

GEOPHYSICAL
ASSESSMENT REPORT

LOG NO: 0926	RD.
ACTION:	
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on the

JUBILATION MINERAL CLAIMS

KELOWNA AREA

by

MURRAY MORRISON, B.Sc.

Claims:

Jubilation 1 & 2 (10 units).

Location:

The Jubilation claims are situated 1 km north of Lambly Lake, or 19 km northwest of Kelowna, B.C.

Lat. 49°58'; Long. 119°43';
N.T.S. 82-E-13E.

Owner:

Murray Morrison

Operator:

Murray Morrison

Date Started:

June 10, 1989

Date Completed:

June 27, 1989

GEOLOGICAL BRANCH
ASSESSMENT REPORT 75 1989

GOVERNMENT AGENT
VERNON

Kelowna, B.C.

19,110

June 5, 1989

TABLE OF CONTENTS

	<u>PAGE</u>
Summary	1
Introduction	3
Location and Access	3
Physical Features and Climate	5
Claim Status	5
History	6
Regional Geology	6
Property Geology	7
Ground Magnetometer Survey	7
Discussion	8
Conclusions and Recommendations	10
References	11
Appendix "A" Statement of Qualifications	12
Appendix "B" Statement of Expenditures	13

ILLUSTRATIONS

Location Map Jubilation Property	Figure - 1	2
Claims and Access Jubilation Property	Figure - 2	4
Ground Magnetometer Survey Jubilation 1 & 2 Mineral Claims	Map J-89-1	in pocket
Geology - Main Zone Jubilation 1 & 2 Mineral Claims (Reprint of map from 1986 report, included with this report for reference).	Map J-86-3	in pocket

