

MAP NO.: 115 II 7
ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 092776
MINING DISTRICT: Whitehorse
TYPE OF WORK: Diamond Drilling, Geophysics

REPORT FILED UNDER: Casau Explorations Limited

DATE PERFORMED: 28 August-12 October, 1989

DATE FILED: 18 December, 1989

LOCATION: LAT.: 61°17'N

AREA: Montana Mountain

LONG.: 136°55'W

VALUE \$:

CLAIM NAME & NO.: ACME 1-13(YA94105-117); HOP 1-102(YB25331-604, YB26329-56)

WORK DONE BY: J.C. Stephen, S. Feulgen

WORK DONE FOR: Casau Explorations Ltd

DATE TO GOOD STANDING:

	/

REMARKS: HOPKINS #14

Five BQ holes totalling 376.12 m were drilled to test the Hopkins copper-gold-magnetite skarn formerly drilled by Whitehorse Copper Mines Ltd. The drillholes tested four magnetic anomalies near the south end of the skarn structure. The drillholes proved that the skarn continues south across Franklin Creek and hole HA-2 intersected 2% copper over 7.8 m with individual bands of massive sulphide 1 m thick assaying as high as 11.36% Cu.

DIAMOND DRILLING REPORT

ON THE

HOP-ACME CLAIMS



Aishihik Lake Area, NTS 115 H/7
Latitude 61° 17'N Longitude 136° 55'W

Work Done: August 28 - October 12, 1989

By:

J.C. STEPHEN
SABINE FEULGEN, B.SC.

Of:

J.C. STEPHEN EXPLORATIONS LTD.

For:

CASAU EXPLORATIONS LTD.

Dated November, 1989

092776.

TABLE OF CONTENTS

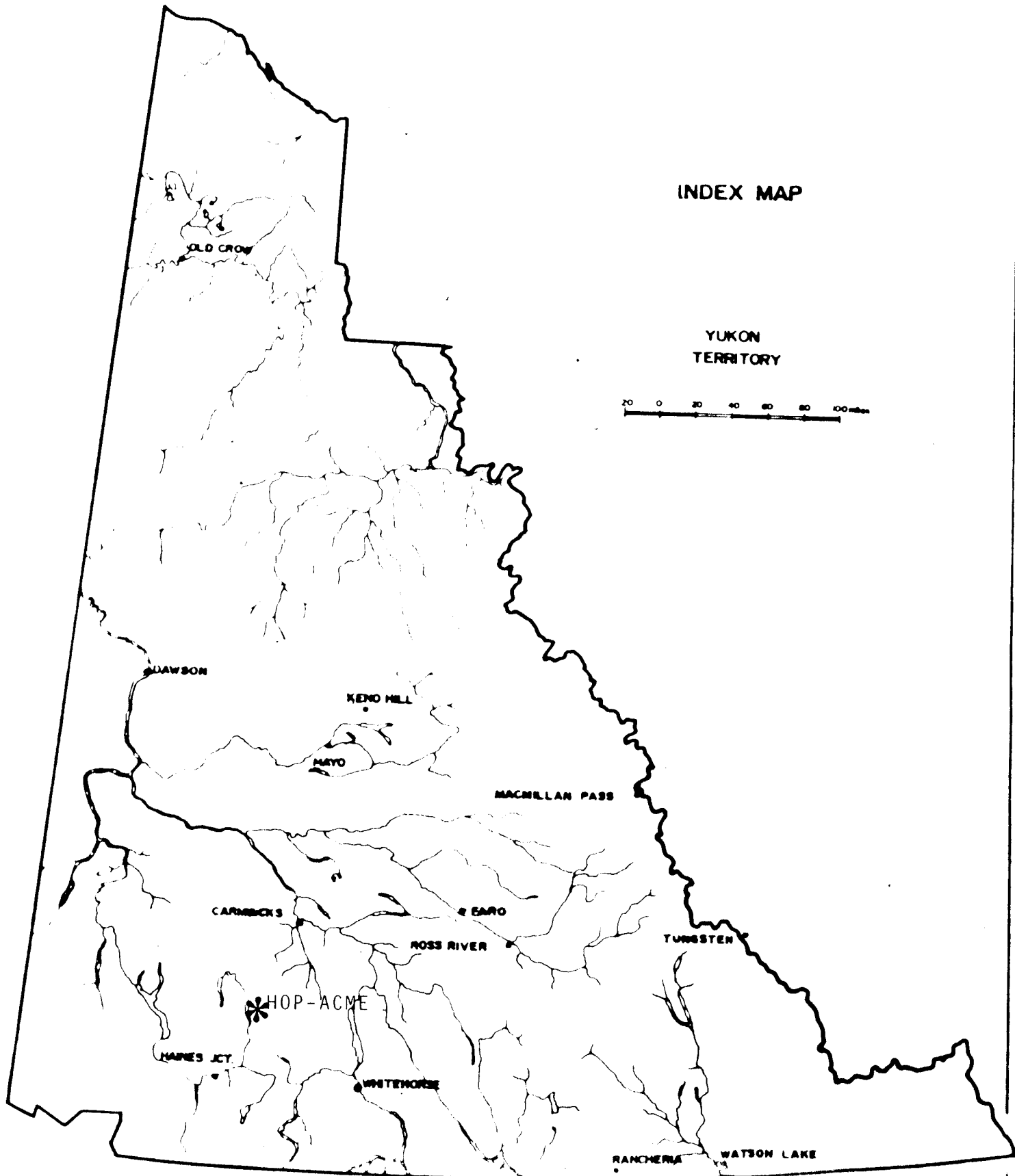
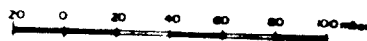
	Page
ACCESS AND TOPOGRAPHY	2
CLAIM STATUS	4
DIAMOND DRILLING Contractor and Equipment Summary Drill Hole Logs	6
1989 PROGRAM COST SUMMARY	17

APPENDIX I: DIAMOND DRILL LOGS

Figure	Title	Page
1	Index Map	1
2	Claim Map, 1:31,680	5
3	Vertical Diamond Drill Section 31+00N	following page 16
4	Vertical Diamond Drill Section 31+50N	following page "
5	Vertical Diamond Drill Section 32+00N	following page "
Map	Title	
I	Claim Locations, 1:10,000	in pocket
II	Topographic Map with Trenches and Drill Holes 1:1,000	of report

INDEX MAP

YUKON
TERRITORY



ACCESS AND TOPOGRAPHY

The HOP-ACME project is centered on copper-gold bearing skarn zones located near Hopkins Lake about 120 km northwest of Whitehorse, Yukon in the southwest corner of NTS map sheet 115H/7. The claim group is reached by following the Alaska Highway west from Whitehorse 125 km to the Aishihik Lake turnoff and by travelling north by gravel road 50 km to Hopkins Lake. This Aishihik Lake gravel road traverses the property south to north. Travel time to the property by road from Whitehorse is approximately 2.3 hours.

