MAP NO.: 115 II 2

ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL
OPEN FILE X

DOCUMENT NO: 092884
MINING DISTRICT: WHITEHORSE
TYPE OF WORK: GEOLOGY
MAGNETOMETER

REPORT FILED UNDER: J.C. Stephen Explorations Ltd.

DATE PERFORMED: August 14-20, 1990

DATE FILED: OCT 31, 1990

LOCATION: LAT.: 61°02'N

LONG.: 136°43'W

AREA: Ashihik Lake

VALUE $: 3 200

CLAIM NAME & NO.: SKIP 1-16

WORK DONE BY: J.C STEPHEN EXPLORATIONS LTD

WORK DONE FOR: AURORA GOLD LTD/CASAU EXPLORATION LTD

DATE TO GOOD STANDING:

REMARKS: Copper gold skarn material occupies limey horizons of Yukon Metamorphic Complex at quartz diorite contacts. Rusty limestone assayed 0.072 opt Au. Mineralization consists of chalcopyrite, pyrr and occassional molybdenite exposed intermittently along several thousand feet. 17 ft chip assayed 1.85% Cu, 0.02% Co, 2 opt Ag and 0.01 opt Au.

Affair... Affaires ... et du Nord

M... file no.	
R.M.M.R. file no.	
Date forwarded	30 OCT 1990

TRANSMITTAL FORM

From ▶ Mining Recorder at:

To ▶ Regional Manager, Mineral Rights at Whitehorse, Y.T.

OFFICE OF THE REGIONAL MANAGER MINERAL RIGHTS NOV 5 1990 WHITEHORSE YUKON TERRITORY

For action are:

☐ NEW APPLICATION FOR PLACER LEASE TO PROSPECT	Name		
☐ RENEWAL APPLICATION PLACER LEASE TO PROSPECT	Name		Lease no.
☐ AFFIDAVIT OF EXPENDITURE ON PLACER LEASE	Name		Lease no.
☐ SECURITY DEPOSIT			
☐ FINANCIAL ABILITY			
☐ ASSIGNMENT OF PLACER LEASE NO.	From	To	
☐ GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT.	Owner		
☐ DIAMOND DRILL LOGS	Claims		Claim sheet no.
☑ QUARTZ ASSESSMENT REPORT	Claims: SKIP 1-16		Claim sheet no.: 115-H-7
	Type of report: Geological / Mag. Survey	Submitted by: Casau Exploration Ltd.	
	Cls. work performed on: SKIP 1-16		$ req. for ren. application: 3200.00

M Southwick

Signature

REPLY ACTION

Date returned

092884

Nov 21/90

Signature

802-37 (7-88)

REPORT ON MAGNETOMETER SURVEY

AND RECONNAISSANCE GEOLOGY

SKIP 1- 16 CLAIMS

YB 26357 - 372

NTS 115H/2

LATITUDE: 61° 02' N LONGITUDE: 136° 43' W

WHITEHORSE MINING DISTRICT

YUKON

by

J.C. STEPHEN EXPLORATIONS LTD.

for

AURORA GOLD LTD.

CASAU EXPLORATION LTD.

092884

September 10, 1990

Work Done: August 14-20, 1990

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ 3200.

for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

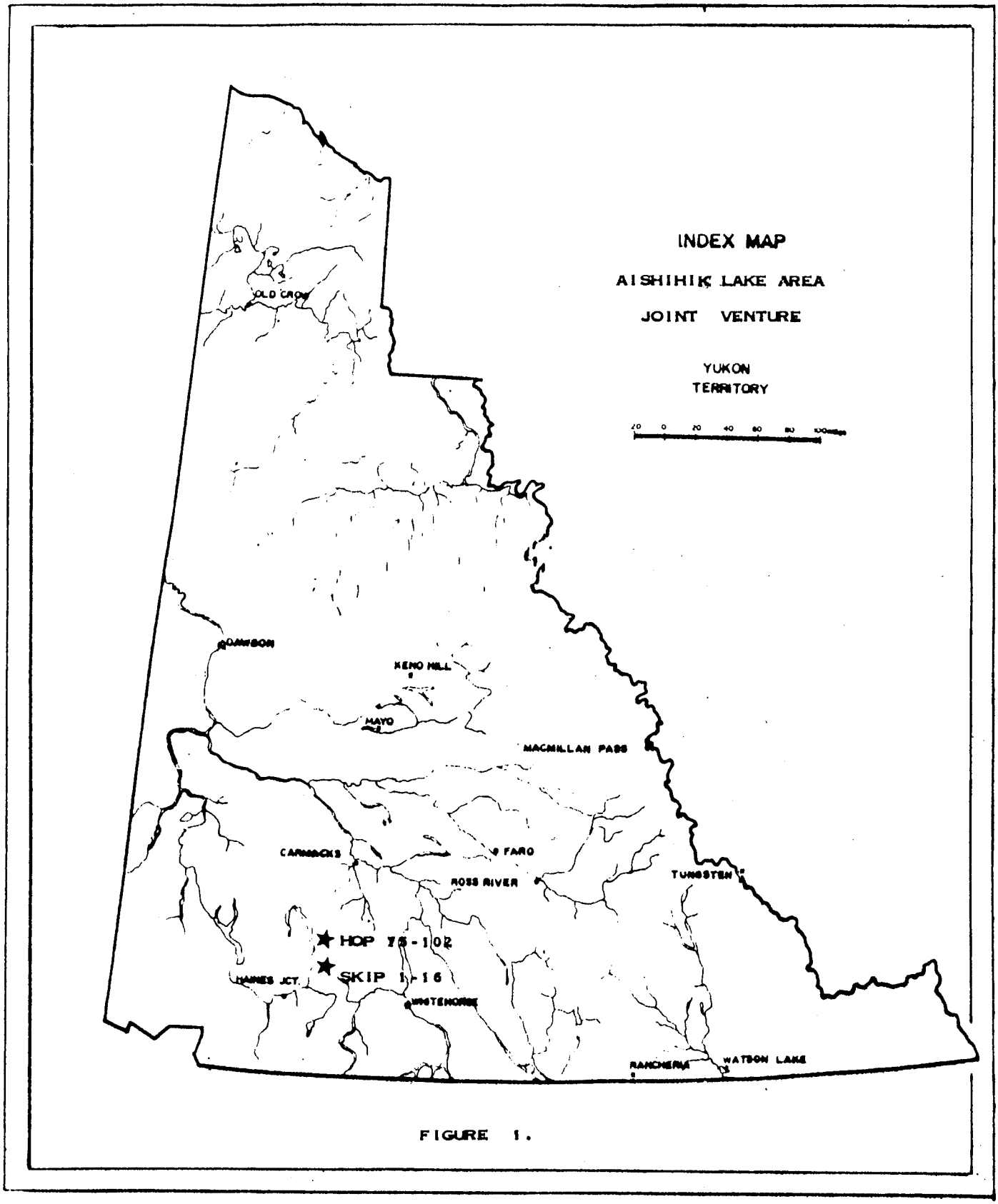

INDEX MAP
AISHIHIK LAKE AREA
JOINT VENTURE
YUKON
TERRITORY
OLD CROW
DAWSON
KENO HILL
MAYO
MACMILLAN PASS
CARMACKS
FARO
ROSS RIVER
TUNGSTEN
HOP 75-102
SKIP 1-16
HAINES JCT.
WHITEHORSE
RANCHERIA
WATSON LAKE

FIGURE 1.

