84-1433-13381

MPH

RECONNAISSANCE GEOLOGICAL MAPPING
AND
ROCK SAMPLING
SPARKLE, ASH, H-A, H-B GROUPS
(SHUSWAP PROPERTY)
NTS 82L/14, 82M/3
LAT. 50°01'N LONG. 119°25'W
FOR
VANWIN RESOURCE CORPORATION
MARCH 4, 1985

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SUMMARY

Geological exploration on the Vanwin Resource Corporation Shuswap property in the Kamloops Mining Division consisting of reconnaissance geological mapping and rock sampling for lithogeochemical analysis was carried out by MPH Consulting Limited in October, 1984.

The Shuswap property is underlain mainly by rocks of the Cambrian to Ordovician Eagle Bay Formation, including metamorphosed felsic and intermediate (to basic?) volcanics, black argillite with lesser interbedded pebble to cobble conglomerate and sandstone, and minor amounts of quartzite and Tshinakin limestone. West of Scotch Creek rocks of the Sicamous Formation, Scotch Creek pluton, and a gneissic member of the Eagle Bay Formation occur on the property.

A mineralized quartz-carbonate vein hosted by a cherty horizon within mafic metavolcanics was located on the property. A sample yielded results of 24 ppm Ag, 4523 ppm Pb, 119 ppm Cu, 43 ppm Zn, 10 ppb Au. In addition, a geologically and geochemically similar environment to that present at the Rea Gold massive sulphide deposit was outlined at the contact between mafic volcanics and argillite. Lithogeochemical results from the 65 samples collected on the property ranged up to 24 ppm Ag, 650 ppm Cu, 4523 ppm Pb, 181 ppm Zn, and 3200 ppm Ba.

Phase Ia and Ib work to consist of detailed geological mapping, rock sampling, prospecting, and soil sampling, VLF-EM, and magnetomter surveys is recommended.

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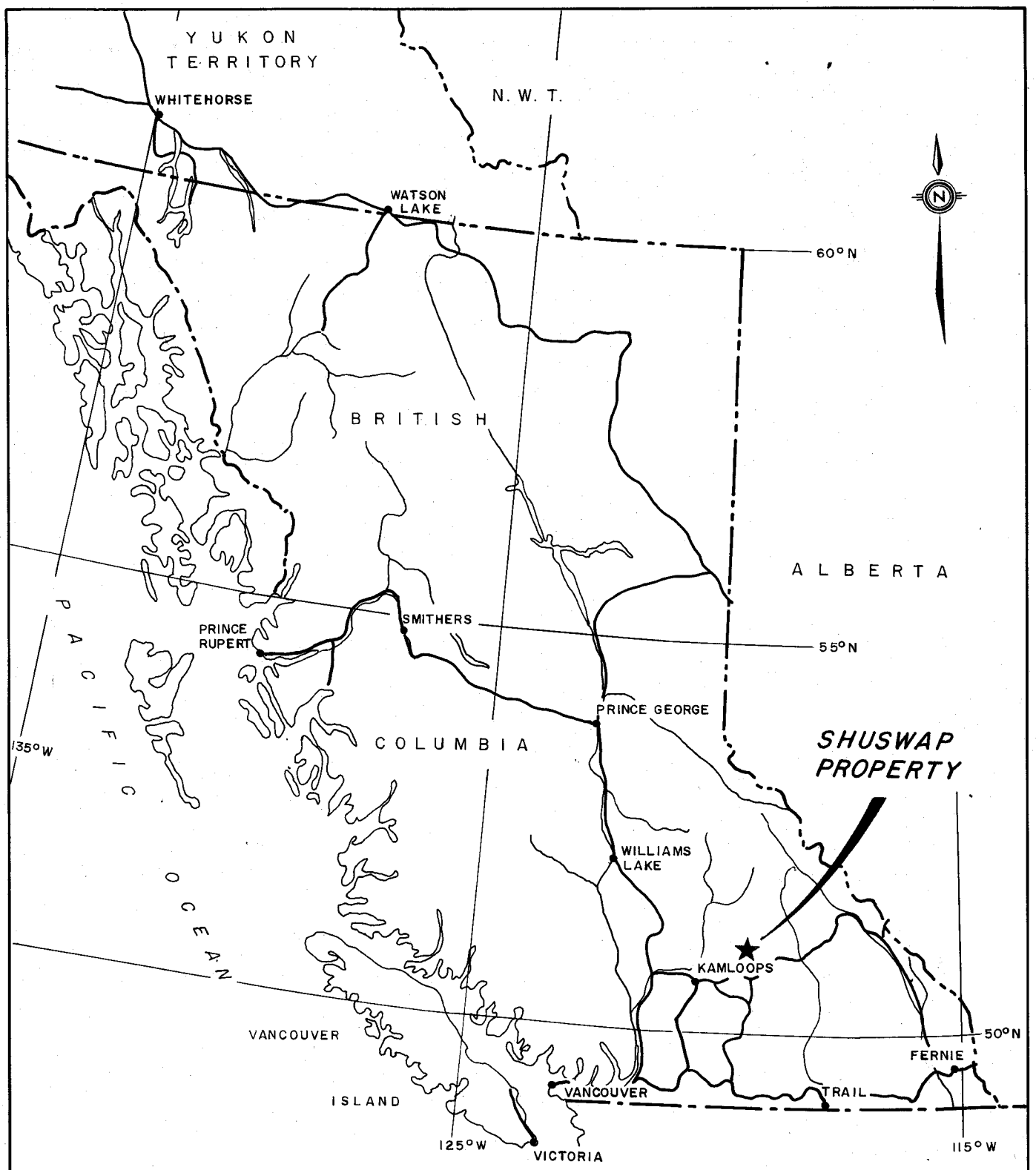

VANWIN RESOURCE CORPORATION

GENERAL LOCATION MAP
SHUSWAP PROPERTY
KAMLOOPS MINING DIVISION

Project No:	V 180	By:	T. N.
Scale:	1 : 8 000 000	Drawn:	J. S.
Drawing No:	1	Date:	MAR., 1985.

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1.0 INTRODUCTION

This report represents the compilation of field work carried out by MPH Consulting Limited at the request of Vanwin Resource Corporation on the Sparkle, Ash, H-A, and H-B Groups (Shuswap Property) from October 12 to October 28, 1984.

Work carried out to fulfill assessment work requirements included reconnaissance geological mapping and rock sampling for lithogeochemical analysis over all of the claims.

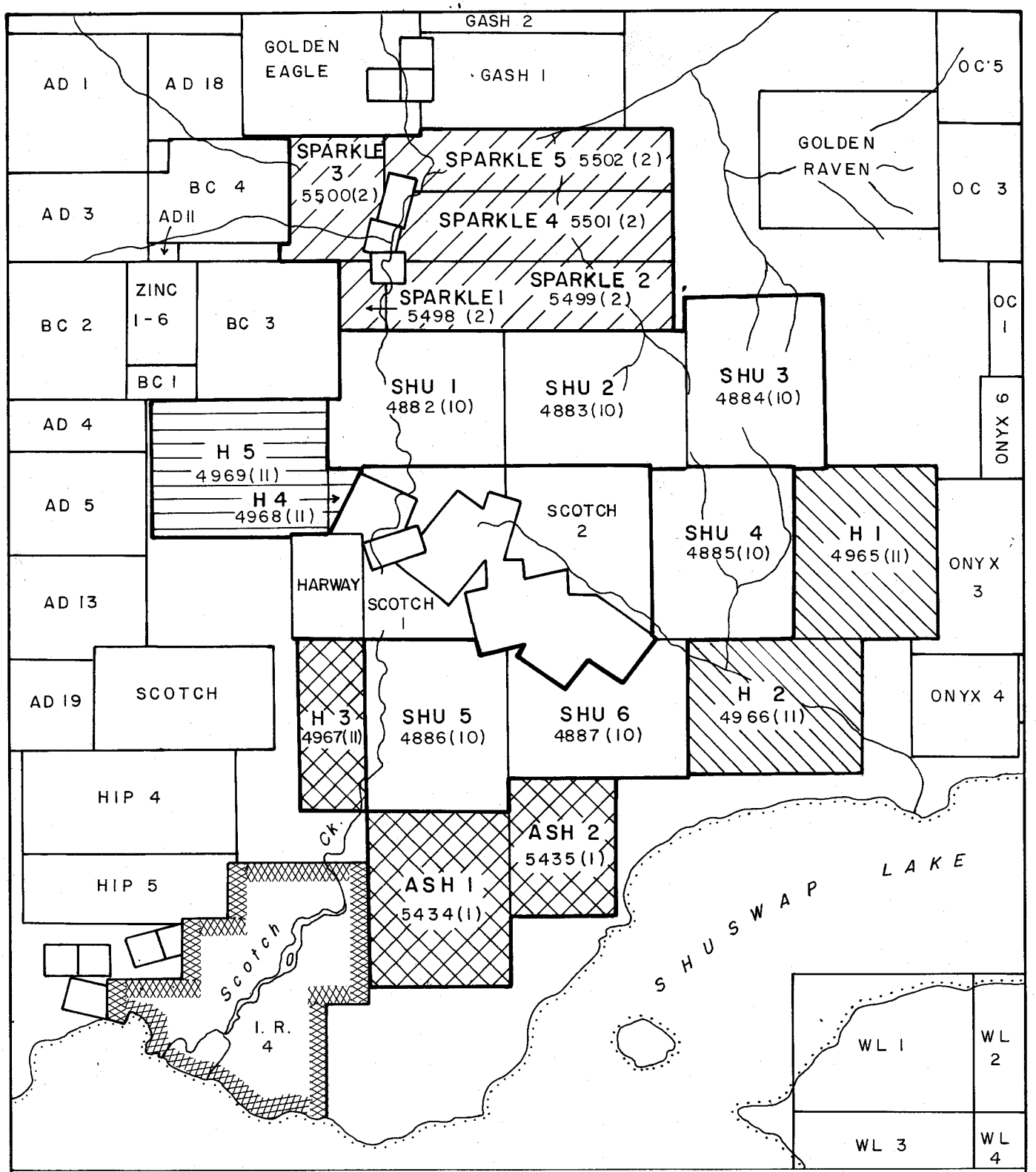
2.0 PROPERTY LOCATION, ACCESS, TITLE

The Vanwin Resource Corporation Shuswap property, comprised of the Sparkle, Ash, H-A, and H-B Groups, is located approximately 25 km northeast of Chase on the north shore of Shuswap Lake between Scotch Creek and Celista in the Kamloops Mining Division of British Columbia. The claims are located between latitudes 50°55'N and 51°01.7'N and between longitudes 119°20.5'W and 119°30.2'W on NTS mapsheets 82L/13, 82L/14, and 82M/3. (Figures 1,2)

Access to the property is provided via a paved road branching from the Trans Canada Highway at Squilax, 112 km east of Kamloops, and running along the north shore of Shuswap Lake. An all-weather gravel road up Scotch Creek provides access to the H3 claim of the ~~Ash Group, the H-B Group, and the Sparkle Group. The~~ Ash 1, 2 claims of the Ash group may be reached via a set of mainly private dirt roads between Celista and Scotch Creek. The H-A group is reached via public and private dirt roads north of Celista.

The property is comprised of 12 mineral claims in four groups as summarized below.

Claim	Group	Units	Record No.	Anniversary Date	Year of Registr.
Sparkle 1)		4	5498(2)	February 6, 1985	1984
Sparkle 2)		16	5499(2)	February 6, 1985	1984
Sparkle 3)	Sparkle	12	5500(2)	February 6, 1985	1984
Sparkle 4)		16	5501(2)	February 6, 1985	1984
Sparkle 5)		16	5502(2)	February 6, 1985	1984
		64			
Ash 1)		20	5434(1)	January 10, 1985	1984
Ash 2)	Ash	12	5435(1)	January 10, 1985	1984
H3)		10	4967(11)	November 18, 1984	1983
		42			



VANWIN RESOURCE CORPORATION

CLAIM MAP

SHUSWAP PROPERTY

KAMLOOPS MINING DIVISION

Project No:	V 180	By:	T. N.
Scale:	approx. 1:81 000	Drawn:	J. S.
Drawing No:	2	Date:	MAR., 1985.

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Claim	Group	Units	Record No.	Anniversary Date	Year of Registr.
H1)	H-A	20	4965(11)	November 18, 1984	1983
H2)		20	4966(11)	November 18, 1984	1983
		40			
H4)	H-B	2	4968(11)	November 18, 1984	1983
H5)		20	4969(11)	November 18, 1985	1983
		22			
		168			

The claims are all owned by Vanwin Resource Corporation. The claims were grouped into the Sparkle, Ash, H-A, and H-B Groups by Notices to Group dated November 30, 1984 (Ash, H-A, H-B) and December 28, 1984 (Sparkle).

