

GEOLOGICAL AND GEOCHEMICAL REPORT

On

SWAN CLAIMS

Skeena Mining Division

103B/6W, 52° 21', 131° 17'

OWNED BY

J.C. STEPHEN

BY

J.T. SHEARER, M.Sc

FOR

J.C. STEPHEN EXPLORATIONS LTD.

Field work completed between July 9 and July 23, 1980

December 17, 1980

North Vancouver

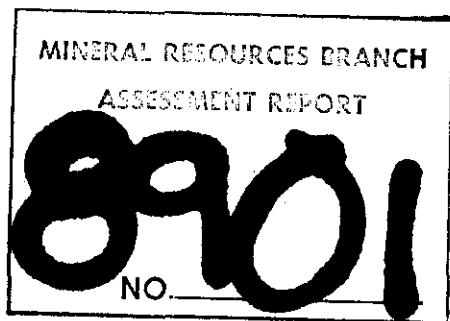


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SUMMARY

- (1) The Swan Group was staked in July, 1980 and is located on the southeast end of Burnaby Island approximately 110 Km south of Sandspit.
- (2) A crew of 5 persons spent 18 man-days on the property between July 9 and July 23, 1980.
- (3) The claims are underlain by fault slices of Triassic Karmutsen Formation chloritized basalt, Kunga Formation massive grey limestone and black, thin-bedded limestone and Cretaceous Longarm Formation lithic siltstone and greywacke. The sequence has been intruded on the east by a portion of the Post Tectonic Burnaby Batholith.
- (4) The claims were located to cover an extensive highly anomalous area of arsenic in soils associated with weakly geochemically anomalous gold in small silicified zones. Silicification of Kunga limy sediments is widespread on the property.
- (5) A total of 114 soils and 12 rock samples were collected and analyzed for Au and As. Geological mapping at a scale of 1:10,000 was conducted over the area.
- (6) Detail geological mapping and prospecting is required over all the claims. Limited soil sampling is warranted to define the limits of anomalous arsenic response. Soil profiles should be taken to establish if a positive correlation between gold and arsenic is present. Particular attention should be given to the narrow intense silicified breccia zones but also to the large pervasive areas of silica influx.
- (7) Two years assessment has been applied to all claims using a \$970 PAC withdrawal request for a total of \$5600 assessment credit.

INTRODUCTION

The SWAN GROUP was located in July, 1980 to cover an extensive area of highly anomalous arsenic in soils associated with weakly anomalous gold in rock samples from narrow, silicified breccia zones. Widespread, pervasive silicification of Kunga Formation, thin bedded black limestone and massive grey limestone members is common in the southern portion of the claims.

Southern Burnaby Island has a very long history of Mineral Exploration. High grade copper occurrences in the South Moresby Area first became general knowledge in 1859 as a direct result of the production of gold in 1851 from Mitchell Inlet. Francis Poole (1872) was attracted to the Skincuttle Inlet region in 1862 where he eventually established a base near Pelican Point. Poole and his crew proceeded to sink several shafts and shallow pits on surface showings along southern Burnaby Island and adjacent smaller Islets. Poole also did some prospecting to the north and apparently found the allemontite vein on Alder Island which he initially misidentified as native silver. After Poole's departure in 1864, the next activity was by Abe Heino who rediscovered the cupriferous skarns around Skincuttle Inlet. Heino remained for more than 30 years in the area making periodic shipments to the Tacoma Smelter. Around 1901 a general influx of prospectors occurred with attention being focussed on the many showings around Harriet Harbour and the first of the Jedway townsites was established. One property active at this time was the Gigger on Kingfisher Cove about which little is known. A profitable mine, the Lily, was brought into production in 1907 by A. Ikeda which produced up to 1920, a total of 14,780 tons which averaged 0.11 oz/ton gold, 1.9 oz/ton silver and 4.3% copper. Present reserves are small and are estimated to be about 25,000 tons of 1.5 to 2 per cent copper. By the late

1920's much of the activity around Jedway had stopped. Interest was revived in the 1940's when Falconbridge acquired many of the old crowngrants. Work in 1956 included drilling by Falconbridge on the Lily and Rose and magnetometer surveys over the Jessie deposit. By 1960 Silver Standard had outlined a sizeable magnetite deposit on the Jessie and this was brought into production in 1962 by Jedway Iron Ore Limited. By the end of operations in 1968 at total of 4,341,676 tons of ore averaging about 35% magnetic iron were mined mainly by open pit.

Exactly 100 years after Pooles arrival, a major iron deposit estimated to contain 8.2 million tons of 49.45% soluble iron was outlined by diamond drilling offshore of Pelican Cove (Western Miner 1965) by Burnaby Iron Mines Limited. This deposit referred to as the Jib deposit is immediately east of the SWAN GROUP and portion of Swan 2 claim is overstaked on some of the Jib claims still in good standing. Magnetite-hematite occurrences were examined at this time by Merrican International Mines Limited along the northern part of the SWAN GROUP and limited drilling conducted.

Only the most preliminary work has been completed on the SWAN CLAIMS to date. A limited program of geological mapping at a scale of 1:10,000 and soil sampling was done in 1980. Detail follow up work in 1981 is warranted. Careful prospecting and rock geochemistry is required in this area of restricted outcrop and recessive weathering lithologies. Overall geological mapping at 1:5,000 on an accurate basemap is recommended with detail observations around each silicified zone.

A statement of costs is tabulated in Appendix II with two years assessment applied to all claims and requesting a \$970. PAC account withdrawal for a total of \$5,600. credit.

PROPERTY - LIST OF CLAIMS

The following table shows the record data concerning the SWAN GROUP as illustrated in Figure 2:

TABLE 1

<u>CLAIM NAME</u>	<u>NUMBER OF UNITS</u>	<u>RECORD NUMBER</u>	<u>DATE OF LOCATION</u>	<u>DATE OF RECORDING</u>	<u>EXPIRY DATE</u>
Swan 1	4	2463	July 7/80	July 28/80	July 28/83
Swan 2	4	2464	July 8/80	July 28/80	July 28/83
Swan 3	10	2465	July 7/80	July 28/80	July 28/83
Swan 4	<u>10</u>	2466	July 8/80	July 28/80	July 28/83
	28 Total				

Part of SWAN 2 is overstaked on Jib 12 to 15 which are still in good standing. The old Gigger claim on Kingfisher Cove was apparently in good standing when the Jib claims were located in 1961 - 1963 but has since lapsed. It appears likely that SWAN 2 does not include the partial area of the old Gigger claim and this would have to be picked up separately.

LOCATION AND ACCESS

The claims are located on the southeast end of Burnaby Island as shown on Figures 1 and 2. Swan Bay is approximately 110 km south of Sandspit or 8 km northwest of the former Jedway townsite. Casual charter of fixed wing aircraft or helicopter can be made in Sandspit. Daily scheduled jet flights operate between Vancouver and Sandspit Airport.

Southern Burnaby Island is characterized by an open forest of large Spruce, Hemlock and Cedar with some patches of windfall. A few small rotted stumps were noted near shallow pits and a caved adit at the old Gigger claim dating from the early part of the Century. Two foundations of disintegrated cabins occur west of Kingfisher Cove and south of Rebecca Point. The present Campsite was likely a seasonal Indian camp-spot perhaps related to the large former settlement on nearby Bolkus Island.

FIELD PROCEDURES

Claim lines were run with a Silva compass and roughly measured for slope corrections by a Topolite Belt Chain calibrated in meters for which the manufacturer gives a 0.1% accuracy. Lines were marked by blazes and orange flagging.

Soil lines were established along the central claim lines and samples taken at 50 meter intervals. Soil samples were also collected in a reconnaissance fashion throughout the claims. A grubhoe, and in some cases a 1 meter auger, was used to sample the B horizon which varied from a few centimeters to over 1 meter in depth. A standard soil data sheet was filled out in the field noting items such as: sample number, location, depth, horizon, colour, particle size, % organics, Ph, slope, vegetation and additional remarks. Location in the field was marked by numbered flagging. Samples were placed in numbered waterproof kraft bags and sent to Chemex labs, 212 Brooksbank Avenue, North Vancouver, B.C. Analytical procedures are outlined in Appendix IV.

