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CONSULTING GEOLOGICAL & MINING ENGINEERS
1000 GUINNESS TOWER
VANCOUVER 1, B.C.

82K/15W

82K/NE-7,8.

Tapin Copper Mines Limited (N.P.L.)

Summary Report

RADIOACTIVE BLACK SANDS IN MALLOY AND VOWELL CREEKS

Bugaboo Area, B.C.

March 8, 1974.

C.R. Saunders Consultant Vancouver, Canada.

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LIST OF ILLUSTRATIONS

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SUMMARY

Tapin Copper Mines Limited (N.P.L.) owns 21 placer leases on Malloy and Vowell Creeks in the Bugaboo area of eastern British Columbia. Creeks in this area which drain from the Bugaboo and Horsethief batholiths have been known since 1953 to contain sands and gravels substantially enriched in radioactive black sands. Previous exploration work by various companies indicated Malloy and Vowell Creeks to have the best economic potential in the area and consequently detailed exploration, consisting of drilling (98 holes) and sampling, was concentrated on the most favourable areas (near the headwaters) of these two creeks.

Field exploration of the potentially economic deposits was adequate but unfortunately assaying was done on less than 20% of the samples obtained. This resultant sparse information does not allow confident interpretation and correlation of the deposit reserves. However, within the data limitations, Mr. J.M. Black, P.Eng., has made a reasonable calculation of the reserve potential on each creek:

	Volume (cu. yds.)	U_3O_8	Nb_2O_5	ThO_2	Magnetite	Ilmenite
		(Pounds per cubic yard)				
Malloy Creek	12,200,000	0.039	0.165	0.116	13.5	1
Vowell Creek	12,750,000	0.038	0.25	0.056	10	3

The gross value of this material at $20 per pound uranium and current prices for the other constituents, with no allowance for recovery efficiencies, is approximately $1.20 per cu. yd.

A further calculation of volume based on the radiometric response (scintillometer readings) of the samples indicated a potential volume of 22,500,000 cu. yds. in Malloy Creek and 19,000,000 cu. yds. in Vowell Creek.

Very preliminary investigation into mining methods and costs suggests that a bucket dredge, of minimum 8 cu. ft. bucket capacity, is the logical means of mining the placer deposits. Capital costs will be 1.5 - 3 million dollars and operating costs in the range of 30¢ - 70¢ per ton.

There is little doubt that Malloy and Vowell Creeks contain appreciable volumes of sand and gravel enriched in radioactive black sands. However, further work is required to determine the economics of exploiting these deposits. This work should consist of analysing all of the drill hole samples by a reliable analytical method, making detailed reserve calculations, doing a reasonably thorough study of alternate mining methods and costs, continuing mineralogical studies, undertaking preliminary marketing studies, commissioning thorough and complete metallurgical studies, and doing some preliminary environmental investigations. The cost of this program is estimated to be $48,000.

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INTRODUCTION

Minerals containing uranium, niobium and rare earths have been known to occur in placer deposits in the Bugaboo area since 1953. Since that time, a number of companies have conducted exploration in the area but, for various reasons, none have managed to bring the deposits to production. With the present high cost of energy and consequent search for alternate energy sources as well as relatively high metal prices, Tapin Copper Mines Ltd. believes that the placer deposits should be reassessed at this time. Therefore, the purpose of this report is to assess the results of the various explorations and to recommend the direction which should be taken by sebsequent exploration and research on the deposits.

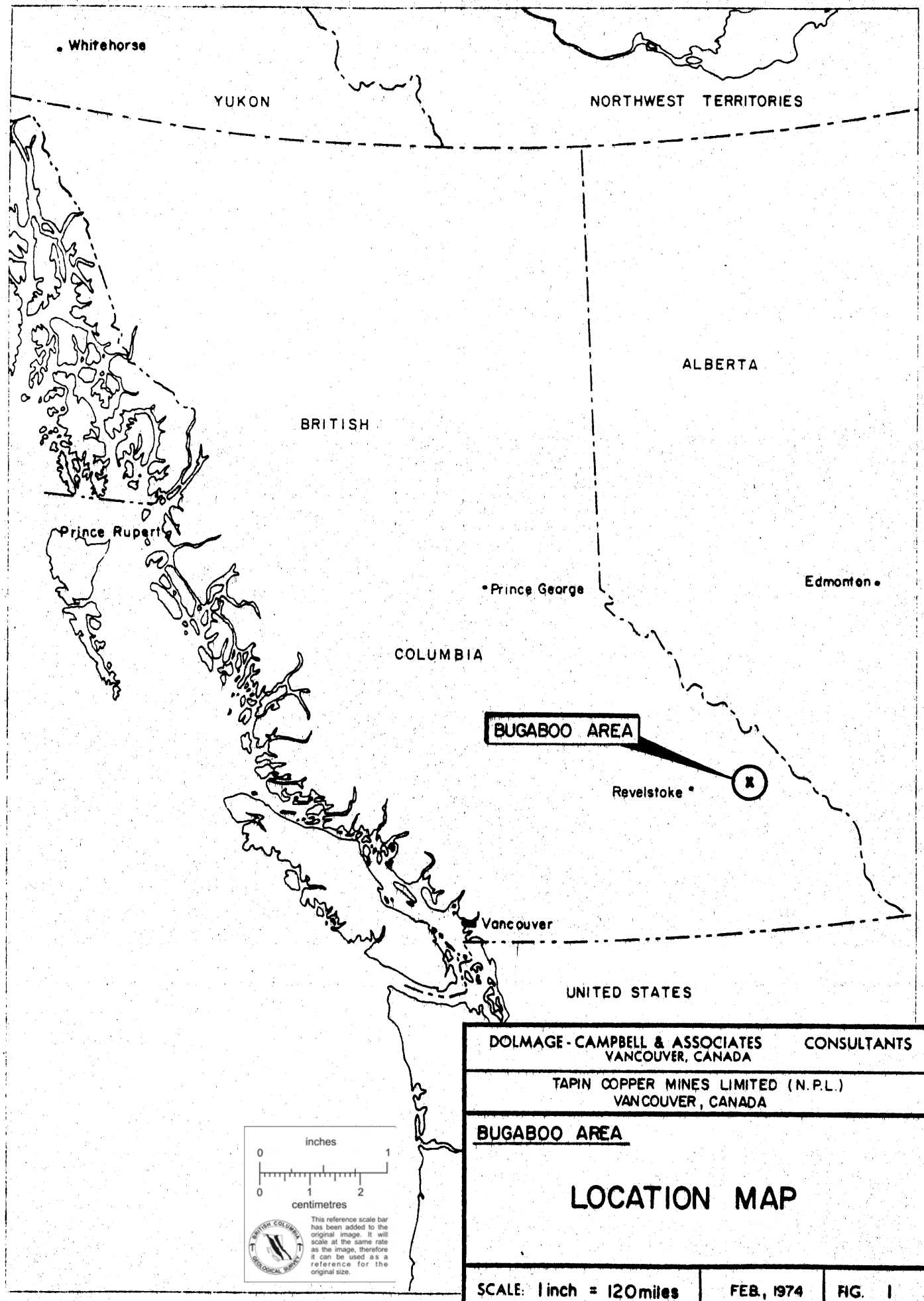
LOCATION: (Figure 1)