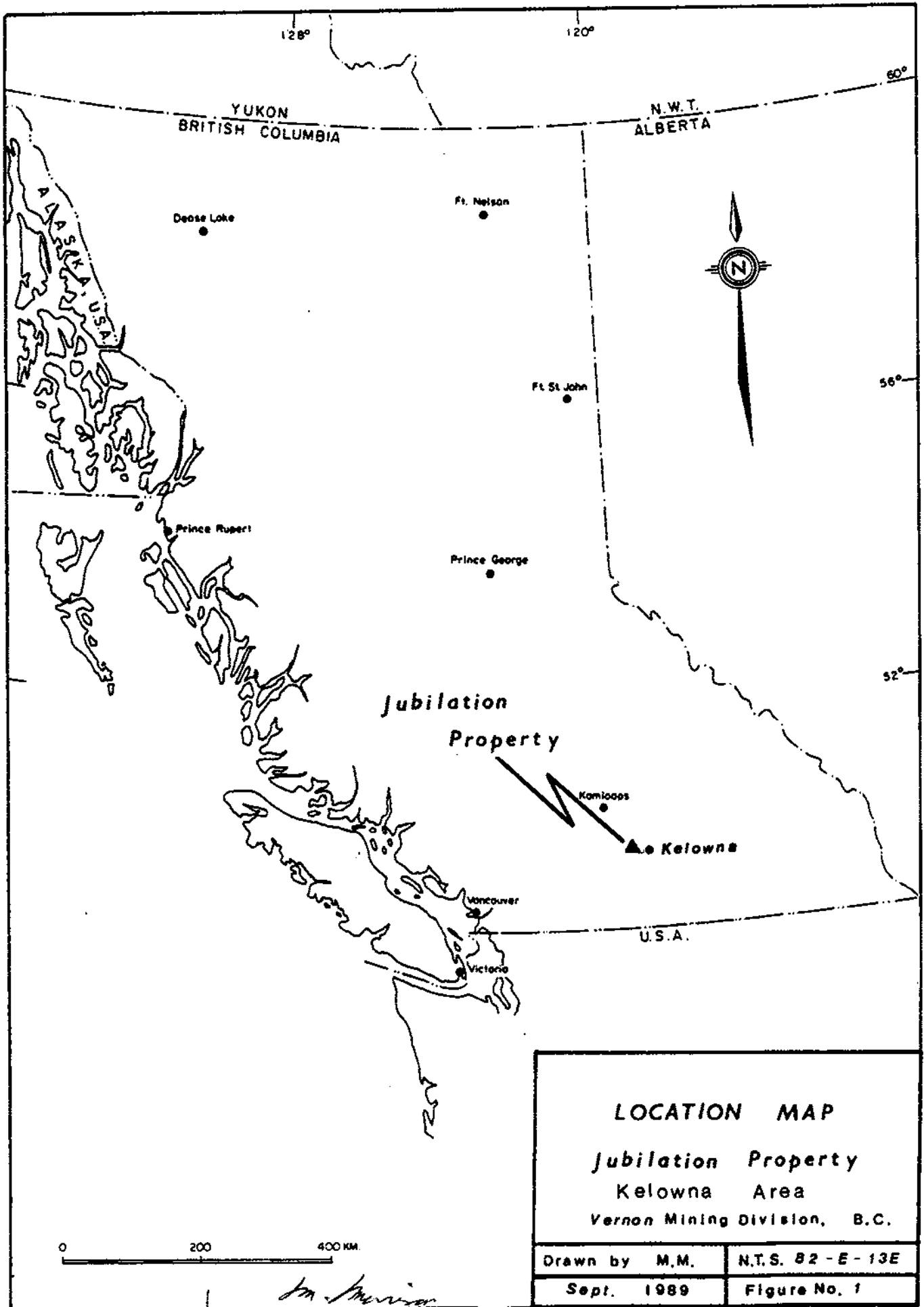
SUMMARY

The Jubilation 1 & 2 mineral claims, situated 1 km north of Lambly Lake, or 19 km northwest of Kelowna, B.C. cover fractured, altered and limonite stained zones within Cache Creek Group metasediments. The claims are a restaking of ground formerly covered by the Nogan 1 & 2 mineral claims of Cominco Ltd.

Gold, silver and arsenic values in anomalous amounts were obtained from the fractured zones by Cominco Ltd. in 1980. Geological mapping of the property in 1986 by the writer indicated that several northwest-striking shear zones might be responsible for the mineralization. The ground magnetometer survey of this June was designed to delineate faults for future drilling targets.

The magnetometer survey failed to identify any northwest-striking faults across the property, but it did outline two dome-shaped hornblende diorite intrusives over the northern portion of the Jubilation 1 & 2 mineral claims.

Indirect exploration surveys to date have been hampered by a clayey till on the property and a program of limited backhoe trenching or drilling is recommended to obtain rock samples for geochemical analyses from the southern portion of this year's grid area. The full extend of anomalous gold, silver and arsenic values in bedrock has never been adequately tested on the property.



INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a ground magnetometer survey conducted during June, 1989, on the Jubilation 1&2 mineral claims located within the Vernon Mining Division of British Columbia.

The Jubilation 1 & 2 mineral claims, totalling 10 units, cover 3 square kilometres of ground 1 kilometre north of Lambly Lake, or 19 kilometres northwest of Kelowna, B.C. The two claims are part of a larger property owned by the writer that also includes the Jubilation 3 & 5 mineral claims (see figure 2).

