Report of Geological Survey
of the May Group or Silver Chief
claims, Revelstoke M.D.

By H.C.B. Leitch P. Eng.
Dates: August, 1960.
Claims Lat. 50° 40' Long. 118° 15'

Owners of the claims:

Larrie B. York,
4892 Dunbar St.,
Vancouver 8, B.C.

and Loyd York,
745 Goldstream Ave.,
Victoria, B.C.

Name of the Claims: May nos. 1 to 6 (long known as the Silver Chief)

Company for whom the work was done:

Albedena Oils,
549 Howe St.,
Vancouver 1, B.C.

82 K/11W

(Mr. V. Petrosky is Sec. of this Co.)

00360

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LIST OF MAPS AND ILLUSTRATIONS

INVESTIGATION OF THE SILVER CHIEF PROPERTY

LARDEAU CREEK AREA

TROUT LAKE

August 1960

GENERAL

A two-day investigation was carried out on the property by the writer at the end of August, 1960. The investigation was requested by Mr. V. M. Petroskey, on the basis of a possible option of the property. The writer was accompanied by Mr. T. Bilinski, working on behalf of Mr. Petroskey. Mr. L. York, one of the claim holders, was present both days and acted as guide throughout the investigation. Continuous heavy rain at lower levels and snow at higher levels hampered the investigation. The party could do little at the higher showings on the second day and confined its attention to the main showings at intermediate elevations.

LOCATION & ACCESS

The claims are situated northeast of Index Creek which is a tributary to Gainer Creek, in turn one of the main tributaries of Lardeau Creek. The trail entrance to the main showings is approximately 13½ miles from Trout Lake or 3½ miles above the 10 mile point on the Lardeau Creek Road. Trout Lake is a small village situated at the head of Trout Lake, a large lake in the Lardeau area of the Arrow Lake region. Trout Lake is 49 miles southeast of Revelstoke which is on the main C.P.R. ~~railway~~. A spur railway line runs from Revelstoke to Arrowhead, a ferry plies from there to Galena Bay and to Beaton, 10 miles from Trout Lake.

The road from Trout Lake to 10 mile on Lardeau Creek is well maintained and apparently all-weather. The 3¼ miles up Gainer Creek to Index are traversed by a fair jeep road with a few weak spots which may be affected by slide material. A rough bridge is maintained across Gainer Creek to the Mollie Mac log buildings and thence the road is strictly a jeep road which climbs along Index Creek to the 5000' elevation before switch-backing up towards the Silver Chief showings. A trail which is steep but fairly well maintained switch-backs up from 5300' to about 7000' elevation. Horses or mules could be used on this trail but

it is rather steep even for this form of transport.

It has been stated that the road could be brought right through to the main showings. Although this is not impossible, it would certainly be difficult and costly. The steepness of the mountain on which the showings are found lends itself to use of an aerial tramway.

PROPERTY

The property is composed of 6 claims, May Nos. 1-6, which cover ground previously occupied by the older claims Silver Chief #1, Bunker Hill Mining Claims #2, #3, #4, #5 and #6. The claim map enclosed in the report is said to illustrate the ground held, but does not necessarily depict accurately the boundaries. Although efforts were made by the engineer, the accompanying assistant and Mr. L. York to find the claim posts on the location line at the time of the examination, no post was observed. Snowy weather prevented any extended search.

The 6 claims are recorded as follows:-

		Staked	Recorded
May #1	3675	6th May 1957	8th May 1957
May #2	3676	"	"
May #3	3677	"	"
May #4	3678	"	"
May #5	3679	"	"
May #6	3680	"	"

HISTORY

The area of the Silver Chief (May Group) is shown as staked on maps existing in 1901, (Map of Lardeau Mining District, including Fish Creek and Upper Duncan River, Shannon and Cummins, Ferguson B.C. 1901), and there is a reference to the Silver Chief (presumably the same area) in a Minister of Mines report of 1900 - pg. 824. It is probable that the ground was prospected and held earlier than 1900. Little is known of its history between that and the present period, except that it appears that the ground was held fairly continuously even in the early thirties. Two men, Messrs. Main and ~~Scorgie~~ Peterson, appear to have been connected with the prospect at an early date. Before the staking by the present owners, a party of 3 individuals, namely Messrs. Main and Peterson and a Mrs. Daney, held the claims