Rock geochem samples were usually collected as continuous chips over short intervals and a standard data sheet filled out for all specimens.

Hip Chain measurements were used on geological mapping traverses for added control plus recent 1:20,000 airphotos showing the shoreline and some windfall areas. A manual enlargement of the 1:50,000 topographic map to 1:10,000 was made for plotting purposes.

GEOLOGY

(A) REGIONAL GEOLOGY

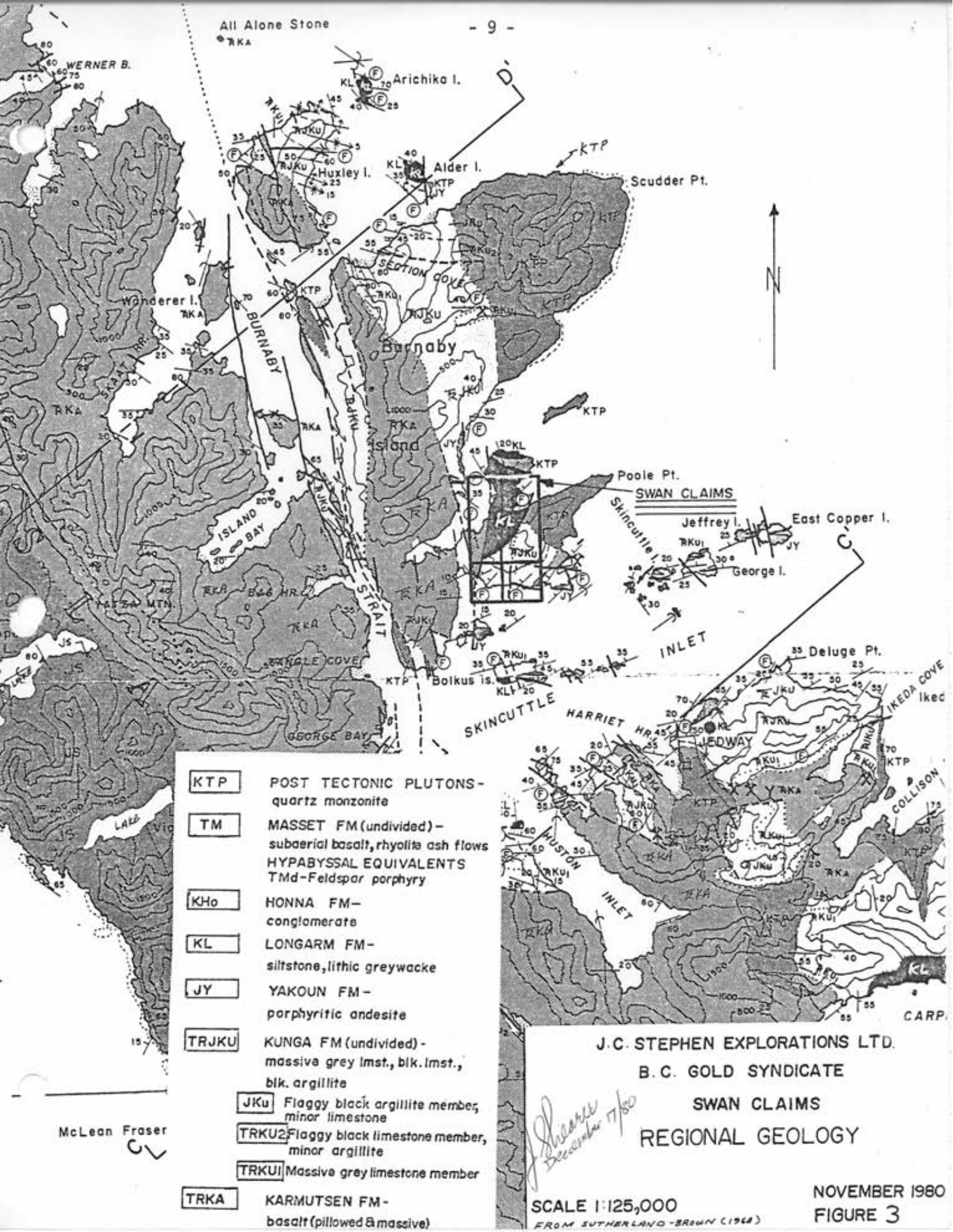
Regional geology of the Queen Charlotte Islands has been compiled by Sutherland-Brown (1968) on a scale of 1:125,000. Figure 3 shows the general geological features of the Skincuttle Inlet Area.

A variety of major rock units are found on Southeastern Burnaby Island including most of older sequences occurring in the Queen Charlotte Islands.

The oldest exposed rocks are the Upper Triassic Karmutsen Formation which is composed of a highly variable assemblage of pillow lavas, aquagene tuff, assorted breccias and distinctive agglomerates. Immediately west of Burnaby Island, an incomplete section indicates the Karmutsen Formation is over 14,000 feet thick.

Conformably overlying the Karmutsen volcanics is the Kunga Formation that can be easily divided into 3 members which from oldest to youngest are: (1) Grey limestone member 100 - 600 feet thick, (2) Black limestone member 700 - 900 feet thick and (3) Black argillite member up to 1900 feet thick. The Kunga Formation represents a prolonged period of quiescence from volcanic activity. The SWAN GROUP is mainly underlain by Kunga Formation which will be discussed under Local Geology.

The dominantly pyroclastic Yakoun Formation occurs most commonly on Graham and northern Moresby Islands where it exhibits complex intertonguing between lava centers and surrounding pyroclastics associated with facies changes to volcanic derived sediments. A thin wedge of Yakoun type rocks is shown by Sutherland-Brown on the north side of Poole Inlet and near Kingfisher Cove,



- KTP** POST TECTONIC PLUTONS-
quartz monzonite
- TM** MASSET FM (undivided) -
subaerial basalt, rhyolite ash flows
HYPABYSSAL EQUIVALENTS
TMd-Feldspar porphyry
- KHo** HONNA FM -
conglomerate
- KL** LONGARM FM -
siltstone, lithic greywacke
- JY** YAKOUN FM -
porphyritic andesite
- TRJKU** KUNGA FM (undivided) -
massive grey lmst., blk. lmst.,
blk. argillite
- JKu** Flaggy black argillite member,
minor limestone
- TRKU2** Flaggy black limestone member,
minor argillite
- TRKU1** Massive grey limestone member
- TRKA** KARMUTSEN FM -
basalt (pillowed & massive)

McLean Fraser

J. C. STEPHEN EXPLORATIONS LTD.
B. C. GOLD SYNDICATE
SWAN CLAIMS
REGIONAL GEOLOGY

SCALE 1:125,000
FROM SUTHERLAND-BROWN (1968)

NOVEMBER 1980
FIGURE 3

*J. C. Stephen
December 17/80*

however, these occurrences may be a series of younger dykes.

Lithic siltstones and greywackes of the lower Cretaceous Longarm Formation are exposed on the shoreline between Francis Bay and Poole Inlet. This unit was not found to the south as indicated on Figure 3 except in well rounded float.

On the east all units are intruded by the Burnaby Batholith, a monzonitic post tectonic pluton. The post tectonic plutons tend to align along the major northwest-southeast faults.

Sutherland-Brown (1968) page 195, describes the regional structure of Skincuttle Inlet as a mosaic of gently, northerly dipping panels cut by steep block faults. The Rennell Sound-Louscoone Inlet Fault zone is a complicated series of faults that can be traced over 200 km from Kunghit Island in the south to Rennell Sound in the north. The main splay of the Rennell Sound-Louscoone Inlet Fault passes through Burnaby Narrows approximately 2 km west of the SWAN GROUP. Much of the faulting in the general vicinity of the claims can be attributed to this major fault zone. A significant fault zone can be seen on Alder Island trending south onto Burnaby Island and likely continues to Poole Inlet.

