180-#904-#8744

SAWYER CONSULTANTS INC.

GEOLOGICAL, GEOCHEMICAL and GEOPHYSICAL REPORT

ON THE

1980 EXPLORATION PROGRAM

on the

BIG FRANK #1, and #2 CLAIMS

Franklin Glacier, Vancouver Mining Division

British Columbia

NTS: 92N/6

Lat. 51°17'N

Long. 125°25'W

Owner and Operator:

MacMILLAN ENERGY CORPORATION

NOVEMBER 28th, 1980

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INTRODUCTION

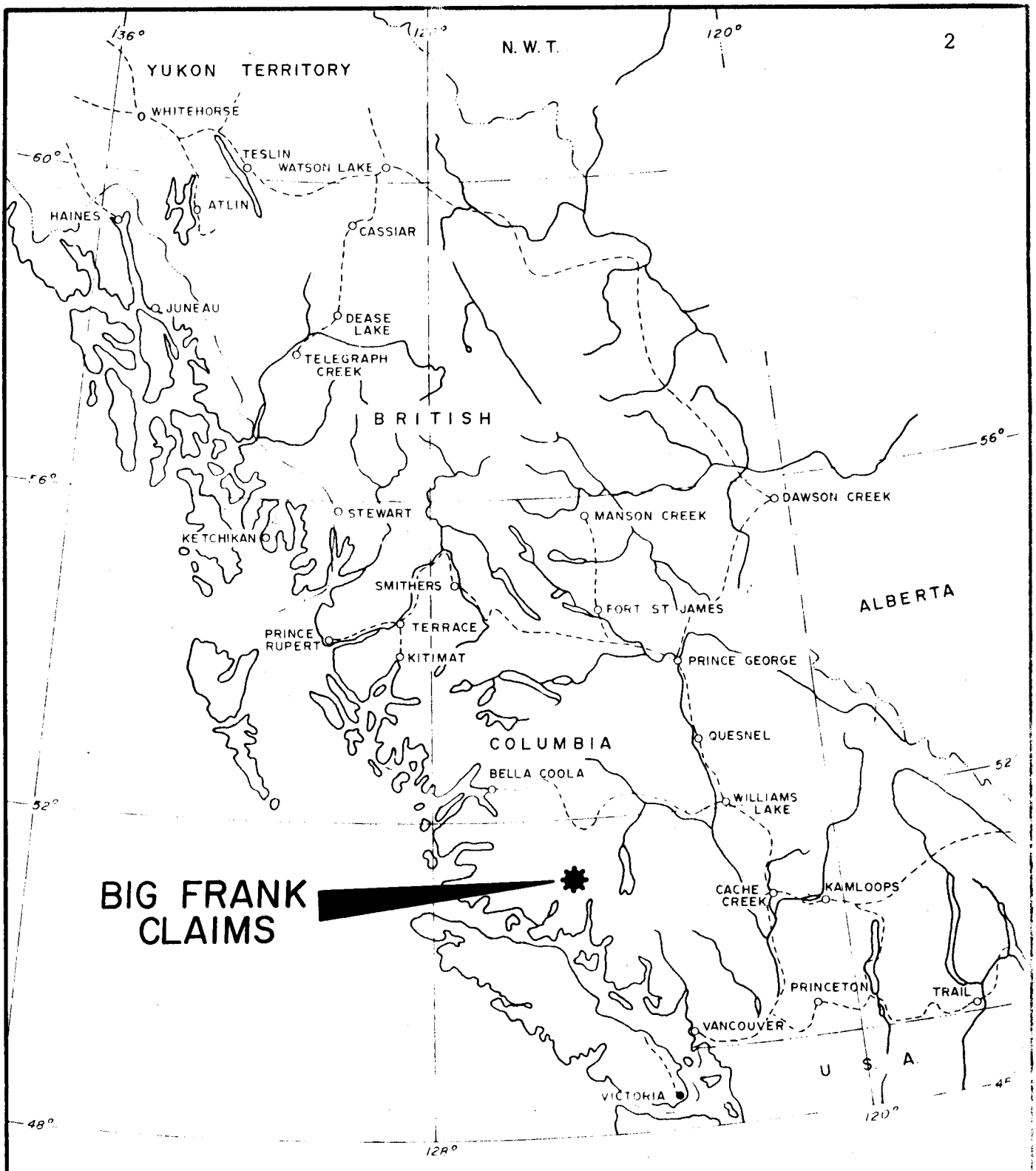
MacMillan Energy Corporation acquired the Big Frank claims from United Mineral Services Ltd. in February 1980. The claims represent a partial restaking of the Knight and Nunatak claims which had been staked in 1976 but allowed to lapse. Both these 1976 claims and the present Big Frank claims cover a mineralized stock of biotite-quartz-monzonite which had been the focus of exploration work by Kennco Explorations (Western) Ltd. in the 1960's. Sawyer Consultants Inc. were retained by MacMillan Energy Corporation to carry out a first stage exploration program following in general the recommendations contained in a report dated December 12th, 1979 prepared by J.P. Elwell, P.Eng. This report describes the work carried out and its results. It is intended that copies of this report be filed with the B.C. Department of Mines in support of applications for assessment credit already filed by MacMillan Energy Corporation.

SUMMARY

Work by Kennco Exploration (Western) Ltd. in the 1960's defined a zone of copper/molybdenum mineralization associated with a quartz monzonite intrusive stock of probable Tertiary age in the area now covered by the Big Frank claims. The price for molybdenum at the time of this work was not sufficiently high to warrant further work on the prospect even though the amount of molybdenum mineralization in the zone was demonstrated to be anomalous. No assaying was done at that time for precious metals.

Work carried out by MacMillan Energy Corporation in the 1980 field season confirmed the existence of a mineralized zone within the quartz monzonite stock through geological mapping, geochemical surveys, a magnetometer survey, and fairly extensive sampling of mineralized zones in bedrock. The results of this work indicate that values in gold as well as in molybdenum are anomalous and at currently prevailing prices are sufficiently encouraging to warrant further exploration.

Exploration costs on this property will be relatively high because of the rugged terrain and lack of ground access to the area, nevertheless the property is located within 20 miles of tidewater so that the possibility of developing a mine in this locality, given that sufficient tonnages of ore grade material can be developed, may not be beyond the realms of logistic possibility. A continuing exploration program consisting essentially of induced polarization surveying and diamond drill testing, the two to be carried out in conjunction with each other, is recommended for the 1981 season at an estimated cost in the vicinity of $150,000.00.



MacMILLAN ENERGY CORPORATION

BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

GENERAL LOCATION SKETCH

SCALE: 1" = 125 MILES

FIGURE 1

PROPERTY AND OWNERSHIP

The property consists of two claims, Big Frank #1, and Big Frank #2, staked under the British Columbia modified grid system. Each claim is comprised of 8 units so that the total property is made up of 16 units having a configuration of 4 units by 4 units. A joint legal corner post for the Big Frank #1, and Big Frank #2 claims is located in the centre of the eastern boundary of the claims, i.e. at the northeastern corner of Big Frank #2 and the southeastern corner of Big Frank #1 claims. The following table summarizes the pertinent information for these two claims and Figure 2 accompanying this report is a reproduction of part of B.C. Department of Mines claim map M92N/6W.

Claim	Record No.	No. of Units	Date Staked	Date Recorded	Expiry Date	Recorded Owner
BIG FRANK #1	597	8	Nov. 2/79	Nov. 29/79	Nov. 29/80	MacMillan Energy Corporation
BIG FRANK #2	598	8	Nov. 2/79	Nov. 29/79	Nov. 29/80	

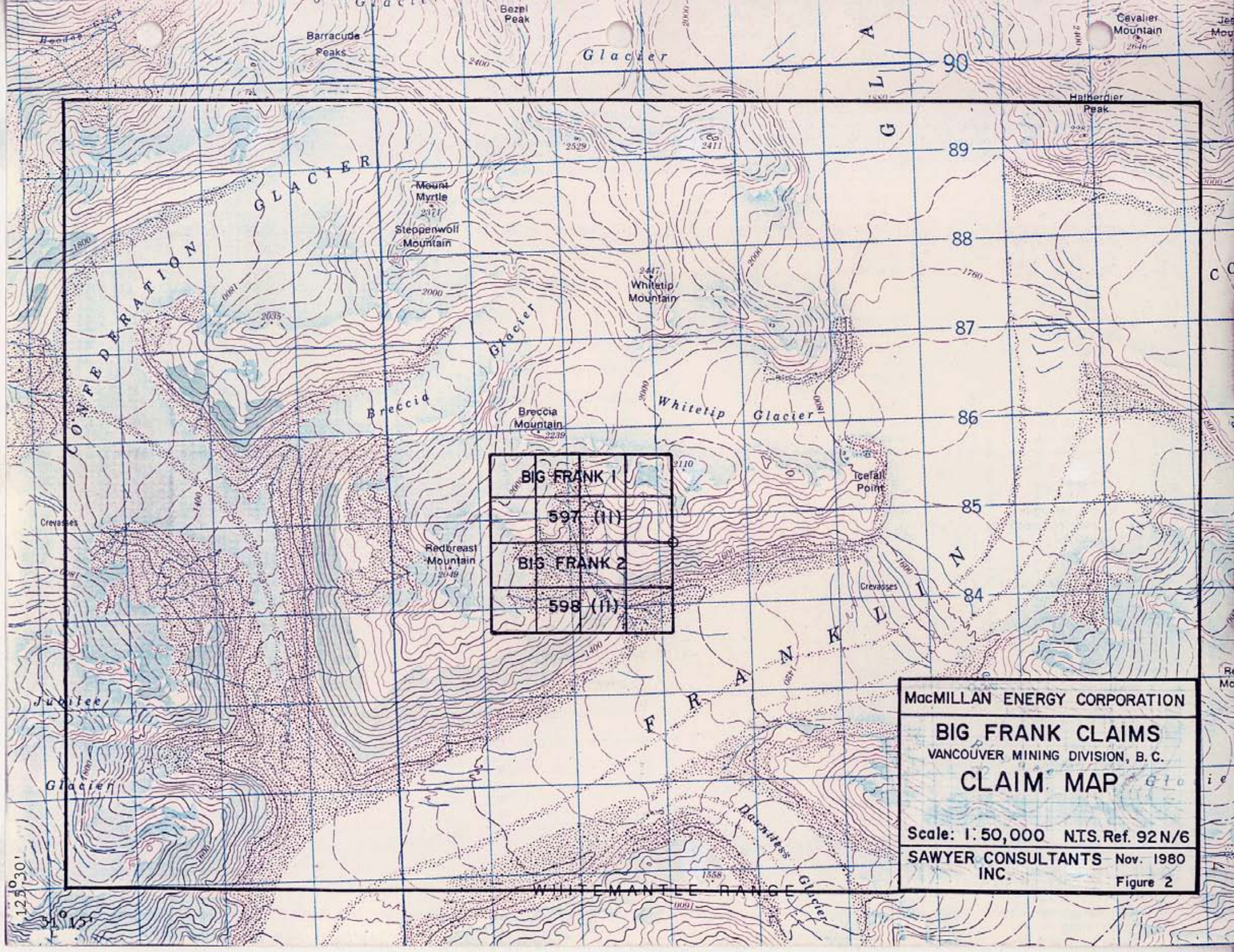
The property was originally staked by R.A. Dickinson for United Mineral Services Ltd. on November 2nd, 1979. Under the terms of an agreement dated February 27th, 1980, MacMillan Energy Corporation acquired the claims from United Mineral Services Ltd. and Bills of Sale conveying the claims to MacMillan Energy Corporation were recorded with the Vancouver Mining District Recorder on October 30th, 1980.