over a long period. It is reported that a syndicate was formed by Mr. Peterson, based on a report by an engineer, Mr. Blanchet, of Calgary. The offices of the syndicate were set up in Calgary. During the period that the syndicate held the claims (6 Silver Chief claims) an $8000 road was built up Index Creek with a D-4 Caterpillar from the Mollie Mac to a point near the present road termination at the 5300 ft. elevation. It is stated that the claims were traded to a Mr. G. Mahood for shares in another company, but as these latter shares were not received by Mr. Peterson and as no visible assessment work was being done, a protest was made by Mr. Peterson to the B.C. government. The Mines Dept. of the B.C. government is reported not to have moved on the protest until 1 year had passed, at which point they took possession of the claims in order to put them up for public tender. The claims were thrown open 1 year later and were staked by a Mr. Zalinski and sold to Foundation Mines. A sum of $2000 cash is mentioned as having been paid out during this transaction.

Foundation Mines did not carry on investigation work and the claims are reported as being sold to the group made up of Mr. L. York, his brother, [redacted], and Mr. Scorgie, for a sum of $2000. The present owners are Mr. L. York, his brother, [redacted]; Mr. Scorgie having died in 1958.

WORK DONE

The investigator, during his brief visit, did not see all parts of the claims by any means but he did observe the most important showings. It was apparent that the road into the property from 10 mile, and especially from the Mollie Mac, has had to be maintained with some effort. Mr. L. York has succeeded in doing this by dint of his own labours. A bridge has been placed across Gainer Creek and the road up Index Creek kept in fair condition. The route is reasonably good for a jeep or Landrover beyond Gainer Creek crossing.

Two adits exist at the main showings. One of these leads into a 97' crosscut with some short side tunnels. A small amount of underhand and overhead stoping have been carried out at a point where white crystalline limestone was encountered (70'± from portal). The other adit is a short, perhaps 20', cut and portal leading into the side of the hill below and not distant from a prominent drag fold structure. Some recent work has been carried out at this point.

Another working is that formed around the exposure of a prominent drag fold. Blasting of the structure has revealed a cross-section of rock with a fairly good galena ore. This structure lies easterly from the main adit.

Perhaps 600' to 1000' above the drag fold and along a descending spur of the mountain towering to the east, a series of lime bands have been discovered which contain pockets of galena. The bands have been opened up by pits or short cross trenches at points deemed to contain ore metallics. There are reported to be 7 bands, of which the investigator observed 4 or possibly 5. Several pits are noted on each of these bands.

Other small pits can be observed in the area between the drag fold and the main adit and also to the southeast of the drag fold.

Equipment on hand consists chiefly of wheel barrows, picks, shovels, some hand steel and powder. Previous to the death of Mr. Scorgie, the partnership had the use of considerable equipment belonging to Mr. Scorgie, including a bulldozer.

GEOLOGICAL ASPECTS

The area containing the May group lies within a great belt of sedimentary rocks termed the Kootenay Arc. The rocks within this arc range from the Badshot-Laib limestone of Cambrian age up to volcanics of the Mesozoic period. Limestones, phyllites, argillites and quartzites predominate within the belt. Some shales, slates and greenstones have been observed. The sedimentary sequence appears to be folded into a series of anticlines and synclines that, in the Silver Chief area, appear to be somewhat overturned to the northeast. Dips are generally steep and the folding somewhat tight. The character of the main folds and minor folds suggests the possibility of thrusting and strike faults.

The immediate area of the Silver Chief area (May Claims) lies within the Bunker Hill group of rocks which are composed of grey and green phyllites with greenstone and limestones in the lower part (B.C. Dept. of Mines). The writer was aware of considerable limestone, mostly dark grey in colour and of an impure nature, with bands which contained streaks and pods of white crystalline limestone. Greenstone bands and argillaceous rocks are also observed at the lower altitudes near Index Creek. Some dark bands of rock are apparently silicified to some extent and in places are noted to contain stringers and cross-fracture fillings of quartz or quartz-carbonate. There are some indications that an

overturned anticlinal fold may pass northwest-southeast through the top of the May claims. The claims are chiefly located on the southwest flank of an 8000' peak. The steep slope of the mountain flank, in places, is close to a dip slope. The limestones or limy bands dip generally at high angles to the southwest. The range in dip would be from 50° up to 80°, with something like 60°-70° as an average. Minor drag folds ranging in size from a few inches to perhaps 30' (or better) across, are not uncommon and these minor structures are apparently one of the chief loci of deposition for metallic mineralization.