Off the west coast of the Queen Charlotte Islands a segment of the Pacific Plate boundary forms a deep trough referred to as the Queen Charlotte Fault. Present day movements make the Islands the most highly seismic area in Canada.

(B) LOCAL GEOLOGY

Limited geological mapping was undertaken by J. Pautler and A. Heagy on a scale of 1:10,000 and results are plotted on Figure 4 (in pocket). Map units are listed in Table II.

TABLE II
MAP UNITS, SWAN GROUP

SYMBOL	ROCK UNIT	THIN SECTIONS	DESCRIPTION
5a	Andesite Dykes	JP-S-2,AH-37	Narrow, dark to light green fine crystalline volcanics.
5b	Basaltic Dykes		Narrow dark green commonly amygdaloidal dykes.
Post Tectonic Plutons (Tertiary)			
4a	Quartz Monzonite	AH-33	Coarse grained, light grey weathering.
4b	Diorite	58497,AH-28 JP-S-5,AH-35	Fine to coarse grained with altered mafic minerals, occasionally porphyritic.
Longarm Formation (Cretaceous)			
3a	Greywacke	AH-40	Lithic pebbles, feldspathic.
3b	Lithic Siltstone	AH-39	Light grey to white weathering, feldspathic.
Kunga Formation (Upper Triassic-Jurassic)			
2c	Argillite		Only seen on the claims as float.
2b	Black Limestone	58496	Black, thin bedded, white sparry calcite veinlets common, often silicified.
2a	Massive Grey Limestone	JP-5-6	Light grey weathering, massive, recrystallized, often silicified.
Karmutsen Formation (Upper Triassic)			
1b	feldspar porphyry	AH-28	Feldspar phenocrysts, speckled calcite+epidote, alteration common.(probably more likely 4b unit)

<u>SYMBOL</u>	<u>ROCK UNIT</u>	<u>THIN SECTIONS</u>	<u>DESCRIPTION</u>
1a	basaltic greenstone	AH-38	Dark grey weathering, dark green fine cry- stalline altered basalt often amygdolidal.

A total of 12 specimens were selected for petrographic analysis as listed in Table II. Brief outline notes on each thin section are contained in Appendix VI and locations are plotted on both Figures 4 and 5 (in pocket).

Karmutsen Formation chloritized amygdaloidal basalt, referred to thin section AH-38, is exposed in western portions of SWAN 3 and is in presumed fault contact with Kunga Formation to the east. A prominent north-south airphoto linear is apparent in Photo BC 7841-136 in this general area although the limited outcrop along the shoreline suggests that this linear does not separate Kunga and Karmutsen Formations. Conformable sills of Karmutsen-like rocks may also occur within the lower part of the massive grey marble member. In this regard a feldspar porphyry was noted within the Karmutsen Basalts (650N, 650E) and also as an isolated outcrop (00, 765N - thin section AH-28). Petrographic examination of AH-28 suggests that this rock is related to the post tectonic diorite peripheral to the quartz monzonite.

Kunga Formation underlies approximately 70% of the claim group. The youngest unit of the Kunga Formation, thin bedded black argillite member was only noted in float on the east side of Swan 4. It is likely that the relatively recessive weathering argillite member subcrops around the central hill on Swan 4 since the upper part of the black limestone member indicated by Monotis subcircularis was noted in many localities at lower elevations.

The massive grey marble and thin bedded black limestone members are extensively exposed along the south and northwest shorelines. Dips are generally north to northwesterly but the sequence is cut by many steep north to northeast trending faults which often are associated with local folding, fracturing and calcite veining. Where the black limestone member occurs on the

hillside of Swan 3 and 4 and also south of the LCP in Swan 1 and 2 the rocks have been bleached a light grey to tan colour with a characteristic bright white on weathered surfaces. The identification of the black limestone member is here largely dependent on the excellent preservation of Monotis subcircularis on bedding planes as exemplified by thin section 58496. A large outcrop of black limestone southwest of the LCP shows extensive silicification with the development of quartz lined drusy vugs. Alteration and mineralization are discussed in the next section.

Longarm Formation coarse clastics are found in the northern portions of Swan 3 and 4. The dominant lithology is a fairly massive, buff to greenish weathering coarse lithic greywacke, refer to thin sections AH-39 and AH-40. Conglomerate and fine grained grey siltstone interbeds are common. The Longarm Formation has generally gently northwesterly dips but locally shows folding, penetrative shearing and boudinage.

On the shoreline around Francis Bay a coarse crystalline, fresh, hornblende-biotite quartz monzonite, thin section AH-33, shows an irregular contact with Longarm Formation clastics. A complex exposure at 2100N + 500E appears to be composed of rounded cobbles of coarse grained monzonite in a highly sheared matrix of similar composition. The Longarm greywacke and intercalated conglomerate are also affected by shearing at this locality.

Variable textured masses of dioritic composition are found throughout the claim group and probably are related to the large monzonitic pluton to the east. Sutherland-Brown (1968) page 195, considers these intrusives, which are found at all metasomatic magnetite deposits, to "pre-date the main plutonic body and probably represent an early phase". These dioritic intrusions appear to have an important relationship to the distribution of silicified zones and associated mineralization. Thin sections 58497, AH-28,

JP-A-5, and AH-35 show a graduation from fine to coarse grained texture with some porphyritic varieties.

Andesitic dykes cut all lithologies throughout the property. These dykes often form prominent headlands along the shoreline especially where cutting recessive Kunga Formation. There is a variety of these late dykes grading in composition from andesite to amygdaloidal basalt. These dykes commonly fill late stage faults. On Alder Islands similar intrusions have been affected by renewed movement along these minor faults.

The relationship between intrusive phases, faulting and silicification, as discussed in the Mineralization section, indicates that future geological mapping should concentrate on producing an accurate map of alteration distribution especially of silicification in Kunga Formation carbonates.

(C) MINERALIZATION

Both limestone members locally exhibit intense deformation, silicification, drusy quartz veining and skarnification where associated with presumed faults and intrusions. Several small silica zones a few square meters in area have been found with the best developed localities at the LCP, at 1050N + 00 and at 1200N + 00. Each of these three areas is marked by intense development of quartz breccia adjacent to very altered dark intrusives hosted by Kunga Formation carbonates. At the LCP locality a minor fault trends 347°/76E. Rock geochemistry gives values in the neighbourhood of 80 ppb Au, (sample 84806). Chalcopyrite was noted in silicified limestone near 1050N + 00. Skarnified "andesite" carrying chalcopyrite and sphalerite occurs at 1200N + 00 along a steep cliff face.

The significance of widespread silicification exemplified by thin section 58496 and zones south west of the LCP have not been determined. The actual extent of these zones aside from covering very large areas is not known.

Airphoto linears are abundant throughout the claims and trend mainly north-south with a small number oriented east to northeast. Some of these linears can be recognized on the ground for example near the IN identification post but a systematic record of their distribution has not been compiled. Very intense alteration as shown by thin sections 58497 and JP-S-6 may be the product of movement of fluids along faults expressed in the airphoto linears. Commonly no primary features are preserved and identification must rely on field observation of the surrounding setting, specimen 58497 is shown by thin section work to be derived from an altered intrusive, but in the field this rock is

difficult to distinguish from surrounding silicified limestone.

The location of the Flo showings drilled by Merrican International is not precisely shown in any available references. Selnes (1963) describes the showings as follows:

"---- reveals a magnetite body outcropping on limestone cliffs at an elevation of 150 feet and 200 feet from tide water.

Float was found one claim length east of the above mentioned outcrop, extending down the hillside below steeply rising limestone cliffs. Outcrops were also seen in place. Samples of the float assayed 40% Fe. The mineralization appears to be a mixture of hematite and magnetite."

