84 - # 947 - 13071

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

on the BANK 9, BANK 9 FR, BANK 10 and BANK 10 FR Claims

SKEENA MINING DIVISION

NTS 103-G-8E, 103-H-5W

53⁰19'N 130⁰00'W

October, 1984

D. B. Petersen

Owners: D. K. Bragg D. B. Petersen J. T. Dennett

Operator: Windarra Minerals Ltd., and Forty-Niner Properties Ltd.

GEOLOGICAL BRANCH ASSESSMENT REPORT

13.071

TABLE OF CONTENTS

		Page
1.	Introduction	1
2.	Location and Access	1
3.	Topography and Vegetation	1
4.	Regional Geology	1
5.	Local Geology	3
6.	History	6
7.	Work Done in 1984:	6
	 Line Flagging Geological Mapping Geochemical Soil Samplin 	g
8.	Results of Work Done in 1984:	8
	 Geological Mapping Geochemical Soil Samplin 	8
9.	Discussion	13
10.	Conclusions	14
11.	Recommendations	14
12.	Costs	14
13.	Title	15
14.	References	16
15.	Affidavit	17
	Illustrations	
Fig. 1	"Location Map"	2

	Contraction and the contraction of	
Fig. 2	"Banks Island Geology"	4
Fig. 3	"Geology"	In Pocket
Fig. 4	"Sample Location Map"	In Pocket
Fig. 5	"ppb Au"	In Pocket

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1. Introduction

This report describes the programme of line flagging, geological mapping and geochemical soil sampling that was performed by J. Dennett, P. Jones and R. Konst from 19 May to 7 June, 1984, and from 10 July to 29 July, 1984 on the BANK 9, 10 AND 10 FR Claims.

2. Location and Access

The BANK 9, BANK 9 FR, BANK 10 and BANK 10 FR claims are located approximately 110km south of Prince Rupert, B.C. at geographic co-ordinates 53°19'N, 130°00'W. NTS is 103-G-8/E and 103-H-5/W. See Fig. 1, "Location Map".

Access is either by float plane from either Prince Rupert or Sandspit to Inland Lake on BANK 9 claim, or by helicopter to numerous landing spots on the claims.

3. Topography and Vegetation

Elevations on the BANK 9 and BANK 10 claims vary from sea level to 400m a.s.1. One large hill is present on the property.

Vegetation on BANK 9 consists of sparse conifers with short scrub, while BANK 10 is covered by moderate to dense conifer forest.

4. Regional Geology

According to Jackson (1976), Banks Island lies within the Coast Crystalline Complex, a northwest trending, structurally controlled belt of rocks that extends with interruptions for 6,000km from the Aleutian Peninsula in the northwest to the Baja California peninsula in the southeast (Roddick, 1966).

- 1 -



4. Regional Geology (Cont'd)

The rocks comprising this belt vary in age from Cambrian through Tertiary and consist essentially of plutonic rocks of the Triassic and Cretaceous Eras enclosing pendants of older volcanic and sedimentary rocks.

Economically the complex is important, hosting a variety of mineral producers such as the vein type Dolly Varden silver deposit, the Britannia Beach and Anyox copper-zinc deposits which various authors have described as being of volcanogenic origin, the porphyry type Alice Arm and Quartz Hill molybdenum deposits, the Bralorne-Pioneer gold district and numerous other mineral deposits of varying sizes and commodities.

5. Local Geology

As is typical of the Coast Crystalline Complex, Banks Island is characterized by two narrow belts of northwesterly striking metasedimentary and metavolcanic rocks that are surrounded by a mass of younger granitic rocks. See Fig. 2, "Banks Island Geology". These rocks display a northwesterly elongation parallel with the regional trend. Airphoto studies by Tate Blanchet (1983) have shown the degree of faulting and fracturing on the island to be extreme.

The metasediments are represented mainly by laminated micaceous quartzite and crystalline limestone, skarn, schist and slate, all of which display varying degrees of metamorphism and contacts that may be sharp or gradational. Roddick (1970) felt that what he mapped as gneissic diorite and migmatite complexes (Unit 5) are clearly the result of granitization of metasedimentary and metavolcanic rocks and which were probably of intermediate rather than siliceous composition.

