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VALUATION OF THE  
MAY AND JENNIE CROWN GRANT,  
TIP TOP FRACTION REVERTED CROWN GRANT  
AND RED TOP NO. 1 LOCATED MINERAL CLAIM,  
NELSON MINING DIVISION  
BRITISH COLUMBIA

S. J. Stricker, P.Geol.  
Stratabound Resource Management Ltd.

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## VALUATION METHOD

Aurora Gold Ltd. has requested an independent report on the May and Jennie Crown Grant, the Tip Top Fraction Reverted Crown Grant and the Red Top No. 1 Located Mineral Claim from the undersigned. This report would a) make recommendations about future exploration work, if warranted; and b) put a dollar value on the property.

No formal regulatory guidelines or definitions appear to exist for the mining industry concerning the valuation of mineral properties, and a variety of approaches, ideas and definitions are in use. Roscoe's (1986) approach, based on a previous article published in Currie, Coopers & Lybrand's Mining Letter, is adopted here. The property's value is determined on the basis of its "exploration potential", that is, its potential for the existence of an economically viable orebody.

This "exploration potential" is a function of many variables, including (but not limited to) results of previous exploration programs, proximity to known mineral deposits, mineral prices and "geological setting", a somewhat subjective variable. Roscoe argues that the most objective way of determining the real value of an exploration property is to equate it to the cost of exploration work that is warranted to assess the potential. Both past and future (recommended) work must be considered. Past expenditures must be reduced by amounts spent on parts of the property which have been dropped or written off on the basis of results to date. It is important to ensure that "past exploration expenditures have been reasonable and productive in the sense that

the results give sufficient encouragement to warrant further work"; therefore if a property has no exploration potential, then it has no value.

The valuation method requires in practical terms that an understanding first be gained of the geological setting, the exploration target, the exploration history and results, and the amount and appropriateness of past expenditures. Estimated expenditures for warranted future exploration work are added to the retained value of past work to yield the total property value. The estimates of value undertaken herein are based on this approach.

Literature research, recent property reports, and a property examination on August 8 and 9, 1987 provided the data base for this valuation.

#### LOCATION AND ACCESS

The property is situated at Latitude  $49^{\circ}26.35'N$  and Longitude  $117^{\circ}22.55'W$  in N.T.S. map-area 82-F/6W within the Nelson Mining Division of southeastern British Columbia (Figs. 1 & 2). It lies 8.5 kilometres southwest of the town of Nelson, on the southwest facing slope of Fortynine Creek. The property can be reached with a four-wheel-drive vehicle by proceeding approximately 10 road kilometres west from the Nelson bridge to the intersection of Highway 3A and Granite Road, 1.6 kilometres along Granite Road to Bedford Road, 2.3 kilometres west and south along Bedford Road to Blewett Road and 0.45 kilometre west on Blewett Road to the May and Jennie Road, also known as Copper Lookout Road and

**Stratabound**

**British Columbia**

Population: 2,180,000  
(1971 estimate)  
Area: 366,255 Sq. Miles  
Capital: Victoria

**Cities and Towns**

- Atlin.....A-2
- Barriere.....E-5
- Beaverdell.....F-6
- Beaton.....E-6
- Bella Coola.....E-3
- Blood Lake.....F-4
- Blue River.....E-6
- Boston Bar.....F-5
- Burns Lake.....D-4
- Campbell River.....F-4
- Canim Lake.....E-3
- Castlegar.....F-6
- Ceasecreek.....F-3
- Chase.....E-5
- Chilliwack.....F-5
- Clinton.....E-5
- Courtenay.....F-4
- Cranbrook.....F-7
- Creston.....F-6
- Dawson Creek.....C-5
- Dease Lake.....B-3
- Duncan.....F-4
- Elko.....F-7
- Enderby.....E-6
- Farmie.....F-7
- Fort St. James.....D-4
- Fort St. John.....C-5
- Fransua Lake.....E-6
- Gerrard.....E-6
- Gibsons.....F-4
- Hanceville.....E-4
- Hadley.....F-3
- Horsey.....E-3
- Hudson Hope.....C-5
- Kamloops.....E-5
- Kelowna.....F-6
- Kelsey Bay.....F-4
- Kimberley.....F-7
- Kilmat.....D-3
- Kitwanga.....C-3
- Kuskoogee.....E-4
- Ladoc.....E-8
- Lillooet.....E-5
- Lumby.....E-8
- Lytton.....F-5
- McBride.....D-5
- Merrill.....F-5
- Mission City.....F-5
- Nakusp.....E-6
- Nanaimo.....F-4
- Nelson.....F-6
- New Westminster.....F-5
- Ocean Falls.....E-3
- Oliver.....E-6
- 100 Mile House.....E-5
- 150 Mile House.....E-3
- Peachland.....E-4
- Pemberton.....E-5
- Pentiction.....F-5
- Port Alberni.....F-4
- Port Clements.....D-2
- Port Hardy.....E-3
- Port Moody.....F-3
- Powell River.....F-4
- Prince George.....D-5
- Prince Rupert.....D-2
- Princeton.....F-5
- Punchaw.....D-4
- Quesnel.....D-6
- Radium Hot Springs.....E-7
- Revelstoke.....E-6
- Ricemoun.....C-3
- Rimous.....F-4
- Roquemore.....F-7
- Sumner.....D-6
- Thompson.....D-6
- Trail.....E-5
- Westwood.....E-5
- Williams Lake.....E-5

