the samples from the pits showed gold in the pan. The surface development was made primarily to discover if the overburden over this area was sufficiently prolific in disseminated chrome and gold values so that this material could be mined by the use of power shovel or by the open pit method without the dilution of the surface overburden reducing below a commercial value the ores at lower depths such as is found in the No. 1 and No. 2 Tunnels. It will be seen by examining the assays that the eighteen surface areas above the tunnel developments show a combined chromite value of 2.55% plus or approximately 51 pounds of chromite to the ton of overburden or materials found in the pits. The combined gold value of the shale or surface pits as shown by the assays is 36¢ per ton.

Assays of seven samples, Nos. 52 to 58 inclusive, show a percentage of 7.10 chromite or 142 pounds of chromite per ton of material in place. If this ore is concentrated as intended at a ratio of eight tons into one it would produce 1,136 pounds of chromite to the ton of concentrate with a value of \$1.09 per ton in free gold.

Chromite average 7.10% or 142 pounds per ton of ore.
Chromite concentrated eight into one - 1,136 pounds
per ton of concentrate.
Gold average - \$1.09 per ton of ore.
Gold average (concentrate eight into one) \$8.72 per
ton of ore.

The areas covered in the sampling of the above seven samples is one of the most important sections of the mine in that with two exceptions it covers the area which lies between the portal of No. 2 Tunnel northerly, passes the Bryant cabin and extends in a northerly direction over the bench upon which the cabin is built to an approximate 250' lower elevation at a point of 650' northerly from the cabin and terminates immediately above where the proposed mill site is located and from which a never-failing spring is found which would deliver sufficient water to fill continuously a 1½ to 2-inch pipe.

The sampling as outlined upon the assay sheets and the attached map show the exact point where the samples were taken and conclusively indicate both a commercial free gold and chromite.

Nine samples, Nos. 59 to 67 inclusive, were taken from the No. 2 - 900 foot tunnel, about 850 feet of this tunnel being sampled, some caving making it unsafe to complete the total 900 feet of sampling. The gold content averaged \$.075 per ton and the percentage of chromite averaged 7.10 plus or 142 pounds to the ton or 1,136 pounds of chromite if it were concentrated, as recommended, at a ratio of eight tons into one. The manner in which the samples were taken was one pound of ore per lineal foot of practically 900 feet of ore exposure in the No. 2 tunnel.

COMMENT - ASSAY AVERAGES - Cont'd:

Chromite average 7.10% or 142 pounds per ton of ore.
Chromite concentrated eight into one - 1,136 pounds
per ton of concentrate.
Gold average \$0.75 per ton of ore.
Gold average (concentrated eight into one) \$6.00 per
ton of ore.

Four samples, Nos. 68 to 71 inclusive, taken from No. 1 Tunnel
averaged \$2.18 per ton in gold and 7.45% in chromite or 149 pounds
of chromite per ton or 1,192 pounds of chromite if concentrated
at a ratio of eight tons into one.

Chromite average 7.45% or 149 pounds per ton of ore.
Chromite concentrated eight into one - 1,192 pounds
per ton of concentrate.
Gold average \$2.18 per ton of ore.
Gold average (concentrated eight into one) \$17.44 per
ton of ore.

Five samples, Nos. 72 to 76 inclusive, average \$3.24 per ton in
gold. The chromite not being computed except in sample No. 76
which is from a solid ore body probably fifty feet to 100 feet in
width in the face of the Endicott pit.

Gold average - \$3.24 per ton of ore.

The total chromite percentage from the entire number of samples
taken during the recent period of development of the Bryant Mine
averages 7.22% or 144 pounds of chromite or 105.4 pounds of Chrom-
ium per ton of ore in place including surface pits, or, concentra-
ted at a ratio of eight tons into one, would be 1,152 pounds of
chromite or 803.2 pounds of Chromium per ton of concentrate.

The gold values per ton of ore in place, including the surface
samples, averages \$1.82 per ton of ore.

Per Ton of Ore In Place

Gold average	\$1.82 per ton of ore.
Chromite average	7.22% per ton of ore.
Chromium average	5.27% per ton of ore.

MARKET - Chromite:

The market for chromium oxide is steadily increasing. The per-
centages of 46% to 50% is the usual metallic chromite content
shipped to smelters. The present price is from \$12.00 to \$14.00
per ton of two thousand pounds containing the above percentage.
The reported large users of this product are:

- Illinois Steel
- Lackawanna Steel Oil Refineries
- American Rolling Mills
- Bethlehem Steel Company
- Wheeling Iron & Steel Company
- Jones & Laughlin Steel Company
- United States Steel Corporation
- Crucible Steel Company, Pittsburgh, Penna.
- Primos Chemical Company, Little Washington, Penna.

MARKET - Chromite - Cont'd:

all of whom are users of ferro-chrome, in which form it is used in the production of high grade alloy steels, principally in stainless steels and irons.

It is estimated that about 15% of chromite used in the United States goes into the manufacturing of chemicals, some 40% in refractory and furnace linings, some 40% is manufactured into ferro-chrome which is used in the production of high grade alloy steels which is then used in the manufacturing of stainless steel and irons. The percentage contained in stainless steel is, we understand, from 12% to 18%. Consumption of chromite in the United States in long tons is as follows:

<u>Year</u>	<u>Imported</u>	<u>Domestic</u>	<u>Total</u>
1918	100,142	82,430	182,572
1919	61,404	5,079	66,483
1920	150,275	2,502	152,777
1921	81,836	282	82,118
1922	90,081	355	90,436
1923	128,763	227	128,990
1924	118,343	288	118,631
1925	149,739	108	149,847
1926	215,464		215,464
1927	222,360		222,360

The United States uses about 70% of the world production of chromite, most of which is imported from the following countries: Bosnia, Cuba, India, Japan, New Caledonia, Rhodesia and Union of South Africa.

