

4790. 0018

176
Item 21

A GEOLOGICAL REPORT ON THE

TUNGSTEN (SCHEELITE) DEPOSIT

OF THE

NORTH TEN PIUTE MINING AND DEVELOPMENT COMPANY.

LINCOLN COUNTY

NEVADA.

BY

EARL F. NIEMAN
Engineer of Mines.

A GEOLOGICAL REPORT ON THE TUNGSTEN(SCHEELITE) DEPOSIT
OF THE
NORTH TEM PIUTE MINING AND DEVELOPMENT COMPANY.

LOCATION:

The tungsten ore body examined and here reported on is situated on Tem Piute Mountain, Lincoln County, Nevada. The Tem Piute Range has a general northerly and southerly trend and is in south central Nevada, 80 miles west of Caliente; 100 miles east of the camp of Tonopah and approximately 160 miles north of Las Vegas.

ELEVATION: CLIMATE: ACCESSABILITY.

Tem Piute Mountain rises from the valley floor which is at an approximate elevation of 5000 feet to a maximum of probably over 8000 feet at the top of the range. The elevation of the camp of the North Tem Piute Mining and Development Co and of the tungsten deposit itself, is about 7200 feet.

For nine months of the year the climate offers no difficulty to mining operations, it being the typical, high altitude, arid, desert climate, of the southern part of the state, with a maximum of clear days. During the three winter months snow is to be expected at this altitude, but the amount varies considerably from year to year. On the northern slopes, two to three feet of snow may be expected to cover the ground until the middle of March. However with continuous mining operations in progress, no delay, except on rare occasions, need be contemplated on account of snow-fall.

Standard oiled highways, both from Las Vegas and Caliente lead to Crystal Springs, 30 miles east of the property. A good graded, gravel road leads from Crystal Springs to the property

2.

and continues on to Tonopah. In the last ten miles the increase in elevation is rapid, but with no road conditions that offer any difficulty of negotiation by car or truck. The truck haul charge from Caliente, the railroad shipping point, a distance of 80 miles is \$5 per ton.

PROPERTY:

A total of ⁴¹sixty-seven claims are owned or controlled by the North Ten Flute Mining and Development Company. Eight of these in the northern section of the group are known as the tungsten property. The eight claims making up the tungsten group are the following ; Phyllis; Phyllis No. 2; Phyllis No 3; Phyllis No. 4.; Rae Ella; Rae Ella No. 2; Rae Ella No.3; Rae Ella No. 4; these are all full claims and cover an approximate area of 160 acres. You are referred to Sketch No. I, showing claim lines and the location of the tungsten deposit. The claims are held by location.

GENERAL GEOLOGY:

The geology of the district in general consists of a sedimentary series of limestones, shales and slates, which have been later intruded by a main mass of granite with minor dykes and tongues, as phases of the main intrusive mass, forming outliers and contacts in the earlier sedimentaries. It is undoubtedly the case that this intrusive mass was the mineralizer which formed the silver, lead, zinc, copper and tungsten croppings and ore bodies within the company's property. Massive oxidized croppings(gossan) containing minor amounts of silver, lead, zinc and copper are extensively in evidence on the property and present extremely favorable areas for future development. Most of these contacts along lime, shale, intrusive features, forming these oxidized croppings of large size, have recieved practically no development to date.

3.

While there are many outcroppings favorable to the deposition of the base metals, copper, lead and zinc with a silver content, this report is confined especially to a presentation of the geological facts pertaining to the tungsten(scheelite) ore body, with some comments on the advisable future method of attack.

TYPE OF ORE DEPOSIT:

The deposit is a typical contact metamorphic. The magma intruded the older sedimentaries, limestone and shale, and evidently did not come to the surface. Cooled slowly as is evidenced by the fact that the main mass of the magma, cooled to a coarsely crystalline rock designated as granite, also on the extreme north end the granite is overlain by limestone. Along the intrusive contact with the sedimentaries, particularly in the limestone considerable metamorphism is effected, for a varying distance from the contact. It is common for deposits of metallic ores to occur along such contacts, particularly where the older sedimentary is limestone.

