Fairbanks Precinct

College, Alaska
November 6, 1945

Kantishna District

Howard G. Wilcox
Professional Mining Engineer

Mr. Fred D. Crane
c/o McLaughlin Securities Co.
25 Broad Street
New York, New York

Dear Mr. Crane:

Notwithstanding the assays obtained by the U. S. Bureau of Mines and the estimates of ore reserves made by the United States Geological Survey; the mining of the irregular orebodies would be attended by dilution and resultant lowered metal content, and the difficulties encountered in concentrating the ore would lower the recovery so that these orebodies could not be mined at a profit at this time.

I appreciate having had the opportunity of examining this property for you and regret that circumstances have delayed sending the report at an earlier date.

Sincerely yours,

(Sgd) Howard G. Wilcox

GRANT LODE CLAIMS.
Mount McKinley National Park, Alaska

The group consists of 20 unpatented lode claims situated on the north slope of Mount Eielson and Copper Mountain at an elevation ranging from approximately 2400 to 4700 ft. The claims are across Thorofare river flats, 2 miles from Camp Eielson which is on the McKinley Park Highway. McKinley Park Station on the Alaska Railroad is 70 miles from Camp Eielson.

There is no timber within several miles of the property; the mountain slopes are fairly steep but a cat trail could be constructed to most parts of the claims.

Twelve claims are owned by O. M. Grant and eight claims by Mr. Lis McCarvey. The Grant claims are named: Zelma, Lois, Florence, Venora, Ruth, Dee, Mary, Lillian, Eva, Wolf, Churchill and Radio. The McCarvey claims are named: Seal, Mink, Martne Weasel, Wolverine, Fox, Beaver and Bear.

Title to some of the claims appears to have changed between Mr. Grant and Mrs. McCarbey lately. The listing above is according to Mr. Grant's records at the time of the examination. The claims owned by Mrs. McCarvey are marked on the accompany- blueprint. The unmarked claims are Mr. Grants.

The first claims were staked on Mount Eielson in 1920. In 1921, Grant and Giles located 22 claims which they leased to Tom Aitken in 1922. In 1925, Aitken subleased to the American Smelting and Refining Co, and in 1925 the property reverted to O. M. Grant who has held most of the ground since then. There has been no production from this area.

The geology of the district has been described by John C. Reed in U. S. Geol. Survey Bull. 849-D. Clyde Wahrhaftig made some detailed geologic maps of mineralized areas on these claims for the U. S. Geol. Survey in 1945, and the U. S. Bureau of Mines took 26 samples. Wahrhaftig's report and the U. S. Bureau of Mines assay returns are included with this report.

The granodiorite mass that comprises Mt. Eielson is covered on the north flank by a series of sedimentary beds composed principally of thin bedded limestones with minor beds of shale and graywhacke. Numerous granitic dikes and sills have intruded the sediments. More recent fine grained acid and basic dikes also have been intruded into the sediments. Locally, the limestones have been replaced by epidote and locally, the epidote has been replaced by metallic sulfides.

The valuable sulfide minerals in order of decreasing amounts are sphalerite, galena, chalcopyrite and tetrahedrite. Minor amounts of malachite and azurite are present and minor silver and gold values accompany the sulfides.

The country rock has been spotily replaced along bedding planes and along the borders of dikes, by the sulfide minerals. Plate 3-A of Wahrhaftig's report shows such irregular replacement, and the irregularity of the mineralization in the replacement area is indicated by the direction of samples E 17, E 18, E 19 and E 22. Irregularity of mineralization is also indicated by the samples shown on plate 4-B.

The large area in which the numerous outcrops occur does not indicate a large orebody. The individual bodies are small and irregular and the mineral occurrences do not follw a definite pattern. No definite relationship is apparent between the sulfides and the gold-silver values.

The arithmetical average of 26 U. S. Bureau of Mines samples shows silver 1.72 ounces, copper 0.46%, lead 4.04%, zinc 5.36%. The Virginia claim shows the highest arithmetical average values of any claim, 5.5% lead, 6.4% zinc, 215 ounces silver, 0.5% copper with a trace of gold, U.S.B.M. figures. The weighted average would be somewhat lower. A sample but by the writer on the west side of Grant Creek where the U.S.B.M. grab sample E24 was taken, assayed 0.08 ounces gold, 3.02 ounces silver, 1.62% lead, 3.13% zinc. Four samples were cut as checks on U.S.B.M. samples and our checks ran somewhat under the U.S.B.M. assays on lead, zinc and silver, but the sample past noted ran higher in gold.

The development work that has been done on the property has consisted of several open cuts and four short tunnels, three of which are caved. A body of ore that would be large enough to be considered as mineable has not been developed. While the mineralized showings have been shown over considerable horizontal and vertical range, no one body has shown a continuity of width or values that would make an estimation of ore reserves for mining purposes justifiable. And further, more, exploration to determine the probable continuation in depth of any of the showings that are now visible is not warranted. An outcrop near the southern boundary of the Lillian claim is shown on Fig. 2 U.S.G.S. map. An orebody about 8 ft.

wide is exposed intermittently for 150 to 200 ft. up the mountain and a relatively high percentage of sulfides is exposed in the outcrops. This body cuts across the formation and the metal content and extent make it worthy of investigation if any development work is to be undertaken.

A small cabin is located at the edge of Thorofare River flats about a mile from the claims. A few hand tools, blacksmith forge, etc., are on the property.

The property could be connected with the road to Mt. McKinley Park Station by building six miles of road. The road crosses Thorofare river flats which could be crossed except for a short time when the river is unusually high. A cat road could be constructed for $1500 but an automobile road with a span acrossthe river would cost $40,000 to $50,000. Haulage by cat would cost about $0.50 a ton mile and auto freighting about $0.10 a ton mile.

The table of freight rates indicates that total transportation charges to East Helena are about $55.00 per ton of concentrates.

A copy of U. S. Bureau of Mines metallurgical tests that were made on a composite sample from the Grant prospect is included with this report. The rejects from 18 of the 26 samples taken were used for the test. The samples which were not used ran under 7% combined lead and zinc. Previous tests by other laboratories had indicated concentration of the ore was unsatisfactory.

The test showed grinding to 150 to 200 mesh released about 95% of the sulfides but grinding to minus 325 mesh gave only slightly better recovery than grinding to minus 65 mesh. The composite sample assayed 4.22% lead and 5.27% zinc, but recoverable percentages were 2.51% lead and 4.02% zinc.

Recoverable values are $5.26 a ton in lead and $6.60 in zinc with possible $1.00 a ton in silver which would give a gross value per ton of $10.86. However, the lead concentrate only carries $47.29 in lead and the transportation and smelting charges nearly equal this amount. The zinc concentrate assays $81.67 per ton.

It is apparent from the above figures that an improvement in metallurgy is necessary before even a large body of the grade indicated would be profitable.

Wahrhaftig's U. S. Geol. Survey report on the "Zinc Deposits of the Mount Eielson District", the U. S. Bureau of Mines report, "Concentration of Lead-Zinc Ore from the Grant Prospect", and a copy of the assay certificate with widths of veins noted, a copy of assay return on samples taken by Wilcox, a table of freight rates, five blueprints, and photographs of the property are included as a part of this report.

JUN 4 - 1947

J. D. STEWART
Commissioner of Mines

Art!
I found copy of Welcome
Report on MT Evelson;
Please give to Mr Stewart
for his files. Fred

memo by Fred Lorenz