

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

84-1098(b)-13245

13,245

GEOLOGICAL AND GEOCHEMICAL REPORT

SKY 1, 2 AND 3 CLAIMS

NTS 104 B/11

Lat 56° 39' North Long 131° 06' West

Liard Mining Division

BRITISH COLUMBIA

Owner: Skyline Exploration Ltd.

Operator: Anaconda Canada Exploration Ltd.

by

**Myron Sawiuk M.Sc.
John Burlington B.Sc.
Andris Kikauka B.Sc.**

November, 1984

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SUMMARY

Follow-up stream sediment and rock chip sampling has confirmed and identified several new anomalies in areas of known Au and/or Ag signatures. Prospecting and semi-reconnaissance geological mapping reveal the Au anomalies to be spatially related to northwest and northeast trending fault/fracture systems. The fracture systems are marked by zones of silicification, carbonatization, pyritization and fracturing and brecciation.

Recommendations for further work include detailed geological mapping and geochemical surveying to further delineate potentially mineralized sites within favourable structures.

INTRODUCTION

Location and Access

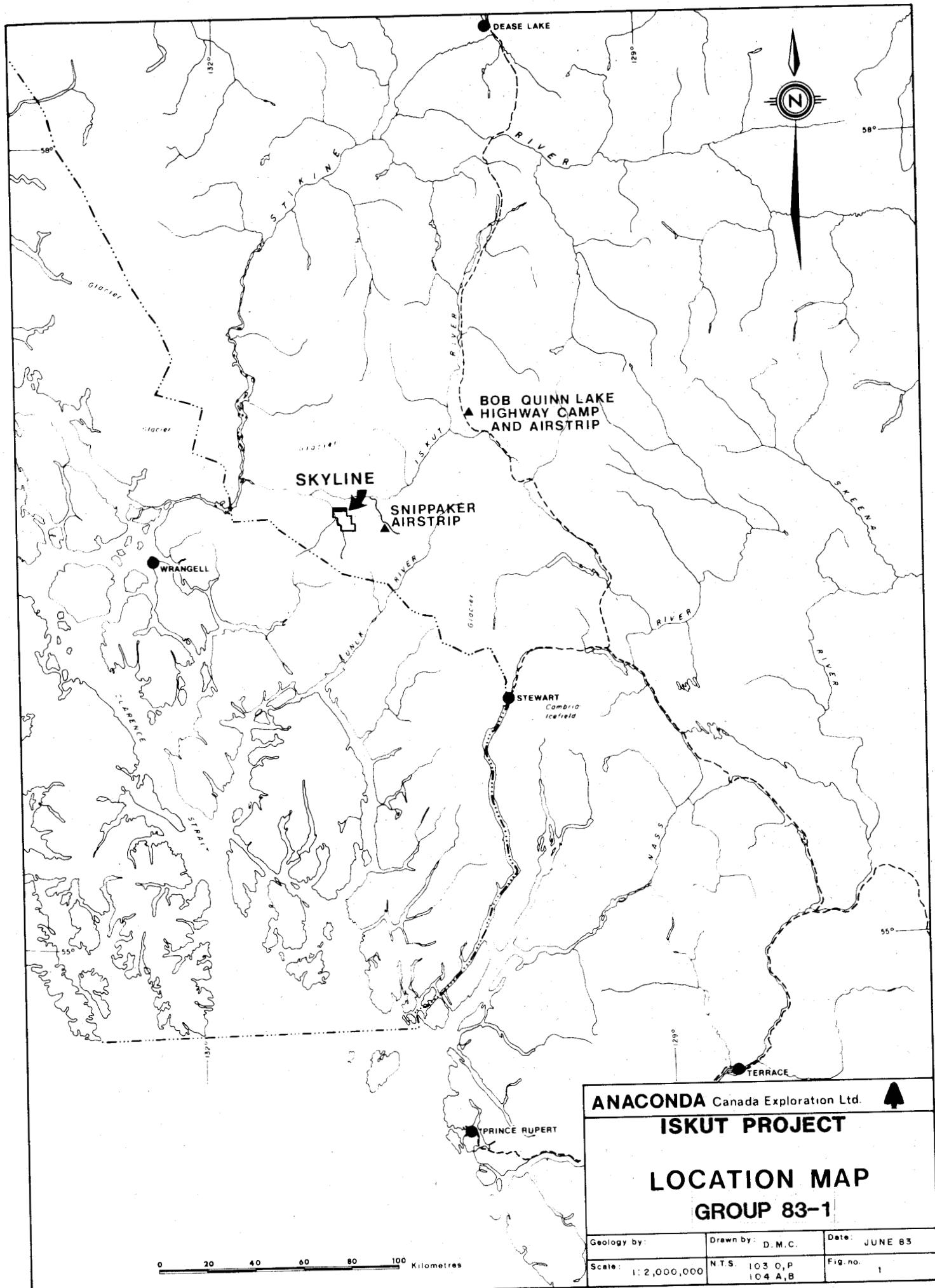
The Sky 1-3 claims are located in NTS map area 104 B/11, approximately 90 km. northwest of Stewart, British Columbia (Figure 1) and 9 km south of the Iskut River near Johnny Mountain. The approximate geographic coordinates at the centre of the claim group are 56° 39' North latitude and 131° 06' West longitude (Figure 2). The claims are normally accessible only by helicopter.