The locality shown by Sutherland - Brown (1968) and Matheson (1974) for the Flo showing do not fit the Selnes description. The B.C. Department of Mines (1964) page 47, reports 500 feet of diamond drilling was completed on the Flo Claims. Surface showings of chalcopyrite in limestone were sampled at two occurrences 200 feet apart and with lengths of 30 and 75 feet. Sample widths range from 10 to 15 feet, with assays giving 4% and 1% copper, however none of these references give a detail map for the Flo Group. Old claim posts for Flo 9 and 10 were noted near 1400N on the central claim line.

Additional detail prospecting is required throughout the Kunga Formation sections emphasizing location of additional small intense silicified zones but also more importantly to assess the significance of the widespread influx of silica into the black limestone member. This prospecting would be carried out in conjunction with geological mapping at a scale of 1:5,000.

GEOCHEMISTRY

A limited soil sampling program was conducted using the central claim lines for control. The locations and results of soil sampling are plotted on Figure 5 (in pocket). Results are also tabulated in Appendix V on the Certificates of Analysis.

In all cases the soil proved to contain less than 10ppb gold. The gold results do not indicate any areas that warrant follow up work or check sampling. Anomalous arsenic values were received for approximately 50% of the samples taken. It is apparent that the distribution of arsenic results is highly skewed to the right as shown in the frequency histogram in Appendix IV. Presumably if more samples were taken to the north and west the distribution would be more normal in appearance without the present bias to higher numbers. This shows that the arsenic anomaly or series of anomalies is very large and covers at least the following zones (1) 1E to 1W and north to 1N and (2) 2N to 3N. The top of the hill has no data to make any conclusions. There is a good correlation between the westward boundary of higher arsenic values in soil and the Karmutsen Formation - Kunga Formation contact and associated dioritic intrusions. High arsenic levels in soil may reflect a wider, more mobile indication of silicified zones. This is a pattern found on northern Burnaby and Alder Islands. More sampling and perhaps soil profiles are required to establish a definite relationship between gold and arsenic. The lowland area west of 1N identification post should be sampled and prospected in detail.

Rock geochemical samples are also shown on Figure 5 (in pocket). Silicified zones run weakly anomalous gold up to 80 ppb Au. Other routine samples of Karmutsen Formation basalt and andesite dykes returned less than 10 ppb Au in all samples. Specimens of silicified material are generally low in arsenic with the highest only 67 ppm As.

CONCLUSIONS AND RECOMMENDATIONS

The SWAN GROUP cover an extensive arsenic in soil anomaly with associated weakly anomalous gold in narrow silicified breccia zones. Preliminary geological mapping and prospecting indicate widespread, pervasive silicification of Kunga Formation black limestone member. A small suite of thin sections further document lithological and alteration variability.

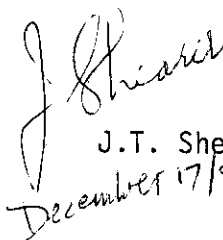
Reports of other mineralized zones found by previous programs in the early 1960's should be investigated by future work. The relationship between showings on the SWAN GROUP and the major magnetite bodies on the adjacent Jib claims warrants consideration. Some geological mapping, with the permission of the present owners of the Jib Claims, in the narrow zone between the eastern boundary of the SWAN GROUP and the Jib deposits may prove beneficial to the understanding of the Swan silicified zones.

Detail geological mapping at a scale of 1:5,000 and prospecting is required over all the SWAN CLAIMS. Particular attention should be given to the narrow zones of intense quartz breccia but also to the large pervasive areas of silica influx.

Limited soil sampling is warranted to define the limits of anomalous arsenic response. Soil profiles should be taken to establish if a positive correlation between gold and arsenic is present.

If a direct relationship between gold bearing silicified zones and the dioritic intrusions is established in future work a magnetometer survey would help locate buried occurrences of the diorite since it has a strong magnetic response.

Respectfully submitted,



J.T. Shearer, M.S.c, F.G.A.C.

December 17/80

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APPENDIX I

LIST OF PERSONNEL
AND DATES WORKED

ON

SWAN CLAIMS

Field time: July 9 to 23, 1980

APPENDIX I

LIST OF PERSONNEL AND DATES WORKED

<u>NAME</u>	<u>OCCUPATION</u>	<u>ADDRESS</u>	<u>DATES WORKED ON PROPERTY</u>
J.T. Shearer	Geologist	RR#1 Mason Ave., Port Coq., B.C.	July 8,9,10, 1980
J.M. Pautler	Geologist 3 summers experience B.Sc 1980 (Laurentian)	539 Moore St., Cambridge, Ontario	July 18,19,20,22, 23, 1980
A.E. Heagy	Student 3 summers experience 3rd year Geology	1037 Brough St. London, Ontario	July 18,19,20,21, 22,23, 1980
S.E. Angus	Prospector 4 years experience	12474 Crescent Rd. Surrey, B.C.	July 9,10, 1980
K.H. Stauffert	Student	#256, Shanty Bay Rd. Barrie, Ontario	July 9,10, 1980

APPENDIX II

STATEMENT OF COSTS

SWAN CLAIMS

Field time between July 9 and 23, 1980

APPENDIX II
STATEMENT OF COSTS

WAGES AND FRINGE BENEFITS

J.T. SHEARER	3 days	@	84.33 per day	= \$	252.99
J.M. PAUTLER	5 days	@	72.56 per day	=	362.80
A.E. HEAGY	6 days	@	65.15 per day	=	390.90
S.E. ANGUS	2 days	@	70.56 per day	=	141.12
K.H. STAUFFERT	<u>2 days</u>	@	60.93 per day	=	121.86

Total 18 man days

FOOD AND CAMP COSTS

18 man days @ \$12 per man day	=	216.00
Tent rental 2 weeks		100.00
Radio rental 2 weeks		50.00

TRANSPORTATION

Fixed wing by Trans Provincial Airlines 2 Otter trips		650.00
Helicopter by Vancouver Island Helicopters		
2.6 hr. @ \$350.00 per hr.	=	910.00

GEOCHEMISTRY

Rock samples 10 @ 8.75 per sample	=	87.50
Au, As, Certificates: 55033		
Soil Samples 90 @ 7.75 per sample	=	697.50
Au, As Certificates: 55031, 55032		

DRAFTING AND REPRODUCTION 300.00

REPORT PREPARATION AND TYPING 350.00

Total: \$4,630.67

1st year assessment - 2,800.

2nd year assessment - 2,800

Total 5,600

Request for PAC withdrawal of 970.

APPENDIX III

STATEMENT OF QUALIFICATIONS

J.T. SHEARER, M.Sc., F.G.A.C.

SWAN CLAIMS

APPENDIX III
STATEMENT OF QUALIFICATIONS

I. J.T. SHEARER of the City of Port Coquitlam in the Province of British Columbia, hereby certify that:

- 1) I am a graduate of the University of British Columbia (1973) B.S.c., and University of London, Imperial College (1977) M.Sc., DIC.
- 2) I am a Fellow of the Geological Association of Canada.
- 3) I have worked continuously in Mineral Exploration since 1973 for McIntyre Mines Limited, Cities Service Minerals Corp. and J.C. Stephen Explorations Ltd.
- 4) I personally worked on SWAN GROUP between July 9 and 23, 1980. This report is based on an interpretation of data collected.

Dated at North Vancouver,
British Columbia

J. Shearer
December 17/80

J.T. SHEARER, M.Sc., F.G.A.C.

APPENDIX IV

ANALYTICAL PROCEDURES

CHEMEX LABS LTD.
212 Brooksbank Avenue
North Vancouver

and

ARSENIC FREQUENCY HISTOGRAM

APPENDIX IV

FEB./80

Joe Shearer - J. C. Stephen Expl.

GEOCHEM PROCEDURES

PPM Antimony: a 1.0 gm sample digested with conc. HCl in hot water bath. The iron is reduced to Fe⁺² state and the Sb complexed with I⁻. The complex is extracted with TOPO-MIBK and analyzed via A.A. Correcting for background absorption 0.2 ppm ± 0.2 Detection limit.