Hopkins Lake lies at an elevation of 3,250 feet (990 m) and the Aishihik road is at about 3,340 feet (1,018 m). Immediately east of the road a relatively flat area extends to the base of the main ridge. This area is underlain by varied glacial deposits including glacial lake silts and clay, small eslers, kames and pot holes with varied sand, gravel and boulder till deposits.

The main ridge rises from a base elevation of about 3,500 feet (1,065 m) to 4,300 feet (1,310 m) in the main survey grid area. This change in elevation is made up of successive steep rock faces generally capped by flat, sometimes swampy, or gently sloping areas covered by overburden. Several small gullies exist which mark small intermittent streams. These lack any steady water flow during the summer season.

East of the survey grid base line a relatively flat and somewhat swampy plateau reaches the headwaters of Franklin Creek. Beyond Franklin Creek to the east the ground slopes gently up to the ridge top near the east boundary of the claim group. Little or no outcrop is evident. Little is known of the make-up of the overburden. A few exposures of silt, sand and clay have been observed, all of which contain many boulders of widely varied size.

Franklin Creek drains the east half of the claim group and empties into the south end of Hopkins Lake. East of the base line the tributary creek banks are generally rounded, slopes are moderate and covered by brush with few trees. West of the base line to the base of the main ridge Franklin Creek occupies a small canyon like course with high rock outcrop particularly on the north bank. The south bank

between 29+00E and 26+00E is relatively steep and overburden covered. Drill holes HA 89-2 and 3, drilled from a tractor road constructed on this bank, encountered considerably more overburden than expected with coarse boulder till extending to 10 metres below the level of the water flow in Franklin Creek. It is postulated that this portion of the valley was occupied by a much larger preglacial valley which has been partially filled with glacial debris. Below 26+00E on the grid steep rock outcrop forms the small canyon outlet for the creek. Beyond the end of the canyon Franklin Creek drainage disappears below its boulder bed during periods of low water flow. It is evident from recent channeling and dispersion of silt that flooding can take place periodically below the canyon and down to the Aishihik road. The bridge on the Aishihik road may ultimately have to be upgraded.

Water for camp use and for drilling was obtained from Franklin Creek at the drill road crossing at about elevation 3,775 feet (1,151 m).

Access from the Aishihik road to the present camp and drill sites is by way of 1.5 km of steep, rough and narrow 4 wheel drive road. Corners on this road are presently sharp and it is not practical to move long loads by this route. It is expected that this road can be improved, and access can be had to additional drill sites, at moderate cost by taking advantage of the flat benches at various levels down the face of the ridge.

CLAIM STATUS

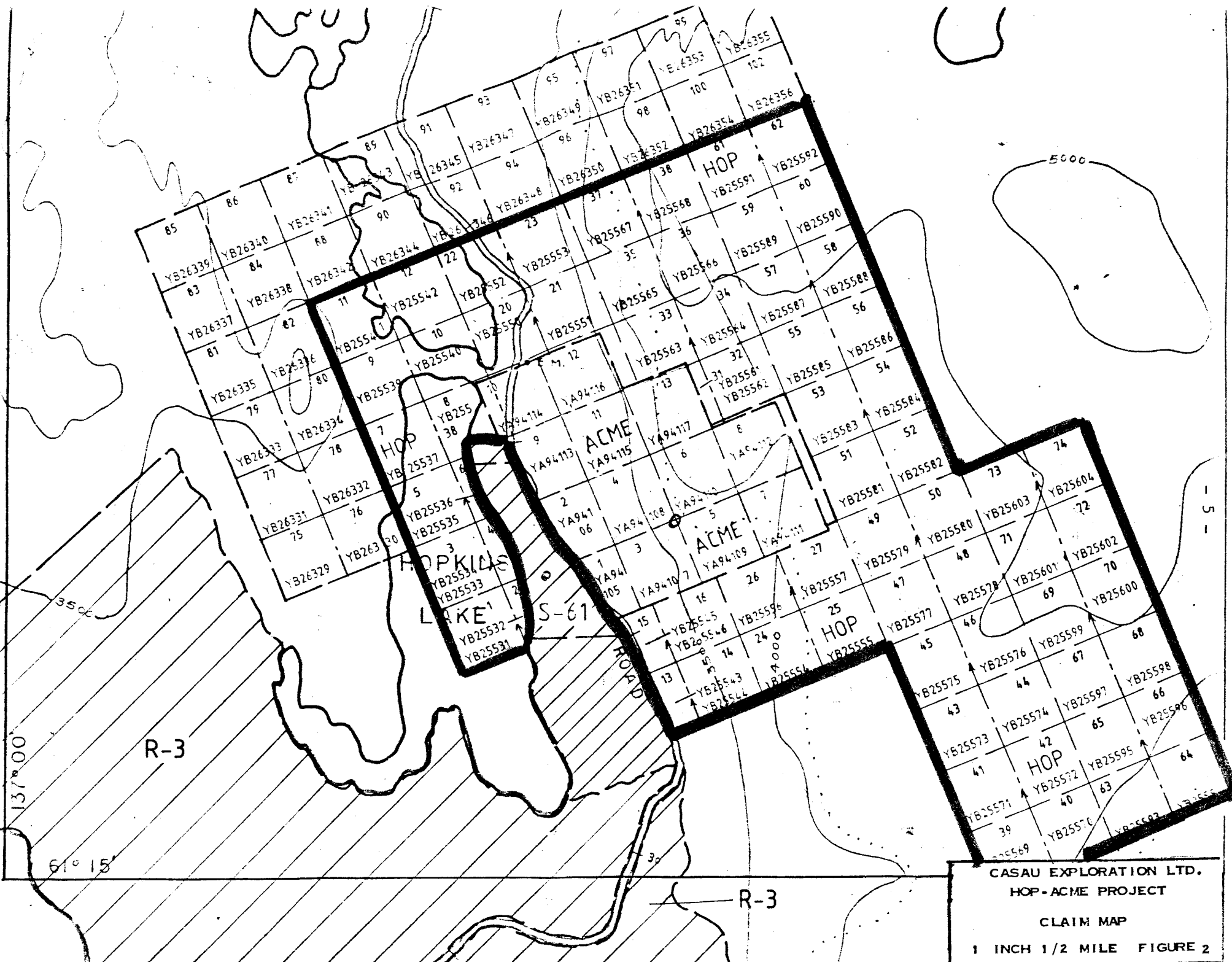
The HOP-ACME claim group, and the adjoining HOP 75-102 claim group, consist of the following Yukon Quartz claims:

