DRILL REPORT
GEORGIA RIVER PROJECT
STEWART, BRITISH COLUMBIA
SKEENA, M.D.
NTS 103-16W

BY

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TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

SUMMARY

The Georgia River property is located approximately 13 kilometers south of Stewart, B.C. on the east side of the Portland Canal. The Project is located at the south end of the "Golden Triangle" located in the Stewart area of B.C. This "Golden Triangle" area hosts the Iskut River gold camp to the west, the Unuk River gold camp (Eskay Creek) to the east and the Sulphurets and Stewart gold camps to the south. The property covers a large roof pendant of Hazelton Group volcanics and sediments within the Coast Range Batholith near its eastern edge.

Extensive shearing has resulted in two patterns on the property; one in a northwest direction contains wide quartz veins with sparse pyrite, pyrrhotite, sphalerite and galena with a second and later cross fracturing and faulting in a northerly direction. Narrow quartz veins with pyrite, pyrrhotite, galena, sphalerite, chalcopyrite, arsenopyrite and electrum occur along the northerly fault zones. Marked gold enrichment with an increase in quartz veining occur along the northerly shears in areas associated with the intersection with earlier northwest veins.

The Southwest Vein has received most of the exploration work in the past 10 years. Prior to 1989 a total of 50 drill holes tested the above vein. The vein has been exposed by trenching and drilling for a strike length of 595 m over a vertical distance of 258 m. It has been explored by two adits; the No. 1 level has drifted 47.8 m along the vein while the No. 2 has drifted for 155.5 m along the vein. No. 3 level failed to intersect the Southwest Vein and was in all likelihood not driven far enough.

During 1989, 8 holes totalling 1528.4 m were drilled to further test the continuity and gold tenor of the Southwest Vein. Out of the 8 holes drilled, two intersected at the south edge of the delineated gold bearing zone (89-07, 08) while DDH 89-03 was lost in a fault zone before penetrating the Southwest Vein. DDH 89-02 steepened up and was halted short of intersecting the target area. A summary of the significant drill results are as follows:

	Meters	Interval (m)	Gold opt
DDH 1	71.6 - 73.5	1.9	0.60
DDH 3	78.8 - 79.6	0.8	.101
	165.5 - 165.9	0.4	.211
DDH 4	73.1 - 74.8	1.7	1.142
DDH 5	212.9 - 214	1.06	1.879
	228.5 - 230.2	1.7	.348

Based on the 1979 - 1989 drilling as well as underground and surface trenching a total of 304,682 tons of a grade of 0.806 opt Au and 0.61 opt Ag is calculated in the drill indicated (116,600 tons) drill inferred (109,366.6 tons) and geologically inferred (78,716 tons) categories. These reserves are over a mining width of at least 1.22 m and in places extend to 3 m. These reserves do not include the reserves in the Bullion Vein which totals 6195.2 tons at .122 opt Au and .30 opt Ag.

To date, a total of 18 vein systems have been discovered of which 7 are wide NW trending quartz veins and 8 are northerly trending veins. Out of the identified eight north trending veins, only the Southwest has been explored to any great extent. Drifting has occurred on the Bullion Vein on both the No. 2 and No. 3 level.

It is recommended that a $1,000,000 2 phase project further explore the project.

The exploration program would include an initial surface program for $400,000 as follows:

1. Silt geochemistry of streams in the southwest portion of the property area, particularly areas covered by overburden and below treeline.

2. Opening the No. 3 portal with mapping and sampling of any vein structure.

3. Opening a 90 foot adit along the Southwest Vein between the No. 3 and No. 1 levels. Sampling and mapping would be conducted along the adit.

4. Prospecting and sampling on the southwest and southern portion of the property.

5. Trenching and sampling along the Southwest Vein above the No. 3 portal.

6. Trenching and sampling along an unnamed vein (elevation 2700 feet).

7. Drilling of short holes on the following veins:
   a) 10 holes totalling 160 m on the East Mark Vein (30 m east of Bullion Vein)
   b) 10 holes totalling 160 m on Southwest Vein above the No. 3 portal.
   c) 5 holes totalling 100 m on Cobbett Vein (30 m east of Southwest Vein)
   d) 10 holes totalling 160 m on Bullion Vein.
   e) 10 holes totalling 160 m in any new areas.

A second phase, $600,000 drill program, is recommended with locations of holes based on the above results.

INTRODUCTION

Auriferous mineralization is associated with sulphide bearing quartz veins emplaced along northerly trending shear zones. An exploration program consisting of 1528.4 m of diamond drilling in 8 holes further tested a known gold bearing zone along the Southwest Vein.

Drilling was conducted utilizing a JK Smit 300 drill contracted from D.W. Coates Enterprises Ltd.

Drill supervision and camp facilities were provided by E.R. Kruchkowski Consulting personnel.

Whole core analysis for gold and silver were conducted on all quartz vein material. Analyses were performed by Echo-Tech Laboratories Ltd. of Kamloops, B.C.

Location and Access

The Georgia River project area is located in the recently revitalized Stewart gold-silver mining camp along the northwest coast of British Columbia. The property is located approximately 13 air-kilometers south of Stewart, within the Skeena Mining Division (NTS 103/16W). The property is centered by latitude 55° 48'N and longitude 103° 03'W. (Figure 1)

The contiguous Georgia River claim block encompasses a tributary of Georgia River, Bullion Creek and the Colling Range on the east side of the Portland Canal (Figure 2). Access is gained via Stewart, B.C. utilizing Bell 206 helicopters based there year round. It is noted that an old wagon trail approximately 13 kilometers in length, built in 1928, accessed the property from the south, leading from the Portland Canal, upstream along Georgia River, to the work site. This wagon trail has since been eroded and grown over by thick tag alder. The Sun claim group is located on the northwest portion of the property bordering on the Portland Canal where water access may be utilized.

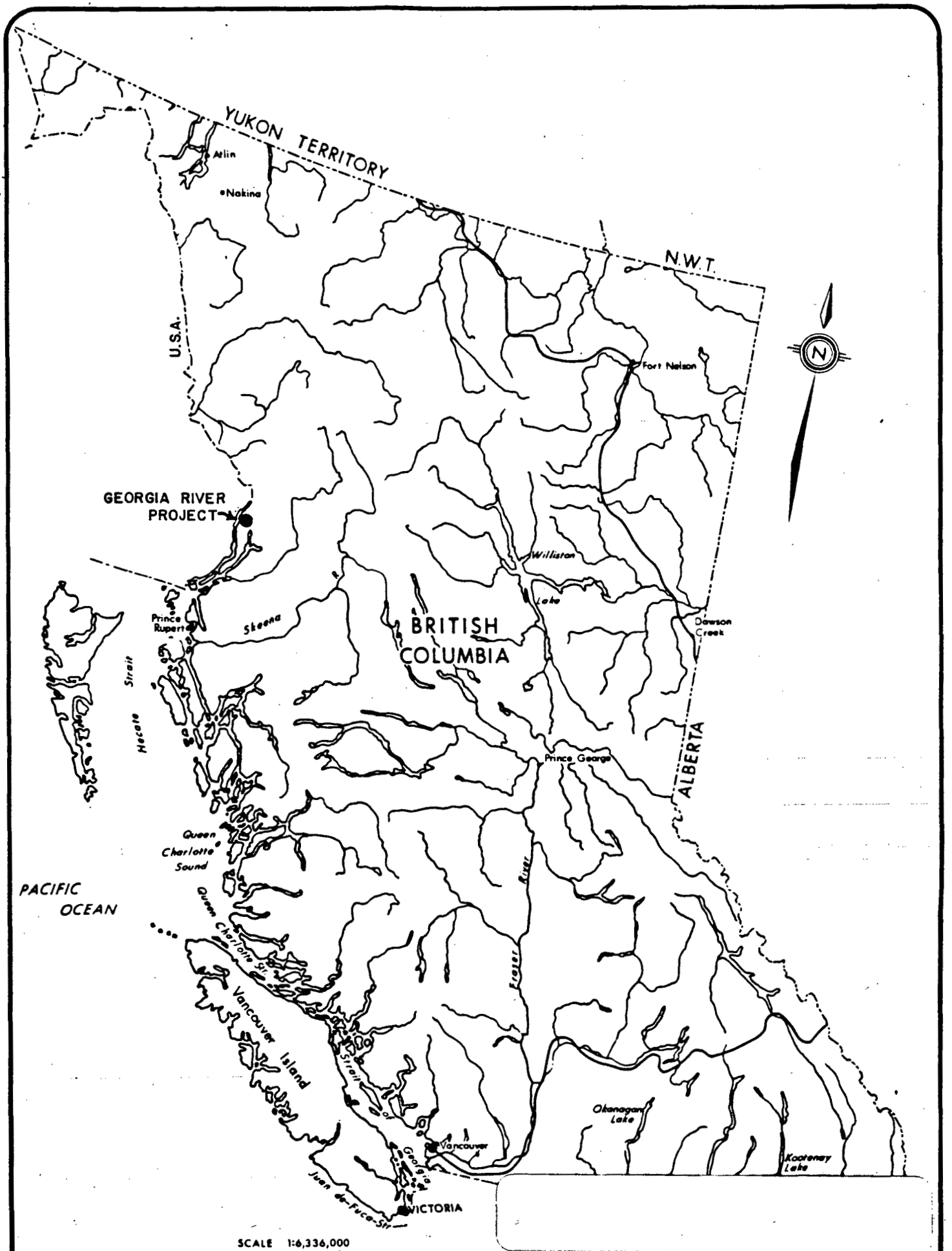


Fig 1

GEORGIA RIVER PROJECT
BRITISH COLUMIA

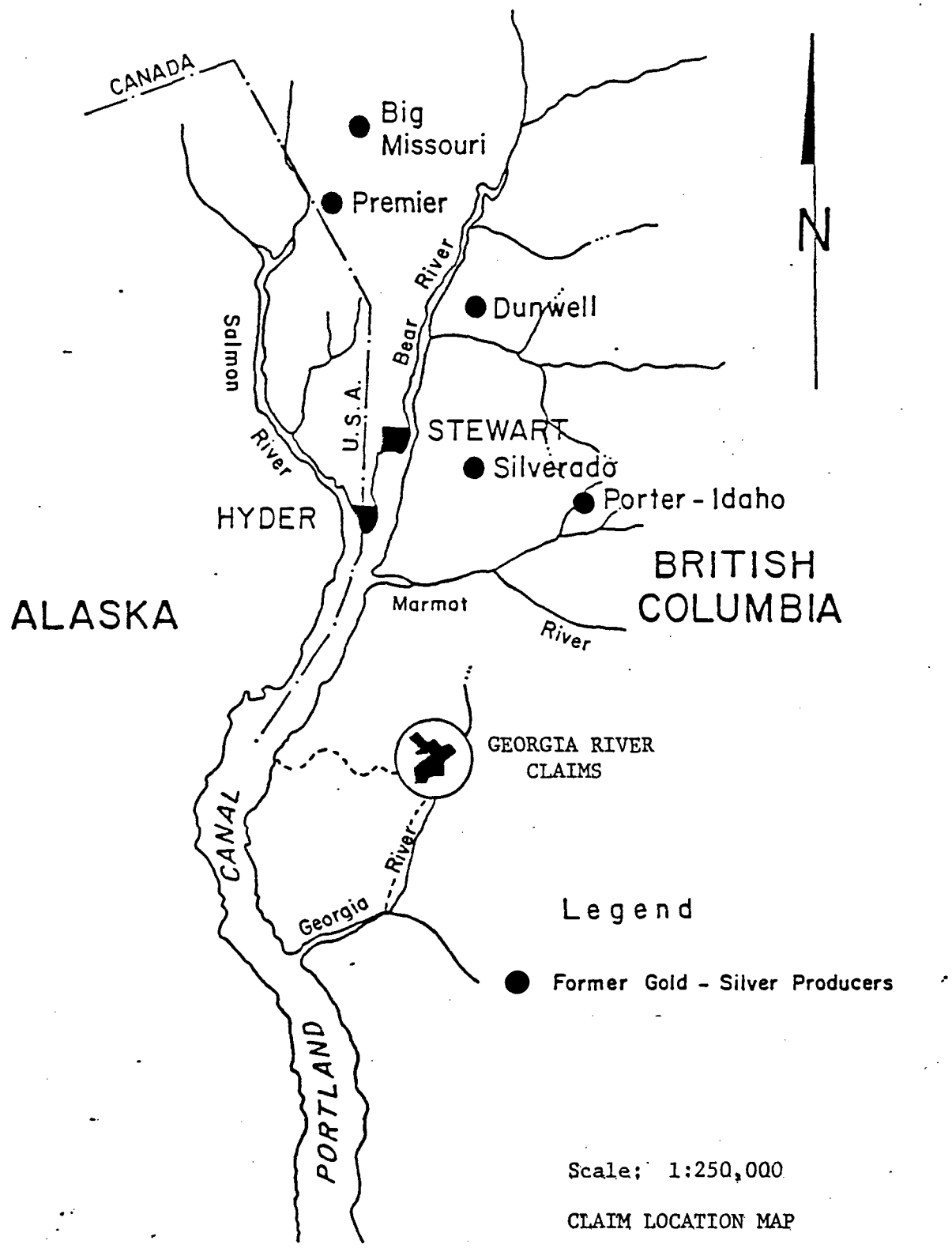

CANADA
Big Missouri
Premier
N
Bear River
Dunwell
Salmon River
U.S.A.
STEWART
Silverado
Porter - Idaho
HYDER
BRITISH COLUMBIA
ALASKA
Marmot River
GEORGIA RIVER CLAIMS
CANAL
Georgia River
Georgia
PORTLAND
Legend
Former Gold - Silver Producers
Scale: 1:250,000
CLAIM LOCATION MAP

FIGURE 2

Physiography and Topography

The topography of the area incorporates the characteristic ruggedness of the Coast Range Mountains of British Columbia, of which the Colling Range is a local segment. The east wall of Portland Canal rises abruptly from sea level to more than 1830 m on Colling Range. The deep valley of Georgia River is bordered by steep and extensively bluffed slopes, generally heavily timbered with mainly spruce, hemlock, and cedar and thickly covered with underbrush. Timber-line is at about 976 m altitude, and above this grassy slopes of more subdued inclination extend to the bluffed and domed ridges of the range-crest at between 1525 and 1830 m elevation. Along the domed ridges, small tarns, less than 100 m in length occupy depressions.

Permanent snow occupies most depressions and gullies with maximum rock exposure in early October.

Thick glacial morraine is primarily restricted to lower elevation and valley floors with good rock exposure along ridge tops and creek beds.

Property Ownership

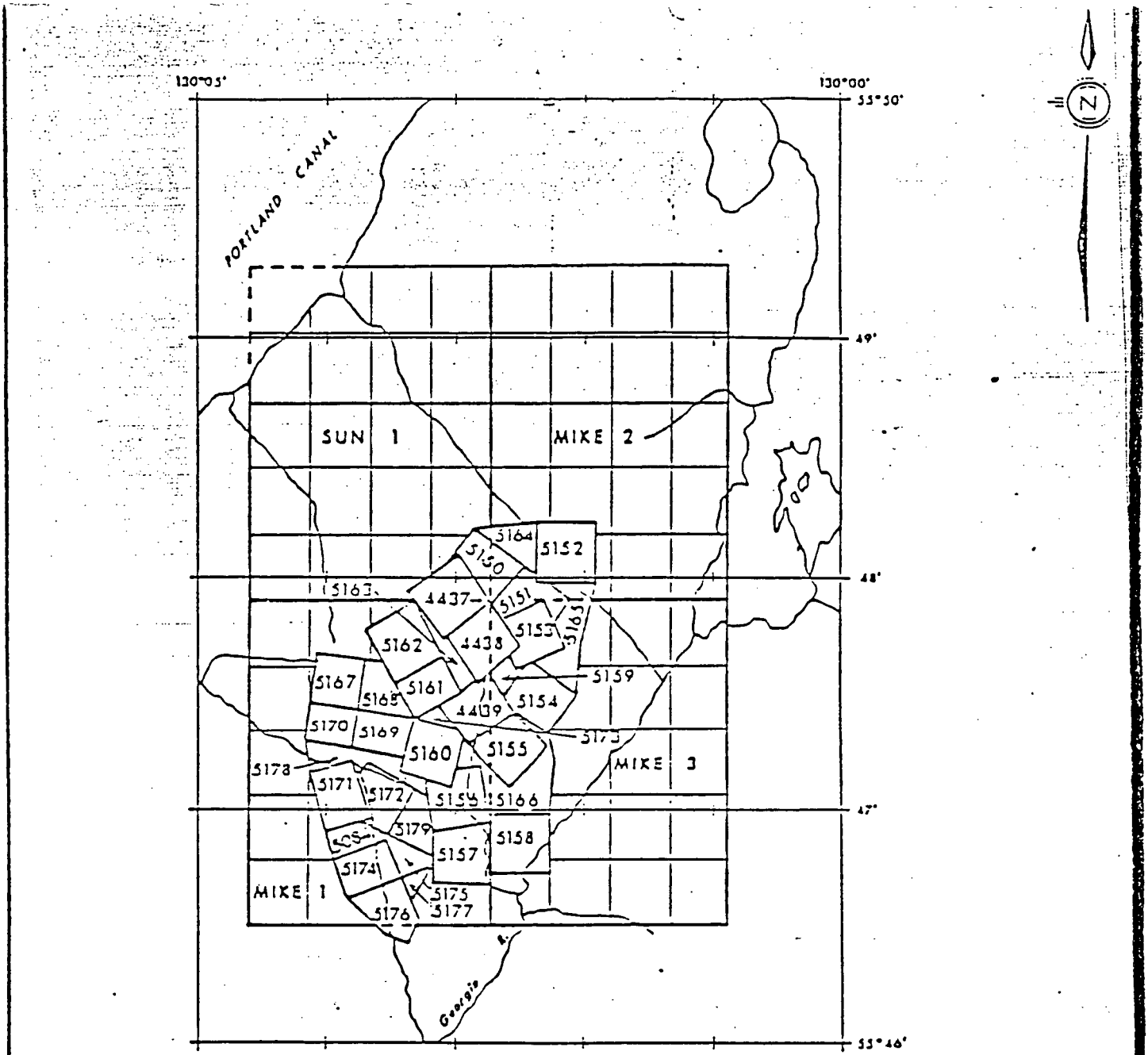
The property consists of 34 crown granted claim units and four 20-unit modified grid staked claims owned by Samson Gold Ltd. (Figure 3)

The claim names with appropriate data is listed in the following table:

TABLE 1

PROPERTY DESCRIPTION

Lot No.	Name	Record No.	Acres	Expiry Date
L5150	Gem	Crown Grant	38.46	August 2, 1990
L5151	Gem #1	Crown Grant	23.19	August 2, 1990
L5165	Gem Fraction	1437(8)	48.80	August 2, 1990
L5152	Goldfields	1434(8)	52.25	August 2, 1990
L5153	Goldfields #1	1445(8)	43.68	August 2, 1990
L5154	Goldfields #2	1429(8)	44.25	August 2, 1990
L5155	Goldfields #3	Crown Grant	47.35	August 2, 1990
L5156	Goldfields #4	1444(8)	44.90	August 2, 1990
L5157	Goldfields #5	1435(8)	48.53	August 2, 1990
L5158	Goldfields #6	1436(8)	51.15	August 2, 1990



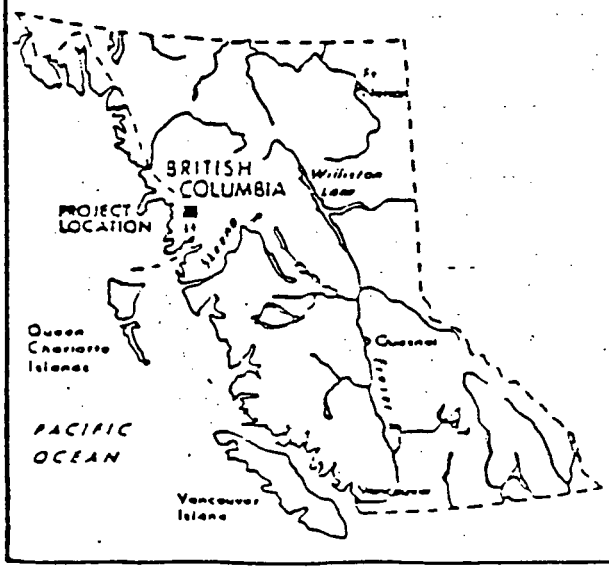


Figure 3

MINERAL DISPOSITION MAP OF PROJECT GEORGIA RIVER GOLD, B.C. (CLAIMS SHOWN ON MAP)
NTS 103-O

SCALE 1:50,000

1 0 1 2 Km

Lot No.	Name	Record No.	Acres	Expiry Date
L1564	Top Fraction	Crown Grant	26.46	August 2, 1990
L5166	Gold Fraction	Crown Grant	46.46	August 2, 1990
L4437	Georgia	Crown Grant	49.39	August 2, 1990
L4438	Georgia #1	Crown Grant	46.71	August 2, 1990
L4439	Georgia #2	Crown Grant	48.58	August 2, 1990
	Sun #1	1622(8)	1,235.60	August 15, 1990
	Mike #1	1623(8)	1,235.60	August 15, 1990
	Mike #2	1721(9)	1,235.60	September 18, 1990
	Mike #3	1722(9)	1,235.60	September 18, 1990
L5159	Jitney	1429(8)	11.68	August 2, 1990
L5084	September Fr.	1430(8)	19.85	August 2, 1990
L5163	Danny Fraction	1431(8)	7.83	August 2, 1990
L5178	June Fraction	1443(8)	41.00	August 2, 1990
L5167	June	1438(8)	41.43	August 2, 1990
L5168	June #1	1439(8)	25.80	August 2, 1990
L5169	June #2	1440(8)	35.58	August 2, 1990
L5170	June #3	1441(8)	39.03	August 2, 1990
L5171	June #4	1442(8)	52.25	August 2, 1990
L5172	June #5	1447(8)	34.84	August 2, 1990
L5179	June #6	1448(8)	28.93	August 2, 1990
L5174	June #7	1430(8)	37.78	August 2, 1990
L5175	June #8	1432(8)	12.53	August 2, 1990
L5176	June #9	1432(8)	39.08	August 2, 1990
L5177	June #10	1432(8)	1.85	August 2, 1990
L5173	Sovereign Fr.	1431(8)	8.50	August 2, 1990
L5160	Sovereign	1446(8)	51.60	August 2, 1990
L5161	Sovereign #1	1431(8)	36.28	August 2, 1990
L5162	Sovereign #2	1433(8)	51.43	August 2, 1990

It is anticipated that the filing of the 1989 drill program will make the claims good until 1993.

Personnel and Operations

E.R. Kruchkowski Consulting Ltd. personnel set-up and maintained a drill camp at the project area as well as provided drill supervision during the August - September program.

Personnel involved included the following:

E.R. Kruchkowski	Project Supervisor	4 days
K. Konkin	Project Geologist	28 days
C. Barr	Cook	21 days
D. Lund	Assistant	21 days
T. Oberg	Assistant	9 days
B. Johanson	Assistant	9 days

The diamond drilling equipment and drill personnel were supplied by D.W. Coates Enterprises Ltd. A JK Smit 300 diamond drill rig provided a BDBGM size drill core. Helicopter service was supplied by Vancouver Island Helicopter's Bell 206 and Bell 205 aircraft.

All drill core was logged on site and all unsampled core is stored on the property. The whole sample interval was collected as a sample (core was unsplit) and sent to Echo-Tech Laboratories of Kamloops, B.C.

All materials and supplies were purchased in Stewart, B.C. and were flown to the camp site. The tent camps were supplied and maintained by E.R. Kruchkowski Consulting Ltd. personnel.

Previous Work

Much of the information on the work history of the property was obtained from B.C. minister of Mines reports dated 1914 - 1936. Discovery of gold in the Georgia River area dates back to 1910. Prospectors Dan Hume and Jake Jarvis are credited with the find and subsequently located the Georgia River claims.

In 1912, exploration was initiated on the auriferous veins. Although gold and silver values were generally weak along the surface, values of six to eight ounces in gold and 15 to 25 ounces in silver are said to have been reported while sinking a small shaft 17 feet deep.

