

Preliminary Report
HAPPY DAYS MANGANESE MINE
Lake Creek Unorganized Mining District
Jackson County, Oregon

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Preliminary Report
HAPPY DAYS MANGANESE MINE
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A C K N O W L E D G M E N T S

We are very much indebted to the owner of the Happy Days Manganese Mine for showing us over the property and for rendering much information in connection with these deposits. We are also indebted to him for furnishing the letter from Mr. Kellogg, which is included in this report, which letter states Mr. Kellogg was Engineer for the Government in furnishing Manganese from this mine during the World War.

This being a preliminary report upon the mine under consideration, we reserve the right to change our findings after we complete our regular extended examination and professional report upon this property.

It is specifically requested that no page of this report be defaced by marginal notations. The writer will not be responsible for the correctness of any copies or excerpts of this report unless written and checked in his office. He further certifies that he holds no interest in the Happy Days Manganese property.

Excerpts on Pages 15 and 16 of this report were taken from U.S.G.S. Bulletin No. 725, Contributions to Economic Geology, Lake Creek District, Oregon.

WILLIAM F. HAYDEN

Preliminary Report

HAPPY DAYS MANGANESE MINE

Lake Creek Unorganized Mining District

Jackson County, Oregon

PROPERTY:

The Happy Days Manganese Mine property consists of ten (10) mining claims and two tunnel sites named as follows:

Manganese Claim No. 1
Manganese Claim No. 2
Manganese Claim No. 3
Manganese Claim No. 4
Happy Days Claim No. 1
Happy Days Claim No. 2
Happy Days Claim No. 3
Happy Days Claim No. 4
Happy Days Claim No. 5
Happy Days Claim No. 7

also

Manganese Tunnel Site
West Manganese Tunnel Site

LOCATION:

The property is located approximately thirty miles in an easterly, slightly south, direction from the City of Medford, Jackson County, Oregon where large mercantile establishments are located which carry stocks of mining supplies, etc. and where camp and food supplies may be had at a reasonable cost.

TITLES:

The claims comprising the acreage of this property are held under the provisions of the Mining Laws of the United States and the State of Oregon governing the location of mining claims.

BUILDINGS AND EQUIPMENT:

The only buildings on the property are shown in Photograph No. 2, comprising an old mill structure, a small bunkhouse, bins, etc.

No equipment of any consequence is found at the mine.

WATER:

The water supply for this mine would be derived from Lost Creek and the South Fork of Little Butte Creek.

It is believed a favorable mill site may be found where the water supply could be brought in by gravity. If not, same will have to be pumped to the mill installation. During eight months of the year Lost Creek apparently carries several second feet of water, but it is low during the summer season. Little Butte Creek, however, carries a large volume of water and may be depended upon for both mill and camp use during any part of the year.

POWER:

Power for the operation of this mine

may be furnished either by the use of oil-burning engines or by electric power.

Electric power would be brought in either from Medford or Eagle Point. The distance over which a high-tension line would be extended would probably be fifteen miles. The low cost of electricity and the fact that the construction cost of the power line would be refunded over a period of years would lead us to recommend the use of electricity over that of Diesel or oil-burning engines.

ROADS & TRANSPORTATION:

The road to the mine is over the paved Crater Lake Highway from Medford to Eagle Point, thence over a fine hard-surfaced highway to within one mile of the mine. The balance of the distance is over a dirt road which will need repair, although the cost of such construction should be nominal.

Medford, Oregon would be the shipping point at the present time.

We consider the transportation facilities as being very favorable.

CLIMATE:

The climatic conditions are such that little interference is experienced with heavy snows, although the winter season is interspersed with rainy periods. After operations have been started the climatic conditions would not interfere with continuous mining operations.

ECONOMIC RESOURCES:

The economic resources are favorable as to timber, transportation, electric power, etc.

TOPOGRAPHY:

The country in which the ore deposits are found would be classed as rugged although the property is approached through valleys and low-lying hills and the grade from the valley floor to the location where the mine would be operated at no point would be at a pitch that would interfere with easy motor transportation.