Malloy and Vowell Creeks are located some 60 miles east of Revelstoke in the East Kootenay district of British Columbia. Both creeks drain northwards from sources in the Bugaboo granitic batholith; the radioactive placers occur near their headwaters between elevations of 5000 and 5500 ft. They are accessible by about 30 miles of dirt and gravel road from Spillimacheen in the Rocky Mountain Trench. Some fifteen miles of temporary roads have been built along both creeks although they are now probably cut by local washouts. Landing sites for helicopters are plentiful on creek bars and swampy meadows.

PROPERTY: (Figure 2)

The property of Tapin Copper Mines Ltd. (N.P.L.) consists of 21 placer mining bases in two groups as listed below. All Malloy leases are on Malloy Creek and all Brsy leases are on Vowell Creek.

Malloy Creek	Name	Tag No.
	Malloy # 1-5	119972M-119976M
	Malloy # 6-7	119955M-119956M
	Brsy # 1	119958M
Vowell Creek	Brsy # 2-5	119959M-119962M
	Brsy # 6-10	119977M-119981M
	Brsy # 11-12	119968M-119969M
	Brsy # 13	119982M
	Brsy # 14	119971M



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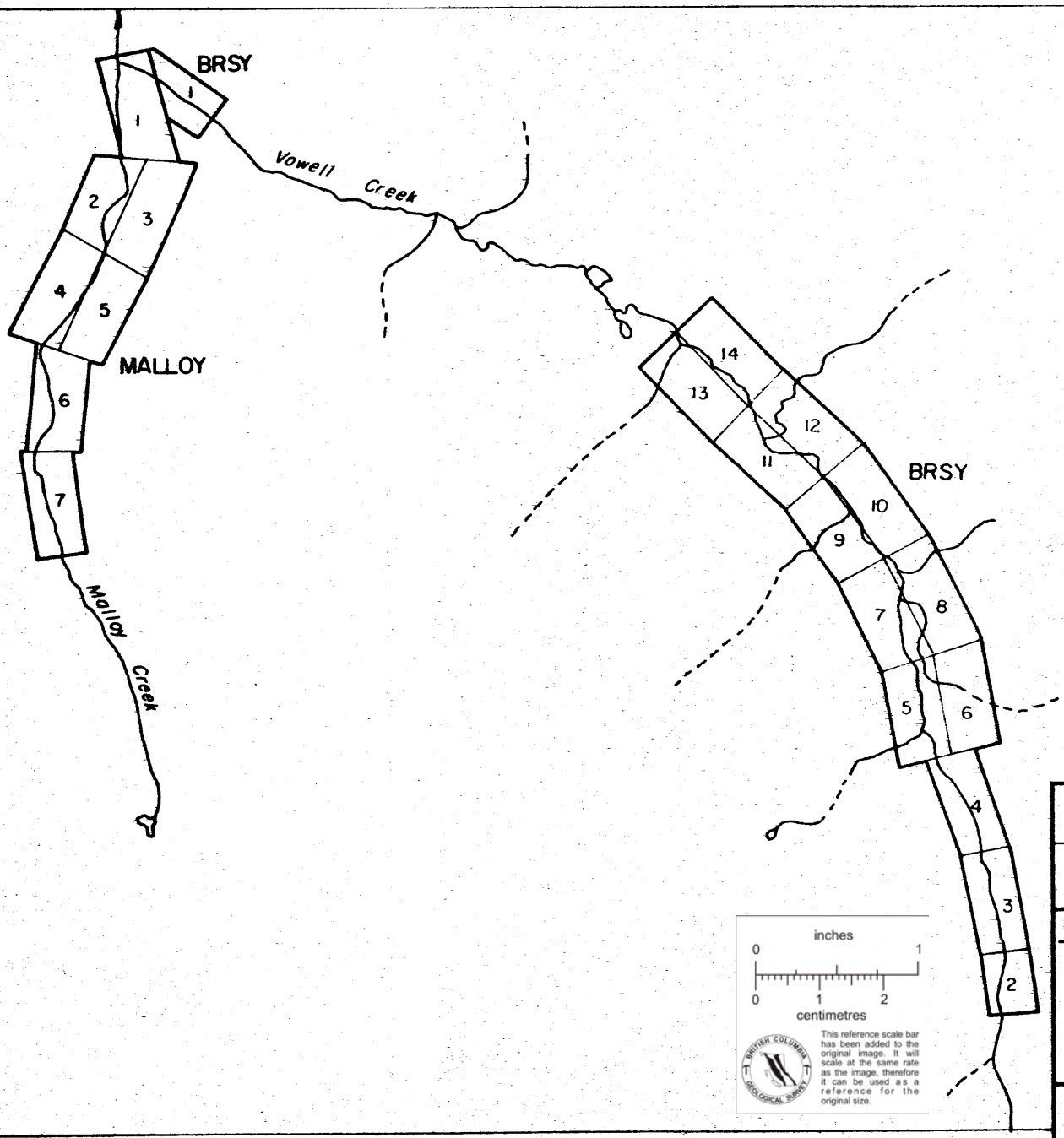
TAPIN COPPER MINES LIMITED (N.P.L.)
VANCOUVER, CANADA

