

Geological Report

for

823480

VERMILION ENTERPRISES LTD.

on the

SNOWFLAKE PROPERTY

PART B

INTRODUCTION

At the request of Ken Burke of Vermilion Enterprises Ltd. the writer prepared the following report on the Snowflake property. The purpose of the report is to evaluate the geology of the property, taking into consideration the known mineralization and workings thereon and to recommend an exploration and development program to locate extensions to known or other potential economic mineralized vein structures.

The information for the report was obtained from sources as cited under bibliography and from a property examination carried out on May 8, 1983.

PROPERTY

The property is comprised of seven contiguous claims consisting of four two post claims and three unit claims consisting of 44 units. Particulars are as follows:

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>	<u>Expiry Date</u>
Ram	20	1693	March 14, 1984
Search	12	1659	February 10, 1984
Ewe	12	1692	March 14, 1984
Lamb 1	(2 post)	1760	March 16, 1984
Lamb 2	(2 post)	1761	March 16, 1984
Lamb 3	(2 post)	1762	March 16, 1984
Snowflake	(2 post)	31320	December 5, 1985

Any legal aspects pertaining to the claim group is beyond the scope of this report.

LOCATION AND ACCESS

The property is located within five km northwest of Oliver, B.C. within the historic Fairview Camp 423 km east of Vancouver, B.C. Oliver is the main commercial centre of the immediate area. Penticton 45 km north of Oliver is served daily by commercial airline from Vancouver or Calgary.

Access to the property is for three km west from the traffic lights Oliver center to the Fairview Lake Road, thence two and seven-tenths km to a poor secondary road branching off to the north. The portal is eight-tenths of a km along this road.

Trail, B.C. where smelter facilities are available is 270 km east of Oliver.

WATER AND POWER

At the time of the writer's property examination, the main workings were making a minimal amount of water, however during the summer months this water source may not be present.

Approximately 75 meters below the main workings are two small lakes from which sufficient water could be available for all phases of the exploration and development program.

A commercial power line is within 200 meters of the main portal.

PHYSIOGRAPHY

The topography within the confines of the property boundaries is gently rolling hills with local bluffs and escarpments.

Elevations are up to 670 meters with a relief of 250 meters.

HISTORY

The history of the general area stems from the historic Fairview Camp within which the Snowflake property is located.

The Fairview Camp is one of the older mining camps of B.C. which is presently being re-explored due to the rise in gold prices. The original claims of the camp were staked in the early 1890's and the greater part of the work done on them prior to 1900.

The main producer of the camp was the Stenwinder, which is within one km of the southwestern portion of the Snowflake property, with the Morning Star and Rattler also credited with production.

In 1936, Fairview Amalgamated Gold Mines began operations on the Morning Star and Fairview properties, and between that time and the end of 1939 produced 10,681 ounces of gold, and a large amount of silver from the milling of 109,405 tons of ore.

On the Snowflake property work was carried out by Continental Consolidated and Norex in 1961 and 1962. The property was then known as the Standard and work consisted of trenches, shafts, the driving of three adits (described under Mine Workings) and the drilling of four diamond drill holes at the end of No. 2 Adit to locate the extension of the vein (not located), a fourth exploratory adit was driven in 1978 by Bill Hegan. There was no work done on the property thereafter.

Smelter returns from Cominco of Lot number 4 through 7 indicate the following shipments processed from shipments made by Norex Mines Ltd. from October 6, 1961 to December 13, 1961.

<u>Serial No.</u>	<u>Tons</u>	<u>Au oz/ton</u>	<u>Grade</u>		<u>Silica %</u>	<u>Gross Value</u>
			<u>Ag oz/ton</u>			
6957-C	217.67	1.593	1.2		90.3	\$12,066.77
7067-C	55.28	1.335	0.7		08.7	2,568.41
7068-c	56.56	1.3295	1.3		91.0	2,675.77
7069-C	<u>75.404</u>	1.1615	1.15		90.6	<u>2,491.18</u>
	404.914	1.43				\$19,802.13
	=====					=====

The values were based on gold at \$35 and silver at \$.97. The present day gross value of the shipments would be approximately 12 times the 1961 prices which is \$237,625.56 or \$586.80 per ton.

It appears that there were three lots of shipments prior to the above. These could be the eight cars of ore that were shipped that averaged 0.20 oz Au/ton for 510 tons (Skerl). The gross value of these shipments would approximately \$7 per ton in gold or \$3,750. At present prices - \$84 per ton or \$42,840.

In January 1962 four of five cars of ore shipped (Skerl) averaged .485 oz per ton Au but no tonnage was mentioned. However in a report dated April 23, 1962 Skerl reports that to that date approximately 1,200 tons of ore have been produced averaging 0.54 oz Au/ton and a net smelter value of \$16 per ton. This would gross value the total production at \$19,200 or approximately \$230,400 at present day prices.

It appears there is a discrepancy in not so much total tonnage but gross value. If the five cars shipped in January 1962 averaged 50 tons each, the total tonnage would approximate the 1,200 tons total, however the average grade differs considerably.