SUMMARY

A program of reconnaissance geological mapping and magnetometer surveying was conducted on the SKIP 1-16 claims to assess the potential of the copper-gold bearing skarn deposits.

Skarns are developed within a limey horizon as part of a sequence of metasediments forming part of the regionally developed Yukon metamorphic complex. Examination of exposures visible in extensive tractor trenches, excavated during earlier exploration programs, in conjunction with results of chip sampling and interpretation of magnetic anomalies, indicates the mineralization is of limited extent and low grade.

An assay of 0.072 ounces gold per ton, obtained from a small isolated exposure of rusty limestone, suggests the possibility of gold mineralization previously unrecognized. Additional sampling is recommended to further test the limestone horizons.

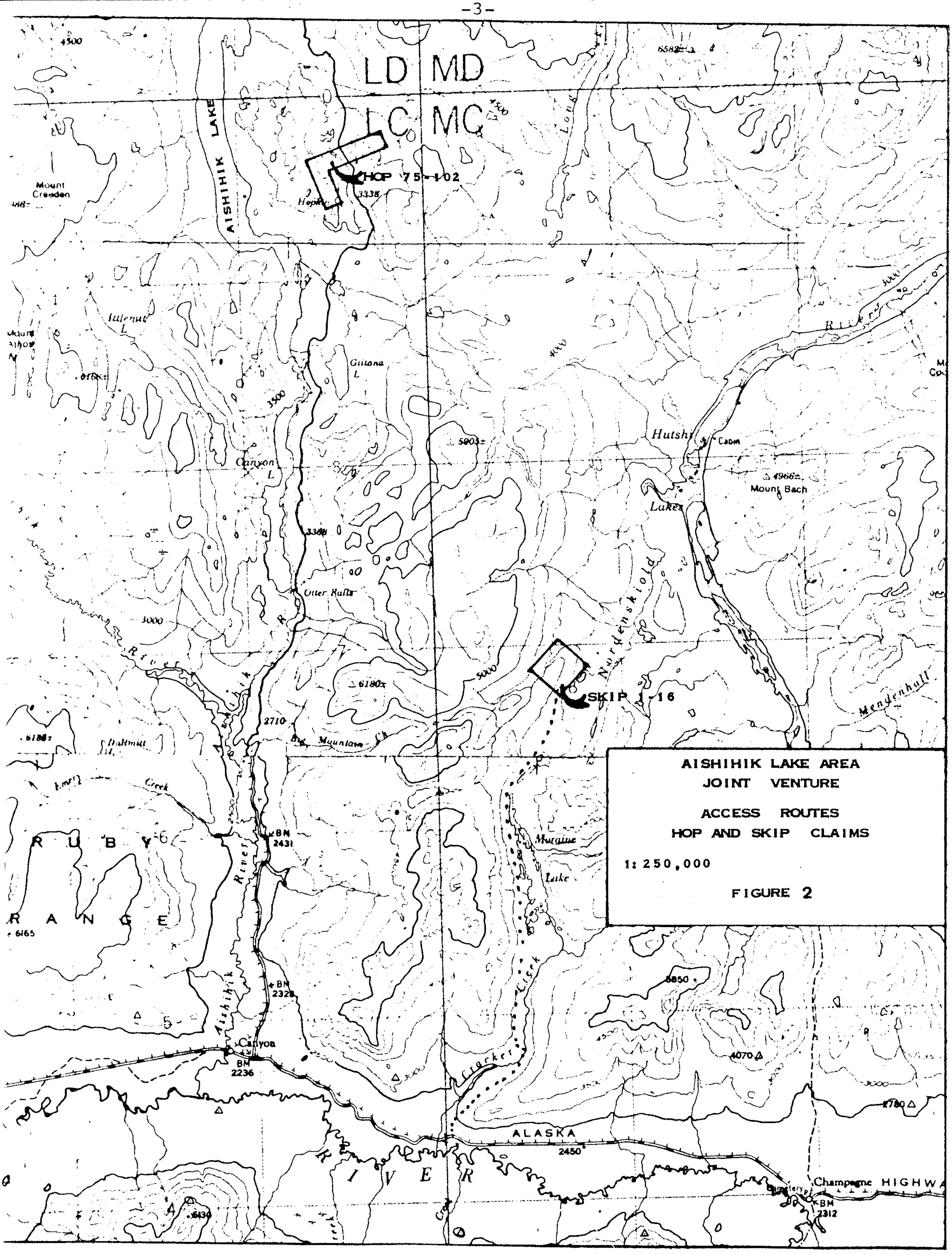
The regional aeromagnetic map shows extensive, strong, magnetic anomalies extending east of the SKIP claims. Further exploration in that direction would very likely lead to discovery of additional mineralization.

ACCESS AND TOPOGRAPHY

The Skip 1-16 claims are located 25 kilometres north of the Alaska Highway and 15 kilometres east of the Aishihik Lake gravel road on Map Sheet 115H/2. Access to the claims for this exploration program was by helicopter from Whitehorse. Camp was made at the old camp site at the south end of the pond located at the northeast corner of the claim group. The pond is stagnant at this time of year.

Earlier access by tractor road was achieved by way of a trail leaving the Alaska Highway a short distance east of Cracker Creek. As a result of those programs, access to the claims is assisted by way of several tractor roads, the known showings are extensively trenched and an exploration baseline extends east across the low ground to the foot of the hill east of Nordenskiold River near the north limit of the main aeromagnetic anomaly.

The ponds at the camp site lie between the 2,900 and 3,000 foot elevations (Map 115H/2E) while the main showings occur at the 3,500 foot elevation near the north crest of the ridge. The creek, west of the showings, flows northeast within a steeply incised valley with considerable rock outcrop visible along its northwest walls. A tributary creek from the west is located at 17+00N, 12+00E on the local tape and compass grid.


LD MD
LC MC
HOP 75-102
SKIP 1-16
AISHIHIK LAKE
Mount Creeden
Canyon L
Otter Falls
Hutshi Lakes
Mount Bach
Nordenskiold
Mendenhall
Moraine Lake
RUBY RANGE
Canyon
ALASKA
RIVER
Champagne
HIGHWA
AISHIHIK LAKE AREA
JOINT VENTURE
ACCESS ROUTES
HOP AND SKIP CLAIMS
1: 250,000
FIGURE 2