BUGABOO AREA

LOCATION MAP

SCALE: 1 inch = 120 miles	FEB., 1974	FIG. 1

DWG. G74 - 22A



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BUGABOO AREA

PLACER LEASES

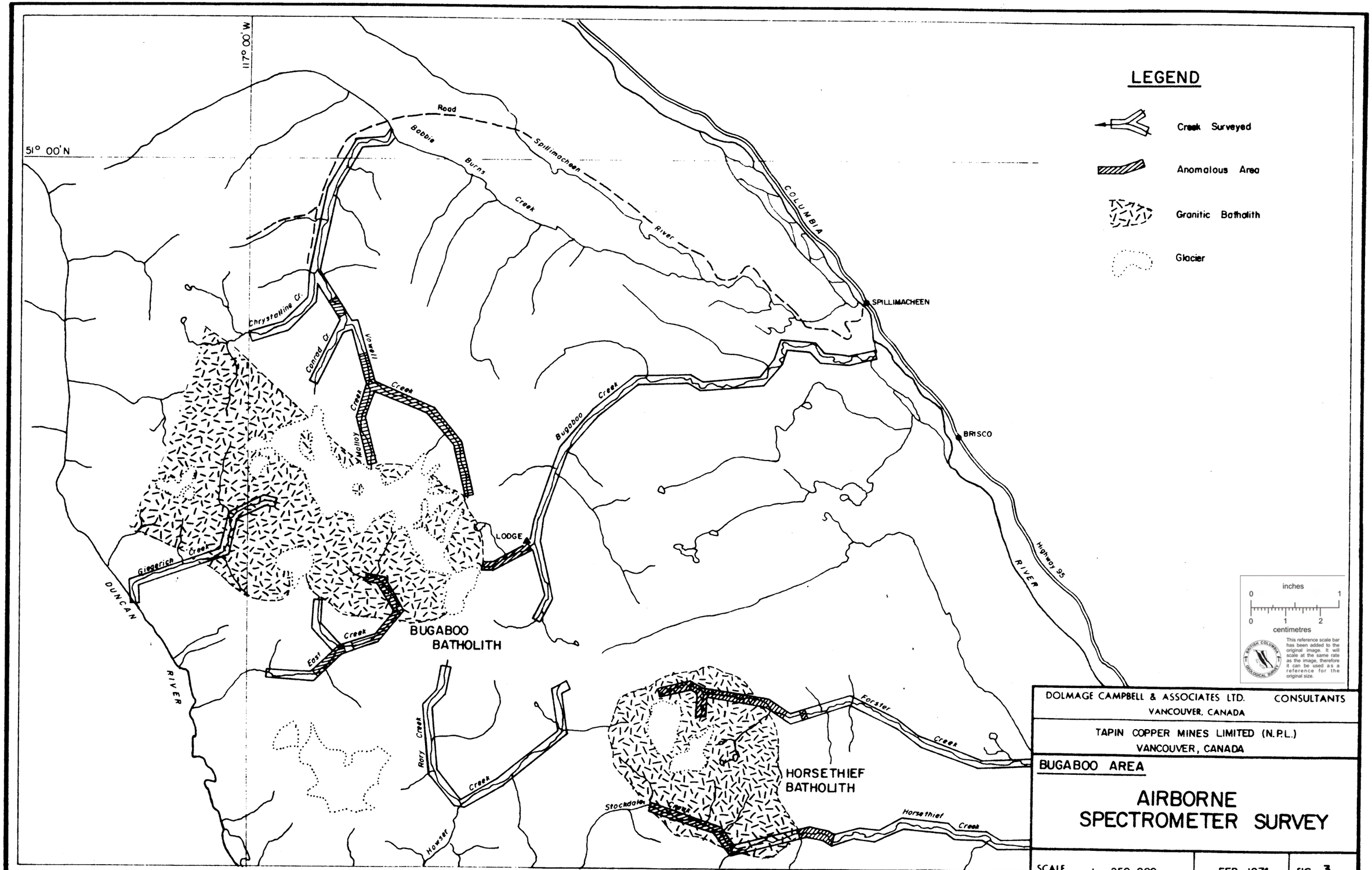
SCALE 1 : 50,000	FEB., 1974	FIG 2

DWG G74 - 23A

HISTORY:

In 1953 uranium oxide and pyrochlore were identified in post-glacial placer sand and gravel deposits in upper Bugaboo Creek. This and similar deposits on Forster and Vowell Creeks were mapped and variously explored by Quebec Metallurgical Industries from 1954 to 1957. A pilot plant (concentrating) was operated on Bugaboo Creek and 21 holes were churn drilled on Vowell Creek. In 1957, application for a contract to produce uranium was turned down by the Canadian government and the leases held in the area were allowed to lapse.

No further work was done in the area until, following restaking by Bugaboo Mines Ltd. in 1966 and 1967 of the upper Bugaboo Creek and the Forster Creek deposits, an airborne spectrometer survey was conducted in the area during September, 1968, (Figure 3). This survey, under the direction of Dolmage Campbell & Associates Ltd., located a number of anomalous areas on several creeks. At that time Dillingham Mining Co. became active in the area through property options and staking. Ground scintillometer surveys and visual estimates of relative gravel quantities in the several anomalous (airborne) areas resulted in the acquisition of property on Bugaboo, Forster, East, Vowell and Malloy Creeks. For a number of reasons, including some of a non-economic nature, some of the properties were allowed to lapse. However, detailed exploration was conducted by Dillingham on Malloy and Vowell Creeks in 1969. This work consisted of drilling the favourable areas and doing some mineralogical studies and metallurgical testing.


117° 00' W
51° 00' N
Road
Spillimacheen
Babbie
Burns
Creek
River
COLUMBIA
SPILLIMACHEEN
Chrystalline Cr.
Conrad Cr.
Creek
Creek
Creek
Bugaboo
Creek
BRISCO
LODGE
Creek
Giegerich
DUNCAN
RIVER
Creek
BUGABOO
BATHOLITH
Rory
Creek
Creek
Howser
Forster
Creek
HORSETHIEF
BATHOLITH
Stockdale
Creek
Horsethief
Creek
Highway 95
RIVER
LEGEND
Creek Surveyed
Anomalous Area
Granitic Batholith
Glacier
inches
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centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
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TAPIN COPPER MINES LIMITED (N.P.L.)
VANCOUVER, CANADA
BUGABOO AREA
AIRBORNE
SPECTROMETER SURVEY
SCALE 1 : 250,000
FEB, 1974
FIG. 3
DWG. G74-24 B

VANCAL - 72

ORIGIN AND CHARACTER OF THE DEPOSITS

The radioactive placer deposits of the Bugaboo area have been derived by post-glacial erosion of the Bugaboo and Horsethief batholiths and the consequent deposition of the resultant sands and gravels in the locally overdeepened valleys. Testing by churn drilling in 1954 (Vowell Creek) and by Becker drilling in 1969 (Malloy and Vowell Creeks) indicated that the placers contain a large black sand fraction concentrated from minor constituents of the granites. Although some discrepancies occur between the various data sources, it appears that the following minerals are present in the sands, (listed in approximate decreasing order of quantity):