	Tons	Grade Au oz/ton
Lot 4-7	404.9	1.43
Prior shipments	510.0	0.20
January 1962	<u>250</u> (est)	0.485
	1,164.9	0.689

The gross value when shipped would be \$28,083.99 or at present prices \$337,007.95.

Additional information from the 1961 and 1962 Annual Reports of the Minister of Mines report that in 1961 "an adit 230 feet long was driven under old shallow workings on a quartz vein and a small stope was mined to surface. A total of 502 tons was shipped to the Trail smelter". In 1962 the report states that "development consisted of 600 feet of drifting, 15.3 feet of crosscutting and 527 feet of raising. Ore shipped to Trail, 2,417 tons".

Thus it appears that a total of 2,919 tons of ore were shipped of an unreported grade.

GEOLOGY

In the general area of the Snowflake property, the Oliver granite is in a northwesterly contact with the Carboniferous Kobau group with the Oliver syenite sandwiched along the easterly portion of the contact. The Kobau group forms a lenticular zone in contact with the Fairview granodiorite in the south. Within this lenticular Kobau group are the most productive deposits of the Fairview Camp - the Fairview and the Morning Star.

The Oliver granite consists of light pink to grey, medium to coarse grained rocks of granitic texture. Quartz with abundant orthoclase and microcline, a little oligoclase with biotite or muscovite predominates. The granite is mainly porphyritic except in its central part where it has a uniform texture. Towards its contacts it becomes more basic and on its south side it grades in places into a dark syenite.

The Kobau group comprises a great thickness of metamorphosed stratified rocks mainly of sedimentary origin. The quartzite members are thinly bedded and commonly micaceous or graphitic. There are also fine grained siliceous, mica schists and others containing chlorite, hornblende, graphite and talc. The associated greenstones are variously sheared.

The Fairview granite is a medium grained, flesh-coloured to light brown rock with a granitic texture. In places a gneissic texture is indicated. Quartz, andesine, a little orthoclase, biotite or muscovite and pyroxene constitute the quartz diorite.

The ore deposits of the Fairview Camp occur in three ways: veins in the schist conforming closely to the strike and dip of the schistosity; veins in the schist crosscutting the schist in dip and strike; and veins in the granitic bodies.

Examples of veins in the schist are the Fairview and Morning Star where the veins vary greatly in width from great masses of quartz "up to 30 feet wide" to narrow veinlets of partly silicified schist.

The second group of veins, crosscutting the schist in dip and strike, are small and can be traced for only short distances. They generally dip at steep angles and "it is believed that they unite with veins of the first type to form a vein system".

The veins occurring in granitic rocks have apparently no general direction of dip and strike. Veins range from almost flat to nearly vertical within a short distance of each other. Several veins in the granitic rocks are fairly persistent along strike.

Examples of veins within the Oliver granite are on the Susie group which is within two km northwest of the Snowflake workings. The vein consists of a wide, flat-lying vein striking near the shaft approximately north 10 degrees east and dipping about 25 degrees southeast. The vein where exposed is of an apparent width of 3.04 to 4.57 meters (10 to 15 feet).

A parallel quartz vein occurs 61 meters (200 feet) east of the main vein. The width of the vein is from 38 cm to 121 cm for 24 meters (80 feet). This vein may be a faulted continuation of a vein to the north on which the No. 3 adit was driven.

LOCAL GEOLOGY

Within the confines of the property boundaries, the claim group predominantly covers the Oliver granite with a northwesterly contact of the syenitic phase along the extreme southern portion.

The Snowflake vein is hosted by the granite with the main vein trending at approximately 040° and dipping from 85 to 65 easterly. Dykes bisect the vein at two locations, the first intersection is by a hornblende porphyry dyke as revealed within the No. 2 adit is at 100 meters (330 feet) where the dyke strikes at 060° and dips 70 north. The second intersection by a feldspar porphyry dyke near the end of the drift at 155 meters (510 feet) where the dyke strikes at 350° and dips steeply. The drift was not extended through the second dyke.

The vein consists basically of quartz with occasional carbonates and is in a sharp contact with the wallrock. A gouge zone (less than 6 cm) may occur along the footwall.

The width of the vein is up to 1.52 meters with no obvious relationship of grade to width.

SNOWFLAKE WORKINGS

The workings consist of open-cuts and four adits over a horizontal distance of 387 meters. Two adits are on the main zone with two other exploratory adits.

The two main adits at 582 meters (1,920 foot) and 579 meters (1,900 foot) elevations are 22 meters (72 feet) and 168 meters (551 feet) long respectively.

The third adit at the 554 meter (1,820 foot) elevation or 25 meter (82 foot) below adit No. 2 is 29 meters (95 feet) long and explores a vein exposed in surface cuts.

Adit No. 4 at the 545 meter (1,788 foot) elevation reportedly extends for 30 meters (100 feet).

The No. 4 adit - 187 meters north of the No. 1 adit and 36 meters below in elevation is the northern limit of the workings, however surface workings explore vein structures for up to 200 meters to the south of the No. 1 adit.

The stoped areas occur within the No. 2 drift. The first is 73 meters (75 feet) long and extends from 54 meters (177 feet) to 78 meters (256 feet) and extends for 17 meters (55 feet) above the drift back. This stope reaches the surface through a raise from the roof of the stope.