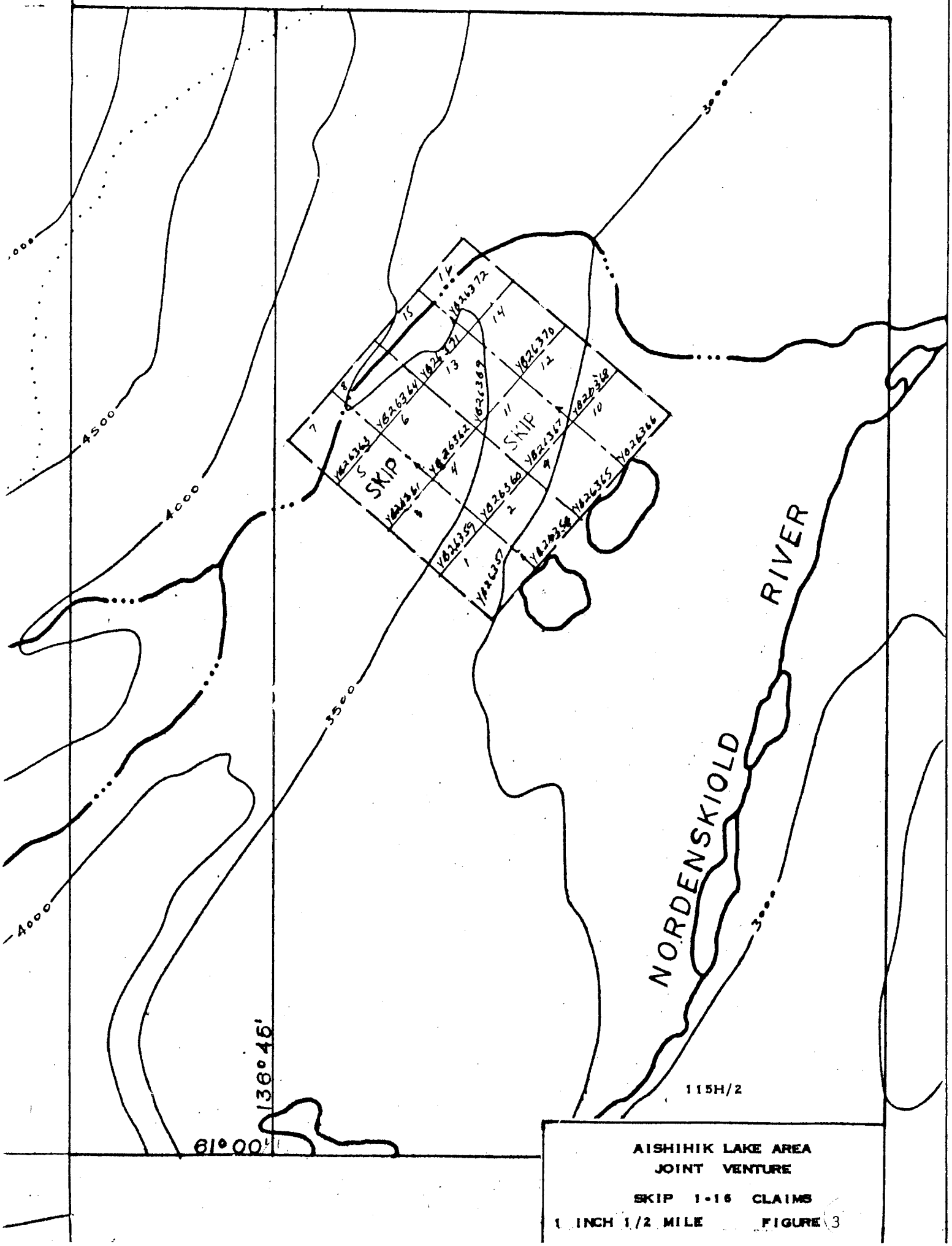
CLAIM STATUS

The Skip 1-16 Yukon Quartz claims were staked by Aurora Gold Ltd. of Calgary, Alberta as part of the joint venture exploration program with Casau Exploration Ltd.

Claim			Expiry Date	
Name	Record No.	Recording Date	Current	On filing this Report
Skip 1-16	YB 26357- YB 26372	June 29, 1989	June 29, 1991	June 29, 1993

Cash in lieu of work was paid for the first year on these claims. The current work program is being filed for two years additional credits.

Figure 3 illustrates layout of the claim group. Claim post locations are shown on Map I in relation to the tape and compass survey grid established during this program.


SKIP
SKIP
NORDENSKIOLD RIVER
4500
4000
3500
3000
61° 00'
136° 46'
115H/2
AISHIHIK LAKE AREA
JOINT VENTURE
SKIP 1-16 CLAIMS
1 INCH 1/2 MILE
FIGURE 3

PROPERTY HISTORY

History of the claim group is outlined in the following description from Northern Cordilleran Mineral Inventory - 1972 - Archer Cathro & Associates Ltd., revised to 1980.

The tractor trenching proved to be very much more extensive that had been expected and, in general, it appears the existing showings have had more work done than seems justified.

REVISED 1980 **Occurrence No. 15**

Property Name:	Common	Moraine	Other
Location:	Lat. 61° 02'	Long. 136° 43'	NTS 115H/2
Metals:	Major - Copper, Molybdenum Minor - Gold, Silver, Tungsten, Cobalt		

Type of Mineral Deposit: Skarn

History and Previous Work

Staked as OX cl (67102) in June/54 by A. Riba and O. Wickstrom on an old showing reportedly staked and hand trenched in the 1940's. Restaked as Ball cl (75770) in June/61 by A. Riba and S. Papp, who bulldozer trenched in 1961 and hand trenched in 1964-66. The AH 79-93 cl (Y11247) were staked in Nov/66 by Empress ML (Atlas EL and Nippon Mg L) immediately west of the Ball cl, explored by prospecting in 1967, and restaked as the Highball cl (Y24627) in May/68 by A. Parker. The Ball group was optioned in 1967 by A.J. MacDonald and J. O'Brian, who did no work, and during 1969 by Union Carbide Mg L, which conducted bulldozer trenching, geochem, sampling and mapping. Riba and Papp did more hand trenching in 1972 and 1975.

Restaked as Coot cl (YA23457) in Aug/78 by Whitehorse Copper ML, which explored in a joint venture with Hudson Bay Mg with geochem, mag surveys and mapping in 1979.

Description

A skarn is found along the contact between a quartz diorite stock and limy Yukon Group sediments. The skarn is intermittently exposed for several thousand feet and is weakly mineralized with pyrrhotite, chalcopyrite, molybdenite and molybdo-scheelite in three localities. The best showing is exposed in a 23 ft. hand trench from which a 17 ft. chip sample assayed 1.85% Cu, 0.02% cobalt, 2.0 oz/ton Ag and 0.01 oz/ton Au.

REGIONAL GEOLOGY

The Skip claim group lies within a series of highly metamorphosed sediments considered to be of Proterozoic an/or Paleozoic age and commonly considered part of the Yukon Metamorphic Complex. Locally this complex consists of grey brown weathering biotite quartz schist, micaceous quartzite, marble and skarn.

The biotite schist is in contact with granodiorite of Triassic age and has been intruded by stocks of granodiorite of Cretaceous age. It is cut by younger feldspar porphyry and andesite dykes.

To the east, the Yukon Metamorphic Complex is in fault contact with the Upper Triassic age Lewes River Group volcanics and sediment and with the Jurassic age Laberge Group conglomerates, greywackes and siltstones. These sedimentary and volcanic formations are intruded on a regional scale by granitic rocks of the Triassic-Cretaceous Coast Intrusions.