World production of chrome is in the neighborhood of 360,000 tons per year. The increase in the use of chromite is due to causes which will, because of its character, be of lasting effect. It is the opinion of the writer that chromite will have a steady rising demand in price and consumption.

REVIEW:

Economic Natural Resources: The economic natural resources should be emphasized since they include favorable road and railroad transportation, water and timber.

The quality of the timber is exceptional in that a large number of white cedar trees, some of which reach a height in excess of 200 feet, are found upon the hillsides of the different claims of the property.

A reservoir could be located within a short distance of the proposed mill site, which would cover an area of some sixty acres; the breast of the reservoir would reach a height of eight to fifteen feet which would accommodate adequate water supply for large mill operations. Another arrangement which is now under investigation would be to pipe the water a distance of three to five miles from a branch of Johnson's Creek which lies to the south of the property. This creek would provide abundant water for practically any sized operation installed at the Bryant Mine by gravity flow, thereby obviating the necessity of pumping water to the mine.

REVIEW - Cont'd:

Power: The question of power, we find, as outlined on Page 5 of our report of June 25, 1931, to be subject to change since a recent investigation provides the fact that a high tension power line has been extended to Powers, seven to eight miles northerly from the Bryant property, and that a line to supply the mine with power may be extended to the Bryant property where cheap electric power may be substituted for our recent statement that oil-burning engines would be necessary to supply the power requirements. The power company represented at Powers is one of the largest in the country.

Topography: The topography of the claims provides economic location for cheap mining facilities.

Geology: No comment affecting the geology other than outlined in our previous report need be made except that the establishment of sandstone and porphyry contacts were more apparent upon our recent examination.

Treatment: The question of the treatment of the ores is very important since the ores, because of their soft character, may be ground and treated cheaply. Insofar as we have been able to test the ores up to the present time, the treatment recommended would be amalgamation of the free gold, first having ground the ore to a very fine mesh, probably 100. Table and possibly flotation concentration for the chromite should complete the flow sheet.

ASSAY VALUES
Per Ton of Ore in Place

Gold average	\$1.82 per ton of ore.
Chromite average	7.22% " " " "
Chromium average	5.27% " " " "

CONCENTRATED
Ratio of 8 tons into 1

Gold @ \$1.82 per ton	\$14.56	Per Ton of Concentrates
Chromite 1,152 Lbs. @ \$24.00	13.87	" " " "
Total Value.....	28.43	Per Ton of Concentrates

After careful investigation and testing of the ores, we believe the ore in place may be mined and milled at a cost not to exceed \$1.00 per ton if either power shovel or open pit method of mining is employed.

Respectfully,

(Signed) Wm. F. Hayden
Consulting Mining Engineer.

September 25, 1931.

OREGON MINING PROPERTY

The Group of Claims with which this Report is concerned consists of Eleven (11) unpatented lode mining locations, embracing an area of 200 acres of ground, and is located about 50 miles from the Pacific Ocean, in a region of abundant rainfall, and consequently sources of water supply, and lies at an elevation of from 1200 to more than 2,000 feet above the sea level, and the climatic conditions are such that even outdoor work and operations can be prosecuted at all times the year round without interference from either cold or snow.

A railroad is within 2-1/2 to 3 miles of the property and from thence is a road that can be used part way by automobiles at all seasons, but for part way only during the dry season; but this road could be put into all year travel condition, or a new road built, at a comparatively small cost.

There is an abundance of timber, consisting of red fir, white and yellow pine, some sedge-pole pine and white cedar, furnishing an ample source of timber, suitable for all mining, construction and other requirements, as well as for lumber and domestic use.

Water sufficient for a 2,000 ton milling plant is readily accessible and available, and more can be developed and secured at comparatively reasonable costs, besides provision being made for the re-use of the portion of original waters as can be economically regained, as suitable and usable water.

The general topography of the country is very rough, consisting of high steep hills and deep gulches, and is due primarily to an intense folding of a series of sedimentaries, including formations from the Cretaceous upwards, and in this particular area followed by invasions of a series of intrusives on a large scale; later erosion following the unequal conditions of hard and soft strata and the intrusives has resulted in the present topography in the main, though several minor contributory causes and agencies such as slumping from decomposition, etc., are also present, the whole result being a very rough area of numerous hills, ridges and gulches, with many tortuous drainage channels and many streams affording excellent water sources and storage reservoir sites; however, in the instances of this deposit, these erosional conditions have afforded a favorable set of mining conditions, as the deposit is exposed and can be approached with working faces from three sides and continue to be worked in this manner to comparatively great mining depths. The difference in elevation at the lowest point of exposure of the deposit in place, and its highest point, being more than 2,000 feet.

There is no equipment on the property, and only one building, which building is suitable for a combined bunk and boarding house for about from six to eight men, and will afford headquarters in the starting off stage of any operations.

TITLE:

The title is vested in what is known as location by pre-emption, the locations being lode locations and the Title is a good clear one.