A short stope occurs at the dyke intersection with the second major stope from the footwall of the dyke for 26 meters (86 feet). The roof of the stope borders the dyke with the stope increasing in height westward as the distance from the intersection of the dyke and stope increases.

Near the end of the level and 11 meters (35 feet) west of the stope is a 26 meter (85 foot) raise to surface.

Other workings to the east as indicated on the accompanying maps explore vein structures.

MINERALIZATION

In the Fairview Camp:

The "ore" generally occurs in the form of shoots. considerable stretches of the veins are of comparatively low value. The gold appears to be very largely associated with the galena and zinc blende and not with the pyrite. The leaner parts of the veins particularly in the underground workings, usually carry considerable pyrite.

On the Snowflake property, numerous samples were taken during the mining period 1961-62 with returned values as indicated on the accompanying maps. The information on the map is as presented to the writer with the samples reportedly taken by Norex and Continental Consolidated in 1962. A number of assay sheets from J.R. Williams and Son Ltd. and Coast Eldridge bearing the name of Continental Consolidated (Mines Ltd.) are on file with the writer. The assays cannot be cross-referenced, however the values presented therein and in check sampling by the writer are in correspondence to the map values.

The main vein (No. 1 vein) is continuous for 155 meters (510 feet) throughout the length of the No. 2 adit to the south end of the drift which ended in a dyke. An intermediate section of the vein has also been bisected with a dyke. The vein appears to be consistent in width over the length of the drift with the narrower section - to 30 cm (12 inches) in the area of the first stope with the wider sections - up to 106 cm (42 inches) of higher value.

In the second stope area to the south of the central dyke, the vein is from 81 cm (32 inches) to 172 cm (68 inches).

Skerl describes the mineralization as "The mineralization ranges from 5% sulphides in the auriferous sections down to less than 1/2% in the almost barren southern section. It consists, in order of decreasing abundance, of patches of coarse pyrite, chalcopyrite, galena, sphalerite, tetrahedrite and specks of the silver tetrahedrite hessite (identified by Dr. R.M. Thompson at U.B.C.). No distinct gold mineral has been recognized so far."

Sampling by Continental Consolidated and Norex on the face of the drift during mining in 1961 and 1962 disclosed values of up to 8.42 oz. Au/ton across 1.06 meters (42 inches).

In the October to December shipments, the 405 tons shipped returned a weighted average assay of 1.43 oz. Au/ton.

The writer took samples from the main drift area with the following assay results.

<u>Location</u>	<u>Description</u>	<u>Width (meters)</u>	<u>Assay</u>	
			<u>oz Au/ton</u>	<u>oz Ag/ton</u>
<u>Underground</u>				
S stope	Qtz vein w/massive sulphides	.71	1.660	12.70
S stope	Barren vein		.45	.065
S stope	Py zone along F.W. of vein	Grab	.895	12.65
<u>Surface</u>				
Open cut north of No. 1 level	Py in granite Qtz. and wall rock	Grab	.009	.16
			.006	.08

RECOMMENDED EXPLORATION AND DEVELOPMENT PROGRAM

A two stage program is recommended. The first stage would be comprised of a diamond drill program to test the main zone for extension to the 548 meter (1800 foot) elevation. Due to topographical considerations, the northern mineral zone extension would only be tested. Additional drill holes to the north would be completed to establish the location of the structure in this direction in order to confirm the specific location for the portal of the 548 meter (1,800 foot) adit. A survey control would also be completed in the initial stage.

The second stage of the program would be the driving of a 365 meter (1,200 foot) exploration and development drift from the 548 meter (1,800 foot) elevation along the main structure. The drift would serve as an exploratory working from the portal to the projected extension of the first mineral zone.

ESTIMATED COST OF THE RECOMMENDED EXPLORATION AND DEVELOPMENT PROGRAM

Stage I

Establish survey control	\$ 5,000
Diamond drilling 300 meters @ \$100	
- all inclusive	30,000
Engineering and supervision	<u>5,000</u>
	\$ 40,000

Stage II

Drifting - 365 meters @ \$500	\$182,500
Associated costs	20,000
Engineering and supervision	<u>25,000</u>
	<u>\$217,500</u>
	\$257,500
	=====

It is estimated that the first stage would take two months to complete.

The second stage of the program would be carried out contingent on the favorable results of the first stage.

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 Laurence Sookochoff, P.Eng.  
 Consulting Geologist

May 17, 1983  
 Vancouver, B.C.