Driving of a tunnel along the Bullion Vein commenced in 1913. It was designed to intersect below the shaft started in 1912. By the end of the 1914 season, the tunnel was advanced to a distance of 55 feet.

In 1915, the Bullion tunnel was driven to the 245 foot mark and significant surface development included stripping and trenching of the Main vein. A considerable portion of the vein was reported to carry good gold values.

The Bullion tunnel was advanced to 362 feet at the end of 1916. During this year, a winze was diven to a depth of 35 feet. Again good gold values were reported but vein widths varied from 10 inches to 2 feet 6 inches.

In 1917, a construction of a pack horse trail commenced but constant repairs and maintenance hampered completion of the trail until the Department of Mines helped with the construction. The trail was completed by 1922. By the end of 1917 the Bullion tunnel was advanced to 390 feet, and a raise was pushed to the surface for 35 feet from which bonanza ore was taken.

In 1918, the winze was mined for another seven feet extending it to a total of 42 feet down and the Bullion tunnel was extended for another 20 feet when a crosscut was driven west for 35 feet. The bottom of the winze yielded a two foot wide quartz vein with massive pyrrhotite carrying 2.28 oz. per ton gold and 3.74 oz. per ton silver.

Activity ceased from 1918 until 1924 when Georgia Gold Mines Ltd. was incorporated. A large number of adjoining claims were acquired and in 1928 the company undertook development work. In 1928, Georgia River Gold Mines Ltd. undertook wagon trail construction in order to construct a permanent camp to the working site. As soon as the trail was complete, lumber was rushed in for camp construction and supplies were taken in for the winter's operation. Very little work was done on the veins, the focus of the work effort was on the road and camp.

By the end of 1929, compressors and other mine equipment were installed. Bunk houses, residences, assay offices and warehouses were erected for year round occupation.

The majority of underground work was completed between 1928 and 1934. From 1928 to 1929, the No. 1 tunnel, No. 2 tunnel, No. 3 tunnel and Little tunnel were developed along the Southwest Vein system. During 1932, a crosscut from the Bullion Vein was extended to intersect the Southwest Vein. Once on the Southwest Vein, drifting commenced for 180 and 130 feet north and south respectively. In 1933, continued drifting along the Southwest Vein and 3,050 feet of surface diamond drilling in nine holes was completed.

In 1933, reorganization occurred when Helena Gold Mines was formed and underground exploration continued.

By the end of 1934, about 4000 feet of underground work consisting of drifting and crosscutting, with raises of 150 feet between No. 3 and No. 2 (Bullion) adits and 25 feet raise between No. 2 and the surface had been carried out in five adits.

In 1935, Gold Leasing Ltd. leased the property and during 1936 a mill and mining facilities were erected. By 1937, 500 tons of vein material yielded 329 ounces of gold, 410 ounces of silver and 7,301 pounds of lead for an average grade of 0.658 opt. Au, 0.82 opt Ag and 0.73% Pb.

There has been no significant work reported from 1938 to 1979. E & B Explorations Ltd., in 1979, completed a diamond drill program totalling 346.9 meters drilling in six holes. Two holes tested the Southwest and Main Vein intersections, one tested the Southwest and Georgia Vein intersection and three holes tested the Southwest Vein and the north faulted extension of the Georgia Vein. Values of .96 opt Au and .96 opt. Ag over 1.45 meters was obtained from drill hole GGP-3, intersecting the Southwest Vein.

Based on favourable results obtained from the 1979 diamond drill program, E & B Explorations Ltd. continued exploration on the Georgia River property in 1980. The project included: gridding, geological mapping, prospecting, trenching, underground mapping and sampling, diamond drilling and claim staking. The Southwest zone was tested by 15 holes

totalling 904.24 m of drilling and confirmed the down dip extension of the surface mineralization. Significant intersections were encountered in nine holes and varied from 0.438 opt Au and .54 opt Ag over .35 meters to 2.05 opt Au and 1.28 opt Ag over 2.44 meters. Based on the work completed in 1980, measured ore reserves were calculated at 22,206 tons of 0.43 opt Au and 0.53 opt Ag and inferred reserves were calculated at 22,815 tons of .46 opt Au and 0.61 opt Ag.

In 1981, E & B Explorations Ltd. conducted a 14 diamond drill hole program based on the previous year's results. This program yielded measured, indicated and inferred reserves of 120,037 tons with an average grade of 0.55 opt Au and 0.68 opt Ag.

In 1988, Avatar Resources Ltd. drilled 15 holes to further test the Southwest Vein. This 1988 drilling totalled 2628.77 metres and extended the mineralization to a depth of 257.6 metres. Assay values in the vein structure ranged up to a high of 5.202 opt Au. Based on the 1979 - 1981 work and 1988 drilling, a total of 321,067 tons at a grade of .839 opt Au and .656 opt Ag was calculated in the drill indicated (108,462 tons), drill inferred (113,916 tons) and geologically inferred (78,716 tons) categories.

GEOLOGICAL SURVEYS

Regional Geology

The project area lies adjacent to and includes moderately folded volcanic and sedimentary rocks intruded by a succession of plutons of the Coast Crystalline Belt.

Within the Stewart area, Lower Jurassic Hazelton Group rocks, which include an extensive sequence of volcanic and sedimentary rocks, are unconformably overlain by Middle and Upper Jurassic Bowser rocks which are comprised of a series of non-marine and marine sediments with minor volcanics.

At the base of the Hazelton Group is the lower Jurassic Marine (submergent) and non-marine (emergent) volcaniclastic Unuk River Formation. This is overlain at steep discordant angles by a second, lithologically similar, middle Lower Jurassic volcanic cycle (Betty Creek Formation), in turn overlain by an upper Lower Jurassic dacitic lapilli tuff horizon (Mt. Dilworth Formation). Middle Jurassic non-marine sediments with minor volcanics of the Salmon River Formation unconformably overlie the above sequence.

The oldest rocks in the area belong to the Lower Jurassic Unuk River Formation which forms a north-northwesterly trending belt extending from Alice Arm to the Iskut River. It consists of green, red and purple volcanic breccia, volcanic conglomerate, sandstone and siltstone with minor crystal and lithic tuff, limestone, chert and coal. Also included in the sequence are pillow lavas and volcanic flows.

In the property area the Unuk River Formation is unconformably overlain by middle Lower Jurassic rocks from the Betty Creek Formation. The Betty Creek Formation is another cycle of trough-filling sub-marine pillow lavas, broken pillow breccias, andesitic and basaltic flows, green, red, purple and black volcanic breccia, with self erosional

conglomerate, sandstone and siltstone, and minor crystal and lithic tuffs, chert, limestone and lava.

The upper Lower Jurassic Mt. Dilworth Formation consists of a thin sequence varying from black carbonous tuffs to siliceous massive airfall lapilli tuffs and felsic ash flows. Minor interbedded sediments and limestone are present in the sequence. Locally pyritic varieties form strong gossans.

The Middle Jurassic Salmon River Formation is a late to post volcanic episode of banded, predominately dark coloured, siltstone, greywacke, sandstone, intercalated calcarenite, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and minor flows.

According to E.W. Grove, the majority of the rocks from the Hazelton Group were derived from the erosion of andesitic volcanoes subsequently deposited as overlapping lenticular beds varying laterally in grain size from breccia to siltstone.

The Bowser formation includes volcanic sandstones, tuffs, siltstones and greywackes occurring as isolated structural remnants.

Granodiorite is the dominant rock of the Coast Crystalline Batholith. Stocks and plutons generally varying from quartz monzonite, quartz diorite to granites are associated intrusive phases.

Numerous dykes swarms varying in composition from granite, quartz monzonite, granodiorite and quartz diorite are located in the Stewart area.

Structurally, the Stewart area lies on the west flank of the American Creek Anticline, a northerly trending, slightly arcuate regional structure truncated by intrusions of the Coast Crystalline Belt.

Folds in the Stewart area are locally disrupted by; small east-overthrusts on strikes parallel to the major fold axis, cross-axis steep wrench faults

which locally turn beds, selective tectonization of tuff units, and major northwest faults which turn beds.

Regional metamorphism includes relatively low amphibolite facies minerals.

Local Geology

The section on property geology is derived from the 1979 - 1981 programs by E & B Explorations.

The rocks underlying the area consist predominately of an altered andesitic crystalline tuff, tuffaceous sediments, weakly altered andesites and basalts with minor argillitic siltstone. They are foliated into a roof pendant spanning approximately 20 km east-west and 28 km north-south. These rocks belong to the Unuk River Formation of Lower Jurassic ages, and regionally trend 135° between 50 - 75° to the southwest.

The predominately volcanic units have been locally subjected to strong metasomatic alteration and shearing incurred during intrusion of various granodioritic and porphyritic granodiorite plugs and dykes of the Cenozoic Coast Plutonic Complex. Significant silicification of the various crystal and minor lithic andesitic tuffs is evident along contacts with the granitic structures. The alteration appears to be pervasive as epidote and calcite is often associated with strong silicification and quartz injection throughout the metamorphosed host.

Northwest and north trending shear patterns exist on the property. Along these shears and their intersection points are the zones of primary auriferous, sulphide-bearing quartz vein enrichment.

The shear zones appear to be directly related to the disruptive intrusive events that formed the roof pendant. Along these shear zones fissure filling, metaliferous hydrothermal fluids are emplaced associated with late stage plutonism.

The wall rocks vary from a relatively unaltered, medium green-brown, massive andesite-basalt to an altered, pale-dark, mottled, grey-green-maroon andesitic crystalline tuff or altered andesite tuff. This unit is usually very well silicified and exhibits strong epidote and calcite alteration association with silicification and quartz intrusion. Metasomatic alteration has also silicified the feldspar phenocrysts commonly found in the altered andesitic crystal tuff. Minor black argillaceous siltstone is also encountered and is generally massive and only weakly altered.

Narrow felsic dykes encountered are aphanitic equivalents to the coarse grained granodiorite and porphyritic granodiorites intruding the volcanic and sedimentary hosts. The granodioritic plugs are generally equigranular and coarse grained with minor porphyritic phases. In the porphyritic phases, feldspar phenocrysts are generally 2-5 mm long and are abundant.

Mineralization

Three stages of faulting and quartz infusion and intrusion of granodiorite dykes and/or sills appear to be related to the mineralizing events at the Georgia River property.

The three stages of faulting are as follows:

1. Faulting and fracturing in a northwest direction with quartz emplacement in the shears and subsequent wall rock silicification. This northwest direction is very prevalent in the Stewart area and many of the known mineral deposits lie along northwest faults.

This early phase of quartz veining has resulted in vein systems up to 12 m wide particularly along the Main Vein. In general most of the veins produced during this stage are from 1-2 m in width. These early quartz veins carry less than 5% pyrite and pyrrhotite and occasionally sphalerite with rare galena. The sulphides occur as blebs, disseminations and small discontinuous stringers. The quartz is generally white with an unbrecciated appearance.

2. The second stage of faulting occurred in a northerly direction and resulted in the development of chlorite schist and gouge. This faulting has resulted in lateral movement up to 20 m in length. Narrow quartz veins and stringers carrying pyrite, pyrrhotite, sphalerite and galena as blebs and dissemination were emplaced along this faulting. Subsequent fracturing of these veins and stringers was followed by the disposition of the main quartz-gold-silver-polymetallic minerals. This has produced vein material along the Southwest Vein containing both unbrecciated sulphide bearing quartz with low gold and base metal values and brecciated sulphide bearing quartz with high gold and base metal values.

The main quartz-gold-silver-polymetallic phase has produced quartz material having seams of massive pyrite, pyrrhotite, sphalerite and galena with minor chalcopyrite and arsenopyrite. The rock generally has a brecciated appearance with fractures filled with the above mentioned mineral assemblage. High grade gold intersections carry from 5 to 30 percent sulphides with the average around 10 percent. Gold and silver minerals are usually not obvious and are probably intimately mixed with the sulphides. Pale yellow electrum has been observed in both drill core and outcrop and consists of fine flakes occurring as clusters.

The sulphides, pyrite, and pyrrhotite may form 50 percent of the massive sections with a ratio of 1:1 sphalerite to galena generally forming the other 50 percent. Mariposite and/or fuschite are commonly noted within the chlorite schists.

The Au/Ag ratio is extremely variable over individual assays but the overall ratio appears to be 1:1.

3. Subsequent to or contemporaneous with the formation of the northerly trending zones, granodiorite dykes and/or sills were intruded into the vein areas. These dykes have cut off the northerly trending veins and have been responsible for the formation of several different mineralized zones. The first type of zone consists of massive sphalerite-pyrite and/or pyrrhotite veins in sericite schist generally along or near the intrusive

contact. These veins may be in excess of 1 m in width but generally are less than 20 cm in width. Low gold and silver values are associated with these stringers generally from 30 up to 100 m in length. Drilling has encountered numerous of these stringers in the hanging wall zone of the Southwest Vein. The second type of mineralization consists of quartz-calcite stringers and veins carrying pyrite-pyrrhotite with minor sphalerite. Epidote is a common constituent of these veins which occur in sharm mineral assemblages. These veins carry low gold and silver values.

4. The final stage of development is post mineralizing fault movement along the vein system and deposition of quartz-calcite veinlets. Occasional intersections from the Southwest Vein exhibit mineralized quartz veinlets in chlorite schist clasts within a calcite matrix. This stage produced narrow drusy quartz filled fractures within observed intrusive rocks. Calcite is the last gangue mineral to be deposited and is commonly found filling fractures in the wall rock zones.

Several drill holes have intersected fault gouge with mineralized brecciated quartz fragments. It would appear that DDH 89-03 has intersected a zone of extreme faulting. Although this late stage faulting has caused some disruption of the mineral zones, little,if any, lateral movement is indicated. It may well be that some vertical displacement has occurred.

DIAMOND DRILLING

A total of 1528.4 metres (5013 feet) of BDB size diamond drill core was cut from 8 drill holes using a modified JKS-300 diamond drill rig supplied by D.W. Coates Enterprises Ltd. Drill core recovery was excellent, in excess of 95% except for 89-03 which was abandoned. All the unsampled core is stored on the property. Figure 4 illustrates the 1988 diamond drill hole locations with respect to previous diamond drilling and Table 2 summarizes the diamond drill hole data.

TABLE 2

1989 DIAMOND DRILL DATA

DDH	Azimuth	Dip	Depth(m)	Drill Pad #	Panel #
89-01	107	-49	76.5	I	1
89-02	107	-67	154.9	I	1
89-03	124	-68	169.0	I	2
89-04	112	-45	77.1	II	3
89-05	114	-68	231.4	III	4
89-06	85	-65	260.1	III	5
89-07	141	-68	286.0	III	6
89-08	146	-69	273.8	III	7

Table 3 summarizes the economically significant (greater than 2 g/tonne) gold and associated silver values obtained from the 1989 diamond drill program.

TABLE 3

ECONOMICALLY SIGNIFICANT ASSAY DATA
1989 DIAMOND DRILL HOLE PROGRAM

	Meters	Interval (m)	Gold opt
DDH 1	71.6 - 73.5	1.9	0.60
DDH 3	78.8 - 79.6	0.8	.101
	165.5 - 165.9	0.4	.211
DDH 4	73.1 - 74.8	1.7	1.142
DDH 5	212.9 - 214	1.06	1.879
	228.5 - 230.2	1.7	.348

The appropriate diamond drill sections are plotted with geology and assay data in Figures 5 to 11 located in the back pocket of this report. The drill holes were designed to intersect the Southwest Vein system at depth and to fill-in zones previously drilled in the Southwest Vein.

Two panels were drilled from drill pad site I, including DDH 89-01 and DDH 89-02 along 107° azimuth and DDH 89-03 was drilled along a 124° azimuth.

DDH 89-01 intersected the Southwest Vein from 71 - 74.1 m consisting of chlorite schist and quartz. Two quartz veins at 71.6 - 72 and 72.9 - 73.4 m contained 2-3% disseminated pyrrhotite, 1% disseminated galena, 1-2% disseminated pyrite and trace sphalerite. These quartz veins yielded 20.56 g/T Au (.6 opt) and 14.7 g/T Ag (0.43 opt). DDH 89-02 drilled along the same azimuth but at a -67° dip appeared to steepen (-71° acid test at 154.9 m) and was stopped short of the anticipated target.

DDH 89-03 encountered the Southwest Vein at 164.9m. From 165.5 - 165.9 the hole intersected a quartz vein with 1-2% disseminated pyrite and trace galena. The section from 165.9 - 167.1 had a recovery of only 10% of the core which consisted of ground up chlorite schist. The section from 167.1 - 168.6 had no recovery and the hole was abandoned after several attempts to drill through the caved section neearly resulted in stuck rods. Assays from 165.5 - 165.9 yielded 7.25 g/T Au (.211 opt) and 5.1 g/T Ag (0.15 opt) while the section from 165.9 - 167.1 yielded 2.64 g/T (.077 opt) Au and 1.4 g/T Ag (.04 opt). It is speculated that coring of the whole vein system would have shown higher gold values.

DDH 89-04 was drilled south of panel I at azimuth 112° and at -45° dip and intersected the vein near DDH GM-20, one of the best intersections with 2.05 opt Au across 2.44 m. The hole intersected the Southwest Vein at 72.6 - 75.5 m with a quartz vein 73.4 - 74.8 m in chloritic sericitic schist. The quartz contained 3-5% disseminated and veinlet pyrite and pyrrhotite with 2-3% disseminated coarse grained blebs of arsenopyrite and 1-2% chalcopyrite and 1-2% disseminated and very fine veinlet galena and sphalerite.

The section at 74.2 - 74.4 contains abundant fine grained visible gold and one flake in the middle of a galena grain. The assay section certainly did not reflect the presence of the native gold but still showed high values of 39.15 g/T gold (1.142 opt) and 15.7 g/T silver (0.46 opt) over 1.7 m.

DDH's 89-05-08 were drilled from one set up south of DDH's 89-01-04. DDH 89-05 was drilled at azimuth 114^{o} at -68^{o} dip. The hole intersected the Southwest Vein at 212.3 to 214.6 m and 228 to 230.2 m. At 212.9 - 214, a quartz vein is present within leached silicified chloritic schist. This vein contains 3-5% disseminated and veinlet galena, 2-3% disseminated blebs of sphalerite, 3-5% blebs of pyrrhotite, 2-3% disseminated pyrite, 1-2% disseminated chalcopyrite and flakes of visible gold. A second quartz vein is present at 228.5 - 230.2 m containing 3-5% pyrrhotite, 2-3% pyrite, 2-3% galena, 1-2% sphalerite and trace visible gold. The first quartz vein carried 64.43 g/T gold (1.879 opt) and 52.4 g/T silver (1.53 opt) over 1.06 m. The second intersection consisted of 11.93 g/T gold (.348 opt) and 19.1 g/T (.56 opt) silver over 1.7 m.

DDH 89-06 was drilled at 85^{o} azimuth and -65^{o} dip. The hole intersected a narrow quartz and silicified zone at 214.3 - 214.9 m carrying fine disseminated pyrite. Low gold and silver values were intersected. It may well be that DDH 89-06 was not drilled far enough. DDH 89-05 was drilled off the same set up at roughly right angle to the Southwest Vein and at the same dip. It intersected the vein at 212.6 m. DDH 89-06 was drilled at 30^{o} to the azimuth of DDH 89-05 and intersected the interpreted vein at 214 m. This interpreted vein may be just a stringer of the vein and deeper drilling would have intersected the main structure.

DDH 89-07 was drilled at azimuth 141^{o} and a dip of -68^{o}. It intersected a fairly wide zone of the Southwest Vein at 255.4 - 261.2 m and 270.1 - 277.4 m. Quartz stringers form up to 30% of the rock in short sections up to 0.5 m. Pyrite and pyrrhotite form 2-3% of the vein material. Low gold and silver values were intersected in the drill hole. However

DDH 89-07 was drilled at the south edge of the mineralized zone and high gold values should not be expected.

DDH 89-08 was drilled at azimuth 146° and a dip of -69°. It intersected the Southwest Vein at 238.1 - 253.1 and 256.6 - 264.3 m. The vein consisted of chlorite schist with minor quartz stringers randomly orientated and containing 2-3% pyrite and pyrrhotite. Low gold and silver values were obtained from the hole which intersected the vein south of the known gold bearing zone.

ORE RESERVES

Ore reserves for the Georgia River project have been calculated using information obtained from 50 previously completed drill holes, underground sampling, surface trenching and the 1989 diamond drilling (Appendix 1-3). The data enables mineral reserves to be "blocked out" in the following categories: drill indicated, drill inferred and geologically inferred. This is demonstrated in Figure 12, Longitudinal Section of the Southwest and Bullion Veins.

The methods and criteria used in the reserve calculations are outlined below.

Using all the information gained from drill hole intersections, underground and surface trench programs, the areas of influence were assigned a grade. Each vein intersection was recalculated to its true vein width as opposed to its intersected width and, where necessary, calculated to a minimum mining width of 1.22 metres. All mineralized values were recalculated against these widths. Veins intersected by drifts and crosscuts and surface trenches were weighted according to their true width or adjusted to a minimum mining width of 1.22 meters. The true vein length, as measured from underground mapping and surface trenching was used. Grades of these veins were derived from chip samples taken across the strike of the vein on the backs of the drifts and across the face of trench cuts. Intermediate intersections on a particular vein were projected halfway to the next intersection.

The reserves have been classified using the USGS and GSC classification and are identified as indicated and inferred ore. Appendix 4 contains the definitions for the different reserve categories.

Each "block" was weighted according to the projected length and true width. By summing this product for each "block" and dividing by a volume factor of 11 cubic feet per ton a total tonnage was arrived at for each "block". The tonnage factor is based on approximately 10% sulphides including sphalerite, galena, pyrrhotite and pyrite each 25%. The weight

of the gold and silver are not incorporated in calculating the tonnage factor. Total ounces of gold and silver were calculated for each "block". Adding all the tonnage factors and total ounces yields the total number of tons, the total ounces and ultimately the average grade for ore category.

Tables 4 and 5 give the indicated and inferred tonnages for the various blocks in Zone 1 and Zone 2 of the Southwest Vein.

TABLE 4

RESERVES OF THE SOUTHWEST VEIN ZONE 1

Indicated

	Block (tons)	Grade (minimum 1.22 m width) Au opt	Ag opt	Ounces Au	Ag
1.	2083.42	.040	2.32	83.34	4833.53
2.	1268.85	.266	.36	337.51	456.79
3.	1762.29	.729	.86	1284.71	1515.57
4.	959.99	.51	.56	489.59	537.59
5.	834.15	.218	.18	181.17	150.15
6.	1026.90	.216	.11	160.72	81.85
7.	1425.24	.18	.19	256.50	270.80
8.	1065.20	.515	.97	548.58	1033.24
9.	2100.00	.788	.94	1655.00	1974.00
10.	2014.00	.03	.03	60.00	60.00
11.	391.62	.810	.81	317.21	317.21
12.	2108.87	1.51	2.3	3184.39	4850.40
13.	4677.00	2.05	1.28	9588.00	5986.50
14.	4433.00	.727	.586	3222.80	2597.80
15.	4386.14	.16	.53	701.78	2324.65
16.	886.76	.330	.266	292.63	235.88
17.	5642.27	1.336	1.28	7538.07	7222.10
18.	3741.93	.218	.327	815.74	1223.61
19.	5799.89	.742	.724	4303.52	4199.12
20.	6044.65	.037	.01	223.65	60.40
21.	5639.33	.20	.27	1127.87	1548.50
22	3797.00	.035	.026	132.90	98.70
23.	4542.79	.079	.148	358.88	672.33
24.	2584.69	.154	.36	398.04	930.49
32.	4054.00	.58	.41	2351.30	1702.70
33	3228.00	1.142	.46	3686.40	1477.50
34	7678.00	.610	.50	4683.60	3817.00
	84175.98	.57	.60	47983.90	50178.41

Drill Inferred

A	40,058	(See Figure 12)
B	3,711	(See Figure 12)
C	45,625	(See Figure 12)
	89,394	

Geologically Inferred

D	58,743	(See Figure 12)

TABLE 5

RESERVES OF THE SOUTHWEST VEIN ZONE 2

Indicated

	Block (tons)	Grade (minimum 1.22 m width) Au opt	Ag opt	Ounces Au	Ag
25.	4254.95	.303	.433	1289.25	1842.39
26.	2715.88	.067	.050	181.96	135.79
27.	6013.33	7.292	2.14	43849.20	12868.53
28.	8488.36	.097	.34	823.37	2886.04
29.	4636.78	.040	.05	185.47	231.84
30.	3558.28	1.091	.78	3882.08	2775.45
31.	2757.00	.219	.19	603.78	423.83
	32424.58	1.567	.656	50815.11	21163.87

Drill Inferred

E 19972.62 (See Figure 12)

Geologically Inferred

F 19972.62 (See Figure 12)

In summary, the Southwest Vein Zone 1 mineral inventory is calculated at:

Indicated	84,175.98
Drill Inferred	89,394.00
Geologically Inferred	58,743.00
	232,312.98 tons of .57 opt Au and .60 opt Ag

The Southwest Vein Zone 2 mineral inventory is calculated at:

Indicated	32,424.58
Drill Inferred	19,972.62
Geologically Inferred	19,972.62
	72,369.82 tons of 1.567 opt Au and .656 opt Ag

Therefore, the weighted average between Zone 1 and Zone 2 of the Southwest Vein, yields 304,682.8 tons of .806 opt Au and .61 opt Ag. Note that the gold values differ significantly between the Zone 1 and Zone 2 at .57 opt and 1.567 opt respectively yet the silver values were nearly identical at .60 and .656 opt for both zones within the Southwest Vein.