Deposits of this type have a tendency to be irregular in outline and bunchy in character, many of them being more or less tabular, due to following the contact or to metasomatism along a more favorable bed of the intruded rock. The contact zone which forms the tungsten deposit on the Rae Ella and Phyllis claims, shows a cropping area with an average width of 70 feet and an approximate length of 800 feet. The mineral association along this contact zone is characteristic. The minerals in evidence are garnet, epidote, pyrite, a small amount of molybdenite, scheelite & the calcium tungstate and considerable recrystallized calcite.

4.

Scheelite, (CaWO_4) is a heavy white mineral of non-metallic luster. Under the Ultraviolet lamp most scheelite fluoresces a light blue color. This is most strikingly in evidence in underground workings or at night on the cropping of a deposit.

In going over the tungsten outcrop of the North Tem Butte Mining and Development Co. with the Ultra violet lamp the fluorescence showing the presence of scheelite is general over the cropping, with a more heavily mineralized area at or near the limit of metamorphism and against the marbleized lime contact. It is quite probable that the per centage of contained tungsten tri-oxide will vary considerably from place to place within the limits of this deposit.

The outcropping of this contact zone stands out more prominently than either the granite wall on one side or the limestone on the other. The amount of development done to date is limited. The greatest depth to which scheelite has been exposed by development is in the winze at the end of the main development tunnel, the bottom of which is approximately 100 feet below the apex of the cropping. The cut on the northern end of the deposit exposes the marbleized lime contact. In this cut a zone of about four feet in width of high grade scheelite is exposed. This is the only place where this contact is opened and it is advised to trace out this feature by trenching, with the idea of opening for sampling, the high grade scheelite ore shown in the first cut.

DEVELOPMENT OF THE DEPOSIT:

The deposit is situated on a steep hillside with an average slope of 30 to 35 degrees and therefore

offers an excellent opportunity for the attack of the deposit at depth by means of cross-cut tunnels from the granite side of the contact zone.

As preliminary development it is advised that the contact zone be trenched at the surface at 50 foot intervals across the strike of the deposit for the purpose of thoroughly sampling the cropping. It is quite evident that an area averaging 70 feet in width and 800 feet in length, if proved to contain payable quantities of tungsten over the entire area, would represent approximately 230000 tons to a depth of only 50 feet. Whether payable values exist over the entire area is still problematical, although the tungsten lamp shows variable degrees of fluorescence over the entire area.

A cross-cut tunnel of approximately 200 ft. in length would expose the ore body to a depth of about 100 feet, which would probably be the most advisable course of procedure after the thorough exploration of the cropping. A few thousand feet of diamond drill cores would undoubtedly furnish considerable advance information as to the grade and size of the ore body with depth.

COMPARISON WITH SIMILAR DEPOSITS:

The Nevada-Massachusetts Tungsten Co., at Mill City, Humboldt Co., Nevada, has been operating and producing for a number of years from a scheelite deposit of similar geological characteristics as that on the property of the North Ten Piute Mining and Development Co.. The deposit at Mill City is in limestone close to granite. The mineral association is calcite, scheelite, garnet, epidote and pyrite and the ores resemble mineralogically those of the North Ten Piute Co very