3.0 HISTORY

The Scotch Creek area first gained prominence as a gold placer camp. It was first mined in the 1860s. The most important period for placer mining was the 1885-1887 period when 1519 oz of gold worth $26,500 was recovered. In the mid-1930s, work was done to prove the existence of old channels above the present creekbed and in 1934 one group recovered 60 oz of gold from the bedrock at an old channel 175 feet above the creek. Scotch Creek Placer Mines Ltd. tested the benches and creekbed with a dragline and hydraulicking equipment. Apparently, yields were not good enough as production and work records disappear from the reports after 1936.

The gold was found as coarse, well-rounded, flattened pellets and nuggets with an average fineness of 842. Nuggets of over $2 (0.11 oz) were rare. No appreciable amount of gold was found in the main body of gravels, but was found sporadically at or near bedrock. Most of the work was done immediately below the fork (14 km from Shuswap Lake) and above and below the canyon 2.4 km downstream (ie on the Sparkle 4,5 claims). This area is presently covered by a placer mining lease and a 2-post claim. Workings could be found as far upstream as 34 km. The source for the gold is said to be the abundant quartz veins and stringers in the area. Scotch Creek is no longer a designated placer area and only one valid placer mining lease exists near the junction of Scotch Creek and Kwikoit Creek.

Extensive exploration and development have been carried out since the late 1920's on a number of high-grade Ag-Pb-Zn deposits/

occurrences on the Adams Plateau. Total recorded production to date has been just over 9500 tons which yielded 625.4 oz Au, 313,894 oz Ag, 386.3 tons Pb, 498.2 tons Zn, 15.4 tons Cu, and 375 lb Cd. Recently, many of these deposits have been re-interpreted as being "volcanogenic massive sulphide" deposits and major mining companies including Craigmont Mines Ltd., Esso Resources Canada Ltd., Noranda Exploration Co. Ltd., and Corporation Falconbridge Copper have become involved.

The Metal Crest Pb-Zn quartz vein occurrence is reported to be located about 500 m south of Sparkle 2. In 1929, 137 feet of tunnelling and shaft sinking was performed, but no production is recorded. The Silver King, Pearlmarie, Onyx, and Shuswap quartz vein occurrences all are located within 1 km of the Shuswap property. All were the subject of minor tunnelling and/or surface work in the 1930's. The Silver King and Pearlmarie have been explored by prospecting, geochemical, and geophysical methods in the mid-1970's. On the Scotch property (surrounded by the Shuswap property) recent exploration has identified an auriferous siliceous oxide facies iron formation layer within greenstones of the Eagle Bay Formation.

The Mosquito King and King Tut deposits are the most important historical occurrences on the Adams Plateau, and are located 4 and 11 km, respectively, northwest of the Sparkle group. King Tut is a Ag-Pb-Zn-Au vein deposit, regarded as a potential producer. Recently (1983-84), a major exploration program by Adams Silver Resources, Inc. consisting of geochemistry, geophysics, trenching, and diamond drilling located massive sulphide style Pb-Zn-Ag mineralization over strike lengths of 2100 m or more. The

Mosquito King deposit is included in the Noranda Mines Ltd. option from Killick Gold Co. Ltd. (formerly Orell Resources Ltd.).

The discovery of the Rea Gold massive sulphide deposit in late 1983 in rocks of the Eagle Bay Formation near Johnson Lake, 30 km northwest of the property, produced a surge in activity within the entire Eagle Bay Formation. Diamond drilling of the Rea Gold deposit by Corporation Falconbridge Copper has outlined indicated reserves of 132,000 tons grading 0.531 oz Au/ton, 4.12 oz Ag/ton, 0.85% Cu, 4.11% Zn, and 3.67% Pb, with the mineralized zone still open to the northwest and downdip.

No previous work on any of the Shuswap property claims is recorded. A more detailed description of the mineral occurrences in the property area and their history is provided in the Mineral Occurrences section following.

4.0 REGIONAL GEOLOGY

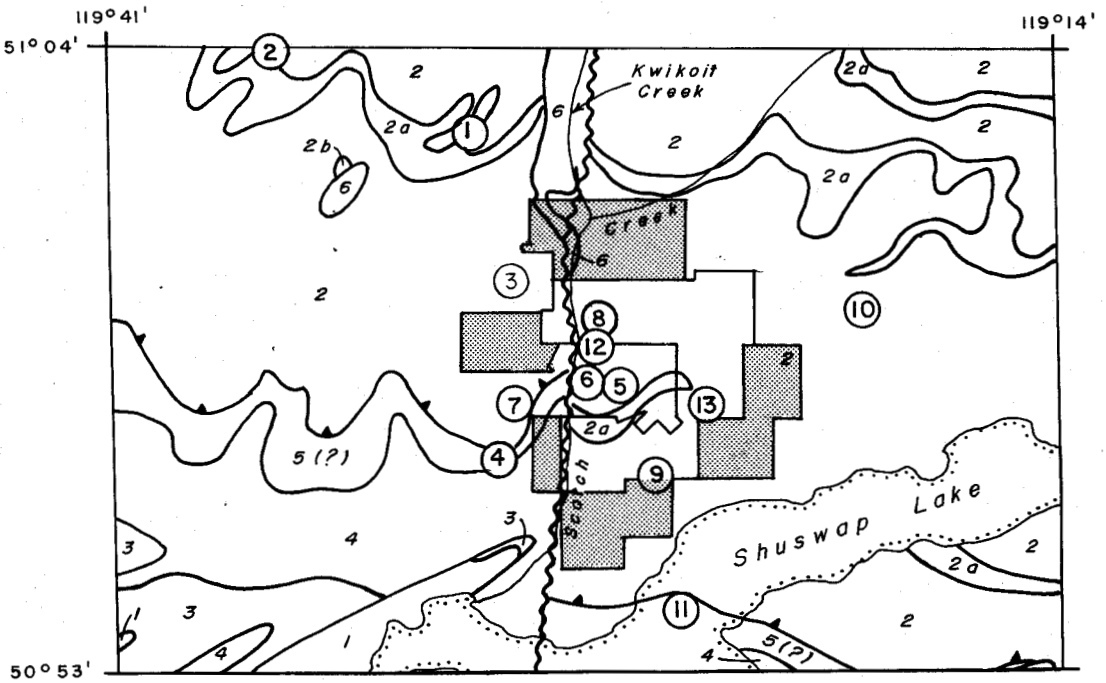
Regional geological mapping for the Shuswap area has been carried out by A.G. Jones, 1959 (1"=4 miles), R.B. Campbell, 1963 (1"=4 miles), A.V. Okulitch, 1979 (1:250,000), and P. Schiarizza and V.A. Preto, 1983 (1:100,000).

Figure 3 is modified from Okulitch (1979), as Schiarizza and Preto's work did not cover the area near the Shuswap property but rather the region to the northwest.

Early authors grouped the Silver Creek, Eagle Bay, and Tsalkom Formations (Units 1,2,3) (and other formations outside this area) as the Mt. Ida Group and dated the package as late pre-Cambrian. Okulitch (1979) abandoned the Mt. Ida Group label due to uncertainty about temporal and stratigraphic relationships of the various rock units, and made major revisions in the estimated age of the units.

4.1 Silver Creek Formation

The Silver Creek Formation (Unit 1) is believed to overlie the Shuswap Metamorphic Complex unconformably. Jones (1959) describes the Silver Creek Formation, estimated to be 10,000 to 12,000 feet thick, as being mainly mica schist with mica gneiss also an important constituent. The principal mica present in the schist is muscovite, but biotite also occurs, with quartz, orthoclase, microcline, plagioclase, garnet, and amphibole also present. Grain size in the schist ranges from very fine to coarsely knotted. Sills intrude the Silver Creek Formation along



Reference : GSC Open File 637

LEGEND

EARLY CRETACEOUS

Scotch Creek Pluton

6 — granodiorite, quartz monzonite, quartz diorite, granite.

UPPER TRIASSIC AND LOWER JURASSIC

Nicola Group

5(?) — andesite and basalt flows, porphyritic augite andesite, breccia, tuff, agglomerate, greenstone, chloritic phyllite; minor argillite, limestone, and sericitic schist. N.B. Now believed to probably be lowermost part ot the Eagle Bay Formation.

UPPER TRIASSIC

Sicamous Formation

4 — sericitic, graphitic, and argillaceous limestone; calcareous phyllite, argillite.

PERMIAN AND (?) PENNSYLVANIAN

Tsalkom Formation

3 — greenstone, chlorite phyllite, amphibolite; minor black shale, limestone, marble.

CAMBRIAN AND ORDOVICIAN

Eagle Bay Formation

2 — siliceous, chloritic, sericitic phyllites; quartz-biotite (-garnet) schists; greenstone, black argillite, shale, limestone, chert, conglomerate, foliated acidic volcanics, and lesser amounts of other meta-sediments and meta-volcanics.

2b — ultramafic

2a — Tshinakin Limestone Member - massive white crystalline limestone; minor greenstone and greenschist.

Silver Creek Formation

1 — quartz-biotite, sericite and garnet schist; minor quartzo-feldspathic biotite gneiss, pegmatite, amphibolite, marble.

MINERAL OCCURRENCES

1. Mosquito King
2. King Tut
3. Zn - B.C.
4. Scotch
5. Scotch property
6. Silver King
7. Pearlmarie
8. Metal Crest
9. Shuswap
10. Onyx
11. Copper Island
12. Scotch Creek
13. Hlina Creek

VANWIN RESOURCE CORPORATION

REGIONAL GEOLOGY AND MINERAL OCCURRENCES MAP

SHUSWAP PROPERTY

KAMLOOPS MINING DIVISION

Project No:	V 180	By:	T. N.
Scale:	1 : 250 000	Drawn:	J. S.
Drawing No:	3	Date:	MAR., 1985.

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foliation planes, pinching and swelling irregularly. Close to intrusive bodies, granitoid gneiss is formed by impregnation of the schist with granitic components. Gneiss is also found intercalated with schist, representing more quartzo-feldspathic original sediments.

Okulitch includes Jones' Chase Formation of quartzite, calcareous quartzite and quartzitic marble as the basal Chase Quartzite Member of the Silver Creek Formation.

4.2 Eagle Bay Formation

The Eagle Bay Formation (Unit 2) is a very heterogeneous sequence of interbedded and interfolded metavolcanic and metasedimentary units with a prominent calcareous member, the Tshinakin Limestone (Unit 2a). It is an important host to numerous vein and concordant sulphide deposits.

Jones (1959) estimated the total thickness of the Eagle Bay Formation as at least 30,000 feet. Sixty percent of the rock units are derived from argillite, greywacke, limestone, and quartzite and their metamorphosed equivalents. He describes the green metasediments as commonly containing chlorite, epidote, sericite, magnetite, and carbonate; while the grey and black metasediments commonly contain sericite, chlorite, carbonate, zoisite, and graphite. Impure calcareous rocks are sericitic with quartz as the major constituent. The volcanics differ from the sediments by their lack of bedding. They are predominantly dark green schists derived from volcanic flows, strongly cleaved and foliated, and composed of chlorite, amphibole, and epidote with

plagioclase. Both siderite and magnetite are important accessories to all greenschists. Limestones are massive, non-bedded to thin-bedded or flaggy, impure, and schistose. Rare quartz pebble conglomerate also occurs.

Unit 2b is one of a number of small, serpentinized ultramafic bodies spatially associated with mafic to intermediate volcanics of the Eagle Bay Formation. It is of unknown age and origin.

4.3 Tsalkom Formation

The Tsalkom Formation (Unit 3) was estimated by Jones (1959) to be 4,000 to 15,000 feet thick. He describes it as being primarily made up of altered greenstone with lesser sericitic and chloritic sedimentary rocks. The greenstone typically contains chlorite, epidote, calcite, zoisite, hornblende, albite, magnetite, and titanite. Minor quartz-calcite veinlets also occur. Minor metasedimentary units include sericite schist, sericitic argillite, chloritic argillite, and black schist. These are intermittent and grade to tuffaceous and greywacke sediments. Tight isoclinal folding accentuates bedding. Regional metamorphism is said to be generally greenschist facies with amphibolite facies occurring close to granitic contacts.

4.4 Sicamous Formation

The Sicamous Formation rocks (Unit 4) are estimated to be 6,000 to 10,000 feet thick, and consist of a predominantly sericitic, calcareous schist, sandwiched between layers of mostly platy impure limestone, all roughly the same thickness. The limestone

has one-half to three inch thick layers with a parting of black graphite-sericite schist and contains diagnostic small veins, sill-like bodies, and lenticular knots of calcite. Graphite is a common constituent of the limestones. Deformation that creates the foliation in the schists has emphasized the platy, cleavable nature of the limestone. The Sicamous Formation has been traced westward into an argillaceous facies of the Nicola Group.

