ARIS SUMMARY SHEET

District Geologist, Smithers — Off Confidential: 91.10.04

ASSESSMENT REPORT 20364 — MINING DIVISION: Omineca

PROPERTY: Sping
LOCATION: LAT 56 14 30 LONG 127 10 30
UTM 09 6234261 613106
NTS 094D03E
CLAIM(S): Sping 1
OPERATOR(S): Windflower Min.
AUTHOR(S): Ryznar, G.
REPORT YEAR: 1990, 16 Pages
COMMODITIES
SEARCHED FOR: Copper,Silver,Gold
KEYWORDS: Jurassic,Hazelton Group,Limestones,Chalcopyrite
WORK
DONE: Geochemical
META 1 sample(s)
RELATED
REPORTS: 15861
MINFILE: 094D 104

LOG NO: 10-10 RD.
ACTION:
FILE NO:

METALLURGICAL TESTWORK
SPING CLAIM

OMINECA MINING DIVISION
NTS 94-D-3/E

LAT: 56° 15' N
LONG: 127° 10' 30"W

REPORT BY
G. RYZNAR, PENG

Testwork carried out
Aug. 10-22/90

Report writing
Oct 1,2/1990

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,364

METALLURGICAL TESTWORK

SPING CLAIM

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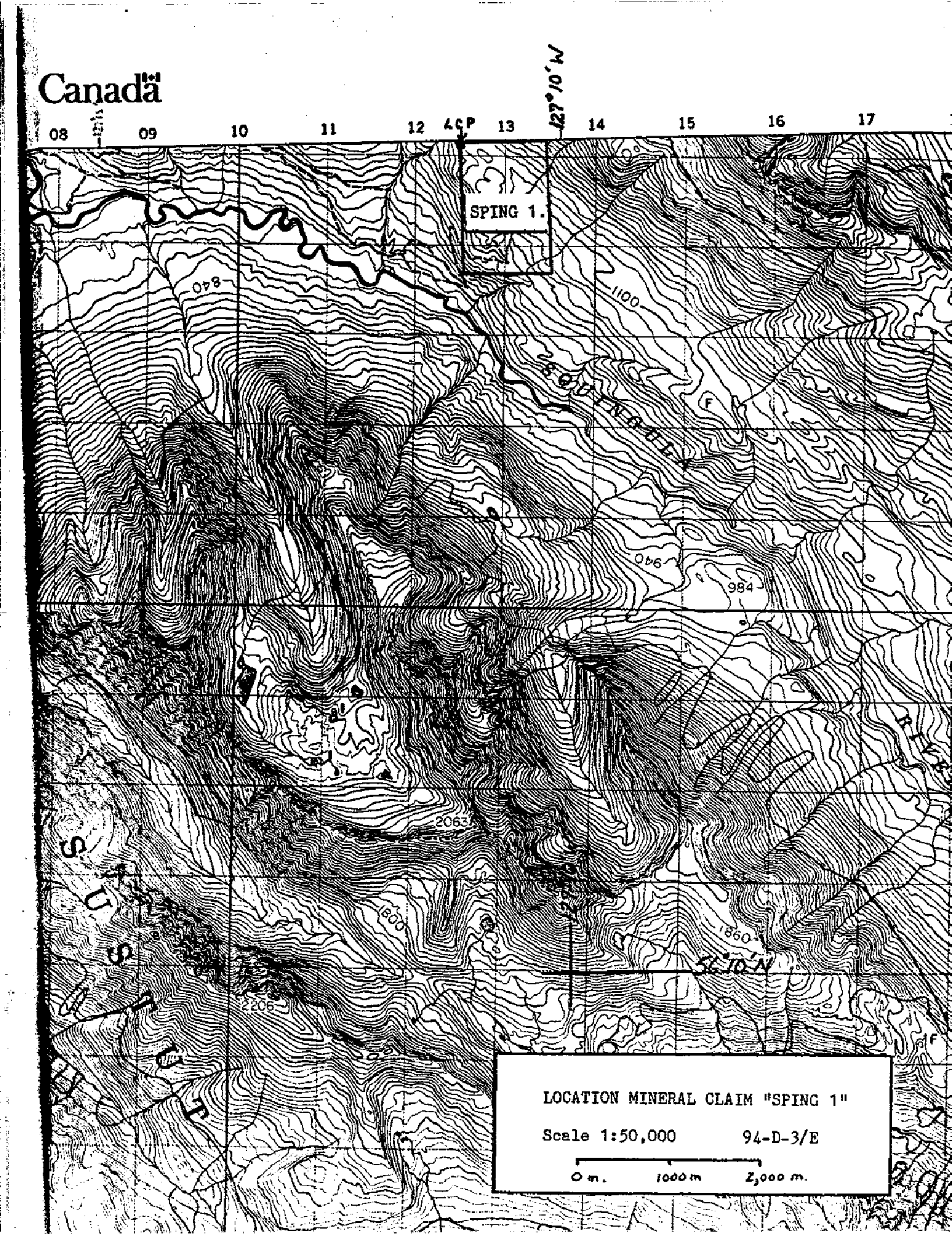
METALLURGICAL TESTWORK
SPING CLAIM