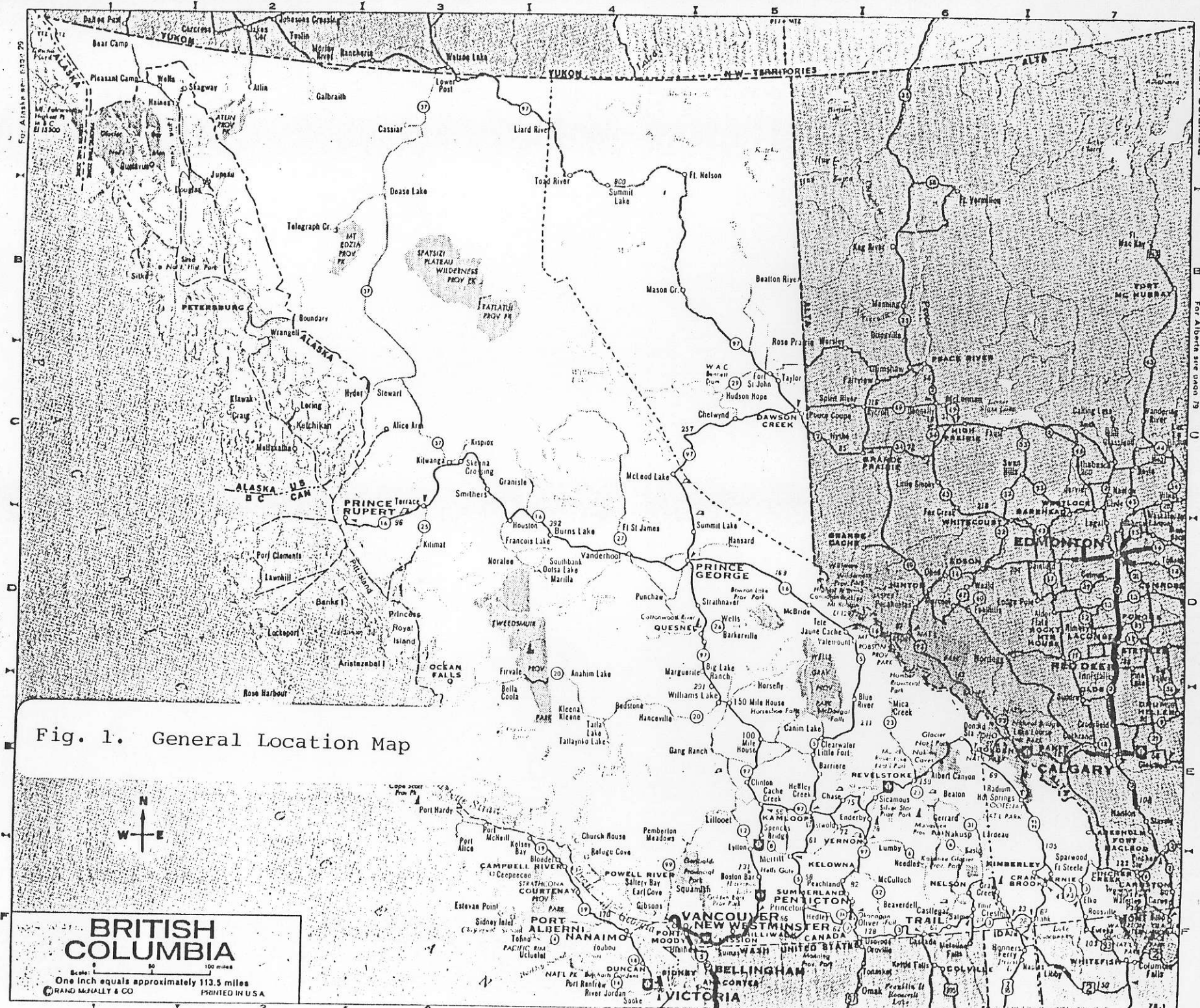


Fig. 1. General Location Map



**BRITISH COLUMBIA**

Scale: 1 inch equals approximately 113.5 miles  
GRAND MAPS & CO. PRINTED IN U.S.A.

British Columbia  
For Alberta see page 79

Fortynine Creek Road. The May and Jennie Road is followed for 6.0 kilometres to a fork in the road which leads upslope for 150 metres to No. 4 adit (Fig. 3) and beyond as a series of switchbacks to the "May and Jennie Vein", the site of recent trenching and drilling. When visited the road was fairly serviceable as far as the No. 2 adit (approximate elevation 1350 metres), although some clearing of boulders and deadfall was required, but beyond No. 2 adit an increase in fallen timber, steepness of grade and jagged boulder debris made the road impassable to standard four-wheel drive vehicles.

#### PROPERTY AND OWNERSHIP

The property comprises the May and Jennie Crown Grant, the Tip Top Fraction Reverted Crown Grant, and the Red Top No. 1 Located Claim (Table I). The claims are contiguous and are owned by Orbit Oil and Gas Ltd. of Calgary (G. Nolin, pers. comm.). They occupy an area of 55.43 hectares (136.98 acres).

#### DISTRICT GEOLOGY

This northwest-trending section of the Kootenay Arc is underlain by a Triassic to Lower (?) Jurassic sequence of volcanic and sedimentary rocks, known as the Rossland Group, intruded by a variety of stocks and apophyses related to the Cretaceous-age Nelson Batholith, collectively designated Nelson Plutonic Rocks.

The Rossland Group is composed of the basal Archibald-Ymir Formation, a mixed sedimentary and volcanic succession; overlain by the Elise Formation, composed of massive augite porphyry and andesitic flows, tuffs, breccias and flow breccias; succeeded  
**Stratabound**

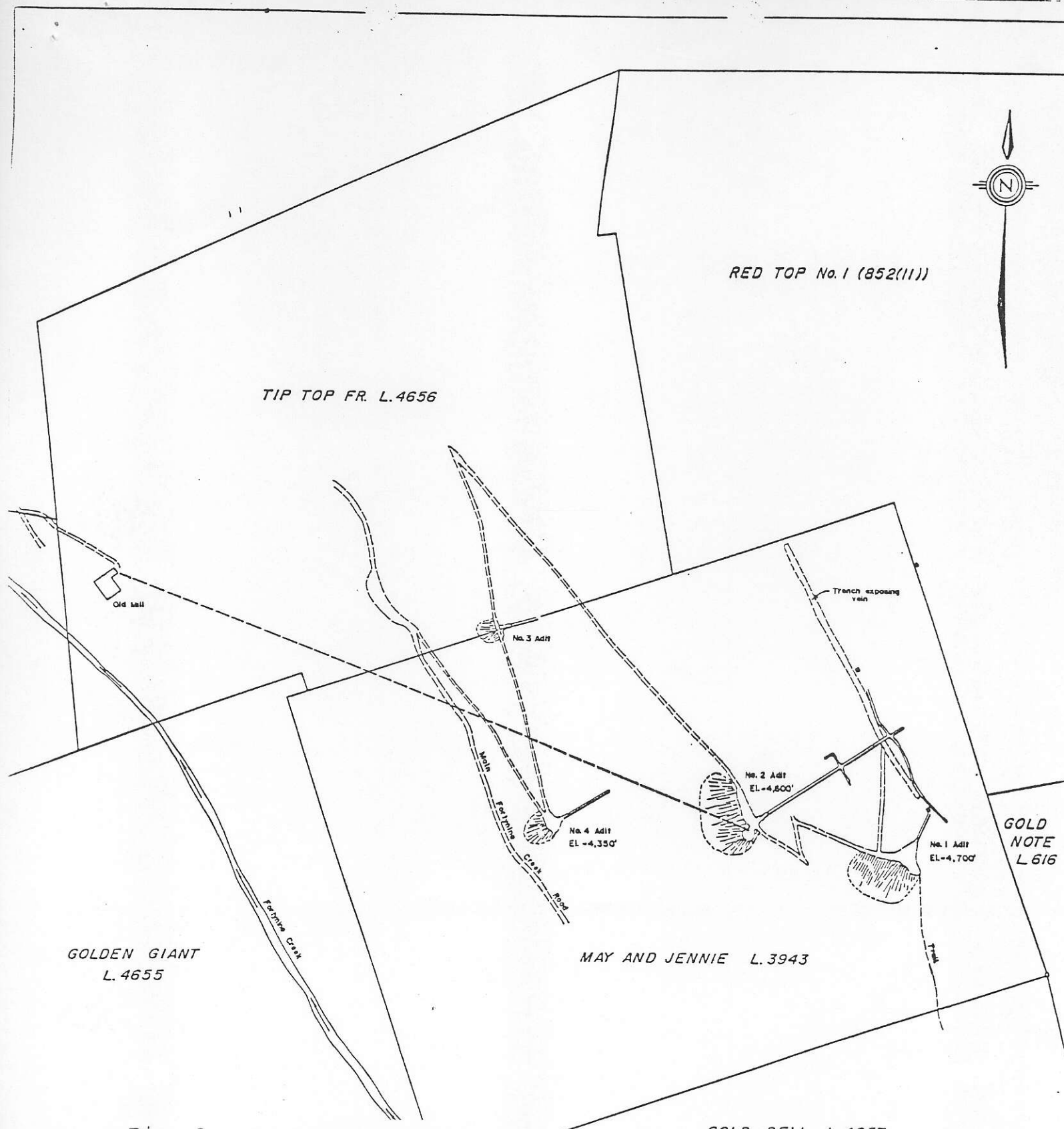
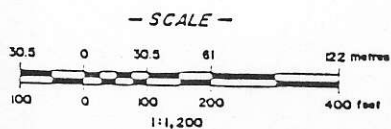


