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B I G H O R N , B E T H , C O M M E R C E , F O R U M , L I N , O P A L A N D S A G E C L A I M S .

EDMONTON, Alberta

January, 1972

E. GOBLE

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Spring Program

We intend to carry out an initial field program from mid-April until late June, 1972, the main objective of this program being to provide a strong base on which we will go public in July and which will provide good support for the public shares. As recommended by our consultant, Dr. R.D. Morton, we will begin our program by sampling and mapping the various company properties. This will be done in succession as each becomes clear of snow in the spring, commencing with the Bighorn claims in southwest Alberta.

Subsequent to staking the initial group of ten claims in 1963 numerous assayed samples have been taken, the results of which induced us to stake a further sixty-five claims to cover the discovered mineralization. Many of these assays are reproduced later. However, little attempt was made to map or to correlate the assayed beds and this will be of primary importance in the project. From having worked on the property we now know which beds are correlative and foresee no problem in proving continuous surface showings of good Cu mineralization. Essentially we intend to duplicate the original good samples, to take additional samples from the same mineralized beds between the primary sampling sites, and to map and correlate the sections. The main targets of this program on the Bighorn claims are:

- a) A 5-8 foot thick bornite-covellite-chalcocite mineralized quartzite bed continuous along strike from just north of Yarrow Creek,

through the Blind Canyon to just south of Spionkop Creek, approximately three miles, with Cu values from 1-2 1/2 percent:

Spionkop Quartzite

Ag	Cu	
.10	.51	W.N.W. main area, near Spionkop Creek
tr	.65	
.10	.83	
.20	.71	
.10	.30	
	1.08	Same area as Copper bearing diorite sill
	1.12	
	5.71	

The assays from the Yarrow/Blind Canyon portion of the bed are given in Table 4 on page 12.

b) A 12 to 30 foot thick diorite sill with a 3-8 foot chilled margin, described by R.W. Stevenson of Kennco Explorations (Western), Ltd. as containing approximately 1 million tons of mineable ore grading from 1.83 to 3.45 percent Cu and with up to 0.86 ounces per ton Ag. Since this report was prepared by Mr. Stevenson, five additional sills below the first have been found, from 6 to 12 feet thick, exposed 500 to 1500 feet along strike. The main sill described by Stevenson shows zonation of copper minerals from a pyrite-chalcopyrite assemblage through chalcopyrite, chalcopyrite-bornite, bornite, and bornite-chalcocite to a central chalcocite zone. Each zone is completely gradational into the next and in all cases the mineralization is in the form of disseminated sulphides. The one million tons estimated by Mr. Stevenson includes the bornite, bornite-chalcocite, and chalcocite zones, with the copper values

gradually decreasing both north and south of this area to approximately 0.25 percent Cu and 0.10 to 0.5 ounces per ton silver. An interesting silver assay was taken one-half mile northwest of the bornite-chalcocite zone of the sill, where a sample in the chalcopyrite zone of the same diorite sill ran 8.72 ounces per ton silver. The assays taken from the Spionkop intrusives are given in Table 1 page 10.

c) A high silver showing on Yarrow Creek near the south end of the quartzite bed mentioned in a), which assayed at 59.38 ounces per ton Ag and 3.7 percent Cu; and a 2.22 ounces per ton silver showing in the apparently unmineralized central portion of the main diorite sill where it crosses Yarrow Creek plus other silver bearing samples indicate that those portions of the Yarrow area should be carefully prospected and sampled for silver. See Table 2.

d) An area of old trenches where faulting has apparently pushed mineralized Appekunny strata into the lower Grinnell. The quartzites/sandstones found in this area are identical with the upper Appekunny quartzites except these are much richer in copper. In 1965, F. Goble drilled a shallow X-ray hole here which remained in mineralized quartzites until it was stopped at 32 feet. Approximately 2000 feet southeast of the trenched area, a 65 foot section of upper Appekunny quartzites which although very strongly leached still carry pyrite and chalcopyrite, may represent the surface equivalent of the better mineralized showing at the trenches. See Table 3.