Magnetite	Zircon
Ilmenite	Titanite
Apatite	A Titano - niobate
Allanite	Uraninite
Rutile	Monazite

Metals contained by these minerals which may have some economic value depending upon metallurgical recoveries and costs are:

Iron	Tantalum
Zirconium	Uranium
Thorium	Rare Earths
Niobium	

METALLURGY:

Metallurgical testwork has been conducted on the black sands but in only a very limited manner; consequently, the results should be considered only as indications on which to base further testwork. Indicated recoveries for niobium and uranium as determined by Quebec Metallurgical Industries are 75% and 80% respectively. However, the data do not give the grade of the sampled gravels or of the contained black sands. Testwork for Dillingham suggests that the minerals allanite, rutile, zircon, monazite and an unidentified titano-niobate, (possibly pyrochlore), could be recovered in a sink-float process and that this concentrate could contain 2.25% U_3O_8, 6% Nb_2O_5, 2.5% ThO_2, 6% cerium, and a number of other rare earths. The niobium apparently occurs as niobium-bearing rutile and as the unidentified titano-niobate. Some of the uranium and thorium also occurs in the titano-niobate with the bulk of the thorium associated with monazite.

POTENTIAL RESERVES

Exploration of both the Malloy Creek and Vowell Creek deposits was done in adequate detail in the field but subsequent sample analyses were too few for the volume of deposit covered. The deposits were drilled along lines transverse to the valley trends. The lines were spaced at approximately 1000 ft. intervals with holes along them at about 400 ft. intervals. A total of 98 holes were drilled (including 21 in 1954); 38 on Malloy Creek and 60 on Vowell Creek. Hole depths varied from 8 feet to 95 feet and totalled 2160 feet on Malloy and 2723 feet on Vowell. The holes were generally sampled at four foot intervals with the result that approximately 1200 samples were collected. All of the samples were "field-concentrated" and the resultant black sands sent for analyses. However, less than 20% of the samples, (about 225), were analysed and then by the semi-quantitative X-ray fluorescence method. Comparison with results obtained by the fluorimetric method indicates the X-ray fluorescence results to be approximately 50% high for uranium. The precision of fluorimetric assaying is excellent for uranium grades below 0.10%, and virtually all of the results for Malloy and Vowell Creeks lie in this range, whereas X-ray fluoresence results tend to be inconsistent and biased (in this case 50% high).

GRADE:

The determination of average grade of the deposits is difficult and the results suspect because of the rather sparse number of samples which were assayed and the imprecise method of analysis. Compounding the problem are "cut-off" grades, the multi-mineral and element content, recoveries, mining limits, etc. However, calculations made by J.M. Black, P.Eng., for Dillingham Mining Co., done in some detail, appear to be as representative and meaningful as can be expected considering the limitations noted above. The grades, in pounds per cubic yard, determined by Mr. Black are:

	U_3O_8	Nb_2O_5	ThO_2	Magnetite	Ilmenite
Malloy Creek	0.039	0.165	0.116	13.5	1
Vowell Creek	0.038	0.25	0.056	10	3

At $20 per pound for uranium, a not unrealistic future price, and current prices for the other constituents, these grades return approximately $1.20 per cubic yard, of which two-thirds is uranium value. This represents a gross value of the gravels, with no allowance for concentrating efficiencies or metallurgical recoveries.

VOLUME OF DEPOSITS:

The calculation of potentially mineable sands and gravels is complicated by many of the same factor affecting grade determinations. Unfortunately, the rather sparse analysis data has an even greater detrimental effect on determining mining limits than on grade calculations. Indications of potential volume, employing the present data, can be obtained in a number of ways. Calculations can be made for the volume of all sands and gravels that: are derived from granitic rocks; have a relatively high proportion of black sands; have a relatively high scintillation count; or, that contain one or more metal and/or mineral values above some cut-off grade. The last method would appear to be the most useful but is also the most prone to various types of bias (cut-off grade, analyses inaccuracies, personal bias, etc.) which could have a very large effect on the results. However, calculations done by Mr. Black, in which he employed the assay results to determine mining limits (Figures 4 & 5), appear to be reasonable within the limitations noted. They are presented below as an indication of the reserves which may be present along the two creeks.

Malloy Creek	12,200,000 cu. yds.
Vowell Creek	12,750,000 cu. yds.
Total (approx.)	25,000,000 cu. yds.

There appears to be, and should be, some correlation between U_3O_8 assays and scintillometer readings for individual samples. Employing this correlation in a general manner (more qualitative than quantitative), it is apparent that a greater volume of sands and gravels may be mineable than the volumes shown above. The volumes based on mining limits determined from scintillometer readings are shown below and are outlined on figures 4 & 5. The figures are presented to indicate a not unreasonable potential reserve that may prove to be present in the two creeks after all of the samples have been assayed.

Malloy Creek	22,500,000 cu. yds.
Vowell Creek	19,000,000 cu. yds.
Total	41,500,000 cu. yds.

MINING METHODS AND COSTS

There may be several alternative methods for mining the Malloy and Vowell Creek deposits but the most obvious would appear to be by dredging with a floating bucket dredge. Limiting features of this method (size of equipment with respect to accessi bility of deposits, stream gradients, mobility from creek to creek, etc.) could prove it to be uneconomic when compared with some other method (dragline) but for the present discussion dredging is presumed to be the mining method employed.

In all probability mining could not be conducted during the wint er months because of heavy snowfall and freezing temperatures. The work period will therefore be limited to about 200 days per year.

The size of the dredge to be used will depend upon the total volume to be processed, depth to be worked, capital and operating costs, as well as numerous other lesser factors. However, from present data it can be suggested that the minimum size to be considered should be about 8 cu. ft. (per bucket). A dredge of this capacity will process 1.2 - 1.5 million cu. yds. per operating season.

The capital cost of a dredge, concentrating equipment and other ancillary equipment is difficult to estimate without undertaking a thorough feasibility study. Preliminary enquiries indicate a wide range in equipment costs depending upon size, condition (new, used), location and type. However, such enquiries and experience with other types of mining operations suggest a capital cost in the range of 1.5 - 3 million dollars will be required to get the operations underway.

Reliable operating costs are also difficult to obtain because there are few similar operations with which to compare and a general lack of experience in the industry with such operations. Estimates obtained range from 15¢ to 50¢ per cu. yd. for dredge and concentrator operation. With all of the rather tenuous factors considered, the total operating cost for the Malloy-Vowell Creek project will probably be in the range of 30¢ - 70¢ per cu. yd.