Fig. 3. Surface & underground plan of May & Jennie, Tip Top Fr. & Red Top No. 1 claims (Blanchflower, 1983)

Surveying after A.M.Gerun for Highland Star Mines Ltd., 1974.



PLAYER PETROLEUM INC. VANCOUVER, BRITISH COLUMBIA	
SURFACE and UNDERGROUND PLAN MAY and JENNIE PROPERTY NELSON MINING DIVISION, B.C.	
Drawn by - J.D.B.	N.T.S. - 82F/8W
Date - March, 1983	Figure No. - 3



T A B L E I

L A N D S U M M A R Y

Claim Name	Claim Type	Lot No.	Record No.	Area (Hectares)	Record Date	Expiry Date	Owner
May & Jennie	Crown Grant	3943	-	16.09	-	-	Orbit Oil & Gas Ltd.
Pip Top Fr.	Reverted Crown Grant	4656	568	14.34	Feb. 13/78	Feb. 13/91	"
Red Top No. 1	Located Claim	-	852	25	Nov. 16/78	Nov. 16/91	"

by the Hall Formation, consisting of carbonaceous shales, argillaceous sandstone, conglomerate, siltstone and greywacke (Taiga, 1983). These rocks have been interpreted as indicative of an island arc terrane along a destructive plate margin.

The Rossland Group underwent complex deformation before and during the emplacement of the Nelson Plutonic Rocks consisting of porphyritic and non-porphyritic granite, granodiorite, quartz diorite, diorite, "pseudodiorite" and syenite. In the vicinity of the property stocks and apophyses of non-porphyritic granite, syenite and "pseudodiorite" have been mapped (Little, 1960). Dikes of various compositions, notably lamprophyre, appear to be related to the Nelson plutonic event.

The region also underwent later major tectonism during the Upper Cretaceous and Tertiary periods.

The Rossland Group appears to form a major fold system at least 24 miles long, occupying most of N.T.S. area 82F/6, as well as northern 82F/3. The fold system is centred around a syncline, the axis of which follows the Hall Formation and presumably plunges to the south. The structural trend changes from north-south (south of the Territory Peak/Dominion Mountain Nelson-age intrusive lobe) to northwest-southeast (north of the intrusive lobe). The undersigned attributes this to refolding around the competent Territory Peak intrusive body.

#### DISTRICT PRODUCTION

Active since the 1890's, the Ymir-Nelson camp has seen many attempts at small-scale precious metal production, but only

## Stratabound

five mines to date have produced 100,000 metric tons or more of ore-grade material, namely the Yankee Girl-Dundee, (370,616), Ymir Consolidated (327,646), Second Relief (207,023), Silver King (202,049) and Granite-Poorman (181,120) (Appendix 1).

All of the main producers at Ymir (Centre Star, Yankee Girl-Dundee, Ymir Consolidated, Wilcox and Tamarac) were intrusive-related north- to northeast-trending vein deposits, with no preferred dip direction. They all were either a) hosted by Archibald-Ymir sediments at or near an intrusive (granite or granodiorite) contact; or b) entirely within intrusive rock. Gold grades were high, and silver, lead and zinc recoveries were significant.

The Second Relief, Porto Rico and Fern properties, located between the Nelson and Ymir camps, were high-grade gold producers with minor silver and negligible base metal recoveries, occurring as northeast-striking veins associated with porphyritic intrusives within Elise volcanic rocks.

The Nelson camp producers included a) two gold-silver-copper skarn producers (Queen Victoria and Eureka-Champion; b) two intrusive-hosted, quartz-vein-type gold producers with minor silver and base-metal byproducts (Granite-Poorman and Athabaska); and c) the Silver King, a high-grade silver-copper producer with minor gold, lead and zinc byproducts. The Silver King consists of polymetallic sulfide disseminations and stringers in an ore zone subparallel to the enclosing schists of the Elise Formation, which strike northwesterly and dip 70° to the southwest. This zone was traced for 414 metres along strike, and may represent

## Stratabound

the stringer zone of a concordant volcanogenic, massive sulfide deposit.

The May and Jennie property, examined below, also has concordant features, and may be genetically closer to the apparently **stratabound Silver King deposit** than to the true vein deposits of the Nelson and Ymir camps.

#### EXPLORATION HISTORY OF PROPERTY

Details of the property's history are provided by Blanchflower (1983, 1984, 1985 (a), 1985 (b), 1986) and Taiga (1983). Exploration of the May and Jennie, Red Top and Tip Top claims dates back to at least 1900, when United Gold Fields undertook 430 metres of underground development, installed 365 metres of pipeline, and provided road and trail access to the workings.

A 50-ton mill and cyanide plant erected in 1904 by Reliance Gold Mining Company of Nelson proved to have insufficient capacity in test runs made in 1905 and the mill was disassembled in 1918. By 1904 underground work on the property consisted of 610 metres of drifting and raises between No. 1 and No. 2 adits (Fig. 3; Photos 1 and 2). Despite optimistic reports by Reliance, the property was never mined.

The No. 1 adit had intersected the main May and Jennie "vein" 24.3 metres from the portal, giving a downdip extension of 38 metres between the tunnel and its surface exposure. Approximately 175.3 metres of drifting on this level showed the vein to vary in width from 1.52 to 7.32 metres (B.C.M.M.A.R. 1904, p.H144).

## **Stratabound**

The No. 2 adit intersected the vein 106.7 metres from the portal. Drifting northwestward and southeastward along the structure, 122 and 76.2 metres respectively, disclosed a "vein" varying from centimetres to approximately 0.66 metre. A 34.15 metre raise was driven between the two levels and a second raise of 29.5 metres joined the No. 1 level with the surface (B.C.M.M.A.R. 1904, p.H144).