HISTORY AND DEVELOPMENT:

The deposit was first discovered in the "Pioneer Gold Days" and yielded a considerable sum from pockets near the surface in the search for veins in place and some attempts were made to work these veins on a small scale, but without success; many pits and shallow shafts were sunk in these operations. Finally, in the hope of finding large rich veins, a small company was formed which excavated one tunnel 900 feet in length and another 400 feet in length, and a small "freak" mill was set up, but, of course, no success attended this venture. - This 900 foot tunnel reaches a vertical depth of a little over 900 feet, due to the steep pitch of the hill, and this tunnel is entirely within the deposit as is, also, the other one which attains a depth of at least 400 feet. At one time, a placer operation was very successful as far as it progressed. This will be referred to later on. The owners immediately preceding the present owners did the tunnel work spoken of and became involved amongst themselves in disputes, the property in the meantime lying idle, became open for location, and the present owners located and wish to dispose of it on reasonable terms, as they fully realize that their finances will not allow them to undertake the operation of this property.

GENERAL GEOLOGY:

No detailed geological work has heretofore ever been done in this district by anyone and all examinations heretofore made have been concerned with sampling only, and it is not my purpose or intention to burden this Report with any detailed technical geology or theories, but I will confine myself, in the main, to a brief statement of the salient features, which can readily be seen by field observation.

The ore-body itself consists of a mass of intensely serpen-tized peridotite for all depths thus far reached, and the arcial extent of which has not been as yet disclosed or determined, but which is exposed and known over an area of approximately 200 Acres, most of which is contained within this Group of Claims and the balance of which can also be obtained upon reasonable business terms.

This body of peridotite is so far as exposed about 3,000 feet long and 3,000 feet wide and was intruded into and through a series of sedimentaries of which the exposed parts are probably near the horizon between the lower and upper Tertiary. That the peridotite did not reach the surface at any time can well be seen, for parts of it are yet covered by what was once a soft shale and this horizon expresses the upper limits of the original intrusion. In places yet remaining, there are from a couple of feet to not more than 20 feet of this shale, though from the greater part of this exposed ore-body this shale has been removed by erosion, etc.

That the peridotite did not reach a higher horizon than this former over-lying shale body spoken of is also evidenced by the fact that this shale horizon lies conformably and in a continuously connected sedimentary series with the other formations of this series, and is conformable both by this consideration as well as by its conformity to the angular attitude of formation of which it is a part. Therefore, the conclusion that the age of the peridotite is Tertiary is justified.

Whether this peridotite body is of a dike or laccolith structure is not determinable from as brief a field observation as I made as I was hampered and handicapped by a broken leg during my examination, which prevented me from doing much travelling in the rough "going" in this area, and it will take either careful field work on the surrounding strata or actual prospecting and development work on the ore-body itself to determine its limits.

The wall-rocks of this intrusive mass or ore-body will, for several hundred feet, be sandstones in the main, one wall intercalated with small stratas of arenaceous shales all altered to parti or psuedo quartzites, resulting in satisfactory wall-rock conditions, and in deeper formations, whether of shale, either arenaceous or argillaceous or of sandstones, will also be metamorphosed to the crystalline form and be cemented by the calcic and siliceous emanations for a sufficient distance from the contact zone to cause and constitute satisfactory wall-rock conditions.

The entire peridotite body has been permeated by calcite and quartz to such an extent and degree that all interstices, however minute, are filled as well as are all other spaces, resulting in a stock-work of veinlets radiating in every conceivable direction. In the first few hundred feet of the ore-body, calcite is greatly predominant, almost to the exclusion of quartz; then quartz "fills" start to appear in increasing amounts and this quartz filling will finally predominate and pass into either great parent master quartz veins or a large pegmatitic quartz core, though I am decidedly inclined to the consideration of the quartz veins from both structural and geo-chemical reasons, which I do not intend here to discuss.

It is needless to say, however, that following the serpentinization and the decomposition of these peridotites (whether or not such decomposition or alteration was or was not superinduced or aided in the ore-making process), some genitic influence or agency was set up at depth which produced the calcic and silicite "fills"; I will refrain from discussing this feature, though I have very definite ideas of the entire geo-chemistry of this deposit, and competent cover or mantle to confine the intensity of the action to a concentration within the deposit itself, especially in its upper horizon.

The deposit may, from an economic standpoint, be roughly divided into three main parts, consisting of (1) - a slide of several million tons of ore; (2) - an outer exodized shell or mantle body; (3) - the underlying primary zone and its phases of passage from the calcite ores to the calcite quartz ores, and finally to

the relatively pure vein quartz stage, though it is well to state that the only places thus far disclosed by openings are the calcite fills and the calcite quartz fills and that the change to the other phases or stages mentioned is a conclusion founded upon the nature of the deposit and the processes involved in its genesis, which appear to be very clear to me, but the discussion of which I will not enter into in a Report of this nature.

ORES AND VALUES:

There occurs upon the property a large slide consisting of several million tons of Ore, which slide lies partly on ground not underlain by the ore deposit and in part lying on the ore and in one part was worked by placer methods, and in this part proved to be some 40 to 50 feet deep; this slide covers from 60 to 80 Acres of ground. This material has been broken and decomposed to **such** an extent that it consists of material in size from "fines" upward to that of fairly coarse, but not overly large in size.

At the point where this material was placered, about 30,000 Tons were removed and \$125,000.00 in Gold recovered therefrom, and this can be confirmed from a true record, though a great deal of fine Gold was not recovered, and the tailing material yet remaining there, upon "panning", yields Gold, and upon them grinding yields more Gold. This placer operation was discontinued only because of tailing difficulties and different ownership of property, etc., all of which reasons are readily observable upon the premises.