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CONCLUSIONS

The Bugaboo area of eastern British Columbia encompasses a number of creeks along which radioactive heavy sands have been deposited. Airborne and ground radiometric surveys completed in 1968 and 1969 indicated that two creeks, Malloy and Vowell, had good potential for containing economic mineral deposits of, principally, uranium and niobium. Detailed exploration of the anomalous areas along these two creeks has indicated, with little doubt, appreciable volumes of post-glacial sands and gravels containing significant quantities of radioactive, heavy sands.

The grade and volume of this potential resource are difficult, from present data, to determine with as much confidence as would normally be desired in a placer deposit. The deposits have been adequately drilled but too few of the resultant samples have been analyzed, (less than 20%). Although a few samples from virtually all holes were assayed, and thus there is a sparse sampling throughout the deposits, there could still be lensing or stratification that would not be apparent because of the paucity of assay results. The information is thus too sparse to allow confident interpretations and calculations. However, some indication of grade and volume of the deposits is required; a calculation of J.M. Black, P.Eng., is reasonable considering these data limitations:

	Volume (cu. yds.)	U_3O_8	Nb_2O_5	ThO_2	Magnetite	Ilmenite)
		(Pounds per cu. yd.				
Malloy Creek	12,200,000	0.039	0.165	0.116	13.5	1
Vowell Creek	12,750,000	0.038	0.25	0.056	10	3

Gross value of this material at $20 per lb. uranium and current prices for the other constituents is approximately $1.20 per cu. yd.

Another calculation of volume based on the scintillometer response of the samples indicates 22,500,000 cu. yds. in Malloy Creek and 19,000,000 cu. yds. in Vowell Creek.

Mineralographic and metallurgical studies are incomplete but do indicate the direction for further testwork. Marketing studies should be conducted along with such testing because some mineral products may be difficult to market and thus of little or no economic importance to the proposed operation. The best values, as noted above, appear to be in uranium and niobium. Also, some revenue may be realized from other products such as zirconium, etc. that occur in the concentrate.

In conjunction with these various studies some preliminary but reasonably thorough mining cost studies should be completed.

A problem which could arise, even in this rather remote area, if exploitation of the deposits is undertaken, is the impact on the environment with respect to public opinion. It will probably be necessary to rehabilitate all mined areas, a cost which should be included in all economic considerations.

RECOMMENDATIONS:

To determine the economic possibilities of the Malloy and Vowell Creek placer deposits the following program is recommended:

Analyse all of the samples from the earlier drilling program including those previously assayed. Use the fluorimetric process and analyse for U_3O_8 and Nb_2O_5 (1200 samples @ $15.00 ea.)	$ 18,000.
Make detailed reserve calculations (grade and volume)	2,000.
Do a preliminary but reasonably thorough study of alternate mining methods and costs	5,000.
Obtain a thorough mineralogical analysis of the black sands including selective assaying for element-mineral relationships	3,000.
Undertake preliminary market studies	3,000.
Use the several thousand pounds of sample rejects to do very complete separation and recovery research and testwork	10,000.
Preliminary environmental studies	2,000.
Contingency	5,000.
TOTAL	$ 48,000.

The deposits on Malloy and Vowell Creeks still require considerable work and study to determine economic probabilities. However, results of the exploration work to date suggest that such efforts are warranted since a relatively large reserve of a potentially valuable mineral product exists in the deposits. Furthermore, with higher metal prices, other creeks in the area may contain potentially economic deposits as well.

Respectfully submitted,
DOLMAGE CAMPBELL & ASSOCIATES LTD.

C.R. Saunders, P.Eng.

CRS/jv
Vancouver, Canada.

DOLMAGE CAMPBELL & ASSOCIATES LTD.
CONSULTING GEOLOGICAL & MINING ENGINEERS
1000 GUINNESS TOWER
VANCOUVER 1, B.C.

CERTIFICATE

I, C. R. Saunders of 666 St. Ives Crescent, North Vancouver, Canada, do hereby certify that:

1. I am a consulting geological engineer.

2. I am a graduate of the University of British Columbia, (B.A.Sc., Geological Engineering, 1956).

3. I am a registered Professional Engineer of the Province of British Columbia.

4. From 1956 until 1967 I was engaged in mining and mining exploration in Canada for a number of companies. I was Chief Geologist for Western Mines Ltd., when I left in 1967 to begin practice as a consulting geological engineer.

5. This report is based on the results of an assessment of the data presented by Tapin Copper Mines Ltd. (N.P.L.) by the writer and the use of all available government and private reports, maps and records.

6. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Tapin Copper Mines Ltd. (N.P.L.) or any associated companies.

Respectfully submitted,

C. R. Saunders, P.Eng.

Vancouver,
Canada

MALLEY & VOWELL CREEKS PLACER LEASES

STAKED BETWEEN 18-24 AUG 73 — 15-18 OCT 73 — 25-27 MAR 74

BY

BRUCE WOODSWORTH, P.ENG. VANCOUVER, B.C

LOGGING BRIDGE

CAMP 1

BRSY #18

No. 20 cut off by printing

Camp 2

BRSY #1

Malley #1

VOWELL CREEK

BRSY #14

Camp 3

BRSY #2

MALLEY CREEK

T.N.

M.N.

23½°

SCALE:

ONE INCH = 0·8 MILES

MILES 1 0 1 2

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
BRUCE WOODSWORTH

Bruce Woodsworth, P. Eng.
30 Mar 74

82K/15W

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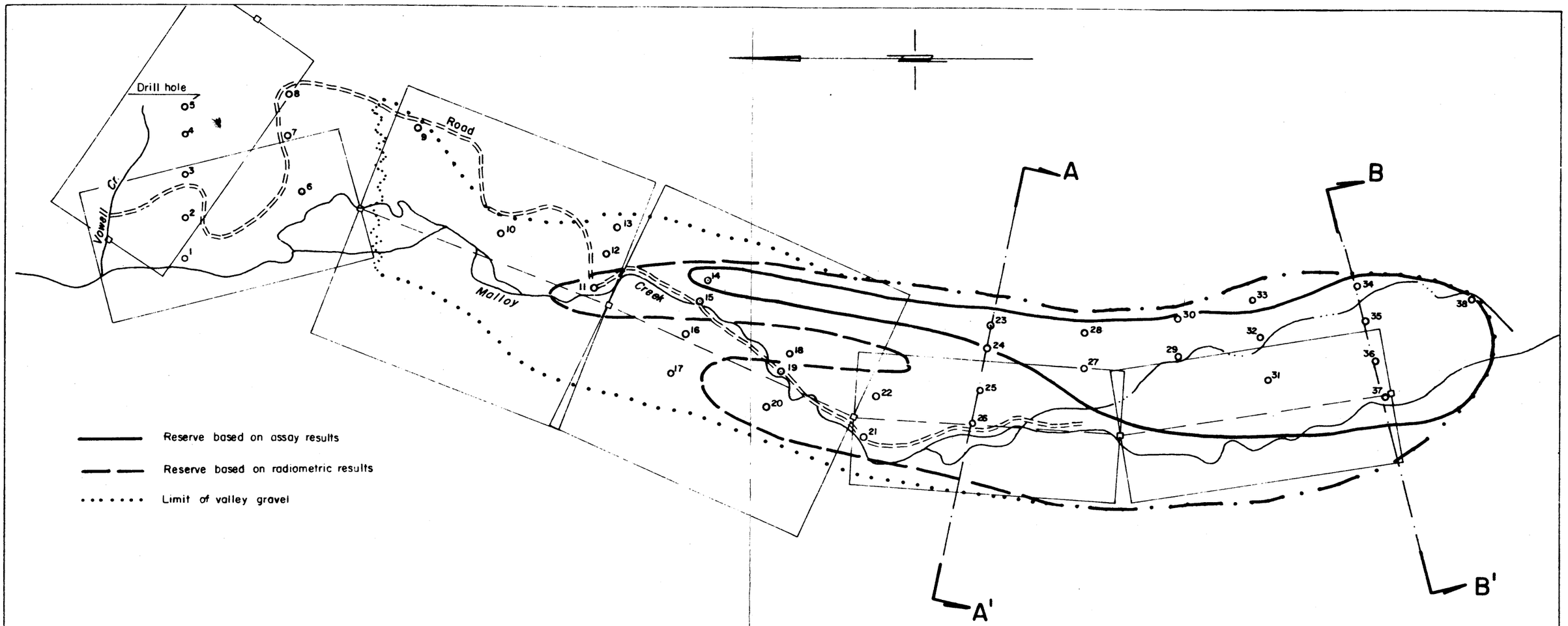

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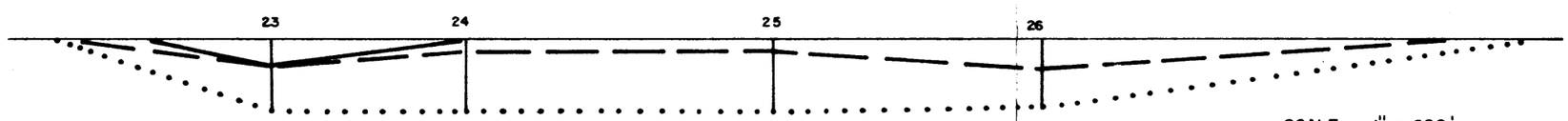

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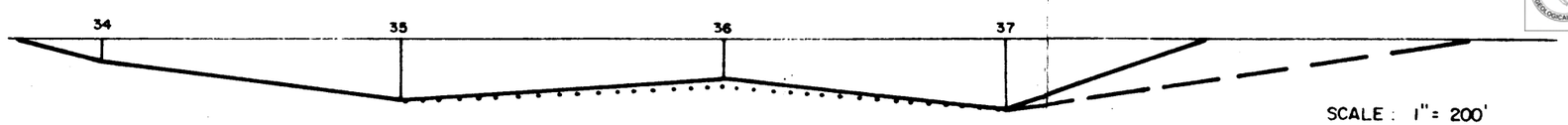
SECTION B-B'



