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673739
Nadina Mtn.
93L/2

BACON & CROWHURST LTD.
CONSULTING ENGINEERS

Bradina Mine,
7 May 1972.

Mr. F.W. Fitzpatrick, President,
Bralorne Can-Fer Resources Limited,
320 - 355 Burrard Street,
Vancouver, 1, B.C.

Dear Mr. Fitzpatrick:

Pursuant to your request, I have examined and made an estimate of a portion of the mineable ore reserves at the Nadina property, Houston, B.C., now operated by the Bradina Joint Venture under Bralorne Can-Fer management. I have not made a complete proper detailed ore reserve estimate, but have completed enough work to indicate the expected grade of the various valuable metals, and their value per ton of ore.

Although I have not examined the basic calculations made by Dr. D.D. Campbell, I am in possession of his summary report entitled "1971 - Ore Reserves". I have used calculations made by the Bralorne staff, as I understand, which show vein widths, assays and weighted averages for the various ore-shoots. I have had, of course, the advantage of the sampling and assaying carried out by the mine staff in recent months as the mining has progressed. The draft of a report written by the late F.R. Thompson for Nadina Explorations Ltd. "to outline a mining method applicable to the Wrinch vein system---" has been examined; comments are made later in this report.

RESERVE ESTIMATES

The comparative reserve estimates are as in the following table. Dr. Campbell's estimates refer to "total proven probable ore for the four veins---", whereas the other estimates are made for the No. 3 vein system only. A comparison is made, however, between selected blocks from Dr. Campbell's tabulation, actual mining results to date, and Bacon & Crowhurst estimates in a table following in this report.

Bralorne estimates apply to ore blocks situated above and below the 2600 level, but Bacon & Crowhurst estimates and Mr. Thompson's estimates apply only to that ore located above the 2600 level.

Factors, based on expected metallurgy and present metal prices, have been calculated which, when applied to each metal assay value in turn and then totalled, give net smelter returns in $Canadian per ton of ore. These assay values are after mining dilution has been applied. It is to be particularly noted that these factors are also based on existing metal sales contracts.

Dave Gunn - metallurgist in D.C.

	Tons (to mill)	AU. oz/ton	AG. oz/ton	CU-%	PB-%	ZN-%	Net Smelter return per ton of ore *
Dr.Campbell	551,600	0.10	10.00	0.76	2.10	6.96	$ 23.17
Bralorne	413,237	0.10	8.39	0.64	1.27	5.64	19.02
Thompson	449,000	0.12	10.00	0.65	1.47	6.40	21.52
Bacon & Crow-hurst	251,385	0.06	7.08	0.74	0.95	5.26	17.72

* Bacon & Crowhurst factors.

(A) Campbell

Dr. Campbell's estimates were based principally on the results of face and back channel sampling of the drifts on two levels exposing No.3 vein, plus surface trench sample results obtained from No. 3 vein and three other veins. Weighted averages from this work were diluted by extending any sampled widths less than four feet in length to four feet with the increase taken at nil grade. Presumably no dilution was added for any widths exceeding four feet, because his report states "-- This has in effect'built in'some dilution to about half of the reserves calculated for this report".

A tonnage factor of 9.5 cu. ft. per ton, derived from specific gravity determinations, was used.

A cut-off grade of $10/ton of net smelter returns, using metal prices of: Au, $35/oz; Ag, $1.70/oz; Cu, 50¢/lb; Pb, 14¢/lb; Zn 15¢/lb was used.

A category of"proven-probable"ore was quoted for the 551,600 tons shown in the above table. The"readily available possible" ore is estimated to be 502,630 tons for a total reserve of 1.05 million tons.

The geological potential for new ore is considered to be excellent, and an ultimate life of 20 years at 500 tons per day is suggested.

90% of the estimated reserves apply to No. 3 vein, because it has been exposed by underground workings and nearly all of the development has been completed on that vein.

(B) Bralorne

It is our understanding that Bralorne reviewed all the sampling results, sampling procedure, sample preparation and assaying, and after considering that several different sets of results obtained by reliable engineers coincided closely, accepted the basic vein assay figures.

Bralorne then calculated average assays for ore shoots by weight-

ing against sample widths, and then weighted these average ore shoot assays against drift lengths of the various ore shoots to obtain an overall ore tonnage and grade.

It is understood that a uniform figure of 20% for mining dilution was then applied to this reserve to give mineable grades of metals. These diluted figures are the ones quoted in the table above.

No cut-off grade specifically has been quoted, although it would appear that generally speaking a $10 per ton figure for net smelter returns has been used.

A factor of 10 cu. ft. per ton was used in the tonnage calculation, and is in use by the mine staff.

(C) Thompson(P.Eng.)

Mr. Thompson's report on Page 8 of the draft, states that "In calculating reserves average assays and width relating to a measured length of vein were used. The figures were obtained from Company records."

It is understood that these reserves refer to the metal grades and tonnage of ore quoted in the foregoing summary in this report, and are applicable to the No. 3 vein above the 2600 level.

Mr. Thompson estimates a further amount of 300,000 tons of possible ore to a depth of 300 feet below the 2600 level. No grade is given, but presumably this would be estimated to be of the same average grade as that ore above the level,

Mr. Thompson also quotes a high degree of reliability in the reported assays, the sampling procedure, sample preparation and assaying.

Mr. Thompson recommended open stoping where conditions permit, and cut and fill stoping as required throughout the rest of the mine. He expresses a belief that there would be a plus factor in grade control, presumably in limiting dilution, but also (from verbal communication) to permit greater flexibility in ore selection, with reference to discarding waste already broken in the stopes.