Grey to blackish bands of limy rock or limestones which strike northwest and southeast are noted as being bleached and discoloured over long sections or in short, lenticular blows. The rock contained in the bleached areas is in many places a crystalline white limestone with occasional injections of quartz or quartz-carbonate. It appears that the white crystalline limestone, as well as the quartz-carbonate, is the result of hydrothermal activity, although movement might have brought about recrystallization of the grey limey rocks and caused the subsequent light colouring. In many places there is no apparent lead back to the sources of the solutions, for the pods of white crystalline limestone either come to an end abruptly or "tail" out into grey limestone for no obvious reason. The appearance is as though steam may have been an agent of alteration. There is a tendency for pods and streaks of white crystalline limestone to follow one bed of impure limestone but over a long stretch of several hundred feet, one gains the impression that the line of alteration is in places transgressing the strike. Faint strike fractures are believed to be the passage up which hydrothermal solutions may have moved. At some points, streaks of sideritic material with quartz are observed within the bleached area. Intense stress on the limy rocks such as that produced in complex drag folding appears to have brought about favourable rock conditions for the alteration and recrystallization of the rock and the deposition of ore metallics.

On the Silver Chief or May group, the drag folds contain some of the chief deposits of lead-silver. The drag folding is not always apparent but within many white crystalline limestone patches (and at nearly every mineralized point the lead-silver mineralization is contained in these or directly related to them), the metallics are noted as following a minor drag. A good example of drag folding was observed at about the 6000'-6200' level of the claims. This drag fold is displayed in cross-section by a diagram in illustration #1. The illustration indicates the complex crumpling accompanying the drag movement and its local control on the deposition of metallic sulphides. This particular structure indicates an anticlinal axis to the

northeast and movement of the outer beds over the inner beds. The drag structure would seem to persist towards the southeast and may link up with a rusty zone which carries towards the high ridge to the southeast. To the northwest, erosion has apparently cut across and removed the drag fold, although minor drag folding is found in that direction. Crystalline white limestone is traceable on the mountain slope to a point 25' to 40' below the top of the larger drag fold and the recrystallization is related to the stressing and alteration of the rock within this particular limestone bed or beds.

To the northwest of this drag, shearing and alteration seem to follow the strike in general and metallic mineralization is encountered within the white limestone again. A 97' tunnel has been run to intersect a "zone" at a lower elevation. White crystalline has again been encountered in a band approximately 70 feet from the portal. Some ore was noted near the mouth of the tunnel. This tunnel is perhaps 300'-400' northwest from the drag fold and perhaps 100'-200' lower in elevation.

MINERALOGICAL ASPECTS

The chief metallic ore minerals found on the property appear to contain lead and silver. Gold is present in minute amounts, reporting usually nil to trace and occasionally 0.01 to 0.015. Zinc reports only as trace normally. Copper and antimony are recorded as being present from spectrochemical analysis and on one occasion tungsten was reported as being present. During a spectrochemical analysis, traces of cobalt and nickel have also been reported. The ratio of lead to silver ranges normally around 5% to 8% of lead to 1 oz. of silver.

As indicated earlier, the metallic minerals are found in close association with the crystalline white limestone patches or streaks in otherwise grey limestone rock. Quartz, quartz-carbonate, and siderite are present in a number of places along with the ore minerals. Some slight brecciation and development of schistosity, plus silicification, were noted at a few points. The diagrams covering the showings illustrate the relationship of these features with the metallic deposition.

SHOWINGS

The number one showing is that described as the drag fold. It has been described under the geological and structural aspects, for the most part. This drag fold is perhaps 150' northwest of other minor workings and from it to the other lime band workings is perhaps 1500' northwest with between 600' to 1000' higher elevation. Galena and some tetrahedrite are evident in the mineralized core of the drag fold. The metallics do not continue with any strength up-dip or down-dip within the lime band after the disturbed area of the drag fold is left behind. However, there is a good possibility that the structure continues southeastward and contains more ore. This structure may eventually pass into a fault or ruptured zone, as indicated possibly by a rusty weathered area further down strike.

The investigator took 2 samples across the drag fold. The innermost sample on the foot wall side was 4' in width and seemed to contain a fair proportion of galena. This sample yielded:-

Au	Ag	Pb	Zn
0.015	2.75 ozs.	16.70%	Tr.

The second sample, cut across 4' of the hanging wall side, seemed to contain grey copper or tetrahedrite, siderite and considerably less galena. The results of analysis were as follows:-

Au	Ag	Pb	Zn
0.015	1.60 ozs.	12.25%	Tr.