This entire slide could be handled by power-shovel methods or sluicing through "open" sluices into a mill, but to conduct this sluicing operation, a flume of about two miles in length would have to be constructed. The ore of this slide and of the oxidized zone are somewhat higher grade than the primary zone in that part thereof which is straight calcic stage. This increased richness of the slide ore and the oxidized zone is due to secondary enrichment by mechanical concentration alone, and there has been no secondary enrichment through chemical agencies such as that from manganese and chlorine, and as sometimes occurs also in heavy or massive pyrrhotitic bodies containing Gold.

There is a decided lack of iron derived from iron pyrite and of manganese, even in the deepest exposures showing but very little iron sulphide, and this sulphide is pyrite. Also, small amounts of copper sulphide show, **associated** with some of the calcite streaks, and in some **instances** very small amounts of small garnet crystals occur alongside of the calcite streaks in the serpentine muds. There is also a **small amount** of Silver and Platinum reported as occurring, but I **will** not dwell upon these nor upon any of the other numerous minerals which may occur in the deposit.

In the oxidized zone, there is considerable serpentine mud or attrition clay alongside the calcite streaks, and in the veins hereafter mentioned, these muds occur at all horizons thus far exposed. When the quartz phase "fill" begins to appear, the values again begin to increase; in fact, all quartz occurrences show very good values and in excess of those in the average calcite occurrences, and the positive indications are that the quartz phases will prove to be the highest grade and most valuable part of this deposit.

In the 900 foot tunnel, and the 400 foot tunnel, the oxidized shale shows for a depth of 300 feet. This is followed by the calcite fill zone or phase to a depth of 700 feet. Here the quartz begins to make appearance and increases to appreciable quantities to the final depth of 900 feet is reached. It is my opinion that this quartz calcite zone will continue for about between 200 and 400 feet more, and that, then, the quartz fill stage will predominate for about another 600 to 800 feet, and then pass off to the phase of quartz in veins. This conclusion just mentioned, and mentioned hereinbefore, is also borne out by observation in another part of this area, where two large quartz veins, each of about 100 feet average width, occur for several thousand feet in length; and, though this occurrence is in a different formation, i.e., a granite rock, they are very valuable Gold veins, which, so far as the workings prosecuted on have been carried, show an average "free" Gold content of well over \$4.00 per ton, and a decided increase in value to the depths thus far attained.

Following erosional planes along the length of these veins, a set of conditions from the outcrop of the veins upward in an ascending column is as follows: (1) Outcrop of the veins themselves. (2) Quartz stock-work fill of fair value at its base and low-grade at its summit. (3) Quartz calcite stock-work fill of low-grade. (4) Calcite stock-work fill, very low value; and, except the very lowest part of horizon Number 2, none of these horizons consist of economically valuable or workable ore above the vein quartz phase from the genesis of which the calcic and silicic emanations were undoubtedly derived, and these veins are very good workable Gold veins. One of these veins shows a gossan indicating the former presence of some pyrite, manganese and copper sulphides, and increases in Gold values as depth is attained has thus far been the order, and, in my opinion, these outcrops are and have been rather impoverished than enriched. These veins occur in an area three or four miles from this deposit and the highest part of their outcrop where the outcrops enter under cover, the differences in elevation of these points and of the 900 foot tunnel, spoken of on this other property, is approximately from 1200 to 1500 feet, and these veins are and their surrounding conditions are simply mentioned here as field observation confirmatory to the rather theoretic conclusion advanced as to the occurrences which are as yet not disclosed in the deposit with which this Report is concerned.

Two sets of sampling by competent and responsible parties, known to me, gave an average of about \$6.00 per ton recoverable Gold in the "slide" Ore-body, and on this oxidized ore, two different results appear - one set gave approximately \$4.50 per ton recoverable Gold and one set \$2.50. This side divergence, however, is easily explainable, as in this sampling as determined by me after an examination of the assay maps, and finding the locus of the points on the premises, it shows that a great many samples of this one set were taken in areas of the overlying shale and these samples showed assays from a few cents up to \$1.25 per ton, and averaged close around \$1.00 in recoverable Gold. But, this shale does not represent even one percent of the oxidized zone and the average thus arrived at is certainly not a fair one.

The primary Ore in the calcite fill zone gave an average of \$3.00 in both sets of samplings, and the quartz calcite zone gave \$4.00 in both sets on the only openings and exposures of this condition; that is to say, in the long tunnel from a depth of 700 feet to the face.

The short tunnel gave \$4.50 in the oxidized zone and \$3.00 in the primary calcite zone, but has not yet reached the quartz calcite zone. All values stated are values as determined from recoveries of actual mill tests, and milling costs hereinafter mentioned are also partly based on the results of mill tests made on these ores. However, taking the lowest figure of \$2.40 per ton recoverable Gold as the true value, and an average of the entire deposit, it would yet remain a deposit of the most exceeding economic importance, as it covers an already known area of at least 200 Acres, and depths of 400 to 900 feet, respectively, have been proved for at least this average value, and as the nature of the deposit is such that the conclusion that the entire mass will "prove out" a better average than this, is most certainly warranted from every standpoint of consideration. The Gold is of flake lamellar or tabular form and is comparatively heavy, though it varies from fine Gold up to pieces of considerable size, the largest so far discovered weighing more than 100 ounces.

The two tunnels mentioned cross in their length several vein-like structural conditions which may be properly classed as veins, varying from 18 inches to 8 or 9 feet in width, and these veins show average values across them of from \$8.00 to as high as \$300.00 per ton, which last value shows for 4 feet wide in a vein in the short tunnel, and here also is a streak of calcite one inch in thickness, in addition to the 4 feet of \$300.00 ore, and this one inch of calcite shows a value of \$3,000.00 per ton; but, I think that this is a local condition of pocket occurrence, though most certainly one is warranted to sink on this rich stringer as it may result in a very large piece of ore containing several thousand dollars.