<u>Claim</u>	<u>Record Number</u>	<u>Recording Date</u>	<u>Registered Owner</u>	<u>Current Expiry Date</u>
ACME 1-13	YA94105 - 117	Dec 30, 1985	Douglas M. Baird	December 30/89
HOP 1-74	YB25331 - 604	March 31, 1989	Casau Exploration	March 31/90
HOP 75-102	YB26329 - 356	June 29, 1989	Aurora Gold Ltd.	June 29/90

Casau optioned the ACME 1-13 claims in 1989 and had the HOP 1-74 claims staked as part of the optioned property.

Map 1 shows the claim locations as presently known from mapping and prospecting. More accurate location of posts will await further surveys.

The HOP 1-74 claim posts have been tagged and a program of line cutting, geological mapping, magnetic surveying and diamond drilling has been carried out.



CASAU EXPLORATION LTD.
 HOP-ACME PROJECT
 CLAIM MAP
 1 INCH 1/2 MILE FIGURE 2

DIAMOND DRILLING

Bids for a contract to carry out 1,200 feet of BQ diamond drilling were solicited late in August from Arctic Diamond Drilling, E. Caron Diamond Drilling and Kluane Diamond Drilling, all of Whitehorse, Yukon. Drillers were asked to bid a price to include mobilization, camp, and drill moves. Kluane was awarded the contract and 1,234 feet of BQ drilling in five holes was completed between September 23 and October 5. Kluane had mobilized equipment and constructed camp including setting up on the first hole during the period September 18-22. The drill and camp were moved out October 6.

Earlier drill holes had generally failed to find mineralization south of Hopkins Creek although diamond drill hole TH-8 had returned 1.27% Cu / 4.3 m and TH-9 had returned 3.06% Cu / 1 metre. Hole TH-5 on strike south of the main zone in TH-2 had been lost at 152 ft. in overburden. Percussion hole P-15, south of TH-2 had not been assayed though no geological information was available.

The Casau magnetometer survey indicated three separate positive anomalies crossing Franklin Creek. The first, 50 metres up-dip from hole TH-8, was interpreted to be magnetite within the skarn horizon at the projected normal dip of the main skarn.

HA 89-1

This first anomaly was explored by drill hole HA 89-1 which encountered magnetite skarn as expected but the extent of copper mineralization was disappointing. The following is a summary of the drill hole:

Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
0 - 20.9	Overburden. Many large boulders.				
20.9 - 42.42	Mica schist and quartzite.				
42.42 - 46.35	Magnetite-pyrrhotite skarn, minor chalcopyrite.	42.39-42.78	0.66	0.66	0.72
		42.78-44.82	0.133	2.00	0.07
		44.82-46.66	0.100	6.33	0.02
46.35 - 47.49	Feldspar porphyry sill.				
47.49 - 48.56	Magnetite-pyrrhotite skarn, minor chalcopyrite.	47.49-48.56	0.100	0.30	0.28
48.56 - 52.83	Calc-silicate skarn dense, very fine grained, white	48.56-49.26	0.100	2.66	0.15
		49.26-50.85	0.069	0.34	0.03
		50.85-52.38	0.069	2.06	0.22
52.83 - 53.69	Diopside, chalcopyrite pyrrhotite skarn.	52.38-53.69	0.860	35.66	2.70
53.69 - 59.61	Quartzite not sampled.				
59.61 - 60.48	Chalcopyrite, pyrrhotite skarn	59.61-60.71	0.800	18.66	3.72
60.48 - 60.71	Magnetite skarn, minor cpy.				
60.71 - 68.12	Quartzite and mica schist.				
68.12 - 69.69	Calc-silicate skarn, schist remnants.				
69.69 - 70.98	Banded magnetite skarn	69.69-71.09	0.034	1.37	0.26
70.98 - 75.57	Marble.				
75.57 - 76.20	Green epidote and calc-silicate skarn.				
76.20 - 77.05	Epidote calc-silicate skarn with cpy.	76.20-77.06	0.755	2.40	0.38
77.05 - 78.56	Marble.				

Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
78.56 - 89.91	Thin bedded fine grained calc-silicate skarn with small schist beds.				
89.91 - 92.14	Mica schist.				
92.14 - 95.09	Interbedded calc-silicate and schist, minor cpy.	93.81-94.88	.069	2.06	0.25
95.09 - 96.65	Mica schist.				
96.65 - 97.40	Epidote rich calc-silicate skarn with interbedded mica schist, minor cpy.	96.60-97.38	0.034	0.69	0.06
97.40 - 100.16	Mica schist.				
100.16 - 101.25	Fine grained calc-silicate skarn.				
101.25 - 104.83	Dark green actinolite skarn with light cpy mineralization.	101.24-103.02	0.446	5.49	0.52
		103.02-104.18	0.137	2.74	0.33
104.83 - 105.16	Thin bedded siliceous calc-silicate skarn.				
	End of hole.				

This hole had been extended well below the main skarn horizon because of the sporadic chalcopyrite mineralization in the siliceous calc-silicate horizon.

HA 89-2

The second drill hole tested a narrow intense anomaly east of the apparently barren percussion hole P-15 which had been drilled in a narrow magnetic low which might be due to faulting or to a dyke.