- 3 -



- 4 -

5. Local Geology (Cont'd)

The younger granitic rocks consist of quartz diorite, granodiorite and quartz monzonite which tend to show crude - and on the west side of the island, incomplete - concentric zoning from quartz diorite at the margin through to quartz monzonite at the core. An important feature of these rocks is that they display gradational contacts, so that determination of rock type was based on K-feldspar content and specific gravity. Roddick (1970) interpreted this as indicating an origin that resulted from the burial and granitization of sedimentary rocks rather than by an intrusive process.

According to McLaren (1983), eleven separate gold deposits and occurrences have been found to the present time in the central part of the island. These are of two main types - bulk tonnage, and high-grade replacement deposits. Precious metal mineralization consists of native gold and silver in roughly equal amounts. Sphalerite, galena, chalcopyrite, molybdenite and pyrite may also be present.

All the known deposits are controlled by well developed faults and fracture systems in both the metasedimentary and the intrusive rocks, particularly in what is known as the "Kim" granite, a centrally located phase within the quartz monzonite core that is characterized by an unusually high density of fractures and hosts the bulk tonnage deposits. These appear to be controlled by faults and shears and to consist of a tabular shaped system of mineralized quartz veins and associated stockwork. The largest of the known deposits, the Kim zone, covers an area of approximately 400m x 20m.

- 5 -

6. History

The BANK 9 and 10 claims were staked in 1983 to cover what was considered to be a favourable area southeast of the TAD claim. The BANK 10 fractional claim was staked after commencement of the field programme to cover unstaked ground between the BANK 9 and TAD claim. The BANK 9 fractional claim was staked to cover what was thought to be open ground between the BANK 9 and 10 claims. Subsequent surveying showed that these claims actually overlap and that the fraction does not exist.

There is no recorded history of work on the claims.

7. Work Done in 1984

J. Dennett, Geologist, P. Jones, Prospector, and R. Konst, Geologist/ Sampler spent a total of 105 man-days in two stages from 19 May - 7 June, and from 10 - 29 July performing the work. D. Petersen visited the property on 26 - 27 May and 19 - 20 July.

1. Line Flagging

A total of 16 man-days were spent flagging 6km of baseline and 49km of grid line on the claims. Lines were spaced at a nominal distance of 200m and oriented either North-South or East-West. Station spacing was 25m along the lines. See Fig. 3, "Sample Locations".

2. Geological Mapping

Prospecting along the flagged lines and between them was done coincidentally with the geochemical soil sampling. J. Dennett spent 13 days conducting follow-up mapping and sampling in areas of interest characterized by quartz veining, mineralization and alteration.

On BANK 9 claim, 23 man-days were spent prospecting a large area that was found to be underlain by more than 50% outcrop.

- 7. Work Done in 1984 (Cont'd)
 - Geological Mapping (Cont'd)

The results of the mapping are shown in Fig. 3, "Geology".

3. Geochemical Soil Sampling

Fifty-nine man-days were spent collecting a total of 1,471 soil samples, 47 rock samples, and 9 heavy mineral samples.

Samples were taken at 25m intervals along lines spaced 200m apart. On the BANK 10 claim, sample density was reduced over a large area where outcrop exposure was more than 50%. All the gullies were sampled at regular intervals.

Soil samples weighing approximately 400gm were taken with a mattock. As the B horizon is virtually absent or very poorly developed on the property, samples consisted of an approximate 50-50 mix of material from the A and C horizons. Each sample was placed in a numbered Kraft paper bag and sent to Vancouver to Acme Analytical Labs. There, the samples were dried at 60°C, sieved to -80 mesh and 10gm of the residue ignited overnight at 600°C, and digested with hot dilute aqua regia. The clear solution was extracted with Methyl Isobutyl Ketone and the Au content in the MIBK extract determined by Atomic Absorbtion using background correction to a detection limit of 5ppb.

Rock samples were taken over areas of geological interest, placed in numbered plastic sample bags, and sent to Acme Analytical Labs for assaying. There, the samples were crushed to -100 mesh and analyzed for gold using AA technique described above.

Heavy mineral samples were taken in several creeks and consisted of taking approximately 25kg of sand from the active parts of creek beds, wet-sieving this to -10 mesh, and panning the fine fraction to an

- 7. Work Done in 1984 (Cont'd)
 - 3. Geochemical Soil Sampling (Cont'd)

approximate 12kg concentrate which was placed in a numbered plastic bag and sent to Acme Labs in Vancouver for processing. There, the light minerals and the magnetite were removed by heavy medium and magnetic separation respectively, and the remaining heavy fraction crushed and analyzed for gold by AA technique.