LOCATION AND ACCESS

The claims are located in the Coast Range Mountains on the north side of the Franklin Glacier and immediately south of White Tip Glacier approximately 17 air miles north-northeast of the head of Knight Inlet and approximately 8 miles southwest of Mount Waddington. The nearest centre of population is Campbell River which lies approximately 95 air miles almost due south of the property. The City of Vancouver lies approximately 175 miles to the southeast.

There is no land access to the claims although logging roads are in existence to the head of Knight Inlet, thus access to the property must be had by helicopter. For the purposes of the 1980 work program equipment and supplies were taken to the head of Knight Inlet by fixed wing aircraft out of Campbell River (Island Air) thence by helicopter to the property. A Jet Ranger helicopter supplied by Okanagan Helicopters Ltd. from Campbell River was used. Helicopter flying time from Campbell River to the property is approximately one hour.

The claims lie within the area covered by map sheet 92N, Mount Waddington, in the 1:250,000 series, and by map sheet 92N/6, Mount Waddington, in the 1:50,000 series. The coordinates of a point approximately


Bezel Peak
Barracuda Peaks
Glacier
Cevalier Mountain
Halberdier Peak
GLACIER
CONFEDERATION
Mount Myrtle
Steppenwolf Mountain
Whitetip Mountain
Whitetip Glacier
Breccia Glacier
Breccia Mountain
Icefall Point
Crevasses
Redbreast Mountain
FRANKLIN
Jubilee Glacier
Dauntless Glacier
WHITEMANTLE RANGE
BIG FRANK 1
597 (11)
BIG FRANK 2
598 (11)
89
88
87
86
85
84
90
125° 30'
51° 15'
MacMILLAN ENERGY CORPORATION
BIG FRANK CLAIMS
VANCOUVER MINING DIVISION, B.C.
CLAIM MAP
Scale: 1:50,000 N.T.S. Ref. 92N/6
SAWYER CONSULTANTS INC. Nov. 1980
Figure 2

at the centre of the claims are 125°25'W, 51°17'N. Figures 1 and 2 accompanying this report show the general location of the property and the configuration of the claims with respect to the local topography.

PHYSIOGRAPHY

The property lies within the Coast Mountains Physiographic System. Elevations in the property range from 1400-1600 metres approximately (4600-5300 feet approximately). Much of the area is covered by permanent ice fields and glaciers, the Franklin Glacier, on the northern margin of which the property is located being one of the larger glaciers in the area. All of the highest peaks in the area are permanently covered by ice fields. In the claims area approximately two-thirds of the property have bedrock exposures, the balance of the area being covered by snow and/or ice. Saffron Creek, fed by glacial waters from the ice fields, runs more or less through the property. Immediately east of Saffron Creek there is a small alpine meadow with grass and a few small scrubby spruce trees however the rest of the property is bedrock outcrop or glacial scree material. Relief locally is quite rugged, or precipitous. Mean annual precipitation in the area is in the range 250-350 centimetres.

HISTORY AND PREVIOUS WORK

The area of the Big Frank claims was first staked in the 1960's by Kennco Explorations (Western) Ltd. as the B.H.A. claims to cover a zone of copper/molybdenum mineralization originally located by Kennco personnel. Exploration work on these B.H.A. claims by Kennco included geological mapping, silt and soil geochemical sampling, and a short diamond drill program involving a total footage of 630 feet drilled in seven short holes. The drill core was analysed for copper and molybdenum but as far as available records indicate it appears that no analyses for precious metals were carried out. The tenor of mineralization encountered was too low at 1960's metal prices to justify further work and eventually the claims expired in 1976.

Kennco's geochemical work outlined a broadly anomalous area of copper, molybdenum, and zinc values which were obviously reflecting exposed mineralization in the main showing area. Other anomalous values were also defined to the west of the exposed mineralization and suggested possible extentions of it.

United Mineral Services Ltd. restaked the area in April 1976 as the Nunatuk, Franklin, Scimitar, and Knight claims which comprised a total of 68 units. Work carried out subsequently to this staking by United Mineral Services Ltd. appears to have consisted principally of reconnaissance geological mapping and general regional research, however no further exploration in the field was completed and these claims also lapsed.

In November 1979 part of the earlier Knight and Nunatuk claims which covered the principal mineral showings then known were restaked as the Big Frank #1 and #2 claims by R.A. Dickinson for United Mineral Services Ltd. No further work was done until the work described in this report carried out by MacMillan Energy Corporation in 1980.

REGIONAL GEOLOGY

The Big Frank claims are within the Coast Crystalline Complex made up largely of coarse crystalline intrusive rocks of Jurassic to Cretaceous age of generally granodioritic or dioritic composition. These rocks have in several places been cut by later Tertiary and volcanic complexes which have been described (Culbert, 1971) as lying along an "axial fracture zone" which is a north-northwesterly trending lineament extending from Pemberton in the south to the area of Bella Coola in the north. The MacMillan Energy Corporation Franklin Glacier zone is one of these complexes. Other known mineral prospects of similar type and in the same general area including the Salal Creek and Hoodoo prospects, the latter having been actively explored by Utah Mines Ltd. in the 1980 field season.

1980 WORK PROGRAM

The 1980 exploration program was carried out by Sawyer Consultants Inc. for MacMillan Energy Corporation. The work completed included establishment of a control grid, geological mapping, and sampling of mineralized zones, geochemical soil and stream sediment sampling, and a ground magnetometer survey. The work was carried out in the period September 4th-19th, 1980. Mr. F. Yacoub, a geologist of Sawyer Consultants Inc., carried out the geological mapping and sampling, the results of his work being confirmed by the writer who spent one field day with Mr. Yacoub on September 13th, 1980. Compilation of the field data, etc. was done by the writer and Mr. Yacoub.

Control Grid

A control grid was established on the claims using laths and flagging to mark the various stations. A base line oriented 310° true was established from a zero point located on the east bank of Saffron Creek just to the north of the campsite at an elevation of approximately 5500 feet. The base line was chained and stations marked at 150 metre intervals with grid lines being turned off at right angles to the base line at these same intervals so that lines were established at 0+00, 1+50N, 3+00N, 1+50S, 3+00S, etc. A total of nine lines extending from 4+50S to 7+50N were established. On the northeast side of the base line all of the lines were established to 6+00E or 7+00E depending on topography however to the southwest of the base line the topography is much more rugged and in places is too steep for the lines to be established for their entire length. Reference

to the geological map (Map 1) will show the extent of the grid lines established. In all, a total of approximately 11,500 metres of grid line were established.

Geological Mapping and Sampling

Geological mapping was carried out by F. Yacoub over the exposed part of the claim area using the picket lines and topography as control. The extreme western and northern areas of the claims are covered by snow or ice fields. Within the exposed area mineralization was quite widely distributed. Where possible the mineralized zones were channel sampled and the samples were submitted to the Vancouver laboratories of Bondar-Clegg & Co. Ltd. where they were assayed for copper, molybdenum, silver, and gold. In places where mineralization was less massive or less well developed chip samples were taken and were similarly analysed. A total of 34 channel samples and 30 chip samples were collected.

Map 1 accompanying this report is a geological map showing the distribution of the various rock types mapped within the claim area and Map 2, Sample Location and Assay Plan, gives the locations, sample numbers, and assay values for the four elements assayed.

Geochemical Sampling

A total of 113 soil samples were collected over the grid including the main mineralized area. In areas of outcrop or scree, of course, soils are not developed and samples were not collected. In some instances fine sandy material, which is more properly described as finely ground rock was collected. All of the samples were submitted to the Vancouver laboratories of Bondar-Clegg & Co. Ltd. where they were dried, screened to -200 mesh, and analysed for total copper and molybdenum (Mo) content. Maps 3a and 3b accompanying this report are plots of the copper and molybdenum values respectively from these samples, and from some silt samples. The plotted values have been subjected to standard statistical treatment to determine threshold values. The threshold value determined for copper is 231 ppm, and the values on Map 3a have been contoured using threshold value (mean + 2 x standard deviation), and at 339 ppm, 555 ppm, and 987 ppm, which represent mean + 4 x standard deviation, mean + 8 x standard deviation, and mean + 16 x standard deviation. In the case of molybdenum the calculated threshold value is 22 ppm, and the plotted values have been contoured at 22 ppm, 36 ppm, 65 ppm, and 122 ppm, representing the similar statistical intervals as used in the case of copper.

The analytical techniques employed by Bondar-Clegg & Co. Ltd. involve extraction of the copper and molybdenum from the -80 mesh sample fraction with the use of hot lefort aqua regia and determination of metal concentrations using normal atomic absorption instrumentation.

Magnetometer Survey

A Phoenix Geophysics fluxgate type magnetometer, Serial No. 6931, was used to carry out the ground magnetometer survey over the grid established on the Big Frank claims. Stations were read at 100 metre inter-

vals along all of the grid lines except where topography prevented access. At one or two stations (marked NR on Map 4) readings were not obtainable. Base station readings were taken at regular intervals throughout the survey in order to monitor diurnal variations however in compiling the results it was found that these variations were so slight during the time that the survey was read as to be insignificant. The values of the vertical component of the magnetic field as read with this instrument are plotted on Map 4, Magnetometer Survey, accompanying this report.

1980 WORK PROGRAM - RESULTS

Local Geology and Mineralization

The oldest rocks represented in the property area are granodiorites and subordinate quartz diorites of the Coast Range Intrusions, of probable Jurassic age. The granodiorites are grey to dark grey, medium grained, rocks in which the dark minerals, mainly hornblende and some biotite, show a preferred orientation giving the rock a faintly foliated gneissose appearance. Rocks of this map unit occupy the northeasterly part of the claim group, the southern contact of the unit with the much younger quartz monzonite lying along the valley of Saffron Creek, in the southeastern part of the property. The granodiorites are overlain by darker coloured relatively unaltered and fresh looking volcanic agglomerates and flow rocks of intermediate composition whose outcrop pattern forms a wedge shaped area between the granodiorites and younger intrusive quartz monzonite in the central part of the claim group. Probably the most important group of rocks represented in the property area are the quartz monzonites and biotite quart monzonites of possible Tertiary age, which form a stock intruding the granodiorites and volcanics in the southern part of the property. These are the only rocks exposed in the southeastern and south-central part of the claim group and are thought to underlie the area immediately to the west covered by ice fields. These are light grey, fine grained to medium grained, rocks composed essentially of feldspars, quartz and biotite. The fresh rock does not carry any obvious or appreciable amount of sulphides, however sulphide mineralization, which includes pyrite, chalcopyrite, and molybdenite, with some specular hematite does occur abundantly in veinlets and fracture zones and in association with more altered phases of these later intrusions. Grouped with the quartz monzonites are rocks which are essentially highly altered parts of the same intrusive. They are shown on the geological map (Map 1) as a zone of hybrid rocks and quartz sericite altered rocks. Feldspars are highly altered to sericite and some kaolin, and the rocks generally have undergone some secondary silicification, all of these alteration effects probably being the product of late stage aqueous fluids which were relatively highly charged with metals and are thus responsible for the emplacement of mineralization in fracture zones, along contacts, and in these highly altered parts of the intrusive. Two or three small "islands" of volcanic tuff have been mapped. The material of these zones is light grey with an obvious tuffaceous texture whose main characteristic is, perhaps, the fact that they look relatively fresh and unaltered, and are almost totally devoid of mineralization.