Within both the Yukon Metamorphic Complex and the Lewes River - Laberge Group, iron, copper, gold skarn deposits have been formed where limey sedimentary rocks are in proximity to intrusive stocks related to the Coast Intrusives. Thus mineralized skarns may occur both in roof pendants within the Coast batholith and adjacent to intrusive stocks at considerable distance to the northeast of the main batholith contact. Cockfield (1926) concluded that "... the mineral deposits of the region occur in a belt following the eastern margin of the batholith ..." and "It follows that on the whole the eastern margin of the batholith ... slopes gently eastward with recurrent upward projections whose summits have been laid bare to the east of the main margin."

The mineralogy of the skarn deposits is, in general, similar whether they occur in the older Yukon Metamorphic rocks or in the Triassic and possibly Jurassic rocks. Magnetite, sometimes with hematite as in the Macks deposit, chalcopyrite, with considerable bornite in some of the Whitehorse

Copper deposits, and gold with low values in silver are the more important minerals. Pyrrhotite is common as a minor and sometimes major constituent. Traces of molybdenite and scheelite occur in some skarns.

Although exploration of the copper gold skarns has been concentrated on their economic viability for copper production, it was the purpose of the regional exploration portion of the Aurora - Casau joint venture to explore for gold bearing skarns. The demonstrated gold content of the copper skarns at Whitehorse and Aishihik Lake and the occurrence of rich gold deposits of Tertiary epithermal type in the Mt. Skukum area, together with very late stage epithermal type "chalcedony breccias" on the HOP-ACME claims suggests a possible late stage gold enrichment is possible.

The Skip 1-16 claims lie within the glaciated portion of the Yukon.

CENOZOIC

Tvr — VARICOLOURED ACID TUFF: brightly coloured, light-weathering acid vitric crystal tuff, lapilli tuff and welded tuff; includes plugs and necks that are feeders to these extrusive rocks

EOCENE

TMN — MOUNT NANSEN GROUP: dark grey to black weathering (blocky talus), dark greenish-grey, aphanitic, intermediate to acid, massive, tuff and tuff-breccia

Tfp — FELDSPAR PORPHYRY: orange and buff weathering light-coloured feldspar porphyry dyke and flow rocks of intermediate to acid composition; may include Nisling Range Alaskite (Tgal) undifferentiated. Where these rocks are represented by intrusive phases this is indicated by a lined pattern defining the trend of dykes, where they are extrusive this pattern is not shown

Tgal — NISLING RANGE ALASKITE: fine-grained, miarolitic, buff-weathering leucogranite or alaskite; may include Coffee Creek (Tg), and feldspar porphyry (Tfp) undifferentiated

Tg — COFFEE CREEK GRANITE: coarse-grained, equigranular, buff-weathering, homogeneous biotite granite and quartz monzonite; includes Nisling Range Alaskite undifferentiated

MESOZOIC

LMdim — HORNBLENDE DIORITE: melanocratic fine-grained equigranular biotite hornblende diorite; may include Ruby Range granodiorite (Trgd) undifferentiated

LOWER CRETACEOUS AND/OR UPPER JURASSIC

LKT — TANTALUS FORMATION: chert pebble conglomerate with minor interbedded sandstone and shale

LOWER AND MIDDLE JURASSIC

JL — LABERGE GROUP: poorly sorted, white and buff weathering, medium bedded to massive sandstone with interbedded pebble and boulder conglomerate and minor shale

Mqmp — PORPHYRITIC QUARTZ MONZONITE: porphyritic (pink K-feldspar) medium-grained, hornblende biotite quartz monzonite; includes minor pink quartz monzonite (Trqm) and hornblende granodiorite (Trgdm) undifferentiated

TRIASSIC (?)

Trqm — PINK QUARTZ MONZONITE: pink coarse-grained leucocratic quartz monzonite and porphyritic pink quartz monzonite; may include porphyritic quartz monzonite (Mqmp) undifferentiated

Trgdm — HORNBLENDE GRANODIORITE: dark grey weathering, coarse-grained, equigranular biotite hornblende granodiorite to quartz diorite; commonly shows layering or foliation by alignment of mafics; includes pink quartz monzonite (Trqm) and porphyritic quartz monzonite (Mqmp) undifferentiated

Trgd — RUBY RANGE GRANODIORITE: medium-grained, equigranular, grey, hornblende biotite granodiorite; includes undifferentiated diorite (LMdim); may include biotite granite (Tg)

Trvb — MASSIVE GREEN VOLCANICS: massive dark green epidotized basalt; minor tuff breccia