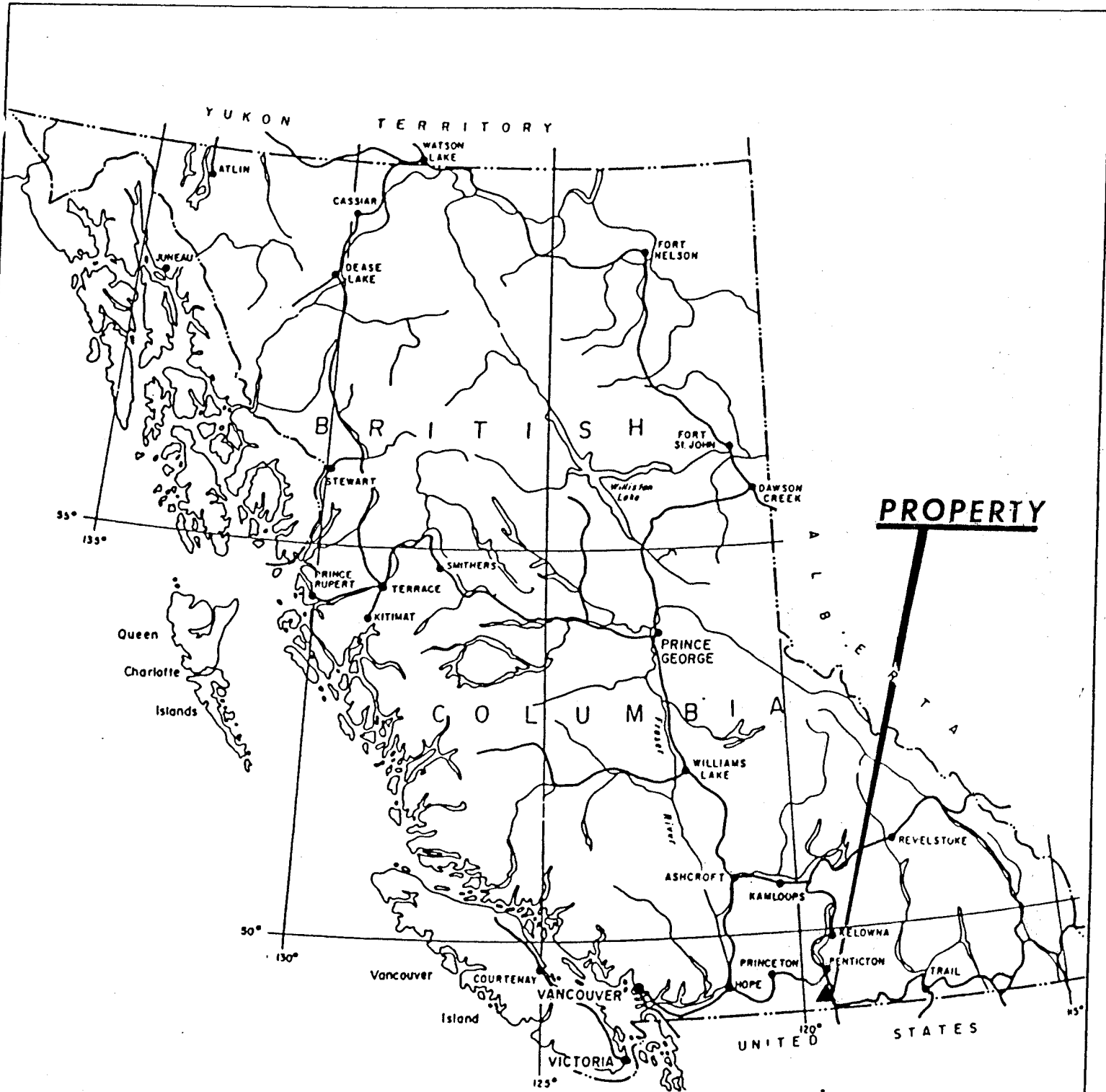
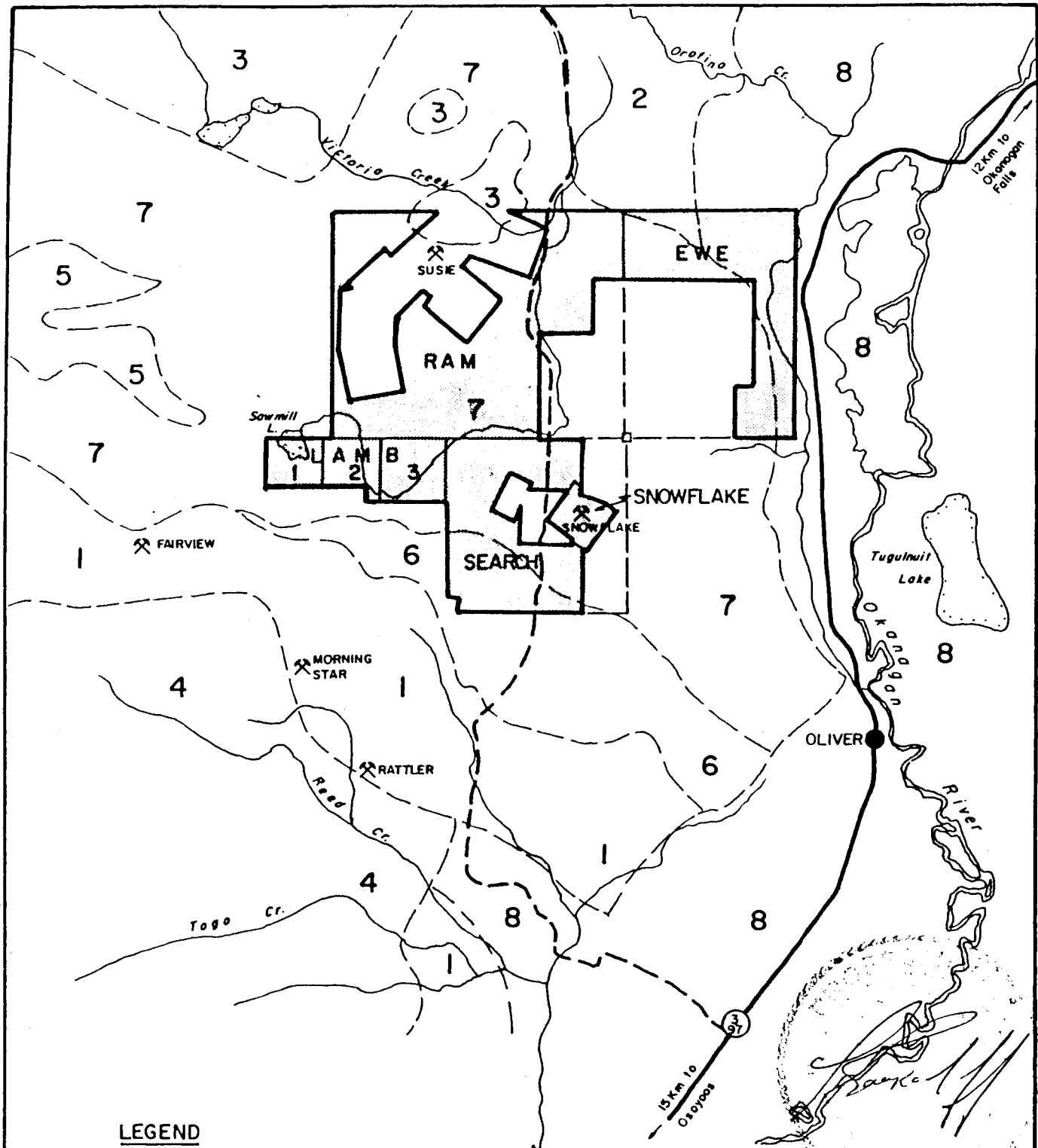