It is not known what tonnage factor in cu. ft. per ton, or what cut-off grade was used by Mr. Thompson.

Mr. Thompson quotes three figures regarding net smelter returns or "value per ton" under the heading"Economic Considerations". The first of these refers to metallurgical testing carried out by Mr. D. Gunn, P.Eng., who calculated a net smelter return of $32.17 per ton, as related to the sample investigated. The second of these gives what appears to be his own

calculated " value per ton of the grade calculated in the ore reserve estimate amounting to $29.08." The third refers to the"value per ton of the grade calculated at the mine amounting to $31.32," which was presumably that of the Nadina staff at the time of his visit.

It is not known on what basis Mr. Thompson translated his ore reserve values into net smelter returns. It is suggested that it is extremely likely that the terms of smelter contracts then in existence (late 1970) for copper concentrates and lead-zinc concentrates would be used by him. These were unquestionably more favourable to the mine as a shipper than the ones now being exercised, in 1972.

In any event, it can be seen that there is a substantial difference in the average of the three above valuations,amounting to a net smelter return of $30.86 per ton, as used by Mr. Thompson, and the corresponding figure of $21.52 per ton quoted on a comparative basis in the table on Page 2 of this report. This latter figure, it is repeated, was obtained by applying the current factors to Mr. Thompson's average metal grade of his ore reserves.

(D) Bacon & Crowhurst

Bacon & Crowhurst calculated tonnages of mineable ore by adding one foot on either side (i.e. a total of two feet) to average vein widths for the different ore shoots selected and tabulated in detail by Bralorne. The various grades of metals in these reserves were then calculated by reducing the vein grades proportionally to this two feet extra waste, which was assumed to carry zero metal content. A minimum of four feet was used.

It must be stressed that this is an empirical method, tested in other similar vein mines, and found to be in accord with sound conservative engineering practice.

In our opinion, after examining the structural vein conditions, the patchy mineralization sometimes encountered, the presence of strong slips one to three feet back from the vein in either the hanging wall or the foot wall of the vein, and the presence of dikes either within the vein or parallelling the vein for some distances at times, such a [illegible] dilution factor should be used. These enumerated conditions occur irregularly, and are sometimes all absent from any one stoping area, but do exist sufficiently often to warrant recognising their effect and making allowance.

In our opinion also, the use of cut and fill stoping will not reduce this dilution sufficiently to warrant a complete change in mining method at this stage. In one area, the N10 and N12 stopes, cut and fill would undoubtedly have controlled dilution remarkably, but in all the

remainder of the working places, dilution occurs within the vein boundaries plus + sloughing away of gougy dike material parallel to and along side of the vein, or,more generally, breaking back to a parallel slip outside the vein during blasting thereby introducing waste material. This occurs even though the holes are well within the vein. Vein splits also occur.

As Mr. Thompson suggested, open stoping might be possible in the Ruby section of the mine. The walls are hard and relatively strong, and dilution can no doubt be held to a minimum. This section of the mine is now being opened up; experience will tell whether waste inclusion will be less than in other working areas.

Experimentation with different blasting techniques, hole spacing and explosives may well mimimize mining dilution.

It is our recommendation that the dilution be ealculated in the meantime, however, by adding one foot on either side at zero grade until mining results prove this to be too cautious.

After tonnages were thus compiled, several blocks carrying net smelter return values below $11.00 per ton were then re-examined to determine whether higher grade sections occurred within the block. On this basis, four blocks, N1, S6, S10, and S13 were dropped. Their net smelter return values were $10.96, $8.49, $10.83 and $6.77 per ton respectively. One block,N3 with a $10.55 value,was omitted because insufficient sampling information was available, and one block S12 ($11.98/ton) was disregarded due to lack of time for proper investigation.

A higher grade section was selected within block S8. The original net smelter return value was $11.66 per ton, whereas the selected section carries a $17.12 average.

Bacon & Crowhurst concur with Campbell, Bralorne and Thompson in accepting the reliability of the sampling procedures, sample preparation and results generally. A figure of 10 cu. ft. per ton was used.

Bacon & Crowhurst also concur with Bralorne and Thompson in a total conservative estimate of some 400,000 tons in the proven and probable category above and below the 2600 level in the No. 3 vein structure,(with a mineable grade as detailed in the summary table on Page 2.)

No study has been made by Bacon & Crowhurst concerning the other possibilities for the other known vein exposures on the claim group, except that several appear attractive and should be worthy of further exploration.

COMPARISION OF RESERVE ESTIMATES & CURRENT MINING

A comparision has been compiled (see Tables following) showing the net smelter return values per ton of ore as determined by (a) Bacon &

Crowhurst, (b) mining results to date, and (c) Campbell.

In summary:-

	No. of Stopes compared.	Net Smelter Return per ton of ore
Bacon & Crowhurst	12	$ 15.79
Mining -to 23April72	12	14.98
Campbell	10	$ 22.04
Mining -to 23 April 72	10	15.17

It is true that in one or two instances the grade of ore has dropped off as the stope has advanced upwards from the drift elevation, but in others, the reverse has been true.

It was not always possible to compare exact stoping areas with vein lengths selected on the levels for the estimates by Bacon & Crowhurst and Campbell, but essentially in our opinion, the above comparision is valid for those stoping areas shown in the table above.

As detailed on the next page, tables have been compiled to support the observations made in this report. Plans and long sections showing the location of the blocks and the stope locations are available for inspection at the Bradina Joint Venture office at the mine.