The sample stations and the results are shown in Fig. 4, "Sample Locations" and Fig. 5, "ppb Au" respectively.

8. Results of Work Done in 1984

The results of the work done are as follows:

1. Geological Mapping

Essentially, mapping has shown that the claim area is underlain by two bands of Northwesterly striking metasediment and crystalline limestone that are surrounded by younger rocks consisting of gneissic diorite and quartz diorite to the Southwest, and by quartz monzonite to the Northeast. See Fig. 3, "Geology".

The metasediments (Unit 2b) consist mainly of fine grained, brown to dark green, metamorphosed sandstones and argillites. Cleavage is well developed. The crystalline limestone (Unit 2d) consists of light-coloured, hard, fine-grained limestone.

Two pods of skarn are present East of the metasediment contact. These are small, erratic and very fine grained. Diopside and brown coloured garnet are well developed.

The two sedimentary bands vary between 100m and 200m in width, and are separated by approximately 200m of diorite and gneissic diorite.

8. Results of Work Done in 1984 (Cont'd)

1. Geological Mapping (Cont'd)

The quartz diorite (Unit 8b) is fresh, grey, medium to coarse grained, with an approximate composition of quartz (10%), felspar (15%), hornblende (70%), and biotite (2%). A quartz-poor version of the quartz diorite with a quartz content or approximately 5% was termed diorite. The gneissic diorite (Unit 8e) appears to be a gneissic variety of the quartz diorite. These units occur Southwest of the limestone bank on the BANK 10 claim where there is a paucity of outcrop.

The quartz monzonite is generally fresh, medium to coarse grained, light grey in colour and is composed of quartz (35%), felspar (50%), biotite (10%), and hornblende (2%). Essentially it weathers positively and affords excellent outcrop exposure.

Northeast of the metasedimentary belt, an approximate 500m square area of quartz monzonite is characterized by a high density of fractures (Unit 10k) and quartz veinlets. In this area, the veinlets were seen to strike East-West or Northeasterly, and consist typically of 5 or 6 sub-parallel veinlets spaced approximately ¹/₂ metre apart forming a swarm some 3 to 4 metres wide, traceable in some cases for as much as 50m along strike. Very narrow (lmm wide) sericite envelopes sometimes flank the veinlets.

Elsewhere in the area underlain by quartz monzonite, East-West and North-South striking fracture systems are dominant. Quartz veining is generally associated with East-West striking fractures.

In the Northeast portion of the BANK 9 claim, in an area approximately 800m by 300m, six areas of mineralized quartz veining occur. Mineralization is confined to East-West striking veins which were seen to contain up to 5% sulphides. Minerals include galena, sphalerite,

- 8. Results of Work Done in 1984 (Cont'd)
 - 1. Geological Mapping (Cont'd)

chalcopyrite and pyrite with minor bornite. Sericitization of the wall rock is present. The veins occur either as small swarms over areas approximately 2m x 2m or as single veins. The largest vein that was found is 38cm in width at co-ordinates 950S, 1750E and is exposed for 2m in length. One chip sample, number 8,410,018 returned a high value of 0.46 oz/t Au. Follow-up of the area showed that the vein is single and isolated, and is surrounded by unfractured, unmineralized quartz monzonite.

The rock chip sampling may be summarized as follows:

Sample No.	Type	Width (m)	Rock Type	Remarks
8,410,018	chip	.08	Qtz Mon	Qtz vn, py, cpy, gal
8,410,019	chip	.12	Qtz Mon	Alt
8,410,052	float	grab	Qtz Mon	Qtz vn, py
8,410,056	chip	0.75	Qtz Mon	Frac, py
8,410,059	chip	0.75	Qtz Mon	Alt
8,410,060	chip	0.8	Qtz Mon	Qtz vn
8,410,063	chip	?	Qtz Mon	Ру
8,410,138	chip	1	Qtz Mon	Qtz vn
8,410,139	chip	1.1	Skarn	Lim
8,410,500	chip	. 75	Qtz Mon	Qtz vn
8,410,501	chip	.50	Qtz Mon	Qtz vn
8,410,502	chip	?	Qtz Mon	Qtz vn
8,410,503	chip	?	Qtz Mon	Qtz vn
8,410,504	chip	?	Qtz Mon	Qtz vn
8,410,505	chip	?	Qtz Mon	Qtz vn
8,410,506	chip	?	Qtz Mon	Qtz vn