A small adit exists about 25' vertically below the drag fold. A small amount of metallics were in sight at the entrance of this adit.

The second main showing is that of the main adit, a cross-cut about 97' in length and with some minor side drifts. A small amount of underhand and overhead stoping had been done in this adit but no ore was visible within it. Crystalline white limestone streaks and patches were observed in the area of the stoping. It is believed that the cross-cut was driven with the purpose of cutting a mineralized sector which lies above it. Up the surface slope some distance, a patch of crystalline limestone with pockets of galena was noted beneath a band of sheared, schistose rock. A large loose block of galena ore is located not far from the entrance of the tunnel.

The only other area of noteworthy mineralization visited was that of the lime bands occurring at elevations of approximately 6700'-7000', just below the peak of a descending spur which carries towards the Mollie Mac ground. The northern side of the spur is occupied by a 200' cliff and a cirque-like area extending back into the mountain. South of the cliff are 5 and possibly 7 "lime bands" which contain metallics in crystalline white limestone streaks and patches within a generally limy zone of rocks. The bands containing the white limestone dip steeply, 70°-80°, to the southwest and are approximately parallel, although at one point the white crystalline limestone appears to be working at a low angle across the general strike. Some of the lime bands are depicted in the accompanying diagram with rough indications of length and breadth. The longest sector is nearest the ridge and perhaps 400' in length. Along this length the present owner has pitted and removed perhaps 1 to 3 feet of overburden. At the points chosen for pitting, metallic mineralization by galena is nearly always present. A rough diagram is enclosed showing the main features of the lime bands.

Several piles of ore were noted around the workings or nearby. The total tonnage of ore in the 3 piles observed would appear to be:

(1) 2½ short tons

(2) 20 " "

(3) 3 " "

25 " "

The tonnage in the 3 piles of ore might be as high as 30 tons but with snow cover, the actual depth or thickness of the ore piles could not be readily estimated. The grade of ore in the piles would appear to range around 37% to 56% lead and from 6 to 16 ozs. of silver, to judge from samples taken by Mr. L. York.

CONCLUSIONS AND RECOMMENDATIONS

The property is accessible by road to within a ¼ to ½ mile of the main showings. The showings are exposed on a steep slope to the northeast of Index Creek. The showings indicate that the main mineralization is by galena with some silver in an approximate ratio of 6-8% Pb to 1 oz. silver. The deposition of the metallics observed was closely associated with crystalline white limestone which occurs in patches or bands up to 400' long within grey to dark limy horizons. The crystalline white limestone appears to have been produced by the action of hydrothermal solutions or some related means

on the limy bands of what is chiefly a sedimentary series. The alteration is found to be closely related to movement of the beds, which has produced fracturing or drag structures. Mineralization by galena, siderite and possibly some tetrahedrite occurs within the white crystalline sections of limestone or at a few points within the grey, altered (silicified) limy bands near their contact with white crystalline limestone areas. Deposition by the metallics is controlled at many points by minor structures, such as small drag folds. The best occurrence insofar as concentration of metallics is concerned is in a drag fold of 20'-30' in cross section. The mineralization observed is not heavy and apparently is found in pockets at favourable points along the strike (the general country strike) of the white bands or in the centres of the drag folds. The amount of ore observed and available would be limited but the structures containing the metallics are reasonably persistent and there is, therefore, some hope of finding additional ore. It is expected that this will remain of a pockety nature unless a strong structure of some size with good channels intersects the upward movement of the mineralization and the deposition of metallics is brought about in the limy structure by a relatively impervious barrier. It may be possible to find such structures within the area of the claims. The better areas for prospecting are those near the drag fold and extending from the cliff down towards the Mollie Mac or Gainer Creek. The lime leads of the cliff area may carry towards the Mollie Mac, if dip and topography are taken into consideration.

It is recommended that prospecting be undertaken in the direction of Mollie Mac, particularly to trace the lime leads through the area of the cliff and downwards from it in hope of encountering a more favourable structure. It is also recommended that prospecting be carried out along the rusty zone to the southeast to ascertain if it is connected with the main drag fold. The main drag fold could be drilled at intervals of 25 feet with a small drill to a depth of 50'-100' and at right angles to the general dip of the drag fold and crystalline white limestone.