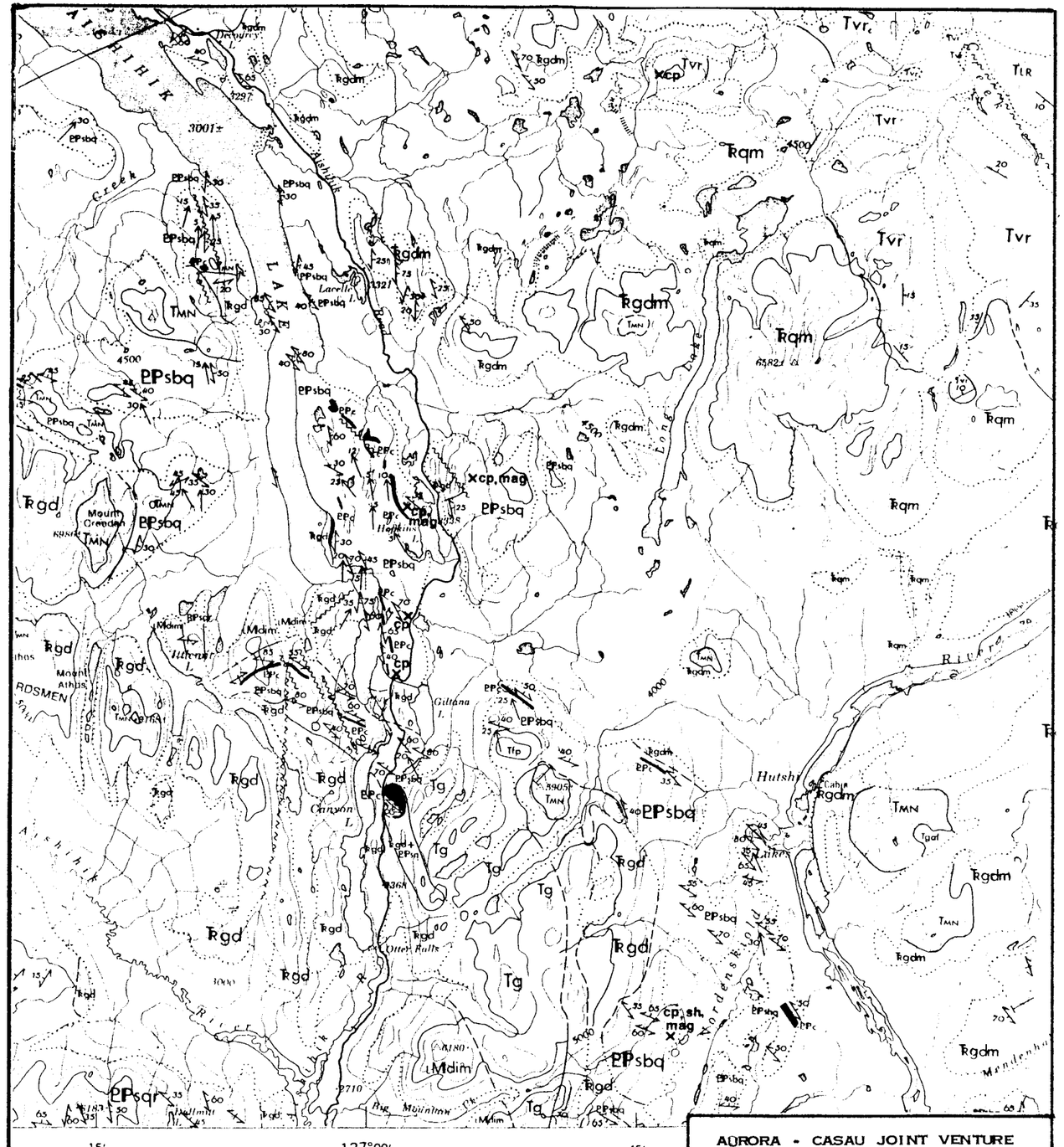
PROTEROZOIC AND/OR PALEOZOIC

PPm — AMPHIBOLITE: dark green fine-grained amphibolite; includes interfoliated schist and gneiss

PPsqr — HORNFELSED SCHIST: dark purplish brown staurolite cordierite biotite hornfels with relict schistose texture

PPc — MARBLE: light grey and white coarsely crystalline, locally finely laminated fetid marble

PPsbq — BIOTITE SCHIST: brown grey weathering, recessive, chlorite muscovite biotite quartz schist and micaceous quartzite; garnetiferous; minor amphibolite, marble and skarn



MAP 17-1973

PAPER 73-41

GEOLOGY

AURORA - CASAU JOINT VENTURE

SKIP 1-16 CLAIMS

REGIONAL GEOLOGY

1 250,000 AUG. 1990

FIGURE 4

PROPERTY GEOLOGY

Rock Units

The rock unit subdivision shown in the table following is based on the brief mapping program on the property and, more particularly, in the vicinity of the mineral showings.

TABLE OF FORMATIONS

Intrusives

10	Andesite dykes
9	Aplite, Feldspar porphyry dykes
8	Hornblende diorite
7	Granodiorite

Metasediments

6	Micaceous schist, gneiss
5	Limestone
4	Skarn
3	Amphibolite
2	Quartzite
1	Gneiss

Metasediments

Unit 1, the lowermost gneiss unit, consists of a variety of micaceous schists, quartz biotite gneiss and quartzitic gneiss. The unit does not differ significantly from Unit 6, micaceous schist, gneiss and is separated only because of its apparent stratigraphic position below the quartzite, skarn, limestone horizon. The unit includes rocks noted quartzitic gneiss and is gradational into Unit 2.

Unit 2, quartzite, varies from quartzitic gneiss to relatively clean quartzite lying stratigraphically below the skarn, limestone horizon. The rock is well fractured and generally rusty.

Unit 3, amphibolite, consists of dark, micaceous, narrow lenses included within the quartzite. These lenses are conformable and may derive from impure, iron-rich, beds deposited within the quartzite sequence.

Unit 4, skarn, consists of a wide range of calc-silicate altered impure sediments occurring in a discontinuous horizon associated with the upper contact of the quartzite and generally interbedded with lenses of limestone. The northern skarn bed is garnetiferous with considerable epidote and actinolite. Sulphide mineralization consisting of magnetite, pyrrhotite, pyrite, chalcopyrite, molybdenite and molybdo-scheelite occurs as narrow lenses. The zone dips northerly. The southern zone shows wide areas of epidote-actinolite dark green skarn with garnetiferous areas and is marked by a fairly intense, small magnetic anomaly. Mineralization consists of pyrrhotite, chalcopyrite, magnetite, molybdenite, molybdo-scheelite and calcite. The apparently best mineralized area at 17N on line 20E dips 45° grid south.

Unit 5, limestone, is white to grey, generally fairly thin bedded with bands of scattered small reddish garnets. Portions are apparently silicified or altered to fine grained light coloured calc-silicate skarn. Fragments of grey to white limestone are found on the tractor road northeast of the skarn showings and a small outcrop occurs on line 14E at 18+80N. Limestone was not located west of the creek near line 12E in the area traversed although two zones of grey appearing rock were later observed to the north which may be limestone.

Unit 6, micaceous schist, gneiss, is a varied sequence of quartz feldspar mica rock varying from massive quartzitic gneiss to highly sheared mica schist. The rock type is similar to Unit 1 although generally more

micaceous and is separated by being stratigraphically above the skarn limestone horizon.

Intrusives

Unit 7, granodiorite, varies from fine to medium grained, grey to light pink in colour. The rock generally contains feldspar, hornblende, minor quartz and biotite. It is generally massive with north-trending steeply dipping joints. In the southwest portion of the claim group this intrusive appears to be a small stock.

Between lines 26E and 28E at about 12 North, considerable amounts of darker grey granodiorite boulders and fragments indicate underlying intrusive bodies. This rock is generally more magnetic as indicated by the magnetometer survey.

Other granodiorite exposures mapped often occur as narrow, north trending outcrops and may be due to dykes rather than stock-like bodies.

The granodiorite becomes fine grained and occasionally appears to be contaminated by Unit 1 rocks where intruded in the central part of the area mapped. It appears to intrude the south skarn zone.

Unit 8, hornblende diorite, is exposed near 17N, 21E and more extensively at 14E, 16+70N and at about 13+50E, 17+50N on the steep west-facing hillside. The rock is fine to medium grained, dark pepper and salt in appearance, with fresh hornblende crystals quite prominent.

Unit 9, aplite, feldspar porphyry dykes, occur as late intrusives generally trending northerly.

Unit 10, andesite, occurs as a massive fine-grained greenish, dark grey, rock as a relatively large mass north of the skarn, limestone horizon between 19E and 20E. This rock is generally only slightly fractured and

jointed and shows slight malachite staining. A north-trending narrow dyke occurs south of the skarn horizon at 18+40E. The andesite appears to be a late intrusive and the malachite (copper) mineralization is considered to be local contamination where the andesite cross-cuts the copper-bearing skarn deposit.

Mineralization

Mineralization associated with skarn zones consists primarily of pyrrhotite, chalcopyrite, magnetite, pyrite, with minor molybdenite and molybdo-scheelite. The main sulphide mineralization is variable as local lenses within the skarn within the north zone. Chalcopyrite and magnetite occurs with epidote, chlorite and calcite within the south showing. Molybdo-scheelite occurs as disseminated small grains in both skarns.

Mineralization is generally spotty. Chip samples were taken at selected locations to represent the best mineralization. Results were as follows:

Sample No.	Description	Width	Geochemical Results Cu ppm	Mo ppm	W ppm	Au ppb
30312	Heavy sulphide mineralization in lens within skarn.	1 m	6898	58	214	60
	Check assay	0.72% Cu				
30313	Mafic zone in skarn with py, cpy	1.4 m	3236	28	229	20
30314	Epidote, garnet, skarn zone.	4.2 m	3439	3415	284	120
	Check assay	0.76 oz Ag/t				
30315	Epidote, chlorite skarn	4 m	363	39	84	5
30316	Epidote skarn.	3.4 m	24336	693	366	1400
	Check assay	2.48% Cu		1.66 oz/t Ag		0.060 oz/t Au
30317	Rusty Mn stained limestone with small garnets.	-	1704	5	1	1940
	Check assay	0.78 oz/t Ag		0.072 oz/t Au		

Samples 30312-14 from the best mineralized portion of the north skarn average approximately 0.35% copper over an average of approximately 2 metres of exposed width. One Sample, 30314, contained 3415 ppm molybdenum but this value is probably not representative of any great area as small patches of molybdenite were only very erratically found in the skarn.

