

WILLIAM J. ELMENDORF  
905 Allison St.  
Seattle, Washington

Aug. 13th, 1926

Northwest Copper Company,  
E. I. Staley, Geology-Trans..  
Laies, Oregon.

Gentlemen:

My recent investigation of the mining properties owned by your Company and made on Aug. 5", 6", 7", & 8", 1926 leads me to the following opinions:

There are at least three distinct, ore-bearing, fissure veins in the property; the Northwestern, Granger & Five Spot. Of these the last is, in my opinion, the least important. These veins are in an altered andesite area and later intrusions are not apparent. In places the veins appear to widen into what may be considered a shear-zone which, is, at one point, forty feet in width. The average width of the veins is difficult to estimate, for this reason, but may be considered better than five feet. Both the Northwestern and the Granger veins show a mineralization of copper ores, principally chalcopirite, carrying gold and silver values and contain, apparently no minerals that would complicate their concentration or reduction.

As the gangue of the veins is soft and the minerals, at the level of the present workings, largely leached, it is apparent that depth should be gained on them to find the ores in their original, or possibly an enriched, condition. This can be most expeditiously and economically done by drifting into the mountains south from the face of the long Northwestern tunnel for the development of the Northwestern vein and north from the face of the Shilo tunnel for the development of the Granger vein.

In the meantime a careful sampling of the ore bodies already exposed in the Northwestern tunnels, the Granger and Shilo tunnels, and other ore exposures should be had. It is only by this that a proper knowledge of the exposed ore, its size and grade, can be obtained. I propose, with your approval, to send a man with an assay outfit, which will remain the property of the Company, to the mine and have this properly done. The sampling must be of an average character at regular intervals through the ore bodies and will necessitate the removal, temporarily, of the lagging at most of the points sampled. The information will tell the grade of the ore over

stopping widths and it is upon these results that my recommendation as to the future conduct of operations will be based to a large extent. I imagine that the work will take a month or six weeks.

Pending and during this work I have outlined to Mr. Kunkle certain work for the men at the mine which may be done to good advantage.

Mr. Herman Bueche, a competent civil engineer, is now doing good and necessary work at the mine by surveying and platting the mine surveys, when completed will show that amended locations should be filed on many or all of the claims and he is entirely competent to attend to this work.

Confirming my conversation with your directors, I will be glad to act in the capacity of consulting engineer to your Company and my charge for this service will be a retaining fee of \$50.00 per month. For any time given exclusively to your work my charge will be based on \$25.00 per day and expenses. It is, however, understood that the retaining fee will be credited on my account during any month that I am actively employed. If this arrangement meets with your approval I shall be glad to receive a confirmation of the same at your convenience.

I wish to express my appreciation of the energetic and competent manner in which Mr. F. H. Kunkle is handling your affairs. He is doing exceptionally good work both at the mine and on the outside in a very economical manner.

Finally, I am pleased with what I consider the possibilities of your mining proposition. You are entirely warranted in carrying the present investigation to a conclusion and I believe your proposed method of financing later, if the results are favorable, to be sound.

Respectfully yours,

(Signed W. J. Elmendorf.)

William J. Elmendorf  
905 Allison St.  
Seattle, Washington

October 20th 1926

Northwest Copper Company  
Salem, Oregon

Gentlemen:

I hand you herewith my report on your mining property in the Lester Mining District, State of Oregon.

The investigation upon which the report is based has been a thorough one. I was on the ground from August 5th. to 9th. and from October 1st. to 12th. inclusive.

Mr. Wm. M. Romischer, M. S. of the U. S. Bureau of Mines, who did the sampling and assaying, was at the mine about seven weeks. Mr. Herman Bueche, C. E., who did the surveying was there about an equal length of time.

The facts and figures given may be depended upon.

I shall be glad to recommend this property to any one looking for mining investment. My opinion of the mine is very favorable and I consider it an exceptional opportunity. It should be made a highly profitable producer quickly if my theory of the ore deposit is correct.

I wish to thank you for the facilities given me for this exhaustive examination and hope that my report will meet with your approval.

Very respectfully yours,

(Signed) W. J. Elmendorf

Mining Engineer

WILLIAM J. ELLENDORF  
Mining Engineer  
Seattle, Washington  
905 Allison St.

August 3, 1927.

Northwest Copper Company,  
W. I. Staley, Sec. and Treas.,  
Salem, Oregon.

Gentlemen:

I visited the property of your company on the 18th, 19th and 20th of July, and made careful inspection of the work that had been done since my previous visit.