4.5 Nicola Group

The Nicola Group (Unit 5) was described by Jones (1959) as being comprised mainly of massive, locally epidotized or silicified green andesites, many bearing augite phenocrysts or exhibiting flow breccia textures. Red and purple augite porphyries also occur. Green tuff, green-grey argillaceous tuff, and black slate are interbedded with the lavas in minor amounts, and a few areas have a basal conglomerate bed.

In the White Lake area (10 km SE of the property), the Nicola Group is represented by augite andesite flows, breccia, tuff, greenstone, and minor sediments (Okulitch, 1979). Jones (1959) believed these rocks to be the lowermost part of the Eagle Bay Formation but Okulitch assigned them to the Nicola Group on the basis of relationships with the Sicamous Group. Recent work by Schiarizza and Preto (1983) and by various mining and exploration companies suggests that they belong to the Eagle Bay Formation.

4.6 Scotch Creek pluton

The early Cretaceous Scotch Creek pluton (Unit 6) (and another

small body to the west) is described by Okulitch (1979) as a post-tectonic, massive, crosscutting body with local foliated margins. Granodiorite, quartz monzonite, quartz diorite, and granite are reported to be the most common Mesozoic intrusive rock types.

4.7 Kamloops Group

The Tertiary Kamloops Group is a very widespread, dissected, horizontal sheet of volcanic rocks lying on an erosional surface of early Tertiary age, averaging about 500 feet thick but locally more than 3000 feet. The lavas are mainly basalts but in thicker sections andesite, trachyte, and rhyolite (often as pyroclastic breccias) occur. Porphyritic textures are common, as are vesicles and amygdules. No Kamloops Group rocks occur in the vicinity of the property.

4.8 Structure and Metamorphism

Four phases of deformation are recognizable in the Eagle Bay Formation. The first two are not separable and are represented by pervasive foliation sub-parallel to bedding, rare tight to isoclinal sheared recumbent folds; and foliation tightly folded about north to northeasterly trending axes with parallel distinct mineral, rodding, and cleavage intersection lineations.

The third phase is represented by west-northwest to northwest trending folds with associated axial plane cleavage and prominent linear structures. Axial planes usually dip steeply to the northeast.

The latest phase is represented by fractures, kink folds, and gentle warps, commonly trending north. Megascopic features include steep northerly-trending faults (e.g. Scotch Creek fault) possibly with some associated folding.

The Eagle Bay Formation may be thrust over Nicola Group by a north-dipping northwest-trending thrust fault. If the rocks Okulitch (1979) identified as belonging to the Nicola Group are actually part of the Eagle Bay Formation, a different structure, such as an overturned fold, may exist.

The Tsalkom and Sicamous Formations were each subjected to the three latest periods of deformation, and the Nicola Group was involved in the last two only. Kamloops Group volcanics are cut by steep block faults and very slightly folded.

Metamorphism of the Silver Creek, Eagle Bay, and Tsalkom Formations is of greenschist facies, while that of the Sicamous Formation and Nicola Group is of sub-greenschist facies.

4.9 Mineral Occurrences (Figure 3)

1. Mosquito King Zn Ag Pb Au Cd

Extremely fine-grained pyrite, sphalerite, galena, and pyrrhotite occur in intensely silicified beds of argillite and quartz-sericite rock of the Eagle Bay Formation. The mineralization is concordant with bedding but localized by fracturing, and by minor folding. Steeply dipping to vertical fractures occur in the area and the metamorphic complex is intruded by felsic to basic dykes., The mineralized zone is exposed in open cuts for over 5600 feet and ranges from 8 inches to 18 feet wide.

Indicated reserves are 45,000 tons indicated at 8.5% Zn, 7 oz Ag/ton, 10% Pb, 0.04 oz Au/ton (9/4/81). Production in 1972, 73, 79 amounts to 460 tons of ore mined and 200 tons milled yielding 40,406 lb Zn, 7,464 oz Ag, 50,091 lb Pb, 7 oz Au, 1 oz Cd.

2. King Tut

The area is underlain by Eagle Bay Formation limy schists, phyllites, and greenstone schists. An 18-48 inch wide quartz vein in sericite schist carries pyrite, arsenopyrite, galena, and sphalerite. The vein is exposed in open cuts for 4000 feet.

The latest published reserves data (1972) show 68,040 tonnes of "high grade" Ag, Pb, Zn ore. In 1976-77, an unknown amount of ore yielded 22 oz Au, 7362 oz Ag, 290,434 lb Pb, 107,548 lb Zn, and 123 oz Cd.

3. Zinc, BC Claims Pb Zn Ag Mo Cu

The property is underlain by bedded andesitic fragmentals and flows, siliceous tuffites with some rhyolite ignimbrites, tuffs and fragmentals. The andesite and tuffite contain abundant siliceous and/or cherty layers. Very small amounts of pyrite and pyrrhotite and traces of chalcopyrite and sphalerite are found disseminated in most rock types. There are numerous zones of massive pyrrhotite, pyrite and magnetite with minor sphalerite and chalcopyrite in conformable chlorite and/or epidote rich layers. Pyrrhotite-magnetite iron formation on these claims is also reported to be "anomalous" in gold.

The property has been explored by Orell Copper Mines Ltd. (now known as Killick Gold Co. Ltd.) and Craigmont Mines Ltd. In

1977-78, 17 diamond drill holes totalling 1607 m were drilled. Indicated reserves are 148,000 tonnes at 6% Pb, 2.4% Zn, 1.1 oz Ag/ton, 0.14% Mo, 0.19% Cu in the Cu 1-Zinc zone. "Potential" tonnage is stated as at least one million tonnes. In addition, the Bowler Creek (Cu 5) zone contains 181,000 tons indicated, at 2.72% Zn, 1.6 oz Ag/ton,1.0% Pb, 0.2% Cu. Noranda Mines Ltd. currently holds an option on the property.

4. Scotch Cu Zn Ag

Small zones of pyrrhotite, pyrite, chalcopyrite, and sphalerite mineralization are associated with chloritized and sericitized zones in the lower 1000 feet of the Eagle Bay ignimbrite member immediately above the contact with the Sicamous Formation (ie the rocks which Okulitch [1979] described as Nicola Formation volcanics). Pyrrhotite, pyrite, and chalcopyrite also occur on foliation planes, in fractures, and in quartz veins.

In 1971, the Shuswap Syndicate carried out geological mapping at 1:9600 scale, magnetometer and geochemical surveys, and diamond drilled five holes totalling 2043 feet. In 1977, Craigmont Mines Ltd. diamond drilled one hole 162.6 m deep, intersecting a sheared rhyolitic flow with 1 m of quartz-chlorite-massive sulphide (pyrrhotite and sparse chalcopyrite). In 1979 Esso Resources Canada Ltd. diamond drilled one hole 125.3 m deep to test an EM anomaly and intersected a conductive graphitic schist in a sequence of metasediments and metavolcanics. No assays are available from any of the drilling.

5. Scotch Property Au Ag

The property is underlain by an east-west trending sequence of

conglomerate, black argillite, greenstone, and basic volcanics of the Eagle Bay Formation. Within the greenstone unit, a siliceous oxide facies iron formation layer is found with varying degrees of quartz-pyrite and iron carbonate alteration.

Gold vaues of 0.007 oz/ton, 0.019 oz/ton and 0.061 oz/ton were obtained from increasingly altered rocks of this iron formation. An assay of 0.127 oz Au/ton and 1.41 oz Ag/ton over 0.33 m is reported. The highest assays reported are 0.34 oz Au/ton and 1.52 oz Ag/ton in separate grab samples. Six samples from the main showing trenches averaged 0.04 oz Au/ton over an average of 2.23 m.

6. Silver King (Silver Queen) Pb Ag Zn (Au)

An argentiferous galena and sphalerite bearing quartz vein hosted in the Eagle Bay greenstone unit. The width of the vein may be over 3 m. The vein apparently parallels the Scotch Creek fault and may be related to it. A grab sample assayed 0.002 oz Au/ton, 7.6 oz Ag/ton, 30.2% Pb and 1.4% Zn.

An adit was driven about 1930. Vertical loop EM, SP, horizontal loop EM, soil sampling and trenching were carried out on the property in 1974-75 by Noranda Exploration Co. Ltd. EM anomalies were detected, but no sulphides or graphite were located to account for the anomalies.

7. Pearlmarie (Iron Pot) Cu Au Ag Zn Pb (Ni)

Pyrrhotite and minor galena and sphalerite occur in a number of quartz seams in schist which has been cut by several basaltic dykes which carry chalcopyrite. The mineralized area is about

600 feet wide. Assays from chip samples are: Au trace to 0.02 oz/ton, Ag trace to 0.22 oz/ton, Cu 0.005-0.87%, and Pb and Zn each 0.02% or less. The property was originally staked in 1930 and two short tunnels were driven. In the mid 1970's, prospecting was done on the property.

8. Metal Crest Pb Zn

Similar in type and host to the Silver King showing but has "produced" minor amounts of ore. An erratic system of quartz, lead, zinc veins crosscutting the schist outcrop in Scotch Creek. 100 feet of crosscutting and drifting from one adit plus a 37 foot deep shaft are reported (1929).

9. Shuswap Pb

A 15 cm wide quartz vein containing segregations of galena and pyrite occurs in Eagle Bay sericitic phyllite, quartzites, and schists. Several open cuts and two adits were excavated in 1934.

10. Onyx Ag Pb (Zn)

The Onyx claim, situated on Onyx Creek is a Pb-Zn occurrence reported to yield very high silver values (1934). It has been described as being galena associated with "quartz in sedimentary rocks" and is hosted by the Tshinakin limestone. It is questionable whether this is a vein type or massive sulphide type of showing.

11. Copper Island Cu

The Copper Island showing was first noted by G.M. Dawson in 1877. Chalcopyrite is disseminated in a 1.8 m band of chlorite schist

near a fault zone. No work is known to have been done, and it is now part of a Class 'A' Provincial Park.

12. Scotch Creek Au

Placer gold mining took place on Scotch Creek from the 1860's to about 1936, with the bulk of recorded production coming in the late 1880's. It was considered to be an exhausted producer as of 1979. The source for the gold is said to be the abundant quartz veins and stringers in the area (underlain by the Eagle Bay Formation). Scotch Creek flows through the Sparkle 2, 4, 5 claims and the H3 claim. Most of the production came from an area located on the Sparkle 2, 4, 5 claims.

13. Hlina Creek Au

Minor amounts of placer gold are reported to occur in Hlina Creek. No production has been recorded. Hlina Creek flows through the H2 claim.

Major Deposits

Elsewhere in the Eagle Bay Formation, the most important deposits are Rea Gold, Rexspar, and Homestake.

Rea Gold is a recently discovered volcanogenic massive sulphide deposit near Johnson Lake, about 32 km northwest of the Shuswap property. It is reported that on surface the massive sulphide body is stratabound, has an apparent true width of 3.75 m, and is underlain by felsic and lithic tuffs and overlain by siliceous lithic tuffs with indications of precious metal potential. Chip sample assays of up to 1.32 oz Au/ton over 3.2 m, 7.3 oz Ag/ton

over 3.2 m, 3.6% Cu over 3 m, 12.7% Pb over 5 feet, and 6.76% Zn over 5 feet, are reported.

Corporation Falconbridge Copper has optioned the property and is conducting a diamond drill program. Results from the first 25 drill holes included intersections of:

True Width	Au (oz/ton)	Ag (oz/ton)	Cu %	Pb %	Zn %
8.12 m	0.517	4.25	0.82	3.89	4.93
7.11 m	0.314	3.61	0.43	2.94	3.48

Indicated reserves are 132,000 tons of ore grading 0.53 oz Au/ton, 4.12 oz Ag/ton, 0.85% Cu, 3.67% Pb, and 4.11% Zn.

Rexspar is a potential producer of uranium, with zones of fluorite and of manganese also present. It is located 70 km north-northwest of the Shuswap property. Published reserves are 1,114,000 tonnes of 1.55% U (indicated) and 1,360,000 tonnes of fluorospar (unreported grade; estimated tonnage). Uranium minerals and fluorite occur in separate areas hosted by tuffaceous trachyte. Earlier workers believed them to be hydrothermal replacement deposits but they are now considered to be at least partly syngenetic in nature. Manganese occurs as a hydrous manganese oxide subsoil deposit.