In the early day workings, large pieces of calcite ore were found on occasions containing from several hundred dollars to several thousand dollars worth of Gold and in the working of this deposit, as a whole, these same conditions will be found and dis-

closed. None of these vein sample values or any high-grade pocket sample values were included in any set of sampling in arriving at the general average value for the whole mass of the deposit, but the veins and pockets will unquestionably considerably enhance the general average value and there will be days during the working of this deposit which will show several thousand dollars more recovery than for the average days.

The significance of the stock-work conditions so far found in all parts of the deposit, together with the nature of the Gold and its occurrence, and its continuous close and invariable association with the calcite and quartz, wherever found, cannot be too greatly stressed as pointing not only to the conclusion of the average and consistent and continued value throughout the entire deposit, and it also furthermore points most conclusively to the reasonable probability of a decided increase after the quartz fill stage and the vein quartz stage is reached; and all of these foregoing considerations are further-more borne out by the nature of the genesis of the deposit itself.

Such sampling as was done by me was simply checking here and there the results of others, and, as in all instances where checking was done, the results were alike, or so nearly so as to make no difference; it is justifiable to suppose that the sampling results heretofore given are correct and are results of capable and careful sampling, and as my checking was done "at random" it could hardly be so peculiarly coincident, under such extreme conditions that it should check so consistently and closely. However, whatever may be said, here exists a set of indicated conditions well worthy of the thorough investigation and examination on the part of any financially able to undertake the operation of this property after satisfaction of examination.

It is my opinion that an operation started on what might be said to be a comparatively small scale, say, of a plant of 200 tons or more daily capacity, on the "slide" ore would soon "pay out" the entire venture and work it up to a large scale operation, and the mining and milling of this ore will be cheaper or less costly than any other ore in the deposit because it is already mined and already partly milled, in so far as the crushing and grinding processes are concerned; and I will say that this ore will not cost to exceed from 50¢ per ton in a large mill to about 30¢ per ton in a mill of from 200 tons daily capacity up.

Due to the extreme friability of all the ores and their low mining costs, and their subsequent easy crushing, grinding, etc., the entire cost of mining, milling losses, and all other costs will not exceed from 80¢ to \$1.00 per ton, depending upon the magnitude of the operation.

It would not surprise me in the least if this entire deposit will average well over \$3.00 per ton in recoverable Gold milling values, and that there will here be proved to be a most wonderfully valuable Gold mine, even at an average of \$2.50 per ton. In addition to the Gold values, the deposit in all parts sampled shows an average content of more than three per cent chromite, which may be recovered to a considerable extent during the process of milling and may also prove to be of great value; but, in

this Report, is simply mentioned as one for future consideration and of possible added value to anyone who may be interested in such consideration.

As to mining methods, these will lie wholly within the judgment of the operators, but the property is amenable to operation by the "glory hole" or open bench stoping, or open cut faces, or such like to a depth of more than 2,000 feet before any sinking of any nature will be necessary and at or above this level, I expect to see the parent master quartz veins and vein quartz encountered, which, of course, will somewhat change the methods of mining from that point.

Milling methods employed for the Gold recovery will also be a matter of judgment of the operators, but in any event, no other than a simple Gold milling flow sheet will be necessary until Gold bearing sulphides are reached in the lower horizon.

In conclusion, I will also state that the "slide" heretofore mentioned caused the exposure of the larger part of this deposit and in such a manner as to expose it for an elevational difference equivalent to a depth of several hundred feet of the ore-body through the calcite horizon along a steep, sloping planal section on such a large scale as to render rather positive evidence of the continuity and regularity of the values of the entire mass for these horizons, as well as to confirm my conclusions deducted from the nature, occurrences and genesis of the deposit; and it leaves small room for any other possibility. This area is, of course, now oxidized and constitutes the larger part of the exposed oxidized zone.

The sampling results heretofore mentioned were obtained from several hundred samples taken in several hundred places in all accessible workings and in numerous pits, cuts and trenches excavated for the purpose and distributed all over the areal extent of the ore-bodies in such a fashion and manner as to clearly determine, at least, the minimum average value of several hundred million tons of ore.

The only reason that any other of the examining parties heretofore mentioned did not undertake this enterprise is that the funds available and at their immediate disposal were insufficient and they were confronted, also, with the added and, to them, adverse conditions of the business deal then demanded, but which feature has now been greatly altered as to price, payments and terms.

As already stated, this operation could be started off on a, comparatively speaking, much smaller scale of operation than will be ultimately necessary by starting the same off on the "slide" ore deposit and which operation will "pay out" and ultimately necessitate large scale operations.

It is, however, not within the province of a Report of this nature to seek to interest capital, but to concern itself mainly with stating the facts found and to advance opinions and conclusions based on the evidence of the conditions disclosed by

such examination and investigation, and to either condemn or recommend this property to anyone able to properly finance and operate it, and I confidently believe that the same will result in success and I most certainly can and do, also, unhesitatingly recommend it to such parties for their examination and investigation, with the firm conviction that it will prove to be satisfactory indeed.

My examination was made during the early part of October, 1932.

Respectfully submitted,

(Sgd.) H. G. KLEINSCHMIDT
Mining Engineer and Geologist.

ENGINEER'S REPORT
THE SALMON MOUNTAIN COARSE
GOLD MINING COMPANY

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LOCATION:

The property of the Salmon Mountain Coarse Gold Mining Company is situated in Section of Township 32S., Range 12W., Siskiyou National Forest, Oregon, 10 miles from Powers, Coos County, Oregon, and within 1 1/2 miles from a shipping point on railroad, which can be reached by a fairly good wagon road from the property.