PPM Arsenic: a 1.0 gram sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with NaBH₄ and the arsenic content determined using flameless atomic absorption.
Detection limit - 1 PPM

PPB Gold: 5 gm samples ashed @800°C for one hour, digested with aqua regia - twice to dryness - taken up in 25% HCl⁻, the gold then extracted as the bromide complex into MIBK and analyzed via A.A.
Detection limit - 10 PPB

ASSAY PROCEDURES

Gold: - Fire Assay Method.

0.5 assay ton sub samples are fused in litharge, carbonate and silicious fluxes. The lead button containing the precious metals is cupelled in a muffle furnace. The combined Ag & Au is weighed on a microbalance, parted, annealed and again weighed as Au. The difference in the two weighing is Ag.

SOIL GEOCHEMISTRY

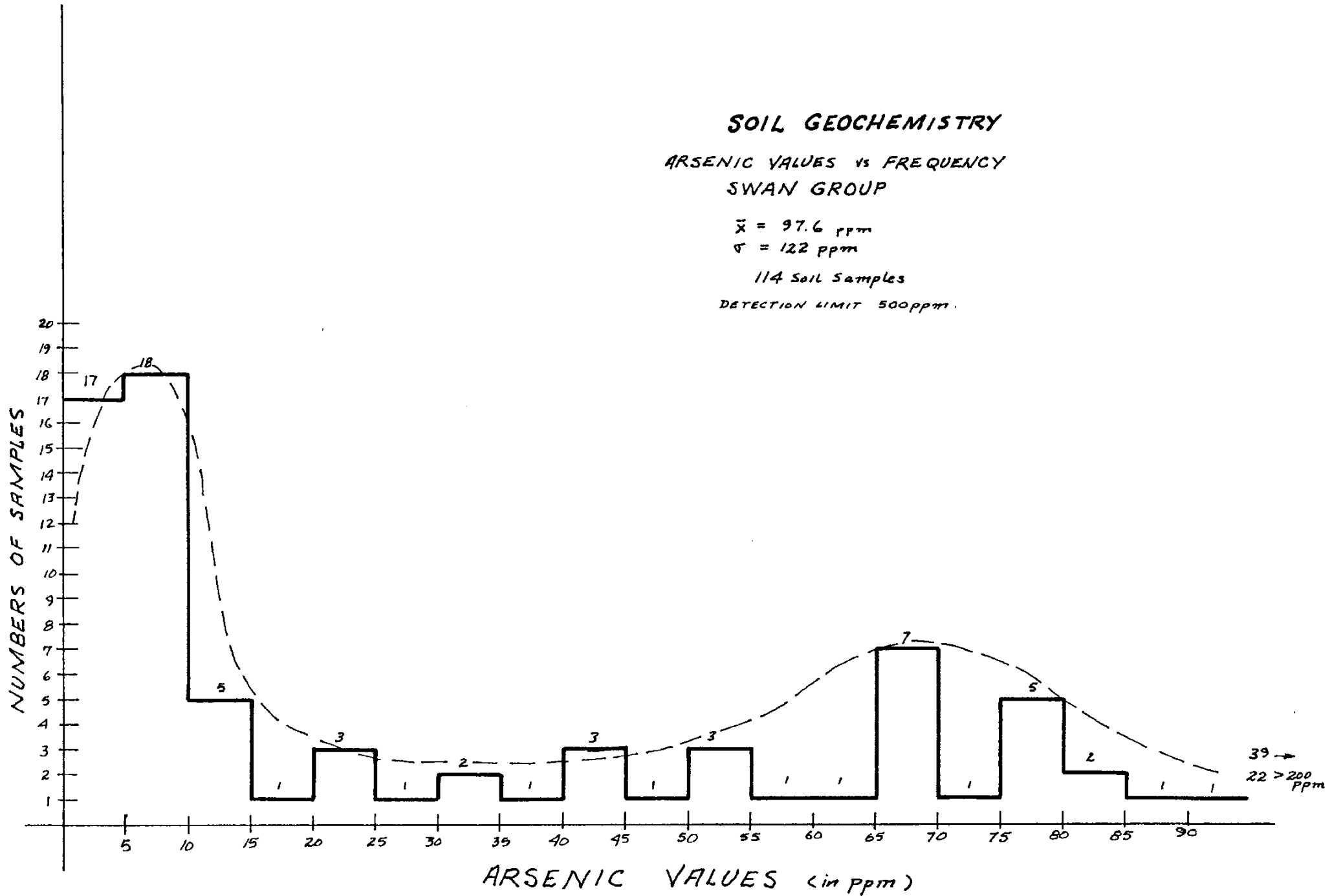
ARSENIC VALUES vs FREQUENCY SWAN GROUP

$$\bar{x} = 97.6 \text{ ppm}$$

$$\sigma = 122 \text{ ppm}$$

114 Soil Samples

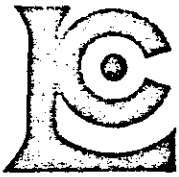
DETECTION LIMIT 500ppm.



APPENDIX V

CERTIFICATES OF ANALYSIS

SWAN CLAIMS



CHEMEX LABS LTD.

212 BROOKSBANK AVE
 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE 984-0221
 AREA CODE 604
 TELEX 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: J. C. Stephen Explorations Ltd.,
 1124 W. 15th St.,
 North Vancouver, B.C.
 V7P 1M9

c.c.- J. Shearer
 Sandspit, B.C.

CERTIFICATE NO. 55031

INVOICE NO. 37764

RECEIVED

July 28, 1980

ATTN: SWAN PROJECT

ANALYSED

August 12, 1980

SAMPLE NO.	PPM	PPB
	As	Au
A-80-401	3	<10 ✓
402	100	<10 ✓
403	200	<10 ✓
404	>500	<10 ✓
405	180	<10 ✓
406	80	<10 ✓
407	120	<10 ✓
408	10	<10 ✓
409	5	<10 ✓
410	3	<10 ✓
411	10	<10 ✓
412	1	<10 ✓
413	9	<10 ✓
414	6	<10 ✓
416	15	<10 ✓
417	6	<10 ✓ where is 415?
418	70	<10 ✓
419	240	<10 ✓
420	73	<10 ✓
421	240	<10 ✓
348	250	<10 ✓
349	500	<10 ✓
350	77	<10 ✓
351	14	<10 ✓
352	4	<10 ✓
A-80-353	250	<10 ✓
S + 00N	88	<10 ✓
50	70	<10 ✓
100	27	<10 ✓
150	55	<10 ✓
200	63	<10 ✓
250	67	<10 ✓
300	1	<10 ✓
350	135	<10 ✓
S + 400N	12	<10 ✓
LCP	100	10 ✓
LCP 50	95	<10 ✓
100	12	<10 ✓
LCP 150	60	<10 ✓



MEMBER
 CANADIAN TESTING
 ASSOCIATION

CERTIFIED BY:

Hart Bielle



CHEMEX LABS LTD.

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 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE 984-0221
 AREA CODE 604
 TELEX 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: J. C. Stephen Explorations Ltd.,
 1124 W. 15th St.,
 North Vancouver, B.C.
 V7P 1M9
 ATTN: Swan Project CC. J. Shearer

CERTIFICATE NO. 55031
 INVOICE NO. 37764
 RECEIVED July 28/80
 ANALYSED Aug. 12/80

SAMPLE NO.	PPM	PPB
	As	Au
401 A-80	3	-10
402	100	-10
403	200	-10
404	+500	-10
405	180	-10
406	80	-10
407	120	-10
408	10	-10
409	5	-10
410	3	-10
411	10	-10
412	1	-10
413	9	-10
414	6	-10
416	15	-10
417	6	-10
418	70	-10
419	240	-10
420	73	-10
421	240	-10
348	250	-10
349	500	-10
350	77	-10
351	14	-10
352	4	-10
353 A-80	250	-10
S+00N	88	-10
50	70	-10
100	27	-10
150	55	-10
200	63	-10
250	67	-10
300	1	-10
350	135	-10
S+400N	12	-10
LCP	100	10
LCP 50	95	-10
LCP 100	12	-10
LCP 150	60	-10

Note: - denotes less than



MEMBER
 CANADIAN TESTING
 ASSOCIATION

CERTIFIED BY: *Hart Bielle*



CHEMEX LABS LTD.