GEOLOGY:

The mineralized deposits contained within the perimeters of the mine under consideration are found to extend over a distance of approximately one and one-half miles, carrying a width of 2000 to 3000 feet. The strike of the deposits is east, bearing about 10 degrees to the south; although the mountain in which the deposits are found strikes north approximately 10 degrees west, the deposits attaining an approximate reported depth of 400 feet. The estimate of 400 feet, however, was reported by Kellogg and possibly was made by taking the elevation from the level of Lost Creek (Probably by Aneroid reading) to the crest of the mountain overlooking the drainage of the South Fork of Little Butte Creek. The mineralized croppings, however, extend from Lost Creek to the South Fork of Little Butte Creek and they are also reported to be found on the North Fork of Little Butte Creek.

Without going into the genesis or origin of the above described deposits, will say that same appear to the writer to be a jointed mass of mineralized material, apparently carrying commercial

Note:

Referring to the last paragraph on Page 5 under Geology, which would be the third paragraph on this page, may we clarify the expression somewhat because of our visit to this mine on September 2 when the writer had an opportunity to locate what he regards as the footwall of these deposits?

We would class the footwall as a very much altered diabase material though not part of the diabase dike or fault referred to 150 feet south of the No. 1 Tunnel in the main development. Otherwise the dike would be estimated over a width of several hundred feet upon which the manganese deposits to the south would be superimposed, which may only be determined by shafts or core-drilling of these areas.

values of Manganese which appears to the writer principally as a pyrolusite or manganese dioxide with inclusions of manganite of considerable proportions, and that there is no particular dip to the strike of the deposits except that it may be that the general mass has a tendency to pitch slightly to the south.

Since this is a preliminary report, it must be understood the writer has not covered the entire distance over these croppings, having confined his examination to the area of large croppings and development near the old mill and tunnel locations.

The hanging wall of the deposit would be classed, we believe, as a very much altered dike material and the footwall a more or less granitic formation.

DEVELOPMENT:

The development of the property consists of open cuts and tunnels. The portal of the largest tunnel is caved, making it impossible at this time to examine this underground development.

The owners describe this tunnel as driven upon an easterly course for a distance of approximately 400 feet. Near the face of this tunnel two laterals have been extended - one to the north for a distance of some 80 feet and another to the south for a distance of approximately 85 feet. They report that practically the entire underground workings are in Manganese ore of different grades - some very high grade was reported and other sections showed what would appear to be a lower grade ore.

There are several large dumps at the

tunnel location, indicating the fact that the amount of work reported has been done.

The areas in and around the old mill and to the crest of the hill were examined by the writer and croppings of Manganese ores are apparent over the entire area. My associates, during the visit to the mine, examined the areas or radius between the mill and Lost Creek, which they described as showing croppings over the entire area and without a doubt over a width as reported by the owners. Samples taken indicate ores of good commercial values.

Values: The writer had the face of several deposits cut down for him where samples were taken which indicated ore of very good grade. A face of Manganese ore near the portal of the tunnel, which shows a vertical face of some forty feet and an equal distance in width, exposes the type of ore which evidently has been encountered by the tunnel development. The writer would consider same to be very encouraging for the reason that considerable high grade appears to be present, which should yield a good percentage of Manganese.

No assays have been taken at this time since this is purely a preliminary report, but which provides sufficient information, we believe, to warrant extensive sampling and development.

The following letter was given to the writer by the owner of the Manganese Mine, and we are inserting same at this point in our report, placing the responsibility upon the signer of this letter for the information contained therein:

Note:

It is to be noted that the percentage given in Mr. Kellogg's letter is high since pyrolusite or manganese dioxide carries but 63.2%.

Therefore, it is evident to the writer that the ores of this mine contain the different manganese oxides. The main mineral contained in these ores, we believe, is manganite. Otherwise, Mr. Kellogg could not have referred to such a high value in his letter. The shipments of ores to which he refers possibly were concentrates since same were probably the result of treatment by the jig mill installed at the mine at this time, in this way naturally increasing the manganese percentage.

The errors in the Kellogg letter evidently are typographical and should not alter the points he wishes to convey to the reader.

C
o
p
y

"Medford, Oregon
April 1, 1937

"To whom it may concern:

"I have been employed by the Govern-
ment as a mining engineer to research manganese
and chrome deposits during the world war of 1917-
1918, and my work was to get the ore out.