The 0.57 opt gold grade average is very close to the 0.658 opt gold grade average obtained in the 1937 milling of 500 tons in the Southwest Vein. If the high gold value of 27.8 opt over .7 m in Block 27 gold is removed then the gold grade would be closer to the .6 average.

Previous drilling conservatively indicates the Bullion Vein yields 6195.2 tons of .122 opt Au and .30 opt Ag. Since this vein is considerably lower in grade, it was not included in the tonnage calculation with the Southwest zones.

EXPLORATION POTENTIAL

The Georgia River property offers excellent exploration potential in known partially explored and known unexplored veins. The exploration potential is summarized as follows:

1. The Southwest Vein along strike and at depth;

2. The Bullion Vein in the area of the No. 3 and No. 2 levels as well as at the intersection with the Southwest Vein;

3. The East-Mark Vein approximately 100 m NE of the No. 2 level and 50 m east of the Bullion Vein;

4. A vein exposed at 853 m (2800') and discovered while the trail was being built in the 1930's;

5. The Cobett Vein? which is 30 m east of the Southwest Vein;

6. Numerous sulphide bearing quartz veins along the western contact of the volcanics and Coast Range Batholith.

The Georgia River property covers a large roof pendant that extends from 1830 m at the ridge tops down to and beyond the valley floor at 488 m. If the Batholith is considered as the source of mineralization then the property has a great depth potential. The vein systems appear to be terminated to the north by a east-west fault approximately 300 m north of 1979 - 1981 drilling. However the veins appear to offer good strike length potential to the south and at lower elevation. Unfortunately this area is overburden covered with heavy tag alder and spruce obscuring outcrops.

The Southwest Vein has been the most actively explored, mainly due to the excellent results obtained in past programs. At present exploration has concentrated on Zone 1 (intersection of Main and Southwest Vein) and Zone 2 (intersection of CC #1, CC #2 and Georgia Vein with the Southwest Vein). If the assumption that marked gold enrichment with an increase in

quartz veining occurs along the northerly shears at the intersection with northwest trending vein is true, then any intersection point should be explored. This would mean that the Southwest Vein at its intersection with the Gem top and Pond Veins would offer an excellent exploration target.

DDH GM34 which was drilled at the south edge of this area and has the deepest intersection indicated 0.37 m (1.2 feet) of .33 opt gold. Additional drilling may well provide the existence of another gold bearing zone, particularly at depth.

Further drilling should also test the Southwest Vein below GM 16-17 and north of DDH 89-01. Narrow gold bearing veins at surface and in GM 16-17 may well become wider at depth.

Another area of exploration should be along the Southwest Vein above the No. 3 level in the area of previous high gold assays. Work in the 1930's indicated gold values up to 13.1 opt over 15 cm (6") in one trench. An adit in this period failed to intersect the zone. However the prior work indicated a dip of 65-80^{o} to the east. The vein system shows an overall dip of 80^{o} to the west from El. 1151 m to El. 1018 m. It is inconceivable that the vein would show this great change at El. 1018 m near the No. 2 level and El. 1015 m near the No. 3 level. In the underground mapping program on the No. 2 level, it is common in the Southwest Vein to have individual quartz stringer dipping east in a system with an overall west dip. These stringers show great fluctuations in dip over short intervals. If the overall dip of the Southwest Vein is 80^{o} west, then the No. 3 adit should intersect the vein 8 m west of its present face.

Sampling of some of the trenches in No. 3 level area in 1979 indicated .17 opt gold over .63 m in the Southwest Vein. Work was incomplete as some overgrown trenches were not cleaned out and the source of the high grade assays not located. In addition the fault gouge between the quartz was not sampled in the cleaned out trenches. Two trenches which had the quartz as well as gouge sampled indicated .17 opt Au over .63 m (gouge) and .102 opt Au over .46 m (gouge and quartz). Samples of just quartz showed low gold values.

Further work is definitely required on this area as the Camp Vein (a NW trending vein) intersects the Southwest Vein in the area of the No. 3 level.

The second area requiring further work is the Bullion Vein. Stringers of mineralization along the Bullion Vein show values up to 6.144 opt gold over .27 m in surface trenches. The No. 3 level has also reported good gold values along mineralized stringers over a strike length of 10 m. In addition quartz bearing sphalerite and galena in the area of the intersection of the Bullion and Georgia Vein (NW trending zone) indicated .372 opt gold over .28 m. Further work is required along this intersection to fully evaluate the gold bearing potential of the Bullion Vein.

The next area requiring further exploration is the East Mark Vein, 30 m east of the Bullion Vein and 100 m northeast of the No. 2 portal. Trenching along this zone indicated values up to .576 opt gold over narrow widths. The zone has been traced over 50 m of strike length and trenching and drilling is recommended to extend the strike length and depth potential. Because it is so near the undergound workings on the No. 2 and No. 3 levels, it presents an excellent exploration target.

There are reports of a pyrite, galena and sphalerite bearing vein up to .6 m wide at elevation 853 m near the old mine trail. It may well be that this vein is the southerly extension of the Southwest, Bullion or East Mark Veins. Trenching and sampling should be carried out on this vein to determine any possible economic significance.

The Cobbett Vein? should be further evaluated as DDH GM 16-18 intersected values up to .21 over 1.52 m in silicified rocks. In addition galena and sphalerite bearing quartz float is found along strike to a trench yielding .25 opt gold.

In addition to the above, further work should be conducted on the East, Summit and any new structures located.

The work program recommended includes the following:

1. Silt geochemistry of streams in the southwest portion of the property area, particularly areas covered by overburden and below treeline.

2. Opening the No. 3 portal with mapping and sampling of any vein structure.

3. Opening a 90 foot adit along the Southwest Vein between the No. 3 and No. 1 levels. Sampling and mapping would be conducted along the adit.

4. Prospecting and sampling on the southwest and southern portion of the property.

5. Trenching and sampling along the Southwest Vein above the No. 3 portal.

6. Trenching and sampling below an unnamed vein (elevation 853 m).

7. Drilling of short holes in the following veins:
   a) 10 holes totalling 160 m on the East Mark Vein (30 m east of Bullion Vein)
   b) 10 holes totalling 160 m on Southwest Vein above the No. 3 portal
   c) 5 holes totalling 100 m on Cobbett Vein (30 m east of Southwest Vein)
   d) 10 holes totalling 160 m on Bullion Vein
   e) 10 holes totalling 160 m in any new areas.

A second phase, $600,000 drill program, is recommended with locations of holes based on the above results.

CONCLUSIONS

1. The property covers a large roof pendant of Hazelton Group volcanics and sediments within the Coast Range Batholith near its eastern edge.

2. Significant gold and silver values are associated with narrow northerly trending quartz veins carrying pyrite, pyrrhotite, galena, sphalerite, chalcopyrite, arsenopyrite and electrum. Marked gold enrichment occurs at the intersection with northwest trending zones.

3. The 1989 drilling consisted of 8 holes of which 4 intersected appreciable values, 1 hole was lost in a fault zone, 1 hole steepened up and did not intersect the zone and 2 were drilled at the south limit of gold values along the Southwest Vein. A summary of the significant values are as follows:

	Meters	Interval (m)	Gold opt
DDH 1	71.6 - 73.5	1.9	0.60
DDH 3	78.8 - 79.6	0.8	.101
	165.5 - 165.9	0.4	.211
DDH 4	73.1 - 74.8	1.7	1.142
DDH 5	212.9 - 214	1.06	1.879
	228.5 - 230.2	1.7	.348

4. Based on the 1979 - 1989 drilling as well as underground and surface trenching a total of 304,680 tons of a grade of 0.806 opt Au and 0.61 opt Ag is calculated in the drill indicated (116,600 tons) drill inferred (109,366.6 tons) and geologically inferred (78,716 tons) categories.

5. An extensive surface exploration program is recommended which would include silt geochemistry, underground mapping and sampling, trenching and diamond drilling. This program would be in two phases with the first phase costing $400,000 while phase two would be $600,000.

RECOMMENDATIONS

The property should be further explored by surface exploration and diamond drilling.

Costs of the program are as follows:

Personnel	
1 Blaster 16 weeks @ $200/day	22,400
2 Samplers, assistants 16 weeks @ $150/day each	33,600
1 Cook 16 weeks @ $150/day	16,800
1 Geologist 16 weeks @ $300/day	33,600
1 Geologist 2 weeks @ $300/day	4,200
1 Geological Assistant 16 weeks @ $150/day	16,800
Camp Rental 798 man days (includes drillers) @ $25/day	19,950
Subsistence 798 man days @ $25/day	19,950
Rentals Cobra drills, generators, etc.	11,200
Analysis 1500 samples @ $15/sample	22,500
Helicopter 60 hours @ $700/hour	42,000
Freight, miscellaneous	10,000
Drilling 740 m @ $110/m	81,400
Report Writing	10,000
Drafting, typing etc.	7,500
	351,900
Contingency	48,100
	$400,000
Phase II diamond drilling	600,000
TOTAL PHASE I AND II	$1,000,000

STATEMENT OF EXPENDITURES

Drilling	102,868.00
Helicopter	24,767.00
Accomodation/Meals	1,057.00
Geological/camp (mob (mobilization/demobilization	5,000.00
Personnel	
Geologist 28 days @ $300/day	8,400.00
Cook 21 days @ $150/day	3,150.00
Geological Assistant (2) 39 days @ $150/day	5,850.00
Project Supervisor 4 days @ $400/day	1,600.00
Camp Cost	
176 man days @ $25/day	4,400.00
Rentals	1,912.00
Consulting Geologist & Travel	10,421.00
Assays	1,684.50
Groceries, fuel	4,556.00
Expediting	810.00
Report and drafting	6,000.00
TOTAL	$182,475.50

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CERTIFICATE

I, EDWARD R. KRUCHKOWSKI, geologist, residing at 23 Templeside Bay, N.E., in the City of Calgary, in the Province of Alberta, hereby certify that:

1. I received a Bachelor of Science degree in Geology from the University of Alberta in 1972.

2. I have been practising my profession continuously since graduation.

3. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4. I am a consulting geologist working on behalf of Avatar Resources Ltd.

5. This report is based on a review of reports, documents, maps and other technical data on the property and on my experience and knowledge of the area obtained during the drill programs in 1979 - 1989.

6. I hold no direct interest in the Georgia River Property.

7. I consent to the use of the accompanying report and/or any portion thereof in a prospectus, statement of material facts and/or information circular issued by Avatar Resources Ltd.

Feb 14/90
Date

E.R. Kruchkowski, B.Sc.

APPENDIX I

1989 Diamond Drill Logs

PROPERTY Georgia River DATE August 28, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 01 DEPTH 76.5 m DOWN TIME _____

Az: 107 Dip: -49°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 5.79			Casing; overburden, fractured o/c	
	5.79 - 10.7			Granitized lithic, crystal andesitic tuff, verging on a biotite	
				hornfels, mottled finely laminated, foliated 40-45° to c.a.	
				pale-medium grey-brown, extremely calcareous 3-5% calcite blebs	
				and veinlets ± quartz (barren), trace - 1% fine grained diss.	
				pyrite, weak-medium sericite alteration.	
		7.6 - 8.4	44126	Contact to mineralized zone, granitized tuff	
		8.4 - 9.1	44127	10-15% calcite sweats and stringers, minor quartz ass, very	
				vuggy, 5-7% fine-coarse grained diss PØ and pyrite, 2-3% diss. +	
				blebs black specular hematite (red streak)	
		9.1 - 10.1	44123	Contact to mineralized zone, granitized tuff	
	10.7 - 13.6			Porphyritic granodiorite, pale-medium grey granodiorite medium	
				grained matric with 10-15% sub-rounded plag. phenocrysts 1-3 mm	
				in diameter foliated 45° to coarse grained, 2-3% fine grained	
				disseminated pyrite. 3-5% calcite blebs, sweats, stringers &	
				veinlets.	

PROPERTY Georgia River | DATE August 28, 1989 | STARTED | FINISHED

DRILL HOLE 89-01 | DEPTH 76.5 m | DOWN TIME

Az: 107 Dip: -49°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	13.6 - 76.5			Finely laminated andesitic tuff, (biotite hornfels) vein weakly granitized in local sections, predominately pale grey-green mottled with minor pale-medium brown zones, foliation/lamination, 45° to c.a., as section 5.8 - 10.7	
				Gouge at 35.8 - 35.82, 52° to c.a.	
				Brecciated barren calcite + quartz vein at 53.7 - 53.9	
				176.7, contact 56° to c.a.	
				Well granitized at 59.8 - 61.9	
		71 - 71.6	44129	Contact with quartz vein 25° to c.a.	
		71.6 - 73.5	44130	White quartz veins at 71.6 - 72.0 and 72.9 - 73.5 with intensely sericitized pale grey-buff host leached, quartz contains 2-3% diss. PØ, 1% diss. galena, 1-2% diss. pyrite, trace sphalerite, mineralization also in very fine veinlets within quartz.	
		73.5 - 74.1		Gouge at 72.3 - 72.5	
			44131	Contact with quartz vein, 15 cm medium leached and baked.	
				E.O.H. 76.5 m	

[redacted]. K[redacted]IKOW[redacted] CO[redacted]TIN[redacted]

PROPERTY Georgia River | DATE August 28, 1989 | STARTED _____ | FINISHED _____

DRILL HOLE 89-02 | DEPTH 154.9 m | DOWN TIME _____

Az: 107 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 4.3			Casing; glacial till	
	4.3 - 11.1			Laminated lithic-crystal andesitic tuff (altered to a biotite	
				hornfels) weakly granitized locally, medium-dark grey varying	
				to pale-medium grey-brown mottled with minor green andesite,	
				moderate sericite alteration, 2-3% calcite veinlets + sweats +	
				quartz as 89-01 5.79 - 10.7 zone.	
		6.3 - 6.9	44132	Contact to mineralized zone	
		6.9 - 7.9	44133	10-15% quartz and calcite stringers, vuggy with 5-7% pyrite	
				+ PØ, 2-3% spec. hem.	
		7.9 - 8.5	44134	Granitized host	
		8.5 - 9.1	44135	7-10% calcite sweats with 3-5% spec hem, 2-3% pyrite + PØ, trace	
				chalcopyrite	
		9.1 - 9.7	44136	Host rock on contact with min. zone, 2-3% diss. PØ + pyrite	
	11.1 - 16.7			Porphyritic granodiorite; as 89-01 10.7 - 13.6	
	16.7 - 17.7			Laminated andesitic tuff; dark grey-brown as 4.3 - 11.1 foliated/	
				laminated 30° to c.a.	

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PROPERTY Georgia River DATE August 28, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-02 DEPTH 154.9 m DOWN TIME _____

Az: 107 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				Predominately medium grey from 42.1 - 57.3	
		31.7 - 37.3	44137	Well silicified 25-30% quartz + calcite stringers, 30° to c.a.,	
				1-2% pyrite + PØ	
				Predominately medium-dark grey at 72.6 mostly andesitic crystal	
				tuff moderate-well granitized (grey-green augite porphyry?	
				5-7% 1-4 mm round augite phen.) foliated 35° to c.a. at 126.2.	
				E.O.H. 154.9 m	

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PROPERTY Georgia River | DATE August 29, 1989 | STARTED | FINISHED

DRILL HOLE 89- 03 | DEPTH 169.0 m | DOWN TIME

Az: 124° Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 3.7			Casing; glacial till, overburden	
	3.7 - 12.9			Laminated andesitic crystal lithic tuff, mottled medium-dark	
				green with grey-brown, weakly granitized locally 3-5% layers,	
				lenses, veinlets, sweats of calcite ± quartz, 1-2% diss. pyrite	
				+ PØ foliated/laminated 50° to c.a., local calcite. Layers up to	
				15 - 20 cm thick	
		6.25 - 6.9	44138	Contact to mineralized zone, barren	
		6.9 - 7.6	44139	15-20% calcite + quartz stringers with 5-7% fine-coarse grained	
				diss. pyrite. 1-2% blebs spec. hem., brecciated veinleting	
		7.6 - 8.2	44140	Contact to mineralized zone, barren	
				.1 layer calcite with 5-7% pyrite, 2-3% spec. hem. at 9.1 - 12.8	
				(not sampled)	
	12.9 - 18.1			Porphyritic granodiorite, as 89-01 10.7 - 13.6	
	18.1 - 168.6			Laminated andesitic lithic-crystal tuff as 3.7 - 12.9, foliated/	
				laminated 45-50% at 30.8 - minor local agglomerate, 7-10%	
				subrounded 5-10 mm clasts.	

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PROPERTY Georgia River DATE August 29, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-03 DEPTH 169.0 m DOWN TIME _____

Az: 124° Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				Fault with 3 cm gouge at 60.6	
		72.7 - 73.3	44141	Silicified contact zone 10-15% quartz + calcite stringers, 1-2%	
				pyrite + PØ	
		73.3 - 74.8	44142	Quartz vein + stockwork 45-50% with silicified host 45° to c.a.,	
				3-5% pyrite + PØ	
		74.8 - 75.4	44143	Silicified host	
		75.4 - 76.1	44144	35 - 40% quartz stockwork + silicified host, 2-3% diss. pyrite +	PØ
		76.1 - 76.7	44145	Well silicified contact 40° to c.a.	
		78.8 - 79.6	44146	Well silicified 30-35% quartz + calcite stringers, 1-2% pyrite	
				+ PØ 3.48 - 7.7	
				Predominately medium-dark grey-green alteration porphyritic vol,	
				granitized, augite porphyry? 97.2 - minor leached pale green zones	
				10 - 15 cm calcite sweat with 1-2% PØ lenses + diss. at 97.0 -	
				97.2 (not sampled)	
				Minor crystal tuff at 164.3 - 164.9 - 15-20% white plag. sub-	
				rounded crystals 1-2 mm in diameter	
		164.9 - 165.5		Leached, baked + ser. alteration volcanic host, pale green-grey,	
				barren	
		165.5 - 165.9	44148	Milky white quartz with 1-2% diss. pyrite, trace galena	

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PROPERTY Georgia River DATE August 29, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-03 DEPTH 169.0 m DOWN TIME _____

Az: 124° Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
		165.9 - 167.1	44149	10% recovery; cave material?, pale grey-green ser. alteration	
				volcanic host, barren	
				No recovery from 167.1 - 168.6, made several attempts to core	
				cut failed to recover any rock, basically ground up the core, the	
				cave situation is extreme and the hole is very tight. We are	
				forced to abandon the hole.	
				E.O.H. 169.0 m	

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PROPERTY Georgia River DATE August 31, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-04 DEPTH 77.1 m DOWN TIME _____

Az: 112 Dip: -45°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 1.2			Casing; overburden, glacial till	
	1.2 - 27.9			Granodiorite; pale-medium grey, very coarse grained minor	
				porphyritic phases, minor lim. ox. along fracture planes, locally	
				well leached and ser. alteration, trace - 1% diss. fine grained	
				pyrite, contact with metamorphic volcanics 30° to c.a.	
	27.9 - 75.9			Altered porphyritic andesitie; medium-dark maroon brown with	
				blotchy pale-medium grey-green veinlets - blebs, 3-5% epidote	
				+ calcite alteration moderate-strong, metasomatically altered	
				host, granitized, generally very fine grained with	
				+ 5-7% 1-5 mm altered plag. phenocrysts, trace - 2% diss. fine	
				grained pyrite + PØ, minor granodiorite dykes up to 25 cm wide	
				silicified with 1-3% 1-5 cm quartz + calcite stringers usually	
				barren, 5 cm granodiorite dykes at 28.4 m, 45° to c.a.	
		43.1 - 43.8	44150	Contact to quartz vein 50° to c.a., pale grey well leached barren	
		43.8 - 44.8	44151	Quartz vein 50° to c.a. at 43.8 - 44.1 with 3-5% bleb + diss.	
				PØ, 1-2% chalcopyrite diss. blebs, trace - 1% fine grained diss.	
				galena	

PROPERTY Georgia River DATE August 31, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-04 DEPTH 77.1 m DOWN TIME _____

Az: 112 Dip: -45°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				Semi-massive - interstitial 10-15% sphalerite + 7-10% PØ	
				in silicified host, 3-5% diss. fine-coarse grained pyrite at 44.1	
				- 44.5	
				Very well silicified host 65% quartz flooded with 2-3% PØ, 1-2%	
				arsenopyrite + pyrite with 3-5% epidote, 2-3% fine grained diss.	
				black-red sphalerite	
		44.8 - 45.4	44152	Weakly leached with silicified contact with 1-2% fine grained	
				diss. PØ and pyrite	
		56.6 - 57.8	44153	5-7% 5-10 cm quartz + calcite stringers with seams + diss. fine-	
				coarse grained 2-3% sphalerite, 3-5% pyrite with 10cm quartz vein	
				with 10-15% sphalerite + 7-10% pyrite at 57.6 - 57.8,	
				contacts 30-35° to c.a.	
				Barren silicified zone at 68.6 - 68.9	
		72.6 - 73.1	44154	Contact with mariposite leached zone at 45° to c.a.	
		73.1 - 74.8	44155	Leached pale grey-green-tan zone at 73.1 - 73.4 with 3-5% mariposite	
				milky white quartz vein at 73.4 - 74.8 with 3-5% diss. + veinlet	
				pyrite + PØ, 2-3% diss. coarse grained blebs arsenopyrite, 1-2%	
				chalcopyrite, 1-2% diss. + very fine veinlet galena + sphalerite,	
				3 cm gouge at 73.9 within quartz	

PROPERTY Georgia River DATE August 31, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 04 DEPTH 77.1 m DOWN TIME _____

Az: 112 Dip: -45°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				Quartz section at 74.2 - 74.4 contains abundant fine-medium	
				grained diss. visible gold, one grain is middled in galena grain	
				1 mm in diameter	
		74.8 - 75.5	44156	Unaltered contact to quartz vein, normal host rock	
	75.9 - 77.1			Andesite, weakly-moderately altered chloriticly massive andesite	
				medium green-brown non-descript massive, mottled and erratically	
				laminated, barren	
				E.O.H. 77.1 m	

PROPERTY Georgia River | DATE September 2, 1989 | STARTED | FINISHED

DRILL HOLE 89-05 | DEPTH 231.4 | DOWN TIME

Az: 114 Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 4.6			Casing; overburden, fractured bedrock	
	4.6 - 32.9			Granodiorite; pale-medium grey speckled very coarse grained with	
				minor porphyritic phases. Strong leaching, minor silicified zones	
				lim. ox. along fracture planes, trace - 1% diss. pyrite, chlorite	
				and ser. alteration mod.	
	32.9 - 231.4			Laminated altered andesite tuff; medium-dark grey-green to maroon-	
				brown, strong metasomatic alteration, epidote + quartz + calcite	
				alteration in veinlets and blotchy blebs, trace - 1% diss. fine-	
				coarse grained pyrite & PØ locally well silicified zones with	
				barren white quartz + calcite stringers up to 10 - 15 cm wide	
				randomly orientated, laminated/foliated 55° to c.a., local	
				porphyritic sections	
		115 - 115.7	44157	Quartz vein with 1-2% blebs PØ, weak-moderate epidote, 5-10% host	
				Barren quartz with 25 cm wide 45° to c.a. at 139 - 139.3 at the	
				beginning of a weak shear zone very blocky core, 139 - 145.7	
				leached, not sampled - fault gouge at 145.7	
				Pale grey-dark maroon porphyritic host with 15-20% random barren	