Respectfully submitted,

J. J. Crowhurst

J. J. Crowhurst

BACON & CROWHURST LTD.

LIST OF TABLES

To accompany report, dated May 7th, 1972, by J.J. Crowhurst, to F.W. Fitzpatrick, President, Bralorne Can-Fer Resources Limited.

COMPARISON - NET SMELTER RETURNS - $ per ton of ore

	Gold		Silver		Copper		Lead		Zinc		
	Assay	N.S.R.	Assay	N.S.R.	Assay	N.S.R.	Assay	N.S.R.	Assay	N.S.R.	Total N.S.R.
Campbell	0.10	$0.77	10.00	$6.50	0.76	$4.41	2.10	$1.05	6.96	$10.44	$23.17
Bralorne #1	0.12	0.92	10.49	6.81	0.80	4.64	1.59	0.80	7.05	10.57	23.74
Bralorne #2	0.10	0.77	8.39	5.45	0.64	3.71	1.27	0.63	5.64	8.46	19.02
Thompson #1	0.12	0.92	10.00	6.50	0.65	3.77	1.47	0.73	6.40	9.60	21.52
Thompson #2	0.12	0.54	10.00	7.95	0.65	4.38	1.47	0.66	6.40	6.96	20.49
Bacon & Crowhurst	0.06	0.46	7.08	4.60	0.74	4.29	0.95	0.48	5.26	7.89	17.72

Notes - Bralorne #1 - No dilution
Bralorne #2 - Plus 20% dilution @ zero grade
Thompson #1 - Reserves using present metal prices & Bradina metallurgy, etc.
Thompson #2 - Reserves using metal prices at time of his report and Bradina metallurgy, etc.

All estimates (except Thompson #2 as noted) use assay reserves coupled with factors related to Bradina expected metallurgy and smelter contracts now in force.

ESTIMATED CONCENTRATE VALUES PER TON OF ORE

COPPER CONCENTRATE

Content - 19% Cu - 0.72 oz. Au - 138 oz. Ag - 6.00% Zn - 10% Pb - 2.50% Sb & As.

Metal paid for - 380# - 20# = 360# Cu.
0.72 ozs. x 95% = 0.684 ozs. Au.
138 ozs. x 92% = 127.0 ozs. Ag.

Prices assumed - Cu = 52.5¢ - Au - $46 - Ag = $1.50.

Gross Revenue

	P.T. Concs.	Pro-rated Deduct.	Net P.T. Conc.
Cu = 360# x (52.5 - 4.7) =	$172.08	25.44	146.64
Au = 0.684 x $46 =	31.46	4.65	26.81
Ag = 127.0 x (1.50 - 0.10) =	177.80	26.29	151.51
	381.34	56.38	324.96

Deductions - Treatment $45.00

Penalties

Zinc	= 1.00 x 50¢ =	$0.50
Pb	= 9.00 x 50¢ =	4.50
Sb	= 2.00 x 50¢ =	1.00
As	= 2.00 x 1.00=	2.00
Bi	= 0.18 x 1.00=	0.18
		8.18
Freight		3.20
		$56.38

NET PER UNIT
Cu = 38.6¢/lb.
Au = $37.24/oz.
Ag = $1.10/oz.

Net @ Houston $324.96 per ton of ore

ESTIMATED CONCENTRATE VALUES PER TON OF ORE

ZINC CONCENTRATE

Content - 49% Zn - 6.0% Pb - 19 oz. Ag - 0.12 oz. Au -0.28% Cd.

Metal paid for - 49% - 8% = 41% = 820#.
6.00 - 2.50 = 3.50% = 70.0# Pb.
19.00 - 1.82 = 17.18 x 85% = 14.60 ozs. Ag.
0.12 - 0.03 = 0.09 x 50% = 0.045 ozs. Au.
0.28% = 5.60# - 2.73# = 2.87# Cd.

Gross Revenue

	P.T. Concs.	Pro-rated Deduc'n.	Net P.T. Concs.	Units	Net per Unit
Zinc = 820# x 18.0¢ =	$147.60	61.16	86.44	980#	8.82¢
Pb = 70# x 14.7¢ =	10.29	4.26	6.03	120#	5.03¢
Ag = 14.60 x $1.50 =	21.90	9.07	12.83	19 oz.	67.5¢
Au = 0.045 x $46.00 =	2.07	0.86	1.21	0.12 oz.	$10.08
Cd = 2.87 x 2.20 x 50% =	3.15	1.31	1.84	5.60#	0.33¢
	$185.01	76.66	108.35		

Deductions

Treatment = 43 + 6 + 10 = $59 x $\frac{2}{22}$ = $53.64

Freight	PSWT
Mine to Houston - say	3.50
Houston to Pr. Rupert	5.51
Loading @ Pr. R.	4.00
Freight to Japan	8.50
Total	21.51 x 1.07 (H_2O) = 23.02

Total = $76.66

As above - Net Smelter Return = $108.35 per ton of ore

DETERMINATION OF FACTORS FOR NET SMELTER RETURNS

(Factors to be applied directly to individual assay values & totalled)

ASSUMED METALLURGY

Copper recovery in copper conc. - 75% (March est. = $\frac{31,680}{69,118}$ = 45.8% - c.f. 51.1% (on daily sheets)

Zinc recovery in zinc conc. - 85%
Copper & zinc concentrate analysis as per attached est.
Silver recovery - 40% in Cu conc. - 20% in Zn conc. - total of 60%.
Gold recovery - 16% in Cu conc. - 17% in Zn conc. - total of 33%
Lead recovery - 50% in Zn conc.