The field relationships suggest that these tuffs are post quartz-monzonite intrusive and the fact that they are almost completely unmineralized would support this view.

From an economic point of view the biotite quartz monzonites and associated hybrid and altered rocks are the most important, and are the main focus of interest in relation to commercial mineralization. They have obviously been highly fractured and shattered, and the resulting structural fracture zones, veins, etc., have been available for later mineralizing solutions.

As part of the geological mapping program a number of channel samples and rock chip samples were collected in the main area of mineralization and adjacent to it. A total of 34 channel samples and 30 chip samples were collected. Map 2 accompanying this report is a Sampling and Assay Plan which distinguishes between the chip samples and channel samples, and shows their location together with the assay and/or geochemical analysis results. All of the samples were analysed for copper, molybdenum, silver and gold. The channel samples were submitted for assay and the rock chip samples for geochemical analyses, all to the Vancouver Laboratories of Bondar-Clegg & Co. Ltd. Gold and silver were determined by standard fire assay methods, and the copper and molybdenum concentration by normal chemical assay methods. The geochemical samples were digested with hot aqua regia and the concentrations of the elements determined by atomic absorption techniques. We have attempted analytical evaluation of the results from both channel and chip samples, and it is apparent that the values for molybdenum (Mo) and gold are of greater significance in terms of the style of mineralization and its potential for economic exploitation than those of the other metals (copper, and silver).

Dealing first with the 34 channel samples, the average assay for molybdenum of all 34 samples is 0.0865% Mo, and for gold 0.0308 oz./ton. Using these average values it is apparent that there are two small zones of higher than average molybdenum values. The first of these extends from approximately 2W and 1+50N east-northeastwards across the base line in the vicinity of 0+60N. This zone is represented by samples 34650 and 34640. To the west of this a cluster of four samples (Nos. 34676, 34670, 34671, 34667) centering approximately about 4+00W, 4+00N, returned molybdenum assays in the range 0.09% to 1.25% Mo. The distribution of above average gold values shows some general agreement with the above zones of higher molybdenum values. Immediately southwest of the second zone of anomalous molybdenum values, i.e. at about 4+00N and 4+00W, a small cluster of three samples (Nos. 34672, 34664, 34668) give values in the range 0.021 to 0.028 oz./ton gold. To the south of this a fairly broad zone along Saffron Creek and several of its tributaries extending from just west of the 0+00 point on the base line to approximately 1+00E, 1+15N, between the base line and the right hand branch of Saffron Creek, thence southwestwards along line 1+50N to about 4+50W, includes five or six samples (Nos. 34633, 34641, 34650, 34680, 34682) which range from 0.021 to 0.330 oz./ton. The distribution pattern of all these anomalous samples is, of course, controlled to some degree, by the available sample sites and it may well be that these zones are in fact more extensive than indicated by the present sampling, or even perhaps that two or more zones

would in fact be part of a larger single continuous zone. The recognition of these zones, however incomplete they may be on the basis of present sampling, is however useful in defining within fairly broad limits permissive zones for potential ore grade mineralization.

Referring now to the chip sample values, the fairly broad zone of higher gold values extending just west of the 0+00 point on the base line up to line 1+50N which was defined by the channel samples (Nos. 34633, 34640, 34650, etc.) is similarly picked out by a number of chip samples. In the case of these latter the area of anomalous molybdenum values extends further to the northeast than that of the higher gold values, however there is in general fairly good coincidence between higher molybdenum and gold values from both chip samples and channel samples. Similarly to the southwest (at approximately 3+50N, 5+40W) a small area of three higher chip samples (Nos. 34626, 34627, and 34697) returned above background molybdenum values in the range 86 to 240 ppm Mo. One or two other isolated higher gold value also occur, e.g. at 6+00W, 4+90N, and at 5+30E, 3+50N.

From all of the foregoing it is apparent that the principal zone of sulphide mineralization on the Big Frank claims is related to the biotite quartz monzonite intrusive stock and that it forms a fairly well defined area in the southern and southwestern parts of the 1980 grid. The description of the geochemical and geophysical results which follow will show some interesting correlation with this target area.

Geochemical Surveys B to C horizon, shallow; -80 mesh, hot aqua regia, AA.

Maps 3a and 3b accompanying this report are plots of the copper values and molybdenum values obtained from soil and silt samples collected over the Big Frank claim grid as part of the 1980 field program.

A total of 11 silt or stream sediment samples were collected along Saffron Creek and its tributaries. All of the samples were analysed for copper and molybdenum. Molybdenum values showed almost no variation and were uniformly low. The calculated threshold value for copper in stream sediments is 77 ppm, and reference to the plot of these values and of the geochemical laboratory report (see Appendix A) shows that only one sample, taken from a branch of the creek where it crosses line 4+50N just southwest of the base line, returned an anomalous value (137 ppm copper). These silt results are of little use in evaluating the mineralization on these claims principally because the available drainage for sampling in the property area is so limited. The samples were collected as part of the general sampling program for the sake of completeness and in order that any unexpected anomalies would be detectable. The results are of no particular significance.

Calculated threshold values for copper in soils and for molybdenum in soils are 231 ppm and 22 ppm respectively. Referring to Map 3a, the copper plan, it is apparent that the greater part of the grid area returned copper values below the threshold value and anomalous zones of copper in soils are relatively restricted and confined either to the edges of the exposed bedrock areas, i.e. at the edges of the ice fields, or in isolated locations along the creeks, this latter feature probably indicating

the anomalous values at these locations to be hydromorphic. The main area of exposed mineralization does not appear to be anomalous in copper. The highest values in the whole grid area are at the extreme southern and southeastern edges of the grid on line 4+50S where values in excess of 1000 ppm were obtained from two separate sample stations. Again, reference to topography and drainage shows that these highest values also may be hydromorphic. Referring to Map 3b, which shows the molybdenum values in soils and silts, there is a quite marked contrast with the copper plot. It is apparent that the main area of exposed mineralization lies within a broad zone of above threshold molybdenum values and includes a significant area of moderately to highly anomalous values. This broad zone extends from line 1+50S to the northern limit of the grid and of the exposed area below the ice fields, to the south and west of the base line. At the extreme south end of the grid some quite strongly anomalous values in molybdenum were returned around the base line and to the southwest of the base line along one of the smaller drainages on line 4+50S. As in the case of copper, one or two isolated areas of higher molybdenum values also occur, for example, on line 1+50S at 4+00E to 5+00E, and again at the extreme southwestern extremity of this same line at 9+00W.

While it is of interest that the molybdenum geochemical plot better reflects the mineralized zone than does the copper soil plot these surveys have served only to confirm the area of observed mineralization and in general to provide only very weak indications of other possible mineralized areas. This is due in the main to the very limited area which is available for sampling below the snow fields and ice fields. In general the rather restricted zone of higher copper values at the southern and southwestern extremity of the grid is displaced southwestwards from the area of highest molybdenum values. There is general correspondence between some isolated high values in copper and molybdenum, for example on line 3N at 2E approximately, and at the extreme western part of the grid on line 6N at 4+50W and at 7W. In the eastern corner of the grid a zone of higher copper values building up at the northeastern extremities of lines 1+50S to 4+50S is displaced southeast from a similar zone of higher molybdenum values at 4W and 5W on the line 1+50S.

Magnetometer Survey

Reference to Map 4, Magnetometer Survey Plan, shows a broad generally northeasterly trending zone of much lower magnetic intensity extending through the centre of the grid from southwest to northeast surrounded by an area of higher magnetic intensity. Within the broad magnetic low zone values range from less than 100 gammas to 400 gammas. To the northwest, northeast, and southwest maximum values of magnetic intensity range up to about 800 gammas, while to the southeast the magnetic intensity is much higher with values up to 1800 gammas. The whole picture is reasonably symmetrical with the zone of magnetic lows standing as the most striking feature. If one compares this magnetic picture with the geological map it becomes apparent that there is good correlation between the more highly mineralized and broken up area within the biotite quartz monzonite and the magnetic low, and that the northeasterly extension of this low in general follows the area of the hybrid rocks and strongest sericite

alteration. To the north-northwest and further to the northeast areas underlain by volcanic rocks and granodiorite show generally higher magnetic intensity.

The association of sericitic alteration which frequently accompanies porphyry style mineralization with lower magnetic intensity is well recognized as a typical feature of porphyry style mineralization. The pattern exhibited within the limited grid area on the Big Frank claims obviously fits this general picture. As is the case of the other surveys the relatively restricted area over which it is possible to carry out detailed work places fairly strict limitations on the usefulness of these surveys however it is interesting and perhaps significant to see this fairly classical magnetic pattern on this property.

DISCUSSION AND CONCLUSIONS

The main objective of the 1980 work program was to verify the general geological environment as reported from earlier work in the 1960's by Kennco Explorations and to expand if possible on the data available from that work. In particular, the lack of any assays for gold or silver from the 1960's work left a serious gap in our information thus the sampling of the mineralized area was an important part of the 1980 work program. As can be seen from the above descriptions of the 1980 work and its results the existence of a strongly fractured and mineralized zone within the quartz monzonite stock was verified and the mean assays for both molybdenum and gold of all of the surface samples collected, 0.0903% Mo and 0.0245 oz./ton gold, are considered very encouraging. As in the case of the earlier work the most recent exploration has been limited by the areal extent of the local terrain not covered by glaciers or permanent ice fields. It may be that the outcrop area is now slightly greater than 20 years ago but the overall area still remains fairly restricted.

In general we can conclude from the results of the 1980 work program that a molybdenum-gold-copper-silver zone of mineralization within the quartz monzonite intrusive on the Big Frank claims represents a legitimate target for more detailed investigation. It would appear that molybdenum and gold will be the primary commodities to be sought, and the tenor of mineralization in these two elements will determine the viability of any possible mining operation in the future. Even though the property is located in fairly rugged terrain and at considerable elevation the problems presented by this location are probably not insuperable and its relative proximity to tidewater at the head of Knight Inlet helps to alleviate any logistical problems.