Hole HA 89-2 is summarized below:

Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
0 - 23.09	Overburden with large boulders.				
23.09 - 25.27	Magnetite skarn with pyrrhotite and chalcopyrite.	23.09-24.55	1.132	8.23	1.25
		24.55-25.27	0.412	3.42	0.38
		25.27-26.04	1.749	18.86	2.66
25.27 - 26.12	Green tremolite skarn with chalcopyrite and pyrrhotite				
26.12 - 26.67	Heavy chalcopyrite, pyrrhotite.	26.04-26.71	1.646	78.20	11.36
26.67 - 27.98	Magnetite skarn.	26.71-27.99	0.034	0.69	0.04
27.98 - 30.88	Light to dark green skarn with chalcopyrite, pyrrhotite and magnetite	27.99-29.57	0.412	11.66	1.68
		29.57-30.45	0.034	2.06	0.20
		30.45-30.88	0.343	22.29	2.26
30.88 - 32.85	Fine grained calc-silicate minor cpy.				
32.85 - 34.08	Actinolite skarn with pyrrhotite, chalcopyrite and molybdenite.	32.78-34.08	0.274	6.52	0.70
		Assayed 0.195% MoS ₂			
34.08 - 40.39	Feldspar porphyry dykes.				
40.39 - 41.96	Quartzite and mica schist.				
41.96 - 42.95	Skarn with magnetite, pyrrhotite and chalcopyrite.	41.96-42.95	0.240	4.12	0.54

Metres	Rock Type	Assays		
		Au g/t	Ag g/t	Cu %
42.95 - 50.05	Mica schist.			
50.05 - 50.45	Tremolite skarn, minor pyrr, cpy.			
50.45 - 57.94	Limestone and marble with thin skarn beds.			
57.94 - 67.29	Fine grained calc- silicate skarn, minor schist, very minor cpy.			
67.29 - 72.54	Feldspar porphyry dyke. End of hole.			

Overburden was deeper in this hole than expected and some of the skarn horizon may be eroded at this location. Bedrock was reached at an elevation 10 metres lower than the stream surface in Franklin Creek some 28 metres to the north of the hole. No significant copper occurs in the calc-silicate below the skarn horizon as had occurred in HA 89-1.

HA 89-3

This third hole was drilled to test for a south extension of the skarn cut by TH-2 (1.94% Cu/61') in spite of the evidence in HA 89-2 that the bedrock surface might be so deep as to have most of the skarn eroded. The alternative, to drill from the elevation of the previously lost hole TH-5, was not attractive since the hole would be much farther south in weaker magnetics and might have too much overburden to penetrate with the BBS-1 drill.

Drill hole summary:

Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
0 - 14.63	Overburden with boulders.				
14.63 - 16.00	Heavily oxidized broken fragments of diopside skarn with malachite.	14.63-16.00	0.274	8.57	0.47
16.00 - 17.50	Actinolite skarn with cpy, pyrr.	16.00-17.51	0.137	5.49	0.64
17.50 - 23.63	Mica schist, quartzite minor calc-silicate.				
23.63 - 23.96	Diopside skarn.				
23.96 - 34.56	Mica schist, quartzite, narrow skarn bands.				
34.56 - 39.14	Marble with band of skarn 0.5 m.				
39.14 - 39.60	Diopside skarn with pyrr, cpy, py.	39.14-39.60	0.309	13.03	1.39
39.60 - 39.75	Feldspar porphyry dyke.	No sample			
39.75 - 40.38	Diopside skarn, minor cpy.	39.74-40.39	0.034	1.37	0.16
40.38 - 40.81	Marble.	No sample			
40.81 - 41.27	Diopside skarn, pyrr. cpy.	40.81-41.29	0.034	0.69	0.06
41.27 - 43.15	Marble.	No sample			
43.15 - 44.10	Actinolite skarn, pyrr, cpy, py.	43.15-44.10	0.034	1.71	0.24
44.10 - 64.7	Mainly calc-silicate, thin bedded grey to greenish, minor schist.				
64.7 - 65.2	Fine grained aphanitic latite dyke.				
	End of hole.				

Bedrock was encountered 5 metres below creek level located 30 metres to the north. About 10 metres of skarn has probably been eroded at this location. The oxidized fractured nature of the bedrock suggests a north trending fault may be responsible for the loss of hole TH-5 which is located to the southwest, and for the apparent termination of the large feldspar porphyry dyke which lies to the northeast. The hole does help to confirm that the magnetic anomaly is due to mineralized skarn which extends south beyond Franklin Creek.

HA 89-4

The magnetometer survey indicates the mineralized skarn cut by TH-2 terminates about 100 metres to the north. A magnetic low and an apparent parallel magnetic high structure located a short distance west suggested the offset portion of the mineralized skarn. Hole HA 89-4 investigated this anomaly and is summarized below:

Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
0 - 2.94	Overburden.				
2.94 - 18.29	Mica schist, oxidized fault zone, 11.86-12.24.				
18.29 - 19.28	Calc-silicate, minor cpy	18.29-19.28	0.103	0.34	0.04
19.28 - 20.61	Actinolite-diopside skarn, pyrr, cpy.	19.28-20.61	0.137	3.43	0.40
20.61 - 21.57	Actinolite skarn, heavy pyrr, cpy.	20.61-21.57	0.652	20.24	2.52
21.57 - 24.95	Magnetite, pyrrhotite skarn, minor cpy.	21.57-22.74	0.034	0.69	0.10
		22.74-23.85	0.034	0.34	0.01
		23.85-24.95	0.034	1.03	0.13
24.95 - 25.25	Diopside skarn, light green.	24.95-25.25	0.034	132.40	0.25
25.25 - 26.01	Calc-silicate, minor pyrr, cpy.	25.25-26.03	0.034	2.40	0.18
26.01 - 26.54	Diopside skarn, talc on fractures.	26.03-26.52	0.034	1.71	0.16

Metres	Rock Type		Assays		
			Au g/t	Ag g/t	Cu %
26.54 - 26.94	Magnetite pyrrhotite skarn, cpy.	26.52-26.94	0.514	10.63	1.00
26.94 - 28.33	Diopside skarn, minor cpy.	26.94-28.33	0.034	2.74	0.24
28.33 - 28.75	Magnetite skarn, pyrr, cpy.	28.33-28.75	0.240	6.17	0.71
28.75 - 29.20	Actinolite skarn, heavy cpy.	28.75-29.20	2.504	29.15	3.38
29.20 - 29.96	Magnetite pyrrhotite skarn, minor cpy.	29.20-29.96	0.171	2.06	0.30
29.96 - 30.53	Feldspar porphyry dyke.	No sample			
30.53 - 31.20	Pyrrhotite magnetite skarn, cpy.	30.53-31.20	0.069	1.03	0.45
31.20 - 32.00	Limestone, minor pyrr, cpy.	31.20-32.00	0.103	1.03	0.14
32.00 - 32.90	Diopside skarn, minor pyrr, cpy.	32.00-33.40	0.034	0.34	0.07
32.90 - 38.19	Mica schist, quartzite.				
38.19 - 38.82	Marble with magnetite, pyrrhotite, minor cpy, py.	38.12-38.82	0.377	0.34	0.12
38.82 - 39.50	Feldspar porphyry dyke.				
39.50 - 42.00	Calc-silicate with beds schist.				
42.00 - 50.96	Mica schist.				
50.96 - 52.25	Calc-silicate.				
52.25 - 53.57	Marble.				