"Regarding the manganese body of ore
in Section 9, 10, and 15, Township 37, South, Range
2 East, Jackson County, of the State of Oregon, I
myself personally engineered and built a Gig 10
ton mill on the property. We shipped out 400 tons
of manganese of 72% m.n., and our engineering report
gave the third largest manganese deposit in the
world.

"It's a manganese formation of two
miles in length, and 3000 ft. wide. There is some
high-grade as high as 75% and low grade as low as 10%.
It is a deep upheave, down deep, and will increase
in percentage in depth. There is plenty of water,
and the body of ore is elevated 400 feet above the
level of the creek, with an estimation of 100,000,000
tons for the 400 feet deep.

Wm. Kellogg

"I hereby certify that the above is a true copy of
the signed original held by the undersigned.

"Dated at Grants Pass, Oregon this 29th day of June, 1937".

James Baker
James Baker

STATE OF OREGON)
) ss
County of Josephine)

On this 29th day of June, 1937, personally came before

WILLIAM F. HAYDEN

me, a Notary Public in and for said County, the within named James Baker, to me personally known to be the identical person described in and who executed the above certificate, and acknowledged to me that he executed the same freely for the uses and purposes therein named.

Witness my hand and official seal this 29th day of June, 1937.

Ruth L. Groth
Notary Public for Oregon

My commission expires
September 27, 1940

The owners further state that much of the manganese ore contains gold in commercial quantities. Samples taken should be assayed both for manganese and for the gold content.

Treatment: Since this, as above stated, is a preliminary report, we do not feel it is the time to go into the treatment or recovery of the values of these Manganese deposits. However, the improved present-day metallurgical methods which may be employed in the recovery of the manganese values permits the mining of a much lower grade of Manganese than has been permitted heretofore.

The present price of Manganese ore, carrying a value which this ore should contain, should make it a very profitable mining operation.

RECOMMENDATIONS:

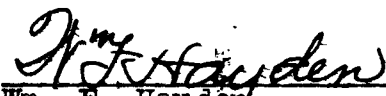
We would recommend that the tunnel de-

velopment be reconditioned immediately. This should be a matter of nominal expense according to our observations and would permit an examination of the larger underground development, which would be a very important factor in connection with the examination of this property.

We would also recommend that numerous open cuts and surface pits or trenches be dug to expose the ores at different locations. If it becomes necessary to determine the extent of these ores as to depth we would further recommend that drilling tests be made.

The writer has no hesitancy in stating that the deposit, if it carries the values in manganese as indicated, he considers worthy of immediate attention and extensive development.

Respectfully,



Wm. F. Hayden,
Consulting Mining Engineer

WFH:G

August 14, 1937

HAPPY DAYS MANGANESE MINE

September 2, 1937

During the period which has elapsed since my first visit to the Happy Days Manganese deposits on August 4, 1937, I have had an opportunity to visit this property upon two different occasions at which time I was able to extend my examination over a much larger area than that which has been covered in the foregoing report. My recent work was confined largely to additional development, character and mode of occurrence of the ores of these deposits.

Approximately 100 feet to the south of what is called the No. 1 Tunnel, we find a large open cut or pit approximately 100 feet in length exposing a face of what appears to be a milling grade of manganese with streaks of high grade present at places. The face of the pit is probably 20 to 25 feet vertically. A tunnel approximately 40 feet in length has been driven into the deposits upon the floor of the pit exposing very high grade ores at the portal of the tunnel and some lower grade ores in different sections of the drift. We are informed from reliable sources that the entire mass of material as mined from the different developments was milled or jigged and that the recovery results were very satisfactory.

Many small open cuts and developments over the property reveal the fact that manganese in some form is present. One interesting feature is that a small cut was extended into the hill where no manganese croppings were present, but as the cut was extended manganese of a grade which we have not as yet

established was encountered. This indicates to the writer that the areas as described may contain manganese over practically the entire widths between what is described as the hanging wall and the footwall of these deposits.

From the point just described and down the side of the mountain or hill a distance of approximately 500 feet we find surface croppings as described in Photograph No. 12. The ore here appears to the writer to be of a fairly high grade and we believe would be considered extensive.