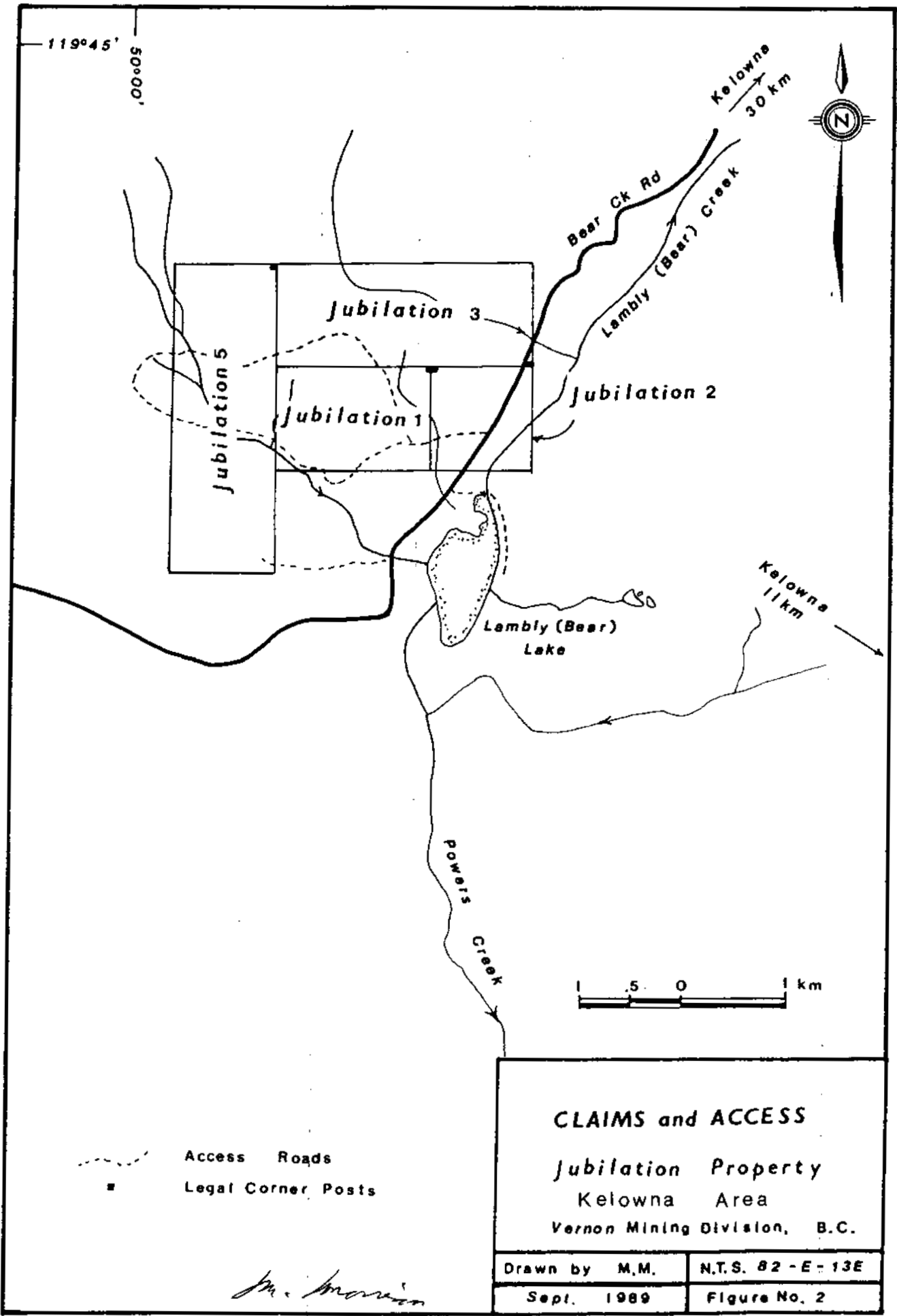
The Jubilation 1 & 2 mineral claims cover a lime-rich sedimentary sequence of Cache Creek Group rocks of Permian Age that have been intruded by a hornblende diorite stock of possible Cretaceous Age. Altered, limonite and manganese stained, rock samples collected from shear zones located near the centre of the claim group have been found to contain anomalous values of gold, silver and arsenic.

This year's magnetometer survey consisting of 6.5 lineal kilometres was concentrated near the common boundary of the Jubilation 1 & 2 mineral claims where the geology was mapped during a 1986 exploration program (Morrison, 1986). The results of the survey are illustrated on Map J-89-1 accompanying this report.

LOCATION AND ACCESS

The Jubilation 1 & 2 mineral claims are situated 1 km north of Lambly Lake (Bear Lake), 19 km northwest of Kelowna, B.C. (Lat. 49°58'; Long. 119°43'; N.T.S. 82-E-13E.)

The Property may be reached from Kelowna via Highway 97, the Westside road, and the main Fletcher-Challenge Bear Creek logging road. The trip requires 45 minutes driving time. A secondary logging road, branching west from the Bear Creek main road near kilometre #23 runs $\frac{1}{2}$ km directly to the key area of interest on the Jubilation 1 & 2 mineral claims. (see figure 2).



--- Access Roads
 ■ Legal Corner Posts

M. Morrison

CLAIMS and ACCESS
Jubilation Property
 Kelowna Area
 Vernon Mining Division, B.C.

Drawn by M.M.	N.T.S. 82 - E - 13E
Sept. 1989	Figure No. 2

PHYSICAL FEATURES AND CLIMATE

The property is located on rolling-forested uplands of the Thompson Plateau adjacent the semi-arid Okanagan Valley. Relief on the property is gentle and the average elevation of the property is 1200 metres above sea level. The mixed forest of balsam, lodge-pole pine, and spruce has been strip-logged from approximately one-half of the claim area in recent years, and the main mineralized showings on the Jubilation 1 & 2 claims are located in one such area.

