REPORT

OF

PRELIMINARY EXAMINATION

OF THE

WIGWAM MINE

REVELSTOKE.B. C.

To:- E. A. Julian,
Goldfield Consolidated
Mines Exploration Co.

By: Chas. C.Starr,
July 12th.,1933.

INTRODUCTION:

Three full days were spent on the examination of the property which was shown by Mr. Herbert Brewett, the President of the Company. Sampling was done by two miners under close supervision and samples were assayed by R.W. Widdowson of Nelson.

LOCATION:

The property is situated on Isaac Creek (Akolkolex River) six and a half miles north east from Wigwam Station on the Revelstoke-Arrowhead branch of the C.P.R. It is in the Revelstoke Mining Division, Kootenay District. At present trains operate twice a week in each direction over the railroad. Wigwam Station is seventeen miles south of Revelstoke; the Revelstoke-Arrowhead highway is on the opposite side of the Columbia River from the mine and railway, and there is no road connection between Wigwam Station and the highway. The road between Wigwam Station and the mine is easily traversed by autos and trucks.

PROPERTY:

The group of claims examined consists of sixteen claims, seven of which have been surveyed, but Crown Grants have not been applied for. The other nine claims have not been surveyed. Assessment work on all claims has been done and recorded for five years in advance. The camp site is included in the group.

TOPOGRAPHY:

Elevation at the Columbia River is approximately 1500 feet, and 2100 feet at the camp site which is in the Isaac

Creek valley. The claims extend diagonally along a steep mountain side from an elevation of 2100 feet to approximately 4500 feet at the summit. The side slopes of the mountain, where crossed by the ore bodies, average between 30 and 40 degrees and are subject to snow slides in the winter. Good tunnel sites are available for the development of the property, but safe camp sites near the workings are difficult to find.

TIMBER:

There is a large amount of good timber in the valley, but it is rather scarce close to the workings.

POWER & WATER:

Isaac Creek contains a very considerable flow of water at all seasons, and at about five miles below the property there is a fall of four hundred feet in a distance of about six hundred feet. The available power here at low water is said to be about four thousand horse power and it could be developed very cheaply. The rights to this power are said to be held by the Wigwam Mining Company. There is sufficient water for camp and mine use above all the present workings on the property.

EQUIPMENT:

Camp buildings consist of an office, boarding house, bunk house for about a dozen men, and a stable, all equipped for immediate use. A small electric generator suitable for lighting and driven by water power is situated a few hundred feet below the camp.

The power plant is situated about a quarter of a mile below camp, on the road. It consists of a single cylinder, (10" x 12") Sullivan Air Compressor rated at 280 cubic feet per min., capacity driven by "Caterpillar 60" engine using gasoline.

Air is piped to No.II and No.I3 tunnels through 4000 feet of two, and two and a half inch, pipe. At the No.I3 tunnel there is a No. 3I Ingersoll Rand drill sharpener and one Ingersoll Rand drill. There is a track and cars in the principle tunnels and other equipment required for a limited amount of development.

GEOLOGY:

The general geology of the district is covered in Memoir I6l, by the Canada Geological Survey, "Lardeau Map Area of B. C." ; the geology, following, has in part been taken from this Memoir.

The Wigwam ore deposits are included in the limestones of the Badshot formation of late pre-Cambrian age. Mineralization occurs in a wide band of white or grey crystalline limestone of somewhat variable strike and dip, but averaging about N.30° W. and dipping on the average about 23° N. E. Below these limestones, which are marblized and silicified, is a series of quartz mica schists, argillites, and quartzites, and above them are a series of carbonaceous schists. There is much minor folding and dips and strikes are quite variable. Both the silicified material and the marble have been replaced by pyrite, pyrrhotite, sphalerite and galena. Pyrrhotite is the most abundant metallic mineral. In general the sulphide replacement has occurred along the bedding planes as narrow, comparatively regular, bands alternating with unreplaced marble. It seems evident that siliceous mineralizing solutions penetrated the bedding from below, affecting a wide silicification. Later the sulphides were introduced in a like manner.