Metres	Rock Type		Assays		
			Au g/t	Ag g/t	Cu %
53.57 - 53.95	Pyrrhotite skarn	53.57-53.95	0.171	0.69	0.44
53.95 - 54.82	Actinolite skarn.	53.95-54.82	0.034	0.34	0.09
54.82 - 55.95	Pyrrhotite skarn.	54.82-55.96	0.034	0.34	0.38
55.95 - 59.86	Marble.				
59.86 - 61.14	Calc-silicate.				
61.14 - 63.23	Marble.				
63.23 - 66.10	Actinolite skarn.				
66.10 - 66.20	Quartzite.				
66.20 - 72.24	Calc-silicate.				
	End of hole.				

This skarn carries much more pyrrhotite than usual with magnetite in the upper sections giving way to pyrrhotite lower down. Copper bearing sections are narrow.

HA 89-5

This last hole was drilled vertically from the same site to trace the down dip extension of the skarn into the postulated fault area and to explore for the dip of the fault encountered at 12 metres in HA 89-4.

Metres	Rock Type	Assays		
		Au g/t	Ag g/t	Cu %
0 - 2.58	Overburden.			
2.58 - 9.45	Schist.			
9.45 - 14.23	Fine grained intrusive dyke.			

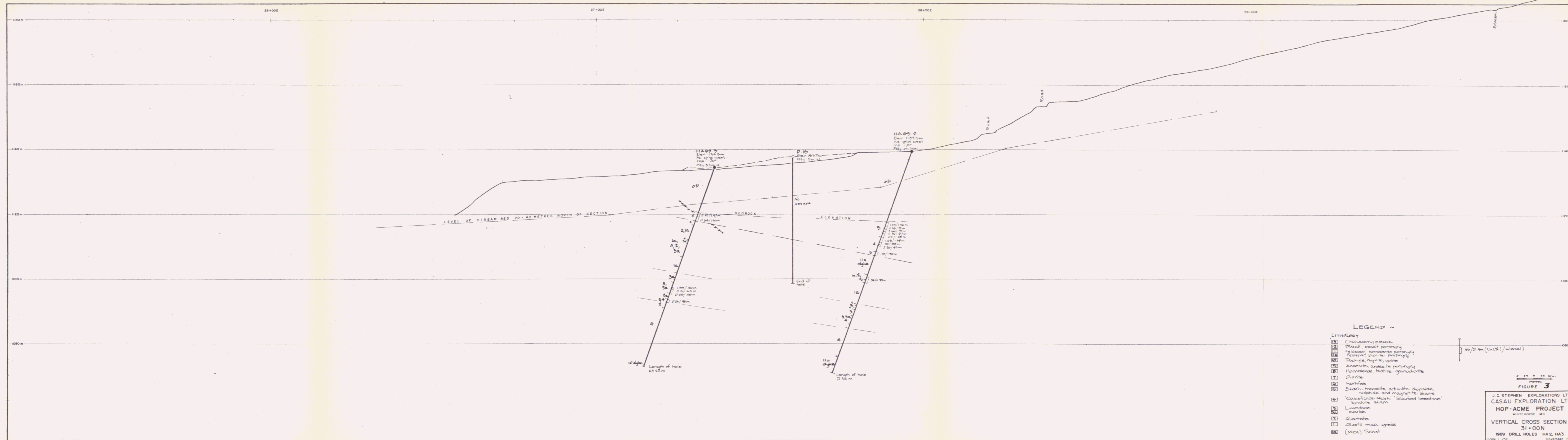
Metres	Rock Type	Assays			
		Au g/t	Ag g/t	Cu %	
14.23 - 18.08	Schist.				
18.08 - 18.94	Fine grained intrusive dyke.				
18.94 - 21.36	Quartzite with dyke from 20.2 - 20.73.				
21.36 - 35.97	Variable skarn types, calc-silicate with actinolite, minor cpy, pyrite.	21.36-22.02	0.069	2.40	0.23
	Dark green skarn, minor pyrr, cpy, py.	22.02-22.62	0.034	1.71	0.20
22.65 - 22.97	Calc-silicate.	22.62-22.97	0.034	0.34	0.03
22.97 - 23.94	Actinolite skarn.	22.97-23.94	0.171	2.06	0.31
23.94 - 24.22	Actinolite skarn with cpy and py.	23.94-24.23	0.823	19.55	2.06
24.22 - 25.06	Diopside skarn.	24.23-25.08	0.103	2.74	0.29
25.06 - 29.15	Calc-silicate.	No sample			
29.15 - 29.44	Brecciated limestone calc-silicate, qtz carbonate veining.	28.70-29.44	0.034	0.34	0.04
29.44 - 31.10	Actinolite skarn.	29.44-31.10	0.034	1.03	0.09
31.10 - 32.31	Actinolite skarn, cpy, py.	31.10-32.34	0.034	0.69	0.08
32.31 - 32.84	Diopside skarn.	32.34-32.84	0.034	0.34	0.07
32.84 - 33.39	Calc-silicate, splashes cpy and py.	32.84-33.37	0.514	4.80	0.50
33.39 - 34.52	Magnetite pyrite skarn, magnetite, pyrrhotite, and chalcopyrite.	33.37-34.52	0.103	1.03	0.23
34.52 - 35.97	Calc-silicate.				

Metres	Rock Type	Assays		
		Au g/t	Ag g/t	Cu %
35.97 - 37.07	Quartzite, cherty argillite.			
37.07 - 39.66	Oxidized fault zone in schist.			
39.66 - 40.33	Aplitic dyke.			
40.33 - 47.81	Feldspar porphyry dyke.			
47.81 - 49.50	Mica schist.			
49.50 - 50.35	Feldspar porphyry dyke.			
50.35 - 50.93	Mica schist.			
50.93 - 59.60	Marble.			
59.60 - 60.96	Thin bedded calc-silicate.			
	End of hole.			

