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PIONEER CLAIM GROUP

1/12/56

Report by Flagg in 1921
5000 ft of drilling in 1913
One hole said to average 0.7% (Cu.?)
Another said to have cut
±400' with native Cu.

Present lease holders:

L.E. Artz
4312 N. 12th St.
AM - 5-6629
} Mountain States Mining Co.

B.E. Thurston
Tyson Ashlock (young geologist)

Presented to Anaco in May by

Frank J. Dunbar Jr. (broker)
and his associate, George Flack

Claims formerly called
New England States group.

E. N. PENNEBAKER
CONSULTING GEOLOGIST
P. O. BOX 817
SCOTTSDALE, ARIZONA

January 14, 1956

Mr. Jack A. James
Manager, Exploration Division
The American Metal Co., Ltd.
61 Broadway
New York 6, N. Y.

Dear Jack:

Re: Pioneer Claim Group
Ward Mining District
Pinal County, Arizona

COPY

On January 12, 1956, I made a brief examination of the above-noted copper prospect at the suggestion of Mr. David Moore. I was accompanied by Mr. L. E. Artz and Mr. Tyson Ashlock of the Mountain States Mining Company. A third associate, Mr. B. E. Thurston, was not present. These people apparently hold the property on some kind of a lease from the owners.

The ground was judged to have no promise for a porphyry copper ore body and to have very limited possibilities for small bodies of higher grade ore. These thoughts were conveyed to Messrs. Artz and Ashlock, who were told that this property was not of interest to Amco.

The Pioneer group consists of some 32 unpatented lode mining claims that lap across the Gila River near the railroad siding at Cochran, about 20 miles in a beeline northeast of Florence. Some of the area along the river is subject to withdrawal in case a proposed dam is constructed, although at present there is no intimation that such a dam will be built.

North of the river, bedrock consists mostly of Pinal schist containing some granitic and basic intrusives. This complex is overlain by a "schist breccia" (Whitetail conglomerate?) with post-mineral rhyolitic lavas above. The country has been tilted north and subjected to post-volcanic faulting so that some of the rhyolite occurs south of the river. In general the mountains north of the Gila present volcanic croppings whereas the schist and granite, partly obscured by young gravels, are found along the river. To the south is Precambrian granite partly masked by rhyolite.

Most of the schist is rather fresh and free of mineralization. In places it is stained by a "paint" of transported limonite, and this is particularly true of the "schist breccia" in which the faces of the fragments are coated by a dark red iron oxide.

Copper occurs locally in very limited areas. Generally it appears as the brightly colored oxides along fractures in schist, rhyolite, and in places in a dark rock that resembles a serpentinized diabase. This copper is generally a transported type derived from an unknown source. A few fractures in schist contain chalcopyrite boxwork but the general quality of this material is poor. Such mineralization was apparently localized near a granitic dike cutting the schist, although the dike itself is barren. A number of occurrences of oxidized copper are exposed at or near the base of the rhyolite. This rock is judged to be post-mineralization in age, and its contained copper is believed to have been washed in by supergene solutions. In places some chalcocite was identified in the basic rock, but this occurrence is poorly exposed.

The location of the source of the copper transported by supergene solutions is not known, but it is probably from very low-grade material in scantily mineralized bedrock. There is no indication that search for a source of commercial grade would be fruitful.

The granitic rocks are generally unaltered and unfractured. South of the river they carry a few spots of transported copper oxides.

Because of the general lack of alteration, the very scanty evidence of indigenous copper sulphide mineralization, and the localization of copper in very limited areas, this prospect is not recommended.

A short tunnel on the east exposes a pyritic zone that locally exhibits some radioactivity. This was not sufficiently exposed to demonstrate its possible worth.

Yours very truly

E. N. Pennebaker

ENP:mc

January 14, 1956

Mr. Jack A. James
Manager, Exploration Division
The American Metal Co., Ltd.
61 Broadway
New York 6, N. Y.

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Yours very truly

E. N. Pennebaker

ENP:mc

January 14, 1956

Mr. L. E. Artz
4312 N. 12th St.
Phoenix, Arizona

Dear Mr. Artz:

I am returning herewith the report by Mr. Flagg which you so kindly loaned me about a week ago.

Yours very truly

E. N. Pennebaker

ENP:mc
encl.

Said to be a report by A. L. Flagg - 1921

GEOLOGY REPORT

ON

THE PIONEER GROUP OF COPPER CLAIMS

The Pioneer Group, consisting of thirty-two claims, is located in the Ward Mining district, Pinal County, Arizona. Cochran, a station on the Southern Pacific Railroad, is adjacent and about sixty-eight miles from Phoenix. The Gila River divides the property.

The group is in a very rough, mountainous country. Elevation is 1650 feet above sea level where the railroad crosses the property. On both sides of the river, the land rises rapidly; the highest point is along the northern limits of the claims, being about a thousand feet higher and less than a mile back from the river. The climate is that which is common to mountainous districts of moderate elevation in the southwest.

It is twenty miles to Hayden where the Ray Consolidated Copper Company's concentrator, and the Hayden plant of the American Smelting and Refining Company are located. The Southern Pacific Railroad provides freight service. The nearest post office is at Kelvin.

The central part of Arizona, where this group is located, has been a prominent mining district for many years; first because of the rich silver mines and later on account of the copper mines. The old Silver King, so famous as a silver producer some thirty years ago, is directly to the north. The Ray copper camp is a little north of east, about seven miles distant. Five miles northeast in the direction of Ray is the Copper Butte Mine which has been a large producer. At one time the production there exceeded six hundred tons of shipping ore daily.