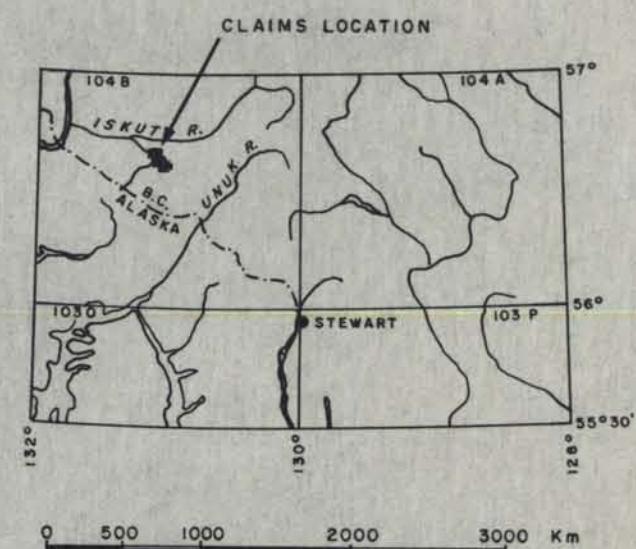
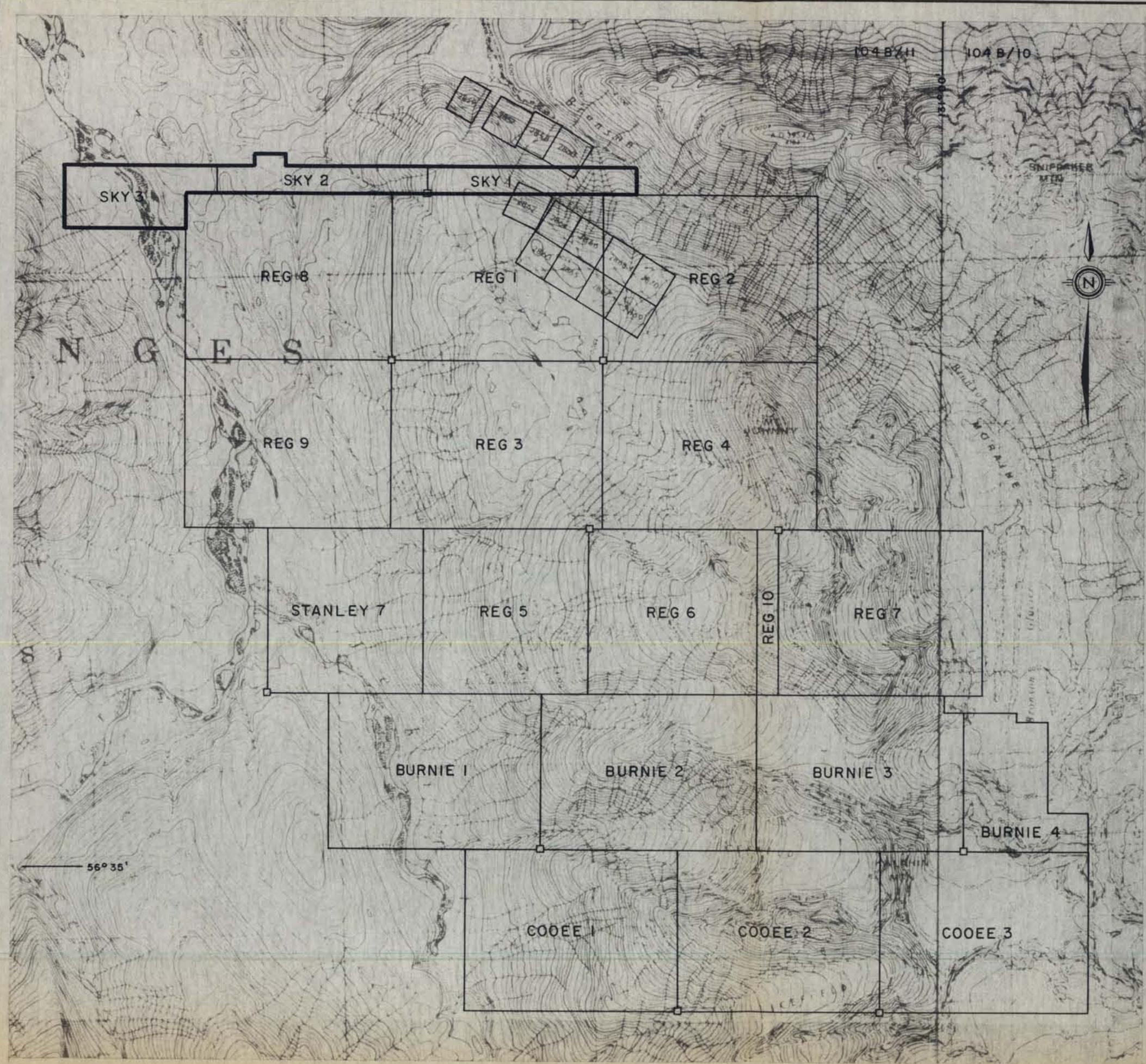
Property and Ownership