Homestake is a past (and potential) producer of silver, lead, zinc, barium, gold, and copper located 30 km northwest of the Shuswap property. A total of 7670 tons of ore was mined, averaging 0.047 oz Au/ton, 36.68 oz Ag/ton, 2.03% Pb, 2.92% Zn,

and 0.13% Cu. Geological reserves are listed as 796,000 tonnes of 7 oz Ag/ton, 2.5% Pb, and 4% Zn. Sulphides including galena, sphalerite, pyrite, chalcopyrite, tetrahedrite, and argentite with some native silver and gold are associated with layers of massive barite up to 9.5 m thick near a fault in a talcose quartz-sericite schist. The deposit is owned by Kamad Silver Company Ltd.

5.0 1984 EXPLORATION PROGRAM

5.1 Work Completed

Geological mapping and sampling was carried out over all the claims. A total of 65 rock samples was collected and lithogeochemically analyzed by atomic absorption for Au, Ag and Ba, and by 30 element ICP. Whole rock geochemical analysis was carried out on 5 rock samples. A geological map was compiled from field observations, GSC mapping, and assessment report information.

5.2 Results

5.2.1 Geology (Figure 4)

The Shuswap property is underlain by a variety of northwest to west-trending rocks of the Eagle Bay Formation. The four main rock units mapped include: Unit 1) felsic metavolcanics; Unit 2) mafic metavolcanics and chlorite phyllite; Unit 5) black argillite with lesser sandstone and pebble to cobble conglomerate; and Unit 6) quartz feldspar augen gneiss. Lesser amounts of Unit 3) Tshinakin limestone and Unit 4) quartzite are also found on the property. All of the above units belong to Eagle Bay Formation of Cambrian to Ordovician age. In addition, Triassic Sicamous Formation limestone underlies most of H3, and the northwestern area of the Sparkle Group is underlain by quartz monzonite of the Cretaceous Scotch Creek pluton. Occasional thin dacite and rhyolite dykes are also found on the property. (Unit numbers within the Eagle Bay Formation are arbitrary. Relative ages of the units are unknown.)

Unit 1 consists of chlorite-sericite schist with varying amounts of quartz as well as a zone of rhyolite, cherty rhyolite, and chert breccias near the south boundary of Ash 2. The siliceous chlorite-sericite schist is interpreted as having been derived from felsic tuffs. Unit 1 rocks are found on the Ash 1,2 claims, and occasionally as thin interbeds or lenses within Unit 2 on the H2 claim. A single outcrop of quartz-chlorite-sericite phyllite (sample 9066) on Ash 2 was located in an area underlain mainly by quartzite.

Unit 2 consists of chlorite phyllite and probably represents metamorphosed andesitic volcanics. A very prominent feature of this unit is the abundance of white carbonate $\pm$ quartz veins, veinlets, and pods which occur subparallel to, and crosscutting, foliation. Carbonate (calcite?) veins are up to 15 cm thick and may make up as much as 30% of the rock in places. It is not known whether the volcanics are tuffs or flows, as the strong foliation has destroyed all primary features of the rocks. Minor amounts of more felsic volcanics (Unit 1) are interbedded within Unit 2; for example, dacite and rhyolite tuff are found on H2.

Unit 2a is similar to Unit 2 except that it generally is less strongly deformed and lacks the carbonate veining. Tuffaceous to agglomeratic and flow textures were noted in several outcrops on Ash 1.

The contact between Units 5 and 2 was observed on Sparkle 4 and west of H1. It is marked by a zone with interbedded chert layers,

chlorite phyllite, and argillite. West of H1 this zone is 350 m wide; on Sparkle 4 it is about 5 m wide.

Unit 3 consists of highly silicified limestone of the Tshinakin Member of the Eagle Bay Formation. It is white to medium grey, buff weathering, very fine-grained to medium-grained (locally somewhat recrystallized), and massive. It is cut by numerous criss-crossing milky white barren quartz veinlets and veins to 2 cm which have partially to wholly silicified the limestone, depending on abundance. Whole rock analysis indicates that dolomite is found in Unit 3, in addition to the limestone. The Tshinakin limestone is mapped north of the Sparkle Group, and on the Ash 1,2 claims.

Unit 4 outcrops in the northeastern part of the Sparkle Group. It consists of white to pale greenish grey fine-grained quartzite, which locally contains sericite and/or minor chloritic laminae. Minor amounts of argillite are interbedded in the quartzite in some areas.

Unit 4a consists of fine-grained quartzite to local chert. An outcrop of chert northwest of Ash 2 is cut by abundant white quartz veins similar to those cutting Tshinakin limestone, suggesting that Units 3 and 4a may be related. At or near the contact between Units 2 and 4a, several outcrops of travertine were found.

Unit 5 consists of black, strongly foliated, variably crenulated argillite. It contains widespread disseminated pryite resulting in many very rusty weathering roadcuts. It weathers recessively

and for this reason is outcrop in areas underlain by argillite is scarce. Locally, minor graphite and/or chlorite occurs on foliation planes. Bedding is apparently subparallel to foliation.

Intercalated with argillite are layers (lenses?) of very fine to very coarse-grained sandstone and very fine to coarse-grained conglomerate up to 500 m thick (Unit 5a). Contacts between argillite, sandstone, and conglomerate are usually gradational. Unit 5a makes up less than 20% of Unit 5 and contains roughly 70% conglomerate to 30% sandstone. The composition of conglomerate horizons varies widely, from containing mainly quartz clasts to mainly chert, argillite, or volcanic clasts. Clast size varies from 2 mm to at least 250 mm. The conglomerates are commonly clast-supported, but range to matrix-supported as well. The matrix consists of fine to medium-grained sericitic sandy material. Argillite-rich conglomerate horizons tend to be strongly foliated, with the clasts stretched and flattened into the foliation planes while quartz or chert-rich conglomerate horizons are weakly or non-foliated unless fine-grained. A gradational contact between conglomerate and argillite at sample 9009 indicates that the beds are upright in this area. Sandstone is almost always found with conglomerate and is composed of chert, quartz, and volcanic fragments in varying proportions in a fine sericitic matrix. Sandstone horizons are generally fairly well foliated, with flattening of sand grains parallel foliation.

A major strike-slip fault running along Scotch Creek juxtaposes rocks of Units 1-5 on the east with rocks of Units 6-9 on the west.

Unit 6 consists of quartz-feldspar augen gneiss cut by occasional andesitic or basaltic dykes. Thin (0.1 mm) chloritic laminae separating the more felsic bands make up about 15% of the rock. The felsic bands are composed of 20% quartz augens up to 5 mm by 7 mm in a fine-grained quartz-feldspar groundmass. The gneiss was probably derived from a tonalite or granodiorite. Unit 6 gneiss underlies most or all of the H-B Group.

Unit 7 is the Upper Triassic Sicamous Formation argillaceous limestone. Medium grey limestone is interbedded with thin (5 mm) layers of black, commonly graphitic argillite which may locally be cherty. Limestone usually comprises 60-80% of the rock but locally argillite may increase to 60%. Minor pale green quartzite was also observed interbedded with limestone and argillite in one outcrop. Numerous quartz and/or quartz-carbonate and/or calcite stringers to veins from under 1 mm to at least 6 cm cut the rocks. Pyrite is found associated with veining and disseminated in some argillite layers in sufficient amounts to cause most outcrops to weather rusty. Andesitic (to dacitic) dykes up to 20 m thick cutting the Sicamous limestone are fairly abundant. Thin dioritic dykes were also observed in Sicamous limestone.

Unit 8 is the package of rocks which Okulitch (1979) assigned to the Nicola Group, but which are now generally believed to belong to the Eagle Bay Formation. They are mapped on the northwestern corner of the H3 claim, but were not observed during this program. On the Scotch claim, west of H3, Unit 8 is described as an ignimbrite. Diamond drilling records indicate that metasediments and metavolcanics are present, including rhyolitic flows.

Unit 9 is the Scotch Creek pluton. It underlies the western part of the Sparkle Group and consists of moderately coarse-grained quartz monzonite with 30% quartz, 35% Kspar, 25% plagioclase, <10% biotite, minor hornblende. Near the contact with Unit 2 metavolcanics is a complex zone of mixed, altered volcanic and intrusive rocks.

A number of rhyolite dykes or sills up to 1 m wide were observed cutting Unit 5 argillite and Unit 2 metavolcanics on the Sparkle Group. Andesitic and basaltic dykes up to 20 m wide occur on the H5 and H3 claims.

5.2.2 Mineralization

The most common type of mineralization located on the Shuswap property during this exploration program was disseminated pyrite, which is very common in Unit 5 argillite and was also found in lesser amounts in all other units.

A quartz-calcite vein carrying up to 20% pyrite, galena, chalcopyrite, and sphalerite was located on the Sparkle 4 claim. The vein is contained within a thin (1-1.5 m) chert horizon in Unit 2 carbonatized chlorite phyllite. The chert is also mineralized with about 10-20% pyrite, galena, and banded magnetite and can be traced for 35 m until it is obscured by overburden. A grab sample from the vein ran 24.0 ppm Ag, 4523 ppm Pb, 119 ppm Cu, low Au, Zn while a grab sample of the chert wallrock ran 5.4 ppm Ag, 991 ppm Pb, 106 ppm Cu, low Au, Zn. A second sample of chert taken 35 m away yielded low values for all the above metals. The

geological description of the Metal Crest Pb-Zn-quartz vein occurrence suggests that it occurs in metavolcanic rocks such as those of Unit 2, which do not outcrop in the area where the occurrence is reported to be located. It is possible, therefore, that the mineralized vein located on Sparkle 4 is the Metal Crest vein, or is related to it. No evidence of the adit or shaft reported in 1929 was observed. The association of mineralization with a chert horizon in volcanics may be an indication of exhalative mineralizing events.

Elsewhere on the Sparkle Group, a 10-15 cm wide quartz vein (8818) ran 650 ppm Cu, while a sample of Unit 4 quartzite (9041) cut by a 2 cm quartz-carbonate vein containing minor pyrite and galena ran 0.8 ppm Ag, 507 ppm Pb. The only other mineralization found on the Sparkle Group was disseminated pyrite.

The only mineralization found on the H-B Group was minor disseminated pyrite in andesitic dykes cutting the quartz-feldspar augen gneiss which underlies most or all of the group, and in the gneiss itself. None of the samples from the H-B Group contained anomalous Au, Ag, Cu, Pb, or Zn. A sample of augen gneiss (9044) ran 1420 ppm Ba, however.

On the H-A Group, disseminated pyrite was widespread in Unit 5 argillite and was locally present in Unit 2 metavolcanics. Most of the H-A Group is covered by farmland and outcrop is extremely scarce.

On the Ash Group, a zone of rhyolite breccia (9057-62) contains up to 10% coarse (5 mm) disseminated pyrite. Samples from this

zone returned low values for almost every element analyzed although three of the samples were slightly anomalous in Ag. Lesser disseminated pyrite also occurs in the mafic metavolcanics (Unit 2a) with little or no pyrite in Units 3 and 4a. The Sicamous limestone underlying H3 contains local concentrations of up to 1% disseminated pyrite in argillaceous layers.

5.2.3 Lithogeochemistry

The ranges of results from the rock samples collected on the property are listed below:

Ag	Cu	Pb	Zn	Ba
0.2-24.0 ppm	1-650 ppm	3-4523 ppm	1-181 ppm	20-3200 ppm

All of the Au results were 10 ppb (detection limit) and most of the Ag results were 0.2 ppm (detection limit). The only 2 Ag results over 0.8 ppm came from the Metal Crest(??) vein on Sparkle 4. The Metal Crest(??) vein also returned the two best Pb values and two of the higher Cu values. A feature of interest is the cluster of eight samples along the contact of Units 2 and 5 on the Sparkle Group which have anomalous contents of one or more of Ag, Cu, Pb, Zn, or Ba. A similar, but smaller, cluster of three samples occurs along the contact of Units 2 and 9.

The concentration of anomalous samples along the volcanic-argillite contact, combined with the presence of cherty horizons is a significant indication of potential volcanogenic exhalative mineralization. The Rea Gold deposit occurs at a similar mafic volcanic-chert and argillite contact. Enrichment of Ba and Mg is

reported to occur in the zone in which massive sulphides are found (White, 1985). On the Sparkle Group, samples taken from near the contact returned values of up to 3200 ppm Ba and up to 2.99% Mg.

Three samples from the lens of rhyolite breccia on Ash 2 returned slightly anomalous Ag results of 0.2 ppm. Almost all other elements seem anomalously low from samples from this breccia, as if they had been leached out.

For a complete list of rock sample descriptions and Ag, Cu, Pb, Zn, and Ba results, see Appendix II. Full ICP analysis results are included in Appendix IV.