ORE	Factor	Mine Use in Practice
1% copper = 20# x 75% recovery = 15.0# x 38.6¢/lb. =	5.79	5.8
1% zinc = 20# x 85% recovery = 17.0# x 8.82¢/lb. =	1.50	1.5
1 oz. Ag =		
Copper Conc. = 0.45 x $1.10 = $0.495		
Zinc conc. = 0.22 x 0.675 = 0.149		
Total	0.644	0.65
1 oz. Au =		
Copper Conc. = 0.16 x $37.24 = 5.96		
Zinc. conc. = 0.17 x 10.08 = 1.71		
Total	7.67	7.7
1% Pb = 20# x 50% = 10# x 5.03¢	0.503	0.5

EXAMPLE

	Assay values	Factor	Product
Gold - ozs./ton	0.09	7.7	$0.69
Silver - ozs./ton	5.09	0.65	3.31
Copper - %	0.56	5.8	3.25
Lead - %	0.84	0.5	0.42
Zinc - %	6.35	1.5	9.52

TOTAL - Net Smelter return per ton = $17.19

TABLE NO. 5

NADINA (BRALORNE) - WEIGHTED ORESHOOTS

Ore Block	Length	Width	ASSAY Au	ASSAY Ag	ASSAY Cu	ASSAY Pb	ASSAY Zn	LENGTH x WIDTH	LENGTH x WIDTH x ASSAY Au	LENGTH x WIDTH x ASSAY Ag	LENGTH x WIDTH x ASSAY Cu	LENGTH x WIDTH x ASSAY Pb	LENGTH x WIDTH x ASSAY Zn
N1	223	2.1	.04	4.19	1.34	2.38	6.29	468.3	18.732	1,962.177	627.522	1,114.544	2,945.607
N2	215	3.2	.02	5.99	1.59	1.56	9.41	688.0	13.760	4,121.720	1,093.920	1,073.280	6,474.080
N3	85	2.5	.03	5.50	1.30	1.20	4.70	212.5	6.375	1,168.750	276.250	255.000	998.750
N4	173	3.8	.02	5.18	1.00	2.46	14.47	657.4	13.148	3,405.332	657.400	1,617.204	9,512.578
N5	240	3.2	.06	11.54	.94	1.58	11.90	768.0	46.080	8,862.720	721.920	1,213.440	9,139.200
N6	250	3.1	.05	12.20	1.56	.74	10.67	775.0	38.750	9,455.000	1,209.000	573.500	8,269.250
S1	174	3.3	.06	15.22	2.92	.65	2.52	574.2	34.552	8,739.324	1,676.664	373.230	1,446.984
S2	270	3.9	.10	8.96	1.64	1.34	4.82	1,053.0	105.300	9,434.880	1,726.920	1,411.020	5,075.460
S3	275	5.9	.11	6.60	.32	1.96	6.28	1,622.5	178.475	10,708.500	519.200	3,180.100	10,189.300
S4	175	6.2	.03	10.77	.69	1.22	3.52	1,085.0	32.550	11,685.450	748.650	1,323.700	9,244.200
S5	57	5.1	.05	7.58	.85	.23	9.79	290.7	14.535	2,203.506	247.095	66.861	2,845.953
S6	118	4.0	.04	4.53	.19	1.01	5.25	472.0	18.880	2,133.160	89.680	476.720	2,478.000
S7	250	5.3	.04	5.93	.31	2.12	9.31	1,325.0	53.000	7,857.250	410.750	2,809.000	12,335.750
S8	247	2.8	.19	10.79	.15	1.37	7.04	691.6	131.404	7,462.364	103.740	947.492	4,868.864
S9	287	3.8	.22	17.45	.19	2.26	8.57	1,090.6	239.932	19,030.970	207.214	2,464.756	9,346.442
S10	220	3.2	.12	9.17	.79	.93	3.79	704.0	84.480	6,455.680	556.160	654.720	2,668.160
S11	232	4.2	.17	17.11	.72	.54	4.25	974.4	165.648	16,671.984	701.568	526.176	4,141.200
S12	350	4.2	.28	11.53	.34	1.07	3.69	1,470.0	411.600	16,949.100	499.800	1,572.900	5,424.300
S13	85	5.2	.02	1.90	.15	.49	4.59	442.0	8.840	339.800	66.300	216.580	2,028.780
	3,926							15,364.2	1,616.041	149,152.067	12,139.753	21,870.223	109,432.858

$\frac{15,364.2}{3,926} = 3.9'$

$\frac{1,616.041}{15,364.2}$

= 0.11 oz./ton | 9.71 oz./ton | 0.79% | 1.42% | 7.12%

0.85 | 6.31 | 4.58 | 0.71 | 10.68

Total $23.13/ton.

TABLE NO. 6

NADINA (BRALORNE) - WEIGHTED ORE BLOCKS (PROVEN)