PROPERTY Georgia River DATE September 2, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89-05 DEPTH 231.4 DOWN TIME _____

Az: 114 Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				quartz ± calcite stringers at 147.3 - 138.1	
				Volcanic unit grades from a maroon andesitic tuff to a medium-	
				dark blue-grey porphyritic unit with blebs of epidote lithic	
				crystal tuff or altered porphyritic intrusive? from 173.2 - 203.7	
				203.7 - 214 minor volcanic	
				214 - 217.1 blue grey altered aglomerate? altered porphyritic	
				intrusive or altered lithic crystal tuff	
		212.3 - 212.9	44153	Silicified contact with 10-15% 1-3 cm wide quartz stringers,	
				2-3% PØ	
		212.9 - 214	44159	Quartz vein 20° to c.a., with 3-5% diss. + veinlet galena, 2-3%	
				diss. pyrite, 1-2% diss. chalcopyrite, fine grained 18-20 grains	
				of visible gold within center of vein and along upper contact.	
		214 - 214.6	44160	Leached, baked & silicified contact	
				Black-dark brown massive andesite - basalt 219.5 - 231.4, fine	
				grained weakly altered	
		228 - 228.5	44161	Contact at 20-25° to c.a., zone pale green-grey, leached, barren	
		228.5 - 230.2	44162	Quartz vein with 5-7% mariposite, 3-5% PØ, 2-3% pyrite, 2-3%	

PROPERTY Georgia River DATE September 2, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 05 DEPTH 231.4 DOWN TIME _____

Az: 114 Dip: -68°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				galena, 1-2% sphalerite; trace visible gold, 1 small visible grain	
				<1 mm in diameter in center of vein, 1-2% arsenopyrite.	
		230.2 - 230.8	44163	Silicified contact, maroon barren volcanic andesite	
				E.O.H. 231.4m	

PROPERTY Georgia River | DATE September 5, 1989 | STARTED | FINISHED

DRILL HOLE 89-06 | DEPTH 260.1 m | DOWN TIME

Az: 85° Dip: 65°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 3.96			Casing; overburden, fractured bedrock	
	39.6 - 26.8			Granodiorite; pale-medium grey speckled very coarse grained with	
				minor porphyritic phases, strong leaching, minor silicified zones,	
				lim. ox. along fractured planes, trace - 1% diss. pyrite, moderate	
				chlorite and sericite alteration.	
				Well sheared, fault gouge at 4.87 - 5.5	
				Well sheared, fault gouge at 11.7 - 11.9, 2-3 cm pyrite seam	
				Well sheared, fault gouge at 21.5 - 22.1	
	26.8 - 98.6			Altered andesite tuff; medium-dark grey-green to maroon brown,	
				strong metasomatic alteration, epidote + calcite + quartz	
				alteration in veinlets and blotchy patches, trace - 1% diss.	
				fine-coarse grained pyrite + PØ locally well silicified zones	
				with barren white quartz ± calcite stringers up to 10-15 cm	
				wide - local porphyritic phases. Barren quartz & calcite @ 29 -	
				29.1 with sheared gouge	
				Intensely leached and moderately silicified, pale grey-green at	
				31.6 - 42.8	

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PROPERTY Georgia River | DATE September 5, 1989 | STARTED _____ | FINISHED _____

DRILL HOLE 89- 06 | DEPTH 260.1 m | DOWN TIME _____

Az: 85° Dip: 65°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				Very well silicified zone with 10-15% quartz stringers in	
				silicified volcanic host, 2-3% pyrite + PØ 95.4 - 98.6	
	98.6 - 141.3			Andesitic tuff, medium-dark maroon-brown with medium-dark	
				green mottled, weak epidote alteration 5-10% calcite ± quartz	
				stringers & blebs, 1-3% diss. & blebs pyrite & PØ, semi-massive	
				fine grained unit, weakly altered	
		140.6 - 141.3	44164	10-15% calcite stringers and veinlets, 5-7% sphalerite layered	
				Diss. blebs, 3-5% coarse grained blebs pyrite	
	141.3 - 228.2			Porphyritic altered andesite; predominated medium-dark grey-blue	
				with dark-medium brown-maroon to medium-dark green sections	
				altered intrusive? or crystal tuff plag. phenocryst (epidote +	
				quartz) replaced up to 10-15% 1 mm - 2 cm diameter	
				147.3 - 149.4 10-15% predominately barren quartz + calcite	
				stringers with 2-3% epidote, trace - 1% diss. pyrite (in host)	
				Fault gouge in shear zone @ 170.9 - 171.5, leached sheared zone	
				with 5-7% quartz & calcite (barren) at 175.8 - 176.6	
				202.6 - 204.9 25 - 70% calcite & quartz vein barren with 20-25%	

PROPERTY Georgia River DATE September 5, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 06 DEPTH 260.1 m DOWN TIME _____

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	Az: Dip: DESCRIPTION	ASSAYS
				host (brecciated) 3-5% chlorite, trace - 1% diss. pyrite & PØ	
		214.3-214.9	44165	Silicified zone, 15-25% 3-5 cm wide quartz stringer 15-20° to	
				c.a., 5-7% veinlet + diss. pyrite, white quartz as in silicified	
				vein - leached and baked contacts.	
	228.2 - 260.1			Black to dark brown andesite/basalt, very fine grained, massive	
				up to 15-20% calcite ± quartz barren veinlets, sweats	
				+ stringers, 2-3% diss. fine-coarse grained pyrite ± PØ, minor	
				porphyritic phases, resembles a siltstone at times, finely	
				laminated/bedded 65-70° to c.a. possibly black siltstone inter-	
				bedded with very fine grained basaltic/andesitic tuffs	
		242.2-243	44166	Contact to vein zone, weakly baked, barren	
		243-243.8	44167	35-40% quartz + calcite stockwork zone 20° to c.a. in silicified,	
				leached pale-grey brecciated volcanic host, 3-5% diss. fine-	
				coarse grained PØ laths sheared along contacts.	
		243.8-244.4	44168	Contact to vein zone, 10-15% barren calcite veinlets, 1-2% diss.	
				fine grained + blebs pyrite in tuffaceous medium-dark brown	
				sediment.	
				E.O.H. 260.1 m	

PROPERTY Georgia River | DATE September 7, 1989 | STARTED | FINISHED

DRILL HOLE 89- 07 | DEPTH 286 m | DOWN TIME

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 3.4			Casing; overburden, sheared bedrock	
	3.4 - 34.3			Granodioritic; pale grey speckled, coarse grained, porphyritic	
				sections, intensely leached, chemically well weathered, intensely	
				sheared locally, weak-moderate silicified with minor quartz	
				± calcite stringers 1-2% diss. pyrite	
				3.4 - 4.6 intense shearing + gouge with barren 7-10% quartz	
				stringers	
				Sheared and decomposed at 23.6 - 24.5	
				Sheared and decomposed at 29.7 - 32.6	
	34.3 - 51.1			Altered andesite tuff; locally well granitized and silicified	
				(as 89-06 26.8 - 98.6)	
		35.1 - 36.5	44169	Vuggy with 7-10% pyrite, 5-7% sphalerite in silicified zone	
				Predominately barren quartz with 3-5% epidote, 1-2% diss. pyrite	
				at 47.8 - 48.3, 48.9 - 49.6	
	57.1 - 69.1			Altered porphyritic granodiorite/granite gneissic texture 40°	
				to c.a. coarse grained, very well silicified, speckled medium-	

PROPERTY Georgia River | DATE September 7, 1989 | STARTED | FINISHED

DRILL HOLE 89- 07 | DEPTH 286 m | DOWN TIME

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				pale grey-buff, plagioclase + quartz rounded porphyroblasts	
				1-2% diss. pyrite	
	69.1 - 83.6			Laminated alterated andesite tuff (as 89-6 - 26.8 - 98.6	
				- foliated/laminated 50° to c.a. at contact with granitic gneiss	
				Fault/shear zone at 72.4 - 72.56, blocky core, fault at 73.6	
				5 cm wide	
		79 - 80.1	44170	Brecciated quartz stringer and calcite zone with 7-10% pyrite,	
				3-5% sphalerite, contact 5-10% to c.a.	
	83.6 - 135.4			Altered porphyritic intrusive? crystal tuff, intensely	
				granitized, medium speckled grey-blue with 7-10% 1 mm - 3 cm	
				altered plagioclase phenocrysts, 3-5% blotchy epidote &	
				veinleting, locally some pale grey-buff gneissic-granitic	
				silicified rock.	
				Gneissic granitic unit at 89.8 - 92.7, 95.4 - 96.3, 97.8 - 112.8	
				(very well silicified at 101.5 - 102.9 with 20-25% quartz & calcite	
				stringers, barren, 2-3% epidote)	
				Altered porphyritic andesitic tuff, granitized maroon with blotchy	

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PROPERTY Georgia River DATE September 7, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 07 DEPTH 286 m DOWN TIME _____

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS	
				pale grey-medium green calcite + quartz + epidote alteration		
				+ veinlets and stringers		
				35-40% quartz stockwork with 5-7% epidote + 3-5% sericite		
				barren of crystals at 119.6 - 120.5.		
				Barren quartz + calcite vein at 122.1 - 122.4 20° to c.a. with		
				3-5% epidote, trace - 1% PØ - random orientated quartz		
				& epidote vein at 123.5 - 123.8 (barren)		
				Quartz vein with 10-15% host, 3-5% epidote, 1-2% chlorite		
				minor sericite & 3-5% calcite at 124.4 - 125.1. Intense gouge		
				at 134.9 - 135.4		
	135.4 - 149.7			Massive andesite/basalt, fine grained medium-dark brown to		
				medium-dark green black, minor weakly porphyritic zones, trace		
				- 2% diss. pyrite, PØ, very weak, sericite & epidote & calcite		
				alteration		
	149.7 - 166.6			Altered porphyritic andesite tuff; dark grey-blue to maroon unit		
				altered by blotchy sericite & quartz & calcite & epidote zones		
				& veinlets & stringers		

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PROPERTY Georgia River DATE September 7, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 07 DEPTH 286 m DOWN TIME _____

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS	
		159.3-160.6	44171	Leached and silicified zone with 5-7% quartz & minor calcite		
				sweats massive sphalerite @ 160.1 - 160.5 with 10-15% diss.		
				pyrite blebs up to 3 cm long x 1 cm wide, 3-5% diss. pyrite		
				throughout. Barren pale grey-green baked zone at 164.2 - 165.2		
	166.6 - 176.2			Altered granitic intrusive, coarse grained speckled maroon-buff,		
				5-7% quartz ± calcite stringers & sweats, remnant altered		
				porphyritic maroon andeiste common, very silicified and leached		
				locally, trace - 2% diss. pyrite & PØ - 2-3% epidote alteration.		
	176.2 - 220			Altered porphyritic andesite tuffs dark brown-maroon-black with		
				white altered blotches of epidote and sericite calcite and		
				quartz with 5-7% veinlets, intense metasomatic alteration.		
				187.8 - 191.5 well silicified, quartz flooded with 3-5% fine-		
				coarse grained diss, blebs pyrite. 15-20% quartz & calcite		
				stringers with 3-5% epidote & 1-2% chlorite at 194.8 - 197.6,		
				leached host. 2 cm wide seam of coarse grained diss. pyrite 30°		
				to c.a. at 203.4		

PROPERTY Georgia River | DATE September 7, 1989 | STARTED _____ | FINISHED _____

DRILL HOLE 89- 07 | DEPTH 286 m | DOWN TIME _____

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
		204.9-206.1	44172	Massive andesite/basalt, medium-dark brown-black, weakly-	
				moderately altered with 10-15% sercite & calcite & chlorite	
				veinlets + quartz stringers, massive fine grained trace - 2%	
				diss. pyrite + PØ.	
	225.9 - 281.9			Altered porphyritic andesite tuff; maroon-dark grey-blue with	
				blotchy pale gren-green quartz and calcite and epidote and	
				sericite alteration.	
		255.4-256	44173	Contact to leached, baked sheared zone with brecciated quartz	
				- stockwork vein.	
		256 - 257	44174	Pale grey-green sheared zone with brecciated white-buff quartz	
				containing 3-5% diss. blebs PØ 2-3% fine-coarse grained diss.	
				pyrite, 3-5% mariposite	
		257 - 257.3	44175	Quartz vein along a shear zone 30° to c.a. - silicified contact	
				with 5-7% quartz stringers with 3-5% PØ & pyrite.	
		260.8-261.2	44176	Well silicified with 15-20% quartz stringers 1-2% diss. fine-	
				coarse grained pyrite in filling stress fractures and forming	
				veinlets 1 mm wide 2-3 cm long, 5-7% chlorite.	
				Moderately - well leached; baked zone at 266.2 - 270.1, medium-	

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PROPERTY Georgia River DATE September 7, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 07 DEPTH 286 m DOWN TIME _____

Az: 141 Dip: -67°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				pale grey-green alteration	
		270.1-271.3	44177	Intensely leached and baked, pale grey-green with 7-10% brecciated	
				quartz stringers and veinlets subparallel to c.a. & random	
				orientation trace - 2% diss. pyrite + PØ	
		271.3-272.6	44178	As above	
		272.6-273.8	44179	As above with 3-5% pyrite & PØ	
		274.4-275	44180	Silicified zone, quartz flooded with 5-7% epidote	
		275-276.8	44181	Quartz vein 35° to c.a., predominately milky white with 5-7%	
				pale green-grey altered host, well stressed quartz with 2-3%	
				diss. & veinlets pyrite, trace mariposite	
		276.8-277.4	44182	Leached & baked contact 2-3% diss. pyrite	
	281.9 - 286			Porphyritic andesitic basalt; dark green-black weakly altered;	
				10-15% 1-2 mm altered plagioclase phenocrysts amdylydules	
				fine grained massive unit, 1 mm calcite veinlets (trace - < 1%)	
				barren, no significant visible crystals	
				E.O.H. 286 m	

PROPERTY Georgia River DATE September 9, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 08 DEPTH 273.8 m DOWN TIME _____

Az: 146 Dip: -69°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
	0 - 3.1			Casing	
	3.1 - 50.2			Granodiorite; very well leached, pale grey-green speckled, minor	
				porphyritic phases with 1-3 mm plagioclase phenocrysts, generally	
				very coarse grained granite matrix, strong chemical weathering,	
				minor barren 1-3 cm quartz ± calcite stringers and veinlets,	
				trace - 2% diss. fine grained pyrite & PØ.	
				Well sheared at 3.1 - 4.6 with barren quartz brecciated.	
				Gouge at 30.1 - 30.3, 28.5 - 28.7.	
				Very well silicified (quartz flooded) at 35.4 - 43.3 with barren	
				7-10% random quartz stringers 1 cm - 15 cm thick.	
				Andesitic tuff maroon with green alteration at 44.8 - 45.3 20°	
				to c.a. Well silicified with 10-15% quartz stringers with	
				sericite at 46.6 - 50.2	
	50.2 - 54.7			Gneissic granodiorite /granite; pale grey-buff speckled, coarse	
				grained, granitic rock with gneissic foliation 60° to c.a.,	
				very sileous (replacement), 2-3% 1-2 cm wide quartz (barren)	
				random stringers trace - 1% diss. pyrite & PØ, minor porphyritic	

[redacted]. K[redacted]IKOV[redacted] CO[redacted]TIN[redacted]

PROPERTY Georgia River | DATE September 9, 1989 | STARTED | FINISHED

DRILL HOLE 89- 08 | DEPTH 273.8 m | DOWN TIME

Az: 146 Dip: -69°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				(porphoblasts?) zones with 7-10% 1-5 mm white feldspar phen.	
	54.7 - 70			Altered porphyritic andesitic tuff; medium-dark maroon-brown	
				with pale-medium grey-green alteration patches, epidote &	
				sericite & chlorite & quartz alteration intense, very strong	
				metasomatic alteration in veinlet and patchy vlotchy form,	
				trace - 2% diss. pyrite & PØ, well granitized.	
				Calcite vein 45° to c.a. at 64.9 - 65.2, barren.	
				Well silicified with 20-25% quartz stringers & stockwork at	
				66.5 - 72.6, predominately barren. Well silicified with	
				20-25% quartz stringers and stockwork at 82 - 83.8, predominately	
				barren with 3-5% epidote, 5-7% calcite and well sericitized.	
	70 - 99.2			Porphyritic granodiorite, intensely silicified and granitized,	
				15-20% barren quartz ± calcite stringers and stockwork in	
				sericite alteration silicified granodioritic host, not foliated	
				strongly but a weak tectonic talsic 65-70° to c.a.	
	99.2 - 123.1			Altered porphyritic andesite tuff; maroon with epidote veinlets	

PROPERTY Georgia River DATE September 9, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 08 DEPTH 273.8 m DOWN TIME _____

Az; 146 Dip: -69°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				and blotches (as previously described)	
		105.6-106.5	44183	10-15% 1-2 cm wide random quartz & calcite stringers with 5-7%	
				sphalerite, 3-5% pyrite & PØ	
		108-108.7	44184	10-15% quartz & calcite stringers and 7-10% PØ, 3-5% sphalerite,	
				2-3% pyrite	
		112.5-113.1	44185	1 cm wide PØ veinlet 25° to c.a. in silicified zone with 2-3%	
				diss. PØ, 7--0% quartz stringers and epidote (3-5%)	
	123.1-124.6	123.1-124.6	44186	Pale grey-green leached and sheared zone with 10-15% brecciated	
				quartz predominately barren, massive 2 cm thick PØ vein at 124.5,	
				sheared 30° to c.a.	
	124.6-153.1			Massive andesite, medium brown-green mottled, with dark grey-	
				black massive fine grained, laminated finely 25° to c.a., minor	
				quartz & calcite stringers, sweats and veinlets (barren), diss.	
				trace - 1% pyrite & PØ.	
		126.8-128.1	44187	Silicified with 20-28% quartz & calcite stockwork, 3-5% epidote,	
				5-7% interstitial PØ veinlets @ 127.7 - 128.1 , diss. 2-3%	

E.R. KRUCHKOWSKI CONSULTING

PROPERTY Georgia River DATE September 9, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 08 DEPTH 273.8 m DOWN TIME _____

Az: 146 Dip: -69°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				PØ & pyrite in stockwork.	
				Porphyritic diabase? dyke dark grey-black at 141.3 - 142.4 with	
				25--0% 1-3 mm plagioclase phenocrysts, contact at dyke 45° to	
				c.a., unaltered	
		147.3-147.8	44188	10-15% quartz & calcite stringers 5-7% PØ, 3-5% sphalerite	
		149.1-149.8	44189	7-10% quartz & calcite stringers, 3-5% PØ, 5-7% sphalerite	
		152-153.1	44190	Well leached, 5-7% calcite veinlet & stringer with 5-7%	
				interstitial and diss. sphalerite, 3-5% diss. pyrite & PØ	
		168.3-168.9	44191	Silicified zone with 7-10% calcite, 5-7% PØ, 2-3% sphalerite,	
				trace to 1% chalcopyrite.	
				Very well silicified at 205.8 - 211.3 with 20-25% white barren	
				quartz stringers & stockwork & sericite, chlorite & epidote.	
				Intensely leached at 232.1-233.4, pale-medium grey-green,	
				resembles baked margin to veins but barren with no quartz &	
				only trace crystals.	
				Minor black massive andesite/basalt at 236.9 - 238.7	
		238.1-238.7	44192	20-25% quartz & calcite stockwork with 3-5% PØ, 2-3% sphalerite	
				sericite & epidote & chlorite.	
		246.9-247.5	44193	Leached pale green silicified zone with 3-5% pyrite in veinlet	

PROPERTY Georgia River DATE September 9, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 08 DEPTH 273.8 m DOWN TIME _____

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	Az: 146 Dip: -69° DESCRIPTION	ASSAYS
				10-15° to c.a.	
		247.5-248.9	44194	Leached & silicified zone 15-20% quartz & calcite & pale green	
				zone. Stockwork & chlorite (mariposite?), 2-5% diss. pyrite,	
				1-2% pyrite, brecciated, contact 30° to c.a.	
		248.9-249.6	44195	7-10% quartz stringers in leached host, pale green with trace-	
				1% diss. pyrite.	
		249.6-251	44196	Brecciated quartz stockwork 20-25% in leached and baked pale	
				green chloritic host with 5-7% diss. pyrite and 2-3% diss. PØ	
				in quartz.	
		251-252.1	44197	Brecciated 10-15% quartz strongers with 3-5% pyrite, trace - 1%	
				PØ, chloritic leached host.	
		252.1-253.1	44198	Pale green chloritic baked lower contact 25° to c.a., 3-5% quartz	
				veinlets, trace - 1% fine grained diss. pyrite.	
		256.6-257	44199	Medium brown-maroon silicified zone, trace - 1% pyrite	
		257-258.7	44200	Milky white quartz vein with 10-15% host, 7-10% diss. & sub	
				interstitial pyrite, 3-5% interstial PØ contact 15° to c.a.	
		258.7-259.2	44201	7-10% quartz stringers 1-2 cm wide with 2-3% diss. pyrite,	
				7-10% laminated PØ	
		261.6-262.2	44202	Leached zone 40° to c.a., sheared and brecciated with 3-5%	

PROPERTY Georgia River DATE September 9, 1989 STARTED _____ FINISHED _____

DRILL HOLE 89- 08 DEPTH 273.8 m DOWN TIME _____

Az: 146 Dip: -69°

SAMPLE NUMBER	METRES INTERVAL	SAMPLE INTERVAL	SAMPLE NO.	DESCRIPTION	ASSAYS
				quartz veinlets up to 1-2 cm wide along 40-60° to c.a. shearing,	
				tension filling quartz as well subparallel to c.a., pale grey-	
				green zone with abundant chlorite, 2-3% fine-coarse grained	
				diss. & clusters pyrite, 2-3% diss. & clusters PØ.	
		262.2-263.3	44203	As above	
		263.3-264.3	44204	As above with gouge 2-3 cm wide @ 263.7.	
	272.2 - 273.7			Gneissic granite/granodiorite, leached and baked contact at 272.3,	
				coarse grained, silicified speckled medium brown-maroon with	
				medium-pale grey-green.	
				E.O.H. 273.8 m	

APPENDIX II

1989 Diamond Drill Assays

ECO-TECH LABORATORIES LTD.
ASSAYING - ENVIRONMENTAL TESTING
10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

SEPTEMBER 21, 1989

CERTIFICATE OF ANALYSIS ETK 89-720

AVATOR RESOURCES
430, 580 HORNBY STREET
VANCOUVER, B.C.
V6C 3B6

SAMPLE IDENTIFICATION: 79 CORE samples received September 13, 1989

ET#	Description	AU (g/t)	AU (oz/t)	Ag (g/t)
720 - 1	44126	.40	.012	1.7
720 - 2	44127	.86	.025	3.9
720 - 3	44128	.04	.001	.9
720 - 4	44129	1.76	.051	1.5
720 - 5	44130	20.56 *	.600	14.7
720 - 6	44131	.23	.007	2.5
720 - 7	44132	.09	.003	1.1
720 - 8	44133	1.95	.057	1.9
720 - 9	44134	.08	.002	1.5
720 - 10	44135	1.32	.038	4.7
720 - 11	44136	.19	.006	1.7
720 - 12	44137	1.36	.040	1.9
720 - 13	44138	.03	.001	.7
720 - 14	44139	.76	.022	3.8
720 - 15	44140	.03	.001	.7
720 - 16	44141	.04	.001	1.0
720 - 17	44142	.61	.018	2.5
720 - 18	44143	1.68	.049	4.5
720 - 19	44144	2.50	.073	4.9
720 - 20	44145	.12	.003	2.8
720 - 21	44146	3.48 *	.101	7.7
720 - 22	44147	.15	.004	.8
720 - 23	44148	7.25 *	.211	5.1
720 - 24	44149	2.64	.077	1.4
720 - 25	44150	.03	.001	.2
720 - 26	44151	.44	.013	5.0
720 - 27	44152	.06	.002	.5
720 - 28	44153	2.83	.083	5.1
720 - 29	44154	<.03	<.001	.8
720 - 30	44155	39.15 *	1.142	15.7