The style of mineralization is readily apparent from the exposed mineralized zones on the property, and the usefulness of further indirect methods of exploration in this situation is fairly limited. Probably the main thrust of any further work will have to be diamond drill testing to establish continuity and overall grades of the mineralization exposed at

surface. It will probably be useful and will provide at least some preliminary aid in selecting drill targets to carry out some induced polarization surveying. The exposed bedrock and scree cover in the main part of the mineralized zone may provide some difficulties in terms of establishing good electrical contacts for this type of work however with the right crew and equipment it should be possible to carry out these surveys.

RECOMMENDATIONS

Continuing investigation of the molybdenum/gold mineralization on the Big Frank claims is recommended and the following program is suggested for the 1981 field season.

(1) The renewed exploration should be commenced as early as is practical in the season which, at the elevations involved, will probably be mid July. Camp should be established on the property as in the 1980 season, and access and servicing would have to be by helicopter and/or a combination of fixed wing aircraft, and helicopter from Campbell River, and the head of Knight Inlet.

(2) A frequency domain induced polarization survey should be undertaken over the greater part of the property. The principal target area will, of course, be the exposed mineralized zone however it will also be desirable to extend at least some survey lines well beyond the limits of the presently known mineralization.

(3) Known mineralized zones and any IP anomalies should be tested by diamond drilling. Because of the relatively short season it will be important to complete the geophysical work as early as possible. Since there will be some drill target zones available on the basis of current knowledge it may well be reasonable to mobilize both drill crews and geophysical crews, etc. to the property at approximately the same time. This will have the advantage not only of expediting the overall work program but also in having available to the geophysicist some sub-surface information as to percentage of sulphides, etc. in areas which will be covered by the induced polarization survey and this will provide hard data to aid in evaluating other IP features. In this regard it may be noted that molybdenite itself generally gives only a fairly poor IP response. It may well be therefore that the most important drill targets will not be the strongest IP responses but responses of lesser intensity or with particular ratios. The writer has been involved in other situations where it has been useful and fruitful to carry out drilling and IP surveying in conjunction with each other and this may well prove to be helpful on the Big Frank claims.

Because of the difficulties of access diamond drilling will be a relatively expensive proposition in this location and mobilization/demobilization costs will probably be fairly heavy. In order therefore to optimize these costs the program envisaged should make provision for a minimum of say 3000 feet of BQ drilling. Access for the drill and equipment could be by barge to the head of Knight Inlet thence by large helicopter to the property area. It should perhaps be noted in this connection that the logging companies in the 1980 season were using large helicopters for their logging operations in this area and it may well be possible to use these same helicopters to lift such large pieces of equipment as the drill, pump, bundles of rods, etc. from the barge to the property and eliminate costly ferry charges. Certainly this should be investigated in planning for a renewed program.

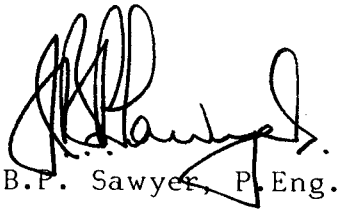
Some approximate costs for a recommended program for this property are given below.

COST ESTIMATES

15 kilometres of IP Surveying @ $425.00/km.	$ 6,375.00
Mob/demob for IP crew and equipment	2,500.00
Diamond Drilling - 914.4 metres (3000 feet) BQ core @ $92.00/m.	84,124.80
Field Geologist re drill supervision, core logging, etc. estimate 45 days @ $200.00/day	9,000.00
Helper - 45 days @ $125.00/day	5,625.00
Assaying, estimate 250 samples @ $21.00 (Cu, Mo, Au, Ag)	5,250.00
Aircraft charter - fixed and rotary wing estimate 18 hours @ $405.00/hr.	7,290.00
Camp, equipment and supplies	7,500.00
Miscellaneous transportation	1,500.00
Supervision & Engineering	4,000.00
Consulting	4,000.00
Contingency	14,000.00
	$151,164.80

Respectfully submitted,

SAWYER CONSULTANTS INC.



J.B.P. Sawyer, P.Eng.

CERTIFICATE

I, Fayz F. Yacoub, do hereby certify:

(1) That I am a graduate in Geology and Chemistry of Assuit University, Egypt (B.Sc. 1967), and Mining Exploration Geology of the International Institute for Aerial Survey and Earth Sciences (I.T.C.), Holland (Diploma 1978).

(2) That I have practised within the geological profession for the past seven years.

(3) That the information, opinions, and recommendations in the attached report are based on personal observations on the Big Frank #1 and Big Frank #2 Claims in the period September 4th-17th, 1980, and from general reference material.

(4) That I own no interest in the shares or securities of MacMillan Energy Corporation, nor in the Big Frank #1 and Big Frank #2 Claims, nor do I expect to receive any such interest.

F. Yacoub

Fayz F. Yacoub

Dated at Vancouver, British Columbia, this 28th day of November, 1980.

CERTIFICATE

I, J.B.P. Sawyer, DO HEREBY CERTIFY:

(1) That I am a consulting geologist with business office at 1201 - 675 W. Hastings St., Vancouver, B.C., V6B 1N2, and President of Sawyer Consultants Inc.

(2) That I am a graduate in geology of Manchester University (B.Sc. - 1953) and of the University of Western Ontario (M.Sc. - 1957).

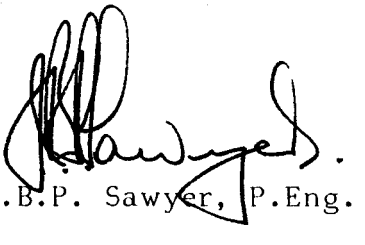
(3) That I am a Registered Professional Engineer (geological) in the Association of Professional Engineers of the Province of British Columbia, and a Registered Chartered Engineer with the Council of Engineering Professions, London.

(4) That I am a Fellow of the Geological Association of Canada, a Member of the Canadian Institute of Mining & Metallurgy, a Fellow of the Geological Society of London, and Fellow of the Institution of Mining & Metallurgy, London.

(5) That I have practised my profession as a geologist for the past twenty-six years.

(6) That the information, opinions and recommendations in the attached report are based on personal study of the records and reports of earlier work on this prospect, and of published maps and reports; on personal supervision of the overall project planning and execution, and on personal observations made on the Big Frank Claims during the course of the 1980 work program.

(7) That I own no interest in the Big Frank Claims nor in the shares or securities of MacMillan Energy Corporation.



J.B.P. Sawyer, P.Eng.

Dated at Vancouver, British Columbia, this 28th day of November, 1980.

SELECTED BIBLIOGRAPHY

Culbert, R.R., 1971: Thermal zones of Coast Mountains - their texture and economic significance; Paper presented at Can. Inst. Min. Metall. Annual Western Meeting, October 24-27, 1971.

Elwell, J.P., 1979: Appraisal report on the Big Frank Claims, Knight Inlet area, Vancouver Mining Division, B.C.; Report prepared for MacMillan Energy Corporation.

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Woodsworth, G.J., and Roddick, J.A., 1974: Coast Mountains Project; Pemberton (92J West Half) Map Area, B.C.; in Geol. Surv. Can. Paper 75-1, Pt. A, pp. 37-40.

APPENDIX A

Certificates of Assay and Analyses
Bondar-Clegg & Company Ltd.

To: wyer Consultants Inc.

PAGE No. 1

1201 - 675 West Hastings Street
Vancouver, B.C. V6B 1N2

RECEIVED OCT 27 1980

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

REPORT NO.) - 1598

DATE: October 23, 1980

Samples submitted: October 4, 1980
Results completed: October 23, 1980
PROJECT: BIG FRANK

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu	Mo						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
34633	<0.002		0.05		0.03	0.047						
34639	<0.002		0.02		0.02	0.005						
34640	0.007		0.16		0.10	0.021						
34641	0.011		0.06		0.02	0.330						
34650	0.003		0.10		0.03	0.030						
34651	<0.002		0.04		<0.01	0.004						
34653	<0.002		0.02		<0.01	0.002						
34654	<0.002		0.05		<0.01	0.004						
34656	<0.002		0.02		<0.01	0.008						
34657	0.008		0.13		0.04	0.004						
34658	<0.002		<0.02		<0.01	0.010						
34659	<0.002		<0.02		<0.01	0.002						
34660	<0.002		<0.02		<0.01	0.004						
34663	<0.002		<0.02		0.01	0.021						
34664	<0.002		0.03		0.10	0.024						
34665	<0.002		0.02		0.02	0.022						
34666	<0.002		0.03		0.14	0.026						
34667	0.040		1.25		0.46	0.001						
34668	<0.002		0.02		0.02	0.028						
34669	<0.002		0.05		0.08	0.003						
34670	0.17		0.15		0.38	0.003						
34671	0.002		0.09		0.07	0.005						
34672	<0.002		0.03		0.04	0.062						
34673	<0.002		0.02		0.01	0.002						
34674	<0.002		0.02		0.01	0.006						
34676	<0.002		0.15		0.01	0.012						

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

To: ___' yer Consultants Inc.

PAGE No. 2

REPORT NO. 0 - 1598

DATE: October 23, 1980

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu	Mo						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
34680	<0.002		0.03		0.01	0.063						
34681	<0.002		0.02		0.01	0.007						
34682	<0.002		0.08		0.01	0.025						
34683	0.002		0.06		0.10	0.20						
34684	0.028		0.06		0.03	0.021						
34685	0.003		0.05		0.03	0.015						
34698	<0.002		0.03		0.03	0.007						
34700	<0.002		0.05		0.04	0.023						

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

RECEIVED SEP 2 5 1980

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVENUE, NORTH VANCOUVER, B.C. (604) 985-0681 TLX: 04-352667

Geochemical Lab Report

FROM: Sawyer Consultants REPORT NUMBER: 20 - 2191

PROJECT: MacMillan Energy Corp. Big Frank Claims
FRANKLYN - Soil Samples DATE: September 23, 1980

SAMPLE NUMBERS	Cu ppm	Mo ppm
0+00 - Additional A	261	49
B	700	27
C	480	53
0+00	87	4
1+00 E	76	24
2+00 E	36	3
3+00 E	96	16
4+00 E	85	5
5+00 E	195	3
6+00 E	121	3
4+00 W	165	37
5+00 W	138	24
6+00 W	206	20
7+00 W	317	18
1+50N- 0+00	181	17
1+00 E	172	10
2+00 E	48	21
3+00 E	129	5
4+00 E	75	5
5+00 E	65	3
6+00 E	199	6
7+00 E	261	2
1+00 W	280	13
2+00 W	186	24
4+00 W	160	77
5+00 W	135	52
6+00 W	197	27
7+00 W	192	23
8+00 W	236	14
9+00 W	420	23
3+00N- 0+00	74	2
1+00 E	109	2
2+00 E	810	27
3+00 E	182	45
4+00 E	35	5
5+00 E	66	2
6+00 E	51	2
7+00 E	9	1
1+00 W	81	3
2+00 W	171	35