FIGURE 1



|                                                                           |         |                  |           |
|---------------------------------------------------------------------------|---------|------------------|-----------|
| PAN AMERICAN CONSULTANTS LTD.                                             |         |                  |           |
| VERMILION ENTERPRISES LTD.<br>SNOWFLAKE PROPERTY<br>PROPERTY LOCATION MAP |         |                  |           |
| <p>0 100 200 300 MILES</p> <p>0 100 200 300 KILOMETRES</p>                |         |                  |           |
| N.T.S. 82E - 4 E OSOYOOS M.D., B.C.                                       |         |                  |           |
| DRAWN                                                                     | PROJECT | DATE<br>MAY 1983 | FIG.<br>1 |

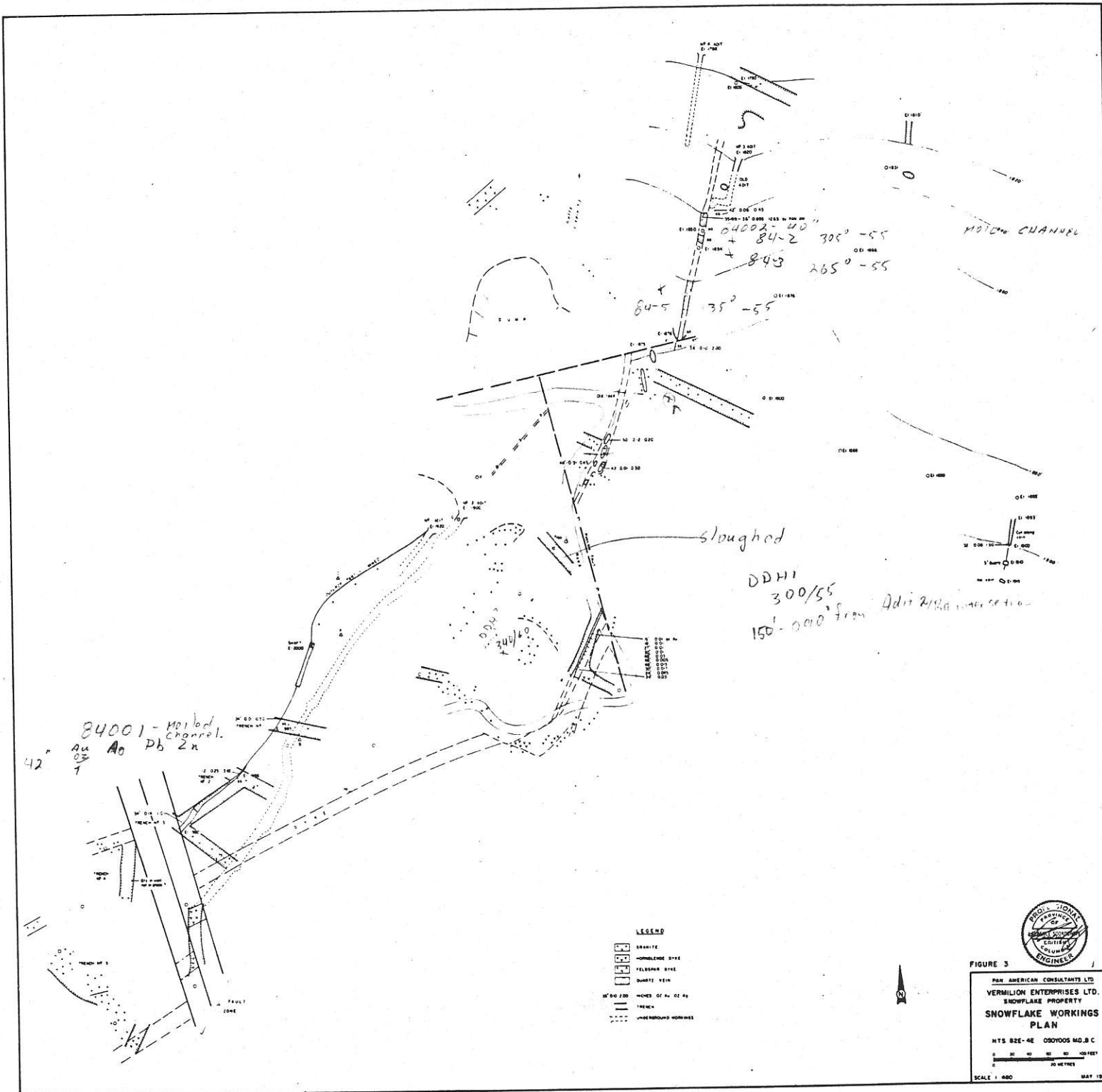


**LEGEND**

- 8 Recent alluvium, glacial drift
- 7 Oliver granite
- 6 Oliver syenite
- 5 Diorite
- 4 Fairveiw granodiorite
- 3 Altered rocks of dioritic composition
- 2 Schist, quartzite
- 1 Limestone lenses of various horizons
- ⌘ Mine workings

**FIGURE 2**

**PAN AMERICAN CONSULTANTS LTD.**  
**VERMILION ENTERPRISES LTD.**  
**SNOWFLAKE PROPERTY**  
**GEOLOGY & CLAIM MAP**  
 N.T.S. 82E-4E—OSOYOOS MD., B.C.  
 0 1 2 3 KM.  
 SCALE 1:50,000      MAY 1983