JUTTA JEALOUSE, Certified Assayer

ECO-TECH LABORATORIES LTD.
ASSAYING - ENVIRONMENTAL TESTING
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AVATOR RESOURCES

SEPTEMBER 21, 1989

ET#	Description	AU (g/t)	AU (oz/t)	Ag (g/t)
720 - 31	44156	.39	.011	6.3
720 - 32	44157	.15	.004	.4
720 - 33	44158	.18	.005	1.1
720 - 34	44159	64.43 *	1.879	52.4
720 - 35	44160	.25	.007	1.2
720 - 36	44161	.09	.003	.7
720 - 37	44162	11.93 *	.348	19.1
720 - 38	44163	.06	.002	.6
720 - 39	44164	1.06	.031	10.3
720 - 40	44165	1.45	.042	1.7
720 - 41	44166	.08	.002	.5
720 - 42	44167	.07	.002	.3
720 - 43	44168	.07	.002	.7
720 - 44	44169	.06	.002	2.5
720 - 45	44170	.04	.001	4.9
720 - 46	44171	.79	.023	16.1
720 - 47	44172	.14	.004	2.1
720 - 48	44173	.13	.004	.2
720 - 49	44174	.13	.004	.6
720 - 50	44175	.04	.001	.5
720 - 51	44176	.22	.006	.5
720 - 52	44177	.14	.004	.1
720 - 53	44178	<.03	<.001	.2
720 - 54	44179	.12	.003	.3
720 - 55	44180	.19	.006	.4
720 - 56	44181	.34	.010	.2
720 - 57	44182	.55	.016	.4
720 - 58	44183	.20	.006	2.3
720 - 59	44184	.24	.007	4.4
720 - 60	44185	<.03	<.001	3.5
720 - 61	44186	<.03	<.001	.3
720 - 62	44187	.08	.002	13.4
720 - 63	44188	.65	.019	17.1
720 - 64	44189	.51	.015	5.9
720 - 65	44190	.18	.005	5.2
720 - 66	44191	.21	.006	5.1
720 - 67	44192	.18	.005	.7
720 - 68	44193	.46	.013	1.7
720 - 69	44194	.05	.001	1.2
720 - 70	44195	<.03	<.001	.6
720 - 71	44196	.76	.022	.8
720 - 72	44197	2.06	.060	1.7
720 73	44198	.18	.005	1.0
720 74	44199	.05	.001	.4
720 75	44200	.41	.012	4.6

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ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

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AVATOR RESOURCES

SEPTEMBER 21, 1989

ET#	Description	AU (g/t)	AU (oz/t)	Ag (g/t)
720	76 44201	1.37	.040	12.9
720	77 44202	.11	.003	.4
720	78 44203	.77	.022	.7
720	79 44204	.27	.008	.2

NOTE: < = LESS THAN
* SAMPLE SCREENED & METALLICS ASSAYED

ECO-TECH LABORATORIES LTD.
JUTTA JEALOUS
B.C. Certified Assayer

CC: ED KRUCKOWSI
400, 255 17TH AVENUE
CALGARY, ALBERTA
T2S 2T8
FAX: (403) 229-3077
SC89/K5

APPENDIX III

Assay Data for Ore Grade Calculations

Parameters for Ore Calculations

1. All trace intervals less than 1.22 m are extrapolated to 1.22 m.

2. It is assumed that all wall zones to veins that are less than 1.22 m have a grade value of zero.

3. All trench assays in a block are computed to have a single influence. Same as a drill hole. (Example Block 4 - T14 & 15 are treated as a single value same as GM-7). Therefore Block 4 is calculated as the average of GM-7 and one single trench value (T14 & 15 combined).

4. DDH GM-21 did not intersect the full Southwest Vein but the partial intersection has been used as representing the whole zone.

5. DDH 89-03 which intersected only a partial Southwest zone was not used in calculating any of the mineral inventory.

6. All intervals are calculated using the dip of the drill holes for Blocks 1-15, 32-34. The calculation does not take into account a dipping vein system but assumes a vertical dip. Blocks 16-20, 22-24 have been corrected for vein dip.

Block No.	Influence (DDH, Trench Underground)	Year Obtained	Intersection Opt Au	Intersection Opt Ag	Width (m)	True Width (m)	Mining Width	Minimum Width Grade Opt Au	Minimum Width Grade Opt Ag	Tons
1	T60 (trench)	1980	.224	12.85	0.22	0.22	1.22	.04	2.32	2083.42
2	T44 (trench)	1980	.675	.92	.48	.48	1.22	.266	.36	1268.85
3	T6 (trench)	1980	2.966	3.50	.30	.3	1.22	.729	.86	1762.29
4	T14 (trench	1980	5.148	6.46	.17	.17	1.22	.51	.56	959.99
	T15 (trench)	1980								
	GM-7	1980	.35	.29	2.13	1.45	1.45			
5	T1, 7, 17 (trench)	1980	.82	.91	.34	.34	1.22	.218	.18	834.15
	GM-10	1980	.659	.35	.61	.4	1.22			
6	T2 (trench)	1980	.20	.56	1.6	1.6	1.6	.20	.56	1026.90
7	T3 (trench)	1980	.582	.39	.24	.24	1.22			
	T4 (trench)	1980	.336	.35	1.85	1.85	1.85	.184	.19	1425.24
	GM-13 (DDH)	1980	.438	.54	.35	.29	1.22			
8	GM-14 (DDH)	1980	3.31	6.23	.31	.19	1.22	.515	.97	1065.00
9	GM-15 (DDH)	1980	.898	1.07	2.47	1.07	1.22	.788	.94	2100.00
10	GM-11 (DDH)	1980	.088	.10	.69	.4	1.22	.03	.03	2014.00
11	GGP-3 (DDH)	1979	.96	.96	1.45	1.03	1.22	.810	.81	391.62
12	GM-8 (DDH)	1980	2.02	3.08	1.53	.91	1.22	1.51	2.3	2108.87

Block No.	Influence (DDH, Trench Underground)	Year Obtained	Intersection Opt Au	Intersection Opt Ag	Width (m)	True Width (m)	Mining Width	Minimum Width Grade Opt Au	Minimum Width Grade Opt Ag	Tons
13	GM-20 (DDH)	1980	2.05	1.28	2.44	1.3	1.3	2.05	1.28	4677.00
14	GM-12 (DDHO	1980	1.365	1.10	1.67	.65	1.22	.727	.586	4433.00
15	GM-21 (DDH)	1980	1.02	3.22	.45	0.2	1.22	.16	.53	4386.14
16*	88-10 (DDH)	1988	.547	.36	.89	.80	1.22	.330	.266	886.76
17*	88-01 (DDH)	1988	5.202	4.99	.49	.31	1.22	1.336	1.28	5642.27
18*	88-08 (DDH)	1988	.272	.41	1.64	.98	1.22	.218	.327	3741.93
19*	88-11 (DDH)	1988	2.287	2.23	.67	.40	1.22	.742	.724	5799.89
20*	88-02 (DDH)	1988	.116	.05	.61	.39	1.22	.037	.01	6044.65
21	CD-26 CD-3 CD-22 CD-23 (underground)	1980	.292 .63 .222 .766	.83 .69 .34 .64	.50		1.22	.20	.27	5639.33
22*	88-09 (DDH)	1980						.035	.020	3797.00
23*	88-03 (DDH)	1988	.365	.51	.36	.20	1.22	.079	.148	4542.79
24*	88-12 (DDH)	1988	.467	1.46	.48	.40	1.22	.154	.36	2584.69

Block No.	Influence (DDH, Trench Underground)	Year Obtained	Intersection Opt Au	Intersection Opt Ag	Width (m)	True Width (m)	Mining Width	Minimum Width Grade Opt Au	Minimum Width Grade Opt Ag	Tons
25	CD-37	1980	.296	1.14	.61	.61				
	CD-38		1.230	1.10	.58	.58				
	CD-39		2.208	2.29	.26	.26	1.22	.303	.433	4254.95
	CD-40		2.432	2.45	.08	.08				
	CD-41		.472	.86	.69	.69				
	CD-42 (underground)		.624	1.29	.36	.36				
26	CD-32	1980	.168	.31	.1	.1				
	CD-33		.226	.21	.17	.17	1.22	.067	.05	2715.88
	CD-34 (underground)		.688	.45	.28	.28				
27	GM-32 (DDH)	1981	27.8	8.17	.7	.32	1.22	7.29	2.14	6013.33
28	GM-33 (DDH)	1981	.369	1.28	.50	.32	1.22	.097	.34	8488.36
29	CD-48	1980	.20	.32	.47	.47				
	CD-49		.250	.19	.13	.13				
	CD-50 (underground)		.364	.35	.16	.16	1.22	.04	.05	4636.78
	CD-52		.082	.19	.10	.10				
	CD-55		.188	.21	.27	.27				
	88-13 (DDH)	1981								
30	CD-10	1980	.188	.15	.54	.54	1.22	1.09	.78	3558.28
	CD-12 (underground)		2.444	1.95	.36	.36				
31	CD-15 (underground)	1980	.469	.40	.57	.57	1.22	.219	.19	2757.00
32	89-01 (DDH)	1989	.6	.43	1.9	1.19	1.22	.58	.41	4054.00

Block No.	Influence (DDH, Trench Underground)	Year Obtained	Intersection Opt Au	Intersection Opt Ag	Width (m)	True Width (m)	Mining Width	Minimum Width Grade Opt Au	Minimum Width Grade Opt Ag	Tons
33	89-04 (DDH)	1989	1.142	.46	2.20	1.23	1.23	1.142	.46	3228.00
34	89-05 (DDH)	1989	1.879	1.53	1.06	.397	1.22	.61	.50	7678.00

* calculated to include dip of vein

APPENDIX IV

USGS and ESC Ore Category Definitions

To serve these planning purposes Total Resoures are classified both in terms of economic feasibility and of the degree of geologic assurance. The factors involved are incorporated in figure 1 to provide a graphic classification of Total Resources.

General guides for the use of this classification system are as follows:

1. Resource categories and definitions in the classification, as specified in the glossary, should be applicable to all naturally occurring concentrations of metals, nonmetals, and fossil fuels. The categories may be subdivided for special purposes.
2. Definitions may be amplified, where necessary, to make them more precise and conformable with accepted usage for particular commodities or types of resource evaluations.
3. Quantities and qualities may be expressed in a variety of terms and units to suit different purposes, but must be clearly stated and defined.

GLOSSARY OF RESOURCE TERMS

Resource.—A concentration of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust in such form

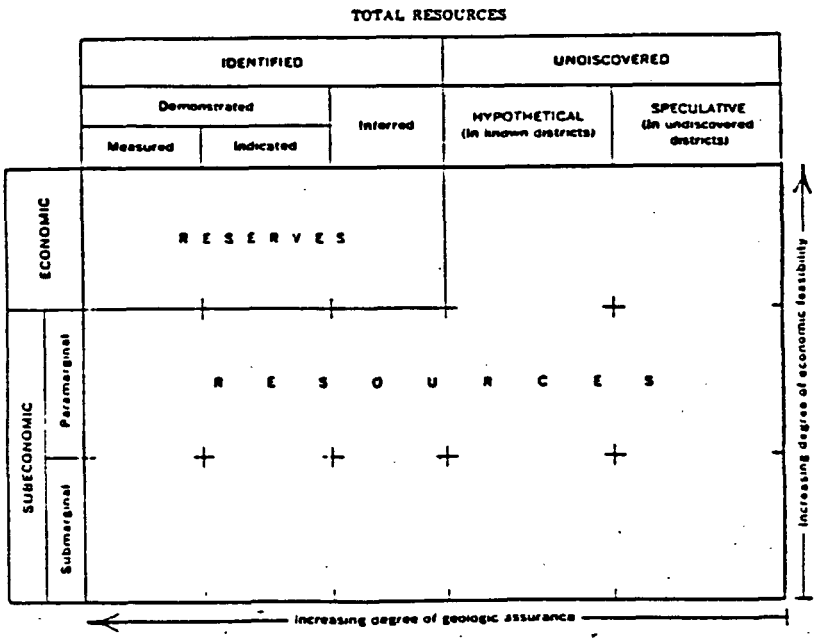


FIGURE 1.—Classification of mineral resources.

that economic extraction of a commodity is currently or potentially feasible.

Identified resources.—Specific bodies of mineral-bearing material whose location, quality, and quantity are known from geologic evidence supported by engineering measurements with respect to the demonstrated category.

Undiscovered resources.—Unspecified bodies of mineral-bearing material surmised to exist on the basis of broad geologic knowledge and theory.

Reserve.—That portion of the identified resource from which a usable mineral and energy commodity can be economically and legally extracted at the time of determination. The term *ore* is used for reserves of some minerals.

The following definitions for measured, indicated, and inferred are applicable to both the Reserve and Identified-Subeconomic resource components.[1]

Measured.—Reserves or resources for which tonnage is computed from dimensions revealed in outcrops, trenches, workings, and drill holes and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling, and measurement are spaced so closely and the geologic character is so well defined that size, shape, and mineral content are well established. The computed tonnage and grade are judged to be accurate within limits which are stated, and no such limit is judged to be different from the computed tonnage or grade by more than 20 percent.

Indicated.—Reserves or resources for which tonnage and grade are computed partly from specific measurements, samples, or production data and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to permit the mineral bodies to be outlined completely or the grade established throughout.

Demonstrated.—A collective term for the sum of measured and indicated reserves or resources.

Inferred.—Reserves or resources for which quantitative estimates are based largely on broad knowledge of the geologic charac-

[1] The terms proved, probable, and possible (used by the industry and economic evaluations of ore in specific deposits or districts) commonly have been used loosely and interchangeably with the terms measured, indicated, or inferred (used by the Department of the Interior mainly for regional or national estimates). The terms "proved" and "measured" are essentially synonymous. The terms "probable" and "possible," however, are not synonymous with "indicated" and "inferred." "Probable" and "possible" describe estimates of partly sampled deposits—in some definitions, for example, "probable" is used to describe deposits sampled on two or three sides, and "possible" for deposits sampled only on one side; in the Bureau-Survey definitions, both would be described by the term "indicated."

ter of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition, of which there is geologic evidence; this evidence may include comparison with deposits of similar type. Bodies that are completely concealed may be included if there is specific geologic evidence of their presence. Estimates of inferred reserves or resources should include a statement of the specific limits within which the inferred material may lie.

Identified-Subeconomic.—Resources that are not Reserves, but may become so as a result of changes in economic and legal conditions.

Paramarginal.—The portion of Subeconomic Resources that (1) borders on being economically producible or (2) is not commercially available solely because of legal or political circumstances.

Submarginal.—The portion of Subeconomic Resources which would require a substantially higher price (more than 1.5 times the price at the time of determination) or a major cost-reducing advance in technology.

Hypothetical resources.—Undiscovered resources that may reasonably be expected to exist in a known mining district under known geologic conditions. Exploration that confirms their existence and reveals quantity and quality will permit their reclassification as a Reserve or Identified-Subeconomic resource.

Speculative resources.—Undisovered resources that may occur either in known types of deposits in a favorable geologic setting where no discoveries have been made, or in as yet unknown types of deposits that remain to be recognized. Exploration that confirms their existence and reveals quantity and quality will permit their reclassification as Reserves or Identified-Subeconomic resources.

AREAS OF RESPONSIBILITY AND OPERATIONAL PROCEDURES

U.S. Bureau of Mines.—The Bureau appraises, analyzes, and publishes reserve estimates from base data supplied by the mineral and energy materials industry, the U.S. Geological Survey, and other governmental agencies. The Bureau judges commodity recoverability on existing economic and legal factors.

MINERAL RESOURCE DEFINITIONS

Ore is a natural mineral-bearing substance that can be recovered by mining and from which one or more commodities can be extracted economically under conditions specified at the time of the appraisal.

Measured Ore refers to ore for which tonnage is computed from dimensions revealed in outcrops, trenches, workings or drill holes, and for which grade is computed from adequate sampling. The sites for inspection, sampling and measurement are so closely spaced and the geological character is so well defined that the size, shape and mineral content are well established. The tonnage and grade should refer to ore recoverable by mining with due regard for dilution.

Indicated Ore refers to ore for which tonnage and grade are computed partly from specific measurements, samples, or production data and partly from projection for a reasonable distance on geological evidence. The openings or exposures available for inspection, measurement and sampling are too widely or inappropriately spaced to outline the ore completely or to establish its grade throughout.

Inferred Ore refers to ore for which quantitative estimates are based largely on broad knowledge of the geological character of the deposit and for which there are few, if any, samples or measurements. Estimates are based on assumed continuity or repetition for which there is geological evidence; this evidence may include comparison with deposits of similar types. Bodies that are completely concealed but for which there is some geological evidence may be included. Estimates of inferred ore should include a statement of the specific limits within which the inferred material may lie. These limits vary depending upon the characteristics and knowledge of the orebodies.

APPENDIX V

Vein Systems - 1980

Trenching was carried out on all previously identified veins and on as many of the newly discovered ones as possible. Rock cuts were excavated using cobra drills, dynamite and hand tools. The objective was to obtain representative material from the veins in order to evaluate the gold-silver potential.

A total of 137 trenches were excavated and 200 chip samples were collected. Figures 7 to 14 show the trench locations on the various vein sytems.

Economic Geology

Vein Systems

Quartz veins are found in two distinct vein systems: wide shear zones striking N40^{O} west consisting of quartz and siliceous breccia and narrower quartz filled fault fissures having a general northerly strike.

Marked enrichment appears to occur in the quartz filled northerly trending fault fissures at points of vein intersections.

Prior to the 1980 program, 7 vein systems had been discovered and explored. These veins are as follows: northwesterly trending - Main, Georgia and Gem veins and northerly trending - Southwest, Summit, Bullion and Camp veins. A detailed prospecting program during late September and early October indicated the presence of numerous other veins. These veins consisted of 4 new northerly trending veins (Eastmark, East Bob, East and the Cobbett veins) and 5 new northwesterly trending veins (CC#1, CC#2, Gem A, Gem Top and Pond veins).

The Zinc and Granodiorite veins outlined appear to have a northeast trend with shallow dips to the southeast.

Figures 15 to 20 show the geology of the veins within the trenches sampled. Figure 7 to 14 show the areal extent,strike and nature of the quartz veins.

A brief description of the veins is as follows:

Main Vein - This vein consists of a large silicified shear zone striking 315° and dipping 55° to 65° to the southwest. The Main vein is a siliceous replacement zone composed of layers of siliceous material separated by bands of schist with silicification gradually fading into country rocks. The zone has been traced along a strike length of 650 meters and exhibits an offset along the Southwest vein(6 meters) and along the Bullion vein (65 meters). This vein has generally sparse mineralization consisting of pyrite, pyrrhotite, and minor arsenopyrite. Sampling underground, 1979 drill results and 2 trenches indicate a low gold value along this vein (0.003 oz. per ton Au).

Georgia Vein - The Georgia vein strikes parallel to the Main vein about 300 meters north and cuts across the Georgia and Georgia No.1 claims. The vein is approximately 1 meter in width and is exposed over a strike length of 450 meters. The Georgia vein appears to pinch out to the northwest into a series of quartz veinlets, the southeast extent has not been defined. The vein which consists of siliceous volcanic inclusions within quartz, generally carries up to 5 percent pyrite and pyrrhotite with local concentrations of sphalerite with minor galena. Assays for both trenching and drilling indicate a low gold value (0.003 to 0.005 oz. per ton Au) along the explored vein. Several short and narrow stringers parallelling the Georgia vein near trench 72 show interesting values in gold.

The Georgia vein is offset approximately 27 meters along the Southwest vein.

Gem Vein, Gem Top, Gem A

The Gem Vein strikes parallel to the Georgia vein approximately 150 meters to the north on the Gem claim. The vein is exposed over a length of 400 meters and is from 1 to 3 meters in width. Mineralization along the vein is generally sparse with local concentrations of pyrite, pyrrhotite with minor sphalerite and rarely galena. The vein has two nearby veins - the Gem Top and Gem A - which are up to 2 meters in width, contain sparse sulphides but are shorter in length. Low gold values ranging from 0.02 to 0.07 oz. per ton Au have been obtained from these veins northwest of the Cobbett vein. However where the Gem vein appears to turn from a northwest direction to a northerly direction, abundant sulphides are present. Trench 111 had massive pyrite and sphalerite stringers and averaged 0.24 oz Au over a 2 meter interval. Massive pyrite-sphalerite float on strike with this zone suggest a possible continuation to the south. This zone also appears to be on strike with the significant intersections in DDH GM-16, 17, 18 (0.032 oz. Au over 0.68 meters, 0.210 over 1.52 meters and 0.064 over 2.07 meters respectively).

Southwest Vein - The Southwest vein is defined on surface for 900 meters across the Georgia No.1 and Georgia No.2 claims and through a vertical range of 360 meters. The vein has been the most extensively explored by drifting on two levels prior to 1937, 1980 trenching and 1979 and 1980 diamond drilling. The vein consists of short discontinuous and overlapping mineralized quartz lenses along a continuous zone of green chlorite schists. The

schist zone varies from 1 to 4 meters and shows evidence of repeated movement along fault zones. Near the intersection of the Georgia, CC#1 and CC#2 veins, the Southwest vein which consists of 1 to 3 overlapping gold bearing quartz lenses, contains a zone 80 meters long and 0.94 meters wide averaging 0.97 oz. Au per ton and 1.12 oz. Ag per ton. The individual lenses appear to vary in length from 8 to 30 meters and may have up to 20 meters depth extension. Above the No.3 portal the vein consists of short quartz stringers pinching and swelling along fault gouge and sheared faulted volcanic. The vein is the prime exploration target at present as underground sampling, diamond drilling and trenching have shown very high grade gold and silver values within the quartz lenses and occasionally in the chloritic zone.

Production of 500 tons of vein material occurred in small stopes along this vein.

Bullion Vein - The Bullion vein is located along Bullion Creek and has been traced along a strike of 400 meters. Above the No.2 level the vein consists of mineralized quartz lenses along a fault zone. Exposure in trenches to the north indicate post quartz faulting with coarse barren quartz fragments from 1 to 50 cm in a matrix of green chloritic gouge. The fault zone also contains up to 50 percent green altered volcanic fragments generally up to 5 cm.

Trenching and underground sampling indicates that vein material varies from 0.1 to 0.35 meters with erratic gold values in discontinuous lenses. The vein has been defined by drifting on two levels and exposure in the creek bed.

Summit Vein - The Summit vein located northwest of the Southwest vein consists of parallel narrow quartz lenses exposed over a short distance. A large area stripped of overburden was outlined and grab sampling of the dump and chip sampling of the veins showed high gold values. The veins noted occur over an area 11 meters in width with individual quartz lenses varying from 0.07 to 0.33 meters in width.

Camp Vein - The vein was not located during several days of search. The area within which the vein appears to be located is heavily overgrown.

CC#1 and CC#2 Veins - The veins are parallel to and a short distance south of the Georgia vein. The CC#1 vein consists of quartz veins, stringers and boxworks. The veins are both approximately 100 meters long and up to 1.5 meters in width. The CC#1 vein contains very sparse mineralization while CC#2 shows stringers and lenses of massive pyrite, sphalerite and galena. Low gold values were obtained within both veins.

Pond Vein - The Pond vein consists of a wide zone similar to the Main vein in composition. The vein striking 320° consists of zones of siliceous material separated by sericite schists. The vein has been traced over a distance of 100 meters and appears to be terminated by a fault on the northwest and pinches into small quartz stringers to the southeast. Low gold values were obtained in one trench.

Cobbett Vein - The Cobbett vein located on the Georgia No.1 claim parallels the Southwest vein and is a wide zone of quartz and calcite with little sulphide. Stringers of massive pyrite, galena and sphalerite striking into and contiguous to the Cobbett vein show appreciable silver

values and occasional gold values. The Cobbett vein was observed over a distance of 90 meters with widths up to 3 meters.