FOR METHOD, EXTRACTION AND FRACTION USED – SEE ATTACHED

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

REPORT NUMBER: 20 - 2191 PAGE: 2

SAMPLE NUMBERS	Cu ppm	Mo ppm
3+00N - 3+00 W	183	28
4+00 W	185	32
5+00 W	131	55
6+00 W	168	25
7+00 W	174	25
8+00 W	165	13
9+00 W	150	9
10+00 W	315	7
4+50N - 0+00	142	2
1+00 E	79	1
2+00 E	66	2
3+00 E	56	2
4+00 E	NS	NS
5+00 E	51	2
6+00 E	640	17
1+00 W	92	10
2+00 W	75	6
3+00 W	182	18
4+50 W	175	31
6+00 W	167	33
7+00 W	266	35
5+35N - 4+00 W	211	38
6+00N - 0+00	173	2
1+00 E	201	4
2+00 E	85	1
3+00 E	108	1
4+00 E	112	3
5+00 E	NS	NS
6+00 E	30	2
4+50 W	242	59
5+00 W	163	20
6+00 W	168	24
7+00 W	242	99
7+50N - 0+00	217	3
1+00 E	179	3
1+30 E	103	2
2+00 E	54	1
3+00 E	170	2
4+00 E	184	3
5+00 E	78	2
6+00 E	52	3
7+00 E	122	4
1+50S - 0+00	140	9
1+00 E	293	17
2+00 E	79	7

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

REPORT NUMBER: 20 - 2191

SAMPLE NUMBERS	Cu ppm	Mo ppm
1+50S - 3+00 E	159	13
4+00 E	104	128
5+00 E	188	79
6+00 E	288	4
2+00 W	157	26
3+00 W	268	38
5+00 W	313	43
6+00 W	327	43
7+00 W	173	41
8+00 W	154	17
9+00 W	208	40
3+00S - 0+00	273	7
1+00 E	185	14
2+00 E	24	4
3+00 E	159	10
4+00 E	263	8
5+00 E	430	7
2+00 W	176	30
3+00 W	219	6
5+00 W	327	48
6+00 W	67	20
7+00 W	20	6
4+50S - 0+00	209	150
1+00 E	237	103
2+00 E	136	11
3+00 E	249	8
4+00 E	258	9
5+00 E	1020	5
1+50 W	1220	41
2+00 W	590	183

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVENUE, NORTH VANCOUVER, B.C. (604) 985-0681 TLX: 04-352667

Geochemical Lab Report

FROM: Sawyer Consultants

REPORT NUMBER: 20 - 2191

PROJECT: BIG FRANK - Silt Samples
MacMillan Energy Corp.

DATE: September 23, 1980

SAMPLE NUMBERS	Cu ppm	Mo ppm
0+12N - 6+00 W	63	< 1
1+50N - 3+28 E	28	< 1
1+29 W	42	1
1+70 W	35	1
2+85 W	76	1
4+50N - 0+61 E	48	1
3+41 E	59	1
0+50 W	137	1
4+00 W	34	2
6+00N - 0+35 E	42	1
2+14S - 6+00 W	41	1

FOR METHOD, EXTRACTION AND FRACTION USED – SEE ATTACHED

RECEIVED NOV 1 8 1980

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVENUE, NORTH VANCOUVER, B.C. (604) 985-0681 TLX: 04-352667

Geochemical Lab Report

FROM: Sawyer Consultants REPORT NUMBER: 20 - 2426
MacMILLAN ENERGY LTD.
PROJECT: FRANK - ROCK CHIPS GEOCHEM. DATE: October 8, 1980

SAMPLE NUMBERS	Cu ppm	Mo ppm	Ag ppm	Au ppb					
34627	78	86	0.8	15					
34628	97	48	0.2	5					
34629	18	12	0.2	5					
34630	74	5	0.2	10					
34631	157	32	0.2	5					
34632	183	12	0.2	5					
34634	376	380	0.2	5					
34635	3200	5	5.4	410					
34636	2700	12	1.0	25					
34637	715	4	0.9	< 5					
34638	210	6	0.2	5					
34642	327	89	0.9	50					
34643	246	270	0.2	5					
34644	254	220	0.2	5					
34645	72	155	0.2	< 5					
34646	133	180	0.2	5					
34647	36	47	0.2	< 5					
34648	161	270	0.6	5					
34649	50	240	1.5	75					
34652	166	10	0.5	10					
34655	112	6	0.2	< 5					
34661	38	18	0.2	< 5					
34662	645	9	0.6	55					
34675	135	12	1.4	25					
34677	151	4	0.4	105					
34678	123	2	0.8	15					
34679	6200	2	4.3	95					
34697	210	240	0.4	15					
34699	189	19	0.6	5					
34701 - 34/626	795	136	4.6	15					

FOR METHOD, EXTRACTION AND FRACTION USED – SEE ATTACHED

APPENDIX B

Sample Descriptions

BIG FRANK - CHIP SAMPLE DESCRIPTIONS

Chip Sample No.	Grid Location	Elevation	Description	Assay Cu ppm	Mo ppm	Ag ppm	Au ppb
34701	3+45N 5+60W	6040	Zone of sheared and altered QM with disseminated sulphides, cpy, py, fine-grained moly. Sample width 20m.	795	136	4.6	15
34627	4+00N 5+70W	6050	Silicified and altered zone of QM intruded by narrow quartz veinlets, strong sulphides, py, and some cpy. Sample width 3m.	78	86	0.8	15
34628	4+60N 6+00W	6050	Heavily altered and disseminated QM, strong py with some cpy, heavy sericite. Sample width 30m.	97	48	0.2	5
34629	3+91N 6+73W	6050	Fresh QM, slightly disseminated with py, no obvious moly. Sample width 3m.	18	12	0.2	5
34630	3+38N 7+00W	6030	Altered, weathered QM, reddish colour on weathered surface. Mineralization includes py, hem, lim, and some cpy.	74	5	0.2	10
34631	3+14N 6+67W	6020	Silicified and strongly altered QM mineralized with massive py in quartz veins, striking 020°-030°. No obvious moly. Sample width 15m.	157	32	0.2	5
34632	2+50N 6+25W	5900	QM extremely disseminated with py and cpy, reddish colour on weathered surface, narrow quartz veinlets strike 020°-030°. Sample width 7m.	183	12	0.2	5
34634	0+05W 0+80W	5360	Small zone of QM, strong alteration, intruded by a large number of narrow quartz veins; disseminated cpy, py, and moly.	376	380	0.2	5
34635	0+10N 0+70W	5360	QM, altered with highly disseminated sulphides, strong sericite alteration. Sample width 6m.	3200	5	5.4	410
34636	0+30N 0+20W		Zone of alteration at the main creek, strong massive pyrite, thin vein of anglesite, plagioclase alteration within QM.	2700	12	1.0	25
34637	0+35N 0+00E	5400	Dark grey-black silicified volcanics, strong py and cpy disseminated at the contact with QM.	715	4	0.9	<5
34638	0+40N 0+10E	5410	Highly altered dark grey volcanics, with light disseminations of sulphides. Sample width 20m.	210	6	0.2	5

BIG FRANK - CHIP SAMPLE DESCRIPTIONS

Chip Sample No.	Grid Location	Elevation	Description	Assay Cu ppm	Mo ppm	Ag ppm	Au ppb
34642	0+98N 0+90E	5460	Contact zone, QM and grey volcanics, strong silicification and alteration.	327	89	0.9	50
34643	1+25N 1+38E	5540	Strongly mineralized and altered zone at QM volcanic contact; narrow quartz veinlets strike 150° vertical.	246	270	0.2	5
34644	1+48N 1+50E	5500	Hybrid rock, strong sericite, disseminated sulphides, no obvious quartz veinlets. Sample width 35m.	254	220	0.2	5
34645	1+55N 1+70E	5600	Strongly silicified quartzite-sericite hybrid rock, light sulphide dissemination.	72	155	0.2	<5
34646	1+20N 3+25E	5700	Altered QM with strongly disseminated sulphides; quartz veins rich in massive py strike 160°, dip 80°NE. Sample width 40m.	133	180	0.2	5
34647	1+20N 3+85E	5800	Altered and pyritised QM with strong py halos. Sample width 35m.	36	47	0.2	<5
34655	4+07N 3+10W	5800	QM intruded by large numbers of quartz veinlets, strike 010°-020°, vertical, 2mm to 5cm wide; strong cpy. Sample width 70m.	112	6	0.2	<5
34649	1+50N 1+60W	5410	Lightly altered QM cut by numerous quartz veinlets, heavy py, light cpy, strike of veins 350°, vertical, very fine-grained moly, light hem, and lim.	50	240	1.5	75
34652	3+51N 3+00W	5740	Lightly altered QM with narrow quartz veinlets from 2mm-1cm wide, striking 350° vertical. Sample width 3m.	166	10	0.5	10
34661	4+80N 4+70W	6000	Lightly altered QM with narrow quartz veinlets from 2mm-8cm wide, strike 340°, light sulphides. Sample width 10m.	38	18	0.2	<5
34662	4+90N 6+00W	6000	A group of quartz veinlets intruded in QM, strongly disseminated py, in the QM; good cpy in veins.	645	9	0.6	55
34675	3+00N 4+20W	5320	Altered, silicified QM with disseminated py, light cpy. Sample width 20m.	135	12	1.4	25
34648	1+07N 2+30E	5675	QM, slightly altered, strong sulphides, big py crystals. Sample width 10m.	161	270	0.6	5

BIG FRANK - CHIP SAMPLE DESCRIPTIONS

Chip Sample No.	Grid Location	Elevation	Description	Assay Cu ppm	Mo ppm	Ag ppm	Au ppb
34677	3+50N 5+30E	6280	Rusty, silicified volcanics, strongly fractured, brown inclusions, possible chlorite, light sulphides, some anglesite and hem. Sample width 30m.	151	4	0.4	105
34678	B.L. 7+50W	6220	Heavily altered, rusty QM, cut by several quartz veinlets striking 0^{o}-028^{o}.	123	2	0.8	15
34679	1+10N 2+80W	5510	Strongly altered QM, good cpy, strong sericite alteration. Sample width 5m.	6200	2	4.3	95
34697	3+10N 5+14W	5950	Silicified and rusty QM intruded by a number of quartz veinlets striking 0^{o}-020^{o}, fine-grained moly in veins, strong sulphides.	210	240	0.4	15
34699	3+31N 5+31W	5960	Fresh QM intruded by narrow quartz veinlets, 0.5 to 4cm wide, striking 010^{o}-020^{o}, dip 80^{o}-90^{o}, strong py and cpy. Sample width 15m.	189	19	0.6	5

Key to Abbreviations

py	=	pyrite
cpy	=	chalcopyrite
moly	=	molybdenite
lim	=	limonite
mt	=	magnetite
aspy	=	arsenopyrite
born	=	bornite
QM	=	quartz monzonite
hem	=	hematite