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VANCOUVER, CANADA

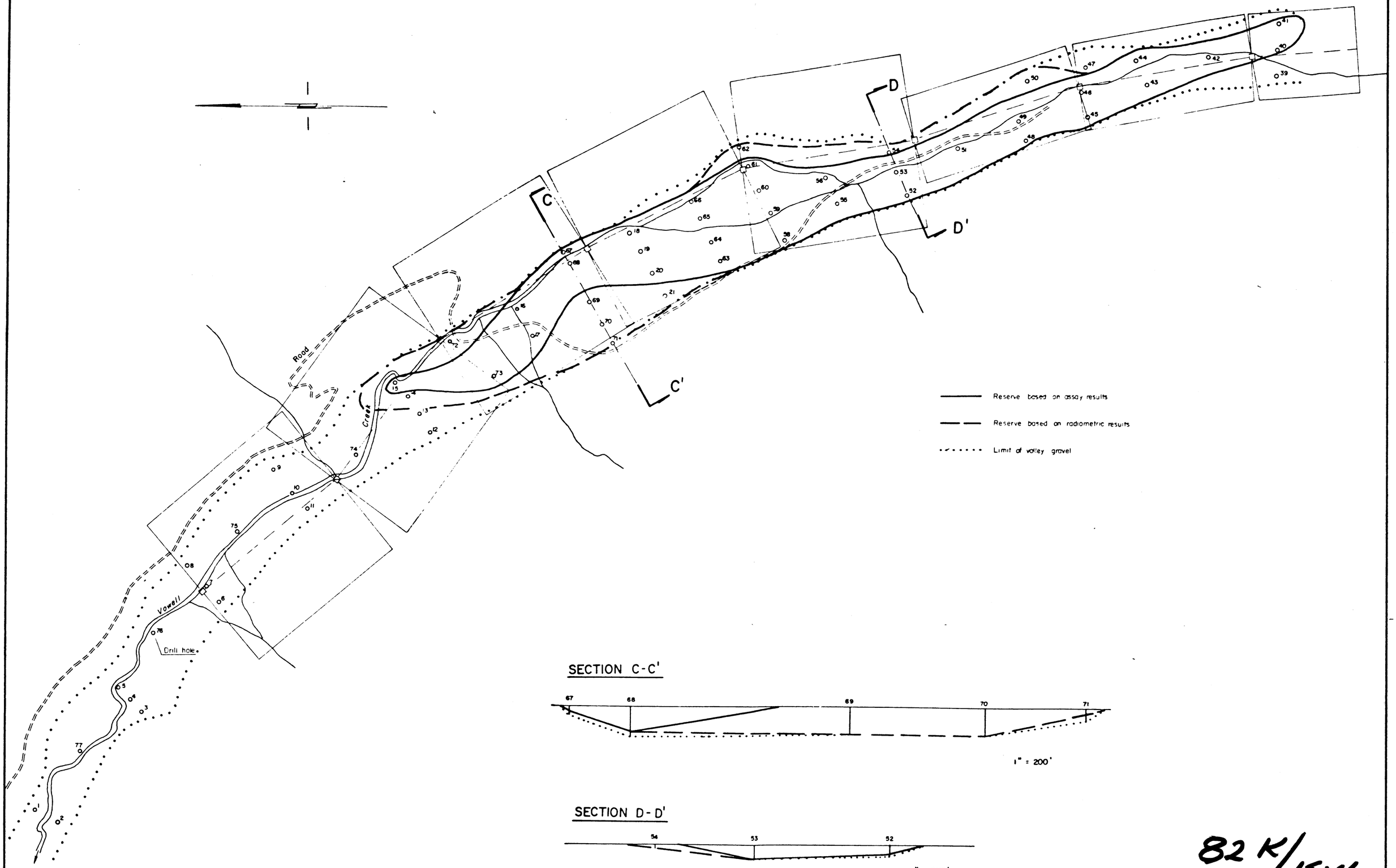
BUGABOO AREA

MALLOY CREEK
PLAN and SECTIONS

SCALE 1" = 1000'	MARCH, 1974	FIG. 4

DWG. G74-43 B

VANCAL - 72



SECTION C-C'

1" = 200'

SECTION D-D'

1" = 200'

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TAPIN COPPER MINES LIMITED (N.P.L.)
VANCOUVER, CANADA

BUGABOO AREA

VOWELL CREEK
PLAN and SECTIONS

SCALE 1" = 1000' | MARCH, 1974 | FIG 5

DWG G74-44 C

LISTED VANCOUVER STOCK EXCHANGE

Tapin Copper Mines Limited

(N. P. L.)

OIL & MINING EXPLORATION & DEVELOPMENT

R. ARONEC, President

307 - 475 Howe Street,
Vancouver, B.C. V6C 2B3

Phone: (604) 687-7235

Tapin Copper Mines Limited

(N. P. L.)

307 - 475 HOWE STREET, VANCOUVER, B.C. V6C 2B3 TELEPHONE: (604) 687-7235

PROGRESS REPORT

March, 1974

In the last report to shareholders, we advised that it was management's intention to concentrate primarily on oil, gas and uranium ventures.

This past December, the Company purchased three producing oil wells in the Pembina field in Alberta from Great Plains Company of Canada Ltd. Tapin Copper Mines Ltd is now registered in Alberta as an extra-provincial company and effective March 1, 1974 has assumed full ownership of the wells. C. J. Gilders, P.Eng., consultant, advises that Tapin Copper Mines Ltd should net approximately $13,697.00 for 1974 production, at the price of $3.96 per barrel, but with the recent indication that the well head price should be set at $6.00 per barrel, commencing April 1, 1974, it would net the Company $26,256.00.

Negotiations are presently underway for the acquisition of further producing oil and gas properties in Alberta.

In the uranium field, Tapin Copper Mines Ltd has successfully purchased an 85% interest in 21 uranium placer leases in the vicinity of Bugaboo Creek, in the Golden Mining District of British Columbia, for the nominal sum of $4,431.12.
Mr. C.R. Saunders, P.Eng., consultant with Dolmage Campbell & Associates Ltd., Vancouver, B.C. reports the following on the Company's placer uranium leases on the headwaters of Malloy Creek and Vowell Creek located approximately 60 miles east of Revelstoke, B.C. containing significant amounts of uranium and niobium. Access is provided by means of dirt road from the village of Sillimacheen, which is situated about 30 miles south of Golden, British Columbia on Highway No. 95.

The Bugaboo batholith has been eroded producing deposition of radioactive sands, particularly in Vowell and Malloy Creeks.

A report by our consultants, Dolmage Campbell & Associates Ltd states that previous exploration work by various companies indicated Malloy and Vowell Creeks to have the most economic potential in the area. Detailed exploration, consisting of drilling and sampling of 98 holes concentrated in the most favourable areas was subsequently carried out. Although insufficient assaying was completed on the sampling, within the data limitations, a reasonable calculation of the reserve potential on each creek by M.J.M. Black, P.Eng., consultant for Dillingham Mining Corp, who previously held these leases, indicates the following:

	Volume (cu.yds)	U_3O_8	Nb_2O_5 (Pounds per cu.yds)	ThO_2	Magnetite	Ilmenite
Malloy Ck	12,200,000	0.039	0.165	0.116	13.5	1
Vowell Ck	12,750,000	0.038	0.25	0.056	10.00	3

Gross value of this material at projected prices of $20 per lb. uranium and current prices for the other constituents is approximately $1.20 per cu. yd. Total operating costs are estimated to be from a minimum of 30¢ to a maximum of 70¢ per cu. yd.

A further calculation based on scintillometer readings of the samples indicates 22,500,000 cu. yds in Malloy Creek and 19,000,000 cu. yds. in Vowell Creek, indicating a total of 41,500,000 cu. yds.

Preliminary metallurgical testing indicates favourable recoveries for uranium and niobium being 80% and 75% as determined by Quebec Metallurgical Industries.

The Consultant's recommended programme of work to further determine the economic possibilities of our leases is at an estimated cost of $48,000.00. This work programme includes

analysis of all samples from earlier drilling, detailed reserve calculations, study of alternate mining methods and costs, thorough mineralogical analysis of the black sands, marketing studies and further exploration and recovery test work.

It is suggested that this operation could be put in production with a capital cost ranging from 1.5 to 3 million dollars using an 8 cu. yd. dredge, working 200 days per year and mining approximately 1.2 - 1.5 million cu. yds. per operating season.

At present, management is negotiating with a number of major oil and gas and mining companies to participate in the final stages of exploration, which we hope will lead to production in the near future.

To further enhance your Company's position, negotiations are presently proceeding for the acquisition of an encouraging uranium property in Ontario in a known uranium-occurring area. It is expected a decision will be made in a few months.

BONNET PLUME PROPERTY - YUKON TERRITORY

Tapin Copper Mines Ltd has recently acquired the J17-24 claim group (eight claims) in the Bonnet Plume area, Yukon Territory, where Barrier Reef Resources Ltd., have reported extensive outcrops containing zinc sulphides in bedded carbonate rocks.

The property is situated approximately eleven miles to the west of the Barrier Reef G0Z property adjacent to the west of Cypress Resources and adjacent to the east of Nadaleen Syndicate.