The more important ore bodies appear to be confined to a width of somewhat less than 200 feet of limestones near the middle of the formation. The three most important bands are numbered I, 2, and 3 from the bottom upward, and are approximately 70 feet and 120 feet apart horizontally. They appear to have very good continuity for a distance of at least 3000 feet although ore is not continuous over this distance, and the separate bands cannot often be indentified. In addition there are more or less local mineralizations above these three main zones, some of which have been explored by open cuts and tunnels.

DEVELOPMENT and WORKINGS:

The chief workings, and the best showing, extends across the Wigwam No. 2 and the Lloyd George mining claims, (see map.) For some distance eastward from the Crooked Tunnel the ore zone has been stripped at close intervals for about 500 feet but it is not certain whether this represents the No.1 or No.2 band. In practically all places, the sulphides have been completely oxidized and only a leached gossan remains. The Crooked Tunnel is about 30 feet in length and shows ten or twelve feet of sulphide ore striking N.30° W. and dipping 10° W., which is a reversal of the ordinary dip. No. 13 tunnel starts in a large open cut which shows 14 feet of ore striking east and west and dipping ten degrees south. A short distance from the portal the tunnel passes into the foot of the ore body and was then turned to crosscut the stratum where the ore body should be, but did not expose any commercial ore. It seems probable that this is the No. 1 band of ore.

No. II tunnel starts on the No.2 ore band which shows a width of about 16 feet at the portal of the tunnel but within a short distance the tunnel passes into the footwall. A crosscut 50 feet to the westward encounters the No.1 ore band which was followed a distance of 75 feet showing an average width of 6 feet. The average strike is north and south and the dip 20° east. A crosscut was also run to the north east and cut the No.2 band at a distance of 200 feet from the surface, from which point a drift follows the ore for 135 feet. It shows an average width of 10 feet, a strike of N. 18° W., and dip of 28° eastward. The No. 3 ore body was opened from this drift by crosscuts and raises and shows a width of 17 feet and a strike of N.30° W., and dip of 27° eastward. The ore in all three of these bands is of the same character, consisting of the metallic sulphides in narrow bands along the bedding, or occasionally in massive streaks of a foot in thickness. Throughout this tunnel, the ore bands are quite regular and definite, and appear to be quite favorable for considerable extension. All ore is unoxidized except in the No. 3 band, where there is four feet of gossan in the east raise along the hanging wall; in the west raise there is only about a foot of gossan.

Above No.II tunnel gossan outcrops and some bodies of sulphide ore have been opened for a distance of several hundred feet by cuts and trenches . It is not certain which ore band is exposed in most of these cuts. Across the Wigwam No. 4, claim the same ore bands have been opened at greater intervals

but do not appear to be as wide or strong; they are represented by gossan only in most cases. The Gold Tunnel does not show any ore; it is an old tunnel driven on quartz carrying low gold values. The Sleepers Tunnel does not show anything of particular importance except that it is on the course of the ore zone. Westward from there the vein is said to show at intervals throughout the length of the property but was not inspected during this examination.

No.I tunnel, about 20 feet long, shows limestone with a strong impregnation of pyrrhotite and pyrite, but with little lead or zinc. It is likely that this is above No. I ore band.

The Galena Tunnel is driven in massive white marble lying stratigraphically above the other ore beds, it shows irregular small bodies of cube galena but does not appear very promising.

The Ice Tunnel is driven below a limestone bed showing gossan and some sulphides, mostly iron, lying stratigraphically above the main ore zone. The tunnel cuts and follows for 250 feet a zone of oxidized material varying from one to seven feet in width, striking N.20° E., and dipping about 27° eastward. No samples were taken of this gossan as it appears to have been thoroughly leached and there is little sulphide ore; it pinches at both ends of the drift.