BIG FRANK - CHANNEL SAMPLE DESCRIPTIONS

Channel Sample No.	Grid Location	Strike	Dip	Width	Elevation	Description	Assay Au oz/ton	Assay Ag oz/ton	Assay Cu %	Assay Mo %
34633	0+05S 0+90W	305°	90°	20cm	5360	Sheared zone of QM, slightly altered, light sulphides, no moly obvious.	< 0.002	0.05	0.03	0.047
34639	0+50N 0+28E	140°	65° NE	2m	5420	Extremely altered and silicified zone of QM, numerous fractures filled with massive py.	< 0.002	0.02	0.02	0.005
34640	0+60W 0+40E	130°	90°	5cm	5420	Zone of mineralized QM, strong sulphides (py with some cpy) in addition to some anglesite.	0.007	0.16	0.10	0.021
34641	0+80N 0+70E	345°	90°	8cm	5460	Silicified and pyritized zone of volcanic rock intruded by a number of quartz veins ranging from 3mm to 8cm, strong py, fine-grained moly in quartz veins.	0.011	0.06	0.02	0.330
34650	1+80N 1+75W	345°	90°	8cm	5450	Quartz vein in strongly altered QM, extremely rich in py, some moly in quartz vein, exposed over 3m.	0.003	0.10	0.03	0.30
34651	2+07N 1+75W	330°	90°	?	5510	Quartz vein carries py, no cpy, poorly exposed.	< 0.002	0.04	< 0.01	0.004
34653	4+07N 3+10W	345°	90°	8cm	5800	Quartzite vein in QM, strong py, no cpy, no visible moly.	< 0.002	0.02	< 0.01	0.002
34654	4+07N 3+15W	15°	90°	20cm	5800	Vertical quartz vein, rich in py, no alteration at the contact.	< 0.002	0.05	< 0.01	0.004
34656	4+41N 3+70W	15°	70°W	48cm	5880	Quartz vein intruded in heavily altered QM, strong massive py, light quartz, no cpy, exposed over 15m.	< 0.002	0.02	< 0.01	0.008
34657	4+50N 3+80W	10°	75°W	15cm	5900	Quartz vein in heavily altered and sericitized QM, exposed over 10m.	0.008	0.13	0.04	0.004
34658	4+50N 3+90W	20°	90°	90cm	5900	Quartz vein carries strong py, no cpy, exposed over 2m. Finely grained moly in wallrock.	< 0.002	<0.02	< 0.01	0.10

BIG FRANK - CHANNEL SAMPLE DESCRIPTIONS

Channel Sample No.	Grid Location	Strike	Dip	Width	Elevation	Description	Assay Au oz/ton	Assay Ag oz/ton	Assay Cu %	Assay Mo %
34659	4+65N 4+00W	10°	90°	5cm	5900	Quartz vein, rich in py, no cpy, poorly exposed.	<0.002	<0.02	<0.01	0.002
34660	4+65N 3+90W	0°	90°	4cm	5900	Poorly exposed quartz vein, strong py, no obvious cpy.	<0.002	<0.02	<0.01	0.004
34663	4+34N 4+47W	15°	60°E	8cm	5860	Quartz vein rich in massive py, in heavily altered QM, fine moly; narrow quartz veinlets carry moly, mt. Vein exposed over 10m.	<0.002	<0.02	0.01	0.021
34664	4+12N 4+47W	15°	70°W	7cm	5850	Quartz vein with massive py in a slightly altered QM vein exposed over 3m.	<0.002	0.03	0.10	0.024
34665	4+12N 4+44W				5855	Second channel sample from same vein as sample No. 34664 - carries massive py in excess of quartz content. Light moly in wall rock along contact.	<0.002	0.02	0.02	[illegible]22
34666	4+12N 4+47W	30°	65°W	3.5cm	5850	Quartz in vein extremely rich in massive py, some cpy, no visible moly in the bedrock. Vein exposed over 5m.	<0.002	0.03	0.14	0.026
34667	3+95W 4+50W	0°	65°E	10cm	5850	Quartz vein in QM, carried massive py, cpy, aspy, born, in addition to some moly. Exposed for 5m.	0.040	1.25	0.46	0.001
34668	3+90N 4+47W	30°	65°W	90cm	5850	Quartzite, sericite alteration zone in QM, narrow veins from 2mm-1cm width, rich in sulphides, fine-grained moly.	<0.002	0.02	0.02	0.028
34669	3+70N 4+50W	280°	30°E	5cm	5850	Heavy py in quartz vein, no cpy.	<0.002	0.05	0.08	0.003
34670	3+89N 4+25W	180°	90°	18cm	5740	Strongly sheared and altered quartz vein with heavy sulphides (py, cpy) sericitic alteration, reddish colour on weathered surface.	0.17	0.15	0.38	0.003

BIG FRANK - CHANNEL SAMPLE DESCRIPTIONS

Channel Sample No.	Grid Location	Strike	Dip	Width	Elevation	Description	Assay Au oz/ton	Assay Ag oz/ton	Assay Cu %	Assay Mo %
34671	3+39N 4+25W	335°	60° NE	8cm	5740	Quartz vein intruded in heavily altered QM, strong cpy and py, some anglesite, exposed over 3m.	0.002	0.09	0.07	0.005
34672	3+83N 4+25W	280°	30°E	5cm	5720	Heavy py in quartz vein, sparse moly at the contact with the wall rock, exposed over 30m.	<0.002	0.03	0.04	0.062
34673	3+46N 4+25W	20°	70°W	5cm	5660	Heavy py in quartz vein in QM with disseminated py exposed over 10m.	<0.002	0.02	0.01	0.002
34674	3+50N 4+70W	25°	70°W	20cm	5690	Heavy py in quartz vein, no cpy, exposed over 15m.	<0.002	0.02	0.01	0.006
34676	3+75N 4+20W	25°	90°	10cm	5710	Vertical quartz vein, strong py, exposed over 20m.	<0.002	0.15	0.01	0.012
34680	1+30N 4+50W	20°	83°E	18cm	5480	Quartz vein, rich in py, some moly dissemination. Fracturing along the vein exposed over 10m through the creek.	<0.002	0.03	0.01	0.063
34681	1+15N 4+30W	20°	80°E	1m	5425	Sheared, altered zone of QM, light sericite and siliceous veins, 3cm-5cm in width, py, some anglesite.	<0.002	0.02	0.01	0.007
34682	0+15N 2+40W	30°	90°	4cm	5320	Heavy py in quartz vein, light moly, strong sericite. Fracturing along vein exposed through the creek.	<0.002	0.08	0.01	0.025
34683	0+00N 2+20W	350°	90°	8cm	5320	Quartz vein in heavily altered QM. The vein is rich in py; sparse moly at the contact with wallrock.	0.002	0.06	0.10	0.20
34684	1+95S 2+10W	0°	70°E	120cm	5320	Zone of disseminated py and cpy mineralization exposed across a dry creek; heavy alteration, veining and fracturing, strong sericite.	0.028	0.06	0.03	0.021

BIG FRANK - CHANNEL SAMPLE DESCRIPTIONS

Channel Sample No.	Grid Location	Strike	Dip	Width	Elevation	Description	Au oz/ton	Ag oz/ton	Cu %	Mo %
34685	1+20N 4+40W	10°	45°W	15cm	5430	Quartz vein rich in py and cpy, light moly and anglesite.	0.003	0.05	0.03	0.015
34698	3+27N 5+20W	15°	90°	4cm	5950	Small vertical quartz vein in QM. The vein is disseminated with py, no cpy.	<0.002	0.03	0.03	0.007
34700	3+22N 5+15W	325°	90°	6cm	5970	Silicified zone of QM exposed vertically over area of 3m, disseminated sulphides.	<0.002	0.05	0.04	0.023

Key to Abbreviations

py	=	pyrite
cpy	=	chalcopyrite
moly	=	molybdenite
lim	=	limonite
mt	=	magnetite
aspy	=	arsenopyrite
born	=	bornite
QM	=	quartz monzonite
hem	=	hematite

APPENDIX C

Statement of Expenditures and List of Personnel for Assessment Purposes

APPENDIX C

MacMILLAN ENERGY CORP.

NO. 209 - 9321 - 120TH STREET, DELTA, B.C. V4C 6R8
PHONE: 584 - 6086

November 12th, 1980

Re: Big Frank Mineral Claims

The following is a list of exploration expenses for the work done on the Big Frank Claims in the Vancouver Mining District in September 1980. This list of expenses were paid to Sawyer Consultants by MacMillan Energy Corp. in October 1980.

Sundry: Food, Lodging, Telephone, Land Transportation, Ect	$ 2,240.44
Assay:	1,400.00
Geological:	7,435.00
Helicopter:	2,934.10
Data Compilation & Report Preparation:	4,000.00
Mobilization & Demobilization:	1,223.57
Drafting:	500.00
Total	$19,733.11

This is a true and accurate statement for exploration expenses for the above referenced claims.