Surface trenching on the adjoining Red Top claim discovered two veins with reported widths of 2.74 and 6.1 metres (B.C.M.M.A.R. 1904, p. H144).

Subsequent work in 1940 involved re-opening the old adits and re-sampling the known mineralization.

In 1974, Highland Star Mines Ltd. mapped, surveyed and sampled the known mineralization in the No. 2 adit but their work did not extend beyond the old workings.

Energy, Mines and Resources Canada (1983), quoting the Northern Miner of February 28, 1974, reports "indicated reserves" on the property of 80,000 tons grading 0.25 oz./ton gold in 1973.

In 1983 Player Petroleum Inc. chip sampled the May and Jennie "vein" over a strike length of 58 metres within the north-westerly and southeasterly drifts of the No. 2 adit, the only underground workings accessible during the examination. "Vein" widths varied from 0.15 to 0.66 metre. The same "vein" was intersected by the No. 1 adit and by surface trenching, an updip extension of 64 metres. The sampling returned values of 0.036 oz./ton gold across 0.31 metre to 1.18 oz./ton across 0.66 metre (Table II).

In 1983 Player also rehabilitated the portal of the No. 2 adit to improve access. Cost of the 1983 program is not known.

Work by Player in 1984 included the establishment of

## Stratabound

TABLE II  
1983 Sample descriptions and  
assay summaries (Blanchflower,  
1984).

Sample No.	Location (relative to main adit & drift junction)	Interval	Assay					Description
			Au oz./ton	Ag p.p.m.	Cu p.p.m.	Pb p.p.m.	Zn p.p.m.	
MJ 83-1	0 NW	0.31 m.	0.036	6.1	48	36	27	Quartz vein with abundant disseminations and lenses of pyrite.
MJ 83-6	17.2 m. NW	0.31 m.	0.039	1.7	61	28	31	Quartz vein with abundant disseminations and lenses of pyrite. Intensively sheared fault zone.
MJ 83-8	6 m. SE	0.47 m.	0.726	15.1	44	152	38	Quartz vein with abundant pyrite.
MJ 83-9	9 m. SE	2.5 cm.	0.014	2.1	9	20	46	Dark grey fault gouge - crushed sulphides.
MJ 83-10	12 m. SE	15 cm.	0.266	2.7	28	30	9	Fault zone infilled with massive pyrite.
MJ 83-11	15 m. SE	0.30 m.	0.902	2.0	112	27	10	Massive pyrite vein displaced by 150°/-80° fault and 060°/-30° fault.
MJ 83-14	24 m. SE	0.42 m.	1.42	2.1	29	28	10	Massive pyrite vein.
MJ 83-14A	24 m. SE in crosscut	8 cm.	0.059	2.0	74	35	43	Fault gouge on parallel fault zone infilled with 4 cm. pyrite vein.
MJ 83-15	27 m. SE	0.66 m.	1.18	2.0	19	29	10	Massive pyrite vein.
MJ 83-15A	27.5 m. SE	Grab Sample	0.118	2.1	147	28	23	Mixed vein and host rock material from ore chute by

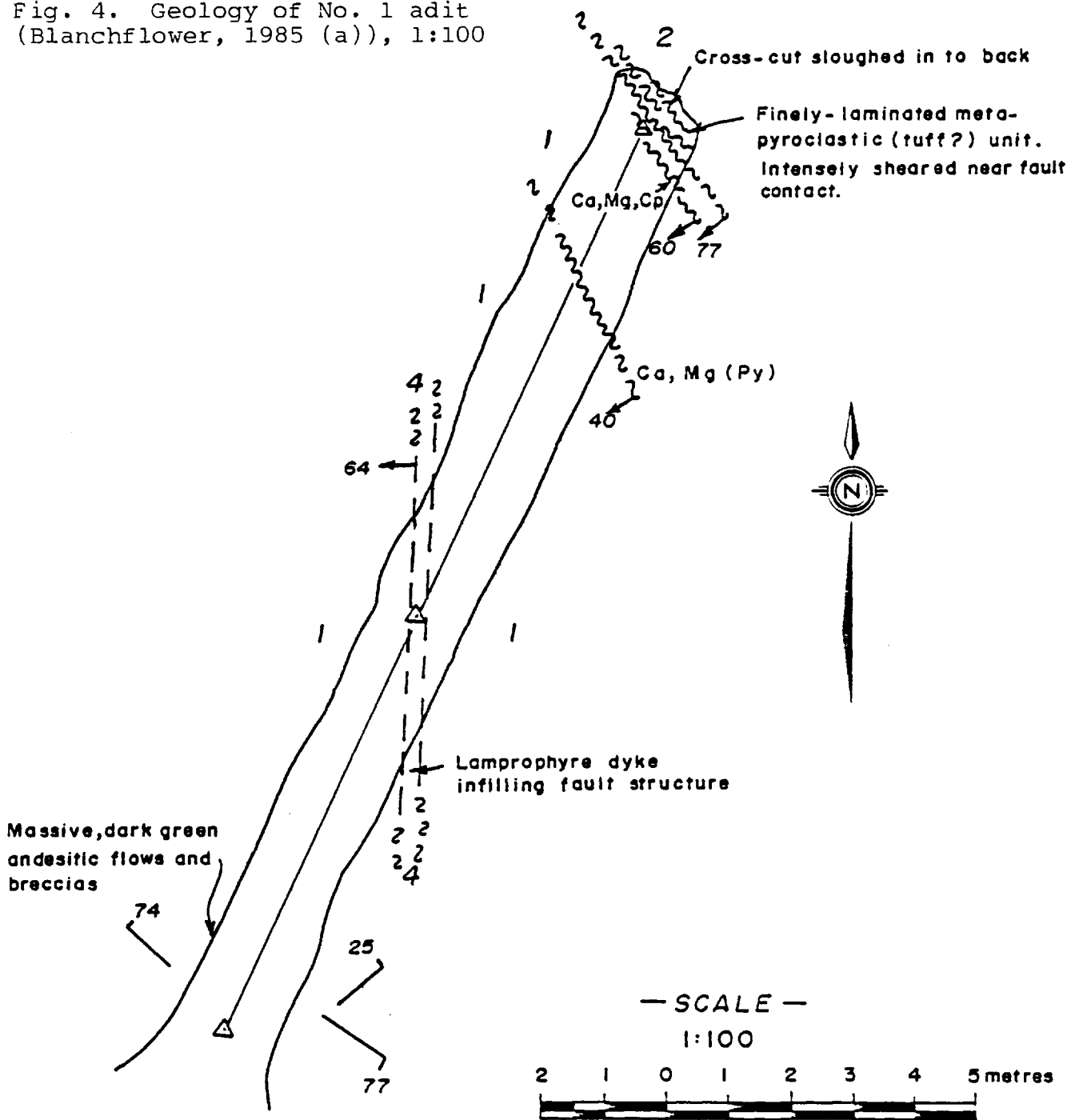
a control grid (18.425 line-kilometres), surface geological mapping (scale 1:2,000), dewatering flooded sections of the No. 2 adit, underground mapping and sampling (9 samples) of No. 1\* (Fig. 4, scale 1:100) and No. 2 (Fig. 5, scale 1:240) adits, soil and rock geochemical surveys (709 soils and 2 rocks), and geophysical exploration (18.425 line-kilometres each of VLF-EM and magnetometer surveys).