e) An area of high bornite/covellite assays, approximately 1000 feet x 300 feet, covering roughly 200 feet of section in the upper Grinnell north of Yarrow Creek, of which one (the lowest)

quartzite is the southern end of the bed described in a). These quartzites are mineralized in varying proportions by chalcocite, chalcocite-bornite, bornite, bornite-covellite, bornite-chalcopyrite, and chalcopyrite assemblages with most being chalcocite-bornite, bornite, bornite-covellite. In addition to the quartzite of a), several of these beds extend more than 1000 feet to the southwest. Many assays as presented in Table 4 have been taken:

f) The numerous 6-10 feet thick diorite dykes and sills north of Yarrow Creek which carry disseminated chalcopyrite and/or bornite and chalcocite, and which have been found to contain veins of covellite and bornite 1/4 inch x 2 inches where blasted, see Table 5.

g) The high lead-zinc area of the Siyeh approximately 1000 feet northwest of f) where all of the dykes and sills assayed carried 0.25 to 0.50 percent Zn, and a quartz-calcite vein with galena and chalcopyrite, assayed at 1.3 percent Cu, 4.3 percent Pb, .50 ounces Ag, .01 ounces Ag. The remainder of the Siyeh sequence in the Blind canyon has not been prospected although in 1967 Kennco found that black shales in the upper Siyeh contained pebbles (1/8 inch x 1 1/2 inches) of bornite but did not investigate further. Assays from this area are in Table 6.

h) A diorite dyke (8 feet x 5000 feet) cutting through the Siyeh formation on Spionkop Creek, carrying galena and sphalerite in vesicles and associated with wolframite in the adjacent Siyeh limestones. Only the north end of this dyke has been examined, and no samples from it or the surrounding sediments were assayed.

The remaining properties will have similar mapping and

sampling carried out on them, probably in the sequence: Beth, Lin, Forum, Commerce-Sage, and Opal claim groups. None of these claim groups have been properly prospected; however, all have interesting mineral occurrences -

Beth Claims - as described in the report on the properties, three assays have been taken, No. 1, a 5 foot chip sample 1/2 mile west of No. 2 on the same bed, and No. 3, a 5 foot chip sample 10 feet above No. 2.

Assays:

	<u>Cu</u>	<u>Au</u>
1.	0.61 %	0.01 oz./ton
2.	0.38 %	none done
3.	0.27 %	none done

Lin Claims - we have no assays from north of the Kishenena Creek but have found numerous bornite and bornite-chalcopyrite showings in the Grinnell quartzites which should be sampled and mapped. The main area of interest on this claim block is on the north face of Starvation Peak where five chalcocite-bornite bearing quartzite sills and two bornite bearing dykes were found in a traverse through the lower one-half of the Grinnell formation. At least one additional showing occurs above this level for in 1968, D. Goble, while running a claim line across the cliff face for Akamina Minerals Ltd. crossed a 1 foot to 1 1/2 foot thick quartzite bed heavily stained with malachite.

Samples of the quartzites and intrusives have been sent in for assay and the results will be annexed to this report.

Forum Claims:- the main showing on the block of claims is an outcrop of limy siltstone 5-6 feet thick exposed for roughly 200 feet at Forum Falls. A stratigraphically equivalent bed found on the north face of Rowe Mountain in Waterton Lakes National Park (approximately 300 yards inside the National Park) was estimated visually as carrying 3-5 percent chalcopyrite. Assays from the heavily weathered outcrop at Forum Falls are presented in Table 7. In addition unsampled outcrops of bornite, chalcopyrite, and covellite bearing quartzites and siltstones have been found near the top of Akamina Ridge.

Commerce-Sage Claims - this claim group is considered the most important of all company properties as it contains an extremely large gold prospect as well as numerous chalcocite-bornite-tetraehedrite-chalcopyrite showings in the Appekunny, Grinnell, and Siyeh formations.

The gold prospect consists of a "syenite" intrusive which is exposed as the upper 1500-1700 feet of south Commerce Peak, and which extends approximately 6000 feet east-west and 3,000 feet north-south. Numerous dykes and sills leading to and associated with this body cut the Siyeh sediments for upwards of 1 1/2 miles in some cases. Two random surface samples of the syenite taken by R.D. Morton, E. Goble, and F. Goble in September, 1971, assayed at 0.02 ounces per ton gold. These samples carried 3-5 percent disseminated pyrite and appeared quite unweathered when broken. Other areas of the syenite are much richer in sulphide (both pyrite and chalcopyrite), but no samples were taken earlier as this area had not been considered of

primary interest.