Tag alder and second-growth balsam form a dense underbrush in the forested regions.

A thin glacial till of clay and boulders covers much of the property while Pleistocene sediments occur in local basins. Natural rock outcroppings are confined to the steeper slopes of ridges or creek banks. Recent logging activities and road construction have provided many additional rock exposures for mapping purposes.

The region receives an estimated 40 cm of precipitation annually, much more than the Okanagan Valley just 15 km to the east. Half of the precipitation occurs as snow which blankets the property from early November until late April and reaches depths of 90 to 120 cm. The creeks crossing the property flow year-round.

CLAIM STATUS

The Jubilation 1 & 2 mineral claims (record numbers 1966, and 2020) are 100% owned by the writer, M. Morrison, of Kelowna, B.C. They were recorded in the Vernon Mining Division July 3rd and October 16th, 1985, respectively.

HISTORY

The Jubilation 1 & 2 mineral claims overlie ground formerly covered by the Nogan 1 & 2 mineral claims originally staked by the writer for Cominco Ltd. in 1980. Localized geological mapping and soil and rock geochemical sampling was conducted on the Nogan mineral claims by Cominco in 1980, but no follow-up exploration was carried out. The claims were allowed to lapse by Cominco in 1985, and the ground was consequently re-staked by the writer.

Geological mapping was conducted near the boundary of the Jubilation 1 & 2 mineral claims in 1986 by the writer (Morrison, 1986).

In 1987 the property was optioned by Chevron Canada Ltd. Re-sampling of soils in the boundary area of the Jubilation 1 & 2 mineral claims was conducted, followed up by a very limited backhoe trenching program. The results were determined to be poor and the property was returned to the writer in late 1987.

REGIONAL GEOLOGY

Map 15-1961 "Kettle River West Half" by H.W. Little of the G.S.C. indicates that the Jubilation property is underlain by metasedimentary rocks of the Cache Creek Group of Permian age. The property lies 1 km from the northwestern edge of the Kelowna-Westbank Tertiary Basin, and 1 km north of a Valhalla (Cretaceous?) granodiorite batholith.

Both the Tertiary Basin and Cretaceous batholith may be fault-bounded and the possibility exists that large scale fault structures may pass through the Jubilation property. One such fault structure aligning with Powers Creek appears to pass through the western side of the property. In addition to being outlined topographically by Powers Creek the inferred Powers Creek fault is expressed magnetically on government Aeromagnetic Map 8522G.

Continued . . .

REGIONAL GEOLOGY - Continued

The aeromagnetic map indicates a "magnetic high" just to the east of the Powers Creek Fault and centred immediately north of the Jubilation 1 & 2 mineral claims. A hornblende diorite stock of possible Cretaceous age has been located in the field coincident with the magnetic high. A syenite plug of possible Oligocene age occurs immediately northwest of the hornblende diorite stock.

The Jubilation property clearly overlies an area that has been subjected to several events over a long geological time span.

PROPERTY GEOLOGY

Metasediments of the Cache Creek Group are intruded by a magnetic hornblende diorite stock centred near the northern boundary of the Jubilation 1 & 2 mineral claims. The metasediments composed of argillites and limy argillites have been hornfelsed and skarnified adjacent the intrusive and for some 500 to 600 metres towards the southwest. The metasediments strike across the property 105 degrees on average and dip steeply north to vertical. The metasediments are fractured, folded, altered, and stained by limonite and manganese along a number of parallel northwesterly striking faults. Gold, silver and arsenic values in anomalous amounts (1044 ppb, 9.6 ppm and 142 ppm respectively) have been found to occur in the sheared, stained rocks. (For more details please see geological map J-86-3 from the 1986 mapping program which has been included with this report for reference).

GROUND MAGNETOMETER SURVEY

A grid was established on the Jubilation 1 & 2 mineral claims as outlined on Map J-89-1 accompanying this report. A Baseline of 700 metres was established in a due north direction, while grid lines were flagged at 50 to 100 metre intervals east and west of the baseline as illustrated. Stations were marked at 25 metre

Continued . . .

GROUND MAGNETOMETER SURVEY - Continued

intervals along each grid line. In total, 6.5 km of flagged grid line was established during the course of the magnetometer survey using a Silva Ranger Compass and a Topolite belt chain. The Legal Corner Posts were also tied-in to the grid during the survey.