TOPOGRAPHY:

Due to the pronounced invasion of sedimentaries by large intrusive bodies, followed by metamorphosis, replacement and erosion, aided by sliding, the property represents a very rough area of numerous steep hills and deep gulches, with many precipitous streams. The roughness of the area, however, created in many cases a rather simplified set of mining conditions by exposing the deposits, which can be approached and worked on three (3) faces simultaneously, by making ideal mill-sites and tailings dams. It offers the opportunity to utilize gravitation to the utmost limits, together with the possibility of mining by use of open bench stoping, open cut faces or glory hole methods, carrying the operation of this kind to a greater depth horizontally before any sinking shall be necessary. Deep drainage channels and streams of this rough area could be used as a source of power and water or as water reservoirs, etc.

WATER:

The property is crossed by the Salmon, Powerby, Johnson and Tim Creeks, always carrying water and being located in a region of abundant rainfall; has plenty of water, accessible and available to meet the requirements of a 2000-3000 tons a day mill. If necessary, more water could be developed at a very nominal cost. Water rights are attached to the property.

POWER:

Peculiar topographic conditions offer a great opportunity to generate the power within the property. If this is not feasible, the energy could be obtained from the Mountain State Power Company; the high tension lines of this Company are within 2-1/2 miles from the property. If still larger supply of energy is required, the power could be brought from the Coquille River, a distance of 9 miles, at a very reasonable cost.

TIMBER:

The property has plenty of heavy timber, suitable for construction, mining, and to be used as domestic fuel or lumber. Among the varieties found, the most common are red fir, white cedar and pine.

CLIMATE:

The property is situated within 40 to 50 miles from the Pacific Coast, at an elevation of about 1,500 feet above sea level, and the property has a very mild climate; therefore, whole year operations could be carried on without interference.

HOUSING ACCOMMODATIONS:

There are five (5) buildings on the property, which could accommodate 50 men. The housing problem could be easily met due to the abundance of timber. On the other hand, the railroad maintains the auto bus, commuting twice a day between Powers and a stopping point which is within 2-1/2 miles from the property. This might simplify the matter of housing accommodations, as well as the accommodation of administrative agencies of assay office, etc., at least temporarily.

HISTORY:

The history of this property dates back to 1860, when so-called "Salmon Mountain Mine" - a huge dyke - was discovered as a result of hydraulicking operations in the neighborhood. The placer worked at that time was extremely rich in coarse gold and it was paying \$20.00 per day man. Although tailings still remaining on the property indicate heavy losses of fine, free and cemented-in-gravel gold, authentic records show that during the hydraulicking, 30,000 tons was removed and \$125,000.00 in Gold recovered. A large open cut made by those operations is still in evidence. In the progress of hydraulicking, some outcrops of commercial value were discovered, and, following small but well paying streaks of them, early miners came to the gossan deposit and peridotite dyke, which have been cross-cut by many tunnels with the hope of striking the large veins therein.

ORE:

The sources of Ore are: (1) Peridotite dyke; (2) "Slide"; (3) Gossan deposit and underlying it the mineralized body; (4) Two (2) very large quartz veins - 80 feet wide and 2,000 feet long. The Tertiary peridotite dyke - and intrusive body in sedimentaries - covers the area of approximately 200 Acres and is 3,000 feet long, 2,000 feet wide and 1500 feet high. This highly serpentized ore-body is covered at the top by a thin layer of soft or crystalized shale. The lower part of this dyke is partly covered by a "slide" - adjacent to it. The body of peridotite, representing an ideal case of filled fissure type, is permeated by calcite and quartz fills crossing it in every possible direction. The lowest and

ORE: (Continued)

longest tunnel of this dyke gives an unusually good illustration of this case. The ore-body could be divided into an oxidized zone - highly serpentized, peridotite, sulphide zone and primary zone, the latter is made up of gradual transformation from pure calcite fills through calcite-quartz state to quartz fills stage. Toward the end of the tunnel, which is 900 feet long, the cross-section of quartz veinlets apparently increases, some of them are found measuring 7 inches, in cross-section. Genetic considerations indicate that if the tunnel were continued for another 50 - 100 feet in the same direction, it will reach two (2) veins of a solid quartz system, which presumably are underlying the gossan deposit and appear on the surface as two (2) large quartz veins, referred to above.

The "slide" covers approximately 80 to 90 Acres and where it has been 50 to 60 feet deep, it was worked by placering in the early days and produced, according to authentic records, \$125,000.00 in Gold from 30,000 Tons, in spite of the heavy losses in the tailings. This slide partly covers the dyke and partly is limited by it. A great many open cuts, in various places of this slide, illustrate broken and finely decomposed material, ideally suitable for power-shovel method of mining. Along with the free Gold, the ore of the slide carries noticeable quantities of iron and copper sulphides.

The Gossan Deposit is located within 1-1/2 miles from the open face of the dyke. The surface extent of the Gossan is enormous, being 1,200 feet long, 600 feet wide and 20 feet deep (possibly more). A soft iron and manganese stained, yellow-red in many places having a burnt look, due to the leaching of the sulphides and substitutions of limonite by neamtite, it is characterized by numerous outcrops, with bold, silicious faultly veins, with considerable exposure of red hematite. Although the veins are of the filled fissure type, the presence of disseminated sulphides in rock of definitely secondary origin, indicate that the replacements took place subsequent to the general period of vein formation. The Gossan Deposit is exposed in many places by open cuts; they indicate a gradual transformation from finely disseminated Gossan to solid ore. Several tunnels cross-cut to intersect the Gossan-caved in. They indicate high mineralization of the foundation of a hill, the top of which is covered by Gossan. There is a large out-crop, where Gossan is found cemented by a large body of heavy iron and copper sulphides, spread through the porphyry and quartz in streaks 1" to 1-1/2" wide. All deposit of Gossan could be easily handled by power-shovel method.