Introduction

During the month of August 1990, Windflower Mining Ltd carried out a preliminary metallurgical floatation test on drill core samples obtained from Windflower's "Sping" claim. The Sping property is a copper prospect located approximately 160 km. north of Smithers, B.C. Previous exploration on the property has indicated a 5,000,000 ton reserve grading .5% copper and .33 oz. silver per ton with some potential for more tonnage. The mineralization occurs as fine disseminations of sulphides, mainly chalcopyrite and pyrite, hosted by a dolomitic limestone unit within the Hazelton volcanics.

Because previous work carried out by Windflower Mining Ltd. indicated low gold values to be associated with the copper mineralization on the Sping claim, a metallurgical test to determine the grade of concentrate one can achieve from simple flotation was thought to be a beneficial exercise, given the size of the deposit and its possibilities for open pit mining.

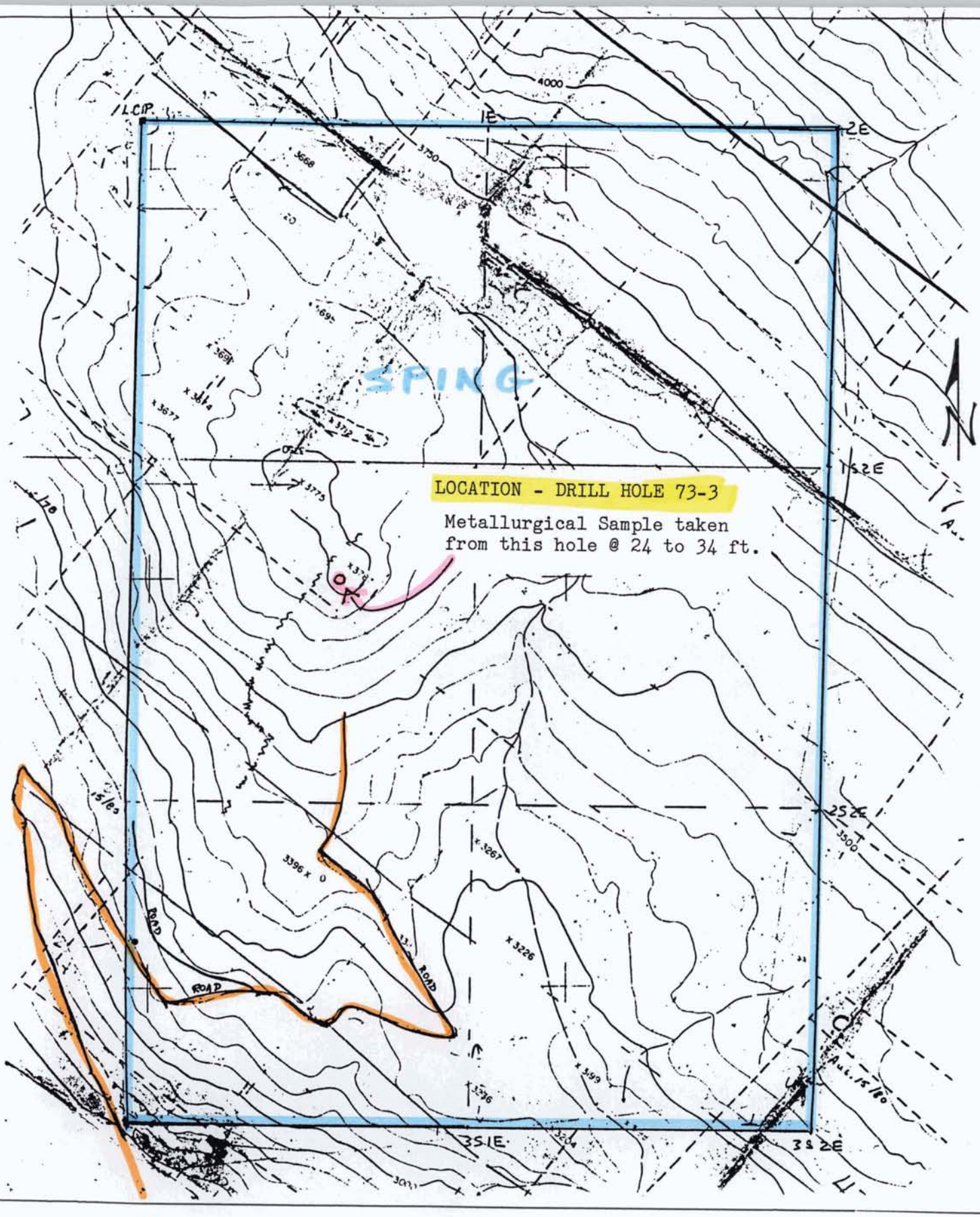
As a result, Bacon, Donaldson and Associates Ltd. were commissioned to carry out a preliminary flotation test. Their results indicated that a concentrate grade of 24% copper, almost 8 grams of gold and 30 oz. of silver per tonne could be achieved by simple flotation. However, further metallurgical work will have to be done to improve recoveries.