The Sky 1-3 claims consist of 33 units having been grouped and designated as 83-2. The claims are located in the Liard Mining Division and are entirely owned by Skyline Exploration Ltd. of Vancouver, British Columbia.

The following summary outlines the present land status:

<u>Claims</u>	<u>Record No.</u>	<u>Expiry Date</u>	<u>Date of Grouping</u>	<u>Group #</u>
Sky 1-3	2568 - 2570	Sept. 13/85	Sept. 13/83	83-1





ANACONDA Canada Exploration Ltd.

ISKUT PROJECT

**SKY CLAIMS
LOCATION MAP**

geology by	drawn by	date
	D. M. C.	OCT, 84
scale	1:50,000	n.t.s. 104 B / 10, II
		fig/proj no 2

Physiography and Glaciation

The claims lie within the Coast Mountains physiographic subdivision of the Coast and Cascade Belt. The region is entirely glaciated and is characterized by wide U-shaped, drift-filled major valleys and deeply cut V-shaped upland valleys. Mountain peaks in the area average 1680 m ASL in elevation and rise abruptly from the major valleys.

The claims are located on Johnny Flats immediately south of the north facing promontory known as the Red Bluff which extends from Bronson Creek to the east and the Craig River to the west. The property is drained by numerous northwest flowing tributaries of the Iskut River. Elevations in the area range from 100 m to 2000 m ASL.

1984 Exploration

The work carried out in 1984 was a follow-up of silt-heavy mineral gold anomalies identified in July, 1983 by the Placer-Anaconda-Skyline joint venture. Complete details of the stream sediment survey were submitted in the report "Johnny Mountain Gold Prospect-V190" by B. Young of Placer Development Ltd., April, 1984.

In 1984 reconnaissance geological mapping, prospecting and stream sediment sampling were carried out by an Anaconda exploration crew based at Johnny Mountain. A total of 4 heavy mineral in-stream samples and 2 rock chip samples were collected and submitted for analysis.

REGIONAL GEOLOGY

The regional geology is described in the vicinity of Johnny Mountain, by Kerr (1948), GSC map 9-1957 and assessment reports by Cominco and Texas Gulf. The time-stratigraphic classification described in this section is after Groves (1971).

The area encompassed by the claim group contains Paleozoic and Mesozoic rocks of three distinctive lithologic groups (Figure 3). Outcropping in the western portion of the claim group and between 100 m and 800 m ASL are metamorphosed sedimentary rocks including schist, slate and marble of late Paleozoic to Triassic age.

Distinct from these and outcropping at Johnny Mountain between 600 m to 1400 m elevation are isoclinally folded and sheared volcanic and sedimentary rocks of the lower Jurassic Unuk River Formation. These include black shale and argillite, lithic wacke and coarse conglomerate, some of which have a significant volcanioclastic component, which are predominant lower in the section. Fine-grained to coarse-grained, intermediate volcanioclastic rocks are predominant higher in the section.