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NORTH VANCOUVER, B C
CANADA V7J 2C1
TELEPHONE 984-0221
AREA CODE 604
TELEX 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: J. C. Stephen Explorations Ltd.,
1124 W. 15th St.,
north Vancouver, B.C.
V7P 1M9

ATTN: Swan Project CC. J. Shearer

CERTIFICATE NO. 55032

INVOICE NO. 37764

RECEIVED July 28/80

ANALYSED Aug. 12/80

SAMPLE NO. :	PPM	PPB
	As	Au
200 LCP	240	-10
250	200	-10
300	15	-10
350	14	-10
400	10	-10
450	41	-10
500	110	-10
550	32	-10
600	51	-10
650	370	-10
700	41	-10
750	33	-10
800	50	-10
850	51	-10
900	215	-10
950	450	-10
1000	9	-10
1050	360	-10
2000	12	-10
2050	3	-10
2100	1	-10
2150	3	-10
2200	2	-10
2250	4	-10
2300	9	-10
2350	4	-10
2400	7	-10
2450	5	-10
2500 LCP	7	-10
A-80 815	25	-10

700W



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *Hart Bielle*



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TELEX 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 55033

TO: J. C. Stephen Explorations Ltd.,
1124 W. 15th St.,
North Vancouver, B.C.
V7P 1M9

INVOICE NO. 37764

RECEIVED July 28/80

ATTN: Swan Project ROCKS CC. J. Shearer

ANALYSED Aug. 12/80

SAMPLE NO.	PPM	PPB	PPM
	As	Au	Cu
58492	2	-10	395
58493	2	NSS	
58494	16'	-10	
58495	15'	-10	
58496	29	-10	
58497	6	-10	
58498	5'	-10	
58499	1'	-10	
84770	3	-10	
84771	48	-10	
84772	33	-10	
84773	35	-10	

Note: - denotes less than



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY:

Harold Biddle

APPENDIX VI

PETROGRAPHIC NOTES

SWAN GROUP

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: 58496

DATE: December 8, 1980

SAMPLE LOCATION: 1000N + 700E east side of Swan 4

SUBMITTED BY: J.P.

PETROGRAPHER: J.S.

FIELD NAME: 2b, Black limestone, banded, py, Po.
bleached hand specimen: Note: well preserved
Monotis Subcircularis on bedding planes,
white weathering.

THIN SECTION DESCRIPTION: Soft sediment deformation,
load casts, micro left hand displacement
on fractures, alternating white, light grey
and medium grey, white streaks in darker grey
layers. Layering 0.1mm up to greater than
10mm., 0.1mm quartz-calcite veinlets at 30°
to bedding vague suggestion of pellets in
dark matrix.

MODE: quartz - 20%-silt sized grains, sub rounded,
hairline veinlets.
calcite - trace - irregular, small patches.
matrix - 80% - very fine grained, probably
very quartz rich (altered) no
reaction to dilute HCL.

ROCK NAME: Very silty, thin bedded to laminated
silicified limestone.

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: 58497 DATE: December 8, 1980

SAMPLE LOCATION: 230N + 700E, Southeast corner of Swan 4.

SUBMITTED BY: JP PETROGRAPHER: JS

FIELD NAME: 26, bleached limestone, banded hand specimen - brown weathering, light greenish grey, pitted, black lines and spots, weathered py cubes.

THIN SECTION DESCRIPTION: Clear, limonite stains on fractures, large relict plagioclase crystals up to 2.0mm long, heavily sericitized, some relict twinning preserved, mainly rims not sericite. matrix almost completely fine crystalline mosaic of quartz, some pyrite cubes, many plagioclase phenocrysts also partially replaced by quartz matrix trace amounts of tremolite, late stage pyrite (replacing plagioclase)

MODE:

Quartz - 80% - as matrix in a fine crystalline mosaic.

Feldspar - 20% - almost completely sericitized opaques - trace, tremolite - trace.

ROCK NAME: Very altered Feldspar porphyry. (sericitized + silicified) (possibly diorite porphyry)

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: JP-S-2 DATE: December 8, 1980

SAMPLE LOCATION: 300N + 1000W on claim line SWAN 3

SUBMITTED BY: JP PETROGRAPHER: JS

FIELD NAME: 5a andesite dyke. hand specimen; slightly rusty, dark grey, fine crystalline, minor anhedral "phenocrysts", cutting black limestone.

THIN SECTION DESCRIPTION: clear, calcite balls up to 0.3mm, network of 0.5mm plagioclase crystals with interstitial quartz, sericite and calcite, large phenocryst largely relict grains up to 3mm wide replaced by calcite and sericite, some quartz replaced by calcite.

MODE: Plagioclase: 60% commonly sericitized
 Quartz: 20% interstitial
 Calcite: 10% secondary
 Opagues - 5% finely disseminated
 Chlorite-Augite? - 5% small euhedral grains replaced by chlorite

ROCK NAME: Andesite, slightly porphyritic, carbonatized and sericitized.

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: JP-S-5 DATE: December 8, 1980

SAMPLE LOCATION: 300N + 340W SWAN 3

SUBMITTED BY: JP PETROGRAPHER: JS

FIELD NAME: 4b Diorite Porphyry, hand specimen, rusty weathering, dark grey green, very ragged phenocrysts, well fractured.

THIN SECTION DESCRIPTION: speckled green, phenocrysts up to 2.5mm with intense sericite and some epidote abundant hornblende in euhedral grains up to 1.6mm, most plagioclase crystals 0.3mm long chlorite very common, subeuhedral pyrite, (non magnetic)

MODE: plagioclase - 50% euhedral with intense sericite, trace epidote.
 hornblende - 10%
 chlorite - 25% - interstitial to plagioclase
 k-spar - 5% - very altered
 Quartz - 10% - anhedral patches
 opagues - 5%

ROCK NAME: Chloritized, slightly porphyritic fine crystalline diorite.

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: JP-S-6 DATE: December 8, 1980

SAMPLE LOCATION: 1200N + 700E SWAN 4

SUBMITTED BY: JP PETROGRAPHER: JS

FIELD NAME: 2b altered limestone. hand specimen: very rusty weathering, thick limonite, buff orange, fine grained carbonate with sparry white calcite.

THIN SECTION DESCRIPTION: light brown, very coarse calcite in irregular ovoid patches over 3mm long, finer crystalline calcite throughout section, quartz areas composed of less than 0.1mm mosaic of clear quartz, seams and patches of very fine (crypto-crystalline) silica. No primary textures recognizable, a very altered rock.

MODE: coarse calcite - 25%)
fine calcite - 35%) variable composition
quartz - 25%) throughout hand specimen.
chert - 15%)

ROCK NAME: extremely silicified limestone (possible fault infilling)

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH-28 DATE: December 8, 1980

SAMPLE LOCATION: 765N on Central Claim Line (00)

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: Feldspar, porphyry (karmutsen?)
Hand specimen: dark grey weathering, spotted
porphyry

THIN SECTION DESCRIPTION: Very large phenocrysts of
plagioclase; greater than 3mm, some sericite,
twinning distinct, euhedral opagues, probably
pyrite, large hornblende phenocrysts, some
replacement by coarse muscovite, small augite
crystals, matrix very fine felted appearance.