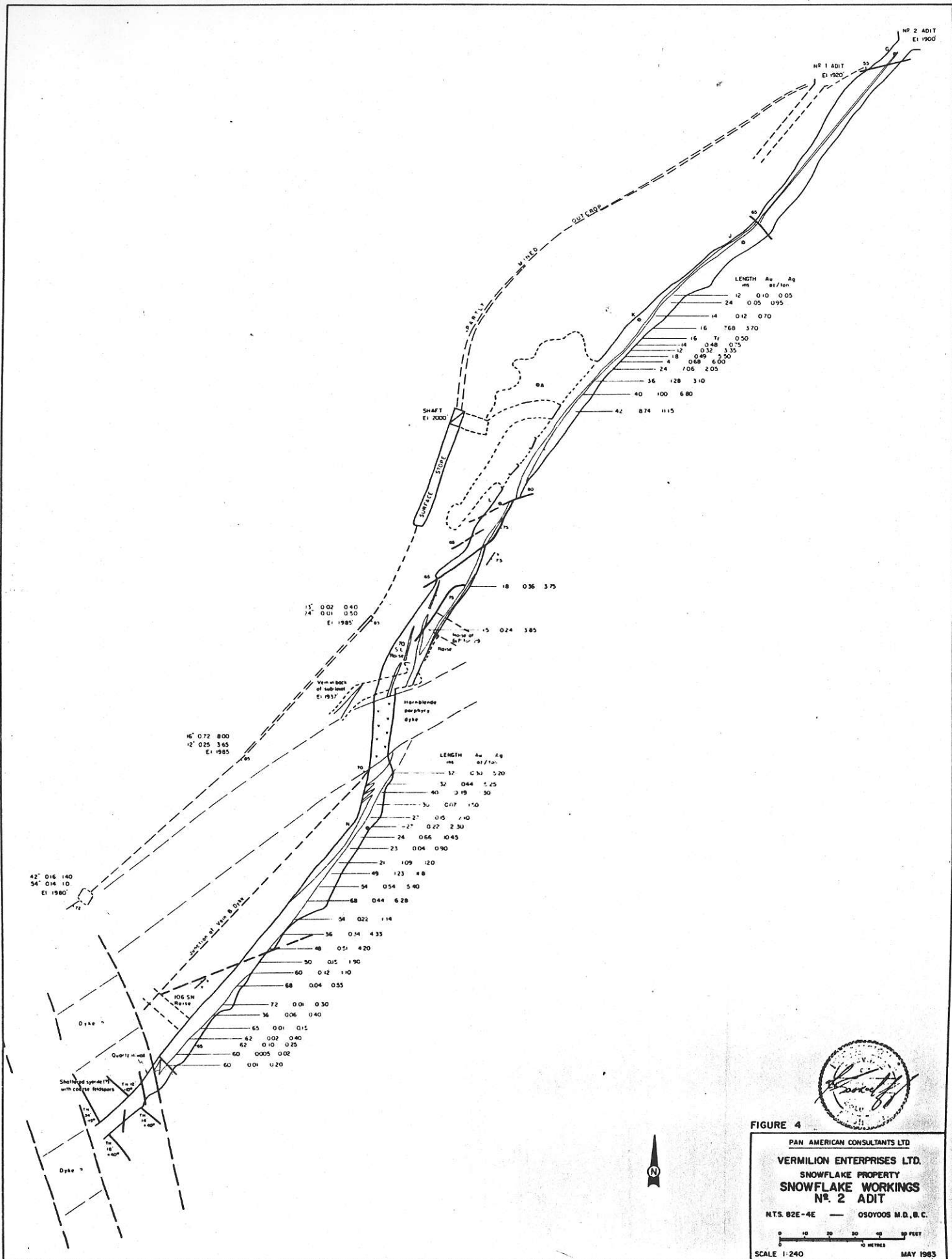


FIGURE 4  
 PAN AMERICAN CONSULTANTS LTD.  
 VERMILION ENTERPRISES LTD.  
 SNOWFLAKE PROPERTY  
 SNOWFLAKE WORKINGS  
 No. 2 ADIT  