5.2.4 Whole Rock Geochemistry

Whole rock geochemical analysis of five samples was carried out. Two were from Unit 3; one was indicated by the analysis to be a silicified dolomitic carbonate rock, the other an impure limey quartzite. A sample of chlorite-sericite-quartz phyllite (9066) believed to represent an altered felsic volcanic taken from an area underlain mainly by Unit 4a quartzite, was evaluated as having anomalous geochemical factors for both gold and base metal volcanogenic mineralization.

Full computer evaluation of whole rock geochemical results are contained in Appendix III, while the whole rock geochemical results themselves are included in Appendix IV.

6.0 CONCLUSIONS

1. The Shuswap property is underlain mainly by rocks of the Cambrian to Ordovician Eagle Bay Formation, including metamorphosed felsic and intermediate (to basic?) volcanics, black argillite with lesser interbedded pebble to cobble conglomerate and sandstone, and minor amounts of quartzite and Tshinakin limestone. West of Scotch Creek, rocks of the Sicamous Formation, Scotch Creek pluton, and a gneissic member of the Eagle Bay Formation occur on the property.

2. The Eagle Bay Formation is an important host to syngenetic massive sulphide and quartz vein types of mineralization. Five mineralized quartz vein showings are reported to occur within 1 km of the Scotch property. The Scotch claim and Zn-BC property massive sulphide prospects occur immediately west of the Scotch property. Placer gold is found in Scotch and Hlina Creeks which drain the property.

3. A quartz-carbonate vein mineralized with pyrite, galena, chalcopyrite, and sphalerite was discovered on the Sparkle 4 claim. A sample yielded results of 24 ppm Ag, 4523 ppm Pb, 119 ppm Cu, 43 ppm Zn, 10 ppb Au. Two other veins on the Sparkle Group yielded values of 0.8 ppm Ag, 650 ppm Cu and 0.8 ppm Ag, 507 ppm Pb.

4. The contact between Unit 2 mafic metavolcanics and Unit 5 argillites is geologically and geochemically favourable for a volcanogenic massive sulphide occurrence. The geological environment is very similar to that present at Rea Gold

(White, 1985), as is the geochemical signature (enrichment of Ba and Mg). In addition, eight samples taken from or near the contact were anomalous in one or more of Ag, Cu, Pb, Zn, or Ba.

5. The presence of coarsely pyritic coarse rhyolitic and/or cherty breccias ("millrock") on the Ash Group indicates that a favourable environment for volcanogenic massive sulphide mineralization may be present. Lithogeochemical results were not high, but relatively few samples were collected.

6. The H-A and H-B Groups do not appear to be as promising as the Sparkle and Ash Groups at this time. A similar, potentially favourable contact (volcanic/argillite) to that on the Sparkle Group does, however, occur on the H-A Group; and the H-B Group occurs in proximity to the Scotch and Zn-BC prospects.

7. Further exploration for volcanogenic massive sulphides and/or mineralized quartz veins on the Shuswap property is warranted in view of the favourable geological and geochemical conditions discovered during this program.

7.0 RECOMMENDATIONS

1. Phase Ia work to consist of detailed geological mapping, rock sampling, and prospecting over the entire Shuswap property is recommended.

2. Whole rock geochemistry is recommended to aid in classifying metavolcanic rock types and to locate alteration patterns which may indicate the presence of mineralized zones.

3. Concurrently with Phase Ia, Phase Ib work to consist of detailed soil sampling, VLF-EM, and magnetometer surveys over favourable portions of the property such as the contacts between Units 2 and 5, and 2 and 9, and the Metal Crest(?) vein on the Sparkle Group; and the felsic pyroclastics on the Ash Group and any targets located during Phase Ia, is recommended.

4. It is recommended that if Phase Ia work fails to locate suitable "target areas" for Phase Ib work on the H-A and H-B Groups, and the H3 claim of the Ash Group, they be dropped.

5. It is recommended that the quartz-carbonate vein in chert (Metal Crest??) on the Sparkle claim be traced as far as possible, that it be thoroughly sampled, and that the possibility that it actually represents a volcanogenic exhalative horizon, rather than a vein, be considered.

6. It is recommended that tentative plans be made for a Phase II follow-up program to consist of trenching, rock sampling, detailed geological mapping, and IP surveys; contingent upon favourable results from Phases Ia and Ib.

Respectfully submitted

T. Neale, B.Sc.

T.G. Hawkins, P.Geol.

March 4, 1985
Vancouver, B.C.

CERTIFICATE

I, T. Neale, do hereby certify:

1. That I am a graduate in geology of The University of British Columbia (B.Sc. 1978).

2. That I have practised as a geologist in mineral exploration for seven years.

3. That the opinions, conclusions, and recommendations contained herein are based on field work carried out on the property during October 1984.

4. That I own no direct, indirect, or contingent interest in the area, the subject property, or shares or securities of Vanwin Resource Corporation or associated companies.

T. Neale, B.Sc.

Vancouver, B.C.
March 4, 1985

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APPENDIX I

LIST OF PERSONNEL AND EXPENDITURES

The following expenses have been incurred on the Shuswap property as defined in this report and on the adjacent SHU property for the purposes of mineral exploration between the dates of October 12 and 28, 1984. The proportion of the total cost being claimed for the Shuswap property is 58.33%, as the Shuswap property comprises 168 units/288 units = 58.33% of the total area explored.

Personnel:		
T.Neale, B.Sc.		
18 days @ $325	$5,850	
12 days @ $325 (report writing)	3,900	
J. Siriunas, P.Eng.		
2 days @ $325	650	
T. Kraft, B.Sc.		
20 days @ $250	5,000	
R. Krause, Geologist		
18 days @ $250	4,500	
T.G. Hawkins, P.Geol.		
5 days @ $450	2,250	
5.5 hours @ $80	440	
		$22,590
Truck Rental:		
18 days @ $71		1,278
Disbursements:		
Motel	1,005.80	
Expenses (food, gas, etc)	1,402.35	
Supplies	179.32	
Phone	45.68	
Drafting	591.60	
Courier	30.00	
Analyses		
105 @ $ 8.45 (Au Ag)	887.25	
5 @ 20 (whole rock)	100.00	
105 @ 6 (ICP)	630.00	
105 @ 3.75 (Ba)	393.75	
		5,265.75
Administration @ 15% (on $5,265.75)		789.86
2 Reports - 6 copies each @ $65		780.00
		30,703.61
Less 41.67%		12,794.20
Total amount applied to Shuswap property		$17,909.41

The amounts to be applied to each group are as follows:

H-A Group	40/168	23.8%	$4,262.44
H-B Group	22/168	13.1%	2,346.13
Sparkle Group	64/168	38.1%	6,823.49
Ash Group	42/168	25.0%	4,477.35

APPENDIX II

ROCK SAMPLE DESCRIPTIONS
AND
LITHOGEOCHEMISTRY RESULTS

Rock Sample Descriptions and Lithogeochemistry Results

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
8801	A1	Altered felsic tuff(?): fine-grained; comprised of 60% limonite, 35-40% felsic matrix, 2-3% disseminated euhedral-subhedral pyrite; thin barren quartz-CO_3 veins. Float.	0.2	90	9	70	180
8802	H5	Cherty argillite: alternating laminae of graphitic argillite and chert; abundant limonite on weathered surface; 1-2% fine disseminated pyrite, pyrrhotite primarily within the cherty layers. Float.	0.2	72	37	44	680
8803	Sp4	Quartz vein: sugary; white; <1% fine disseminated pyrite, pyrrhotite; thin limonite coating on weathered surface.	0.2	12	10	15	80
8804	near H5	Cherty argillite(?): from a 2 m wide gossan zone containing 15-25% sphalerite, <5% galena, minor pyrite, pyrrhotite. Moderately magnetic.	22.0	970	3689	69,832	80
8807	Sp2	Quartz Pebble Conglomerate: framework comprised of subrounded chert pebbles 2-4 cm and rounded to subangular cherty fragments 2-5 mm; matrix is white, fine-grained with 1-2% disseminated euhedral pyrite grains throughout. Framework 80-85%, matrix 15-20%. Float.	0.2	10	12	52	300
8808	Sp2	Conglomerate: strongly oxidized, abundant limonite, <1% disseminated pyrite. 30 cm chip sample across shear zone.	0.2	27	7	39	280
8809	Sp2	Graphitic argillite: strongly foliated; 1% disseminated pyrite, pyrrhotite (also concentrated along fracture surfaces); limonite on weathered surfaces.	0.2	19	8	43	420
8810	Sp4	Graphitic argillite: strongly oxidized; abundant limonite on weathered surface; <1-2% disseminated pyrite, pyrrhotite.	0.2	96	125	63	520

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
8811	Sp4	Quartz vein: 1-2% disseminated fine pyrite, pyrrhotite; abundant limonite on weathered surface. Vein at least 1 m wide.	0.2	20	12	26	180
8812	Sp4	Rhyolite sill: medium-grained, vuggy; <1% disseminated fine pyrite. 2.5 m wide.	0.2	8	19	9	1020
8813	Sp4	Quartz vein: sugary, white; <1% disseminated pyrite. At least 1 m thick.	0.2	15	43	19	80
8814	Sp5	Rhyolite intrusion: medium-grained; <1% disseminated fine pyrite.	0.6	23	102	12	2460
8815	Sp4	Quartz vein: sugary, milky white; <1% disseminated fine pyrite.	0.2	3	12	15	60
8816	Sp4	Quartzite: grey-green, siliceous, fine-grained; <1% disseminated fine pyrite; minor limonite on weathered surface.	0.2	17	3	78	320
8817	Sp3	Granite: coarse-grained; 1% disseminated fine euhedral pyrite.	0.2	4	11	36	1460
8818	Sp3	Quartz vein: sugary; 1-2% pyrite, abundant limonite. In metavolcanics; 10-15 cm wide.	0.8	650	9	18	140
9001	A2	Chlorite-sericite phyllite: pale silvery greenish grey, soft; 20% rusty spots + streaks; poorly foliated.	0.2	42	39	59	440
9002	A2	Chlorite-quartz-sericite phyllite: chlorite coatings occur on foliation surfaces; ≤1% pyrite disseminated in cubes up to 1 mm.	0.2	74	27	106	1020
9003	A2	Quartz-sericite-chlorite phyllite: pale greenish grey; light coloured, very fine-grained siliceous layers to 4 mm thick separated by 1 mm laminae of medium greenish brown sericite, chlorite. Rusty patches to 3 mm x 6 mm about 10% with local areas of up to 3% disseminated pyrite cubes, both occurring in the siliceous layers. Originally dacite to rhyodacite?	0.2	101	19	58	1780

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9004	A2	Quartz-CO_3 vein: minor disseminated pyrite with local concentrations up to 2% over areas of up to 3 cm x 3 cm. Occurs parallel schistosity in rock of 9003.	0.2	70	26	1	400
9018	Sp2	Sandstone: fine-grained, argillaceous, contains quartz, sericite; heavily goethite, jarosite stained.	0.2	26	59	173	540
9019	Sp4	Quartz vein: medium greyish white, highly fractured, abundant rusty specks to 1 mm.	0.2	8	33	18	300
9020	Sp4	Cherty argillite: hard, non-foliated, fractured and friable; very rusty.	0.6	27	73	181	640
9021	Sp4	Dacite tuff??: medium green, fine-grained, chloritic, somewhat siliceous, moderately foliated, strongly rusty, extremely sheared.	0.2	108	13	77	300
9022	Sp4	Chlorite phyllite: soft; pervasively carbonatized with CO_3 veinlets sub-parallel foliation to 5 mm making up 10% of rock. No pyrite noted.	0.2	67	5	42	160
9029	Sp5	Quartzite: white to light grey, fine-grained, slightly recrystallized locally; <1% disseminated rusty pyrite cubes; rusty fracture surfaces.	0.2	8	9	12	100
9030	Sp5	Sericitic quartzite: contains a few chloritic laminae; similar to 9029 but more foliated, more impure; 1-3% disseminated pyrite cubes to 1 mm.	0.2	19	9	17	160
9031	Sp4	Quartz vein: very minor pyrite; goethite stain on fracture surfaces. Float	0.2	15	16	12	20
9032	Sp4	Quartz-CO_3 vein: contains white quartz, lesser light grey to buff carbonate; at least 40 cm thick; no visible mineralization, some rusty patches.	0.2	8	56	30	380