East and East-Bob Vein - East of the Bullion vein, a number of short discontinuous quartz lenses with appreciable gold values were outlined. The East vein consists of 3 possibly 4 short discontinuous veins, generally less than 20 meters in length, some of which carry gold values up to 3 oz. per ton. Individual lenses vary from 0.09 to 0.60 meters in width. The East-Bob vein is a quartz vein or stringer noted over a distance of 10 meters containing gold values over 1 oz. per ton. The vein appears to be from 0.1 to 0.20 meters in width.

Eastmark Vein - Immediately east of the Bullion vein near the No.2 portal, a zone of quartz stringers was outlined. The zone has been noted over a length of 50 meters and may be up to 2 meters wide. Individual quartz lenses in the zone carry appreciable gold and silver values. Due to its proximity to the Bullion vein and underground workings, the Eastmark vein deserves further exploraiton.

Zinc and Granodiorite Veins - Although the two veins are widespread, they show similarities in minerology and mode of occurrence. Both are sphalerite rich zones within sericite schist alteration zones generally near or contiguous to a granodiorite dyke. The zinc vein is a zone 0.12 to 1.10 meters in width outlined over a length of 25 meters. The Granodiorite vein is a zone 250 meters in length and generally 0.25 to 0.40 meters in width. It parallels a granodiorite dyke and shows spotty gold values except in Bullion Creek where several samples returned appreciable values (0.27 to 0.654 oz. per ton).

Both veins have generally low galena values and pyrite may form up to 50 percent of the sulphide component.

APPENDIX VI

Report of Minister of Mines

British Columbia 1936

Company initiated intensive exploratory development-work which it is planned to continue throughout the winter. In the Queen Charlotte Islands exploratory development was continued on the *Skidegate-Southeaster* and a limited amount carried out on the *Haida Gold*. Besides these operations, exploratory work by individual prospectors was carried out on many properties throughout the district.

Placer-gold mining and prospecting by individuals, syndicates, and companies has been very active in the Dease and Liard areas, and especially in the Atlin Division, where about 160 operations of various extent have proceeded.

Prospecting shows an increase over 1935 throughout the district. New discoveries of importance have been made in the Portland Canal and Atlin Divisions. In the Table Mountain section, McDame Creek area, Liard Division, a lode-gold discovery of interest on the *Vollung* group has been optioned by Consolidated Mining and Smelting Company of Canada. Further exploration of this showing is planned for the 1937 season.

The year 1936 has been one of the most active and progressive in the mining history of this district.

The writer desires to express his thanks to prospectors, operators, and all those with whom he has come in contact during the conduct of his work, for their co-operation.

LODE-GOLD DEPOSITS.

Portland Canal Area.

Helena Gold Mines, Ltd.

This company was incorporated in 1933, with an authorized capital structure of 2,000,000 shares of $1 par value, to acquire title and assets of Georgia River Gold Mines, Limited. In this reorganization the Georgia River Company received 800,000 Helena Gold Mines shares. Of these, the Georgia River shareholders received 750,000 shares on the basis of four old shares for one new, and 50,000 shares were set aside to cover liquidation expenses. Wellington Beaton is president and general manager and the registered office of the company is 901 Credit Foncier Building, 850 Hastings Street West, Vancouver.

In 1935, Gold Leasers, Limited, a private company, with an authorized capital of $25,000, made up of 2,000 Class A and 500 Class B shares, both of $10 par value, was formed for the purpose of leasing the property of Georgia River Gold Mines, Limited, from Helena Gold Mines, Limited, to December 31st, 1937. This agreement required Gold Leasers, Limited, to build a mill of not less than 10 tons daily capacity which was to become the property of the company at the termination of the lease. Gold Leasers, Limited, capital was later increased by $35,000 to a total of $60,000, a portion of which is to be sold to secure capital for construction of the mill. The executive offices of Gold Leasers, Limited, is at 902 Credit Foncier Building, Vancouver.

The property is composed of thirty-four Crown-granted mineral claims and fractions, about 1,227 acres, and is located in the Colling Range on the east side of Portland Canal, in the Portland Canal Mining Division, about 18 miles south of the village of Stewart and about 8 miles by trail from seaboard at the mouth of Georgia River.

The property is reached by launch from Stewart to the beach camp at the mouth of Georgia River, a distance of about 18 miles. From thence a pack-horse trail extends for about 6½ miles up the Georgia River Valley to the Cache Camp, elevation 1,225 feet, at the foot of the mountain. About 2½ miles of this stretch of the trail is puncheoned through muskeg, and to be efficient for pack-horse traffic additional stretches still require puncheoning. Along one or two short stretches of the first 5 miles the trail is narrow around steep rock hill-slopes. Between the beach and the Cache Camp several small streams are crossed by culverts and the Georgia River is crossed at about 1 mile and 5½ miles from the Beach Camp by bridges about 100 feet long. At the Cache the Georgia River is again crossed and the trail follows a circuitous and steep route for about 1½ miles to the mine camp at elevation 3,300 feet. Along the last mile of this stretch the trail is poorly located and follows a very steep grade requiring extensive rock-work in places.

The mineral deposits were discovered and staked in 1910 by Danny Hume, of Stewart. The Georgia River Gold Mines, Limited, was incorporated in 1925 with an authorized capital of $1,000,000, later increased to $3,000,000. Up to 1932 operations were conducted by the

Georgia River Company. Helena Gold Mines took over operation in 1933 and ceased in 1934. In 1935 a limited amount of mining-work was done by Gold Leasers, Limited, between August and December of that year. In the spring of 1936, lumber for mill-construction, and oil-supply, was packed in and in the late fall the mill building was constructed. No mining was done during 1936. (Annual Reports of the Minister of Mines for the years 1910 to 1912, 1914 to 1918, 1922 to 1924, 1928 to 1930, 1932, 1933, and Bulletin No. 1, 1932, "Lode-gold Deposits of British Columbia.")

The topography of the area incorporates the characteristic ruggedness of the Coast Mountains, of which the Colling Range is a local segment. The deep valley of Georgia River is bordered by steep and extensively bluffed slopes, generally heavily timbered with mainly spruce, hemlock, and cedar and thickly covered with underbrush. Timber-line is at about 3,200 feet altitude, and above this grassy slopes of more subdued inclination extend to the bluffed and domed ridges of the range-crest at between 5,000 and 6,000 feet elevation.

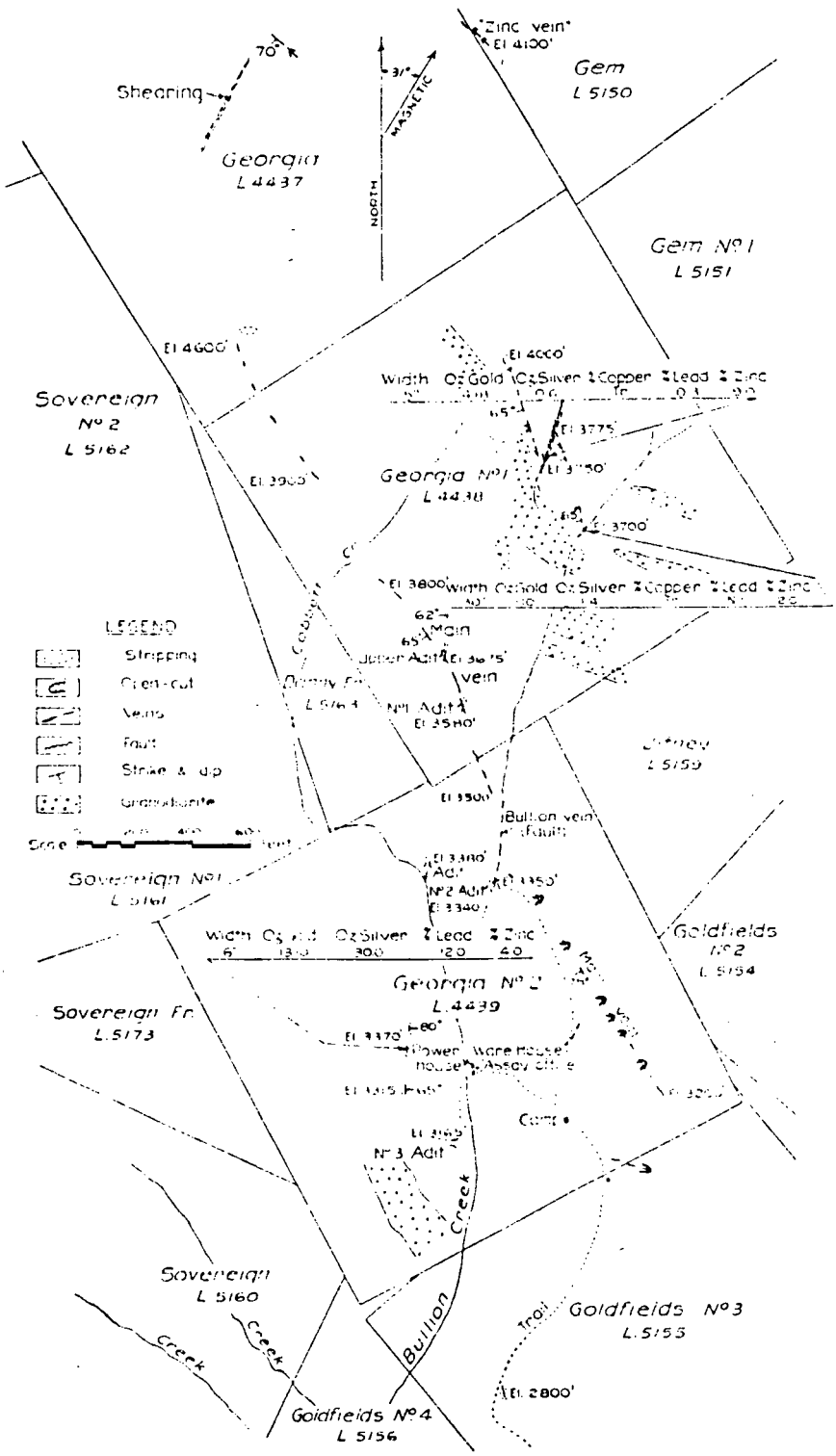
The rocks underlying the area consist chiefly of altered crystalline andesitic flows (greenstone) and altered, probably tuffaceous, sediments. These rocks have been subjected locally to strong shearing movements and are altered to mica-schists, especially in the vicinity of major, north-striking fault-zones. This formation can be correlated with the Bear River series (Hazelton group) of probably lower to middle Jurassic age. Granitic dykes and tongues intrude this series of rocks extensively in the locality of the workings and showings. Structurally, the series in this locality comprises a triangular pendant-inclusion, about 12 miles wide along Portland Canal and extending for 13 miles eastward towards the head of Hastings Arm, lying within and contiguous to the eastern contact of the Coast Range granodiorite batholith. The intrusive granitic dykes and tongues are satellitic to the underlying batholith.

The known mineral deposits are located between elevations of 2,800 and 4,600 feet around the central section and head of Bullion Creek. Bullion Creek in its headwaters section, which is the locality of the main workings, occupies a major fault-structure striking north 9 degrees east and dipping vertically and known as the "Bullion" vein. Striking at various angles between north and north-west towards and across the "Bullion" fault and dipping generally steeply west, a series of quartz-filled fractures occurs. The typical transverse veins vary in width from a few inches to about 4 feet. In the case of the "Main" vein, which differs in character from the smaller veins and resembles a quartz-replacement body, widths from 5 to about 20 feet are exposed. The transverse veins and the "Bullion" vein are locally well mineralized along short stretches with pyrrhotite, pyrite, sphalerite, galena, and some arsenopyrite. The "Main" vein is generally very sparsely mineralized chiefly with pyrrhotite. The best mineralization occurs at and around intersections of the transverse veins with the "Bullion" fault or with each other.

At elevation 2,800 feet, close to the trail and about half a mile from the camp, a quartz vein 10 to 18 inches wide has been exposed in a trench 3 feet deep and 30 feet long through clay overburden on the crest of the steep slope to Bullion Creek. This vein is mineralized in places with pyrite, galena, and sphalerite and should be traced to its possible intersection with the Bullion Creek fault.

The "Main" vein on the east side of Bullion Creek is traced along the 10-degree hill-slope, between elevation 3,200 and 3,350 feet in a north-westerly direction for 950 feet by natural exposure and a series of six open-cuts, showing generally barren quartz across widths of 4 to 8 feet. The vein is not continuous to or across Bullion Creek but is apparently faulted by the "Bullion" fault. On the west side of Bullion Creek the "Main" vein offset to the north about 200 feet is again naturally exposed along a distance of about 800 feet, with widths from 6 to 20 feet, between elevation 3,500 and 3,800 feet. About 400 feet to the north-west it is again exposed for about 500 feet between elevation 3,900 and 4,600 feet, showing widths from 5 to 7 feet of generally barren or very sparsely-mineralized quartz. Snow obscured tracing of the "Main" vein beyond this point. The vein dips generally between 65 to 75 degrees west and exhibits a fairly well-defined hanging-wall. It is a siliceous replacement-zone and the silicification gradually fades towards the foot-wall. A selected sample of the best mineralization observed in the surface exposures consisting of quartz, pyrrhotite, and pyrite assayed: Gold, trace; silver, trace.

Several small quartz veins striking between north-east and north-west, transverse to the "Bullion" fault, are exposed by natural outcrop or open-cutting in the vicinity of the main



Helena Gold Mines, Ltd. Plan of Surface Workings.

workings. The most extensive exploration has been confined to what is locally called the "South-west" vein. Detailed examination, however, indicates that the widely separated exposures of the so-called "South-west" vein, represent, most probably, a series of veins transverse to the "Bullion" fault and striking at acute angles to each other. This is especially evident in the underground workings. These veins show the best mineralization at intersections with each other and especially with the "Bullion" fault.

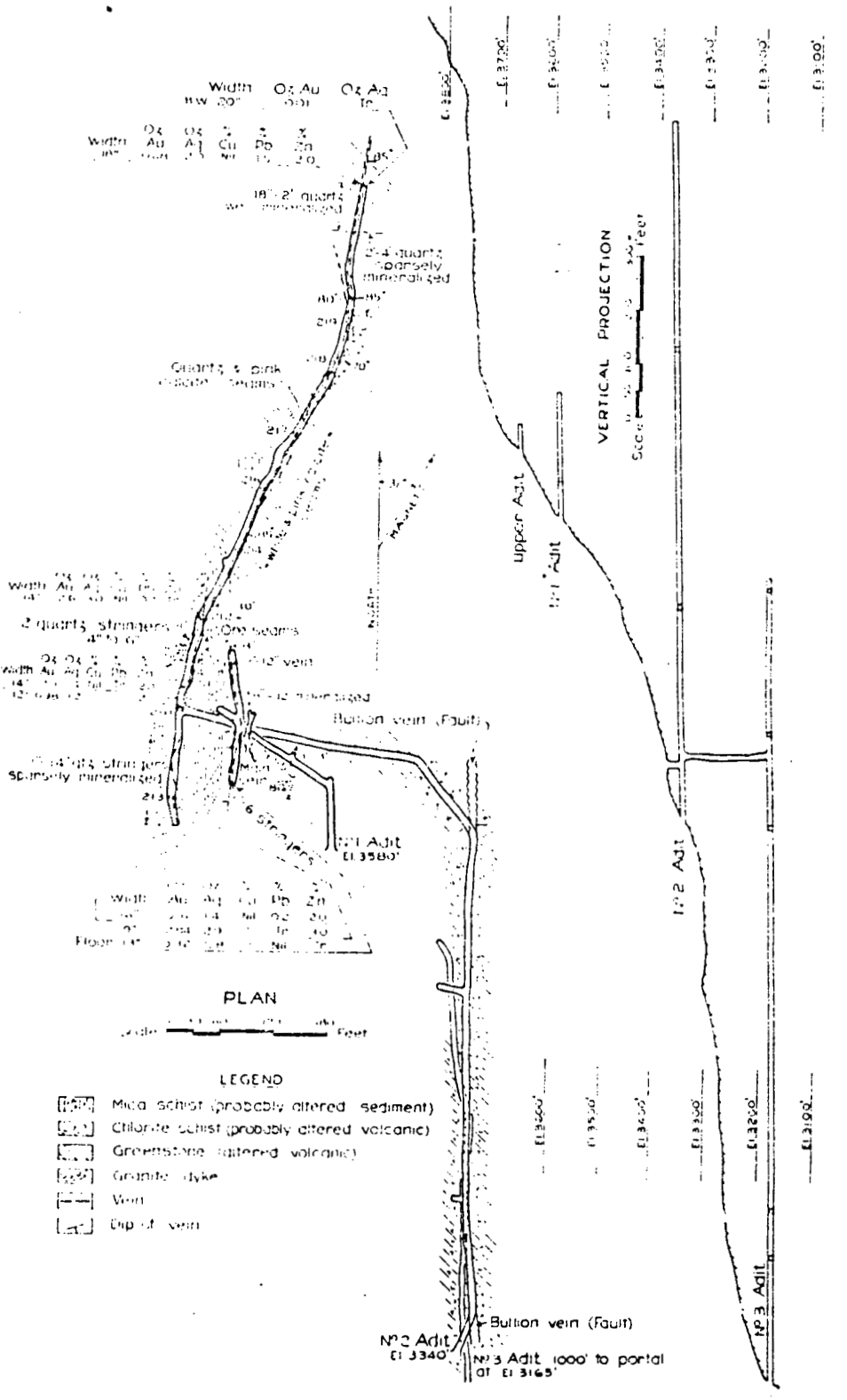
About 240 feet north-westerly from the portal of No. 3 adit, and at about 150 feet higher elevation, a series of open-cuts ("High-grade" cuts) along a distance of 200 feet between elevation 3,315 and 3,370 feet exposes a quartz vein ("South-west" vein) from 6 to 18 inches wide, striking north and dipping from 65 degrees to 80 degrees east. The vein in these cuts is well mineralized with galena, sphalerite, pyrrhotite, pyrite, and arsenopyrite, especially on the hanging-wall side. A selected sample of 6 inches of massive mineralization exposed on the hanging-wall side of the vein in the centre trench assayed: Gold, 13.10 oz. per ton; silver, 30 oz. per ton; lead, 12 per cent.; zinc, 4 per cent. This mineralization and vein have not been located by crosscutting from No. 3 adit-level. It is significant that this mineralization on the surface occurs at about the intersection of the vein with a fault, strike north, dip 60 degrees west, which shows in the crosscut from No. 3 adit-level. Drifting south along this fault and raising to the surface cuts to locate the continuation of the vein would be constructive. About 550 feet north of the "High-grade" cuts, an adit 90 feet long at elevation 3,380 feet exposes a shear 26 inches wide striking north and dipping vertically. The shear is very sparsely mineralized with pyrite and shows some quartz stringers. At elevation 3,675 feet, about 700 feet north of this showing, a quartz vein, 2 feet in width, strike north, dip 62 degrees west, is exposed at its intersection with the "Main" vein. An adit ("Upper" adit) 30 feet long, crosscutting the "Main" vein at this showing, exposes sheared greenstone with silicification across 30 inches mineralized with mainly pyrite and pyrrhotite. A sample across 30 inches of silicification in the face assayed: Gold, trace; silver, 0.2 oz. per ton.

At elevation 3,700 feet, 650 feet north-east of the "Upper" adit and contiguous to a granitic dyke, a quartz vein 30 inches wide, striking north 30 degrees west and dipping 65 degrees west, is exposed in the bed of Bullion Creek, cutting arenaceous argillite. At its intersection with the "Bullion" fault in the creek-bed, this vein is well mineralized in places with sphalerite and pyrite. A sample across 30 inches in the creek-bed assayed: Gold, 0.10 oz. per ton; silver, 1.4 oz. per ton; copper, trace; lead, *nil;* zinc, 2 per cent. This vein is traced north-west by natural exposure across a ridge sloping 30 degrees for a distance of 360 feet to intersection with another north-striking fault in the bed of a small tributary of Bullion Creek at elevation 3,775 feet. Here it is offset 120 feet to the south to elevation 3,750 feet, and can be traced on the west side of the fault for 320 feet to elevation 4,000 feet, where it is obscured by overburden. Several stringers, in places showing massive mineralization of pyrrhotite, sphalerite, pyrite, and some galena, occur in the creek-bed exposure in this locality. A representative sample of a typical stringer, 5 inches wide, assayed: Gold, 4.18 oz. per ton; silver, 0.6 oz. per ton; copper, trace; lead, 0.3 per cent.; zinc, 9 per cent.

The described mineral exposures are mainly in a rock-formation complex of sheared greenstone and tuffaceous sediments. To the north argillaceous sediments predominate. Several small discontinuous and lenticular showings have been located in this formation, amongst which is the so-called "Zinc" vein, located at an elevation of 4,100 feet and about 1,500 feet north of the last-described exposures. A shallow pit sunk on this showing was filled with water.

About 4,000 feet of underground work consisting of drifting and crosscutting, with raises of 150 feet between No. 3 and No. 2 ("Bullion") adits and 25 feet between No. 2 adit and the surface, has been carried out in five adits. The main underground workings are illustrated in the accompanying map.

No. 3 adit, at elevation 3,165, failed to intersect the vein exposed on the surface in the "High-grade" cuts. It then angles towards the "Bullion" fault, which is intersected at station 312 and followed for about 700 feet, showing intensive shearing with some quartz patches and stringers, and occasional sparse, lenticular mineralization with pyrrhotite, pyrite, and sphalerite. The best mineralization occurs 60 feet north of station 314 in a well-mineralized stringer 3 to 8 inches wide for a length of 30 feet. The rock formation on this level is mica-schist probably the result of alteration, partly of argillaceous sediments and partly of



Helena Gold Mines, Ltd. Plan and Vertical Projection of Main Workings.

altered andesitic volcanic rocks. In the raise on the "Bullion" fault-vein between No. 3 and No. 2 adits, a transverse vein 18 inches wide is intersected 48 feet below No. 2 adit.

No. 2 adit, at elevation 3,340 feet, intersects the "Bullion" fault-vein at 45 feet from the portal and continues northerly along it for 570 feet from the portal. The "Bullion" vein as exposed consists of irregular and lenticular masses of quartz from 2 to 4 feet wide, with generally sparse pyrrhotite, pyrite, sphalerite, and some galena, in a well-defined shear dipping vertically or steeply east in chloritic schist. A sample taken across 18 inches at 150 feet north of the winze to No. 3 adit, and representing the best mineralization exposed, assayed: Gold, 0.04 oz. per ton; silver, 0.6 oz. per ton.

Continuing for 570 feet from the portal, the working trends north-westerly through chloritic schist for 105 feet, then turns westerly through greenstone for 210 feet and mica-schist for 60 feet, to intersect a quartz vein. This vein is also exposed in No. 1 adit, 240 feet elevation above No. 2 adit. A sample across this vein, 12 inches wide at the point of intersection, and well mineralized with pyrrhotite, pyrite, some sphalerite and galena, assayed: Gold, 0.98 oz. per ton; silver, 12 oz. per ton; copper, *nil;* lead, trace; zinc, 2 per cent. From the point of intersection a drift south for 80 feet exposes a sparsely-mineralized quartz stringer 1 to 14 inches wide, with some lateral quartz-seams. North from the point of intersection a drift for 630 feet clearly indicates the occurrence of small intersecting transverse veins striking between north-west and north-east, with a tendency for the best mineralization to occur at points of intersection. A close examination shows that this drift follows several such veins which enter and leave the drift at acute angles along the east and west walls in a general rock formation of greenstone. This condition is illustrated in the accompanying map. In the first 500 feet of this drift two short sections of vein, well mineralized with pyrrhotite, pyrite, sphalerite, and some galena, are exposed. The first extends from station 210 for 30 feet north with a vein-width of 8 to 14 inches. A sample across 14 inches at the northern extremity of this section assayed: Gold, 2 oz. per ton; silver, 1.4 oz. per ton; copper, *nil;* lead, trace; zinc, 2 per cent. The second mineralized section with vein-widths from 3 to 30 inches commences 48 feet north of station 211 and extends for 28 feet to just north of station 212. A sample in this section, across 14 inches, 10 feet south of station 212, assayed: Gold, 2.60 oz. per ton; silver, 3 oz. per ton; copper, *nil;* lead, 0.2 per cent.; zinc, trace. It is of importance to note that between stations 210 and 212 the "Main" vein, striking north-west, should be intersected. It is, however, not evident in the drift or the main working to it. Continuing north-easterly for 360 feet beyond station 212, generally barren quartz and calcite stringers and seams are exposed.