The winze from the north tunnel have been sunk to a depth of about 60' and from start to finish showing a consistent improvement in the size, character and grade of the ore. You have been peculiarly fortunate in being able to follow the ore streak in the vein all the way down, and the showing in the bottom of the winze is at this time as good as could be expected. There is from 12" to 20" in thickness of high grade chalcoppyrite and chalcocite ore which the last assay shows to be carrying material gold values i.e., from three to five dollars per ton. The entire width of the vein, insofar as has been exposed by the winze, shows mineralization. The especially important feature of this development to date consists in the steady increase of chalcocite in the ore and so far as the work has progressed confirms my opinion that a high grade horizon or zone of secondary sulphide enrichment exists in the vein. You are not yet entirely below the level of leaching as is shown by the quartz crystals and small cavities in the ore, but although these cavities are not filled with chalcocite they all show a coating of this high grade copper sulphide.

The original plan of sinking the winze to a depth from which a level at 100' can be conveniently run, and which was the original plan for work, should certainly be carried out. The drift should be run to the North at first from the winze. The prosecution of this work depending upon the amount of water that is encountered at that depth. For the purpose of this work it is necessary that more air than is now available should be provided, and tentative arrangement for this purpose, as outlined by Mr. Shand, Mr. Staley and Mr. Runkel, meets with my entire approval.

The work done in the winze is in every way miner-like and is an especially good job. If necessary later, a large amount of ore can be taken out of this working at a cost that is not at all prohibitive, in fact I think that the mining of high grade ore from this working should be contemplated, and as the sinking of the

Northwest Copper Co.

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winze progressed 15 or 20 tons of copper ore, running in the neighborhood of 80% copper, was saved and this ore is now piled outside the mouth of the tunnel. When a carload of this has accumulated it should be shipped to the smelter as it will show a good profit. I will call your attention to the fact that probably twice as much of the high grade ore has been broken up in the blasting and has gone into the waste dump as has been saved on the ore dump.

The operation at the mine meets with my entire approval and I hope that facilities will be afforded for pushing this work economically and rapidly. I feel that the Company is to be congratulated on the results of the development to date.

Respectfully yours,

W. J. Ehsendorf

Consulting Engineer.

WILLIAM J. EISENDORF  
Mining Engineer  
905 Allison Street  
Seattle, Washington

June 28th, 1928

The Northwest Copper Co.  
Salem, Oregon

Gentlemen:

I visited your mining property on the North Fork of the Santiam River on June 21st, 1928 in company with Mr. W. I. Staley, Secty-Treasurer of your Company.

At that time the winze, sunk in the north tunnel at my suggestion, was 96 feet deep and I was able to inspect the last work done.

The high grade ore in the bottom is again widening and is more than a foot in width. The character of ore in this high grade streak is still continuing to change for the better, the proportion of chalcocite to chalcopyrite increasing as it has steadily done all the way down the winze. This high grade ore has, in places, shown a width of more than two feet and its character confirms the theory that the leaching out of the vein above, which is strongly in evidence, had created a horizon of secondary sulphide enrichment below.

The width of the vein in this winze is uncertain as the hanging wall has been followed and at no point, I believe, has the width of ground broken been sufficient to expose the foot wall. The ground broken out in sinking, has all treatment or loss of material and many small high grade seams are in evidence. I think the entire dump aside from the ore pile would make good mill feed-- perhaps 4% copper ore.

A considerable pile of ore has been saved in an ore pile and this is being rough sorted for shipment to Tacoma.

The property has now reached a point where further power and equipment is justified and must be provided for its future economical operation. The result of the work in the winze is favorable to a degree and a drift may now be started north from it at, say, 85 feet depth. This drift, or level, will open a considerable amount of high grade ore, assaying better than 30% copper, and give the opportunity for stopping this, if desirable. It will also provide the opportunity for crosscutting the vein and determining its average value. Such a drift should be continued as far as facilities will permit and conditions warrant but not less than 200 feet should be planned for.

In addition, the winze should be sunk another 100 feet as the horizon of enrichment has only been entered and its improvement indicates that even better ore may be looked for with depth.

To carry out this development work, and such other as may be indicated as it progresses, ample power for the pumping of the winze and the supplying of air for drilling and hoisting must be provided. Operations in the past have proven the futility of attempting to work without adequate equipment but it seemed best to carry on, if possible, until the character of the ore body was demonstrated and its continuance could be reasonably predicted. This is now done and I suggest the installation of a 100 H. P. semi-diesel type engine and a larger compressor as the essential and principal machines for further work. I am, however, open to conviction if it can be shown that something better can be used.

In my opinion there is a good chance of making a pay mine out of your property. The work so far done may be considered initial, and that now proposed preliminary - to the improvement of the fine water power which you own and the construction of a milling plant when sufficient ore is developed to justify it.

Those who provide the necessary money for carrying on the work should be amply protected and placed in a position to receive a generous share of the ultimate profits from the mine.

I think the Company is to be congratulated for accomplishing what has been done with the limited money and facilities at command.

Respectfully submitted

(Signed) W. J. Elmendorf

Consulting Engineer.