Ore Block	Drift Assay Section Length	Slope Dist. Width	ASSAY Au	Ag	Cu	Pb	Zn	TONS	TONS x ASSAY Au	Ag	Cu	Pb	Zn
(Part) A	N-1		.04	4.19	1.34	2.38	6.29	10,443	417.72	43,756.17	13,993.62	24,854.34	65,686.47
B	N-2	286	.02	5.99	1.59	1.56	9.41	19,677	393.54	117,865.23	31,286.43	30,696.12	185,160.57
C	N-3		.03	5.50	1.30	1.20	4.70	3,995	119.85	21,972.50	5,193.50	4,794.00	18,776.50
D	N-4	227	.02	5.18	1.00	2.46	14.47	14,923	298.46	77,301.14	14,923.00	36,710.58	215,935.81
E	N-5	227	.06	11.54	.94	1.58	11.90	17,434	1,046.04	201,188.36	16,387.96	27,545.72	207,464.80
F	S-1	207	.06	15.22	2.92	.65	2.52	11,886	713.16	180,904.92	34,707.12	7,725.90	29,952.72
G	S-2	(400) 300	.10	8.96	1.64	1.34	4.82	42,120	4,212.00	377,395.20	69,076.80	56,440.80	203,018.40
H	Trenches		.17	9.45	.11	6.48	12.63	10,540	1,791.80	99,603.00	1,159.40	68,299.20	133,120.20
I	S-3	206	.12	8.75	.23	2.01	5.46	33,424	4,010.88	292,460.00	7,687.52	67,182.24	182,495.04
J	Trenches		.22	10.35	.34	3.60	6.90	2,851	627.22	29,507.85	684.24	10,263.60	19,671.90
K	"		.31	23.80	.13	5.47	12.06	3,846	1,192.26	91,534.80	499.98	21,037.62	46,382.76
L	"		.16	25.76	.28	3.65	10.50	1,554	248.64	40,031.04	435.12	5,672.10	16,317.00
M	"		.11	9.90	.76	1.16	4.10	11,968	1,316.48	118,483.20	9,095.68	13,882.88	49,068.80
N	"		.17	17.80	.70	.59	4.20	9,289	1,579.13	165,344.20	6,502.30	5,480.51	39,013.80
O	N-6	228	.05	12.20	1.56	.74	10.67	17,670	883.50	215,574.00	27,565.20	13,075.80	188,538.90
P	S-4	260	.03	10.77	.69	1.22	3.52	23,210	846.30	303,821.70	19,464.90	34,416.20	240,349.20
Q	S-5	260	.05	7.58	.85	.23	7.77	7,558	377.90	57,289.64	6,424.30	1,738.34	73,992.82
R	S-6	242	.04	4.53	.19	1.01	5.25	11,422	456.88	51,741.66	2,170.18	11,536.22	59,965.50
S	S-7	232	.04	5.93	.31	2.12	9.31	30,740	1,229.60	182,288.20	9,529.40	65,168.80	286,189.40
(Part) T	S-8	240	.19	10.79	.15	1.37	7.04	16,598	3,153.62	179,092.42	2,489.70	22,739.26	116,849.92
U	S-9	237	.22	17.45	.19	2.26	8.57	25,847	5,686.34	451,030.15	4,910.93	58,414.22	221,503.79
(Part) V	S-10	254	.12	9.17	.79	.93	3.79	17,882	2,145.84	163,977.94	14,126.78	16,630.26	67,772.78
W	S-11	258	.17	17.11	.72	.54	4.25	25,140	4,273.80	430,145.40	18,100.80	13,575.60	106,845.00
(Part) X	S-12	260	.28	11.53	.34	1.07	3.69	38,220	10,701.60	440,676.60	12,994.80	40,895.40	141,031.80
								413,237	47,722.56	4,332,985.32	329,409.66	658,775.71	2,915,108.68
				N.S.R. (JJC)				$23.75	0.17 oz/t.	10.49 oz/t.	0.80%	1.59%	7.05%

TABLE NO. 7

BACON & CROWHURST - PARTIAL ORE RESERVE ESTIMATE - BRADINA JOINT VENTURE (ABOVE 2600 LEVEL)

DILUTED BLOCK GRADE

Dilution Factor calculated by adding two feet to vein width - minimum mining width - 4.0 ft.