EXPECTED TONNAGE:

The expected tonnage of the workable ore is enormous. It is made up as follows:-

1. Peridotite Dyke - 3000 x 2000 x 1500'--	600,000,000 Tons
2. Gossan Deposit - 1200 x 600 x 20'--	960,000 Tons
3. "Slide" ore-body-----	5,000,000 Tons
	<u>605,960,000 Tons</u>

ASSAYS:

The peridotite dyke has been crossed by six (6) tunnels. At the time of my investigation, most of them were in a caved in condition - mainly in portals, except the longest and lowest, which is 900 feet long. To complete the picture, I am referring to the assays made by prominent mining engineer, which are as follows: -

Tunnel #2 - Au \$75.00 per ton. Ag 18 oz. Cu. - Traces
Tunnel #3 - Au \$33.00 per ton.
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Tunnel #4 - Au \$107.45 per ton, average.
Tunnel #5 & #6 - Show Gold, Silver and Cu Sulphides.

The values are in terms of \$20.00 per ounce for Gold. Tunnel #7 is of great importance. The so-called short tunnel investigated by Engineer H. G. Kleinschmidt and referring also to the 900 foot tunnel, he states: "This two tunnels mentioned cross in their length several vein-like structural conditions which may be classed as veins, varying from 18 inches to 8 or 9 feet in width and these veins show average values across them of from \$8.00 to as high as \$500.00 per ton, which last value shows for 4 feet wide in a vein in the short tunnel, and here, also, is a streak of calcite one inch in thickness, in addition to the 4 feet of \$300.00 ore, and this one inch of calcite shows a value of \$3,000.00 per Ton." General average samples range between \$3.00 to \$5.00 in Gold.

The quartz-calcite zone of primary ore assays an average of \$4.25 per ton. (Other investigators' figures are \$4.00 and \$4.50.) The primary calcite zone assays \$3.60 per ton, which is close to the \$3.00 found by other investigators. - The oxidized zone assays as an average \$3.20 per ton, which is between \$4.50 and \$3.00 found by other investigators. "Slides" ore-body assays \$6.60 per ton, average, which is corroborated by the previously found average of \$6.00 per ton. - Gossan shows all the variation in Gold values from "traces" up to \$60.00 per ton, as have been in the mining game for the last 45 years. - Quartz veins assay better than \$5.20 per ton and the values increase with depth.

METALLURGY:

The metallurgy of the deposit does not represent complications. The quartz could be easily cyanided and floated. In the treatment of the Gossan, some method could be applied, although the cyanide of Gossan, however, will be difficult on account of the heavy Sulphides (Copper especially) and of Manganese interference. Gold, Silver and Copper from the peridotite dyke are easily extracted by flotation. The topography of the property in general is not in favor of the use of cyanide. The flotation flowsheets should include the recovery of manganese from the Gossan Deposit and of Chromium (3 - 7%) from the dyke. Former investigators refer to platinum as one of the elements present in commercial quantities. I have not been able to determine the exact amount of platinum in the ore at this writing, but whatever it might be, if commercial the plati-

METALLURGY: (Continued)

num should be extracted. There are other metals in the ore, having a good market value, which could be extracted as by-products.

(Sgd.) V.N. KASSANDROFF, M.Sc.
July 3, 1935.

ENGINEER'S REPORT
THE SALMON MOUNTAIN COARSE
GOLD MINING COMPANY

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LOCATION:

This property is located on Salmon Mountain about 30 miles south of Myrtle Point, Oregon and is located in the Salmon Mountain Mining District, County of Coos and State of Oregon.

NUMBER OF CLAIMS

This property consists of five claims, each claim is 600 feet by 1500 feet, containing 20 acres, making in all 300 acres.

HISTORY OF THE MINE

A. H. Moore, F. A. Moore, Frank Smith, Marshall Nay, John L. Kronenberg, Fred Kronenberg and John Kronenberg filed upon 160 acres of placer ground at Salmon Mountain and commenced operations under the name of the Salmon Mountain Mining Company, in March 1886. A. H. Moore was made president and ere long they erected a saw mill on a branch of Johnson Creek, where they built a dam and erected a floom about three miles in length to conduct water on placer ground that had been discovered to be very rich at the place that Dunbar found a boulder 200 lbs. in weight, and yielded \$2700.00. Since water is at hand, placer mining has been continued in the winter and tunnels have been pushed into the high mountain in various places for the purpose of developing the big lode known to exist. It was believed that the stringers, which were plentiful, would lead to the mother lode, from which the Dunbar bould had broken off.

The Salmon Mountain Coarse Gold Mining Company, successors to the old company, have located at the head of this Gulch, and have uncovered by hydraulic mining a porphyry dyke carrying gold, silver and copper in valuable quantities. This dyke has been cross cut by an 850 foot tunnel, which has proven the quantity of ore to be immense. Several other tunnels have been run into the mountain by this company, cross-cutting stringers that crop to the surface. These stringers all lead to the dyke previously mentioned, and by appearance indicate that the ledge carries a valuable deposit. This Company has had a reliable assayer on the property, testing ore from time to time, and according to his report, which can be shown at any time, the formation in general is highly mineralized.