Continuing along the strike of the deposits, which we have now determined is northeast and southwest, evidence is found of manganese croppings of a grade that should be very acceptable. The distance over which the croppings would extend at this point we estimate would not be less than 500 to 800 feet, and it is at this location, which would be near the level of Lost Creek, that we would recommend extensive development of this property, and we believe the development would prove, as it is extended northerly, that the percentage of manganese would be of a good commercial value. In other words, it is our belief that the deposits toward the north hanging wall would be the higher grade ores.

The writer has now been able to cover practically all of the areas on the westerly exposures of the deposits from Lost Creek to the crest of the hill and his examination of these deposits indicates, as above stated, a very large showing of manganese ores of what we believe may, when developed, prove to be commercial.

Ore Occurrence: The writer was able to contact and converse with several parties who were employed at the mine during its oper-

ation and their description of the method of handling of the ores and the type of ores recovered was very interesting. As they described the method of recovery of the values, it provides the examining Engineer with considerable valuable information in connection with this subject.

The type of ores found in this deposit, inssofar as we can determine at this time, should be classed, we believe, as a Hausmanite, $MnO.Mn_2O_3$, for the reason that evidence of the several types of oxidized manganese ores are present or confined in a matrix, the character of which is difficult to determine at this time, but it appears to be a more or less altered tuff or at places a tuff breccia, all of which is highly oxidized carrying some manganese values and would all be milled with the regular ores. At places some of this "tuff" appears to be kaolinized to a certain degree and at other locations higher in the deposits a clay-like sedimentary material may be found, but all apparently, as above stated, impregnated more or less with manganese values.

A cross-section of the manganese deposits as shown by development would reveal approximately 150 feet south of the No. 1 Tunnel what may be commonly classed as a fault. This is shown by the development above described where we state the deposits show a 20 to 25 foot vertical face. The writer not having geologized the eastern extension of what appears to be a diabase dike, referred to as a fault, is not prepared to say as to whether or not the exposure here is a dike or whether it is simply a protrusion of part of the understructure through the deposits upon which manganese deposits may be superimposed, varying in depth or width of deposits, as above described, or whether the coarse diabase dike may have been tilted and shattered and in this way possibly being one of the agencies in the mineralizing of the deposits at this point.

The higher grade deposits from the point

of the fault or dike appear to extend north and east. This is apparent for the reason that immediately south of this point we find the continuation of the manganese deposits to apparently be of a lower grade though development may prove the ores here to equal in value the deposits of the northerly sections of the mine.

Like most deposits of this type, much of the higher grade is found in irregular or sub-angular nodules - some running into very large sizes - along with the finer manganese oxidized materials contained in the deposits.

As to the depth of the deposits, same can only be conjectured for the reason that all information procurable pertains to the elevations from Lost Creek to the crest of the hill and where some reported drilling has been done ranging in depth from 60 to 210 feet. There is no confirmation of this work available at this time and it is only mentioned as part of the information provided.

It is believed by the writer that the deposits will vary greatly in depth at different locations, but it is further believed that there will be no sections of the mine that will be less than 10 to 30 feet of manganese ores as they extend in depth and from observations made manganese ores of a milling grade may more than treble this 30 foot depth. The overburden will also vary. At some places it may attain a considerable depth and at other places practically no overburden is found.

Treatment Costs: As stated in the foregoing report - the writer hesitates at this time to go into an extended discussion of the treatment or cost of treatment of these ores except to say that the type of ores as found here may, in his opinion, be mined much cheaper than the ordinary

manganese deposits. For instance, the Cartersville, Ga. deposits occurring as they do in gravels and the more or less expensive method of recovery at the Cartersville mines would not be applicable here since the ores of these deposits should be "won" principally by segregating as selected ores the larger nodules of high grade as shipping ore and passing the mass deposits through rolls and jigs, which according to the samples given the writer from this operation produce a very satisfactory high grade concentrate. If further saving was required it may be applicable to install gravity concentrating tables or flotation to complete the recovery, but it is our opinion that the cost of flotation over the amounts saved in the above suggested method would not be profitable. Therefore, the simple method of rolls and the use of jigs should provide, as above stated, a very cheap method of recovery.

Note:

Leaching Recovery Method: We find upon reliable authority

that the U. S. Bureau of Mines is now issuing a pamphlet covering the metallurgical treatment of manganese ores which provides a leaching method from which profitable returns may be had from very low grade manganese ores, probably as low as 10%.