Block	Tons	Mining Width (after dil.)	Dil. Factor	GOLD Vein Assay Undil.	GOLD Vein Assay Dil.	GOLD Tons x Dil. Gr.	SILVER Vein Assay Undil.	SILVER Vein Assay Dil.	SILVER Tons x Dil. Gr.	COPPER Vein Assay Undil.	COPPER Vein Assay Dil.	COPPER Tons x Dil. Gr.	LEAD Vein Assay Undil.	LEAD Vein Assay Dil.	LEAD Tons x Dil. Gr.	ZINC Vein Assay Undil.	ZINC Vein Assay Dil.	ZINC Tons x Dil. Gr.
N-2	22,360	5.2	0.615	0.02	0.01	275.02	5.99	3.68	82,368	1.59	0.98	21,864	1.56	0.96	21,452	9.41	5.79	129,397
N-4	15,050	5.8	0.655	0.02	0.01	197.16	5.18	3.39	51,064	1.00	0.66	9,858	2.46	1.61	24,251	14.47	9.48	142,645
N-5A	9,870	4.7	0.574	0.06	0.03	339.90	5.92	3.40	33,537	0.93	0.53	5,268	1.65	0.95	9,347	9.66	5.54	54,724
N-5B	8,250	5.5	0.636	0.07	0.04	367.29	15.27	9.71	80,122	0.96	0.61	5,037	1.54	0.98	8,080	13.42	8.54	70,415
N-6	19,120	5.1	0.608	0.05	0.03	581.25	12.20	7.41	141,825	1.56	0.95	18,135	0.74	0.45	8,602	10.67	6.49	124,039
S-1	20,750	5.3	0.623	0.06	0.04	775.62	15.22	9.48	196,749	2.92	1.82	37,747	0.65	0.40	8,402	2.52	1.57	32,576
S-2	47,790	5.9	0.661	0.10	0.07	3,158.90	8.96	5.92	283,037	1.64	1.08	51,805	1.34	0.89	42,329	4.82	3.19	152,259
S-3	43,450	7.9	0.747	0.11	0.08	3,570.27	6.60	4.93	214,216	0.32	0.24	10,386	1.96	1.46	63,616	6.28	4.69	203,830
S-4	21,520	8.2	0.756	0.03	0.02	488.07	10.77	8.14	175,217	0.69	0.52	11,474	1.22	0.92	19,848	8.52	6.44	141,679
S-5	6,070	7.1	0.718	0.05	0.04	217.90	7.58	5.44	33,033	0.85	0.61	3,704	0.23	0.16	1,002	9.79	7.03	42,665
S-7	27,380	7.3	0.726	0.04	0.03	795.12	5.93	4.30	117,876	0.31	0.22	6,162	2.12	1.54	42,141	9.31	6.76	185,064
S-8	6,675	5.0	0.600	0.25	0.15	1,001.25	12.18	7.31	48,781	0.12	0.07	481	2.26	1.36	9,051	11.21	6.73	44,896
S-9	24,970	5.8	0.655	0.22	0.14	3,598.10	17.45	11.43	285,395	0.19	0.12	3,107	2.26	1.48	36,962	8.57	5.61	140,162
S-11	21,580	6.2	0.677	0.17	0.12	2,483.70	17.11	11.58	249,977	0.72	0.49	10,519	0.54	0.37	7,889	4.25	2.88	62,092
a)Weighted Totals & Avgs.	294,835	6.31	0.674	0.09	0.06	17,849.55	10.13	6.76	19931.97	1.02	0.66	195,547	1.51	1.03	302,972	7.70	5.18	NSR* Diluted $16.96
b)Arithmetic Avg.		6.07	0.661	0.09	0.06		10.45	6.86		0.99	0.64		1.47	0.97		8.78	5.77	17.78
LESS S-3																		
a)Weighted Totals & Avgs.	251,385	6.03	0.654	0.09	0.06		10.74	7.08		1.14	0.74		1.44	0.95		7.95	5.26	17.72
b)Arithmetic Avg.		5.93	0.661	0.09	0.06		10.75	7.01		1.04	0.67		1.43	0.93		8.97	5.85	18.15

* N.S.R. = Net Smelter Return - calculated by formula as in this report - per ton of ore.

TABLE NO. 8

BACON & CROWHURST - PARTIAL ORE RESERVE ESTIMATE - BRADINA JOINT VENTURE (ABOVE 2600 LEVEL)

BLOCK VALUE PER TON

Block	(in feet) W x L x Ht.	Tons	VEIN ASSAY Au	Ag	Cu	Pb	Zn	VALUE/TON OF ORE - NO DILUTION Au	Ag	Cu	Pb	Zn	Total	Dilution Factor (vein + 2.0 ft.)	Net Value Per ton of Ore	Net Value x Tons
N-2	5.2 x 215 x 200	22,360	0.02	5.99	1.59	1.56	9.41	$0.15	$3.89	$9.22	$0.78	$14.11	$28.15	0.615	$17.31	387,051
N-4	5.8 x 173 x 150	15,050	0.02	5.18	1.00	2.46	14.47	0.15	3.37	5.80	1.21	21.71	32.24	0.655	21.12	317,856
N-5A	4.7 x 140 x 150	9,870	0.06	5.92	0.93	1.65	9.66	0.46	3.85	5.39	0.83	14.49	25.02	0.574	14.36	141,733
N-5B	5.5 x 100 x 150	8,250	0.07	15.27	0.96	1.54	13.42	0.54	9.93	5.57	0.77	20.13	36.94	0.636	23.49	193,793
N-6	5.1 x 250 x 150	19,120	0.05	12.20	1.56	0.74	10.67	0.39	7.93	9.05	0.37	16.00	33.74	0.608	20.51	392,151
S-1	5.3 x 174 x 225	20,750	0.06	15.22	2.92	0.65	2.52	0.46	9.89	16.94	0.32	3.78	31.39	0.623	19.56	405,870
S-2	5.9 x 270 x 300	47,790	0.10	8.96	1.64	1.34	4.82	0.77	5.82	9.51	0.67	7.23	24.00	0.661	15.86	757,949
S-3	7.9 x 275 x 200	43,450	0.11	6.60	0.32	1.96	6.28	0.85	4.29	1.86	0.98	9.42	17.40	0.747	12.99	564,416
S-4	8.2 x 175 x 150	21,520	0.03	10.77	0.69	1.22	8.52	0.23	7.00	4.00	0.61	12.78	24.62	0.756	18.61	400,487
S-5	7.1 x 57 x 150	6,070	0.05	7.58	0.85	0.23	9.79	0.39	4.93	4.93	0.11	14.68	25.04	0.718	17.98	109,138
S-7	7.3 x 250 x 150	27,380	0.04	5.93	0.31	2.12	9.31	0.31	3.85	1.80	1.06	13.96	20.98	0.726	15.23	416,997
S-8	5.0 x 89 x 150	6,675	0.25	12.18	0.12	2.26	11.21	1.95	7.92	0.72	1.13	16.82	28.54	0.600	17.12	114,276
S-9	5.8 x 287 x 150	24,970	0.22	17.45	0.19	2.26	8.57	1.69	11.34	1.10	1.13	12.86	28.12	0.655	18.42	459,947
S-11	6.2 x 232 x 150	21,580	0.17	17.11	0.72	0.54	4.25	1.31	11.12	4.18	0.27	6.38	23.26	0.677	15.74	339,669
Totals & Average (weighted)		294,835													$16.96	5,001,333
Arithmetic Average														24,830 / 14 =	17.74	
Less Block S-3		251,385 - weighted average													17.65	4,436,917
		- arithmetic average												23,531 / 13 =	18.10	