A large amount of diamond drilling was done on the property, as indicated on the map. Only a small percentage of core was recovered and oxidation was shown to extend some distance from the surface at many points. The values obtained

from the small amount of drill core recovered, ~~was~~ Were in general disappointing and it is not unlikely that the better grade of ore was largely ground up. It was difficult or impossible with the limited time available for the examination to correlate the drill core results with the surface exposures and it appeared advisable to neglect these results in connection with the preliminaty examination of the property.

SAMPLING:

Twenty-eight mailed samples were taken on the propaty, most of them from the No.II tunnel, and should closely represent the value of the ore in this tunnel: the assays are listed on a separate sheet herewith.

The average of the No. I ore band in the No.II tunnel is 5.9 feet, with unimportant gold and silver, 2.4% lead, and 3.7% zinc. The average of the No. 2 ore band is 8.5 feet, carrying a little gold and silver, 1.7% lead and 3.5% zinc. The average of the No.3 ore band is a little greater in width but lower in value.

GENERAL NOTES:

The geology of the deposit is simple and favorable. The outcrops of gossan and sulphides extend over a long distance with apparently good regularity and it is presumable the same conditions will continue underground; there is no evidence of any important faulting.

It was noted in the Canadian Geological Survey Memoir that the ore generally occurred in the flatter parts of the bed but this is not very evident, if true at all. At a number of points the strata at the surface are bent from their normal position to partially follow the slope of the hillside.

Mining costs should be low since the ore drills and breaks well (during development work an average advance of over four feet per shift was made). The ground stands well in the drifts, but it is probable that the hanging wall, at least at moderate depth, will be found soft and cavey in stopes. There is every reason to expect good results with concentration by oil flotation, but the ore would require quite fine grinding since it is a very fine grained mixture of iron, lead and zinc sulphides.

CONCLUSION:

While there are many favorable and attractive features on the property the values thus far developed are in general too low to constitute commercial ore. Although it is perfectly possible that better ore might be found on further development underground, there is no valid reason to expect any radical change for the better, except that in depth the gossan will give place to sulphides.

I consider that the property has sufficient merit to justify an owner in doing further underground exploration, but insufficient merit to justify the working of the property by an outsider under a lease and bond, even at a very low purchase price.

Respectfully submitted,

Chas. C. Starr

SAMPLES:

No.	Location	Ft. Width.	Oz. Au.	Oz. Ag.	% Pb.	% Zn.
2221	Cut 50' W. of D.D. Hole #20	9.0	Tr.	.35	.26	3.73
2222	Cut 25' N.W. of D.D. Hole #25	3.1	.01	.73	12.50	.65
	On No. 2 Ore band in #11 Tunnel.					
2223	At Portal Ft. side	7.0	.01	.37	1.84	5.70
2224	Contin. of 2223. center	3.1	Tr.	.45	3.1	4.40
2225	" of 2224 except 5ft. of waste between. Hg. side.	5.3	.01	.19	4.35	.75
2226	56 ft. from portal	5.0 +	Tr.	.17	3.20	4.70
2234	At X-cut	8.4	Tr.	.25	1.05	3.75
2235	40 ft. N. of X-cut	7.4 +	Tr.	.15	1.15	3.25
2236	88 ft. N. of X-cut	7.2 +	Tr.	.15	1.78	4.15
2237	127 ft. N. of X-cut-on Ft.	4.4	Tr.	.17	1.57	2.60
2238	127 ft. N. of x-cut-on Hg.	4.5	Tr.	.15	.47	1.87
2239	At face	7.0	Tr.	.25	1.94	3.03
	On #1 Ore Band in #11 Tunnel.					
2227	In X-cut at drift	4.7	.01	.47	3.35	6.20
2228	In drift 25 ft. from X-cut	5.0	.01	.45	3.46	5.87
2229	In drift 48' from X-cut; on ft.	4.5	Tr.	.37	.84	2.50
2230	Contin. of 2229; on Hg.	3.0	.01	.37	1.73	1.80
2231	In drift 62 ft. from X-cut	4.9	Tr.	.15	.37	1.95
2232	At face drift on Ft.	4.1	.01	.37	6.25	5.70
2233	Contin. of 2232 on Hg.	3.1	nil	.10	.34	.27
	On #3 Ore Band in 2nd. Raise in #11 Tunnel.					
2240	At top raise - on Hg. 1 ft. oxidized above.	4.5	Tr.	.23	.42	3.00
2241	Contin. of 2240 to Ft.	12.0	.01	.24	.31	1.77