The strong oxidized fault zone cut at about 38 metres is considered to be the same as that at 12 metres in HA 89-4. This fault is a late feature and probably corresponds to the fault in the gully on the steep north bank of Franklin Creek at about 26+80E.

A zone of calc-silicate, massive, fine grained, creamy white between 25.15 and 28.65 metres contains apparently partially digested fragments of a darker skarn and may be a late feature in the alteration of the system. A similar zone occurred in HA 89-2 at 30.9 to 32.8 metres. Mineralization occurring in these sections seems to be hosted in the older (?) fragments only.

The 2.06% copper assay at 24 metres is considerably higher than expected from the estimated 4% combined chalcopyrite and pyrite mineralization. Future examination of selected samples should be made for possible bornite mineralization.



- LEGEND**
- LITHOLOGY**
- 1 Chalcidony breccia
 - 2 Basalt, basalt porphyry
 - 3 Feldspar hornblende porphyry
 - 4 Feldspar biotite porphyry
 - 5 Trachyte, rhyolite, apite
 - 6 Andesite, andesite porphyry
 - 7 Hornblende, biotite, granodiorite
 - 8 Diorite
 - 9 Hornfels
 - 10 Skarn - tremolite, actinolite, diopside, sulphide and magnetite skarn
 - 11 Calcilicate skarn, Silicified limestone
 - 12 Epidote skarn
 - 13 Limestone
 - 14 Marble
 - 15 Quartzite
 - 16 Quartz mica gneiss
 - 17 (Mica) Schist

FIGURE 3

J.C. STEPHEN EXPLORATIONS LTD.
CASAU EXPLORATION LTD.
HOP-ACME PROJECT
WHITEHORSE MD.

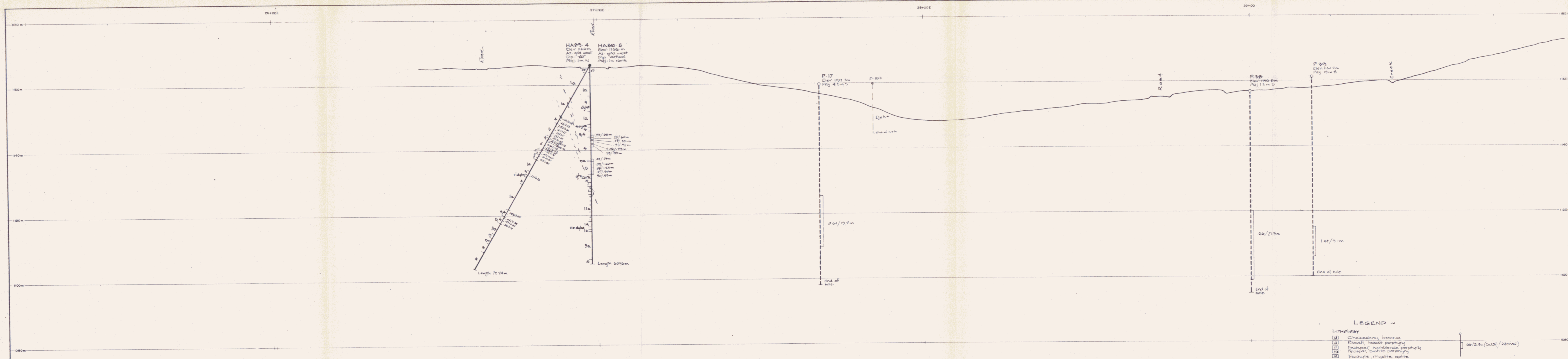
VERTICAL CROSS SECTION
31+00N

1989 DRILL HOLES HA 2, HA3
November 1989



- LEGEND ~**
- LITHOLOGY**
- 1 Chalcodony breccia
 - 2 Basalt basalt porphyry
 - 3 Feldspar hornblende porphyry
 - 4 Feldspar, biotite porphyry
 - 5 Trachyte, rhyolite, apite
 - 6 Andesite, andesite porphyry
 - 7 Hornblende, biotite granodiorite
 - 8 Diorite
 - 9 Hornfels
 - 10 Skarn - tremolite, actinolite, diopside, sulphide and magnetite skarn
 - 11 Calcisilicate skarn, Silicified limestone, Epidote skarn
 - 12 Limestone
 - 13 Manganese
 - 14 Quartzite
 - 15 Quartz mica gneiss
 - 16 (Mica) Schist

J.C. STEPHEN EXPLORATIONS LTD.
 CASAU EXPLORATION LTD.
HOP-ACME PROJECT
 WHITEHORSE, MD.
 VERTICAL CROSS SECTION
 31+50N
 1989 DRILL HOLE HA 1
 Scale 1:250 November 1989



- LEGEND**
- Lithology**
- 1 Chaledony breccia
 - 2 Plagioclase basalt porphyry
 - 3 Feldspar hornblende porphyry
 - 4 Feldspar, biotite porphyry
 - 5 Trachyte, rhyolite, apite
 - 6 Andesite, andesite porphyry
 - 7 Hornblende, biotite granodiorite
 - 8 Diorite
 - 9 Hornfels
 - 10 Skarn - tremolite actinolite diopside sulphide and magnetite skarns
 - 11 Calcic skarn 'Silicified limestone'
 - 12 Epidote skarn
 - 13 Limestone
 - 14 Marble
 - 15 Quartzite
 - 16 Quartz mica gneiss
 - 17 (Mica) Schist

FIGURE 5

J.C. STEPHEN EXPLORATIONS LTD.
 CASAU EXPLORATION LTD.
 HOP-ACME PROJECT
 WHITEHORSE M.D.
 VERTICAL CROSS SECTION
 32+00N
 1989 DRILL HOLES HA4, HA5
 Scale 1:250 November 1989