8. Results of Work Done in 1984 (Cont'd)

1. Geological Mapping (Cont'd)

Sample No.	Туре	Width (m)	Rock Type	Remarks
8,410,507	chip	?	Qtz Mon	Qtz vn
8,410,508	chip	?	Qtz Mon	Qtz vn
8,410,512	chip	1	Qtz Mon	Qtz vns, chl
8,410,513	chip	1	Qtz Mon	Qtz vns
8,410,514	chip	1	Qtz Mon	Qtz vns, py
8,410,515	chip	1	Qtz Mon	Qtz vns, py
8,410,516	?	?	Qtz Mon	Qtz vns, py
8,410,650	chip	2	Qtz Diorite	Qtz vn, py
8,412,323	chip	.15	Qtz Diorite	Qtz vn
8,412,531	chip	1.5	Qtz Diorite	Сру
8,412,705	chip	0.25	Qtz Mon	Qtz vn
8,412,729	chip	.80	Qtz Mon	Qtz vn, gal
8,412,818	chip	.50	Qtz Mon	Qtz vn, ser
8,412,819	chip	.4	Qtz Mon	Qtz vn, ser
8,412,821	chip	.5	Qtz Mon	Qtz vn, py
8,412,828	chip	.65	Qtz Mon	Qtz vn, py
8,412,829	chip	.38	Qtz Mon	Qtz vn, py
8,412,830	chip	.65	Qtz Mon	Qtz vn, py, cpy, gal, sph
8,413,103	chip	1	Qtz Mon	Qtz vn, gal, py
8,413,108	chip	1	Qtz Mon	Qtz vn, ser
8,413,109	chip	1	Qtz Mon	Qtz vn, py
8,413,149	chip	.5	Qtz Mon	Qtz vn, gal, py, sph
8,413,150	chip	.5	Qtz Mon	Qtz vn, py, sph
8,413,166	chip	.75	Qtz Mon	Qtz vn, py

1.	Geological	Mapping	(Cont'd)

Sample No.	Type	Wi	dth (m)	Rock Type		Rem	arks
8,413,169	chip		.75	Qtz Mon	Qtz	vn,	ру
8,413,171	chip		.75	Qtz Mon	Qtz	vn,	ру
8,413,182	chip		.75	Qtz Mon	Qtz	vn,	ру
8,413,550	chip		.5	Qtz Mon	Qtz	vn	
8,413,551	chip		.5	Qtz Mon	Qtz	vn	
8,413,558	chip		.5	Qtz Mon	Qtz	vn	
8,413,559	chip		.5	Qtz Mon	Qtz	vn	
Abbreviations:		Qtz Mon	-	Quartz Monzonite			
		Qtz	-	Quartz			
-		vn	=	Veins			
		Ру	=	Pyrite			
		Сру	-	Chalcopyrite			
		Gal	-	Galena			
		Alt	=	Altered			
		Lim	-	Limonite			
		Sph	-	Sphalerite			
		Ser	=	Sericite			
		Frac	-	Fractured			

2. Geochemical Soil Sampling

The results of the geochemical soil sampling show that the only area of promise is the gulley centred at 2400S, 1200E on the BANK 9 claim immediately North of the KEECH claim, where values of between 15 and 220 ppb Au are present. Sampling around the zone indicates that it is not extensive.

8. Results of Work Done in 1984 (Cont'd)

2. Geochemical Soil Sampling

A few isolated, single-station highs and anomalous values are present on the BANK 10 claim. They appear to be trendless.

9. Discussion

The geological work that has been done has shown that the BANK 9 claim is underlain by quartz monzonite that is fractured in some areas and contains both single and small swarms of quartz veins and stringers in the Northeastern and Southwestern portions of the BANK 9 claim. Chip sampling of these zones has shown that their gold content is generally very low. One vein returned a high value of 0.46 oz/t but it is only 8cm wide, is isolated and occurs in an area that is surrounded by fresh unfractured and unmineralized quartz monzonite.

On the BANK 10 claim, where outcrop exposure is minimal, geochemical soil sampling has shown that apart from a few spot highs, the area does not indicate interest.

The gulley centred at 2400S, 1200E on the BANK 9 claim is of definite interest for it occurs approximately 200m North of the Bushy Creek showing on the KEECH claim where Falconbridge discovered and drilled a series of sub-parallel Easterly striking mineralized quartz veins that are separated by unmineralized host rock. The mineralization causing the anomaly in the gulley may be related to the Bushy Creek mineralization, and is probably restricted in extent for the abundant outcrop to the East and West displays little or no fracturing and is fresh and unmineralized. One hundred metres upstream from the line of anomalous values, the heavy mineral and soil samples returned background values.