TABLE NO. 9

BLOCK AND STOPE CORRELATION

Bralorne	Campbell	Bradina Stope No. (approx. correlation)	Location
N-2	1-W-3		2880 Level - North end.
N-4	2-W-4	N-11	2600 Level - North end - north of Wrinch Fault.
N-5A		N-9	Ditto
N-5B		N-7	Ditto
N-5	2-W-3		Ditto
N-6	2-E-1	N-3 & N-5	2600 Level - North end - south of Wrinch Fault
S-1	1-E-1		2880 Level - South portal area.
S-2	1-E-2	S-2	2880 Level - South end - 300' from portal.
S-3	1-E-8	Backs taken down partially	Ditto - 1800' - 2000' from portal.
S-4	2-E-5 (part)	S-8	2600 Level - South end - No. 4 Zone.
S-5	2-E-5 (part)	S-12	Ditto
S-6	2-E-7	S-16	Ditto
S-7	2-E-8	S-18 & S-20	Ditto
S-8	2-E-10 (part)	S-32	2600 Level - South end - Ruby Zone.
S-9	2-E-11	S-34 & S-36	Ditto
S-10	2-E-12	S-38	Ditto
S-11	2-E-13	S-40 & S-42	Ditto

TABLE NO. 10

COMPARISON OF NET SMELTER RETURNS - BRADINA EXPLORATIONS

Block No.	Stope No.	Campbell Block No.	Vein Width (ft.)	Stope Width (ft.)	ASSAY Au Ozs. /ton	ASSAY Ag Ozs. /ton	ASSAY Cu %	ASSAY Pb %	ASSAY Zn %	N.S.R. $/TON DILUTED ORE Au	Ag	Cu	Pb	Zn	N.S.R. - $ - TOTALS DILUTED ORE B. & C.	Mining	Campbell
(1) N-4	N-11	2-W-4															
(a) B.&C. #1 - diluted - vein			4.0	6.0	0.01	3.04	0.53	1.63	8.70	0.09	1.98	3.07	0.82	13.05	19.01		
(b) B.&C. #2 - no dilution - vein			3.8	5.8	0.02	5.18	1.00	2.46	14.47	0.10	2.21	3.80	0.79	14.22	21.12		
(c) Mining - muck sample				6.4	0.01	3.36	0.67	1.25	6.87	0.09	2.18	3.89	0.63	10.31		17.10	
(c) Campbell - diluted vein				4.14	0.03	4.60	0.82	2.38	13.59	0.21	2.99	4.76	1.19	20.39			29.54
(2) N-5A	N-9	-															
(a) B.&C. #2 - no dilution - vein			2.7	4.7	0.06	5.92	0.93	1.65	9.66	0.26	2.19	3.07	0.47	8.27	14.26		
(b) Mining - muck samples				6.1	0.06	5.24	0.89	0.53	3.51	0.26	3.41	5.16	0.27	5.27		14.37	
(3) N-5B	N-7																
(a) B.&C. #1 - diluted - vein			3.5	5.5	0.07	4.90	0.65	0.79	7.92	0.35	3.19	3.77	0.40	11.88	19.59		
(b) B.&C. #2 - no dilution - vein			3.5	5.5	0.07	15.27	0.96	1.54	13.42	0.35	6.36	3.56	0.49	12.88	23.64		
(c) Mining - muck samples				6.5	0.07	3.61	0.62	0.75	4.64	0.35	2.35	3.60	0.38	6.96		13.64	
(4) N-5	N7 & N9 (combined)	2-W-3															
(a) B.&C. (avg. #2) - no dil. - vein			3.1	5.1	0.04	10.59	0.94	1.59	11.54	0.30	4.28	3.32	0.48	10.57	18.95		
(b) Mining - average, muck				6.3	0.04	4.42	0.75	0.64	4.07	0.30	2.88	4.38	0.32	6.12		14.00	
(c) Campbell - diluted - vein				4.0	0.05	8.50	0.90	1.37	11.10	0.39	5.52	5.22	0.68	16.65			28.46
(5) N-6	N3 & N5																
(a) B.&C. #1 - diluted - vein			3.3	5.3	0.05	7.23	0.65	0.43	6.05	0.39	4.70	3.77	0.21	9.08	18.15		
(b) B.&C. #2 - no dilution - vein			3.1	5.1	0.03	12.20	1.56	0.74	10.67	0.24	4.82	5.50	0.22	9.73	20.51		
(c) Mining - muck - samples				7.3	0.05	3.63	0.59	0.47	4.20	0.37	2.36	3.42	0.23	6.30		12.70	
(d) Campbell - diluted - vein				4.0	0.05	8.50	0.92	0.70	8.10	0.39	5.53	5.34	0.35	12.15			23.76