A Scintrex MF-2 Portable Fluxgate Magnetometer was used to survey the property. The magnetometer with a resolution of 5 gammas was considered suitable for this survey.

Base station magnetometer values were established along the road traversing the eastern side of the Jubilation 1 mineral claim. The roadside stations were corrected for diurnal variations, and once corrected, were used during the survey as baseline stations.

Looped traverses were made along pairs of grid lines, starting and ending at baseline stations (usually within $1\frac{1}{2}$ to 2 hours), and corrections were made to all values for diurnal variation. During this year's survey intermediate readings were taken midway between all flagged grid stations in addition to the grid station readings to increase the detail of the survey. All of the corrected readings are plotted on the contoured magnetometer map, J-89-1, accompanying this report. A constant 50,000 gammas has been subtracted from all of the values on the map for ease of plotting and clarity.

DISCUSSION

The ground magnetometer survey was conducted over the border zone of a hornblende diorite stock intruding the Jubilation 1 & 2 mineral claims in an effort to define the edge of the stock, and thus delineate bounding fault structures. It was hoped that the survey might also outline fault-controlled alteration zones within the Cache Creek Group rocks as linear magnetic lows.

Continued . . .

DISCUSSION - Continued

The results of the ground magnetometer survey, illustrated on Figure J-89-1 accompanying this report, show that the Jubilation property is one of extreme magnetic relief with magnetometer readings ranging from -440 to 19000 gammas.

The hornblende diorite intrusive is represented by two, strong, oval-shaped magnetic highs: one centred at grid 25N, 17+25W and the other at grid 26N, 14+12W. The very strong magnetic zones within the larger anomalies are coincident with segregations of mafic-rich phases within the hornblende diorite intrusives that measure up to 20 by 200 metres in surface dimension. One such zone crosses grid lines 26 & 27N near 13+50W (17,500 to 19,000 gammas).

The 200 metre wide zone of relatively low magnetic relief separating the two strong magnetic "highs" near the northwest corner of the Jubilation 2 mineral claim is believed to represent a thick roof-pendant of Cache Creek Group argillite.

The magnetic relief also flattens considerably towards the southern and western edges of the survey area away from the hornblende diorite intrusives and on to portions of the property known to be underlain by Cache Creek Group rocks. Sharp, fault-bounded, intrusive contacts do not appear in the magnetic data, and it appears that the intrusives are dome-shaped.

The magnetic data also fails to outline the northwesterly-striking faults inferred during 1986 geological mapping.

The data does, however, appear to confirm that a late north-south left-lateral fault may cross the property between grid 16W and 17W, shifting the eastern intrusive dome 100 metres north relative to the western intrusive dome.

CONCLUSIONS AND RECOMMENDATIONS

The ground magnetometer survey conducted over the border zone of the Jubilation 1 & 2 mineral claims during June did not prove useful in delineating mineralized fault zones.

The survey did, however, outline two dome-shaped hornblende diorite intrusives underlying the northern portion of the property. The intrusive plugs do not appear to be fault-bounded, but do appear to be separated by a thick roof-pendant of Cache Creek Group rocks.

No useful information was gained from the magnetometer survey over the southern portion of the grid area where earlier rock sample surveys have yielded anomalous gold, silver and arsenic values.

All of the indirect exploration techniques used to date over the southern portion of the grid area have been hampered by a veneer of clayey till. Further rock sampling should be done on this area of the property to test the full extent of anomalous gold, silver and arsenic values in rock. A limited program of backhoe trenching or drilling may be required to obtain bedrock samples from this drift-covered region of the Jubilation 1 & 2 mineral claims.

September 5, 1989


Murray S. Morrison, B.Sc.

REFERENCES

Little, H.W.

1961: Map 15-1961 Geology Kettle River West Half,
British Columbia, G.S.C.*

G.S.C.

1973: Map 8522 G, Peachland, British Columbia,
Aeromagnetic Series, G.S.C.

Morrison, M.S.

1986: Geological Assessment Report, Jubilation Mineral
Claims, Kelowna Area, Vernon Mining Division,
Filed as an Assessment Report with the Ministry
of Energy, Mines and Petroleum Resources, B.C.