Tungsten values in the 214 to 284 ppm range are much below ore grade. Gold content is low at 20 to 120 ppb.

Within the south zone, Sample 30315 was taken from a 4 metre zone of rather spectacular looking skarn dipping 45° south at 20E, 17+00N. This skarn occurrence is in direct contact with the granodiorite intrusive in this tractor trench. Most of the apparent copper mineralization is represented by malachite, but even so the geochem value of 363 ppm Cu is much below what was expected. Values for other elements were also disappointingly low.

Still within the south zone, Sample 30316 was taken from well mineralized skarn directly above a granodiorite contact. Given the recognized good mineralization, the assayed value of 2.48% copper is higher than was expected. This sample contains 1400 ppb gold and assayed 0.060 ounces gold per ton, silver content was 56.8 ppm, which assayed at 1.66 oz/t. Potential for the zone appears very limited, however, due to the shallow depth to the granodiorite contact.

The shape and size of the magnetic anomaly over this south skarn zone may be misleading due to the lack of readings to the southwest of the trenches and the generally inadequate spacing of the magnetic readings

Sample 30317 was taken on line 14E at 18+80N. The exposure consisted only of rusty manganese stained, slightly garnetiferous limestone at the north crest of a small ridge. Rock was exposed under tree roots. This rock did not look at all attractive and was sampled only because of its rusty,

stained appearance. The gold value of 1940 ppm which assayed 0.072 oz/t and the copper value of 1704 ppm (0.17%) were not expected. Whether these values are due to unexpected mineralization or to possible contamination in the lab should be decided by check sampling of the occurrence. If check sampling confirms gold mineralization, there may be significant areas of garnetiferous limestone which should be check sampled for precious metals.

Structure

A sequence of quartz-feldspar-mica schists and gneiss with a limestone, skarn horizon trends northwesterly through the central portion of the Skip claims. The sequence dips northeasterly at 30° to 70°. The metasedimentary sequence is intruded by stock-like granodiorite bodies of variable composition as well as by hornblende diorite, feldspar porphyry, andesite and aplite dykes.

The deep creek valley near the west boundary of the property trends northeast and may have been protected from glaciation due to its direction. The normally schistose metasediments appear to be even more schistose in this area and the creek valley may be the site of a fault.

An irregular gully between lines 16E and 18E may also mark a fault offsetting the skarn horizon rather than the folding suggested by the magnetic contours. No real supporting evidence was documented for either interpretation.

Because the skarn zone at 20E, 17N in the south zone dips 45° southwest, there is the possibility the north and south skarn zones represent north and south limbs of a single folded horizon. More detailed work would be necessary to provide documentation. The magnetometer survey is too wide spaced to provide adequate information.

The regional aeromagnetic map suggests the favourable skarn hosting metasediments should trend easterly parallel to the magnetic low anomaly. A tractor cleared baseline across the valley indicates this possibility may have been investigated by earlier operators, but no information is available as to what geophysical or prospecting work may have been done.

MAGNETIC SURVEY

Procedure (Map I)

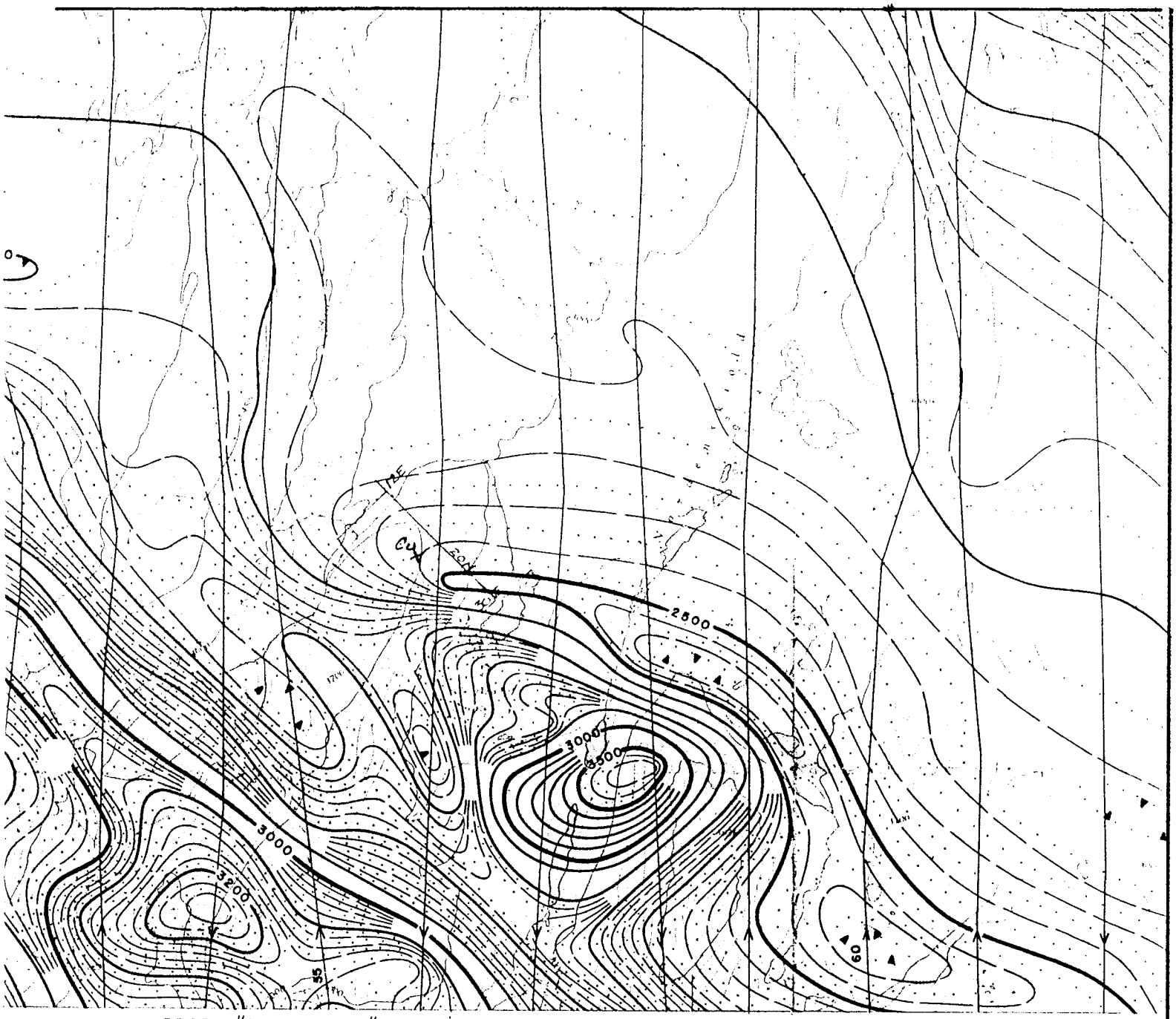
The location line for Skip 9-16 was designated 20+00N baseline and was chained by hip chain from 30+00E at No. 1 Post Skip 9, 10 near the camp lake.