 N.T.S. 82E-4E — OSOYOOS M.D., B.C.  
 SCALE 1:240  
 MAY 1983

SW

NE

E 2000

E 2000

E 1000

E 1000

E 800

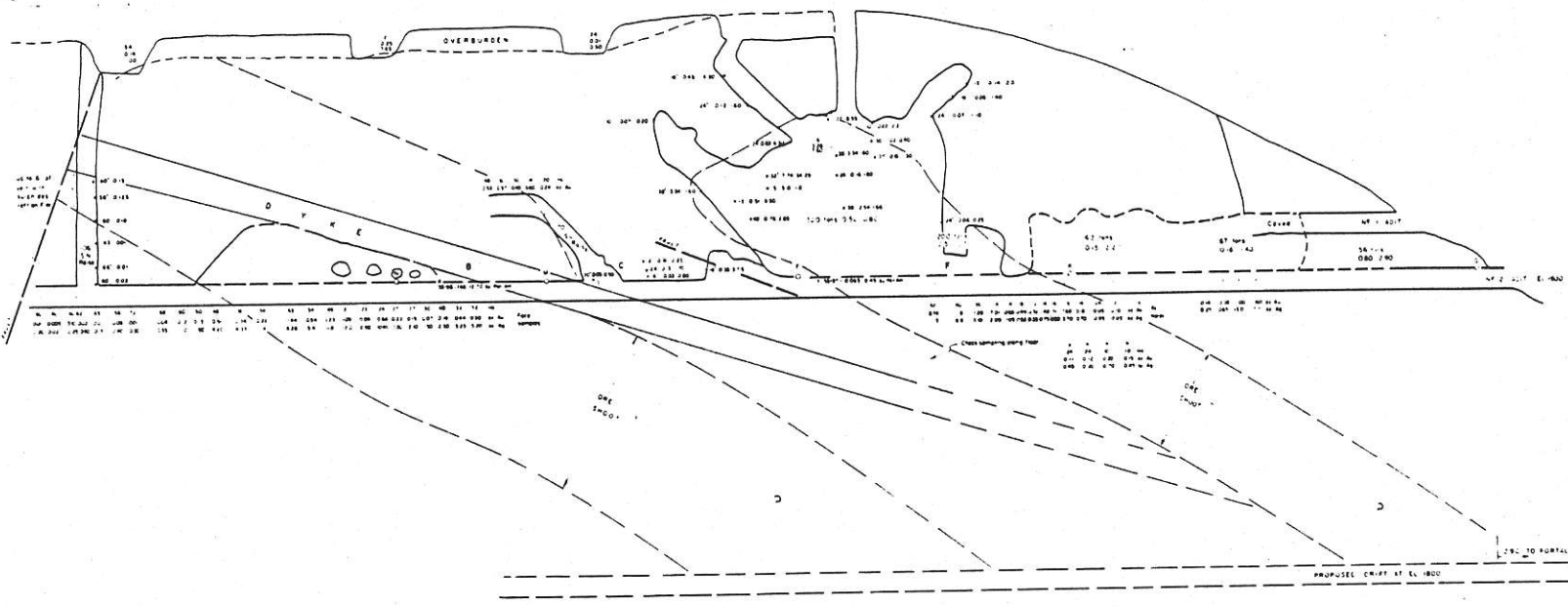
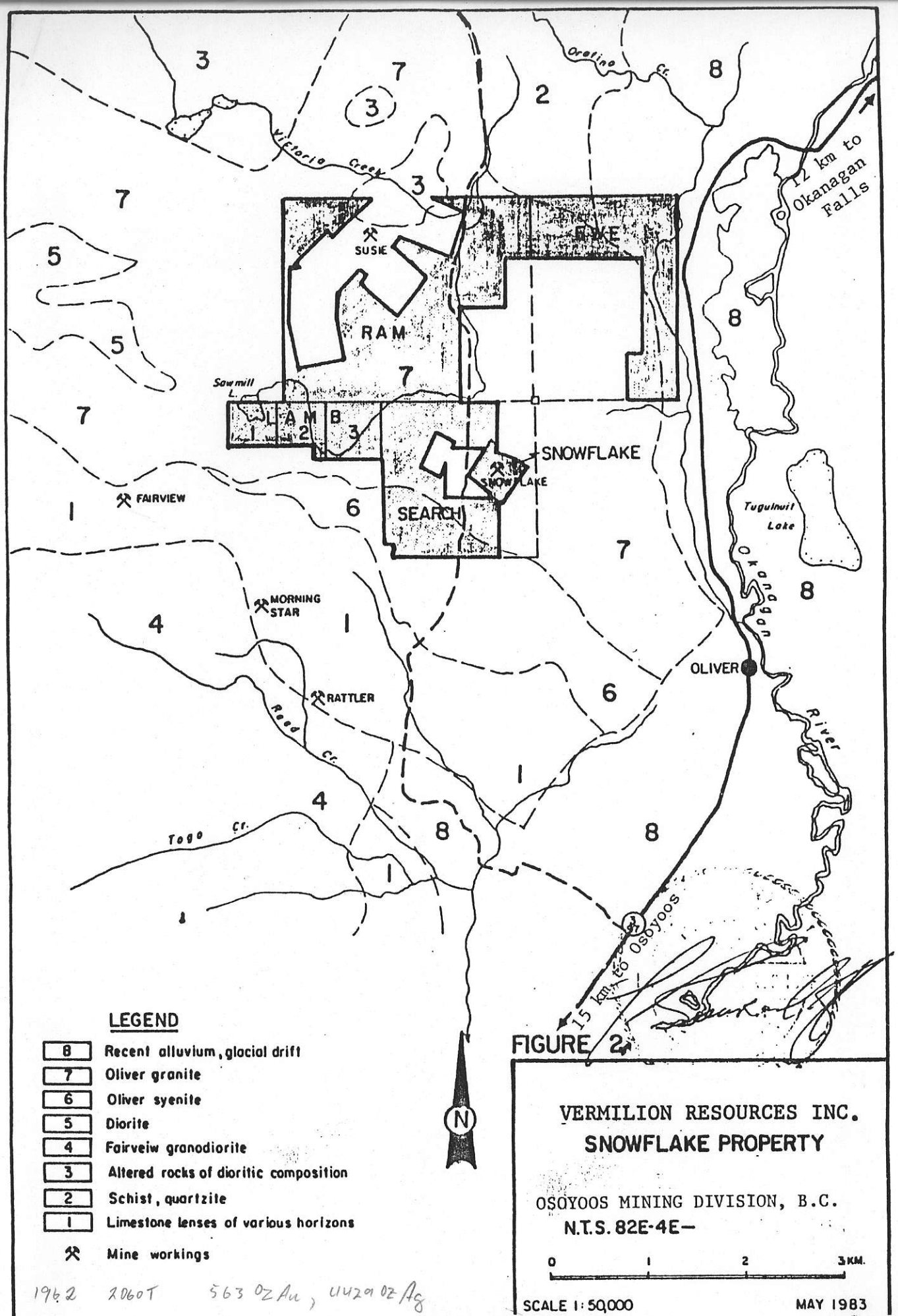