The results of the 1984 exploration work were very encouraging. Geophysical and soil geochemical surveying showed that the May and Jennie mineralized zone continued both southeast and northwest of where it was exposed in the No. 2 adit. Within the underground workings the vein varied in width from 15 centimetres to 0.66 metre and was open both along strike and downdip. Underground chip sampling across the vein, at intervals along its strike length, returned values of 0.028 oz./ton gold across 0.41 metre to 0.46 oz./ton gold across 0.50 metre. (Table III).

It appears from Tables II and III that gold grade varies more or less directly with the amount of accompanying sulfides, i.e. best grades tend to be with "massive pyrite". The geophysical surveys also produced encouraging results. The VLF (EM-16) survey "positively identified the May and Jennie fault/vein structure from grid coordinates 9675N + 9975E to 10600N + 9800E", with the surface projection of the "mapped structure in the No. 2 adit" coinciding with a portion of the anomaly (Fig. 6). Several other VLF anomalies were discovered. Of these, the undersigned considers

\* The No. 1 adit is caved 17 metres from the portal - right at the May and Jennie "fault structure".

Fig. 4. Geology of No. 1 adit  
(Blanchflower, 1985 (a)), 1:100



—LEGEND—

- 4 Lamprophyre dyke
- /3 Quartz-pyrite (gold) veining
- ROSSLAND FORMATION**
- 2 Fine-grained pyroclastic unit
- 1 Andesitic flows and flow breccias

To accompany report by J.D Blanchflower


 <b>MINOREX CONSULTING LTD.</b> GEOLOGICAL CONSULTANTS, KAMLOOPS, B.C.	
<b>PLAYER RESOURCES INC.</b> VANCOUVER, BRITISH COLUMBIA	
GEOLOGY and SURVEY PLAN of MAY and JENNIE No.1 ADIT <b>MAY and JENNIE PROPERTY</b> NELSON MINING DIVISION, B.C.	
Drawn by: P.J.M.	Scale: 1:100
Date: October, 1984	Figure No: 5



TABLE III  
 1984 Sample descriptions and  
 assay summaries (Blanchflower,  
 1984).

Sample No.	Location (relative to main adit & drift junction)	Interval	Assay						Description
			Au oz./T	Ag oz./T	Ag p.p.m.	Cu p.p.m.	Pb p.p.m.	Zn p.p.m.	
84-1-1	3.0 m. SE	0.41 m.	.028	.15	5.1	65	392	154	Channel sample of quartz-pyrite vein within silicified tuffaceous wall rock.
84-1-2	6.0 m. SE	0.50 m.	.46	.20	6.9	55	230	53	Channel sample of quartz-pyrite vein.
84-1-3	8.5 m. SE	0.51 m.	.054	.03	1.0	51	35	15	Channel sample of quartz-pyrite vein with a central 5 cm. massive pyrite core.
84-1-4	10.0 m. SE	0.52 m.	.128	.03	1.0	62	27	18	Chip sample of quartz-pyrite vein with 17 cm. of massive pyrite.
84-1-5	12.0 m. SE	0.26 m.	.32	.06	2.1	32	33	9	Channel sample of massive pyrite vein.
84-1-6	17.0 m. SE	0.17 m.	.07	.03	1.0	86	24	36	Chip sample of quartz-pyrite vein.
84-1-7	23.0 m. SE	0.35 m.	.38	.06	2.1	28	19	5	Channel sample of massive pyrite vein.
84-1-8	3.0 m. NW	0.27 m.	.109	.03	1.0	39	22	25	Chip sample of quartz-pyrite vein and silicified tuff wall rock.
84-1-9	42.0 m. NW	Grab	.125	.06	2.1	19	22	17	Grab sample of silicified fault breccia.

the anomaly trending from (9600N, 10350E) to (10600N, 10100E) to have the best exploration potential, particularly around line 10300N where a fold hinge may be present (see "Exploration Potential of Property", below), resulting in favourable stratigraphic and structural conditions for gold mineralization.

The VLF anomaly along the "May and Jennie structure" coincides along part of its length with a high magnetic trend (Fig. 7) reflecting the pyrite-pyrrhotite mineralization found in the No. 2 adit.

The soils showed very high background gold-in-soils and delineated a number of highly anomalous geochemical trends (Fig. 8).

The results of the 1984 program are described in additional detail below ("Property Geology and Mineralization").

Cost of the 1984 work was \$59,492.93, not including recording fees. A \$105,000 program was recommended for 1985, to include trenching and drilling.

The 1985 exploration program, operated by Player Resources Inc. and Yucana Resources Inc., included: the preparation of a 1:2,500 photogrammetric topographic map of the property; construction of a one-kilometre access road along the surface trace of the May and Jennie "vein"; excavation of 13 backhoe trenches (60 metres); surveying, mapping and collection of sixty-two rock geochemical samples; analysis of all rock samples for gold (ppb) and silver (ppm); and fire assaying of twenty-four sample pulps for gold (oz./ton).

The results of the 1985 exploration work confirmed the

exploration potential of the property. The May and Jennie vein was exposed for 345 metres on surface. Analytical results from vein samples collected over 200 metres of strike length returned values ranging from 0.03 to 1.07 oz./ton gold. The vein widths varied from a few centimetres to over 2 metres, commonly averaging 0.6 to 0.8 metre. This was the same mineralized "structure" exposed 56 metres downdip within the No. 2 adit.

Trenching exposed, in addition to the May and Jennie "vein", two new "hematitic shear zones" carrying anomalous gold values of 170 to 455 ppb, only one of which is located with the present property boundary on the Red Top No. 1 claim. Detailed mapping of these new zones was recommended by Blanchflower (1986), but was not carried out.

Cost of the 1985 program was \$33,695.36, not including recording fees. A \$70,000 preliminary drill program was recommended to evaluate the May and Jennie "vein" and other targets.

In 1986 Player and Yucana drilled eleven NQ-core holes (386.33 metres), analyzed 153 core samples, and assayed 34 pulps. The program was designed to test the continuity and grade of the mineralization between the No. 2 underground workings and surface, and to explore the downdip extension of the May and Jennie "vein structure" northwest of the underground workings. The "structure" was tested from the No. 2 crosscut northwestward to grid line 10150N, a strike distance of 150 metres. Gold mineralization was found in all holes which reached the target zone, and is discussed in the following section.