1989 PROGRAM COST SUMMARY
HOP - ACME GRID, **DIAMOND DRILLING,**
SEPTEMBER, OCTOBER 1989

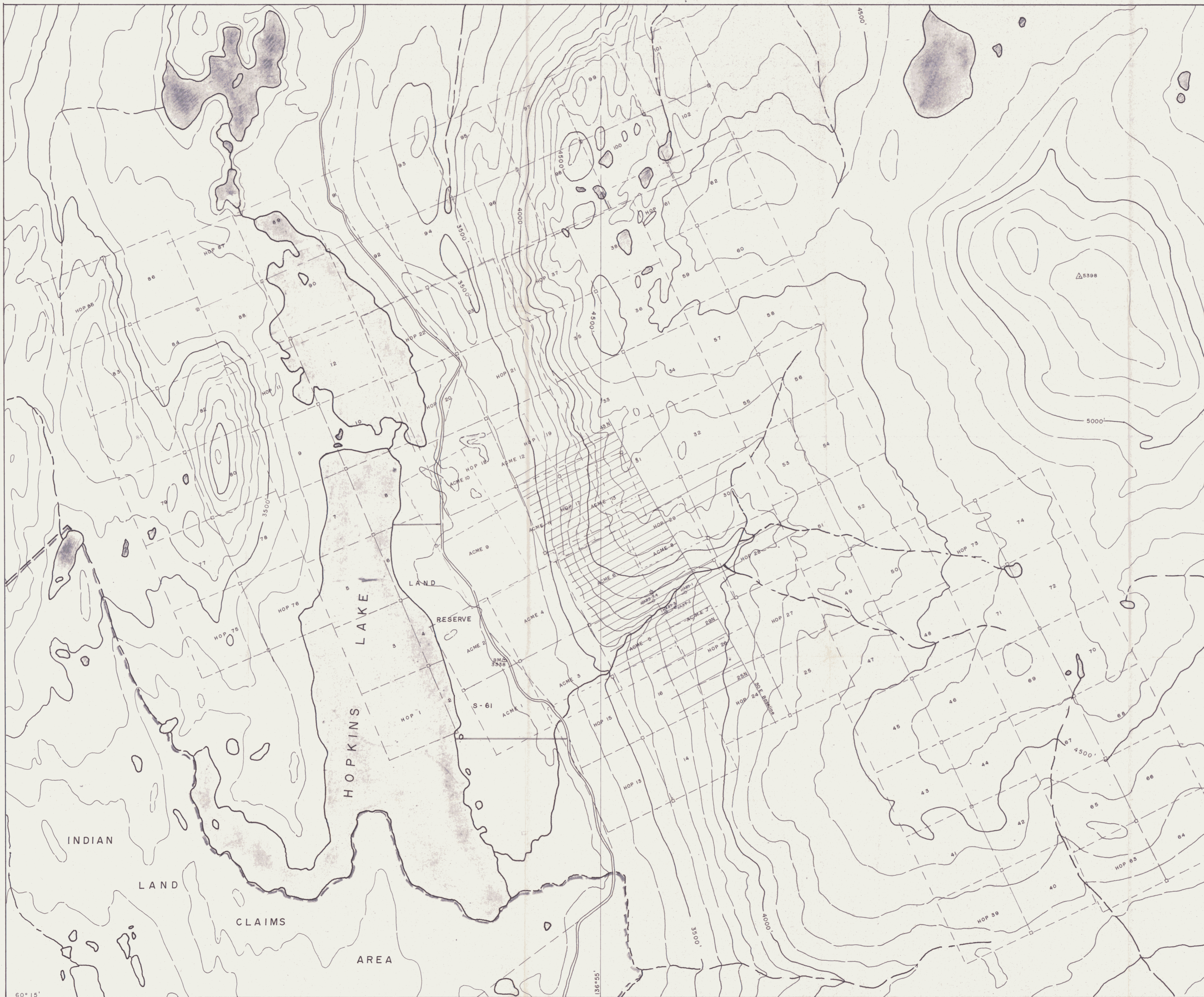
<u>Item</u>	<u>Amount</u>	
Diamond Drilling		
Mob and demob	2,000.00	
Overburden, 198' at \$28	5,544.00	
Core, 1040' at \$28	29,120.00	
Mud Mixing, 18 hrs at \$30	540.00	
Mud, 30 bags at \$14	420.00	
2 pails DD2000 at \$128.44	256.88	
Machine Time, 8.5 hrs at \$25	212.50	
Reaming, 11 hrs at \$30	330.00	
Core Boxes, 41 at \$9	369.00	
Lids, 25 hrs at \$2.65	66.25	38,858.63
Core Logging		
Drill Supervision		
S. Feulgen, 11 days at \$200	2,200.00	
J.C. Stephen, 6 days at \$250	1,500.00	3,700.00
Sample Analysis		
Rosbacher Labs	1,224.23	
Chemex Labs (Inc. Surface Samples)	871.56	
Freight on Samples	164.00	2,259.79
		\$44,818.42

Respectfully submitted,

J.C. Stephen Explorations Ltd.