MODE: plagioclase 30 weakly sericitized, phenocrysts
K-spar 65 - very altered
augite 5 - low birefringence
hornblende 15 - large crystals, euhedral
muscovite 5 after hornblende
opagues 2 - euhedral
matrix 55 - plagioclase (sericitic), mafics,
and quartz
sphene - trace

ROCK NAME: strained feldspar porphyry (not Karmutsen)
possibly diorite porphyry)

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH-33 DATE: December 8, 1980

SAMPLE LOCATION: 1800N + 1000E SWAN 4

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: 4a quartz monzonite, coarse crystalline hand specimen, coarsely crystalline, fresh, granitoid, strongly magnetic

THIN SECTION DESCRIPTION: Entire section very fresh, some zoned coarse plagioclase crystals, perthitic k-spar, very abundant chlorite which is mainly replacing biotite, hornblende being replaced by both biotite, quartz in clear patches interstitial, opaques mainly in biotite-chlorite, trace sphene

MODE: plagioclase 40 trace sericite
chlorite 20 most patches altered from biotite
k-spar 20
hornblende 5 some chlorite alteration
quartz 15
opaques - trace

ROCK NAME: Hornblende - biotite quartz monzonite (chloritized)

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH - 35 DATE: December 8, 1980

SAMPLE LOCATION: 200S + 300E, SWAN 2

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: 4b, diorite, coarse grained hand specimen
rusty weathering, speckled dark grey,
strongly magnetic.

THIN SECTION DESCRIPTION: Slight development of
glomeroporphyritic texture, opaques very late,
replacing hornblende, plagioclase relatively
fresh, minor sericitization, some chlorite
alteration of hornblende, plagioclase cut by
hornblende laths, matrix fine grained.

MODE: plagioclase 40
 hornblende 25% - euhedral
 opaques - trace
 k-spar - trace
 chlorite 15 - replacing hornblende
 matrix 20 - finer crystalline mass between
 plagioclase and hornblende

ROCK NAME: Porphyritic diorite

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH - 37 DATE: December 8, 1980

SAMPLE LOCATION: 500S + 500W shoreline SWAN 1

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: 5a, andesite dyke, sheared, fractured hand specimen: light grey weathering, light grey, fine crystalline, many white ovoid spots.

THIN SECTION DESCRIPTION: Crowded network of 0.5mm long plagioclase crystals, sericitization of plagioclase well developed, much quartz as matrix, between plagioclase laths, white spots in hand specimen do not show up very well in thin section but are areas with trace calcite free from opaques.

MODE: plagioclase 55 - random network
quartz 30% - interstitial
opaques 5-10% - with oxide shadow envelope
calcite - trace
chlorite 10% - mostly replacing matrix
muscovite - trace

ROCK NAME: Andesite

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH - 38 DATE: December 8, 1980

SAMPLE LOCATION: 300N + 650W SWAN 1

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: Karmutsen amygdaloidal greenstone hand
specimen: light grey-buff weathering, dark
green, irregular amygdule , chlorite filled.

THIN SECTION DESCRIPTION: light green, irregular ovoid
amygdules filled mainly with radiating chlorite
clusters, larger amygdules filled with clear
quartz, chlorite "stars" and euhedral epidote.
minor large plagioclase phenocrysts.

MODE: plagioclase 55%
 augite 15%
 amygdules 30% - quartz, chlorite, epidote

ROCK NAME: Porphyritic Amygdaloidal basalt (chloritized)
 (karmutsen formation)

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH - 39 DATE: December 8, 1980

SAMPLE LOCATION: 1900N + 200E, shoreline SWAN 4

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: 5a, Andesite dyke. Hand specimen: dark grey, poorly sorted, sandy, clastic.

THIN SECTION DESCRIPTION: light green, brown patches, very poorly sorted, very small grains with large clasts, close packed, up to 1.5mm in diameter, most clasts sub rounded to angular, some feldspar grains fractured and broken, an immature sandstone, one clast with myrmekite texture, somewhat difficult to differentiate between lithic clasts and matrix

MODE: quartz grains 25
 feldspar grains 15
 chert grains 10
 matics (HbL) 5% mostly hornblende
 chlorite flakes - trace
 rock fragments 20 many volcanic frags and some metamorphics
 matrix 30% could be some rock fragments

ROCK NAME: Fine grained feldspathic lithic wacke.

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: AH - 40 DATE: December 8, 1980

SAMPLE LOCATION: 2000N + 200E, shoreline SWAN 4

SUBMITTED BY: AH PETROGRAPHER: JS

FIELD NAME: 3b, lithic sandstone (longarm Fm) hand specimen - dark grey, crude bedding, silty sandstone.

THIN SECTION DESCRIPTION: Light greenish brown, grains up to 0.8mm, poorly sorted, well rounded to angular, some of rock fragments have the appearance of rip-up clasts but difficult to separate from matrix, trace opaques, some sutured grain boundaries, trace chlorite.

MODE: Quartz grains 30
 Feldspar grains 20
 Rock fragments 40 - mostly volcanic, some metamorphic
 Matrix 10 - less matrix than AH-39

ROCK NAME: Feldspathic lithic wacke

J.C. STEPHEN EXPLORATIONS

B.C. GOLD SYNDICATE

SWAN GROUP

PETROGRAPHIC ANALYSIS

SAMPLE NUMBER: S-19, 311 ft DATE: December 8, 1980
SAMPLE LOCATION: JIB deposit drill hole S19, depth 311 feet,
Pelican Cove.
SUBMITTED BY: JS PETROGRAPHER: JS

FIELD NAME: Calcite breccia, hand specimen - coarse white
sparry calcite, dark rounded fragments

THIN SECTION DESCRIPTION: Light and dark grey, extremely
coarse, sparry calcite, dark sections are
masses of poorly crystalline quartz, euhedral
quartz near boundary of sparry calcite, quartz
replacing calcite, trace of clear quartz micro
veinlets, suggestion of stylolites in sparry
section.

MODE: calcite 40%
 quartz 50%
 opaques 10% (perhaps carbonaceous matter)

ROCK NAME: Calcite - quartz breccia

GEOLOGY:

- 5
 - 5a a andesite (age unknown, some Yakoun? others post-intrusive)
 - 5b b basaltic dikes
- 4 POST-TECTONIC INTRUSIVE ROCKS
 - 4a a quartz monzonite, coarse-grained
 - 4b b diorite, fine to coarse grained, altered mafic minerals, occasionally porphyritic.
- 3 LONGARM
 - 3a a lithic greywacke with lithic pebbles.
 - 3b b lithic siltstone
- 2 KUNGA
 - 2c c argillite
 - 2b b black limestone
 - 2a a massive grey limestone
- 1 KARMUTSEN
 - 1a a basaltic greenstone
 - 1b b feldspar porphyry

- LEGEND:
- LOCATION OF THIN SECTION SPECIMEN
 - outcrop
 - float
 - small outcrop
 - large areas of no outcrop
 - rock samples for geochemistry
 - rock samples
 - stream drainage
 - old out line of SWAN 2-post claim
 - old claim posts
 - claim line and post
 - strike and dip.
 - strike and dip of joints
 - soil geochem. sample
 - camp
 - approximate boundary of JIB claims.
 - fault
 - pyrite
 - chalcopyrite
 - sphalerite
 - quartz
 - epidote
 - calcite
 - pyroxenite
 - magnetite
 - silicification.
 - skarn