Method of Mining: The method of mining to be em-

ployed, we believe, would be open-pit work using power shovels. If this system or if underground drifting and tunneling is preferred the glory-hole system may be used. Either type of operation would provide cheap operating costs for the mining of the ores of this mine.

September 10, 1937

Not until September 9, 1937 was the writer able to procure information from Government Bulletins relative to the development and operation of the Happy Days Manganese Mining claims, known formerly and listed in Bulletin No. 725, Contributions to Economic Geology, Lake Creek District, Oregon, Pages 211 to 220 as the "Tyrrell" mine. The following quotations or excerpts are taken from this bulletin, upon which the writer will comment at the conclusion of same.

"Deposits of oxide minerals in open spaces.--

"The deposit at the Tyrrell mine and other deposits in the Lake Creek district consist of manganese oxides that fill cracks, pores, or other cavities in a Tertiary volcanic tuff. The manganese minerals are distributed over several hundred acres, but so far as known they do not extend more than a few feet below the surface. As a rule the mineralized tuff does not carry more than 1 or 2 per cent of manganese, but in a few places portions that contain from 10 to 20 per cent or more constitute bodies of considerable size.

"Manganite is the principal ore mineral. Psilomelane and wad are moderately abundant, and there are small amounts of a soft brown greasy-lustered oxide that appears to be derived from the manganite by alteration in place. A superficial part of the ore-bearing layer generally contains most of the softer oxides and is relatively poor in manganese. Below this is a richer layer containing the harder oxides. Most of the ore is segregated in distinct streaks, grains, and nodules and is therefore easily separated by ordinary milling methods from the rather soft tuff."

"The rocks of the Lake Creek district belong to the Tertiary volcanic series that composes the middle and southern parts of the Cascade mountains".

"Manganiferous Deposits"
"Distribution and General Features"

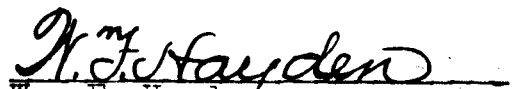
"Manganese in greater amounts than are ordinarily found in igneous rocks is practically confined to the red tuff and the gray tuff associated with it, described as bed 4 in the table on page 215. Outcrops of the red tuff that are scattered throughout the district and aggregate several hundred acres show noticeable amounts of manganese oxides generally. In most places the material exposed at the surface is estimated to carry from 0.5 to 2 or 3 per cent of manganese. Locally, at least, there is a lower layer that is much richer. At the Tyrrell mine this layer is as much as 12 feet thick and carries from 10 to 20 per cent of manganese. The total thickness of manganiferous material ranges from a foot or two on the Vestal claims to 30 feet or more on the Tyrrell mine.

"The manganese occurs as oxides that are deposited in cracks and cavities forming irregular streaks, veinlets, nodules, and grains. To a slight extent these bodies have made additional room for themselves by replacing the tuff. In the upper layer as a rule most of the oxides are soft and sooty, and in the lower layer they are rather hard and compact. Owing to the comparative softness of the tuff it is very easily separated from the harder oxides by ordinary means. Tests made by both the Manganese Metals Co. and Victor Rakowsky with jigs and tables show that the production of a concentrate running as high as 55 per cent of the manganese is practicable, and that under the conditions prevailing in the summer of 1918 crude material containing as little as 10 per cent of manganese could probably be worked at a profit".

Comment: The writer has now spent several days examining the manganese mining claims under consideration, but, as stated several times, this report must be considered as preliminary for the reason that he has not been able to cover the entire

area of these deposits, since same appear to extend over several hundred acres but what we would like to emphasize here is that the U.S.G.S. Bulletin reports cover practically only the old development areas and what took place during the operation of the mine, whereas the writer believes that the deposits in each direction from the old main development as they extend east and west on their strike and to the north and south to their enclosing formations, present evidence of extensive deposits in all directions. Several sections are more prominent than others. One section to the north and east appears to be extensive. The deposits westerly from the old mill toward Lost Creek appear to the writer to evidence large deposits and what was first believed to be a low grade and less extensive showing of Manganese deposits to the south as indicated in the body of this report, but later examinations reveal the fact that these deposits may be very extensive possibly extending over a distance of several thousand feet upon their easterly and westerly strike and may be of a higher grade or at least equal to the grade of the ores of the old development. May we again emphasize our recommendations that extensive development be made of the deposits between the old mill and Lost Creek levels.