W.L. Ramage, President

LIST OF PERSONNEL

C.A. Ashworth, Senior Field Assistant

Sept. 5-17 inclusive, 1980 13 days @ $140.00/day		$ 1,820.00

D. McConnell, Field Assistant

Sept. 5-17 inclusive, 1980 13 days @ $130.00/day		1,690.00

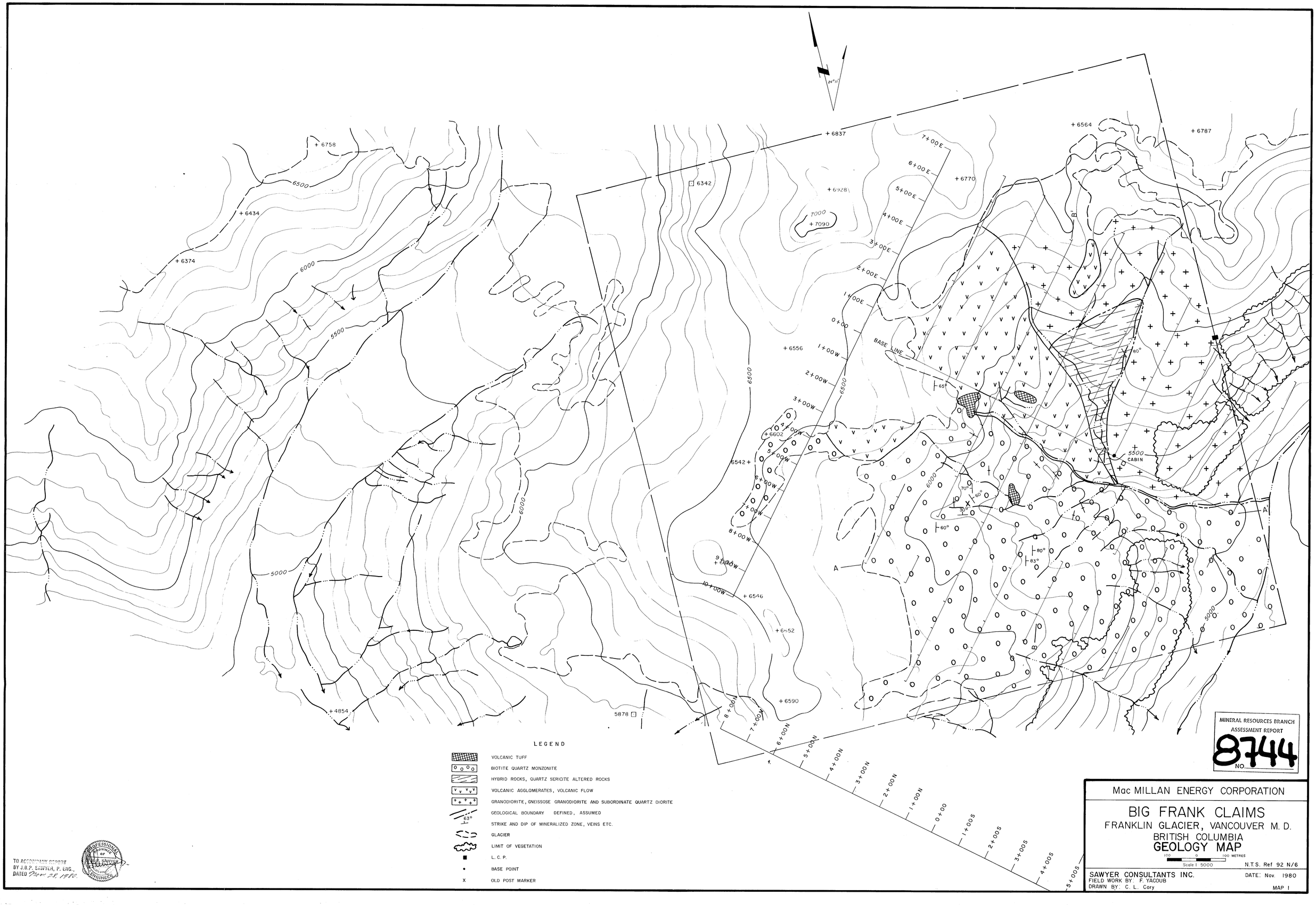
F. Yacoub, B.Sc., Geologist

Sept. 4-17 inclusive, 1980	14 field days	
Sept. 3, 19; Oct. 2, 3, 6-10 inclusive, 20, 23, 1980	12 office days	
Nov. 12, 14, 17-20 inclusive, 28, 1980	7 office days	
Total	33 days @ $150.00	4,950.00

J.B.P. Sawyer, P.Eng.

Sept. 12-14 inclusive, 1980	3 field days	
Sept. 2&3, Oct. 4 to Nov. 28, 1980	7 office days	
Total	10 days @ $300.00	3,000.00

TOTAL	$11,460.00



LEGEND

- VOLCANIC TUFF
- BIOTITE QUARTZ MONZONITE
- HYBRID ROCKS, QUARTZ SERICITE ALTERED ROCKS
- VOLCANIC AGGLOMERATES, VOLCANIC FLOW
- GRANODIORITE, GNEISSOSE GRANODIORITE AND SUBORDINATE QUARTZ DIORITE
- GEOLOGICAL BOUNDARY DEFINED, ASSUMED
- 63° STRIKE AND DIP OF MINERALIZED ZONE, VEINS ETC.
- GLACIER
- LIMIT OF VEGETATION
- L. C. P.
- BASE POINT
- X OLD POST MARKER

TO ACCOMPANY REPORT
BY J.B.P. SAWYER, P. ENG.,
DATED Nov 28 1980.

PROFESSIONAL ENGINEER OF BRITISH COLUMBIA J. B. P. SAWYER

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8744
NO.

Mac MILLAN ENERGY CORPORATION

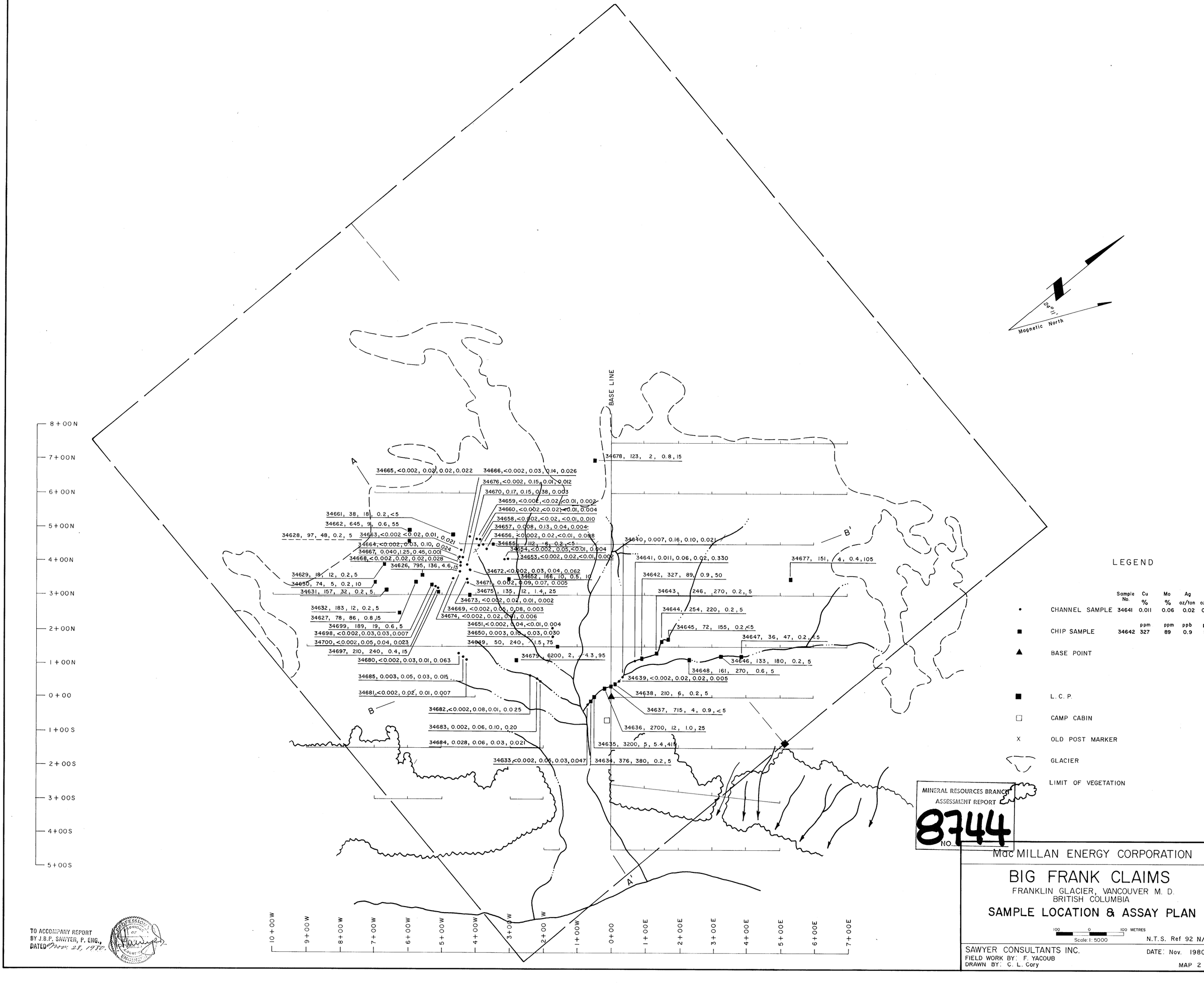
BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

GEOLOGY MAP

100 0 100 METRES
Scale 1 5000 N.T.S. Ref 92 N/6

SAWYER CONSULTANTS INC. DATE: Nov. 1980
FIELD WORK BY: F. YACOUB
DRAWN BY: C. L. Cory
MAP I



LEGEND

		Sample No.	Cu %	Mo %	Ag oz/ton	Au oz/ton
•	CHANNEL SAMPLE	34641	0.011	0.06	0.02	0.320
			ppm	ppm	ppb	ppb
■	CHIP SAMPLE	34642	327	89	0.9	50
▲	BASE POINT					
■	L. C. P.					
□	CAMP CABIN					
X	OLD POST MARKER					
	GLACIER					
	LIMIT OF VEGETATION					

TO ACCOMPANY REPORT
BY J.B.P. SAWYER, P. ENG.,
DATED Nov. 28, 1980.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

Mac MILLAN ENERGY CORPORATION

BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

SAMPLE LOCATION & ASSAY PLAN

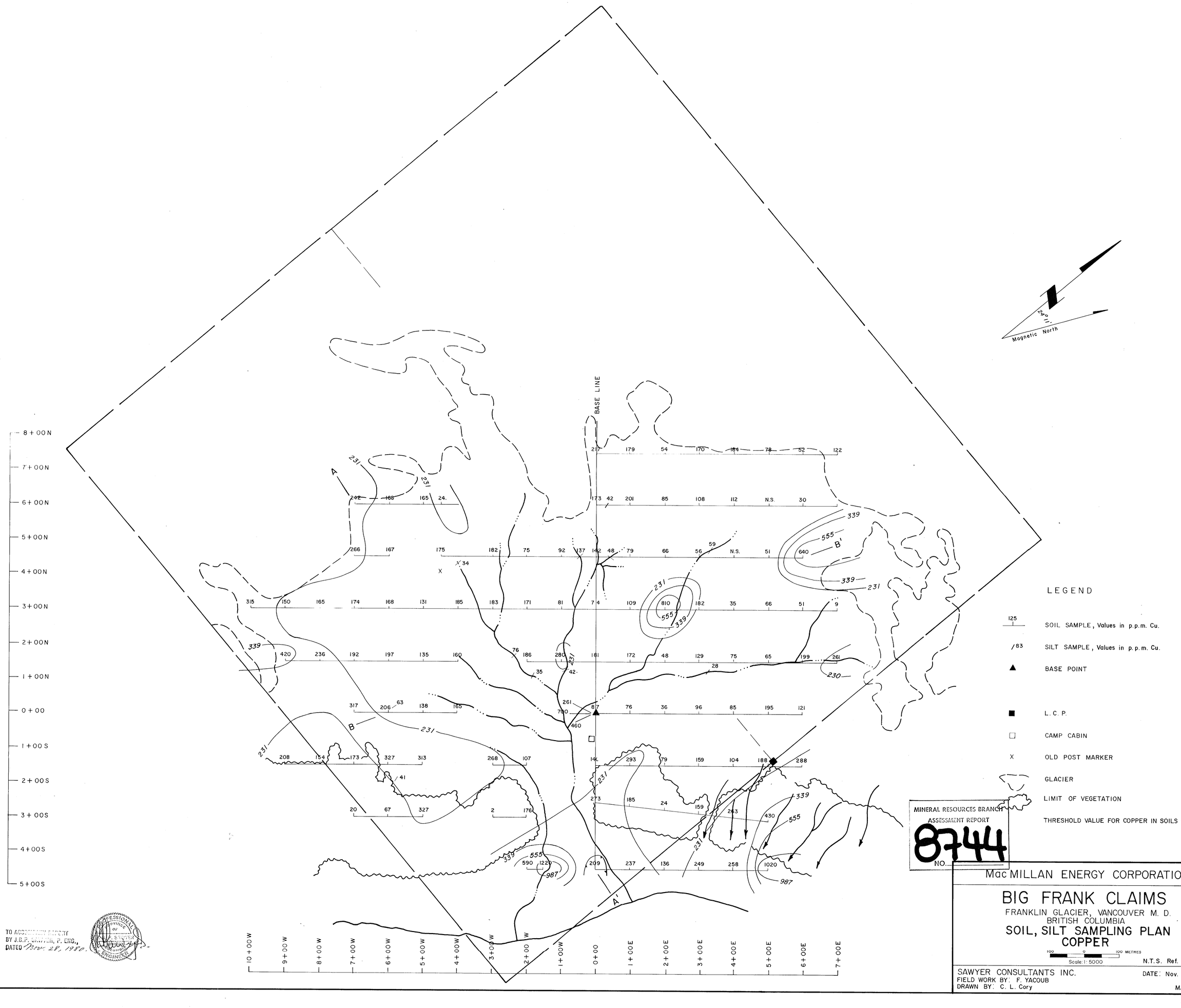
100 0 100 METRES
Scale: 1: 5000

N.T.S. Ref 92 N/6

SAWYER CONSULTANTS INC.
FIELD WORK BY: F. YACOUB
DRAWN BY: C. L. Cory

DATE: Nov. 1980

MAP 2



LEGEND

- 125 — SOIL SAMPLE, Values in p.p.m. Cu.
- /83 — SILT SAMPLE, Values in p.p.m. Cu.
- ▲ — BASE POINT
- ■ — L.C.P.
- □ — CAMP CABIN
- X — OLD POST MARKER
- GLACIER
- LIMIT OF VEGETATION
- THRESHOLD VALUE FOR COPPER IN SOILS = 231 ppm