* G.S.C. = Geological Survey of Canada

APPENDIX "A"

STATEMENT OF QUALIFICATIONS

I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:

1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.
2. I have been working in all phases of mining exploration in Canada for the past nineteen years.
3. During the past nineteen years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.
4. I have examined many mineral properties in Southern British Columbia during the past nineteen years.
5. I conducted the Magnetometer Survey outlined in this report.
6. I own a 100% interest in the Jubilation 1&2 mineral claims.

September 5, 1989
Kelowna, B.C.


Murray Morrison - B.Sc.

APPENDIX "B"

STATEMENT OF EXPENDITURES ON THE JUBILATION 1 & 2 MINERAL CLAIMS

Statement of Expenditures in connection with the Ground Magnetometer Survey carried out on the Jubilation 1 & 2 mineral claims, located near Kelowna, British Columbia (N.T.S. 82-E-13E) for the year 1989.

FIELDWORK - MAGNETOMETER SURVEY (6.5 km)


M. Morrison, geologist	5 days @ \$225.00/day	\$ 1,125.
Truck, 4x4 (incl. gasoline)	5 days @ \$ 70.00/day	\$ 350.
Meals and Lodging	- no charge -	0.
Magnetometer Rental	5 days @ \$ 25.00/day	125.
Flagging & Belt Chain Thread		15.
	Sub-total	<u>\$ 1,615.</u>

REPORT PREPARATION COSTS

M. Morrison, geologist	2 days @ \$225.00/day	\$ 450.
(correcting magnetometer readings for diurnal variations; plotting and contouring magnetometer values; analyzing data and writing report).		
Drafting		50.
Typing		50.
Copying Reports		20.
	Sub-total	<u>\$ 570.</u>
	<u>GRAND TOTAL</u>	<u>\$ 2,185.</u>

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Ground Magnetometer Survey carried out June 10-27, 1989.