At station 219 a well-defined quartz vein, 2 to 4 feet wide, striking north 11 degrees east and dipping 85 degrees easterly, is intersected and continues strongly for 150 feet to the face. For 52 feet from the face this vein is very well mineralized with massive pyrrhotite and pyrite, some sphalerite and galena, across widths of from 18 inches to 2 feet. A sample across 18 inches in the face assayed: Gold, 0.68 oz. per ton; silver, 2 oz. per ton; copper, *nil;* lead, 1.5 per cent.; zinc, 2 per cent. The character of this vein is similar to the described showings in the "Bullion" fault in the bed of Bullion Creek at elevation 3,750 feet, with which structure further work may possibly correlate it.

At elevation 3,580 feet, No. 1 adit intersects the "Main" vein 10 feet from the portal. This exposure is a characteristic siliceous zone, sparsely mineralized with pyrrhotite and pyrite. The adit continues northerly for 65 feet from the portal, and then turns north-westerly for 156 feet. At 122 feet along the north-westerly stretch a transverse quartz vein striking north and dipping steeply west is intersected. It has been drifted on to the south for 60 feet and varies from 4 to 26 inches in width, and is generally well mineralized with pyrrhotite, pyrite, sphalerite, and some galena for a length of 55 feet. Towards the face the vein disperses into several sparsely-mineralized stringers 1 to 6 inches wide which tends to come together towards the floor. The best width is at the intersection of the "Main" vein by the drift about 15 feet from the point of intersection. The following are assay results of samples taken in the south drift.

(1.) Across 16 inches, south of "Main" vein intersection, 12 feet from crosscut: Gold, 0.16 oz. per ton; silver, 1.4 oz. per ton; copper, *nil;* lead, 0.2 per cent.; zinc, 2 per cent.

(2.) Across 9 inches, 36 feet south of crosscut: Gold, 2.84 oz. per ton; silver, 2.9 oz. per ton; copper, *nil;* lead, trace; zinc, 3 per cent.

(3.) Across 13 inches in floor at face: Gold, 0.32 oz. per ton; silver, 0.8 oz. per ton; copper, *nil;* lead, *nil;* zinc, trace.

The vein has been drifted on to the north for a distance of 87 feet from the point of intersection. The vein as exposed in this drift is erratic and varies from 2 to 12 inches in width, with generally very sparse mineralization.

The No. 1 adit vein and mineralization cannot be definitely correlated with that exposed in the No. 2 adit north drift. It is possible, however, that such continuity may be established by means of raising and sub-levelling in this locality.

It is indicated by surface and underground exposures that the best possibilities for intensified mineralization occur at transverse vein-intersections with each other or with faults. Such places are indicated: (1) South of the present workings on No. 3 level, between that horizon and surface at the "High-grade" cuts; (2) in the locality of the present face of No. 2 level, between that horizon and surface; (3) northerly along the "Bullion" vein on the No. 2 level horizon.

Equipment on the property consists of residence, office, cook-house, sleeping accommodation, and stable at the Beach Camp. At the Cache there is a well-constructed cabin with cooking and sleeping equipment for four men, also a stable. The working camp is equipped with dining-room and bunk-house accommodation for about thirty men, office warehouse, and assay office. The plant consists of two units, made up of two 36–42 Petter semi-Diesel engines; two Gardner-Denver 212-cubic-foot compressors; air-pump and steel-sharpeners, together with electric-lighting equipment.

Salmon River Area, Portland Canal.

Bush Cobalt Mines, Ltd. (N.P.L.).

This company was incorporated on January 26th, 1929, under the laws of British Columbia. The authorized capital is $1,000,000, divided into 2,000,000 shares of the par value of 50 cents each. Of these, 500,000 non-assessable shares were issued to the Cobalt Syndicate, vendors of the *Cobalt* group, and 500,000 non-assessable shares to the Bush Consolidated Gold Mines, Incorporated, vendors of the *Exchange* group. O. B. Bush, Vancouver, is president of the company, and the registered office is at 375 Dunsmuir Street, Vancouver.

In November, 1935, the Cardinal Mining and Development Company, Limited, optioned a 55-per-cent. interest in the property of this company in consideration for the expenditure of $75,000 within three years, the work to commence early in 1936. In this respect no work was done on the property during 1936. (*See* Bush Consolidated Gold Mines, Limited.)

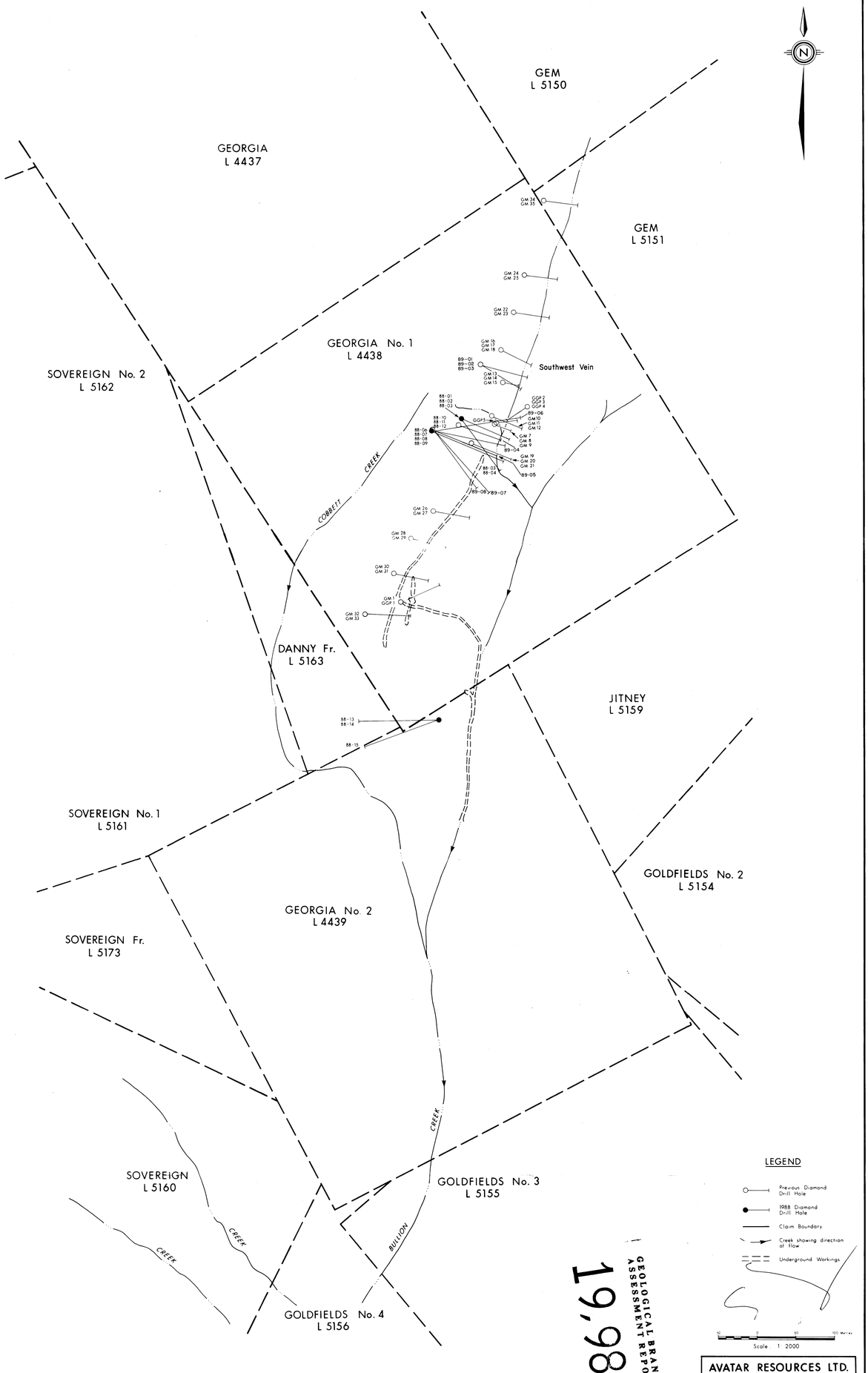
The property comprises eight Crown-granted mineral claims and fractions and one surveyed but not Crown-granted fraction. These consist of *Exchange Nos. 1, 2, 3, 4, 5,* being respectively Lots Nos. 1843, 1844, 1845, 1846, 1847, constituting the *Exchange* group, and the *Winner, Cobalt,* and *Cobalt No. 2,* being respectively Lots Nos. 4116, 4053, 4054, known as the *Cobalt* group. The property is located between 1,500 and 3,000 feet elevation on the east side of Cascade Creek, in the Upper Salmon River Valley, Portland Canal Mining Division, about 15 miles from seaboard at the village of Stewart. The claims adjoin the *Extennate* group on the south and west, the *Sebakwe* group on the north and west, and the *Mineral Basin* and "*45*" groups on the east.

The property is reached by motor-road from Stewart and a branch trail about a quarter of a mile in length leads from this road at elevation 1,725 feet along a gentle hill-slope to the cabin at elevation 1,590 feet.

The cabin, 33 by 21 feet, is a two-story structure and in good condition. The main adit (lower) is situated at elevation 1,540 feet, about 450 feet north 8 degrees west of the cabin, on the 30-degree, partially-benched hill-slope to Cascade Creek and about 200 feet in elevation above the creek. A blacksmith-shop in bad condition is located at the portal of the main adit.

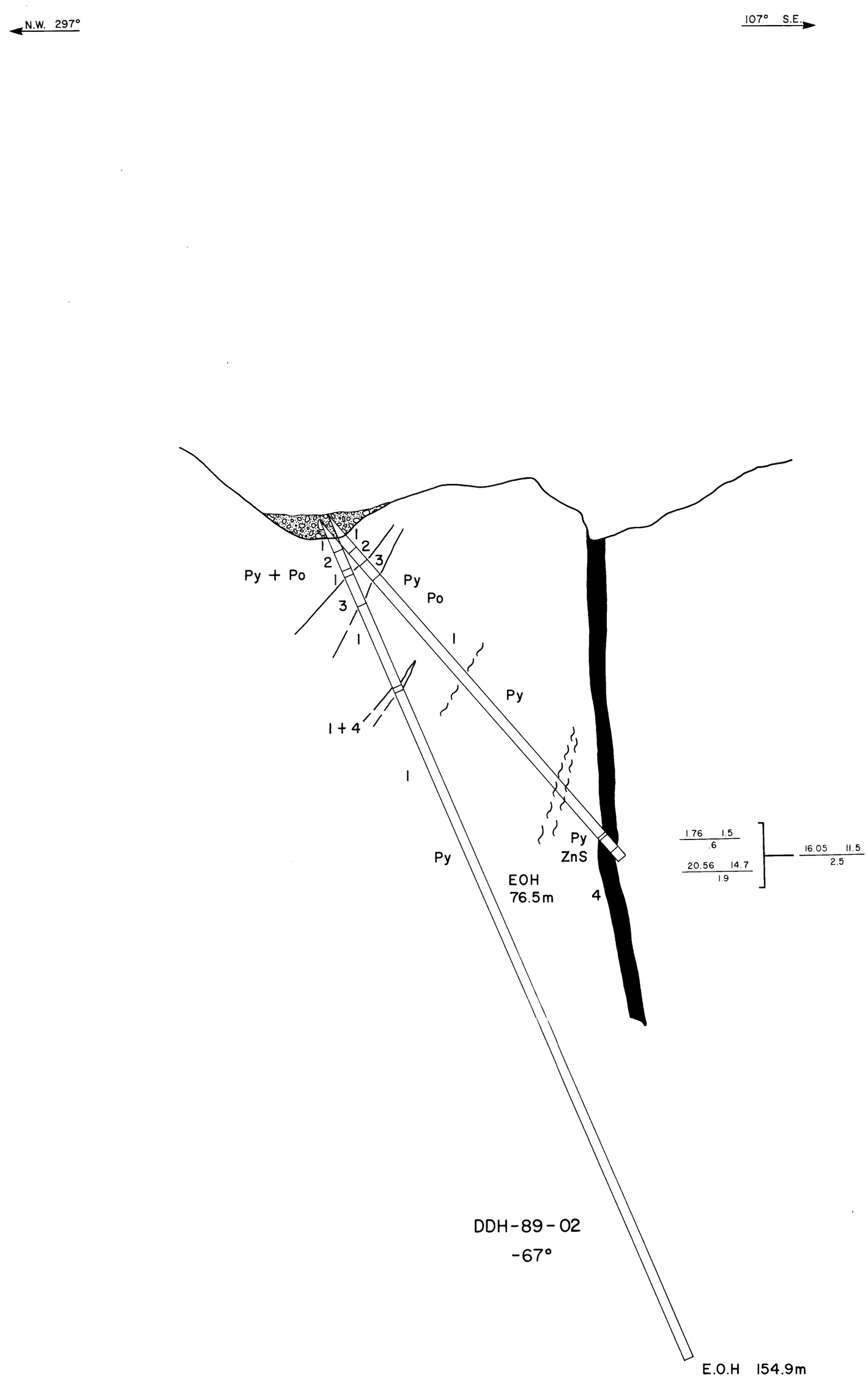
The exposed rock formation in and around the workings is a greenstone and tuff complex of the Bear River series, generally intensively jointed. Major jointing strikes north 30 degrees east and dips 60 degrees west, and minor jointing strikes north 60 degrees east and dips 50 degrees north-west. In places shearing along major joint-planes has occurred and the rocks are generally slightly pyritized. A feldspar-porphyry dyke striking north-west cuts across a steep draw between the upper (elevation 1,625 feet) and lower (elevation 1,540 feet) adits.

Very little surface exploration has been done on the property. This consists mainly of some stripping and open-cutting (now caved) along what appears to be a fault in a steep



GEOLOGICAL BRANCH ASSESSMENT REPORT

19,983



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff: minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with: Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py Pyrite
Po Pyrrhotite
PbS Galena
ZnS Sphalerite
Cpy Chalcopyrite
V.G. Visible Gold
Fault

Au (g./tonne) 15.65 4.3 Ag (g./tonne)
0.98 width (meters)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

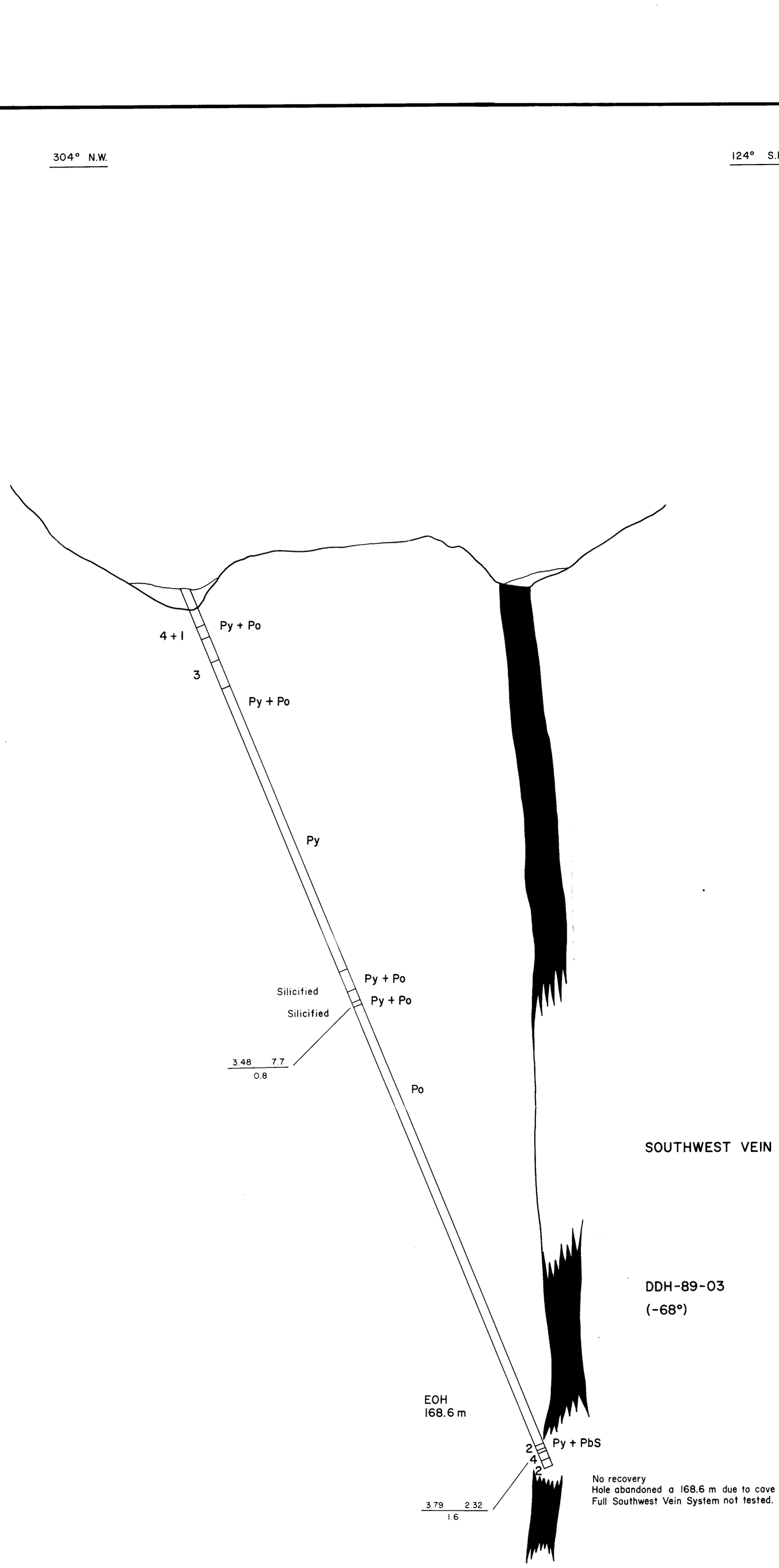
19,983

10 0 10 20 30 Metres
Scale: 1:500

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY SECTION OF S.W. VEIN DDH-89-01 to DDH-89-02

By: E. Kruchkowski	Figure: 5
Scale: 1:500	Date: Dec. 1989



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff : minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with: Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py Pyrite

Po Pyrrhotite

PbS Galena

ZnS Sphalerite

Cpy Chalcopyrite

V.G. Visible Gold

Fault

Au (g./tonne) 15.65 4.3 Ag (g./tonne)
0.98 width (meters)

19983

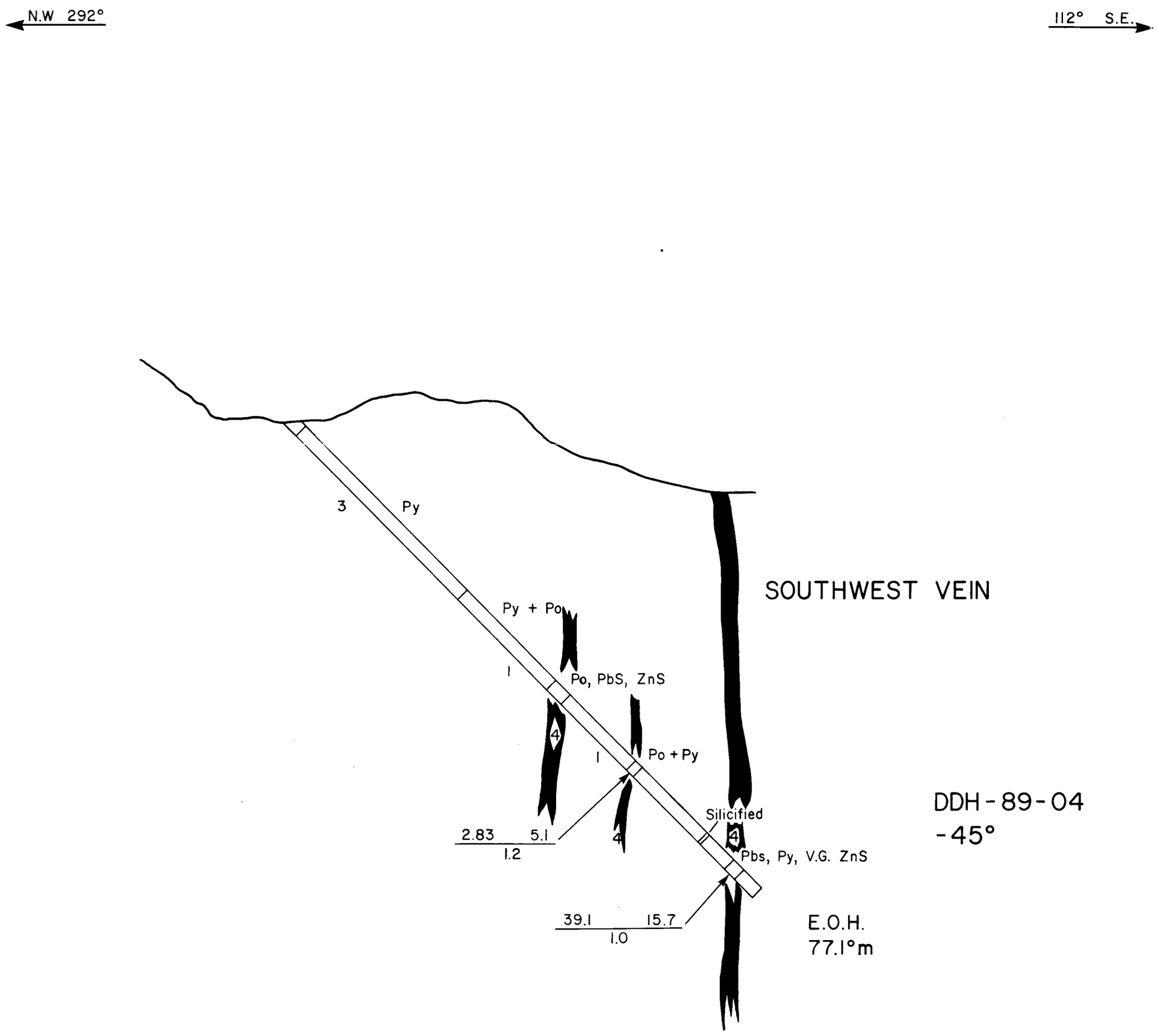
10 0 10 20 30 Metres

Scale : 1:50C

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY SECTION OF S.W. VEIN DDH-89-03

By: E. Kruchkowski	Figure : 6
Scale: 1:500	Date : Dec. 1989



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff : minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with:
Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite
(zones with values of greater than 2.0 g./tonne Au plotted)

Au (g./tonne) — 15.65 / 0.98 — Ag (g./tonne) — width (meters)

Py	Pyrite
Po	Pyrrhotite
PbS	Galena
ZnS	Sphalerite
Cpy	Chalcopyrite
V.G.	Visible Gold
	Fault