LOCATION MINERAL CLAIM "SPING 1"

Scale 1:50,000 94-D-3/E

0 m. 1000 m 2,000 m.



WINDFLOWER MINING LTD.

SPING CLAIM - NTS 94-D-3/E

Location of Drill Hole 73-3

Scale

Approx. 1" = 640'

0' 500'

Metallurgical Testwork - Sping Claim

The Property

The Sping property consists of one 6 unit claim totalling approximately 150 hectares and is owned 100% by Windflower Mining Ltd. The Sping Claim was staked in 1985.

Location & Access

Omineca Mining Division
Lat: 56 15'N; Long: 127 10' 30" W

The Sping Claim lies in the general Motase Lake area of British Columbia, approximately 100 air miles north of Smithers, B.C., on map sheet 95-D-3/E. Access to the property at this time is by helicopter, however, Westar Timber has a proposal for a logging road into the area although these plans are currently "on hold" because of native land claims. B.C. Rail's rail line to Dease Lake lies 20 kms. to the east of the property.

Geology

On a regional scale the Sping claim lies on the eastern edge of the Bowser Basin where exposures of older Hazelton volcanics are more frequent. Locally, the Sping Claim is underlain by volcanics and intravolcanic sediments, all belonging to the Hazelton group of Jurassic rocks. The mineralized strata on the claim consists of a moderately thick (100 plus feet) reefal dolomitic limestone sequence within the Hazelton volcanics and volcaniclastics. The carbonate sequence appears to be of the same age as the surrounding Hazelton rocks.

The carbonate sequence is fossiliferous and stylolitic and carries about 2% to 5% sulphides. This mineralization consists of finely disseminated pyrite and chalcopyrite and shows some preference to stylolitic and silty segregations within the limestone.

An estimated reserve of 5,000,000 tons grading .5% copper and .35 oz. silver per ton has been delineated from previous drilling (1973). More recent work carried out by Windflower Mining Ltd. has indicated that low gold values are associated with the chalcopyrite as well.

Metallurgical Testwork

The setting of the Sping deposit would allow for cheap open pit mining methods to be used, however, because of the very fine grained nature of the chalcopyrite mineralization a preliminary metallurgical test of the deposit was felt to be required. As a result, Bacon, Donaldson and Associates were commissioned to carry out a preliminary flotation test on core samples collected from the Sping Claim. The results of this test are encouraging. Although recoveries are low and more work will obviously have to be done for improvement there, a good grade concentrate was produced. The concentrate grade achieved was 24% copper, 1043 grams silver, and 7.99 grams gold per tonne.

A complete report by Bacon, Donaldson and Associates is attached to this report as Appendix I

Conclusions

It appears that the mineralized limestone on the Sping Property is amenable to standard flotation procedures and that a concentrate of significant value could be produced. Of particular interest is the fact that a significant amount of gold will report with the copper concentrate and in this respect will add considerable value to any concentrate produced. Nevertheless, more metallurgical testing will have to be done to improve recoveries.