Respectfully,


Wm. F. Hayden,
Consulting Mining Engineer

A D D E N D U M



Fig. 1:

Junction of Crater Lake Highway and Little Butte Creek road. This is the point where we leave the Crater Lake Highway, turning southeasterly toward the mine.



Fig. 2:

Photograph looking northwesterly showing Lost Creek valley floor. Taken from large dump at No. 1 Tunnel.

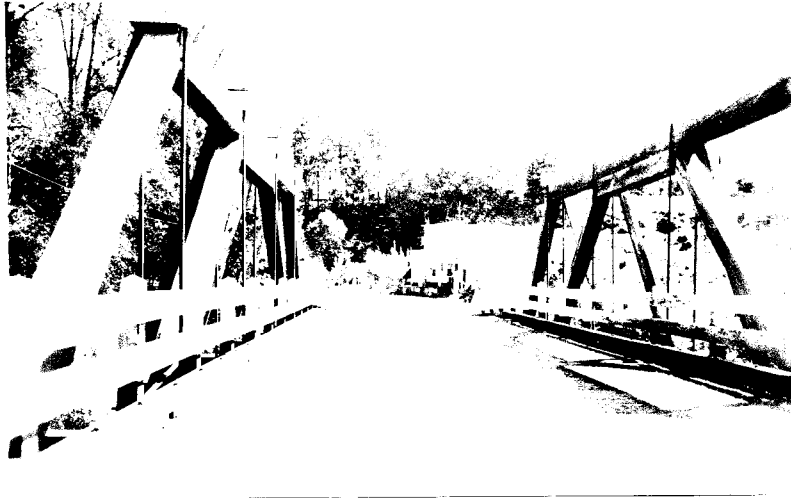


Fig. 3:

Lake Creek Bridge, Post Office and road in to mine - approximately six miles from the property.

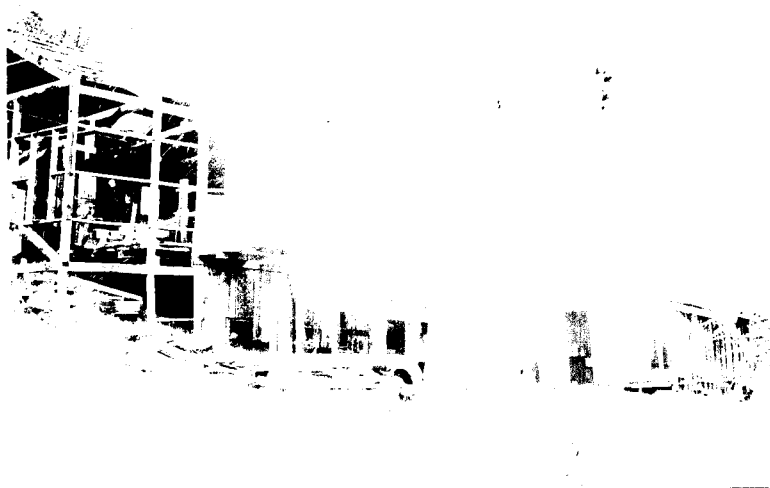


Fig. 4:

A photograph of the old mill structure erected during the World War. The road which extends in to the mine from the County road terminates at this point.

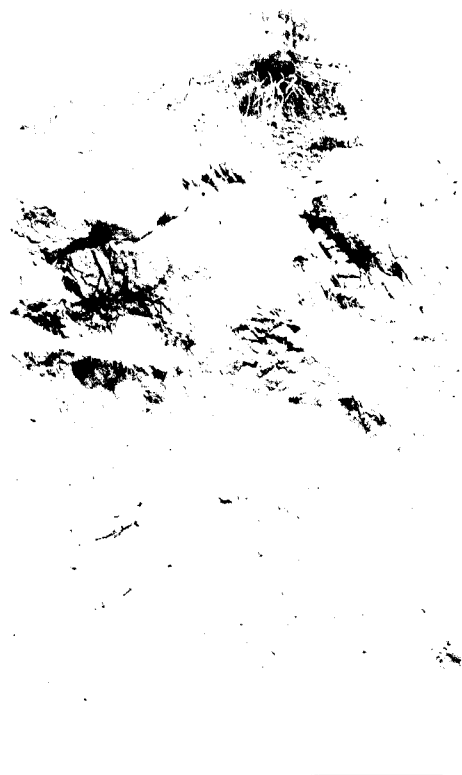


Fig. 5:

This photograph exposes the face of Manganese ore deposits immediately above the caved portal of the No. 1 400-foot Tunnel.