September 5, 1989


Murray Morrison - Geologist

L.C.P.
Jubilation 1
25 x 3W

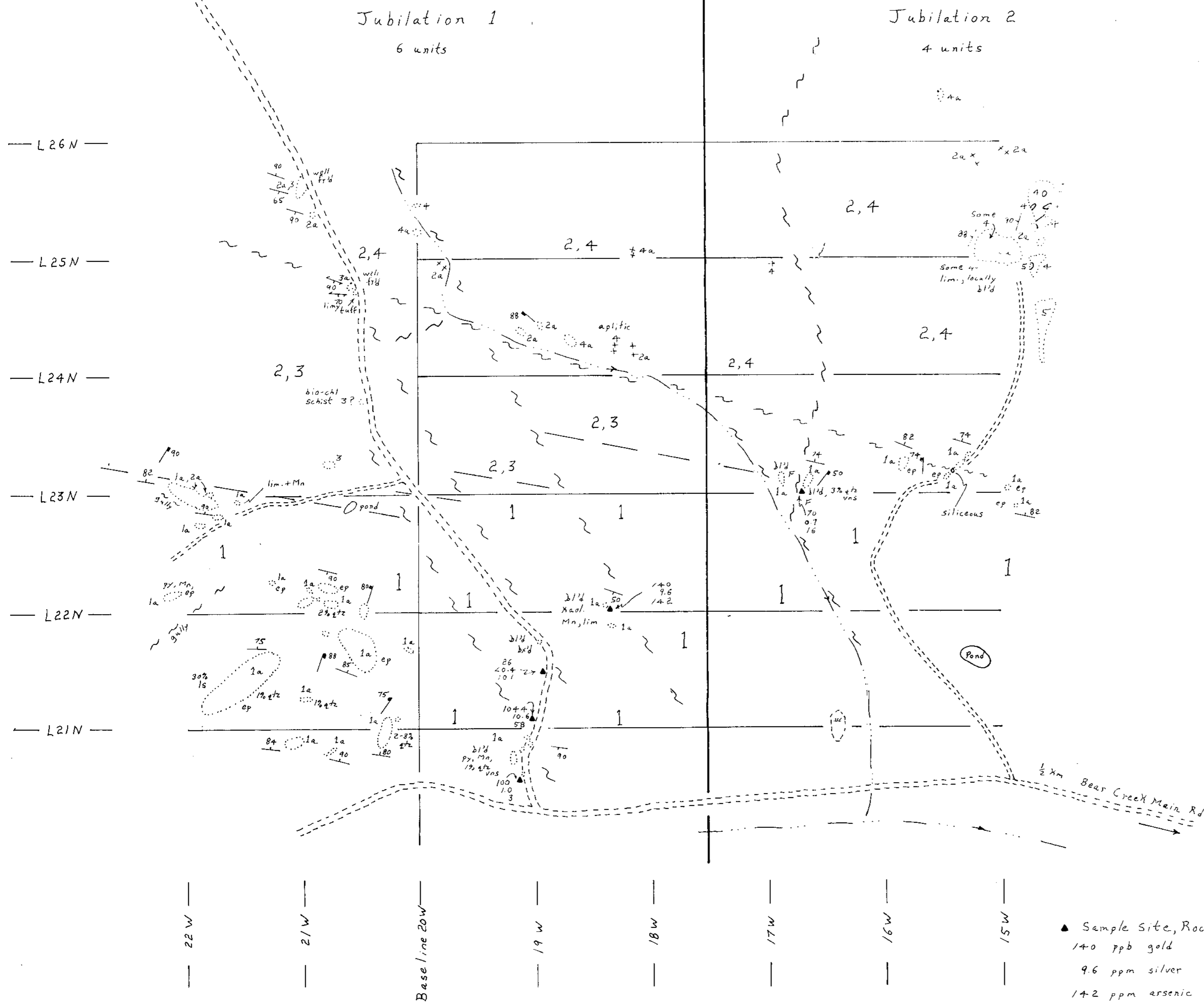
L.C.P.
Jubilation 2
25 x 2E



GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,110

magnetic declination



To Accompany a Geological Report by M. Morrison.

Jubilation Property Kelowna Area, Vernon Mining Division, B.C.		
Geology — Main Zone Jubilation 1+2 Mineral Claims		
Geology: M.M+B.C.	Sept. 1986	N.T.S. 82-E-13E
Drawn by: M.M.	Scale 1:2,500	Map J-86-3

Legal Corner Posts Tied-In With A Compass and Belt Chain.

JUBILATION 3 M.C.

JUBILATION No.1 L.C.P. (2S x 3W) JUBILATION No.2 L.C.P. (2S x 2E)

JUBILATION 1 M.C.

JUBILATION 2 M.C.

28 N

26 N

24 N

22 N

24 W

22 W

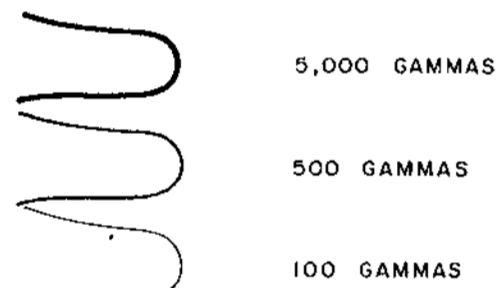
20 W BASELINE

18 W

16 W

14 W

ISOMAGNETIC CONTOURS (ADD 50,000 GAMMAS FOR VERTICAL FIELD)



INSTRUMENT - SCINTREX MF - 2-100 PORTABLE FLUXGATE MAGNETOMETER

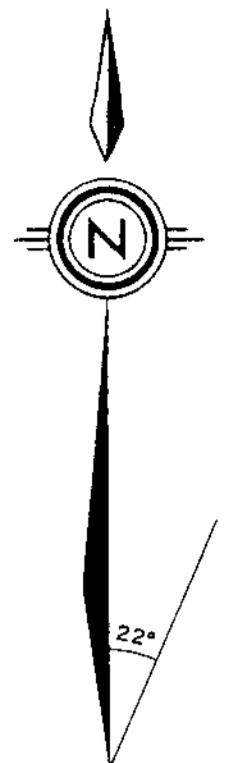
ACCESS ROADS

CLAIM POSTS WERE TIED-IN TO GRID WITH COMPASS AND BELT CHAIN

INTRUSIVE

INTRUSIVE

MAGNETIC DECLINATION



GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,110

1/2 Km. TO BEAR CREEK ROAD

TO ACCOMPANY A GEOPHYSICAL REPORT BY M. MORRISON

JUBILATION PROPERTY KELOWNA AREA, VERNON MINING DIVISION, B.C.		
GROUND MAGNETOMETER SURVEY		
JUBILATION 1 & 2 MINERAL CLAIMS		
SURVEY BY M.M.	SEPTEMBER 1989	N.T.S. 82 - E - 13E
DRAWN BY M.M.	SCALE 1:2500	MAP J-89-1