Cost of the program, including drill site reclamation

and excluding recording fees, was \$54,395.00.

Drilling conditions were difficult. None of the drill waters were recovered after intersecting the first of several fault zones in each hole. The poor water circulation resulted in short drill-bit life and high equipment wear.

## PROPERTY GEOLOGY AND MINERALIZATION

### 1. GEOLOGY

Regional mapping places the claims within the north-westerly striking and easterly dipping volcanic flows, breccias and fine-grained pyroclastic units comprising the Elise Formation of the Lower Jurassic Rosslund Group.

Blanchflower (1985) has mapped most of the outcrops along the grid (i.e. in the vicinity of the mineralized zone) as andesitic flow breccia, with subrounded augite porphyry clasts ranging in size from 1 centimetre to 50 centimetres set in a fine-grained green groundmass with 10% porphyritic hornblende. Also mapped on surface are green, fine-grained andesitic flows with minor biotite phenocrysts and no visible hornblende. The rocks have been metamorphosed to greenschist facies.

Bedding features are indistinct and masked by the foliation and fracturing. Bedding, schistosity and faulting all have similar orientations. Schistosity attitudes in both rock types are 140 - 150° with southwesterly dips. As the regional dips are reported to be easterly, the undersigned suggests that an unmapped anticlinal fold axis is present west of, and paired

with, the regional synclinal axis, parallel to Fortynine Creek.

Mapping by Little (1960) on the southwest side of Fortynine Creek shows 60° westerly dips which are consistent with this interpretation.

Within the No. 1 and 2 adits, Blanchflower (1985 (a)) identified a "finely laminated pyroclastic unit" (Figs. 4 and 5), which is very soft and deeply eroded where observed by the undersigned in recent trenches (Photo 3). In the underground workings it was described as "light to dark brown in colour, fissile, and schist-like in appearance with mafic and leucocratic segregations". Hand specimens are granular in appearance with fine-grained lithic fragments attesting to a tuffaceous origin (Photo 4). Blanchflower states that this unit has been observed only in association with the May and Jennie mineralized zone.

The undersigned has examined the 1986 drilling logs closely, and proposes a four-fold stratigraphic sub-division of the andesitic interval enveloping the gold mineralization:

A. Augite porphyritic flows, flow-breccias and tuff-breccias

Most of the drillholes are collared in this unit. Lateral variations include massive (DH 1, 4, 5 & 9), feldspar porphyritic (DH 8), and lapilli clast (DH 11) facies. DH 1 is collared in a schistose tuff overlying a massive Unit A green flow. The unit contains only traces of pyrite, except in DH 1, where a gold-bearing section contains 3% of the sulfide.

B. Coarse Pyroclastic Unit

Foliated tuff-breccias and flow-breccias,

sometimes containing augite and feldspar porphyritic clasts (DH 9); laminated lapilli tuff-breccias; trace pyrite; abundant clay; muscovite and green micas; no gold.

C. Schistose Tuff Unit

Fine-grained to medium-grained laminated and foliated pyritic (up to 30%) tuffs, siltstones and mudstones; some tuff-breccia and flow-breccia (DH 9); locally contains magnetite (DH 9). This unit is soft (Photo 3), easily eroded, and is mainly exposed underground. Unit C hosts quartz-pyrite veins, limonitic shear zones, lamprophyre dikes, and all of the anomalous (>200 ppb) and highly anomalous (>1000 ppb or 0.0292 oz./ton) gold-bearing sections encountered by the 1986 drilling program except for a 2.3 metre interval in Unit A or B (DH 1), a 5.7 metre interval in Unit A (DH 2), and a 1.0 metre intersection in Unit B (DH 11). The following table shows the widths of anomalous zones in Unit C drilled in 1986:

<u>Drillhole</u>	<u>Width (metres)</u>
3	2.9
4	nil*
5	9.0
6	7.0 + 2.1
7	8.0
8	9.7 + 1.0 + 1.0
9	2.0 + 1.6 + 5.0
10	nil*
11	2.3 + 2.3 + 1.1

\* Abandoned before reaching target zone.

Thus Unit C hosts 55 metres/64 metres or 86% of the gold-enriched core sections.

D. Andesite flows

Augite porphyritic flow, grading into a massive, fine-grained flow (DH 11).

2. MINERALIZATION

The May and Jennie mineralized zone has heretofore been considered to be a "vein" or "structure".

Prior to the 1985-86 trenching and drilling programs, the "vein" had been exposed over a strike length of 58 metres within the northwesterly and southeasterly drifts of the No. 2 adit, the only currently accessible underground workings (Fig. 3 & 5). The same "structure" was reportedly exposed in the sloughed-in No. 1 adit (Figs. 3 & 4), and also in surface trenching, an updip extension of 64 metres. It strikes  $150 - 160^{\circ}$  and dips steeply northeast to steeply southwest. The "vein" varied in width from 0.15 to 0.66 metres and was open both along strike and dip. Chip sampling across the "vein" at intervals along its exposed strike length had returned values of 0.028 oz./ton gold across 0.41 metre to 1.18 oz./ton gold across 0.66 metre and 1.42 oz./ton gold over 0.42 metre (Blanchflower, 1985 (a)).

The 1984 VLF and magnetometer surveys had given the operators hope that there could be more than 700 metres of strike length of unexplored "fault/vein structure".

The 1985 trenching program found anomalous to economic gold values over at least 200 metres within 345 metres of strike length which was tested. Some of the better chip samples assayed

**Stratabound**

0.198 oz./ton/1.1 metres (Trench 5), 0.317 oz./ton 1.5 metres (Trench 6), 0.80 oz./ton/0.30 metre (Trench 7), 0.208 oz./ton/0.30 metre (Trench 8) and 0.66 oz./ton/0.40 metre (Trench 11).

Table IV shows the results of the 1986 eleven-hole drilling program, which tested the "May and Jennie vein/structure" from the No. 2 crosscut northwestward to line 10150N, a distance of 150 metres along strike. Gold mineralization was found in all nine holes reaching the target zone. Generally the intercepts were narrow or the grades were low. The best intersections were 0.70 oz./ton/0.5 metre (DH 1), 0.097 oz./ton/4.0 metres (DH 5), 0.077 oz./ton/3.0 metres (DH 6), 0.099 oz./ton/2.0 metres (DH 6), 0.324 oz./ton/1.15 metres (DH 8), and 0.680 oz./ton/0.4 metre (DH 11). True vein widths, of course, are narrower.

The mineralization was believed to be related to a major northwest-trending en echelon fault system, which dipped steeply east and west, displaced the volcanics in the vicinity of the workings, and controlled the emplacement of quartz-pyrite mineralization and later lamprophyre dike intrusions, one of which cuts Units B and C and the mineralized zone.

The major faulting and the mineralization were recognized to be sub-parallel to the bedding, the schistosity and the contact of the fine-grained volcanoclastic host (Unit C), as is apparent in Figure 5.