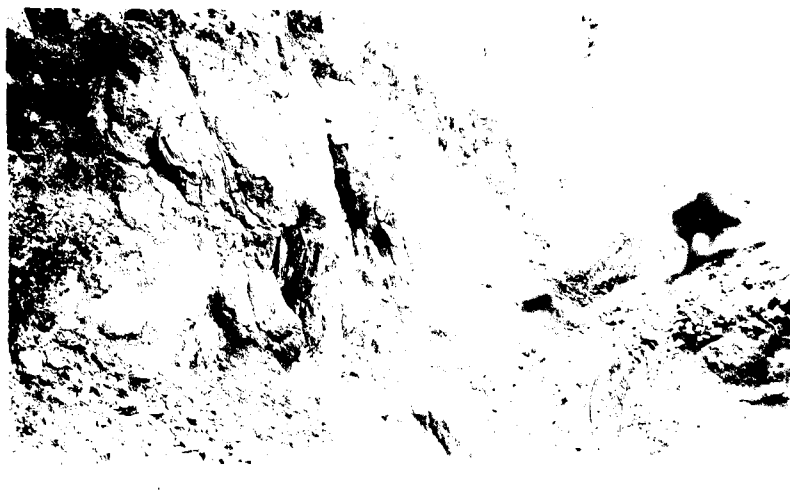


Fig. 6:

Showing the large exposures of Manganese ore deposits and where samples were taken from the large deposits immediately north of the old tunnel.



Fig. 7:

One of the main dumps at No. 1 Tunnel, the size indicating that the amount of work represented was done.



Fig. 8:

A close-up of the lower grade ores - probably 150 feet north of the location shown in Fig. 7.



Fig. 9:

A photograph of the croppings of Manganese ores - probably 250 to 300 feet north of the portal of No. 1 Tunnel.

The exposures shown here are typical of the croppings of Manganese over the entire deposits.



Fig. 10:

Exposure of Manganese cropping 300 feet westerly from the old mill structure.

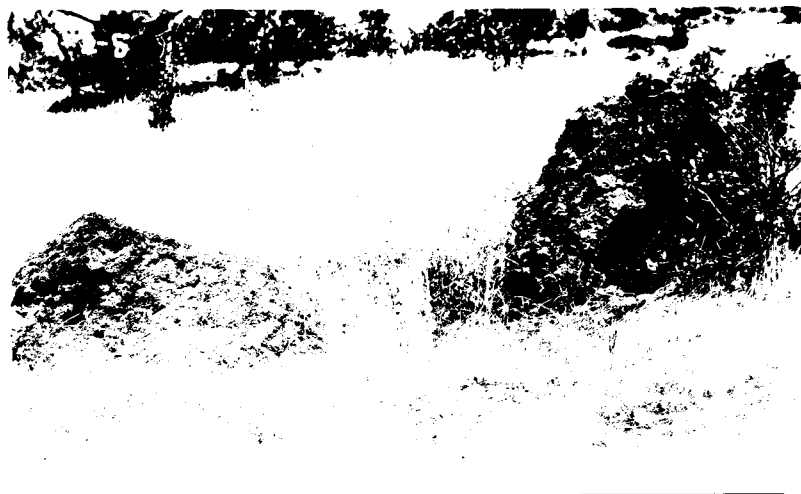


Fig. 11:

Outcrop of Manganese ore approximately 600 feet southwesterly of old mill structure. It is to be noted that the grass which looks heavy at this point is sparse and that Manganese ore is found on the surface immediately beneath and if the grass were removed it would be almost a solid cropping of Manganese ore.



Fig. 12:

Approximately 500 feet westerly from old mill structure. It is estimated there are 4000 sq. ft. of apparently uninterrupted showings of manganese deposits near this point.



Fig. 13:

Looking east on Little Butte Creek
road showing the width of this large clear stream
four miles east of Eagle Point.