G. Ryznar, PEng.
Oct 1, 1990

Metallurgical Testwork

Sping Claim

STATEMENT OF EXPENDITURES

Professional Services	
Bacon, Donaldson & Associates - Flotation Testwork-	$ 676.50
G. Ryznar, PEng., - Organization, sample selection etc Aug 9,10/90 Total 1 day @ $450/day	$ 450.00
G. Ryznar, PEng. - Report writing Oct 1,2/90 Total two days @ $450/day	$ 900.00
Prorated cost of Retrieval of Samples from property, (Helicopter transportation etc.)	$ 400.00
Total costs this Project	$2426.50

G. Ryznar, PEng.
October 2, 1990

INVOICE

BACON, DONALDSON & ASSOCIATES LTD.

2036 Columbia Street, Vancouver, B.C. V5Y 3E1 • Phone: 879-8461 • Fax: 879-1439

In Account With **TECK EXPLORATIONS LTD.**
960 - 175 - 2nd Avenue
Kamloops, B.C.
V2C 5W1

Attention: Fred Daily

Invoice No. **9609**

File No. **M90-241**

Purchase Order No.

Date **1990 August 31**

Re: Flotation Test on Windflower Copper Ore. (For Gerald Ryznar).

PROFESSIONAL SERVICES	**$ 416.50**
Assays	**260.00**
TOTAL	**$ 676.50**

This is a professional invoice and is due when presented.
1.5% per month charged on invoices over 30 days.
(18% per annum)

AUTHOR'S QUALIFICATIONS

I, Gerald Ryznar, do hereby certify;

1) That I am a graduate of the University of Alberta, Edmonton, from which I obtained a BSc. and MSc. in Geology in 1964 and 1965.
2) That I have practiced my profession as a mining exploration geologist during the past twenty-five years throughout most provinces and territories in Canada, as well as in the U.S.A., Australia and New Zealand.
3) That I am a member of the Association of Professional Engineers of British Columbia.

G. Ryznar, PEng.

Dated in Vancouver, British Columbia
October 1, 1990

BACON,
DONALDSON
& ASSOCIATES LTD.

12271 HORSESHOE WAY
RICHMOND. B.C. CANADA V7A 4Z1
TELEPHONE (604) 277-2322
FACSIMILE (604) 274-7235

August 22, 1990

File Number: M90-241

APPENDIX I

WINDFLOWER MINING LTD.
Suite 950 - 355 Burrard Street,
Vancouver, B.C.
V6C 2G8

Attention: Gerald Ryznar, President

Dear Gerald,

Re: Flotation Testwork on Copper Ore

As was requested, Bacon, Donaldson & Associates Ltd. have carried out a single flotation test on the Sping copper ore sample. The objective of this test was to produce a high grade copper concentrate. The grades and recoveries of copper, gold and silver in the flotation concentrate are:

	Grade	Recovery
Copper	24.0 %	33.7 %
Gold	7.99 g/t	48.8 %
Silver	1043 g/t	36.2 %

As is indicated by the results, it is difficult to optimize both grade and recovery in a single flotation test. The grade and recovery of copper in the concentrate can likely be improved upon by varying the grind, the flotation procedure and the reagents.

The sample selected for this testwork was drill core 73-3 24'-34'; the assays which you provide for the samples indicated that this sample should contain approximately 0.70%

copper and 34.92 g/t silver. The sample was prepared by grinding it to 90% -200 mesh (see attached data sheet). This grind was selected based on the results of testwork carried out at U.B.C. The flotation procedure used is attached. It includes rougher-scavenger stages to maximize recoveries and three cleaning stages to achieve grade.

The rougher-scavenger flotation concentrate contained 78.9% of the copper, 79.0% of the gold and 81.4% of the silver. In order to determine if recoveries can be improved, testwork, involving changing the grind and reagent dosages is needed. A mineralogical analysis of the ore, to determine such factors as the liberation size, the copper minerals present and the mineral associations, would be helpful in deciding how to best process this ore.

Three stages of cleaner flotation were required to produce a concentrate with a grade of 24.04% copper. The cleaner tails products, with grades of copper, gold and silver that are higher than the head grades, should be processed further to improve overall recoveries. It should be noted that the grade of silver in the 3rd cleaner concentrate was calculated based on the head grade and grades of the remaining products.

If you have any questions concerning this testwork or these results please contact me at any time.