In the area under consideration, the Pinal schist, and the intrusive batholithic masses of granite, are the characteristic types of the two formations as they exist in many portions of the State. The schist belt occurs in the central and northern part of the property, while granite is the prevailing rock south and east. A rhyolite capping covers parts of the property which varies in thickness from a few feet to about four hundred feet. So far as is known, the rhyolite everywhere overlies a schist breccia, composed of small, subangular fragments of schist and cementing materials. The schist breccia shows no copper stain except in rare instances along prominent fractures where the copper may be

considered as having bee[n] precipitated by surface waters; or in certain instances alon[g] contacts between that breccia and less porous intrusives. It is possible that copper minerals were precipitated by surface waters.

Traversing the property in a general north-south direction is a wide dike of diorite, forming some of the most distinctive topographic features of the area. Bold outcrops of this dike occur in the bed of the Gila River. The rock is light gray, having a fine-grained ground-mass, through which phenocrysts of quartz, feldspar, and biotite are evenly distributed.

Besides the intrusives mentioned above, there are irregular sheets and masses of diabase, and bodies of porphyritic to granular rocks of variable character. It is believed that these last named intrusives, roughly grouped as porphyries, bear an important relation to the ore deposits of the area. In fact, it is believed that the belt of porphyry running from the northeast to the southwest, from fifty to one hundred feet in width and through the center of the property, will develop the largest bodies of commercial ore.

The development work done about 1913 consists of (A) about 5000 feet of churn drilling and (B) 1500 feet of shafts and tunnels.

The churn drilling was all done in an area roughly 1000 feet square. This area shows on the surface conspicuously red stained schist, in places leached to a light yellow color. The results of the drilling indicate copper values over this area averaging 0.763% copper. In view of the system followed in placing the drill holes, they can hardly be considered conclusive evidence in determining the value of even the schist. A study of the ground indicates that the drilling operations did not reach the porphyry belt which is believed to be the mineralized area of greatest importance. Because the porphyry dips north, the most southerly holes passed through only the oxidized portions of the belt, while the most northerly holes were not carried deep enough to reach it.

The deepest shaft is 210 feet deep. This was bottomed in schist, well mineralized and carrying 1.26% copper. The rest of the work consists of numerous shafts and tunnels, many of which supply interesting and valuable data concerning the future of the property. The only work deserving of special mention is the Alabama Tunnel and the 75 foot winze therefrom.

For a little over forty feet the Alabama adit is driven through the leached and bleached residue of what was once a well-mineralized quartz-monzonite-porphyry. As the adit gains depth the ground becomes firmer and less altered. Just before the winze is reached, a cross fracture, eight inches wide, was cut. This assayed 35% copper. Beyond this streak a ten foot zone, exceptionally well mineralized, assays 2.11% copper. Leaching copper ore could be worked as an open pit. On the hanging wall side of the ten-foot streak a winze was sunk 75 feet. The winze is bottomed in a light gray, silicified rock carrying chalcopyrite,

chalcocite, native copper and some pyrite. Samples around the four sides of the winze at five-foot intervals gave the following results: (1) 2.45%; (2) 3.12%; (3) 1.99%; (4) 1.66%; (5)2.12%; (6) 1.42%; (7) 1.99%; (8) 0.95%; (9) 1.54%; (10) 1.85%; (11) 1.08%; (12) 1.15%; (13) 2.00%. A composite of the rejects from the above samples assayed 0.70 oz. silver and 0.03 oz. gold.

Samples in the adit beyond the winze taken at intervals of five feet assayed as follows: (1) 2.11%; (2) 1.25%; (3) 1.16%; (4) 2.13%; (5) 0.12%; (6) 0.12% copper.

At the extreme eastern end of the property some very high grade copper ore was opened up. This ore consists of cuprite (copper oxide) and native copper, accompanied by high silver values. The ore occurs next to the south porphyry. The ground from this point northward to the north porphyry appears to have been well mineralized. The full extent of this mineralization has not been definitely proven but it is known to be over one hundred feet.

The old Alabama claim is the logical place for the initial deep prospecting. The ore zone which seems to be the longest, widest, and most likely to produce the largest tonnage of ore can be most advantageously developed by a shaft not far from the Alabama tunnel. Because of the great length of this ore zone, more than one shaft will be required to develop it. The first work, however, should be done at a point where the conditions are best understood. The site selected for the first shaft is such that if any shipping ore is developed in sinking it can be delivered to the railway in an aerial tramway and loaded direct onto the cars. For this reason ore can be put into the smelter for less than it is costing some mining companies to place their ore aboard the cars.

The ore zone on which the Alabama tunnel is driven has been prospected for fully a mile along the strike. Over this distance the width varies from fifty to over one hundred feet. Though leached at the surface, this zone, wherever opened up is well mineralized. In every instance where work has been carried deep enough to encounter primary ore, it has been found to be of good grade. The earlier prospecting has shown clearly the area within which ore bodies shouldbe sought. The more recent work has demonstrated that still deeper work will possibly open up large bodies of commercial grade ore. Thus several shafts and tunnels sunk into the Alabama and the iron dike that extends for 6000 feet east to west are in shipping ore.

After a thorough study of conditions, checked by sampling, the only conclusion to be drawn is that the property is one of merit which may become a profitable producer of copper.