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9033	Sp4	Sandy limestone: light-medium grey, weathers rusty brown; chlorite on foliation (bedding?) planes; local areas with <1% disseminated pyrite in cubes about 0.1 mm concentrated in lines parallel foliation.	0.2	26	12	42	1040
9034	Sp4	Cherty quartzite: medium greenish grey, hard; thin irregular films of CO_3 on broken surfaces; subangular to rounded quartz grains <1 mm-4 mm commonly visible; rust specks 3-5%. Possibly a rhyolite.	0.2	7	23	8	3200
9035	Sp4	Cherty quartzite: creamy white, hard, very fine-grained; strongly carbonatized; rusty chloritic laminae makeup 1-5% of rock and contain very minor fine disseminated pyrite.	0.2	20	12	18	600
9036	Sp4	Chlorite phyllite: abundant CO_3 veinlets/ layers subparallel foliation; weakly foliated.	0.2	62	7	51	2640
9037	Sp5	Rhyolite dyke or thin flow: white, hard; quartz eyes <1 mm to 2.5 mm from <1-20% in very fine-grained massive white matrix with occasional crystal(?) faces (feldspar?) up to 1 cm or more. 5-10% pyrite in cubes 0.1 to 3 mm and occasional patches to 1 cm.	0.2	6	10	8	120
9038	near Sp3	Sandy chert: minor argillite, minor dark green fine-grained andesite(?) included in sample. Sample consists of various pieces of rusty float over 150 m along a road. Galena was noted in association with quartz veining in one piece of float, a speck of chalcopyrite(?) in another; most of the mineralization consists of disseminated pyrite.	9.8	136	4186	763	600
9039	Sp3	Andesite?: dark green, fine-grained, hard; contains abundant lighter, crystalline-looking patches and irregular masses of altered quartz monzonite. Minor pyrite occurs in masses up to 2x10 mm in altered andesite at intrusive contacts.	0.4	99	93	66	680

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9040	Sp3	Quartzite: white, very fine-grained, hard; 20% disseminated rust specks, 1-3% pyrite disseminated in cubes to 2 mm.	0.2	7	52	24	480
9041	Sp5	Quartzite: medium greenish grey; mildly carbonatized; 2-3% pyrite disseminated in cubes <1 mm. Cut by quartz-CO_3 vein 2 cm wide containing minor disseminated pyrite, possibly trace galena.	0.8	34	507	122	1040
9042	H3	Argillaceous limestone: Sicamous Formation; minor rusty stain.	0.2	1	12	2	520
9043	H5	Basalt dyke: dark grey to black, very fine-grained, fairly soft; dense, heavy; minor pyrite in seams 1 mm wide with 3 mm selvedges of dark green mineral (chlorite?).	0.2	31	23	100	1960
9044	H5	Augen gneiss: quartz augens average about 2 mm (smaller than usual); sericite occurs on foliation planes; <1% disseminated pyrite with associated rusty stain.	0.2	32	18	26	1420
9045	H1	Argillite: black, well-foliated; minor chloritic sheen on foliation planes; <1% pyrite disseminated in cubes to 2 mm.	0.2	53	13	139	1040
9046	H2	Chlorite phyllite: medium green; weakly pervasively carbonatized, CO_3 fracture coatings and veinlets common; weakly foliated; $\ll$1% disseminated pyrite.	0.2	80	10	90	320
9047	H2	Dacite?: pale blue grey to green grey fresh, weathers brownish green; moderately hard; pervasively carbonatized; massive, unfoliated; abundant rust on weathered surface, no pyrite observed.	0.2	92	8	53	220
9048	H2	Rhyolite tuff?: light yellow brown, carbonatized; contains quartz fragments to 1 mm, soft altered feldspar to 5 mm or more; rusty.	0.2	37	6	53	180

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9049	H2	Dacite: pale greenish grey fresh, weathers rusty brown; slightly carbonatized; soft; quartz and/or CO_3 veins to 3 mm parallel foliation.	0.2	92	7	69	200
9050	H2	Chlorite-CO_3-sericite phyllite: graphitic quartz-CO_3 veins to 1 cm parallel foliation; local concentrations of disseminated fine-grained pyrite to 3%.	0.2	121	8	45	620
9057	A1	Rhyolite breccia: fragments <1 mm-5 cm, angular to rounded, composed of rhyolite(?) set in a matrix of very fine-grained siliceous material; 1-2% disseminated pyrite in cubes to 5 mm in matrix; 5-10% disseminated pyrite in cubes to 5 mm in some of the larger clasts; abundant jarosite stain.	0.2	14	62	11	80
9058	A1	Rhyolite breccia: similar to 9057, except matrix extremely hematite stained, and clasts are more siliceous (cherty?).	0.4	13	90	23	420
9059	A1	Chert breccia: pale grey cryptocrystalline clasts 2 mm to 4 cm of chert (possibly rhyolite) in a very siliceous matrix; larger clasts contain 1% pyrite disseminated in cubes about 0.1 mm; matrix contains 2-5% disseminated pyrite in cubes to 2 mm and irregular masses to 5 mm.	0.2	3	20	6	100
9060	A1	Rhyolite breccia: variety of subrounded to angular fragments from <1 mm-6 mm of quartz and/or weathered (kaolinitized) feldspar in a very fine-grained pale bluish grey matrix; 3% disseminated pyrite cubes to 0.5 mm.	0.4	3	31	10	140
9061	A1	Rhyolite breccia: white, very fine-grained siliceous matrix containing 20-25% quartz eye-like blebs to 2 mm and weathered (kaolinitic) feldspar-rich fragments to 1 cm; and 2-4% disseminated pyrite cubes up to 1.5 mm.	0.2	3	14	5	60

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9062	A1	Rhyolite breccia: very similar to 9060, except coarser-grained. Fragments up to 4 cm; pyrite disseminated in cubes to 0.5 mm both in matrix and in occasional fragments <1%.	0.4	5	53	10	380
9201	A1	Andesite tuff: extremely carbonatized; foliated; blebby rust and some minor pyrite; Mn(?) stain on weathered surface.	0.2	80	8	106	840
9202	A1	Agglomerate: fragments up to 1x2 cm and bombs up to 1.5x4.5 cm in fine-grained matrix; silicified; minor rust stain.	0.2	16	17	84	1160
9203	H5	Rhyolitic volcanic(?): rounded quartz eyes or fragments and some quartz crystals in a fine-grained felsic matrix; matrix supported; weakly foliated; limonite on weathered surfaces and some foliation surfaces.	0.2	18	13	65	300
9204	H5	Andesite (dyke?): fine-grained, dark, carbonatized; <2% pyrite disseminated, limonite disseminated, hematite on weathered surface.	0.2	7	10	52	960
9205	H5	Andesite (dyke?): fine-grained, dark, fairly massive, carbonatized; pyrite blebs and stringer veins, limonite replacements of pyrite; hematite on weathered surfaces.	0.2	37	11	53	480
9213	Sp4	Quartz-calcite vein: contains 10-20% sulphides including pyrite cubes to 5 mm, galena, chalcopyrite, sphalerite(?). Sample includes some mineralized wallrock (9214).	24.0	119	4523	43	220
9214	Sp4	Chert: lightly banded; contains magnetite + lesser pyrite and galena(?); total mineralization about 20%. Magnetite occurs in bands.	5.4	106	991	57	200

Sample No.	Claim No.	Description	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ba ppm
9215	Sp4	Chert: same horizon as 9214 - 35 m to the E. Mineralized with magnetite, lesser pyrite, fine-grained galena; total mineralization about 10-15%.	0.2	63	38	43	440
9216	H3	Argillite: well-foliated; dark grey to black; extensive limonite on weathered surface; sericite on fracture surfaces; <1% fine disseminated pyrite + galena(?).	0.2	102	26	67	720
9217	H3	Quartz-calcite vein: coarse crystalline to sugary texture; minor disseminated pyrite (<1%); minor limonite on weathered surfaces.	0.2	14	16	14	380
9218	H3	Sicamous limestone: 65% limestone bands, 35% argillite bands; pyrite disseminated <2%, limonite on weathered and fracture surfaces; sericite on foliation surfaces.	0.2	34	9	46	620

APPENDIX III

WHOLE ROCK GEOCHEMICAL
COMPUTER CLASSIFICATION AND EVALUATION

$ $
>>>>>>>>>>>>>>>>>>>9063 <<<<<<<<<<<<<<<<<<<
$ $

JENSEN CLASSIFICATION: Komatiitic Ultramafic Komatiite

IRVINE/BARAGAR CLASSIFICATION: Tholeiitic Basalt Alkaline

SiO2 CLASSIFICATION: Depleted (22.16% SiO2)

TiO2 CLASSIFICATION: Ultramaf

****

Probably a carbonate rock, sedimentary or igneous

------------------------- Volcanogenic base metals Evaluation -------------------------

WARNING SiO2 content TOO LOW for accepted volcanogenic studies ***

Residuals:

MgO	K2O	CaO	Na2O	Fe2O3	SiO2	TAAS
-1.90	1.00	.07	2.82	-24.67	14.80	42.45

Discriminant Functions:

DF1	DF2	DF3	DF4	DF5
.78	0.00	0.00	-9.99	-9.99
	N/A	N/A		

******************************* VOLCANOGENIC Au EVALUATION *******************************

*** Favourable wall rock is present ***

Na2O(R)	K2O(%)	Au	As	Per. Index	CO2/CaO
2.82	.30	0.00	0.00	.00	.58
		N/A	N/A		EST

SS	RT	LATITUDE	DEPARTURE	COMMENTS
0.	0.	0.00	0.00	

SiO2	Al2O3	Fe2O3	FeO	CaO	MgO	Na2O	K2O
22.16	.10	.81	0.00	22.16	16.11	.10	.30
TiO2	MnO	P2O5	LOI	CO2	Cr2O3	Zr	Sr
0.00	0.00	0.00	38.27	0.00	0.00	0.00	0.00
Rb	Ba	W	U	Th	Cu	Zn	Pb
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni	Au	Ag	S	As	Sb	X	Y
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.B.: ******* anomalous factor
N/A not available
EST estimated

MPH

$ $
>>>>>>>>>>>>>>>>>>>9064 <<<<<<<<<<<<<<<<<<
$ $

JENSEN CLASSIFICATION: Komatiitic Ultramafic Komatiite

IRVINE/BARAGAR CLASSIFICATION: Tholeiitic Dacite Subalkaline

SiO2 CLASSIFICATION: Rhyolite (72.22% SiO2)

TiO2 CLASSIFICATION: Rhyolite

****

Rock is highly altered (e.g. carbonatized, pyritized)

************************ VOLCANOGENIC Base Metals EVALUATION ************************

Residuals:

MgO	K2O	CaO	Na2O	Fe2O3	SiO2	TAAS
4.07	-1.25	5.25	-3.51	-3.18	13.81	59.01
*******					*******	

Discriminant Functions:

DF1	DF2	DF3	DF4	DF5
1.08	0.00	0.00	-4.12	2.59
	N/A	N/A		*******

***************************** VOLCANOGENIC Au EVALUATION *****************************

*** Favourable wall rock is present ***

Na2O(R)	K2O(%)	Au	As	Per. Index	CO2/CaO
-3.51	.10	0.00	0.00	.01	.49
		N/A	N/A		EST

Disseminated carbonate alteration present

SS	RT	LATITUDE	DEPARTURE	COMMENTS
0.	0.	0.00	0.00	

SiO2	Al2O3	Fe2O3	FeO	CaO	MgO	Na2O	K2O
72.22	.10	1.00	0.00	8.53	5.42	.10	.10
TiO2	MnO	P2O5	LOI	CO2	Cr2O3	Zr	Sr
0.00	0.00	0.00	12.54	0.00	0.00	0.00	0.00
Rb	Ba	W	U	Th	Cu	Zn	Pb
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni	Au	Ag	S	As	Sb	X	Y
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.B.: ******* anomalous factor
N/A not available
EST estimated

$ $
>>>>>>>>>>>>>>>>>>9066 <<<<<<<<<<<<<<<<<<
$ $

JENSEN CLASSIFICATION: Calc-Alkaline Andesite

IRVINE/BARAGAR CLASSIFICATION: Calc-Alkaline Dacite Subalkaline

SiO2 CLASSIFICATION: Rhyolite (80.37% SiO2)

TiO2 CLASSIFICATION: Rhyolite

****

Rock is slightly potash enriched vis-a-vis soda

************************* VOLCANOGENIC Base Metals EVALUATION *************************

Residuals:

MgO	K2O	CaO	Na2O	Fe2O3	SiO2	TAAS
.51	.25	-1.98	-2.24	1.97	3.55	78.05

Discriminant Functions:

DF1	DF2	DF3	DF4	DF5
1.18	0.00	0.00	2.85	2.52
	N/A	N/A	*******	*******

---------------------------- Volcanogenic Au Evaluation ----------------------------

Na2O(R)	K2O(%)	Au	As	Per. Index	CO2/CaO
-2.24	1.93	0.00	0.00	2.84	1.66
		N/A	N/A		EST