Yours truly,
BACON DONALDSON & ASSOCIATES LTD.

Bernhard Klein

Bernhard Klein, B.A.Sc.,
Senior Process Metallurgist
BK/jlb

TESTWORK PROCEDURE

Test No: M90-241 F1 **Date:** 13-Aug-90

Purpose: Initial flotation scoping test

Composite: 73-3 20'-34'

STAGE	TIME (Minutes)	ADDITIONS	
		lb/ton	REAGENT
Grind (target 90% -200 mesh)	9		
Rougher Flotation			
Condition	5	0.68	Lime pH=7.6 to pH=10.5
		0.04	Cyanamid S-5100
Rougher Float	5	0.00	DF 250
Scavenger Float 1	5	4.63	Lime pH=10.0 to pH=10.5
		0.02	Cyanamid S-5100
		0.05	Aerofloat 208
		0.00	DF 250
Scavenger Float 2	3	0.13	Lime pH=10.2 to pH=10.5
		0.02	Cyanamid S-5100
		0.02	Aerofloat 208
		0.00	DF 250
			pH=10.4
Cleaner Flotation			
1st Cleaner Float	10	0.12	Lime pH=10.0 to pH=10.5
		0.02	Cyanamid S-5100
		0.005	Aerofloat 208
2nd Cleaner Float	8	2.74	Lime pH=9.4 to pH=12.0
		0.01	Cyanamid S-5100
		0.005	Aerofloat 208
3rd Cleaner Float	5	2.58	Lime pH=11.2 to pH=12.0
		0.005	Cyanamid S-5100
		0.005	Aerofloat 208
		1.00	Na2SiO3

SIZE DISTRIBUTION

SAMPLE NO: M90-241 F1 Head

Size Fraction (mesh)		Individual Percentage Retained	Cumulative Percentage Passing
	+ 65	0.0	100.0
- 65	+100	0.2	99.8
-100	+150	1.7	98.1
-150	+200	7.2	91.0
-200		91.0	

TEST NUMBER: M90-241 F1

PRODUCT	WEIGHT GMS	WEIGHT %	ASSAYS Au g/t	ASSAYS Cu %	ASSAYS Ag g/t	% DIST Au	% DIST Cu	% DIST Ag
3rd Cl Conc	15.5	0.80	7.99	24.04	1043.03	48.77	33.72	36.22
3rd Cl Tails	52.2	2.69	0.41	3.82	126.48	8.46	18.05	14.79
2ND CL CONC	67.7	3.49	2.15	8.45	336.33	57.23	51.77	51.02
2nd Cl Tails	90.9	4.69	0.19	1.78	81.57	6.75	14.64	16.61
1ST CL CONC	158.6	8.19	1.02	4.63	190.31	63.98	66.41	67.63
1st Cl Tails	222.1	11.47	0.17	0.62	27.57	15.00	12.46	13.72
TOTAL RD CONC	380.7	19.65	0.53	2.29	95.37	78.98	78.87	81.35
Final Tails	1556.4	80.35	0.03	0.15	5.35	21.02	21.13	18.65
CALC HEAD	1937.1	100.0	0.13	0.57	23.04	100.00	100.00	100.00

TEST NUMBER: M90-241 F1

PRODUCT	WEIGHT GMS	WEIGHT %	ASSAYS Au g/t	ASSAYS Cu %	ASSAYS Ag g/t	UNITS Au	UNITS Cu	UNITS Ag
3rd Cl Conc	15.5	0.80	7.99	24.04	1043.03	6.392	19.236	834.608
3rd Cl Tails	52.2	2.69	0.41	3.82	126.48	1.109	10.294	340.840
2ND CL CONC	67.7	3.49	2.15	8.45	336.33	7.501	29.530	1175.448
2nd Cl Tails	90.9	4.69	0.19	1.78	81.57	0.885	8.353	382.763
1ST CL CONC	158.6	8.19	1.02	4.63	190.31	8.386	37.883	1558.211
1st Cl Tails	222.1	11.47	0.17	0.62	27.57	1.966	7.109	316.065
TOTAL RO CONC	380.7	19.65	0.53	2.29	95.37	10.352	44.992	1874.276
Final Tails	1556.4	80.35	0.03	0.15	5.35	2.755	12.052	429.743
CALC HEAD	1937.1	100.0	0.13	0.57	23.04	13.108	57.044	2304.019