The contact between the Unuk River Formation and overlying Betty Creek Formation is an angular unconformity marked by a flat-lying basal conglomerate. Outcropping in the eastern portion of the claim block, between 1200 m and 2300 m elevation, are the relatively undeformed volcanic and sedimentary rocks of the lower middle Jurassic Betty Creek Formation. These rocks include coarse clastic conglomerate and breccia with minor finer-grained clastic rocks, intercalated with basaltic to rhyolitic volcanic rocks.

These volcanic and sedimentary rocks are intruded by stocks, dikes, sills and apophyses of gabbro, granodiorite and felsite. One large granodiorite pluton outcrops in the southern portion of the claim block. This plutonic activity is probably related to the Coastal

Crystalline complex of late Mesozoic age. Complex nappe-fold features, thrust planes and overturned beds evident in the Cohee claims are the result of regional compression from this intrusive event. Lamprophyre and diabase dikes intrude all of the rocks and are of Cenozoic age. These may be related to the Pleistocene Mt. Hoodoo volcanic activity.

Regional shearing and faulting are evident in the Jekill and Bronson River valleys. Foliation is developed parallel to these lineaments.

PROPERTY GEOLOGY AND MINERALIZATION

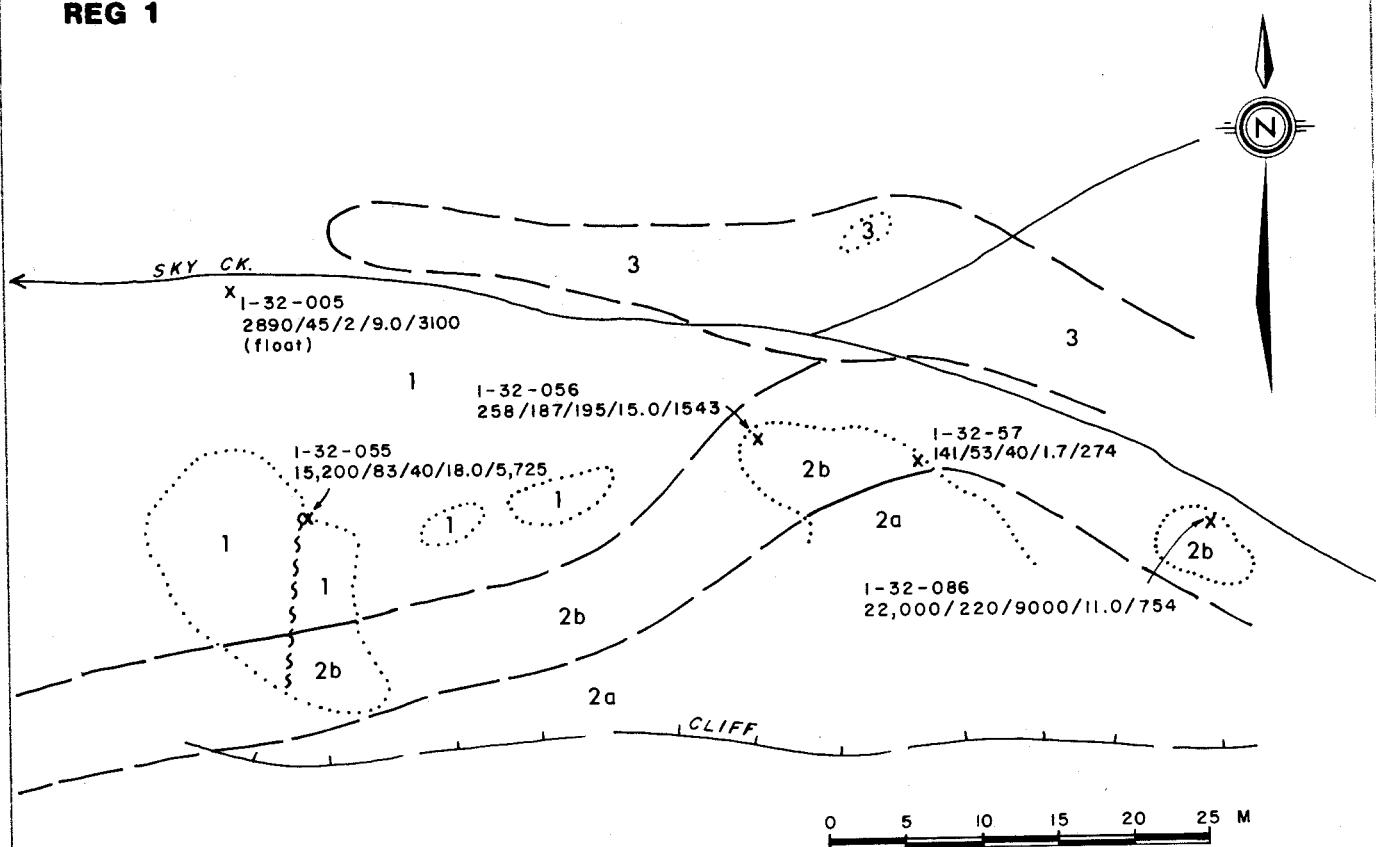
Geologic mapping of the claim group was carried out in selected areas utilizing a 1:20,000 scale topographic base. (Figure 3). Semi-detailed mapping (1:500 scale) was restricted to accessible bedrock exposures on cliff faces in the vicinity of Sky Creek (Figure 4).