The undersigned suggests that this faulting, as well as an orthogonal fracture set which strikes northeasterly, dips 30 - 50° southeasterly, and displaces the main "vein", may be post-mineralization, i.e. unrelated to gold emplacement, for the following

**Stratabound**



TABLE IV

Selected Drill Results  
1986 Drilling Program

D.D.H. No.	Assay Tag No	Intcpt From (m.)	Intcpt To (m.)	Length (m.)	Au (o.p.t)	Au (gx1)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	
DDH86-1	28005	39.80	40.50	0.70	0.081		0.4	142.0	4.0	44.0	
	28007	41.00	41.50	0.50	0.700		1.2	38.0	4.0	36.0	
DDH86-2	28020	30.00	31.00	1.00	0.043	0.043	1.0	49.0	7.0	42.0	
	28021	31.00	31.80	0.80	0.029	0.023	0.6	75.0	6.0	46.0	
				1.80		0.037					
DDH86-3	28026	13.80	14.50	0.70	0.031		0.5	74.0	7.0	34.0	
	28029	16.20	16.70	0.50	0.034		4.1	36.0	6.0	42.0	
DDH86-4	N.S.V										
DDH86-5	28045	25.00	25.50	0.50	0.018	0.009	0.2	193.0	2.0	57.0	
	28046	25.50	26.00	0.50	0.064	0.032	1.0	422.0	2.0	50.0	
	28047	26.00	26.50	0.50	0.031	0.016	0.8	410.0	3.0	65.0	
	28048	26.50	27.00	0.50	0.090	0.045	0.4	36.0	7.0	57.0	
				2.00		0.051					
	28055	30.00	30.50	0.50	0.050	0.025	0.8	935.0	2.0	48.0	
	28056	30.50	31.00	0.50	0.055	0.028	1.4	1180.0	10.0	25.0	
	28057	31.00	31.50	0.50	0.067	0.034	0.8	196.0	7.0	22.0	
	28058	31.50	32.00	0.50	0.141	0.071	0.8	97.0	6.0	21.0	
	28059	32.00	32.50	0.50	0.055	0.028	1.5	169.0	4.0	19.0	
	28060	32.50	32.85	0.35	0.087	0.030	3.2	550.0	5.0	23.0	
	28061	32.85	34.00	1.15	0.150	0.172	0.9	247.0	1.0	52.0	
				4.00		0.097					
	DDH86-6	28071	35.50	36.50	1.00	0.127	0.127	0.3	74.0	1.0	52.0
		28072	36.50	37.50	1.00	0.038	0.038	0.1	60.0	1.0	68.0
28073		37.50	38.50	1.00	0.066	0.066	1.0	179.0	3.0	51.0	
				3.00		0.077					
28076		40.50	41.80	1.30	0.116	0.151	0.6	36.0	6.0	46.0	
28077		41.80	42.50	0.70	0.068	0.048	0.6	96.0	1.0	57.0	
				2.00		0.099					
28080		44.50	45.10	0.60	0.071	0.043	1.3	870.0	0.0	69.0	
28081		45.10	45.60	0.50	0.027	0.014	2.3	844.0	4.0	17.0	
				1.10		0.051					

TABLE IV

Selected Drill Results  
1986 Drilling Program

D.D.H. No.	Assay Tag No	Intcpt From	(m.) To	Length (m.)	Au (o.p.t)	Au (gx1)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
DDH86-7	28091	25.00	25.40	0.40	0.025	0.010	0.7	59.0	44.0	90.0
	28092	25.40	25.90	0.50	0.111	0.056	1.8	46.0	24.0	42.0
	28093	25.90	26.40	0.50	0.060	0.030	1.8	48.0	53.0	47.0
				1.40		0.068				
	28095	26.90	27.10	0.20	0.031	0.006	2.3	231.0	28.0	63.0
	28096	27.10	28.00	0.90	0.033	0.030	0.8	181.0	36.0	71.0
			1.10		0.033					
DDH86-8	28110	37.10	37.70	0.60	0.034	0.020	0.5	85.0	9.0	33.0
	28111	37.70	38.25	0.55	0.640	0.352	2.7	38.0	11.0	31.0
				1.15		0.324				
	28119	45.30	46.30	1.00	0.120		0.5	147.0	2.0	78.0
DDH86-9	28129	26.80	28.00	1.20	0.041		0.4	19.0	4.0	25.0
DDH86-10	N.S.V									
DDH86-11	28150	25.20	25.60	0.40	0.680		2.0	65.0	23.0	34.0

**reasons:**

a) The known mineralization is concordant, or at least sub-concordant, with stratigraphy, and thus may well be syngenetic with the host rocks, i.e. pre-folding. Fracturing and shearing during the subsequent folding event(s) would be expected to take place preferentially along the inhomogeneity represented by the contact between the Coarse Pyroclastic Unit (competent) and the Schistose Tuff Unit (soft). This natural zone of weakness would then be the locus of faulting, secondary vein formation and dike emplacement, all of which would be expected to modify the syngenetic mineralization.

b) Disseminated sulfide mineralization and other sub-parallel "vein structures" extend into the footwall tuffs (Photo 4).

c) The gold-bearing sulfide mineralization has a high magnetic susceptibility due to pyrrhotite and/or secondary magnetite (Blanchflower, 1985 (a)). No visible gold has been observed, and the values probably occur as auriferous pyrite or microscopic native gold intimately associated with pyrite. **Chip sampling showed significant gold values to be associated with wider and more sulfide-rich sections of "vein", a common feature of volcanogenic, pyritic gold deposits.**

d) The May and Jennie "vein" resembles the Silver King deposit (see "District Production" and Appendix 1) in that precious metal zones are concordant within northwesterly striking, steeply dipping schists derived from Elise Volcanics.

## EXPLORATION POTENTIAL OF PROPERTY

Exploration results to date give sufficient encouragement to warrant further work. All previous trenching, drilling and underground work has been concentrated on the "main May and Jennie vein", and other potential mineralized zones have been neglected, due to a) the conventional vein-type geological model which has guided the work, and b) the continuing encouragement of anomalously high to economic gold values obtained from most of the sampled "vein structure". The 1985 trenches, for example, returned assays of 1.07 oz./ton, 0.80 oz./ton and 0.317 oz./ton across widths of 0.30 metre, 0.30 metre and 1.5 metres, respectively.

If the syngenetic model proposed here is correct, then the wide sections of gold-enriched rock (see description of Schistose Tuff Unit, above) suggest that the fine-grained pyroclastic unit should be intensively explored for volcanogenic, stratabound gold, as the sub-economic gold anomalies may grade laterally or down-dip into economic gold deposits. Mineralized widths can increase as the result of seafloor paleo-topographic variations if this model is correct, as the gold and sulfides would have been deposited together with the fine-grained pyroclastic debris in a submarine volcanic environment. Furthermore, the economic portions of the Schistose Tuff Unit would be expected to be lensoid or tabular in shape, and could occur at more than one level within this stratum, which can be tens of metres thick. Most of the "main structure" remains untested along both strike directions and down-dip.