SS	RT	LATITUDE	DEPARTURE	COMMENTS
0.	0.	0.00	0.00	

SiO2	Al2O3	Fe2O3	FeO	CaO	MgO	Na2O	K2O
80.37	9.36	4.07	0.00	.41	1.32	.51	1.93
TiO2	MnO	P2O5	LOI	CO2	Cr2O3	Zr	Sr
0.00	0.00	0.00	2.03	0.00	0.00	0.00	0.00
Rb	Ba	W	U	Th	Cu	Zn	Pb
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni	Au	Ag	S	As	Sb	X	Y
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.B.: ******* anomalous factor
N/A not available
EST estimated

MPH

$$
>>>>>>>>>>>>>>>>>>9079   <<<<<<<<<<<<<<<<<<
$$

JENSEN CLASSIFICATION: Calc-Alkaline   Rhyolite

IRVINE/BARAGAR CLASSIFICATION: Calc-Alkaline   Dacite   Subalkaline

SiO2 CLASSIFICATION: Rhyolite (77.53% SiO2)

TiO2 CLASSIFICATION: Rhyolite

Rock is slightly soda enriched vis-a-vis potash

************************** VOLCANOGENIC Base Metals EVALUATION **************************

Residuals:

MgO	K2O	CaO	Na2O	Fe2O3	SiO2	TAAS
.06	-.38	-1.04	.37	-.49	2.54	30.14

Discriminant Functions:

DF1	DF2	DF3	DF4	DF5
-.60	0.00	0.00	.26	.21
	N/A	N/A		

------------------------------ Volcanogenic Au Evaluation ------------------------------

Na2O(R)	K2O(%)	Au	As	Per. Index	CO2/CaO
.37	1.19	0.00	0.00	1.29	.42
		N/A	N/A		EST

SS	RT	LATITUDE	DEPARTURE	COMMENTS
0.	0.	0.00	0.00	

SiO2	Al2O3	Fe2O3	FeO	CaO	MgO	Na2O	K2O
77.53	10.93	2.29	0.00	1.59	.99	3.48	1.19
TiO2	MnO	P2O5	LOI	CO2	Cr2O3	Zr	Sr
0.00	0.00	0.00	1.99	0.00	0.00	0.00	0.00
Rb	Ba	W	U	Th	Cu	Zn	Pb
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni	Au	Ag	S	As	Sb	X	Y
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.B.: ******* anomalous factor
N/A not available
EST estimated

$ $
>>>>>>>>>>>>>>>>>>9083 <<<<<<<<<<<<<<<<<<
$ $

JENSEN CLASSIFICATION: Tholeiitic Magnesium Rich Basalt

IRVINE/BARAGAR CLASSIFICATION: Tholeiitic Basalt Alkaline

SiO2 CLASSIFICATION: Basalt (49.20% SiO2)

TiO2 CLASSIFICATION: Rhyolite

****

Rock is highly altered (e.g. carbonatized, pyritized)

------------------------ Volcanogenic base metals Evaluation ------------------------

WARNING SiO2 content TOO LOW for accepted volcanogenic studies ***

Residuals:

MgO	K2O	CaO	Na2O	Fe2O3	SiO2	TAAS
1.07	-.21	.37	-.76	-1.72	5.47	58.54
*******					*******	

Discriminant Functions:

DF1	DF2	DF3	DF4	DF5
-1.63	0.00	0.00	-1.51	-.84
	N/A	N/A		

****************************** VOLCANOGENIC Au EVALUATION ******************************

*** Favourable wall rock is present ***

Na2O(R)	K2O(%)	Au	As	Per. index	CO2/CaO
-.76	.20	0.00	0.00	.79	.59
		N/A	N/A		EST

Disseminated carbonate alteration present

SS	RT	LATITUDE	DEPARTURE	COMMENTS
0.	0.	0.00	0.00	

SiO2	Al2O3	Fe2O3	FeO	CaO	MgO	Na2O	K2O
49.20	10.04	10.44	0.00	9.44	7.23	2.41	.20
TiO2	MnO	P2O5	LOI	CO2	Cr2O3	Zr	Sr
0.00	0.00	0.00	11.04	0.00	0.00	0.00	0.00
Rb	Ba	W	U	Th	Cu	Zn	Pb
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ni	Au	Ag	S	As	Sb	X	Y
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.B.: ******* anomalous factor
N/A not available
EST estimated

EVALUATION SUMMARY

SAMPLE	Base Metals EVALUATION	Gold EVALUATION
9063	—	+
9064	+ ✱✱	+
9066	+ ✱✱✱	— ✱✱✱✱✱
9079	+	— ✱✱
9083	— ✱	+

— "less favourable geologic environment"

\+ "favourable geologic environment"

✱ anomalous geochemical factors present (10% of factors per symbol)

APPENDIX IV

CERTIFICATES OF ANALYSIS

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER B.C.
PROJECT: V 180/181

CERTIFICATE#: 84505 - 1
INVOICE#: 5113
DATE ENTERED: JAN.4,1985
FILE NAME: MPH505

PREFIX	SAMPLE NAME	PPM Ag	PPB Au
A	8801	0.2	10
A	8802	0.2	10
A	8803	0.2	10
A	8804	22.0	10
A	8807	0.2	10
A	8808	0.2	10
A	8809	0.2	10
A	8810	0.2	10
A	8811	0.2	10
A	8812	0.2	10
A	8813	0.2	10
A	8814	0.6	10
A	8815	0.2	10
A	8816	0.2	10
A	8817	0.2	10
A	8818	0.8	10
A	9001	0.2	10
A	9002	0.2	10
A	9003	0.2	10
A	9004	0.2	10
A	9018	0.2	10
A	9019	0.2	10

Received
JAN 7 1985

CERTIFIED BY : F. Rossbach

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER,B.C.

PROJECT: V 180/181

CERTIFICATE#: 84505 - 2
INVOICE#: 5113
DATE ENTERED: JAN.4,1985
FILE NAME: MPH505

PREFIX	SAMPLE NAME	PPM Ag	PPB Au
A	9020	0.6	10
A	9021	0.2	10
A	9022	0.2	10
A			
A			
A			
A			
A			
A			
A	9029	0.2	10
A	9030	0.2	10
A	9031	0.2	10
A	9032	0.2	10
A	9033	0.2	10
A	9034	0.2	10
A	9035	0.2	10
A	9036	0.2	10
A	9037	0.2	10
A	9038	9.8	10
A	9039	0.4	10
A	9040	0.2	10
A	9041	0.8	10
A	9042	0.2	10
A	9043	0.2	10
A	9044	0.2	10
A	9045	0.2	10
A	9046	0.2	10
A	9047	0.2	10
A	9048	0.2	10
A	9049	0.2	10
A	9050	0.2	10
A			
A			
A			
A			
A			
A			
A	9057	0.2	10
A	9058	0.4	10
A	9059	0.2	10

CERTIFIED BY : F. Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER,B.C.

PROJECT: V 180/181

CERTIFICATE#: 84505 - 3
INVOICE#: 5113
DATE ENTERED: JAN.4,1985
FILE NAME: MPH505

PREFIX	SAMPLE NAME	PPM Ag	PPB Au
A	9060	0.4	10
A	9061	0.2	10
A	9062	0.4	10
A	9201	0.2	10
A	9202	0.2	10
A	9203	0.2	10
A	9204	0.2	10
A	9205	0.2	10
A			
A			
A			
A			
A			
A			
A	9213	24.0	10
A	9214	5.4	10
A	9215	0.2	10
A	9216	0.2	10
A	9217	0.2	10
A	9218	0.2	10
A			
A			
A			
A			

CERTIFIED BY : F. Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER,B.C.

PROJECT: V180/181
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 84505
INVOICE#: 5126
DATE ENTERED: JAN.22,1985
FILE NAME: MPH84505
PAGE # : 1

PREFIX	SAMPLE NAME	PPM Ba
A	8801	180
A	8802	680
A	8803	80
A	8804	80
A	8807	300
A	8808	280
A	8809	420
A	8810	520
A	8811	180
A	8812	1020
A	8813	80
A	8814	2460
A	8815	60
A	8816	320
A	8817	1460
A	8818	140
A	9001	440
A	9902	1020
A	9003	1780
A	9004	400
A	9018	540

RECEIVED FEB 4 1985

CERTIFIED BY : C. Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER,B.C.

PROJECT: V180/181
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 84505
INVOICE#: 5126
DATE ENTERED: JAN.22,1985
FILE NAME: MPH84505
PAGE # : 2

PREFIX	SAMPLE NAME	PPM Ba
A	9019	300
A	9020	640
A	9021	300
A	9022	160
A		
A		
A		
A		
A		
A	9029	100
A	9030	160
A	9031	20
A	9032	380
A	9033	1040
A	9034	3200
A	9035	600
A	9036	2640
A	9037	120
A	9038	600
A	9039	680
A	9040	480
A	9041	1040
A	9042	520
A	9043	1960
A	9044	1420
A	9045	1040
A	9046	320
A	9047	220
A	9048	180
A	9049	200
A	9050	620
A		
A		
A		
A		
A		
A		
A	9057	80

CERTIFIED BY : P. Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE ST.
VANCOUVER,B.C.

PROJECT: V180/181
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 84505
INVOICE#: 5126
DATE ENTERED: JAN.22,1985
FILE NAME: MPH84505
PAGE # : 3

PREFIX	SAMPLE NAME	PPM Ba
A	9058	420
A	9059	100
A	9060	140
A	9061	60
A	9062	380
A	9201	840
A	9202	1160
A	9203	300
A	9204	960
A	9205	480
A	9213	220
A	9214	200
A	9215	440
A	9216	720
A	9217	380
A	9218	620

CERTIFIED BY : C. Rossbach

ACME ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR Mn.Fe.Ca.P.Cr.Mg.Ba.Ti.B.Al.Na.K.W.Si.Zr.Ce.Sn.Y.Nb and Ta. Au DETECTION LIMIT BY ICP IS 3 ppm.
- SAMPLE TYPE: SOLUTIONS

DATE RECEIVED: JAN 9 1985 DATE REPORT MAILED: Jan. 10, 1985 ASSAYER. T. Saundry DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