The claim group is underlain by the lower Jurassic Unuk River Formation and related felsic intrusive rocks.

Rock units shown in Figure 4 include a thick section of dark green andesite flows and/or tuffs (Unit 1) at 150-460 metres elevation and an overlying buff grey sericite-quartz-pyrite rock (Unit 2). The latter is probably altered dacitic tuff and/or volcanic sandstone and is exposed along the steep south side of the creek (460-700 metres elevation). An orange weathering felsite exposed on the flatter north side of the creek intrudes Unit 2 rocks.

The contact between the andesite and sericite-quartz-pyrite zone contains massive pyrite ± quartz-chalcopyrite stringers 20-100 cm wide. The underlying andesite is enriched in chlorite with 2-5% disseminated pyrite and minor chalcopyrite. Mineralized shears and a major vertical shear zone occur in the sericite-quartz-pyrite zone. Intense fracturing with 5-8% disseminated and vein pyrite, and minor chalcopyrite is related to the shearing.

Significant gold values (3,100 and 5,725 ppb) accompany massive pyrite from a shear zone in the andesite near the contact with the overlying sericite-quartz-pyrite zone (Figure 4).

SKY 2**REG 1**

JURASSIC ?

 3 Felsite

L. JURASSIC - UNUK R. Fm

 2a) Sericite - quartz - pyrite, 1-2% py

2b) Sericite - quartz - pyrite, 5-8% py, minor cpy

 1 Chloritic andesite flow and/or tuff, 2-3% py, minor cpy

I-32-056

Sample Number

258/187/195/15.0/1543

Cu/Pb/Zn/Ag/Au (all results in ppm except Au is ppb)

ANACONDA Canada Exploration Ltd. 4

ISKUT PROJECT
SKY CK. AREA
GEOLOGY and
MINERALIZATION

geology by	A.S.	drawn by	D.M.C.	date
				OCT, 84
scale	1:500	nts	104 B/II	drawing no of

GEOCHEMISTRY

Stream Sediment

Heavy mineral concentrates from stream sediments were taken (Appendix 1) at or near the mouths of streams draining Johnny Flats and at the intersections of tributaries of these streams. Mineralization occurring upstream from these sample points should show an anomalous geochemical expression in the stream sediments. From previous reconnaissance work, the medium grained (>80 mesh), heavy (S.G.> 2.95), non-magnetic fraction was the most anomalous; thus, during the 1984 program, this fraction, only, was analyzed. A total of 75 samples were taken during the program of which 4 were taken on Group 83:1. Analytical results for Au, Ag, Cu, Pb, Zn, As, Bi, Sb are given in Table 1 and results and locations are given in Figure 6.

Results for all samples were subjected to statistical analysis and the results reported here were compared to this analysis to determine any anomalies. Thresholds were determined from visual examination of the data, summary statistics and probability plot analysis. (Appendix II, III) (Lepeltier, 1969; Chand, 1981).

Two of the samples 3-32-015 and 3-32-021 show strong enrichment in Au only. Sample 3-34-004 shows enrichment in Cu and As and sample 3-34-006 shows a strong enrichment in Cu, Pb, Zn, As, a marginally significant enrichment in Ag and possibly Sb.

Rock Chips

Two rock chip samples consisting of 1-2 kg samples were taken from geologically interesting showings on the claim group. The samples were assayed by Bondar-Clegg Ltd. (Appendix 1) and results are given in Table 2. Sample locations and results are given in Figure 5.