Hip chain and compass lines were run from the 20N B.L. southwest to the location line for Skip 1-8. Lines 30E, 28E, 26E, 24E, 22E, 20E were run the full distance while lines 12E, 14E, 16E, 18E were shortened due to the extent of granodiorite intrusive, topography and heavy brush. Short lines were run at 19E and 21E in the showing area.

The magnetic readings were taken using a Scintrex MP-2 magnetometer. Readings were taken at 12.5 meter intervals along the baseline which resulted in a relatively smooth profile. Readings taken on the various cross lines were then adjusted to the values obtained on the 20N baseline on a loop by loop basis. Since the significant anomalies are represented by variations of several hundred gammas the overall accuracy of the survey is adequate for the general purpose. The wide spacing of the survey lines is not adequate for detail information and the trend of the magnetic pattern is probably more irregular than indicated by the survey contours.

Results

The southeast portion of the grid area is dominated by positive anomalies ranging from 500 to over 1300 gammas. Most of this area is overburden covered, but granodiorite rubble on the east facing hillside between 26E and 28E, 12N suggests these positive anomalies are caused by granodiorite with a small magnetite content. Comparison with the aeromagnetic map, Figure 5, suggests these positive anomalies are the west extremity of a large positive anomaly central east of Nordenskiold River.



3325 G "Cracker Creek"

40'

MAP 3326G

HUTSHI LAKES

YUKON TERRITORY

Scale: One Inch to One Mile = $\frac{1}{63,360}$

Miles

½ 0 1 2 3

AURORA - CASAU JOINT VENTURE

SKIP 1-16 CLAIMS

AEROMAGNETIC MAP

1 : 63,360 AUG. 1990

FIGURE 5

In spite of the regional mapping indicating only metasediments in this area, it is likely that a granodioritic intrusive underlies the area and additional skarn zones are likely present.

Extending from the northeast corner of the grid area to the south skarn zone area is a magnetic low anomaly. This is probably the west end of the large magnetic low present on the aeromagnetic map. No rock outcrop was found along this trend except at the south zone skarn area. It is assumed this magnetic low is due to a sedimentary horizon but since limestone in the district is not particularly recessive weathering, there is nothing to support the possibility that this is a limestone horizon.

The north skarn is marked by a narrow positive magnetic anomaly of about 200 to 300 gammas. The skarn extends to the east of the magnetic anomaly (Map II) indicating that the magnetometer cannot be relied upon to outline all sulphide mineralization.

The central and southwest portion of the survey grid area is marked by rather neutral magnetic readings. Contours extending between such widely spaced lines may be misleading as to their true pattern. Outcrops of a fresh lighter grey granodiorite suggest much of this area may be occupied by an intrusive body.

At 14E, 16+60N a positive anomaly appears to be due to an occurrence of fresh dark grey hornblende diorite.

Based on the proximity of sulphide mineralization related to skarn close to the boundary of positive anomalies and a marked magnetic low, it is proposed that the aeromagnetic survey outlines a large area east of Skip group which warrants close prospecting.

RECOMMENDATIONS

Mapping and results of the magnetometer survey suggest the known skarn zones are of small size. Sampling, although limited to only a few samples, tends to confirm visual impressions that mineralization is low grade. No further work is recommended on the known showings.

The unexpected gold value obtained from Sample 30317 suggests the possibility of some previously unrecognized potential. Values of 1940 ppb gold, 25 ppm silver and 1704 ppm copper are higher than expected in spite of the recognized manganese content measured at 10,257 ppm. Anomalous lead and zinc values were obtained. These values should be checked by enlarging the area of exposure, possibly by blasting away some of the overlying roots and soil, and by more complete sampling of the exposure and rubble. If similar gold values are obtained, the area may warrant close spaced soil sampling and additional sampling of other rusty garnetiferous limestone exposures.

Exploration to the east of the present claim group is almost certain to locate additional skarn zones. This type of grassroots exploration might be considered when exploration funds become more generally available.

This report is respectfully submitted as part of the exploration program funded by Aurora Gold Ltd. under the letter agreement with Casau Exploration Ltd.

J.C. STEPHEN EXPLORATIONS LTD.

J.C. Stephen, President

COST STATEMENT

SKIP 1-16

AUGUST - SEPTEMBER 1990

Personnel - J.C. Stephen Explorations Ltd., Contractor	
J.C. Stephen, Aug 13 - 20	$ 2,400.00
H. Piece, Aug 13 - 20	1,600.00
Truck rental and mileage	459.10
Fuel and oil	250.90
Magnetometer rental	317.50
Helicopter	1,584.76
Air Photos, maps	17.00
Flagging, sample bags, hip chain	45.00
Camp equipment, supplies	120.76
Groceries	94.99
Travel, hotel, meals	385.00
Geochemical and assay analysis	135.75
Drafting, report	650.00
TOTAL	$ 8,060.76

STATEMENT OF QUALIFICATIONS

J.C. STEPHEN

Academic

1950 Associate Member British Institute Engineering Technology

1950-1951 One year Geology University of Alberta

Experience Summary

1947-1955 Development and production experience in engineering and geology at Central Patricia Gold Mines, Eldorado Mining and Refining, Madsen Gold Mines, Hasaga Gold Mines, Pickle Crow Gold Mines as Surveyor, Assistant to the Engineer, Geologist.

1955-1959 Regional exploration experience with Pickle Crow Gold Mines, Combined Developments Ltd., R.G. Crosby and Associates, Jay-Kay Syndicate as Field Geologist.

1959-1961 Municipal construction including monolithic concrete tunnels as Senior Inspector.

1962-1968 Regional exploration with Mastodon Highland Bell Mines as field geologist.

1968-1976 Regional exploration with Bacon and Crowhurst Ltd., as supervisor of exploration syndicates.

1977-Present President J.C. Stephen Explorations Ltd.

Management of various exploration syndicates. B.C. and Yukon Management of publicly listed resource companies and supervision of exploration and development programs. Operations in Quebec, Ontario, Manitoba, Saskatchewan, Northwest Territories, Yukon, British Columbia, western United States.