Present indications are only that although exploration may establish more pockets of ore, these will have to be mined by selective mining on a limited scale from surface and that the ore will have to be cobbed and hand picked before shipping, in order to raise the grade to something like 40-55% Pb and 6-8 ozs. Ag per ton. Tonnage of such ore would be limited. At present, there appears to be approximately 25-30 tons of such grade which has been cobbed and hand picked and is lying on surface ready for shipping. Additional cobbed ore may be on surface that was not observed.

Insofar as assessment work is concerned, it is recommended that the better "lime bands" be exposed at 10'-20' intervals by small trenches and that a representative section of 300' be sampled for assaying. This should serve to indicate a definite grade over a fair length and breadth which would act as a guide to any further operations there.

Prospecting and geological study are deemed the best methods at the present time to define the full potential of the claimed area. By these methods, it should be possible to determine if a strong structure of sufficient potential is enclosed by the claims. If such a structure is outlined, geophysical methods could be used over it to detect near-surface concentration of sulphides which in this area are likely to be chiefly of galena-tetrahedrite-sphalerite nature.

A sum of $10,000 to $15,000 could be usefully spent on this type of basic program. This would not and is not intended to include drilling of any kind.

True copy

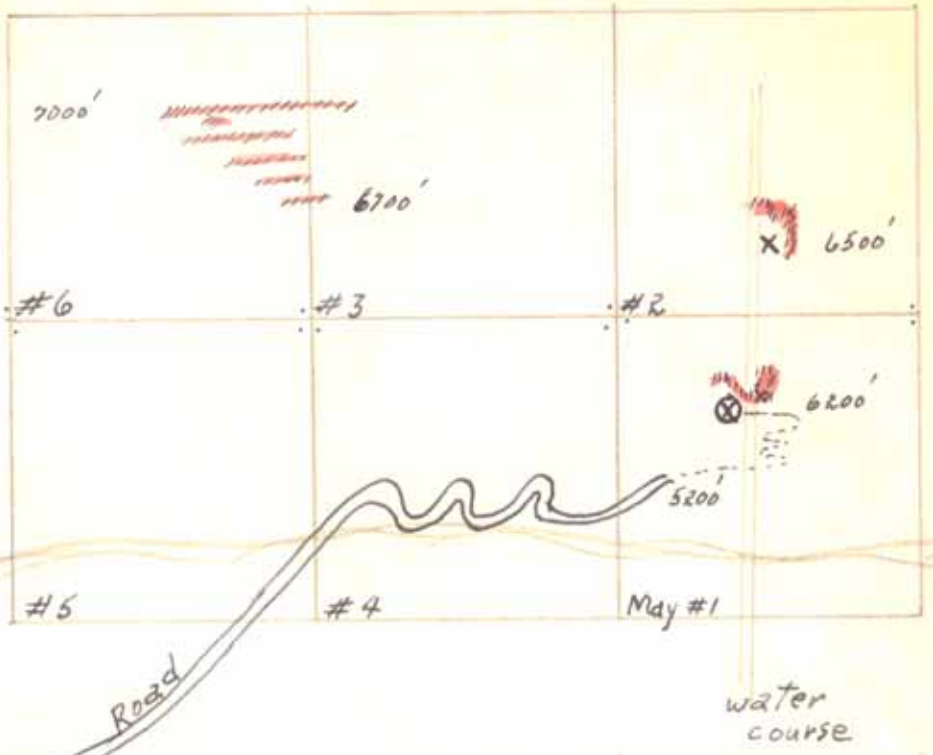
H. G. B. Leitch

H. G. B. Leitch
P. Eng.

Molly Mac

May Group Nos. 1 to 6

also known as Silver Chief



× = tunnel; ⊗ is largest 100' tunnel

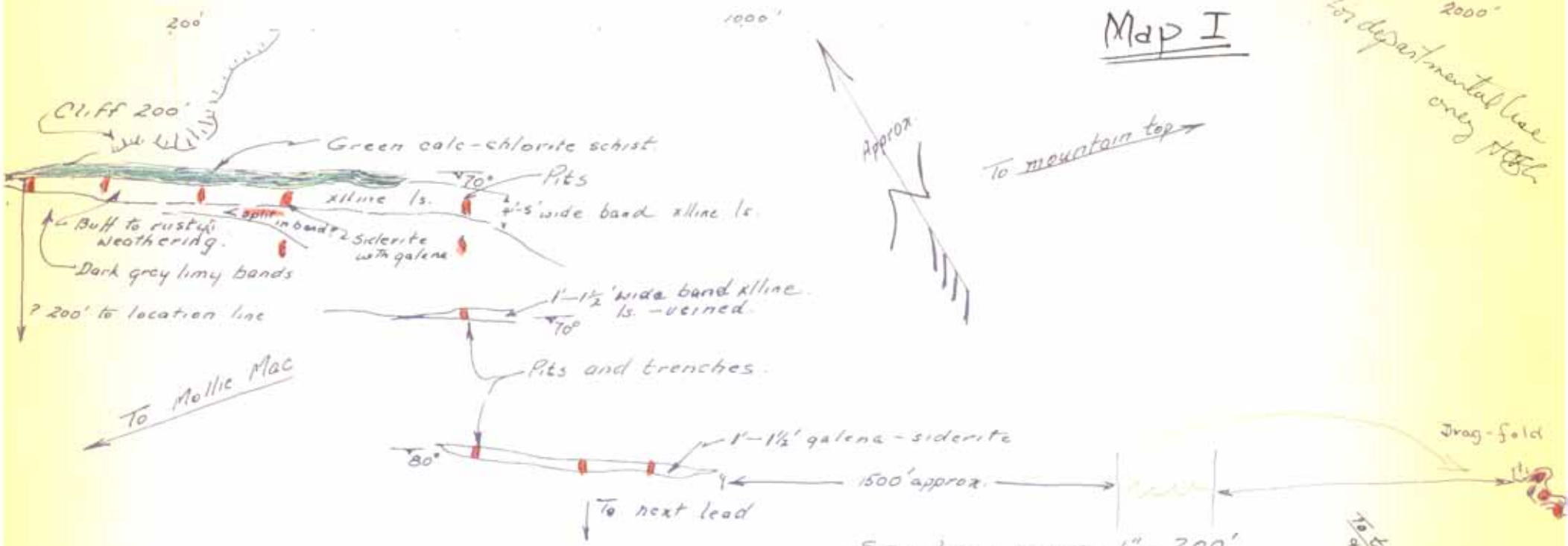
= outcrop areas (ore in place)

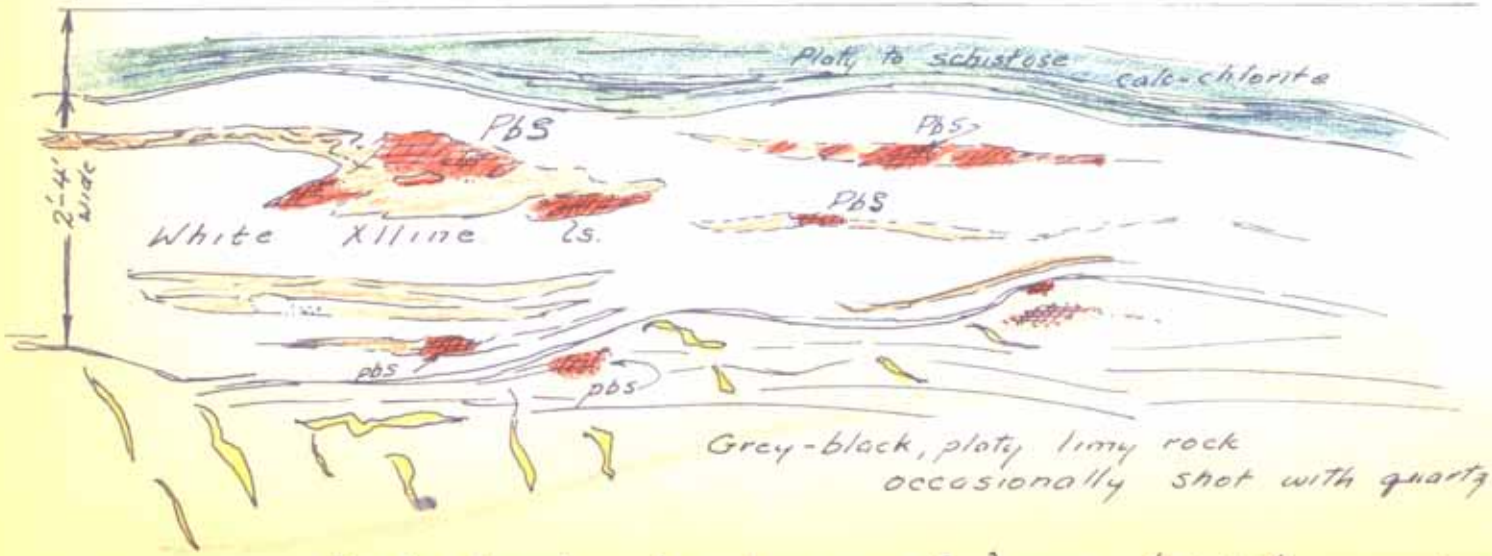
The mapped areas shown on Map I are taken from the highest and most northerly vein, at the 7000 ft level on claims Nos. 6 and 3.