FIGURE 5  
 PAN AMERICAN CONSULTANTS LTD  
 VERMILION ENTERPRISES LTD  
 SNOWFLAKE PROPERTY  
 SNOWFLAKE WORKINGS  
 SECTION  
 NTS 82E-4E — OSOYODS M.D., BC  
 SCALE 1:240  
 MAY 1983



**VERMILION RESOURCES LTD.**

**DRILLING STARTING ON** - Drilling site clearance and drilling on the Snowflake claim of Vermilion Resources Inc. in the OLD B.C. GOLD PRODUCER old Fairview gold camp near Oliver, B.C. is starting forthwith. In announcing this, director Norman S. Chamberlist points out that, in 1961-62, 405 tons of ore grading 1.43 ounces of gold per ton were shipped, and the stopes are in a gold-silver bearing zone where values of up to 8.74 ounces of gold per ton occur across 1.06 meters, 42 inches. Other parallel, gold bearing quartz veins occur within the immediate area of the main zone and are exposed by numerous open cuts and trenches.

The aim of Vermilion's drilling program is to delineate the two gold bearing zones below No.2 adit and to locate potentially mineralized parallel quartz vein structures in the immediate area of the Main zone. The surveying portion of Stage I has been completed. The exploration and development program is being directed by Lawrence Sookochoff, P. Eng., consulting geologist.

Mr. Chamberlist notes that Vermilion have more than \$300,000 in their treasury with which to carry out the recommended program.

**INVERNESS PETROLEUM LTD. (IES-Alberta,T,M)**

**INVERNESS OWNS 20%** - Calgary-based Inverness Petroleum Ltd. have acquired 20% equity interest in Denver-based States OF STATES' SHARES Exploration Ltd. by purchase of 1,041,590 of States treasury shares at \$1 each. Inverness will have 18-month options to increase its ownership in States to 33-1/3%.

**STATES EXPLORATION LTD. (SAX-V,T)**