J.C. STEPHEN EXPLORATIONS LIMITED

BC. GOLD SYNDICATE

SWAN CLAIMS

SKEENA MINING DIVISION

DETAIL GEOLOGY

NTS: 1:03B/6W

DATE: JULY 8-23, 1980

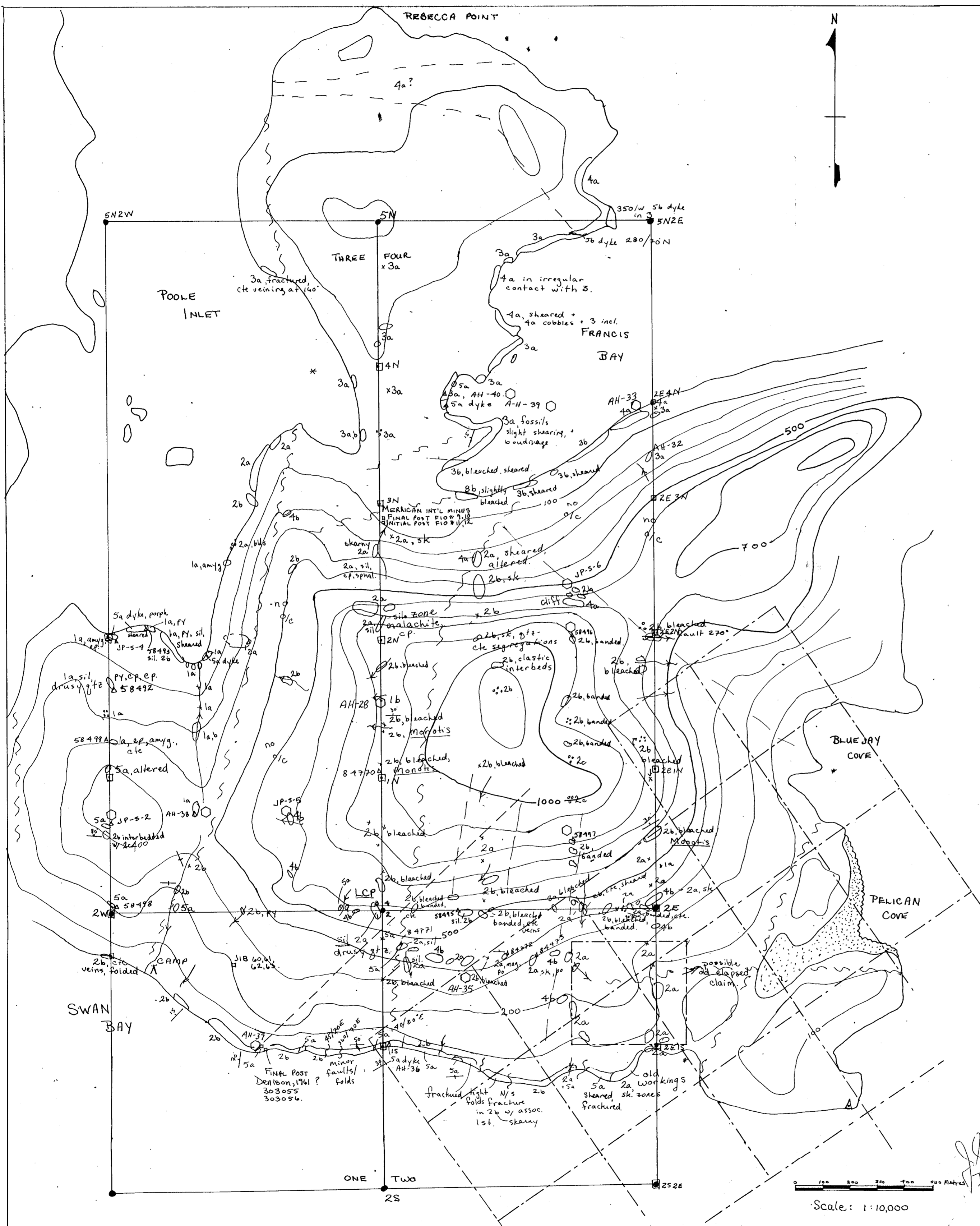
WORK BY: AH, JP, JS.

DRAWN BY: AH, JP, JS.

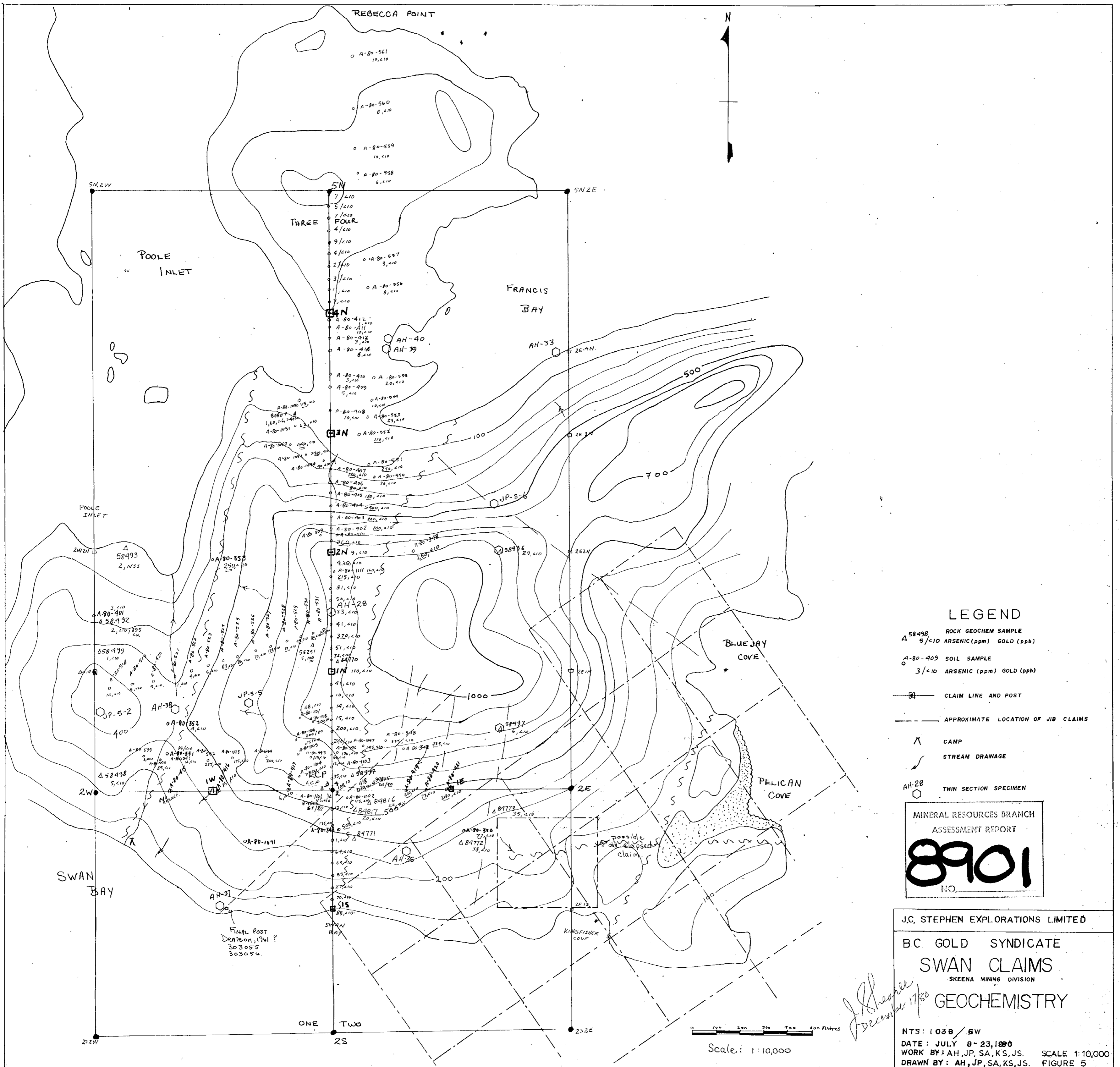
SCALE 1:10000

FIGURE 4

FIGURE 4



Scale: 1:10,000



LEGEND

- △ 58498 ROCK GEOCHEM SAMPLE
5/<10 ARSENIC (ppm) GOLD (ppb)
- A-80-409 SOIL SAMPLE
3/<10 ARSENIC (ppm) GOLD (ppb)
- CLAIM LINE AND POST
- APPROXIMATE LOCATION OF JIB CLAIMS
- Λ CAMP
- ~ STREAM DRAINAGE
- AH-28 THIN SECTION SPECIMEN

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8901
NO.

J.C. STEPHEN EXPLORATIONS LIMITED

BC. GOLD SYNDICATE
SWAN CLAIMS
SKEENA MINING DIVISION

GEOCHEMISTRY

NTS: 103B / 6W
DATE: JULY 8-23, 1990
WORK BY: AH, JP, SA, KS, JS. SCALE 1:10,000
DRAWN BY: AH, JP, SA, KS, JS. FIGURE 5

J. Stephen
December 17/90

Scale: 1:10,000

FIGURE 5