Detail shown on Map II was taken from the dragfolds on claim No. 2 close to the tunnel shown at elev. 6500 ft

L.B. Mark

Map I





Detailed diagram of lime band with galena.

Diagram showing location of lime bands and workings.
elevation = 5700'-7000'

SILVER CHIEF

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Sept. 1960

Map II

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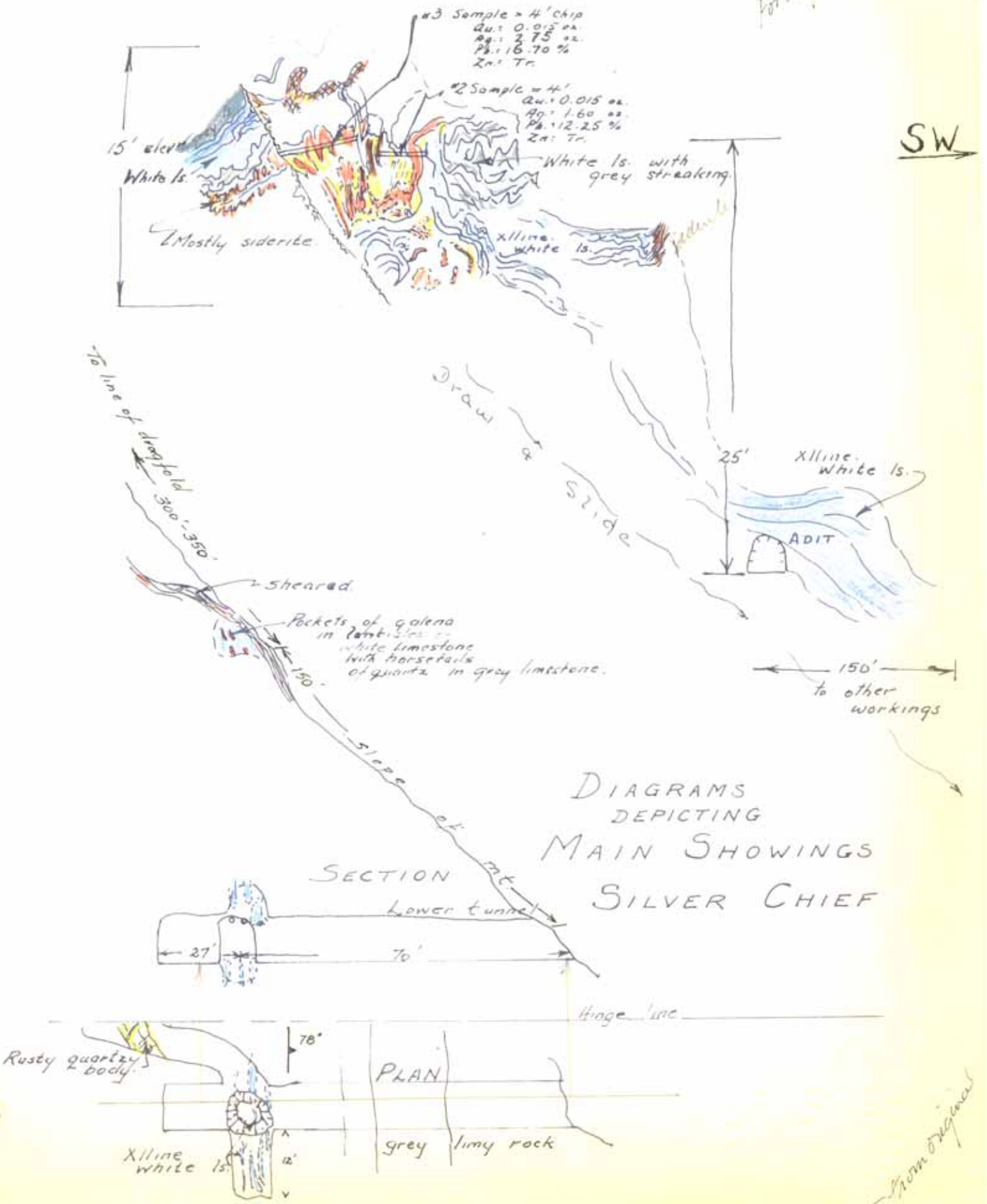