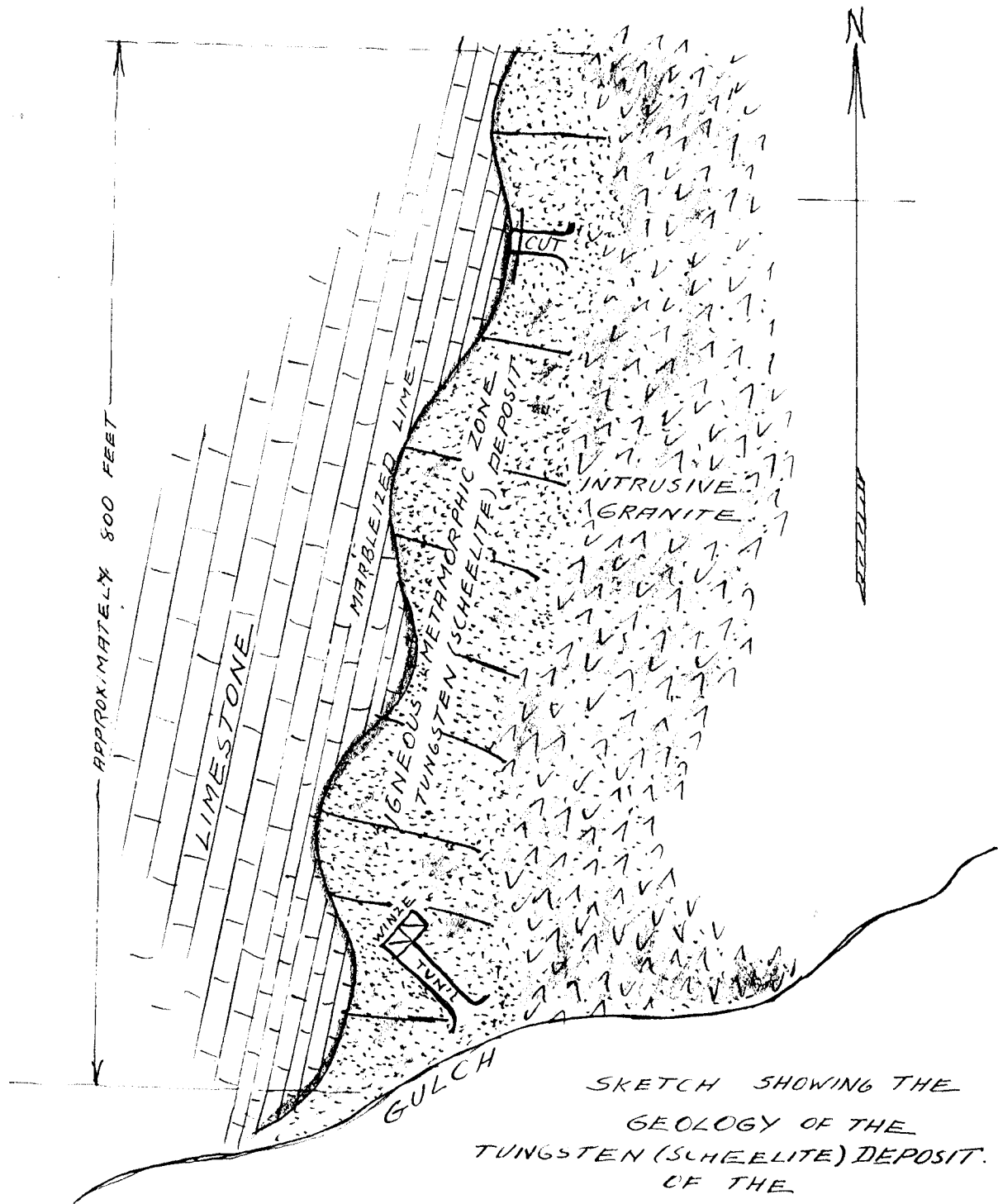
closely. The deposit at Mill City has been developed to a depth of approximately 1000 feet. While this fact in no way proves the North Ten Plute deposit will attain such a depth, nevertheless, the geological conditions being similar, it is logical to suppose that the deposit has a possibility of doing so.

GRADE AND PROBABLE UNIFORMITY:

Contact metamorphic deposits formed by igneous activity and metasomatic replacement of the surrounding rocks have a tendency to irregularity in outline and a buncy variation in mineralogical content. It is to be expected in this deposit that considerable variation in tungsten content will prove to be the case. Only systematic development will prove the zones of higher values. The only indication of possible average grade available at this time is the general existence of scheelite over the whole cropping area as evidenced by the tungsten lamp, together with a number of representative chemical analysis of the material. The work so far done indicates a possible general average of 1% tungsten tri-oxide, but this work is far from conclusive.

Physical Conditions Bearing on Mining:

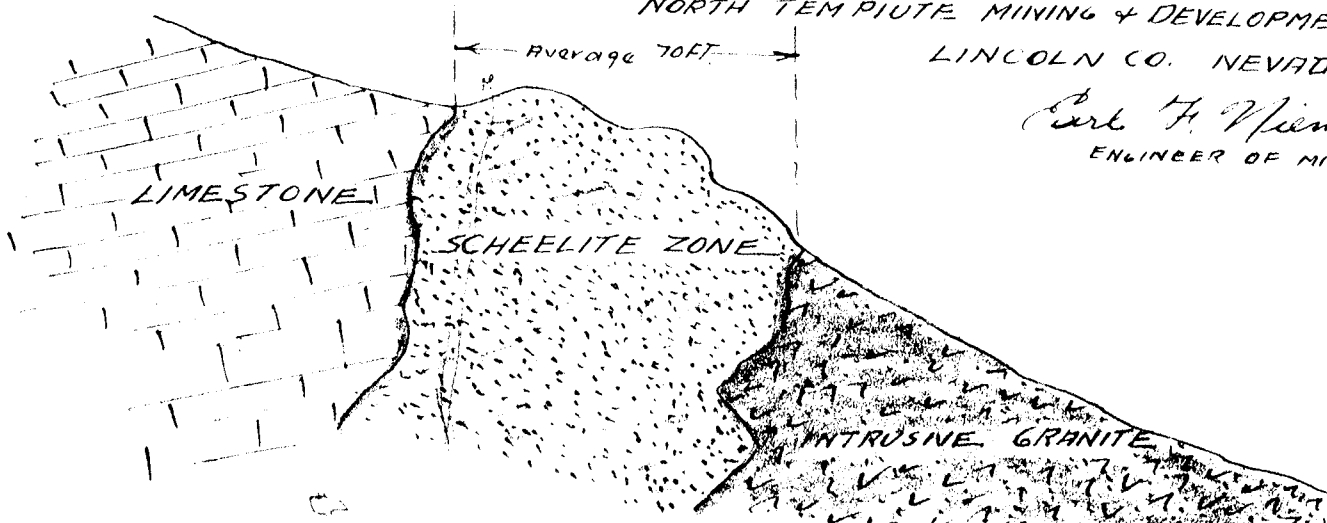
It is the opinion of the writer that preliminary surface exploration would expose in this area a sufficient tonnage of ore to warrant the installation of a 50 ton concentrator. Also without doubt a large tonnage could be mined by surface open cut, with power shovel, which would tend toward low mining costs for the first year or two of production.