J.C. Stephen

APPENDIX I

ROCK SAMPLE RECORD

GEOCHEM ANALYSIS CERTIFICATE

J.C. STE. .EN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHE.. — ROCK GEOCHEM SAMPLING

NTS 115 H/2

SAMPLER H.P.; J.C.S

PROJECT SKIP CLAIM GROUP

LINE

DATE AUG 1990

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au ppb	Mo ppm	W ppm	Cu ppm
(1)	30312	TRENCH 18+98E 18+50N	SKARN	Epidote, silic,	Py. Pyrr Cpy.		Includes local lens heavy sulphides	1 M.		60	58	214	6898
(2)	30313	TRENCH 18+40E, 18+50N	SKARN	MAFIC, silicified	py Cpy			1.4m		20	28	229	3236
(3)	30314	19+50E, 18+56N	SKARN	Epidote, garnet	Py Cpy Mag.			4.2m		120	3415	284	3439
(4)	30315	20+00E, 17+06N	SKARN	Epidote, chlorite	Py, Mag. Cpy Mal		Close to granitic Contact	4 m		5	39	84	363
(5)	30316	19+60E, 17+30N	SKARN	Epidote	Cpy. Mo, Py.		Close to granitic Contact	3.4m		1400	693	366	24336
(6)	30317	14+00E 18+80N	Limestone	Garnet, rust, Mn	Py.?		RUBBLE	—		1940	5	1	1704
(7)													
(8)		SEE	FOLLOWING	ICP	ANALYSIS.								
(9)													
(10)													
(11)													
(12)													
(13)													
(14)													
(15)													
(16)													
(17)													
(18)													
(19)													
(20)													

ROSSBACHER LABORATORY LTD.

2225 S. Sprinyer Ave., Burnaby,
British Columbia, Can. V5B 3B1
Ph:(604)299-5910 Fax:299-6252

CERTIFICATE OF ANALYSIS

TO : J.C.STEPHEN EXPLORATION LTD.
746 REGAL CR.
VANCOUVER, B.C.

PROJECT : AURORA-CASAU JV
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 90412A
INVOICE # : 10576
DATE ENTERED : 90-09-12
FILE NAME : JCS90412.I
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM U	PPM AU	PPM MG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	PPM B	% AL	% NA	% SI	PPM W	PPM BE	PPB AU	AA
A	30307	1	4028	44	101	0.4	112	219	407	19.21	2	5	ND	ND	1	1	5	3	21	0.22	0.01	13	15	0.20	13	0.01	100	0.15	0.01	0.01	2	1	140	
A	30308	5	210	45	59	0.2	19	17	1983	7.13	46	5	ND	ND	102	1	7	2	35	5.03	0.01	4	21	0.80	61	0.01	91	0.60	0.02	0.01	8	1	5	
A	30309	2	43	35	45	0.2	462	15	477	1.76	23	5	ND	ND	47	1	8	3	32	2.71	0.01	9	85	2.17	41	0.11	28	0.96	0.02	0.01	5	1	5	
A	30310	2	179	21	31	0.2	34	9	165	6.44	8	5	ND	ND	22	1	4	2	36	1.58	0.36	11	5	0.77	38	0.15	38	0.38	0.01	0.01	1	1	5	
A	30311	1	1097	31	52	0.9	66	74	269	13.66	10	5	ND	ND	3	2	6	2	9	1.06	0.08	1	11	0.13	18	0.01	95	0.13	0.01	0.01	1	1	5	
A	30312	58	6898	23	122	9.1	11	28	257	11.04	8	5	ND	ND	64	1	10	2	50	1.03	0.05	15	11	0.36	24	0.20	73	1.05	0.01	0.02	214	1	60	
A	30313	28	3236	37	102	4.8	13	55	973	18.11	4	5	ND	ND	53	1	10	2	23	3.49	0.10	12	12	0.34	31	0.05	200	0.43	0.01	0.01	229	1	20	
A	30314	3415	3439	89	124	26.4	6	24	532	13.36	100	5	ND	15	77	1	64	11	35	2.55	0.03	11	18	0.21	45	0.06	40	0.71	0.01	0.02	284	1	120	
A	30315	39	363	26	54	0.4	11	11	658	9.00	13	5	ND	ND	112	2	2	2	46	5.69	0.01	7	21	0.31	15	0.11	17	0.91	0.01	0.02	84	2	5	
A	30316	693	24336	33	476	56.8	57	23	821	8.90	20	5	ND	ND	67	5	18	11	46	3.24	0.01	12	24	0.25	28	0.03	92	0.98	0.01	0.02	366	1	1400	
A	30317	5	1704	463	248	25.0	16	43	10257	11.01	60	5	ND	ND	408	4	2	2	11	9.19	0.01	23	11	0.75	200	0.03	10	1.52	0.01	0.01	1	2	1940	
A	30318	4	6416	35	156	13.6	21	33	881	12.54	7	5	ND	ND	19	1	6	2	33	3.44	0.04	21	11	0.38	41	0.01	55	0.48	0.01	0.01	1	1	20	
A	30319	1	4812	31	3305	49.2	45	113	1063	25.97	2	5	ND	ND	5	33	13	2	23	0.20	0.01	1	28	0.49	20	0.01	54	0.23	0.01	0.01	1	1	110	

CERTIFIED BY : F. Rossbach

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph:(604)299-6910 Fax:299-6252

CERTIFICATE OF ANALYSIS

TO : J.C.STEPHEN EXPLORATION LTD.
746 REGAL CR.
VANCOUVER, B.C.

PROJECT : AURORA-CASAU JV
TYPE OF ANALYSIS : ASSAY

CERTIFICATE # : 90412A
INVOICE # : 10576
DATE ENTERED : 90-09-12
FILE NAME : JCS90412.A
PAGE # : 1

PREFIX	SAMPLE NAME	oz/t Au	oz/t Ag	% Cu	
P	30312			0.72	
P	30314		0.76		
P	30316	0.060	1.66	2.48	SKIP 1-16
P	30317	0.072	0.78		
P	30319		1.36		

CERTIFIED BY : R. Rossbach

SKIP 16

SKIP 14

SKIP 12

SKIP 10

12+00E

14+00E

16+00E

18+00E

20+00E

22+00E

24+00E

26+00E

28+00E

30+00E

20+00N

NOT TRAVERSED

CREEK

Scattered limestone fragments

No.2 post
COOT 1,2

30317

SKIP 15

SKIP 13

SKIP 11

SKIP 9

SEE MAP II

LAKE

CAMP

TRACTOR ROAD

LAKE

SKIP 8

SKIP 6

SKIP 4

SKIP 2

FOR LEGEND SEE MAP II

SKIP 7

SKIP 5

SKIP 3

SKIP 1

MAP#115 H/2 Doc# 092884 (245)

J.C. STEPHEN EXPLORATIONS LTD.

AURORA-CASAU JOINT VENTURE

SKIP 1-16 CLAIMS

NTS 115H/2

MAGNETICS & GEOLOGY

SCALE: 1:2,000 AUG. 1990

MAP I

092884

20N 16E 18E 20E

LEGEND

INTRUSIVES

- 10 Andesite dykes
- 9 Aplite, Feldspar porphyry dykes
- 8 Hornblende diorite
- 7 Granodiorite

METASEDIMENTS

- 6 Micaceous schist, Gneiss
- 5 Limestone
- 4 Skarn
- 3 Amphibolite
- 2 Quartzite
- 1 Gneiss,

30314 ∘ ROCK CHIP SAMPLE
+273 Magnetometer reading

Map#115 H/2 Doc#092884 (246)

J.C. STEPHEN EXPLORATIONS LTD.

AURORA-CASAU JOINT VENTURE

SKIP 1-16 CLAIMS

NTS 115 H/2

MAIN ZONE

GEOLOGY & MAGNETICS

SCALE 1:1,000 AUG. 1990

MAP II

092884