AMOUNT OF DEVELOPMENT

There is now on this property an open cut and six tunnels, which are described as follows:

TUNNEL NUMBER ONE

This tunnel is run into the mountain 850 feet, the end of which has a depth of 700 feet from the surface of the mountain. It was run through serpentine a distance of 600 feet to where the serpentine stopped abrupt, and dacite porphyry has taken its place through eruptive process, which is highly mineralized, on an average of \$7.50 per ton in gold, also silver (but we have no assays of metals other than gold) throughout this entire dyke, or zone, for such it is, as far as the tunnel has been run in this zone. For 200 feet in this tunnel, beyond the contract, the ore is highly mineralized that the entire body is pay ore, and will average anywhere beyond this contract \$7.50 per ton gold, also other values. This dyke is not work of quartz veins, mineralizing the entire dyke or zone. This tunnel is well timbered and set to grade, which drains it. There is a cross-cut run 150 feet, 350 feet in on this tunnel, showing as good ore as in the main tunnel.

TUNNEL NUMBER TWO

This tunnel is in 150 feet. It has a cross cut about 30 feet long, fifty feet in. Another cross-cut 20 feet in length, 140 feet in, showing heavy sulphides running in quartz in serpentine. The tunnel is well timbered and set to grade. This tunnel is not in far enough to strike the contact, but shows good mineral all the way through, and assays gold \$75.00, silver 18 ounces, copper a trace.

TUNNEL NUMBER THREE

This tunnel is in 50 feet, and is highly mineralized, and shows free gold in panning the rick. There is a wienz 45 feet in on this tunnel, connecting tunnel number four. Very rich ore was taken out of this wienz. The assays of the concentrates, mill run was \$516.08. The coarse rock from the crushed assayed \$83.02, concentrated mill test \$202.51.

TUNNEL NUMBER FOUR

This tunnel is an incline, and has a depth of 100 feet. It was very rich ore, assaying on an average of \$107.45 per ton. Owing to the dangerous condition of this tunnel, a good investigation could not be made.

TUNNEL NUMBER FIVE

This tunnel is in 35 feet, showing a net work of quartz veins all carrying gold and silver. It also shows copper sulphides.

TUNNEL NUMBER SIX

This tunnel is in 40 feet. This is the lowest of all tunnels on the mountain. Very rich ore has been taken from this tunnel. It has a net work of small quartz veins, and also shows good tracing of copper sulphides.

THE OPEN CUT

On this property there is an open cut of the old placer workings, which in the past years have yielded over \$350,000.00 in placer gold. There is equally as much ground left, as only a small portion has been worked. Water has to be brought from Johnson Creek, a distance of three and one-half miles, which has to be piped, owing to the loose condition of the ground. All this ground will pay to mill better than placer, as all of the boulders carry high values in gold and silver, they being broken of the main ledge matter. At the upper end of this cut is a great dyke, which has been uncovered by the working of the placer, showing out-crops of homitite ore, carrying copper sulphides. This out-crop assays gold \$12.00, silver one ounce. This ore will have to be concentrated.

TIMBER

There is enough timber on this property to furnish all the necessary mining timbers, also all the lumber for buildings and other purposes, and plenty of fuel for a long time to come. The timber consists of fir, pine and cedar.

BUILDINGS

The buildings on this property consist of a boarding house, furnished for about ten men, an office and assay office, one large store house, one blacksmith shop, and one saw mill and quartz mill.

WATER

There is enough water for all camp purposes piped to the houses. There is also enough water for steam and mill purposes. When the water is brought from Johnson Creek a considerable horse power can be developed.

MACHINERY NEEDED

This property has enough ore in sight to justify the following machinery: a 500 ton concentrator complete, air compressors, and six drills, an electric dynamo for generating power to run cars from mine to mill, also for lighting purposes. After the necessary machinery is set up and in running order, the mine can be made a producer in 60 days, as there is at the least estimation, one million tons of pay ore in sight now.

WAGON ROAD

There is a good graveled road from Myrtle Point, which is the shipping point by railroad or water, to within ten miles of this property, which will be extended in the near future, and will be on a water level to the proposed location of the quartz mill or concentrator. There is another road in fairly good condition, but more mountainous, to within three miles of the property, at present. There is a good trail these three miles. There has been a wagon road at one time to this property, but it has slid in during the rainy seasons, and is grown up to brush. \$1,000.00 will complete the proposed road to this property.

WORK DONE

On this property, there is 2,000 feet of tunnels. There is a quartz mill, saw mill, blacksmith shop and other buildings, an open cut, all amounting to nearly \$80,000.00, all of which are in good condition.

CAMP AND MILL SITE

There is an excellent camp and mill site on this property to which water can be piped to all parts by gravity system, thereby eliminating the cost of pumping.

CHARACTER OF THE DEEPER WORKINGS

In the deeper workings they pass through serpentine, a distance of 600 feet. This serpentine all the way is a net work of quartz veins, highly mineralized, varying from one-half to seven inches in thickness. At the 600 foot point they come to the contact, which is dacite porphyry. Here and for 250 feet beyond this contact, the quartz veins become larger and more numerous, mineralizing the entire dyke or zone which has not been gone through as yet, making the entire dyke or zone pay ore, and is ready to commence blocking out and milling. The quartz veins here are well defined, and dip into the mountain at about a 70 degree angle, showing that on going down to the deeper levels, higher grade ore will be found. Every indication shows that this is a zone and not a ledge, as formerly supposed.

Respectfully submitted October 20, 1906.

H. P. COLLINS, E. M.
Mining Engineer.