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C. C. BOAK
MINES AND MINING
TONOPAH, NEVADA

May 27, 1945

Nevada State Bureau of Mines,
Mr. J. A. Carpenter, Dir.
Reno, Nev.

My Dear Jay:

Agreeable with your request of the 21st I am enclosing form request that the U.S. Bureau of Mines, release to you their report on my Iron King iron deposit in Esmeralda County, Nev. I note you gave it as "Churchill Co.," which is in error.

I am also pleased to hand you my own data on this deposit, with analyses and assays of the iron, as sampled by actual operators. Part of these results were reported to me by Mr. C.T. Keigley (now deceased) Manager of the Columbia Steel Co., Provo, Utah. Mr. Keigley hade two trips here a few years ago. He liked the ore and wanted it and would have written me his check in full in a minute if he could have gotten a satisfactory freight rate from the railroads, to their Provo smelters.

Some others of the samplings were reported to me by the Henry Kaiser organization. They also spent some time wrestling with the railroads trying to get a low freight rate to their plant at Fontana. They like the iron.

I gave an independent iron operator a long term lease on royalty basis about 18 months ago, after he had sampled every deposit in Nevada. He preferred my iron. He was about to erect a plant right at the mine to make quite a heavy prodiction and had most of his equipment arranged for, when his financial backer, an oil man, died suddenly. He was therefore compelled after making several advance royalty payments, to relinquish his lease.

This iron and the Coaldale coal should be considered together. I understand the coal cokes nicely.

Yours with best wishes,

C. C. Boak

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IRON KING MANGANIFEROUS-HEMATITE DEPOSIT:
By
C. C. Boak

LOCATION: The Iron King Deposit of manganiferous-hematite is situated 1½ miles northwest of the old camp of Columbus, in Columbus Mining District, Esmeralda County, Nevada. It is ½ mile from the western edge of Columbus Marsh and 4 miles from Rockhill Siding, on the Tonopah and Goldfield Railroad, which parallels U. S. Highway No. 95, and is a like distance from U. S. No. 6 paved highway - direct route to Los Angeles and Salt Lake. It is distant about 12 miles from Coaldale, where are situated large deposits of coal which are being proven by drilling operations, both by government agencies and private parties. This coal is said to be a good coking coal and no doubt can be used for fuel if sponge iron is to be made. Tonopah, the commercial center, is 50 miles south.

DEPOSIT AND GEOLOGY: The deposit comprises a small mountain and is about 500 feet in width where completely exposed, plus lesser parallel ore bodies, by about 2,500 feet in length, easterly and westerly.

The footwall country is granite, the erosion of which has formed a deep wash on the south side of the ore body. The hanging-wall country is lime with quartzites overlapping from the west end portion. The ore body rises quite steeply from the south side to a heighth of about 200 feet above the canyon floor, rendering it ideal in every way for the cheapest possible mining - that is, by power shovel. The dip of the ore body is about 35 degrees.

The major portion of the ore body is metallic and, as far as sampled, (it has never been drilled) runs from a low of 45% to a high of 68% hematite, plus varying percentages of manganese oxide, running in places to as high as 10%, but on the average considerably less, with only a trace of silica and practically a total absence of phosphorus, making it a highly desirable product. A recent sampling of the deposit, the results of which were given me, by a well known steel company, gave the following results:

Iron	Manganese
57.0%	2.90%
50.60	3.21
45.5	0.60
58.0	1.50
51.4	7.20

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An analysis by the State Analytical Mining Laboratory gave the following:

Iron	62.00%
Manganese	0.18
Phosphorus	Trace
Insoluble	2.06
Calcium Oxide	0.10
Vanadium	None

Further assays and analyses, on ores:

By Hanks:

1.

Silica	4.84%
Iron, 52.51, calculated to Ferric Oxide	75.07
Aluminic Oxide	2.21
Calcium Oxide	Trace
Magnesium Oxide	0.75
Manganese	1.89
Phosphorus	0.105
Sulphur	0.49
Copper Oxide	None found

Specific gravity 3.185

2.

Silica	3.07
Iron, 55.09, calculated to Ferric Oxide	78.75
Phosphorus	0.040
Sulphur	0.27

By Union Assay, (Selby):

Silica	4.40
Iron, 56.00, calculated to Ferric Oxide	79.00
Magnesium Oxide	0.57
Manganese Oxide	2.52
Aluminic Oxide	2.19
Phosphorus Oxide	0.27
Zinc Oxide	1.37
Lime	0.20

Specific gravity 3.48
Combined Alkali Chlorides 9.73

Portions of the ore body carry considerable lime and will probably be found to be self fluxing. In addition to the metallic iron, there is a sizable tonnage of red hematite suitable in every way for the pigment trade. Very recent samplings of this "paint" show it carries a higher iron content than does the metallic iron.

DEVELOPMENT WORK: A perpendicular shaft was sunk on the foot-wall side to a depth of 65 feet, all in pigment grade hematite. A tunnel 75 feet in length and numerous other openings are in the ore body.

WATER: Water can be had in quantity by sinking shallow wells on the edge of Columbus Marsh. The camp, mines and mills of old Columbus were thus supplied.

ELECTRIC POWER: The electric power lines serving Candelaria and other nearby mining camps and communities pass within a few miles of this deposit. The heavy lines of the California Electric Company, serving most of Southern Nevada, can be tapped at Silver Peak.

TRANSPORTATION: Via the Tonopah and Goldfield Railroad from Rock Hill Siding, connection is made with the main line of the Southern Pacific Railroad at Hazen, Nevada, thence to all Coast points. Going south, the railroad ends at Goldfield. (The link between Goldfield and Las Vegas was discontinued many years ago.) There are direct paved highways to both Los Angeles and the San Francisco Bay areas - Los Angeles, 345 miles; San Francisco, 436 miles.

IN GENERAL: This deposit of manganiferous-hematite is rated by informed iron authorities as one of the most desirable in this portion of the West.

The deposit is at an altitude of 5,800 feet and is well out of the snow belt and can be operated at all seasons of the year.

A spur railroad from Rockhill Siding can be extended to the deposit very cheaply as it will follow water level most all the way.

~~The Coaldale coal deposit is distant about 8 miles air line.~~

The ore can be delivered by gravity tram to an advantageously situated plant-site near the marsh.

TONNAGE: As the deposit has never been drilled, engineer's estimates of a minimum of a million tons and from that on up are necessarily based on visible area, heighth above the wash, and development work done. It is a safe assumption that a much greater tonnage can be expected as excavating progresses or the ground is drilled.

Respectfully

C. C. Boak

Tonopah, Nevada
September, 1944