ROSSBACHER LABORATORY FILE # 85-0034 PAGE 1

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
8801	2	90	9	70	.4	85	28	1015	5.94	2	5	ND	2	133	1	2	4	16	5.91	.09	4	35	2.29	52	.01	2	.25	.02	.06	20
8802	3	72	37	44	.2	48	15	205	3.37	2	5	ND	8	256	1	2	3	47	2.72	.07	7	55	.48	25	.08	5	4.34	.36	.31	15
8803	1	12	10	15	.1	13	5	521	1.16	4	5	ND	2	8	1	2	2	4	.07	.02	2	96	.11	18	.01	2	.25	.03	.03	12
8804	2	970	3689	69832	35.7	10	143	3680	9.99	8	13	ND	2	30	511	2	152	24	3.15	.71	8	51	.55	17	.03	2	.73	.01	.03	15
[redacted]																														
[redacted]																														
8807	1	10	12	52	.2	7	2	1238	1.96	3	5	ND	2	301	1	2	3	11	10.85	.04	2	35	4.08	145	.01	2	.26	.01	.10	15
8808	2	22	7	39	.1	47	8	1503	3.33	2	6	ND	4	7	1	2	3	36	.12	.03	14	142	.94	56	.03	2	.92	.01	.08	8
8809	1	19	8	43	.2	26	4	92	2.46	2	5	ND	4	7	1	2	2	11	.05	.06	3	78	.57	29	.01	2	.73	.01	.10	6
8810	25	96	125	63	.2	66	29	7579	4.81	2	5	ND	7	41	1	2	2	22	.12	.05	7	61	.34	88	.01	2	.72	.02	.17	9
8811	6	20	12	26	.1	17	6	3456	2.63	4	5	ND	2	76	1	2	2	5	2.13	.02	2	91	.35	88	.01	2	.12	.01	.04	15
8812	1	8	19	9	.1	6	1	333	.58	2	5	ND	2	14	1	2	2	2	.02	.01	2	45	.01	165	.01	2	.14	.05	.02	6
8813	5	15	43	19	.1	17	7	1187	.89	2	5	ND	2	21	1	2	2	2	.17	.02	2	113	.04	8	.01	2	.07	.02	.02	17
8814	1	23	102	12	.5	3	2	239	.52	2	5	ND	2	51	1	2	3	2	.02	.01	2	45	.01	450	.01	2	.10	.05	.03	8
8815	1	3	12	15	.1	6	1	85	.35	3	5	ND	2	6	1	2	2	2	.03	.01	2	125	.01	8	.01	2	.01	.01	.01	19
8816	1	17	3	78	.1	50	7	137	1.82	2	5	ND	3	11	1	2	3	4	.09	.05	2	70	.34	29	.01	2	.19	.01	.06	5
8817	8	4	11	34	.2	6	4	347	1.65	2	5	ND	25	20	1	2	2	11	1.12	.09	49	59	.43	40	.01	2	.54	.02	.08	6
8818	7	650	9	18	.7	107	47	81	7.95	3	5	ND	2	6	1	2	2	8	.06	.01	2	91	.11	22	.01	2	.20	.01	.03	6
[redacted]																														
[redacted]																														
9001	1	42	39	59	.2	42	12	1671	2.83	19	5	ND	7	5	1	2	4	10	.09	.04	6	51	.71	40	.01	2	1.05	.01	.08	2
9002	2	74	27	106	.4	4	8	779	3.76	6	5	ND	11	25	1	2	4	12	.44	.17	20	16	.77	89	.01	2	1.35	.02	.16	2
9003	2	101	19	58	.3	3	9	989	4.34	3	5	ND	13	60	1	2	3	18	1.49	.21	26	12	.80	67	.02	2	1.58	.02	.14	2
9004	4	70	26	1	.5	3	3	629	2.05	3	5	ND	3	75	1	2	3	9	2.31	.03	19	67	.14	12	.01	2	.41	.01	.04	5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
9018	3	26	59	173	.3	46	6	33	1.81	5	5	ND	3	18	1	3	2	6	.03	.05	2	58	.06	39	.01	2	.26	.01	.14	2
9019	1	8	33	18	.2	7	1	164	.87	2	5	ND	12	10	1	2	2	3	.05	.01	3	35	.01	112	.01	2	.09	.05	.01	2
9020	6	27	73	181	.8	38	6	2266	3.88	2	5	ND	4	114	1	2	2	26	12.89	.05	6	22	.52	151	.01	2	.40	.01	.09	2
9021	5	108	13	77	.2	215	42	718	6.86	3	5	ND	2	79	1	2	2	92	2.37	.12	8	332	1.48	79	.01	2	1.42	.03	.06	2
9022	1	67	5	42	.2	139	23	894	2.97	4	5	ND	2	300	1	2	2	59	18.23	.07	5	168	1.77	16	.08	2	1.51	.01	.01	2
9029	1	8	9	12	.1	8	4	527	.46	2	5	ND	2	3	1	2	2	2	.04	.02	2	44	.02	15	.01	2	.08	.01	.03	2
9030	1	19	9	17	.2	20	8	685	1.13	6	5	ND	4	4	1	2	2	2	.03	.02	2	60	.03	21	.01	2	.12	.01	.04	2
9031	1	15	16	12	.2	6	3	111	.53	3	7	ND	2	2	1	2	2	2	.01	.01	2	111	.01	9	.01	2	.02	.01	.02	2
9032	1	8	56	30	.2	11	3	1196	.97	4	5	ND	2	276	1	2	2	2	9.42	.01	3	63	.09	237	.01	2	.05	.01	.01	2
9033	2	26	12	42	.2	92	16	1028	3.68	2	5	ND	2	159	1	2	2	28	12.89	.21	9	48	.69	221	.02	2	.61	.01	.25	2
9034	1	7	23	8	.1	8	3	232	.54	3	5	ND	9	117	1	2	2	2	1.45	.01	5	40	.04	793	.01	2	.14	.03	.05	2
9035	2	20	12	18	.1	35	7	1002	1.84	4	5	ND	2	260	1	2	2	11	14.99	.18	6	41	1.07	197	.01	2	.33	.01	.08	2
9036	1	62	7	51	.2	145	25	989	4.49	3	5	ND	2	379	1	2	2	76	13.26	.08	9	223	2.99	970	.07	2	2.54	.01	.28	2
9037	1	6	10	8	.1	9	2	126	.74	2	5	ND	5	66	1	2	2	2	.62	.01	2	49	.08	48	.01	2	.09	.05	.01	2
9038	2	136	4186	763	9.6	146	21	292	4.43	4	5	ND	9	86	3	8	2	86	.85	.05	6	75	1.58	41	.13	3	2.67	.07	.79	2
9039	7	99	93	66	.5	7	5	466	2.04	2	5	ND	12	32	1	2	2	18	.32	.02	22	51	.43	35	.01	2	.70	.06	.07	2
9040	2	7	52	24	.1	5	2	338	1.27	2	5	ND	18	16	1	6	2	4	.46	.02	11	41	.05	48	.01	2	.17	.02	.07	2
9041	2	34	507	122	1.0	52	8	606	3.01	3	14	ND	9	714	1	3	6	112	4.14	.07	33	97	1.98	112	.02	2	.69	.03	.34	2
9042	1	1	12	2	.1	1	1	5	.06	3	5	ND	2	12	1	2	3	2	.12	.01	2	1	.03	2	.01	2	.01	.01	.02	2
9043	3	31	23	100	.1	29	11	681	4.18	5	6	ND	4	83	1	2	2	87	.86	.38	12	38	1.63	159	.24	2	1.80	.11	1.09	3
9044	1	32	18	26	.1	3	4	264	1.50	3	5	ND	12	26	1	4	2	9	.18	.04	14	27	.32	76	.03	2	.71	.03	.13	2
9045	2	53	13	139	.1	94	15	278	4.66	2	5	ND	5	21	1	2	2	37	.12	.08	10	84	1.81	51	.01	4	2.17	.01	.11	2
9046	2	80	10	90	.2	32	23	905	6.45	2	5	ND	4	198	1	2	2	145	4.67	.14	20	12	2.63	97	.01	2	2.42	.01	.01	2
9047	2	92	8	53	.1	81	27	803	4.73	9	5	ND	2	227	1	2	2	106	8.63	.10	10	278	2.55	98	.01	2	1.16	.01	.01	2
9048	1	37	6	53	.1	140	18	700	4.80	6	5	ND	2	219	1	2	2	79	14.46	.01	6	125	3.92	42	.01	2	.19	.01	.02	2
9049	1	92	7	69	.1	298	41	1047	7.10	2	5	ND	2	190	1	2	2	154	4.31	.05	12	280	1.72	48	.01	2	.58	.01	.01	2
9050	1	121	8	45	.3	187	37	667	4.54	3	5	ND	2	250	1	2	2	12	11.48	.08	6	33	1.24	66	.01	2	.18	.01	.07	2

Al Na K

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
9057	5	14	62	11	.2	7	1	20	1.00	3	5	ND	6	3	1	2	2	2	.03	.01	15	29	.01	12	.01	2	.14	.03	.06	2
9058	4	13	90	23	.3	5	1	124	1.36	2	5	ND	10	4	1	2	2	2	.02	.02	16	25	.01	36	.01	2	.17	.01	.11	5
9059	5	3	20	6	.2	4	1	20	.71	2	5	ND	9	3	1	2	2	2	.01	.01	16	47	.01	35	.01	2	.12	.02	.13	2
9060	77	3	31	10	.4	4	1	19	.91	2	5	ND	9	2	1	2	2	2	.01	.01	13	34	.01	12	.01	2	.17	.02	.09	2
9061	3	3	14	5	.1	2	1	7	.57	4	5	ND	6	2	1	2	2	2	.02	.01	13	14	.01	10	.01	2	.22	.03	.12	3
9062	36	5	53	10	.4	4	1	62	1.26	11	5	ND	11	12	1	2	3	2	.02	.02	49	35	.01	30	.01	2	.20	.01	.15	2
9201	1	80	8	106	.1	5	14	904	5.43	2	5	ND	4	239	1	2	2	126	1.99	.16	18	9	1.44	100	.03	4	1.83	.03	.07	2
9202	1	16	17	84	.1	3	7	724	4.31	6	5	ND	6	167	1	2	2	17	3.16	.17	13	7	1.24	45	.01	7	1.45	.01	.06	2
9203	1	18	13	65	.2	3	1	144	1.32	2	5	ND	11	31	1	2	2	6	.28	.04	7	47	.45	27	.05	2	.73	.05	.05	2
9204	1	7	10	52	.1	2	8	503	3.80	2	5	ND	6	112	1	2	2	37	1.22	.16	8	14	1.05	115	.07	2	3.06	.23	.59	2
9205	2	37	11	53	.1	26	20	222	4.59	2	5	ND	3	82	1	2	2	59	1.23	.30	11	29	.83	60	.14	2	1.99	.15	.23	2
9213	38	119	4523	43	23.3	103	30	839	4.36	2	31	ND	2	306	1	2	88	28	13.60	.06	12	102	1.88	44	.03	4	.46	.01	.21	2
9214	9	106	991	57	5.6	122	24	951	3.81	4	5	ND	2	281	1	2	23	36	12.62	.07	8	109	2.49	61	.05	3	.65	.01	.40	2
9215	2	63	38	43	.2	86	24	1079	3.58	3	5	ND	2	359	1	2	3	12	15.06	.08	8	37	2.56	74	.01	2	.19	.01	.11	2
9216	2	102	26	67	.3	45	19	213	5.17	4	5	ND	9	352	1	2	2	100	2.06	.05	10	81	1.46	50	.12	4	4.35	.24	.71	2
9217	1	14	16	14	.1	13	3	1230	1.17	3	11	ND	2	357	1	2	2	13	20.65	.02	2	30	.29	11	.02	2	.59	.04	.06	2
9218	1	34	9	46	.1	18	7	397	2.10	2	5	ND	4	457	1	2	2	34	14.05	.06	6	31	.61	23	.05	2	2.35	.15	.20	2
STD D	3	147	117	571	4.4	5	1	72	.93	21	5	ND	7	9	2	9	5	2	.15	.06	5	10	.03	103	.01	2	.16	.04	.05	12
STD E	4	80	23	153	.5	36	6	300	2.74	3	20	ND	108	16	1	2	2	31	.56	.16	141	9	.57	173	.10	2	.87	.03	.55	2
STD C	21	60	44	133	7.2	68	27	1105	3.94	41	20	7	38	48	17	16	20	59	.44	.14	38	53	.88	173	.07	39	1.72	.05	.10	12

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
301-409 GRANVILLE STREET
VANCOUVER, B.C.

PROJECT: V 180/181
TYPE OF ANALYSIS: ASSAY

CERTIFICATE#: 84504
INVOICE#: 5121
DATE ENTERED: JAN. 16 1985
FILE NAME: MPH84504
PAGE # : 1

PREFIX	SAMPLE NAME	% SiO2	% Al2O3	% Fe2O3	% MgO	% CaO	% Na2O	% K2O	% LOI
A	9063	22.0	0.1	0.8	16.0	22.0	0.1	0.3	38.0
A	9064	72.0	0.1	1.0	5.4	8.5	0.1	0.1	12.5
A	9066	79.0	9.2	4.0	1.3	0.4	0.5	1.9	2.0
A	9079	78.0	11.0	2.3	1.0	1.6	3.5	1.2	2.0
A	9083	49.0	10.0	10.4	7.2	9.4	2.4	0.2	11.0

RECEIVED JAN 17 1985

CERTIFIED BY : F. Rossbacher

LEGEND

GEOLOGY (modified from Okulitch, 1979--
Okulitch's symbols in brackets)

EARLY CRETACEOUS

9 Scotch Creek Pluton
quartz monzonite (EKgd)

UPPER TRIASSIC AND LOWER JURASSIC

8 Nicola Group
andesite and basalt flow rocks, porphyritic augite andesite, breccia, tuff, agglomerate, greenstone, chloritic phyllite; minor argillite, limestone, sericitic schist (RJNv)

UPPER TRIASSIC

7 Sicamous Formation
sericitic, graphitic, and argillaceous limestone (uRSc)

CAMBRIAN AND ORDOVICIAN

6 Eagle Bay Formation
Quartz–feldspar augen gneiss: derived from acidic intrusive rock (€OEBvg)

5 Argillite (€OEBp)
5a Conglomerate and sandstone (€OEBcg)

4 Quartzite (€OEBq)
4a Quartzite, chert (€OEBq?)

3 Tshinakin Limestone Member
silicified massive limestone (€OEBT)

2 Chlorite phyllite, abundant CO_3 veining (€OEBv)
2a Metamorphosed mafic volcanic pyroclastics and flows (€OEBv)

1 Metamorphosed acid volcanics–rhyolite breccia, sericite–chlorite schist, quartz–chlorite–sericite schist, sericite phyllite (€OEBvg)

SYMBOLS

- Geological contact (approximate)
- Fault (approximate, assumed)
- 30° 30° Foliation, bedding
- 9001 Outcrop and sample location
- Claim line
- Road
- Actual position of claim post

GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,381

VANWIN RESOURCE CORPORATION

PROPERTY GEOLOGY, PLAN AND ROCK SAMPLING

SHUSWAP PROPERTY

KAMLOOPS MINING DIVISION

Project No:	V 180	By:	T. N.
Scale:	1 : 20 000	Drawn:	J. S.
Drawing No:	4	Date:	MARCH, 1985.

MPH Consulting Limited