From original

W.P. Leitch Aug/60

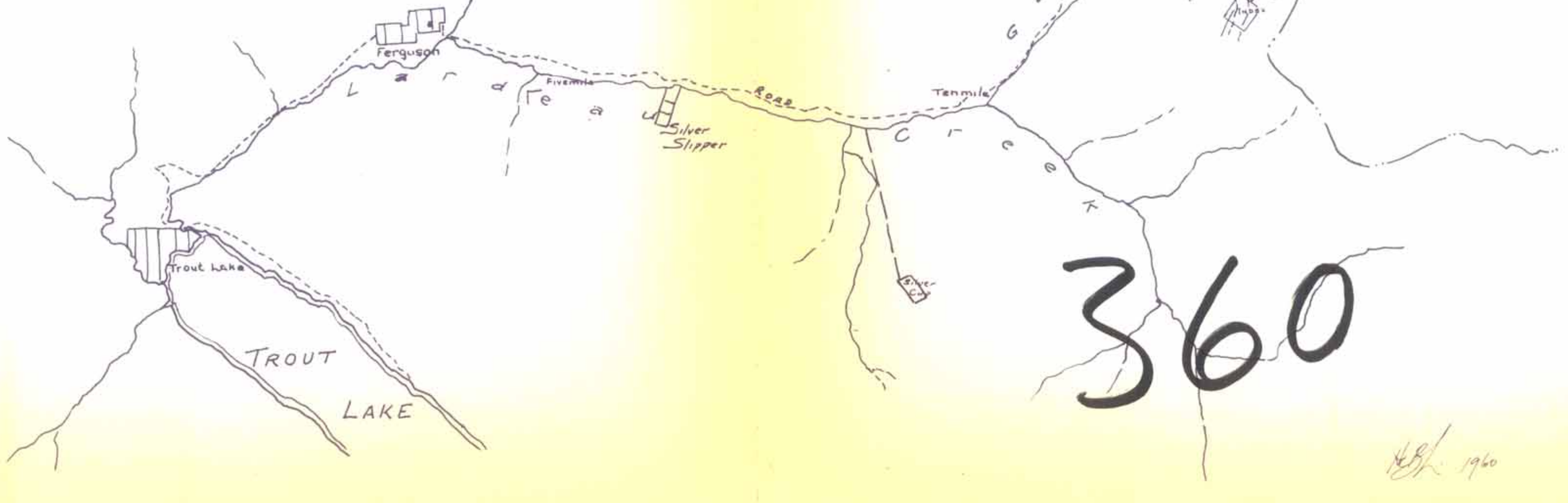
Map III

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 360 MAP 3

LOCATION MAP
SHOWING
SILVER CHIEF
AND
GENERAL AREA

From: MINERAL RES. MAP, 1928
DEPT. of LANDS, B.C.

Scale 1" = 1 mile
1" = 63360"



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1960

Form No. 220 Statutory Declaration. 1-60.

The Willson Stationery Co. Ltd.
Clarke & Stuart Co. Ltd.

Dominion of Canada

Province of British Columbia

To Wit:

In the Matter of

SILVER CHIEF PROPERTY

I, V. M. Petroskey, of the City of Vancouver in the Province of British Columbia

Do Solemnly Declare that

1. I retained the services of H. C. B. Leitch, Consulting Engineer for the purpose of examining the property known as the "Silver Chief Property" located in the Lardeau Creek Area of British Columbia.

2. Mr. Leitch was accompanied to the property by Mr. T. Bilinski as a helper in his investigations.

3. The cost entailed for the examination and the preparation of the Geological report on the property in question, amounted to $300.00.

4. The cost involved in obtaining the services of the helper for the two days of the examination cost Fifty Dollars ($50.00).

5. The cost involved in the travelling expenses and miscellaneous expenses for work done on the property amounted to in excess of One Hundred and Fifty Dollars ($150.00).

6. The total cost involved in the examination and obtaining of the Engineering report as submitted by H. C. B. Leitch cost in excess of Five Hundred Dollars ($500.00).

And I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

Declared before me
at the City of Vancouver,
in the Province of British Columbia
this 5th day of
May A.D. 19 61.

A Notary Public in and for the Province of British Columbia
A Commissioner for taking affidavits within British Columbia.