The initial staking of this area dates back to 1935 when a syenite dyke extending about 4,000 feet east of the main syenite body was found to contain \$72 per ton gold. The dyke is 135 feet wide at this point and consists of quartz cemented syenite fragments and will be an early target for trenching and drilling. Much of the area has never been prospected, including areas with visible rusty syenite dykes up to 150 feet wide cutting through the Siyeh formation.

An interesting showing about 1000 feet south of the quartz-syenite gold bearing dyke contains roughly 2 percent Cu in the form of chalcopyrite in the syenite/Purcell Lava contact. Bornite-chalcocite bearing quartzite beds have been found on the Sage claims, but none have been assayed.

Grinnell quartzites carrying copper mineralization very similar to that of the Bighorn Group have been found in the western half of the property. One section through the upper Grinnell south of the largest Commerce lake contains 47 mineralized quartzite beds. The beds in this area vary from 2 inches to 2 feet thick and range in assayed values from 0.2 to 4.5 percent Cu. Interesting occurrences of tetrahedrite in quartz veins from 2 feet to 15 feet thick and exposed for up to 1200 feet occur in the Siyeh formation above the same lake. These veins appear connected to a large rusty weathering dyke on the south face of the mountain, visible from the main gold prospect. In addition a large deposit of andradite adjacent to the syenite will be checked for a contact metasomatic gold deposit. Assays are presented in Table 8.

Opal Claims - this claim block is based primarily on Pb-Cu-Ag showings in the Grinnell Formation above Starvation Lakes. Only one short traverse has been done in this area and these separate mineralized beds were found in the lower one-third of the Grinnell formation. One block of bornite bearing quartzite float was found on the north side of the valley and one short traverse was done there. The assays from this block of claims are given in Table 9.

We intend to cover the Bighorn and Beth claims in detail, with some shallow drill holes on the Bighorn claims where we drilled before. This drilling was done in areas c) and e) north of Yarrow Creek, and remained in mineralized beds equivalent in grade to the surface showings until we stopped drilling at 20 to 30 feet depths.

It is unlikely that we will be able to do more than gather samples for assay from the other claim groups but as this sampling will be to extend already known showings, the program should provide a much stronger position upon which to base our conversion to a public company.

We feel that the assays, shallow drill holes, and the quote from the 1967 Kennco report concerning 1 million tons of mineable ore on the Bighorn claims will enable us to go public at \$1.50 and maintain a stable share price at that level or higher.

TABLE 1: SPIONKOP SILLS

<u>Ag</u> *	<u>Cu</u> **	<u>Au</u> *	<u>Zn</u> **	<u>Comments</u>
	1.10			
	3.10			Chalcoite zone,
	0.48			Centre of sill,
	5.28			Chalcoite zone,
	1.68			Bornite-chalcoite zone,
	0.96			Chalcopyrite-bornite zone,
	2.70			" " "
	0.57			" " "
	0.53			" " "
	0.49			" " "
8.72	0.61	trace		" " " 12'
0.02	0.75			" " "
0.10	0.24			" " "
0.10	trace			" " "
0.06	0.42			" " "
0.10	0.83			" " "
trace	0.19			" " "
	0.79			Centre of sills, bornite-chalcoite
	0.61			and chalcoite zone,
	0.39			"
	0.53			"
	0.88			"
0.02	0.38	0.005	0.15	"
	0.54			"
0.69	1.85			Bornite-chalcoite zone,
0.86	3.45			Chalcoite zone,
0.89	3.40			" "
0.25	0.02	0.01	0.20	Centre of sill chalcoite zone,
0.03	1.07			Chalcopyrite-bornite zone,
0.06	0.66			" " "
0.14	0.82			" " "
0.04	0.04			" " "

* Ag and Au are in ounces per ton
 ** Cu and Zn are in percent.

TABLE 2: YARROW CREEK SILL

<u>Ag</u> [*]	<u>Cu</u> ^{**}	<u>Au</u> [*]	<u>Zn</u> ^{**}	<u>Comments</u>
0.24	0.10	trace		
0.20		trace		
	0.20			
1.50	1.25	trace		
2.22				Centre of sill.
0.67	0.55			Top of sill.
0.96	0.40			
0.60				
trace	0.08			
trace	0.12	trace		
0.56	0.02	trace		
0.58		0.02		
0.25	0.02	0.01	0.26	One-half mile S. of Yarrow Creek.