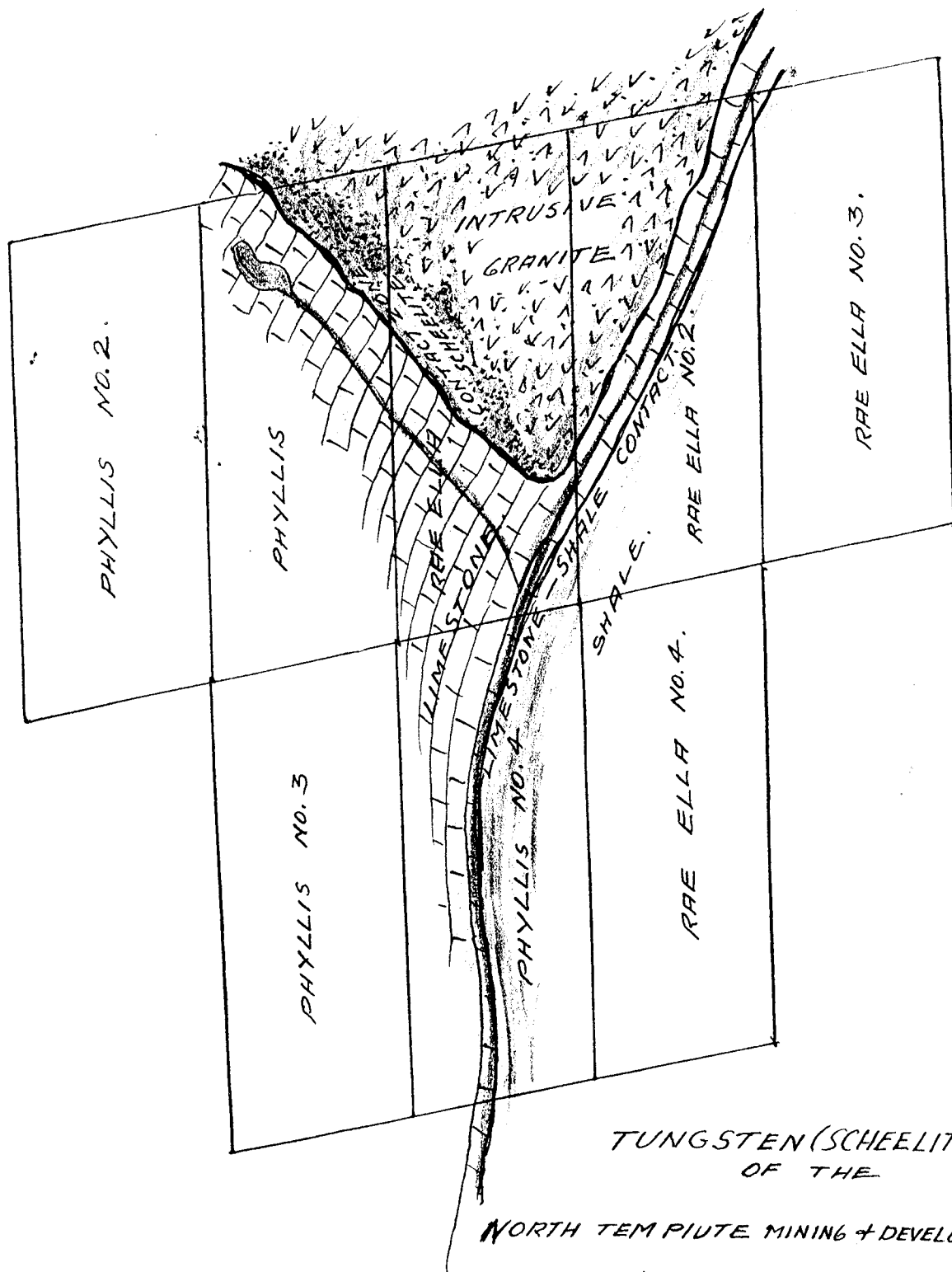


SKETCH SHOWING THE
GEOLOGY OF THE
TUNGSTEN (SCHEELITE) DEPOSIT.
OF THE

NORTH TEMPIUTE MINING & DEVELOPMENT CO.
LINCOLN CO. NEVADA

Carl H. Nieman
ENGINEER OF MINES.





Carl F. Nieman
ENGINEER OF MINES.

Mineralogical Character and Bearing on Treatment of the Ore;

The mineralogical character of the ore is similar to that of deposits being mined and treated successfully elsewhere. A gravity concentration by means of jigs and tables, with previous grinding in rod mills to prevent excessive slimeing is the probable course of procedure for the treatment of the ore. A subsequent drying of the concentrate and elimination of the garnet, epidote and pyrite therefrom by magnetic separation, should offer no difficulty in the production of a 60% Tungsten Tri-Oxide product. Water is available at a distance of 6 miles from the deposit with an entire down hill haul in favor of the load. Truck haul from the mine to the mill should not exceed 50¢ per ton .

OPERATING DETAILS;

Power will have to be supplied at least for the first operation by diesel engines, connected to generators preferably, to supply current for the operation of the mill and mine. Current should be made with diesels in this locality for under 2¢ per K.W.H.

No timber is available on the ground for mining purposes, but the underground workings will evidently stand well and require a minimum of timber. A source of supply however makes it possible to deliver rough mining grade at approximately \$30 per thousand.

Available markets for both product and supplies are Los Angeles, California and Salt Lake City; Utah.

CONCLUSION;

From an operating standpoint the deposit and general surrounding conditions offer no material obstacle to

3.

the profitable production of Scheelite concentrate.

Geologically the deposit is typical and similar deposits being in successful operation elsewhere, there is no apparent reason why this deposit should not be developed and operated with successful financial results.

Carl H. Wieman
-----E.M.
Engineer of Mines.

Salt Lake City; Utah
March 27th. 1939.

APR 8 1957

WAH CHANG MINING CORPORATION

137 CLARKE STREET
BISHOP, CALIFORNIA
PHONE 8911

April 5, 1957

Francis H. Frederick
1209 DeYoung Bldg.
690 Market Street
San Francisco, California

Dear Fran:

Enclosed is the report on the North Tempiute Mine which you were kind enough to loan us.

As you say, it is not of much value. Last year some uranium company from Utah drove a tunnel into the Moody Vein and did a few hundred feet of drifting, and then gave it up. We considered taking it over and did some long hole drilling, which showed up some ore. About that time, we ran into a big ore shoot at Lincoln Mine, and decided we didn't need the North Tempiute.

I hope you and George were successful in taking over the management of the quicksilver mine. Things are looking pretty tough in the tungsten business right now, with no stock-piling, and the world market at around \$27.00, including duty.

With best regards,



J. J. Strutzel, Jr.
General Manager

JJSjr:ml

February 27, 1957

Mr. Joseph Strutzel
Wah Chang Mining Company
Bishop, California

Dear Joe:

Here is the report I mentioned re the North
Tem Piute Mine near the Lincoln Mine.

I see that the report gives little of assay
or technical value.

There is no hurry about returning the report.

Sincerely,

FHF:ea
Enc.