Table 1

Stream Sediment - Heavy Mineral Concentrates

Medium Non-Magnetic Fraction - Assays

Claim Group 83-1

Sample No.	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)
3-32-015	5,100	8.2	1,772	149	714	400	2	18
-021	24,200	3.7	197	103	277	86	2	2
3-34-004	250	5.0	1,063	89	722	406	2	14
-006	450	32.9	1,248	5,484	7,216	6,570	53	2

Table 2

Rock Chips - Assays

Claim Group 83-1

<u>Sample No.</u>	<u>Au (opt)</u>	<u>Ag (ppm)</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>
1-32-053	0.006	7.1	49	1,320	480
1-32-054	0.006	12.0	207	1,440	7,800

The results were grouped with all rock chips from the reconnaissance program and subjected to statistical analysis to determine thresholds (see page 10). The two samples were then compared to these statistics to determine anomalous behaviour.

Sample 1-32-053 was from a quartz breccia contact zone between a light buff arenite and a grey siltstone which was anomalous in Pb. Sample 1-32-054 was from a 25 cm wide shear, slightly silicified and mineralized with pyrite and sphalerite. This sample was anomalous in Zn and Pb.

The geochemical anomaly (Samples 3-32-015, 3-34-004) in Au and Cu-As, respectively, were followed up later in the season and a showing consisting of pyrite and minor chalcopyrite within a quartz-sericite schist was found on the adjacent Reg 1 claim (Figure 4). Sample locations and assays with geology are illustrated but will not be discussed further.

CONCLUSIONS AND RECOMMENDATIONS

Several interesting features were discovered as a result of the 1984 reconnaissance work carried out on the Sky 1-3 claims.

1. Anomalous gold (3,100 and 5,725 ppb) values associated with massive pyrite from an extensive shear zone within andesites near the contact with an overlying sericite-quartz-pyrite zone.
2. Strong Au response in heavy mineral concentrates north of (up to 5,100 ppb) and west of (up to 24,200 ppb) anomalous gold values within a pyritic shear zone.

Minor Au enrichment (up to 0.006 opt) in rock chips and down-stream heavy mineral site anomalies support the conclusions of the gold source located at the identified mineralized shear zone or further south on the Reg 1 claim. Further stream sediment and rock sampling followed by hand trenching and geophysics is recommended to further evaluate the areal extent of the shear related gold mineralization.

REFERENCES

- Chand, F. (ed.), 1981. A Manual of Geochemical Exploration Methods. Geological Survey of Malaysia Special Paper No. 3
- Groves, E.W., 1971. Geology and Mineral Deposits of the Stewart Area. B.C. Dept. of Mines and Petroleum Resources, Bull. 58.
- Kerr, F.A., 1948. Lower Stikine and Western Iskut River Areas, British Columbia. Geol. Surv. Canada, Memoir 246.
- Lepeltier, C., 1969. A simplified statistical Treatment of geochemical data by graphical representation. Econ. Geol., V 64, p.538-550.
- Young, B.J., 1984. Johnny Mountain Gold Prospect, Iskut River Area. Vols. I & II. Placer Development Internal Report.

B.C.D.M. Assessment Report 630

Mawer, A. B., 1965. Report on Geological Survey of Bron Nos. 1 and 2 Groups. Cominco Report.

B.C.D.M. Assessment Report 769

Parsons, G., 1965. Geological Report on Bronson Creek Nos. 1-3 Claim Groups, Cominco Report.

B.C.D.M. Assessment Report 5275

L'Orsa, A., 1974. Geological Report Quinella Claims 1-64, Ecstall Mining Ltd. Report.

G.S.C. Map 9, 1957

STATEMENT OF COSTS

Sky 1-3 Mineral Claims
82-1 Group

Iskut Project

<u>Personnel</u>	<u>Field Time - inc. 20% Benefits</u>	\$	\$
M. Sawiuk Project Geol.	* June 29, * July 12 1 day @ \$124/diem	124.00	
A. Kikauka Geologist	* June 29, * July 12, * 13, 27 2.5 days @ \$112/diem	280.00	
F. Thrane Field Tech.	* June 29, * July 12, * 13 1.5 days @ \$95/diem	142.50	
			<u>546.50</u>
Pro rata labour and indirect charges (per Schedule A):			
	5 days @ \$263.31/diem		<u>\$1,316.55</u>