TABLE 3: YARROW TRENCH

<u>Ag</u> [*]	<u>Cu</u> ^{**}	<u>Zn</u> ^{***}	<u>Comments</u>
0.06	1.66		15'
0.06	0.61	0.05	Appekunny Formation, sixty-five foot section.
trace	0.03	0.10	Appekunny Formation, twenty-eight foot section.
	2.86		X-ray core, thirty-two feet, ten percent recovery.

* Ag and Au are in ounces per ton.

** Cu and Zn are in percent.

TABLE 4:

YARROW QUARTZITES

<u>Ag*</u>	<u>Cu**</u>	<u>Au*</u>	<u>Comments</u>
Trace	1.50		
	0.04		
2.00	3.36		
1.30	6.95		Fourteen foot chip sample.
0.80	2.18		Ten foot chip sample.
0.60	0.24		
	1.20		
	0.95		
1.92	2.80		
0.60	4.50		
Trace	3.80		
1.60	3.40		
1.08	7.20		
1.36	2.30	Trace	Twelve foot chip sample.
	1.25		Chip samples, three inches intervals.
0.06	1.30		" " " " "
	2.30		" " " " "
0.42	2.60		" " " " "
Trace	1.47		Eight foot chip samples.
	0.97		
59.38	3.70		In quartzite near dyke.
	3.91		
0.10	1.20		
	0.50		
Trace		0.015	
0.60	1.11		

* Ag and Au are in ounces per ton.

** Cu is in percent.

TABLE 5: YARROW SILLS AND DYKES

<u>Ag</u> [*]	<u>Cu</u> ^{**}	<u>Zn</u> ^{**}	<u>Ag</u> [*]
0.02	1.66	Trace	
Trace	1.66	Trace	
	1.20	Trace	
0.04	20.82	Trace	
	0.40		
1.26			
	0.60		
	0.30		
	0.60		
Trace	1.10		
Trace	20.10	1.00	
0.40			
1.50	1.25		
0.26	2.10		
1.10			
2.56	10.30		0.04
0.96	0.40		
Trace	1.65		
0.67	0.55		
0.60			
	1.26		

* Ag and Au are ounces per ton.

** Cu and Zn are percent.

TABLE 6: BLIND CANYON SILLS AND DYKES

<u>Ag</u> *	<u>Cu</u> **	<u>Zn</u> **	<u>Pb</u> **	<u>Au</u> *
Trace	0.14	0.25		
		0.37		
0.04		0.15		
		0.49		
0.50	1.30		4.30	0.01
0.86		6.26	0.04	
Trace	1.21	0.19		Trace
0.60	0.02	0.18		
0.02	0.58			
0.62	0.65	0.15		0.03
	0.95			
0.50	1.30			0.01

TABLE 7: FORUM FALLS, BRITISH COLUMBIA

<u>Cu</u> **
0.54
0.32
0.75

- * Ag and Au are in ounces per ton.
 ** Cu, Zn and Pb are in percents.

TABLE 8: COMMERCE

<u>Ag*</u>	<u>Cu**</u>	<u>Au*</u>	<u>Comments</u>
0.10	1.30		Quartz vein 6' x 500' exposed.
0.60	1.75		" " 1' x 1500' "
0.20	1.44		" " 1'-6' x 500' "
0.30	2.11		Quartzite 6' x 500' "
Trace	0.22		" " 20' x 1500' "
Trace	4.30		" " 1/2' x 300' "
Trace	3.00		Quartzite.
Trace	1.70		"
Trace	2.03		"
Trace	2.27		"
Trace	1.47		"
Trace	0.07		"
Trace	1.78		"
Trace	0.04		"
Trace	0.56		"
Trace	1.26		"
Trace	1.63		"
		2.06	"Quartz" vein, 1935.
		0.02	Syenite, random grab sample.
		0.02	" " " "

TABLE 9: OPAL CLAIMS

Starvation Mountain:

<u>Cu**</u>	<u>Comments</u>
0.31	Quartzite exposed 7' x 500'.
0.50	" " 7' x 500'.
0.41	" " 4' x 500'.

Kishenena Ridge:

<u>Au*</u>	<u>Ag*</u>	<u>Cu**</u>	<u>Pb**</u>	<u>Zn**</u>
0.02	17.80	1.33	3.50	0.17.

* Ag and Au are in ounces per ton.
 ** Cu, Zn and Pb are in percent.