## Stratabound

On the basis of existing soils geochemical and magnetometer data, the undersigned suggests that the May and Jennie zone, if it is indeed concordant with stratigraphy as suggested above, lies on the west limb of a fold, the hinge of which is located at grid line 10300 N, 10075 E. The proposed fold structure is shown outlined by the 700 gamma contour on Figure 7. The gold-bearing stratigraphy would therefore be repeated 200 metres east of the May and Jennie "vein" on the fold's east limb if this interpretation is correct.

The geochemical data provided by Blanchflower (1985 (a)) shows very high background gold-in-soils and delineated a number of highly anomalous gold geochemical trends within the claims (Fig. 8). An anomaly of 215 to 1260 ppb gold correlates well with the west limb magnetic anomaly, overlies the projected gold-bearing "vein structure" mapped in No. 2 adit and a number of old and new trenches, and coincides with the southern portion of a VLF conductor (Figs. 6, 7, 8). "There is little doubt that this zone is reflecting the May and Jennie vein for at least 200 metres south and at least 500 metres north of the No. 2 adit" (Blanchflower, 1985 (a)). Coincident limited silver, copper and zinc anomalies are also present along the west limb. Another gold-in-soils geochemical trend of 250 to 450 ppb follows the east limb from (9850 N, 10250 E) northwest beyond the claim boundaries to (10600 N, 10100 E), intersecting the west limb trend, and correlating well with the 700 gamma magnetic contour and a long, continuous VLF conductor running from (9900 N, 10300 E) to 10600 N, 10125 E). These features are flanked to the east by a trend of several silver-in-soil anomalies.

## Stratabound

Several other VLF conductors also remain untested, notably (10325 N, 10050 E) to (10475 N, 10050 E), which is associated with gold, zinc and magnetic anomalies. A portion of this conductor lies outside the property boundaries.

#### VALUATION OF PROPERTY

##### 1. PREVIOUS WORK

Based on the 1986 drilling results, selective underground mining of known "reserves" would not be profitable. Economic grades of gold do occur locally but not over significant underground mining widths. Present-day cost of replicating the work performed between 1900 and 1974 in developing the May and Jennie "reserves" would be well in excess of \$1,000,000. Because the undersigned is not convinced that these "reserves" have any real present worth, but feels that the No. 2 adit, in particular, has some exploration value, these expenditures are written down to a nominal value of \$10,000.

Work performed since 1983 has been "reasonable and productive" in that the results give sufficient encouragement to warrant further work. No statement of expenditures was available to the writer for 1983, and the work is hereby assigned a nominal value of \$10,000. The undersigned estimates that 10 and 20 per cent of the 1985 and 1984 expenditures, respectively, were incurred outside the present property boundaries, and has discounted these expenditures by the appropriate factor. These expenditures have not been escalated to 1987 dollars, which strictly speaking should be done to obtain the present value of the work.

**Stratabound**

2. RECOMMENDED PROGRAM

Detailed mapping by an experienced structural geologist, research and examination of the Silver King property, trenching on the east limb and on the conductor centred at (10400 N, 10050 E), and 1500 metres of diamond drilling are recommended for this property. The drilling should be widely spaced and should probe a) Unit C below presently tested levels on the west limb; b) Unit C along strike from previous drillhole locations on the west limb; c) any gold-enriched targets uncovered by trenching on the east limb or (10400 N, 10050 E) conductor. If the trenching is unsuccessful in uncovering mineralization, the drilling program would be reduced to 750 metres, all on the west limb. Only the latter, reduced drilling program is included in the calculation of value below.

3. CALCULATION OF VALUE

A. Previous work:

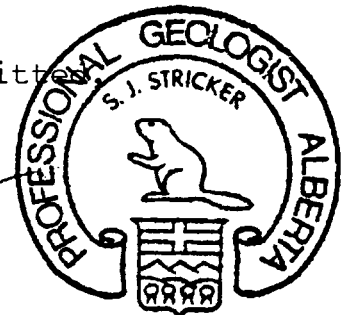
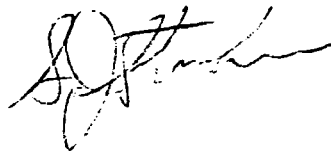
Pre-1983, discounted to nominal value	\$ 10,000
1983 program, at nominal value	10,000
1984 program - 80% x \$59,492.93*	47,600
1985 program - 90% x \$33,695.36*	30,300
1986 program	54,400
	<hr/>
	\$152,300

\* Not including recording fees

B. Recommended work:

Structural geological mapping	\$10,000	
Trenching, sampling and assaying	35,000	
Diamond drilling (750 m.) logging, sampling, assaying, supervision & report preparation	100,000	
	<hr/>	\$145,000
TOTAL . . . . .		<hr/> <hr/> \$297,300

Respectfully submitted



S. J. Stricker, P.Geol.



SOURCES OF INFORMATION

- Blanchflower, J. D., 1983. Report on the May and Jennie (L.3943) Crown Grant; and Gold Note (L.616), Golden Giant (L.4655), Tip Top Fr. (L.4656), and Gold Bell (L.4657) Reverted Crown Grants; and Red Top No. 1 Located Mineral Claim, Nelson Mining Division, Fortynine Creek Area, British Columbia.
- Blanchflower, J. D., 1984. Exploration report on the May and Jennie Property, Nelson Mining Division, British Columbia.
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- Taiga Consultants Ltd., 1983. Southeast British Columbia precious metals compilation, 82E and F. Unpublished study.

CERTIFICATE OF QUALIFICATION

I, Stanley J. Stricker, of the City of Calgary, Province of Alberta, hereby certify:

- That I am a practising Mining Geologist residing at 440 Midridge Drive S.E., Calgary, Alberta T2X 1B3;

- That I am a Professional Geologist registered with the Association of Professional Engineers, Geologists and Geophysicists of Alberta;

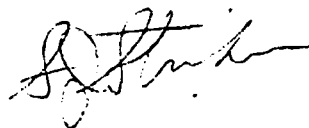
- That I graduated from the University of Western Ontario in 1973, Dean's Honours List, with the degree of B.Sc. (Hons.), Geology;

- That I have been engaged in mineral exploration as a geologist and executive with various major and junior resource companies, and as an independent consultant, for fourteen years;

- That the foregoing report was based on information provided by Aurora Gold Ltd., its Vice-President, Exploration and Chief Financial Officer, private and publically available reports and publications, and a property examination;

- That I have not, directly or indirectly, received nor expect to receive any interest, direct or indirect, in the May and Jennie property or any property of Aurora Gold Ltd. or any affiliate, nor do I own directly or indirectly any securities of that company or any affiliate.

Dated at Calgary, Alberta  
1 September, 1987



S. J. Stricker, P.Geol.