* indicates 1/2 day

Helicopter - Hughes 500D

June 29	1.6 hr.		
July 12	1.0 hr.		
13	0.7 hr.		
	3.3 hr. @ \$410.00/hr.	1,353.00	
Fuel:	100 l./hr. @ \$1.125/l	<u>371.25</u>	<u>\$1,724.25</u>

Geochemical Costs

4 Stream Sediment Samples @ \$23.80	95.20	
2 rock chip Samples @ \$15.70	<u>31.40</u>	126.60

Report Writing 15 days @ \$244/diem

M. Sawiuk 15 days @ \$124/diem	1,860.00	
J. Burlington 15 days @ \$120/diem	<u>1,800.00</u>	<u>3,660.00</u>

Total	\$7,373.90
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SCHEDULE "A"

Project Costs

Schedule of general costs, expenditures, travel expenses and general project expenses. To be applied to assessment on a pro rata basis.

Total Project Man Days: 623

General Labour Costs incl. travel time

Personnel

M. Sawiuk	June 25, Sept. 20-21	3 days	@ \$124/diem	372.00
J. Burlington	June 22-24, Sept. 20-21	5 "	@ \$120/diem	600.00
A. Kikauka	June 15-24, Aug. 10	11 "	@ \$112/diem	1,232.00
R. Gordon	June 15-24, Sept. 11	11 "	@ \$ 85/diem	935.00
F. Thrane	June 15-24, Sept. 15-21	17 "	@ \$ 95/diem	1,615.00
B. Marini	June 15-24, Aug. 8	11 "	@ \$135/diem	1,485.00
D. Carr	Aug. 11, Sept. 11	2 "	@ \$105/diem	210.00
D. Coolidge	Aug. 22, Sept. 15-21	8 "	@ \$ 78/diem	624.00
L. Riccio	July 13, 17, Aug. 3, 8	4 "	@ \$187/diem	748.00
J. Burdette	June 15-24	10 "	@ \$230/diem	<u>2,300.00</u>
				\$10,121.00

Pro rata cost: 82 days @ \$218.33/diem 17,903.06

\$28,042.06

Cost/diem \$44.98

Indirect Costs

Cook (G. Slawson) 87 days @ \$136/diem	\$11,832.00
Food	18,981.33
Fuel (camp) 64 x 200 l.	13,383.68
Propane	820.78
Travel	16,412.31
Travel expenses	3,617.03
Sundry expenses	501.22
Expediting	3,200.00
Miscellaneous -field supplies	11,445.74
Field equipment - rentals and maintenance	12,992.90
Fixed wing a/c support	35,663.40
<u>Freight</u>	<u>7,167.44</u>
 TOTAL	 \$136,017.83
 PER DIEM	 218.33
	+44.98
 TOTAL COST PER DIEM	 \$263.31

STATEMENT OF QUALIFICATIONS

M. Sawiuk B.Sc. (1977) - University of Western Ontario
 - Geology

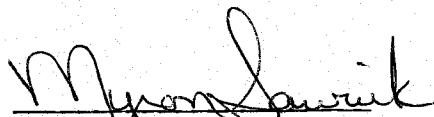
 M.Sc. (1982) - McGill University
 - Geology

J. Burlington B.Sc. (1977) - University of Western Ontario
 - Chemistry

 M.Sc. - pending - University of Western Ontario
 - Geology

A. Kikauka B.Sc. (1979) - Brock University
 - Geology

Respectfully Submitted


M. Sawiuk
Project Supervisor

November, 1984

APPENDICES

Appendix I Analytical Methods

Stream sediment samples for geochemical analysis were pre-sieved on site to -80 mesh and a 1 kg sample of this fraction was collected and dried. Samples were shipped to Acme Analytical Laboratories, Ltd., for further preparation and for analysis.

At Acme the samples were sieved to -20 mesh and wet panned to a sample size of approximately 250 g. The sample was then dried and treated with tetrabromoethane of S.G. of 2.96. The sample was redried, the magnetic fraction removed and hand pulverized. Gold was analysed by conventional fire assay and atomic absorption techniques and the other metals were analyzed on a sample digested with HCl-HNO₃-H₂O (3:1:3) and analyzed by I.C.P.