Block No.	Stope No.	Campbell Block No.	Vein Width (ft.)	Stope Width (ft.)	ASSAY Au ozs./ton	ASSAY Ag ozs./ton	ASSAY Cu %	ASSAY Pb %	ASSAY Zn %	N.S.R. $/TON DILUTED ORE Au	Ag	Cu	Pb	Zn	N.S.R. - $ - TOTALS DILUTED ORE B. & C.	Mining	Campbell
(6) S-1	-	1-E-1															
(a) B.&C. #2 - no dilution - vein			3.3	5.3	0.06	15.22	2.92	0.65	2.52	0.29	6.16	10.56	0.20	2.35	19.56		
(b) Campbell - diluted - vein				4.0	0.02	11.80	2.28	0.50	1.95	0.15	7.67	13.22	0.25	2.92			24.21
(7) S-2	S-2	1-E-2															
(a) B.&C. #2 - no dilution - vein			3.9	5.9	0.10	8.96	1.64	1.34	4.82	0.51	3.85	6.29	0.44	4.77	15.86		
(b) Mining - to March 26/72					0.10	5.55	1.77	0.96	1.65	0.77	3.61	10.27	0.48	2.48		17.61	
(c) Campbell - diluted - vein				4.0	0.10	8.96	1.64	1.34	4.82	0.77	5.82	9.51	0.67	7.23			24.00
(8) S-3	-	1-E-8															
(a) B.&C. #2 - no dilution - vein			5.9	7.9	0.11	6.60	0.32	1.96	6.28	0.63	3.20	1.39	0.73	7.04	12.99		
(b) Campbell - diluted - vein				5.9	0.11	6.60	0.32	1.96	6.28	0.85	4.29	1.86	0.98	9.42			17.40
(9) S-4	S-8	2-E-5 (part)															
(a) B.&C. #1 - diluted - vein			6.15	8.15	0.03	9.16	0.55	1.03	7.15	0.17	5.95	3.19	0.52	10.73	20.56		
(b) B.&C. #2 - no dilution - vein			6.20	8.20	0.03	10.77	0.69	1.22	8.52	0.17	5.29	3.02	0.46	9.67	18.61		
(c) Mining - muck samples				6.90	0.03	5.11	1.12	1.02	6.35	0.17	3.32	6.50	0.51	9.53		20.03	
(d) Campbell - diluted - vein				6.19	0.03	10.56	0.68	1.31	8.42	0.23	6.86	3.94	0.66	12.63			24.32
(10) S-5	S-12	2-E-5 (part)															
(a) B.&C. #1 - diluted - vein			5.58	7.58	0.05	5.71	0.58	0.19	6.70	0.38	3.71	3.36	0.09	10.05	17.59		
(b) B.&C. #2 - no dilution - vein			5.10	7.10	0.04	7.58	0.85	0.23	9.79	0.28	3.54	3.54	0.08	10.54	17.98		
(c) Mining - muck samples				15.70	0.05	6.71	0.68	0.53	6.97	0.38	4.36	3.94	0.26	10.45		19.39	
(d) Campbell - diluted - vein				6.19	0.03	10.56	0.68	1.31	8.42	0.23	6.86	3.94	0.66	12.63			24.32
(11) S-6	S-16	2-E-7															
(a) B.&C. #1 - diluted - vein			4.69	6.69	0.07	4.05	0.18	0.98	4.77	0.54	2.63	1.04	0.49	7.16	11.86		
(b) Mining - muck samples				7.10	0.07	4.06	0.23	0.82	6.39	0.54	2.64	1.33	0.41	9.58		14.50	
(c) Campbell - diluted - vein				4.15	0.07	4.72	0.20	1.11	6.01	0.54	3.07	1.16	0.56	9.01			14.34

Block No.	Stope No.	Campbell Block No.	Vein Width (ft.)	Stope Width (ft.)	ASSAY Au ozs. /ton	ASSAY Ag ozs. /ton	ASSAY Cu %	ASSAY Pb %	ASSAY Zn %	N.S.R. $/TON DILUTED ORE Au	Ag	Cu	Pb	Zn	N.S.R. - $ - TOTALS DILUTED ORE B. & C.	Mining	Campbell
(12) S-7	S18 & S20	2-E-8															
(a) B.&C. #1 - diluted - vein			4.68	6.68	0.03	4.07	0.21	1.60	6.56	0.23	2.64	1.22	0.80	9.84	14.73		
(b) B.&C. #2 - no dilution - vein			5.30	7.30	0.04	5.93	0.31	2.12	9.31	0.23	2.80	1.31	0.77	10.13	15.24		
(c) Mining				7.75	0.03	3.03	0.15	1.30	3.95	0.23	1.97	0.87	0.65	5.93		9.65	
(d) Campbell				4.88	0.04	6.24	0.30	2.35	9.50	0.31	4.06	1.74	1.18	14.25			21.54
(13) S-8	S-32	2-E-10 (part)															
(a) B.&C. #1 - diluted - vein			2.9	4.90	0.15	9.85	0.07	1.00	4.77	1.16	6.40	0.41	0.50	7.15	15.62		
(b) B.&C. #2 - no dilution - vein			3.0	5.00	0.25	12.18	0.12	2.26	11.21	1.17	4.75	0.43	0.68	10.09	17.12		
(c) Mining				5.00	0.15	6.08	0.15	0.94	5.13	1.16	3.95	0.87	0.47	7.70		14.15	
(d) Campbell				4.00	0.13	7.55	0.11	0.95	4.65	1.00	4.91	0.64	0.47	6.98			14.00
(14) S-10	S-38	2-E-12															
(a) B.&C. #1 - diluted - vein			3.10	5.10	0.15	5.02	0.61	0.55	2.00	1.15	3.26	3.53	0.28	3.00	11.22		
(b) Mining				4.02	0.15	4.22	0.38	0.66	4.12	1.15	2.74	2.20	0.33	6.18		12.60	
(c) Campbell				4.00	0.08	7.42	0.83	0.93	3.63	0.62	4.82	4.81	0.46	5.44			16.15

TOTALS - corresponding --B. & C. & Mining	331.62	179.74	
avg. (21 & 12) " "	$15.79	$14.98	
- corresponding --Campbell & Mining		151.73	220.43
		15.17	22.04