Barrier Reef have reported assays ranging from 1% to 49% zinc in sulphides over varying significant lengths in a mineralized zone traced for a distance of 4,400 feet along strike with an apparent average thickness of 25 to 40 feet.

The favourable geological horizon appears to underly the J17-24 claim group and zinc mineralization has been reported to occur on the adjacent Cypress Mines property.

Numerous other mining companies have and are acquiring holdings in the area and a great deal of exploration activity is anticipated.

Tentative plans are to carry out an exploration program in the area when conditions permit.

The proposed amendments to the B.C. Minerals Act as set out in Bill 31 is of concern to us for our B.C. holdings, as they must be to everyone in the industry, operator and shareholder alike. While it is too early to assess the full impact, it is apparent that if implemented, it would create hardships on financing new mine production and its ultimate profitability. The Government may take a "second look" at the proposed new legislation to still achieve the aims of providing increased Government revenues without jeopardizing the continued existence of the mining industry itself.

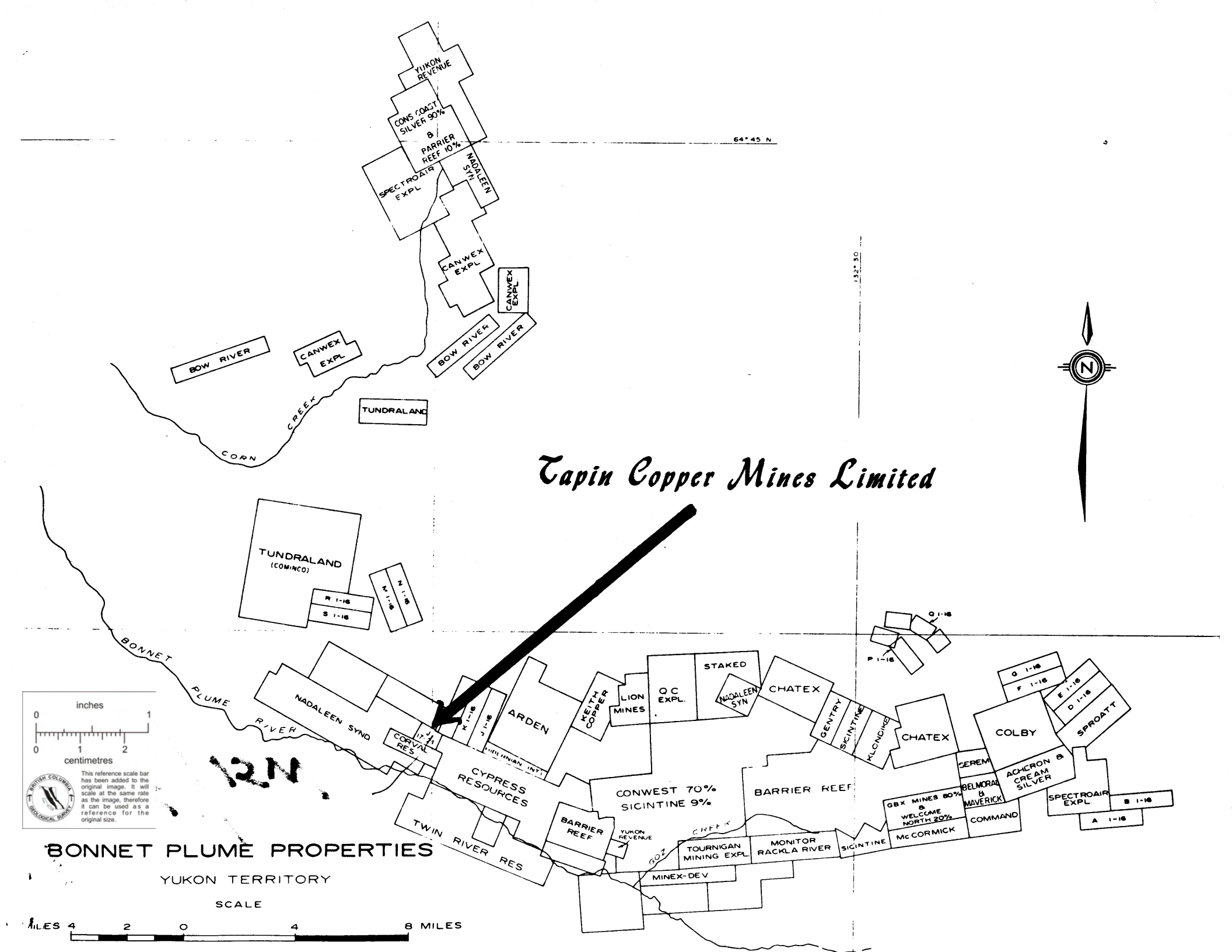
Without clear guidelines from the Government regarding the basis for determining average metal prices, and the removal of some ambiguous requirements in the Bill, it is difficult to determine precise production costs and revenues accurately.

It remains our intention to continue our development program within the framework of governing legislation. It is our belief that it is not the intention of this Government to eliminate new and profitable mines from being brought into production and we intend to proceed accordingly.

ON BEHALF OF THE BOARD OF DIRECTORS

R. T. Aronec
President

RTA:vsm


Tapin Copper Mines Limited
BONNET PLUME PROPERTIES
YUKON TERRITORY
SCALE
MILES 4 2 0 4 8 MILES
64° 45' N
132° 30'
N
YUKON REVENUE
CONS COAST SILVER 90% & PARRIER REEF 10%
SPECTROAIR EXPL
NADALEEN SYN
CANWEX EXPL
BOW RIVER
TUNDRALAND
CORN CREEK
TUNDRALAND (COMINCO)
R 1-16
S 1-16
M 1-16
N 1-16
BONNET PLUME RIVER
NADALEEN SYND
CORVAL RES
K 1-16
J 1-16
ARDEN
KEITH COPPER
LION MINES
QC EXPL.
STAKED
CHATEX
GENTRY
SICINTINE
KLONDIKE
O 1-16
P 1-16
G 1-16
F 1-16
E 1-16
D 1-16
SPROATT
COLBY
CEREM
BELMORAL & MAVERICK
ACHERON & CREAM SILVER
SPECTROAIR EXPL
B 1-16
A 1-16
COMMAND
GBX MINES 80% & WELCOME NORTH 20%
McCORMICK
CYPRESS RESOURCES
CONWEST 70% SICINTINE 9%
BARRIER REEF
TWIN RIVER RES
YUKON REVENUE
GOZ CREEK
TOURNIGAN MINING EXPL
MONITOR RACKLA RIVER
SICINTINE
MINEX-DEV
inches
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.