SAMPLES CONT'D.:

No.	Location	Ft. Width.	Oz. Au.	Oz. Ag.	% Pb.	% Zn.
	On #3 Ore Band in Ist. Rz. in #II Tunnel.					
2242	At top raise - on Hg. 4 ft. Oxidized above.	4.0	Tr.	.27	I.I5	5.80
2243	Contin. 2242	4.8	Tr.	.29	.52	2.05
2244	Contin. 2242 to Ft.	8.0	Tr.	Tr.	.52	I.I2
	Near Portal #I3 Tunnel.					
2245	On Ft. at portal	7.5	Tr	.10	.52	.65
2246	Contin. 2245 near portal	5.8	Tr	.21	1.67	7.8
	Galena Tunnel					
2247	Sorted ore on dump	--	.03	4.1	71.9	1.05
	Crooked Tunnel					
2248	At raise - on Ft. some ore above this.	5.3 +	Tr	.21	2.45	3.0

Property File
082KNW068

COPY OF THE ASSAY CERTIFICATE
Nelson, B.C., October 23, 1931

Description	Gold Ounces	Value at $20 per Oz.	Silver Ounces	Value at __per Oz.	Lead Percent at __per lb.	Zinc Percent	Total Value Gross
Sample #10 A	.01	20¢	.62	19¢	6.8	8.2	$11.57
11 A	Trace		.64	19¢	7.2	9.2	12.29
1 B	Trace		.62	19¢	6.8	8.7	11.72
2 B	.01	20¢	.78	23¢	5.9	8.0	10.75
3 B	Trace		.66	20¢	7.9	10.1	13.59
4 B	.06	$1.20	.58	17¢	6.4	9.2	12.93
5 B	.04	80¢	.62	19¢	14.3	8.3	18.24
10 B	.01	20¢	.38	12¢	8.4	7.2	12.08
11 B	.01	20¢	.50	15¢	6.1	7.8	10.69
6	.01	20¢	.82	25¢	5.8	9.3	11.60
7	.01	20¢	.66	20¢	11.9	7.7	15.31
8	.01	20¢	.62	19¢	11.0	7.5	14.44
9	Trace		.58	18¢	8.9	6.8	12.06
1 A	.01	20¢	1.16	36¢	13.1	9.6	17.76
2 A	Trace		.85	26¢	9.4	9.1	14.15
3 A	Trace		.46	14¢	3.7	6.8	7.86
4 A	.01	20¢	.42	13¢	6.4	9.7	12.24
5 A	.01	20¢	.82	25¢	12.4	7.0	15.27

Signed E. W. Widdowson
Provincial Analyst

COPY OF THE ASSAY CERTIFICATE
Nelson B. C. October 22, 1931

Description	Gold Ounces	Value at $20 per Oz.	Silver Ounces	Value at ___per Oz.	Copper Percent at __per lb.	Lead Percent at __per lb.	Zinc Percent	Total Value Ton
Sample No. 5	.03	60¢	1.06	32¢	traces	15.7	7.3	$18.59
					55.80%			
Silica					5.86%			
Iron					8.02%			
Sulphur					.67%			
Alumina					4.80%			
Lime					1.45%			
Magnesia					Traces			
Cadmium					Traces			
Manganese					none			
Antimony					none			
Arsenic					none			
Bismuth					none			
Nickel					none			
Tin								

Signed E. W. Widdowson
Provincial Analyst