Rock chip samples include both bedrock grab and chip samples and float samples. These samples were shipped directly to Bondar-Clegg and Company Ltd. At Bondar-Clegg the samples undergo preliminary crushing of the entire sample to 80% -10 mesh. A split consisting of 200-400 g is separated and pulverized to 50% -150 mesh and 99% -80 mesh in an impact pulveriser. From this sample a split was treated with a hot HNO₃-HCl solution to extract Cu, Pb, Zn and Ag. The resultant solution is analyzed by conventional atomic absorption methods for the above. Gold on all samples was analyzed by fire assay according to the following procedure. Samples were analyzed on a 0.5 assay ton or 1.0 assay ton basis depending on fusability. The dore bead was dissolved and analyzed by A.A. for Au. Samples in excess of 0.20 o.p.t. were re-assayed and finished by the classic method of re-weighing the gold bead.

APPENDIX II

LOGARITHMIC SUMMARY STATISTICS

HEAVY MINERAL GEOCHEMISTRY

METALS	Au	Ag	Cu	Pb	Zn	As	Sb	Bi
No. of Samples	75	75	75	75	75	75	75	75
Minimum Value	1.00	.30	41.00	10.00	28.00	2.00	2.00	
Maximum Value	30700.00	122.50	2859.00	5484.00	21607.00	6570.00	670.00	
Range	30699.00	122.20	2818.00	5474.00	21579.00	6568.00	650.00	570.00
Median	950.00	3.70	201.00	103.00	220.00	89.00	20.00	20.00
Mode	40.00	1.70	197.00	15.00	277.00	406.00	20.00	20.00
Mean	647.23	3.62	247.86	103.18	273.30	95.90	39.44	29.77
Log St Dev	1.07	.54	.42	.58	.52	.58	.43	.37
Mean + 2SD	88409.56	43.66	1690.97	1507.15	3060.76	1386.48	284.10	161.08
Coef Variation	.38	.97	.17	.29	.22	.29	.27	.25
Skewness	.00	.38	.00	.00	.00	.00	.00	.93
Kurtosis	.08	1000.00	5.89	1.05	3.89	1000.00	72.00	3.76
2.5 Percentile	1.00	.30	42.00	12.00	40.00	11.00	20.00	20.00
5.0 Percentile	10.00	.50	54.00	14.00	61.00	17.00	20.00	20.00
16.5 Percentile	50.00	1.00	101.00	22.00	85.00	24.00	20.00	20.00
50.0 Percentile	950.00	3.70	201.00	103.00	220.00	89.00	20.00	20.00
82.2 Percentile	6200.00	10.20	663.00	312.00	725.00	325.00	90.00	40.00
90.0 Percentile	8200.00	15.50	870.00	483.00	1412.00	446.00	180.00	140.00
95.0 Percentile	20800.00	32.90	1248.00	909.00	2143.00	642.00	330.00	190.00
97.5 Percentile	24200.00	35.30	1772.00	1133.00	2652.00	925.00	510.00	230.00
99.0 Percentile	25200.00	57.20	2022.00	4327.00	7216.00	2940.00	530.00	580.00

APPENDIX III

LOGARITHMIC SUMMARY STATISTICS

ROCK CHIP GEOCHEMISTRY

METALS	Au	Ag	Cu	Pb	Zn
No. of Samples	158	138	138	138	138
Minimum Value	.00	.20	3.00	6.00	2.00
Maximum Value	2.88	1200.70	52800.00	280000.00	23700.00
Range	2.88	1200.50	52797.00	27994.00	236998.00
Median	.01	20.00	250.00	835.00	2600.00
Mode	.00	18.00	85.00	405.00	480.00
Mean	.01	77.36	303.01	949.00	2707.59
Log St Dev	.70	167.56	.83	1.08	1.13
Mean +2SD	.27	412.48	13738.22	139378.98	492779.90
Coeff Variation	-.35	2.17	.33	.36	.33
Skewness	.00	3.91	1000.00	.09	11.75
Kurtosis	155.00	17.78	.26	.00	135.00
2.5 Percentile	.00	.20	7.00	9.00	20.00
5.0 Percentile	.00	.50	20.00	25.00	54.00
16.5 Percentile	.00	1.70	57.00	64.00	144.00
50.0 Percentile	.01	20.00	250.00	835.00	2600.00
82.2 Percentile	.04	102.80	1650.00	11700.00	51800.00
90.0 Percentile	.11	170.70	3500.00	23200.00	101000.00
95.0 Percentile	.17	435.80	10450.00	72000.00	160000.00
97.5 Percentile	.59	684.00	24200.00	127000.00	195000.00
99.0 Percentile	.79	709.70	41000.00	248000.00	221000.00