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8744

TO ACCOMPANY REPORT
BY J.B.P. SAWYER, P. ENG.,
DATED Nov. 28, 1980.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. B. P. SAWYER
ENGINEER

Mac MILLAN ENERGY CORPORATION

BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

SOIL, SILT SAMPLING PLAN
COPPER

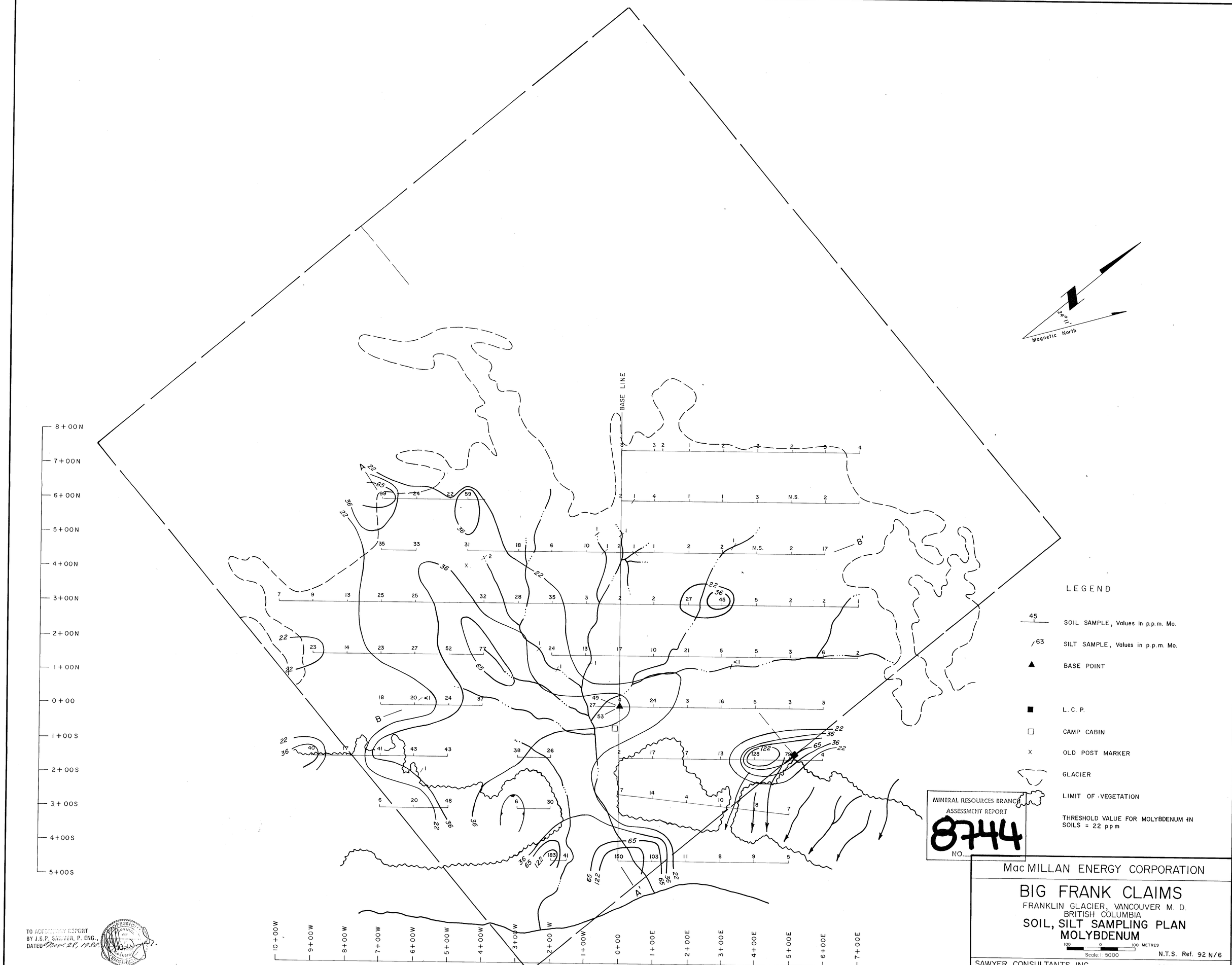
100 0 100 METRES
Scale: 1:5000

N.T.S. Ref. 92 N/6

SAWYER CONSULTANTS INC.
FIELD WORK BY: F. YACOUB
DRAWN BY: C. L. Cory

DATE: Nov. 1980

MAP 3a



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8744

TO ACCOMPANY REPORT
BY J.B.P. SAWYER, P. ENG.,
DATED March 24, 1981

Mac MILLAN ENERGY CORPORATION

BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

SOIL, SILT SAMPLING PLAN
MOLYBDENUM

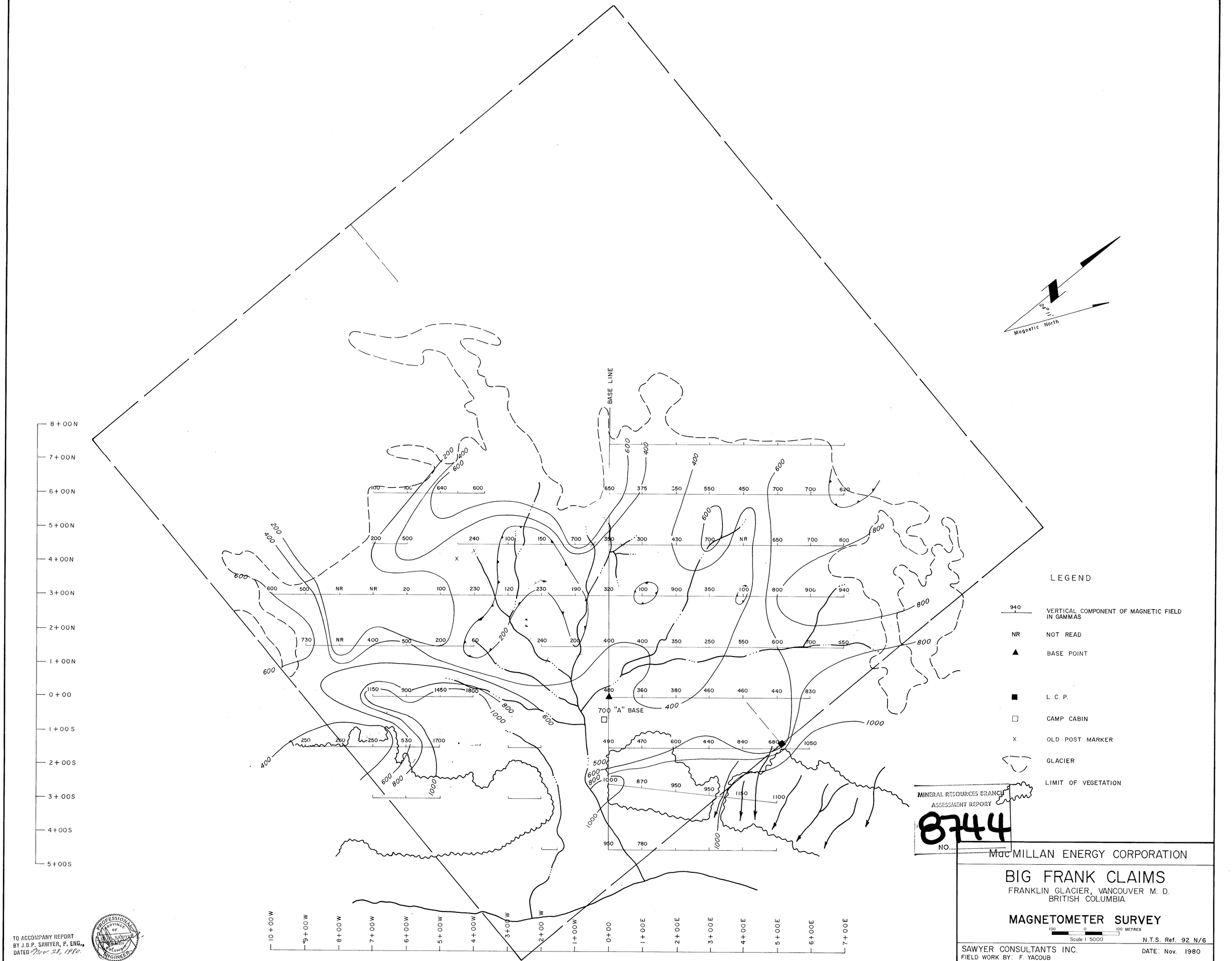
100 0 100 METRES
Scale 1:5000

N.T.S. Ref. 92 N/6

SAWYER CONSULTANTS INC.
FIELD WORK BY: F. YACOUB
DRAWN BY: C. L. Cory

DATE: Nov. 1980

MAP 3b



LEGEND

- 940 — VERTICAL COMPONENT OF MAGNETIC FIELD IN GAMMAS
- NR — NOT READ
- ▲ — BASE POINT
- ■ — L.C.P.
- □ — CAMP CABIN
- X — OLD POST MARKER
- GLACIER
- LIMIT OF VEGETATION

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8744

TO ACCOMPANY REPORT
BY J.B.P. SAWYER, P. ENG.,
DATED Nov 28, 1980.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. B. P. SAWYER

MacMILLAN ENERGY CORPORATION

BIG FRANK CLAIMS

FRANKLIN GLACIER, VANCOUVER M. D.
BRITISH COLUMBIA

MAGNETOMETER SURVEY

100 0 100 METRES
Scale 1: 5000

N.T.S. Ref. 92 N/6

SAWYER CONSULTANTS INC.
FIELD WORK BY: F. YACOUB
DRAWN BY: C. L. Cory

DATE: Nov. 1980

MAP 4