10. Conclusions

It is concluded that:

- the geological mapping, the rock sampling and the geochemical sampling has provided adequate first-stage exploration of the property.
- 2. the only area of interest to be indicated by the programme is the anomalous gulley at the South of the BANK 9 claim. This zone may be related to the Bushy Creek showing on the KEECH claim and is likely to be restricted in size.

11. Recommendations

It is recommended that:

- further work in the Bushy Creek area is justified if exploration on the adjoining KEECH claim is initiated.
- apart from this zone, the programme has failed to outline targets for follow-up.
- 3. the BANK 9 FR claim be allowed to lapse.

12. Costs

The following costs were incurred in the programme:

Salaries:

J. Dennett, Geologist	19-28 May, 3-7 June 10-29 July		
	35 days @ \$178	6,230	
P. Jones, Prospector	19-28 May, 3-7 June 10-29 July		
	35 days @ \$117	4,095	
R. Konst, Sampler	19-28 May, 3-7 June 10-29 July		2
	35 days @ \$113	3,955	
D. Petersen, Supervisor	26-27 May, 19-29 July		
and the second second second second second second	4 days @ \$250	1,000	\$ 15,280

12. Costs (Cont'd)

\$ 1,488	
131	
7,800	
3,726	
423	\$ 13,568
	\$ 1,488 131 7,800 3,726 <u>423</u>

Reporting

D. Petersen	4 days @ \$250		\$ 1,000	
J. Dennett	2 days @ \$178		356	
Drafting, printing			910	
Typing, S. Wheat	4 hours @ \$15		60	2,326
		TOTAL:		\$ 31,174

13. Title

Particulars of the subject claims are as follows:

Name	Owner	Units	Record No.	Recording Date
BANK 9	D. K. Bragg	20	4192	28 October, 1983
BANK 10	D. K. Bragg	16	4193	28 October, 1983
BANK 9 FR	J. T. Dennett	ı	4501	18 June, 1984
BANK 10 FR	D. B. Petersen	1	4478	29 May, 1984

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14. References

Charteris, S.N., 1964, Observations on the Gold Mineralization, Keetcha Lake Area, Banks Island, B. C.; Falconbridge Nickel Mines Limited Inter-Office Memorandum.

Harris, J.F., Tate Blanchet, P.H., Lloyd, J., McClaren, M., McDougall, J.J., 1983, Geological Report - Yellow Giant Project; Trader Resources Corp. Pre-Feasibility Study.

Jackson, E.V., 1976, Generalized Geological Map of the Canadian Cordillera; Porphyry Deposits of the Canadian Cordillera; C.I.M.M. Spec. Vol. 15.

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Roddick, J.A., 1970, Douglas Channel - Hecate Strait Map-Area, British Columbia; G.S.C. Paper 70-41. DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To WIT:

In the flutter of the geological and geochemical surveys conducted on the BANK 9, BANK 10, and the BANK 10 FR Claims, Skeena Mining Division.

f. David B. Petersen

of Daiwan Engineering Ltd.

in the Province of British Columbia, do solemnly declare that the following costs were incurred:

SALARIES

day of

J. Dennett, Geologist	35	days	0	\$178		\$	6,230	
P. Jones, Prospector	35	days	0	\$117			4,095	
R. Konst, Sampler	35	days	0	\$113			3,955	
D. Petersen, Supervisor	4	days	0	\$250		_	1,000	\$ 15,280
FIELD EXPENSES								
Meals, accommodation, gro	cerie	s				\$	1,488	
Supplies					2.54		131	75
Assaying and freight							7,800	
Travel and air transport							3,726	
Miscellaneous				2			423	13,568
REPORTING					4			
D. Petersen .	4	days	0	\$250		\$	1,000 '	
J. Dennett	2	days	0	\$178		1000	356	
Drafting, printing		04.000					- 910	
Typing, S. Wheat	4	hour	s	0 \$15		-	60	2,326
							6	
	1				TOTAL:			\$ 31,174

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the bity of Province of British Columbia, this

Scholar

DB. Peterson

A Commissioner for taking a fidewits for British Columbia or A Notary Public in and for the Province of British Columbia.

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ANS Patersen



onfetenen pbb Au 400 500 Metres 200 300









- GEOLOGY 9D

Metres O