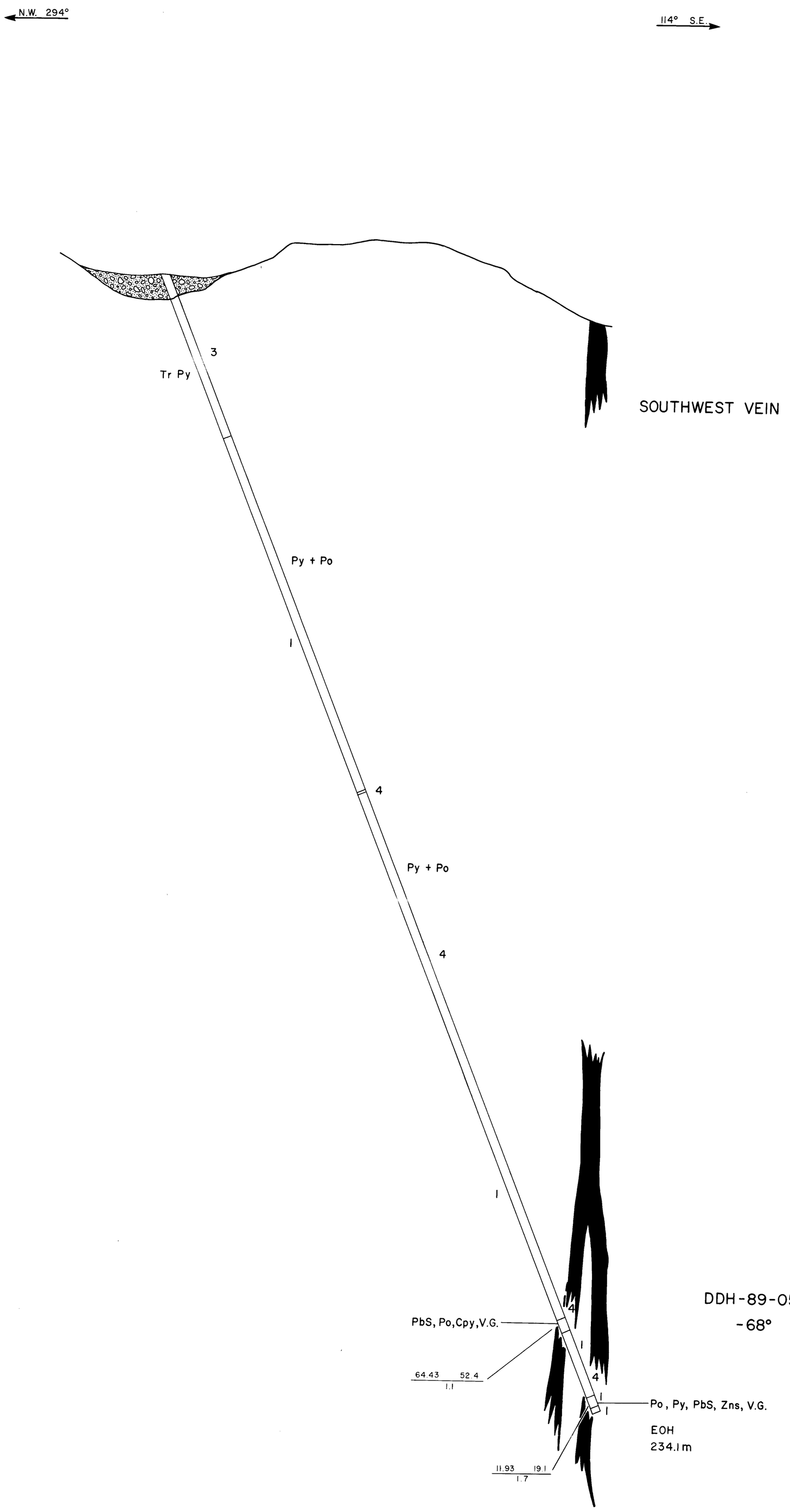
10 0 10 20 30 Metres

Scale: 1:500

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY
SECTION OF S.W. VEIN
DDH - 89 - 04

By: E. Kruchkowski	Figure: 7
Scale: 1:500	Date: Dec. 1989



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff: minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with: Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py Pyrite
Po Pyrrhotite
PbS Galena
ZnS Sphalerite
Cpy Chalcopyrite
V.G. Visible Gold
Fault

Au (g./tonne) 15.65 4.3 Ag (g./tonne)
0.98 width (meters)

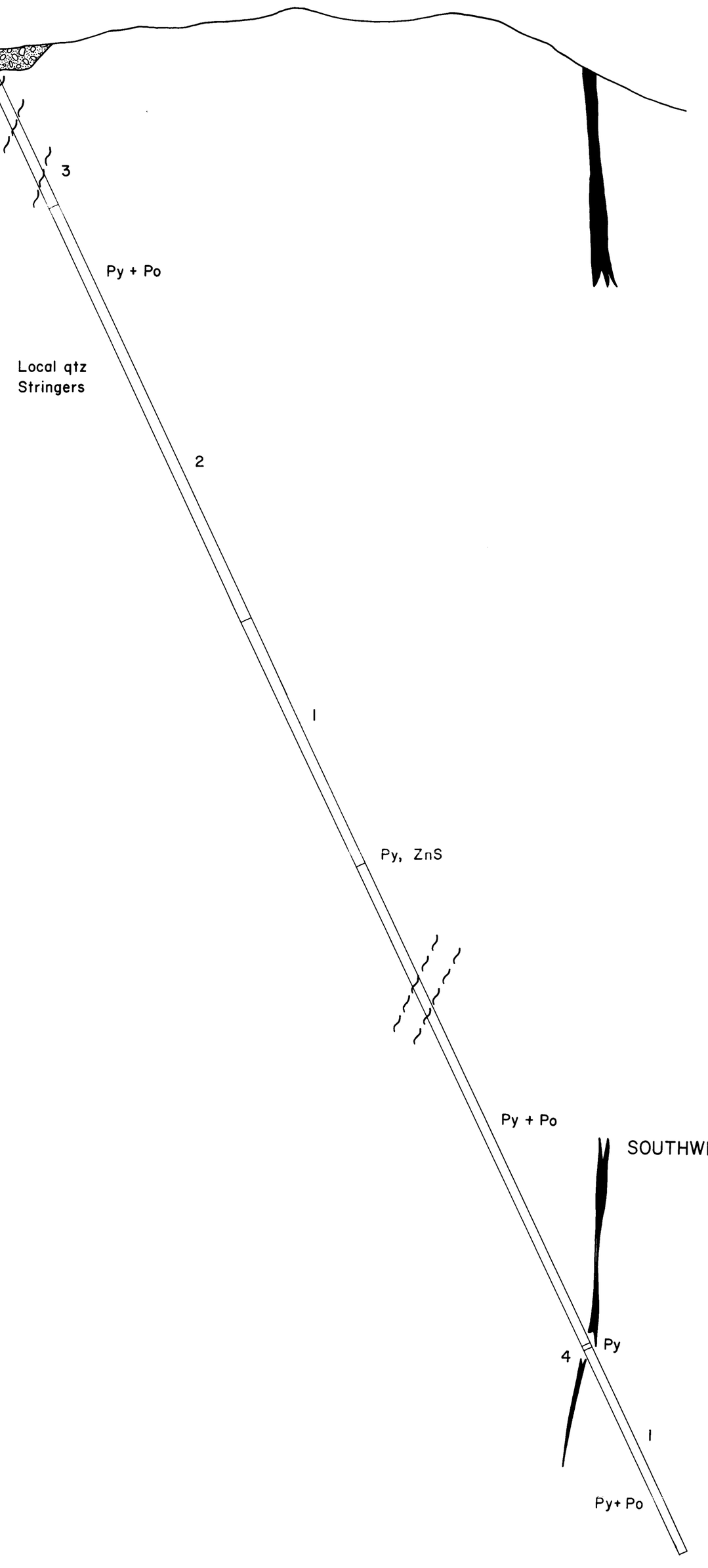
10 0 10 20 30 Metres

Scale: 1:500

AVATAR RESOURCES LTD.	
GEOLOGICAL & ASSAY SECTION OF S.W. VEIN DDH-89-05	
By: E. Kruchkowski	Figure: 8
Scale: 1:500	Date: Dec. 1989

265° N.W.

085° S.E.



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff : minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with : Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py Pyrite

Po Pyrrhotite

PbS Galena

ZnS Sphalerite

Cpy Chalcopyrite

V.G. Visible Gold

Fault

Au (g./tonne) 15.65 4.3 Ag (g./tonne)
0.98 width (meters)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,983

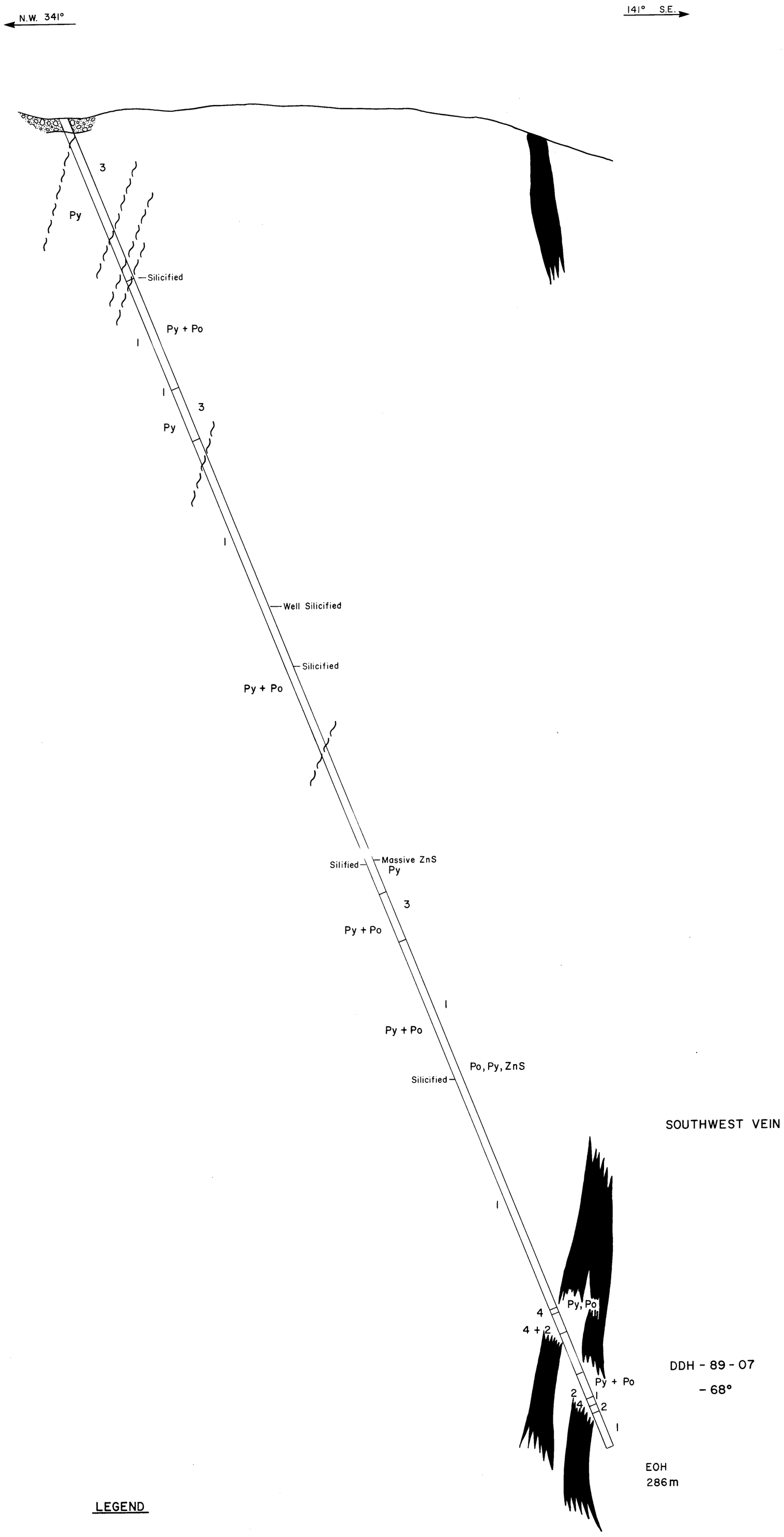
10 0 10 20 30 Metres

Scale : 1:500

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY
SECTION OF S.W. VEIN
DDH - 89 - 06

By: E. Kruchkowski	Figure : 9
Scale : 1:500	Date : Dec. 1989



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff : minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with: Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py	Pyrite
Po	Pyrrhotite
PbS	Galena
ZnS	Sphalerite
Cpy	Chalcopyrite
V.G.	Visible Gold
	Fault

Au (g./tonne) — 15.65 4.3 — Ag (g./tonne)
0.98 — width (meters)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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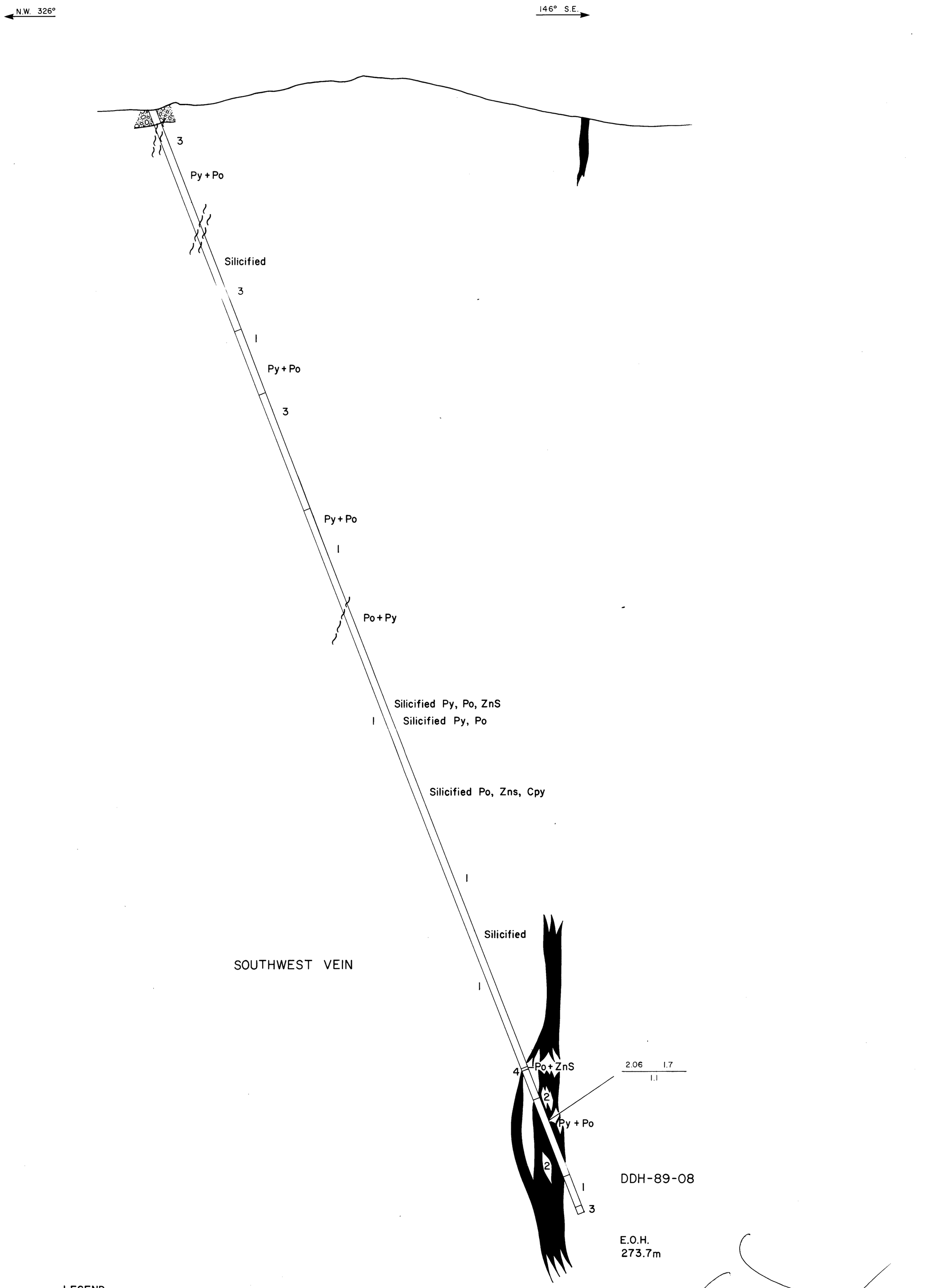
10 0 10 20 30 Metres
Scale : 1:500

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY SECTION OF S.W. VEIN DDH - 89 - 07

By: E. Kruchkowski	Figure : 10
Scale: 1:500	Date : Dec. 1989



LEGEND

1 Andesite / Andesite Tuff / Andesite - Basalt Tuff: minor siltstone & crystal tuff

2 Altered Andesite Tuff / Altered Crystal Tuff

3 Granodiorite / Porphyritic Granodiorite

4 Quartz Vein / Quartz Stockwork with: Pyrite, Pyrrhotite, Sphalerite, Galena & Arsenopyrite (zones with values of greater than 2.0 g./tonne Au plotted)

Py	Pyrite
Po	Pyrrhotite
PbS	Galena
ZnS	Sphalerite
Cpy	Chalcopyrite
V.G.	Visible Gold
	Fault

Au (g./tonne) 15.65 4.3 Ag (g./tonne)
0.98 width (meters)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,983

AVATAR RESOURCES LTD.

GEOLOGICAL & ASSAY SECTION OF S.W. VEIN DDH-89-08

By: E. Kruchkowski	Figure: 11
Scale: 1:500	Date: Dec. 1989

197°

17°

SOUTHWEST VEIN ZONE 1

— 1170 m. elev.

SOUTHWEST VEIN ZONE 2

BULLION VEIN

990 m. elev.

drill, underground & trench indicated

drill inferred

drill, underground & trench indicated

drill inferred

drill inferred

drill inferred

geologically inferred

geologically inferred

WASTE

WASTE

WASTE

WASTE

X — DDH 89-02 Missed too short

89-03 Hole lost in Zone incomplete results

LEGEND

Diamond Drill Hole

Drill, Underground or Trench Indicated Boundary

Drill or Geological Inferred Boundary

Block No.

Tons (rounded to the nearest ton)

Scale 1:500

AVATAR RESOURCES LTD.

GEORGIA RIVER PROJECT

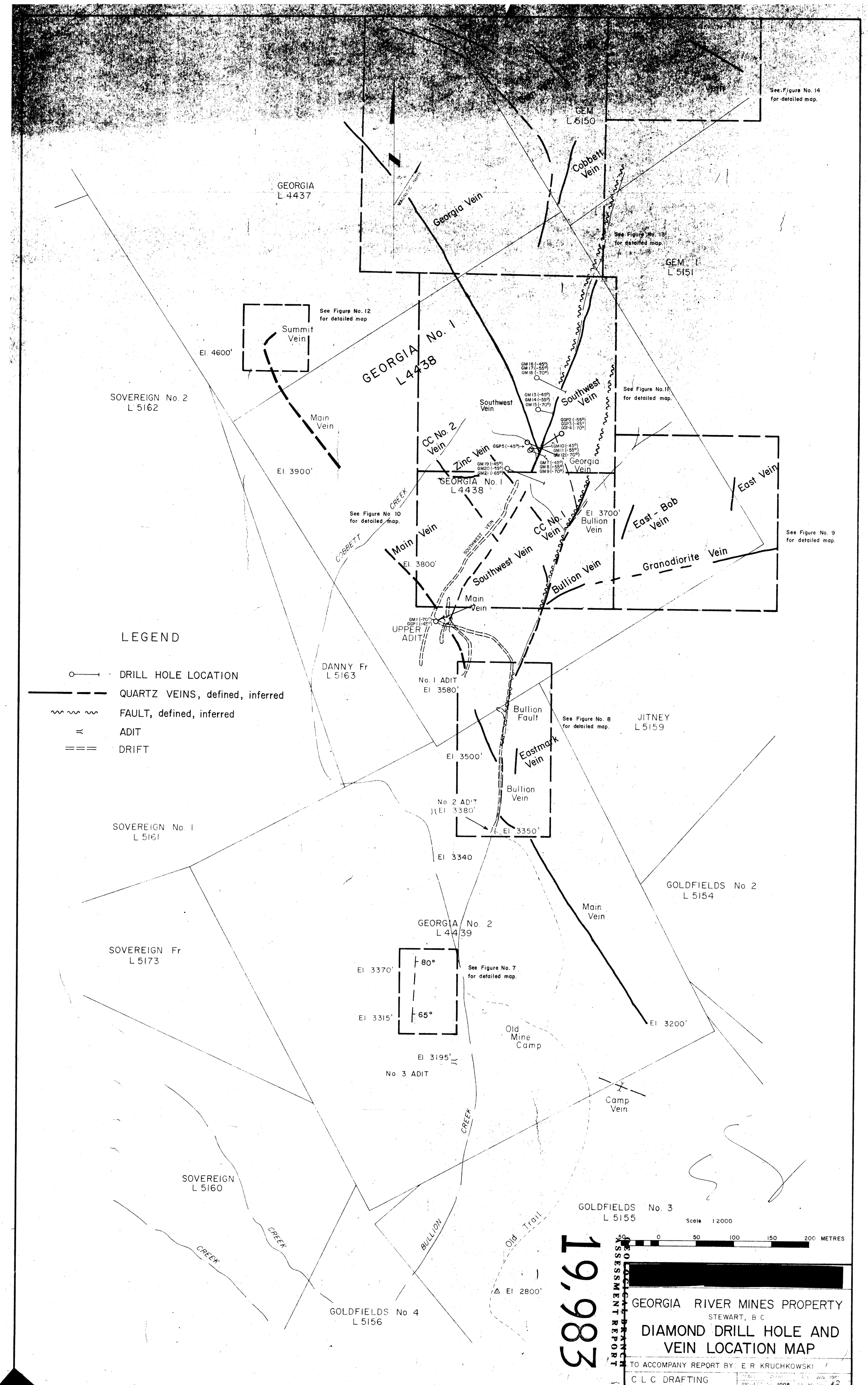
LONGITUDINAL SECTION OF THE SOUTHWEST AND BULLION VEINS

Drawn by: K. Konkin | Figure 11

Scale: 1:500 | Date: Nov., 1988

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,983


See Figure No. 14 for detailed map.
GEM L 5150
Cobbett Vein
GEORGIA L 4437
Georgia Vein
See Figure No. 13 for detailed map.
GEM L L 5151
See Figure No. 12 for detailed map
Summit Vein
El. 4600'
GEORGIA No. 1 L 4438
SOVEREIGN No. 2 L 5162
Main Vein
El. 3900'
GM16 (-45°) GM17 (-55°) GM18 (-70°)
GM13 (-45°) GM14 (-55°) GM15 (-70°)
Southwest Vein
Southwest Vein
See Figure No. 11 for detailed map.
GGP2 (-55°) GGP3 (-45°) GGP4 (-70°)
CC No. 2 Vein
GGP5 (-45°)→
GM10 (-45°) GM11 (-55°) GM12 (-70°)
Zinc Vein
GM19 (-45°) GM20 (-55°) GM21 (-65°)
GM7 (-45°) GM8 (-55°) GM9 (-70°)
Georgia Vein
GEORGIA No. 1 L 4438
East Vein
See Figure No 10 for detailed map.
COBBETT CREEK
Main Vein
El. 3800'
SOUTHWEST VEIN
CC No. 1 Vein
El 3700'
Bullion Vein
East - Bob Vein
Southwest Vein
Bullion Vein
Granodiorite Vein
See Figure No. 9 for detailed map.
Main Vein
GM1 (-70°) GGP1 (-45°)
UPPER ADIT
DANNY Fr L 5163
No. 1 ADIT El 3580'
Bullion Fault
See Figure No. 8 for detailed map.
JITNEY L 5159
El 3500'
Eastmark Vein
Bullion Vein
No 2 ADIT El 3380'
El 3350'
SOVEREIGN No. 1 L 5161
El 3340
GOLDFIELDS No. 2 L 5154
Main Vein
GEORGIA No. 2 L 4439
SOVEREIGN Fr L 5173
El 3370'
80°
See Figure No. 7 for detailed map.
El 3315'
65°
El 3200'
Old Mine Camp
El 3195'
No. 3 ADIT
Camp Vein
CREEK
LEGEND
DRILL HOLE LOCATION
QUARTZ VEINS, defined, inferred
FAULT, defined, inferred
ADIT
DRIFT
SOVEREIGN L 5160
CREEK
CREEK
BULLION
Old Trail
GOLDFIELDS No. 3 L 5155
Scale 1:2000
50 0 50 100 150 200 METRES
GOLDFIELDS No. 4 L 5156
El 2800'
GEOLOGICAL BRANCH ASSESSMENT REPORT
19,983
GEORGIA RIVER MINES PROPERTY
STEWART, B.C.
DIAMOND DRILL HOLE AND VEIN LOCATION MAP
TO ACCOMPANY REPORT BY: E R KRUCHKOWSKI
C L C DRAFTING
VANCOUVER B C
PROJECT NO. 1008
DATE JAN. 1991
FIG. NO. 13