J.C. Stephen, President



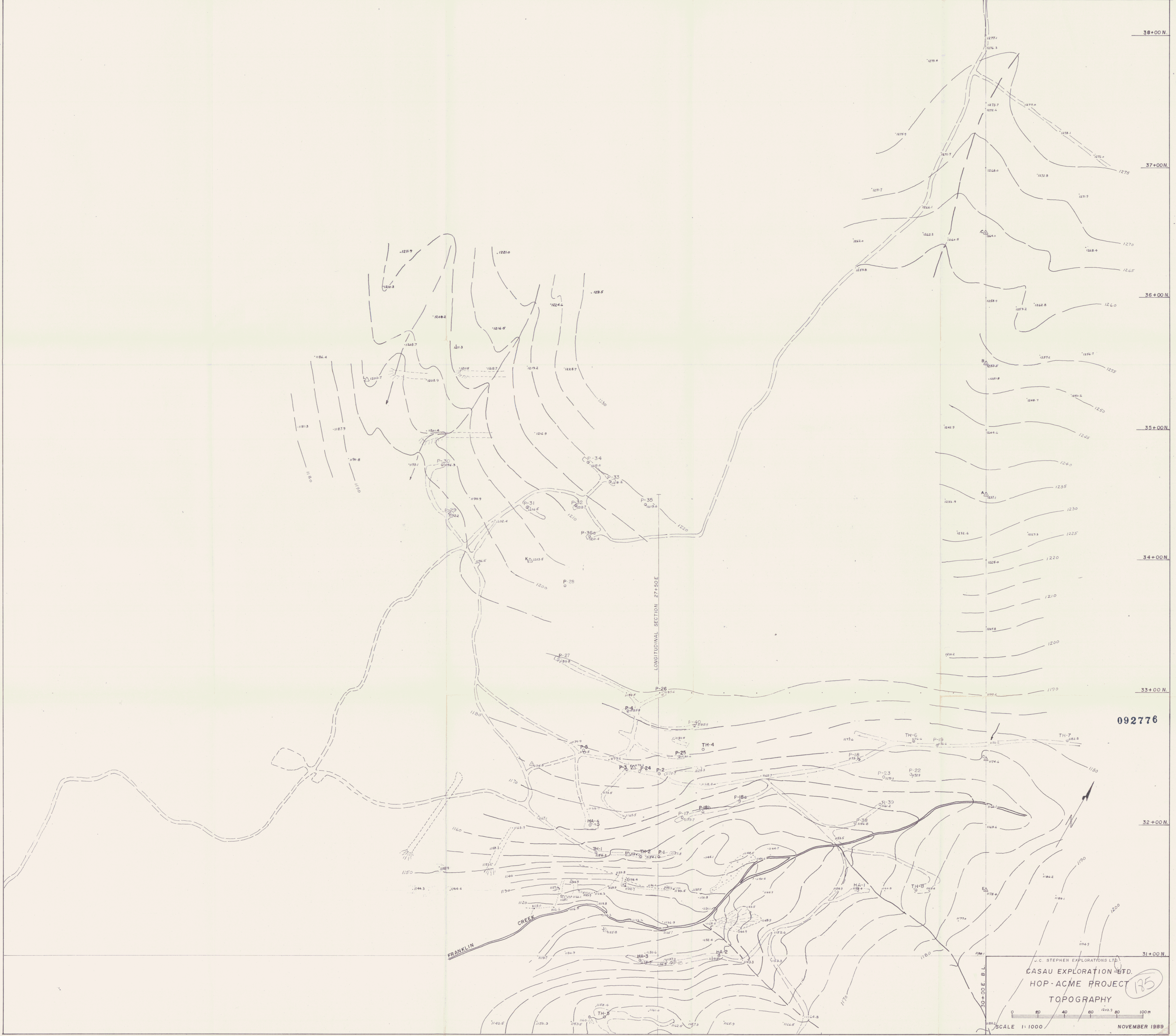
092776



J.C. STEPHEN EXPLORATIONS LTD.
CASAU EXPLORATION LTD.
 HOP-ACME OPTION & JOINT VENTURE
 WHITEHORSE M.D. NTS 115H/7
CLAIM LOCATIONS

SCALE 1:10,000
 ELEVATIONS IN FEET
 OCTOBER 1989

MAP I



38+00 N.

37+00 N.

36+00 N.

35+00 N.

34+00 N.

33+00 N.

32+00 N.

31+00 N.

092776

J. C. STEPHEN EXPLORATIONS LTD.
 CASAU EXPLORATION LTD.
 HOP-ACME PROJECT
 TOPOGRAPHY

SCALE 1:1000
 NOVEMBER 1989

MAP II

APPENDIX I

DIAMOND DRILL LOGS

HA 89-1, 2, 3, 4, 5

CASAC EXPLORATION LTD.
DIAMOND DRILL RECORD

Length	105.16 m	Contractor	Kluane Drilling Ltd.	Hole No.	HA-89-1
Bearing	GRID WEST	Core Size	BQ Casing	Project	Hop-Acme Claims
Dip	-70°	Started	12:01 pm, Sept. 23 '89		
Lat.	3150 N	Completed	03:00 am, Sept. 27 '89	NTS Map	115 H/7
Dep.	2902 E	Logged by	S. Feulgen, J.C. Stephen	Claim	
Elev.	1158.4	Stored	Geoff Lattin	# Pages	5
O.B. Thickness	11.58 m		WHITEHORSE	Purpose	-to test geophysical anomaly

Footage (m)		DESCRIPTION	Sample#	From	To	Length(m)	Assays			
From	To						Au(g/t)	Ag(g/t)	Cu(%)	MoS ₂ (%)
0.00	11.58	<u>overburden</u> ; (0.00-11.26) no record; (11.26-11.58) recovered fragments (schist, diorite, granite) in core box								
11.58	20.90	boulder fragments, schist fragments, <u>broken bits of core</u>								
20.90	39.47	grey to grey brown, <u>mica schist</u> ; bedding/schistosity perpendicular to core; (at 24.30, 26.20) small specks of chalcopyrite, pyrite, and magnetite on fracture planes; (25.75-26.75) calc silicate skarn interbedded with mica schist; (26.64-26.70) magnetite skarn with pyrite and pyrrhotite, enclosed by calc silicate skarn bands; (29.30-29.80) fragmented, oxidized schist; (29.80-30.00) quartzite band; (30.00-30.05) dyke; (31.30-31.60) interbedded quartzite and schist; (32.08-32.78) quartzite; (at 32.60) thin bands of actinolite calc silicate skarn; (32.98-33.00) calc silicate skarn; (34.00-34.15) fragmented, oxidized schist; (35.74-35.78) tremolite-rich calc silicate skarn band; (35.68-36.68) quartzite with interbedded schist; (36.93-36.95) actinolite-rich calc silicate skarn band; (37.72-37.92) quartzite; (38.47-38.48) graphite band								
39.47	42.42	<u>quartzite</u> , some sericitic alteration and micaceous bedding, minor pyrite on fracture planes; (41.10-41.15) fragmented material, gouge (small fault?); (41.65-41.75) fragmented and oxidized; (41.75-42.00) thin beds of epidote within calc silicate skarn, minor chalcopyrite mineralization (<0.5%); (42.30-42.38) fragmented material (sheared and crushed) chlorite-talc mineralization								
42.42	46.35	<u>magnetite-pyrrhotite skarn</u> ; background rock black (carbonaceous?), fine grained, dense; magnetite seen as blebs; pyrrhotite seen in bands and disseminated splashes; magnetite 40%, pyrrhotite 5-10%, chalcopyrite <0.5%; (at 42.43, 42.50, 42.52, 42.55) light blueish-green mineral (serpentine family); (at 42.42, 42.52, 42.53) thin fractures (0.2cm)	30001	42.39	42.78	0.39	0.66	0.66	0.72	

		filled with chalcopyrite; (42.42-42.74) primarily pyrrhotite, some minor chalcopyrite (42.74-42.88) primarily magnetite; (42.88-43.03) pyrrhotite intergrown with magnetite; (43.03-43.14) calc silicate skarn with very minor chalcopyrite in thin fractures; (43.14-46.35) primarily magnetite with carbonaceous material and minor disseminated pyrrhotite and other unidentified sulphides (too small to identify); (at 43.20) soft, glassy deep sea blue mineral (fibrous)	30002	42.78	44.82	2.04	0.133	2.00	0.07
			30003	44.82	46.66	1.84	0.10	6.33	0.02
46.35	47.49	<u>feldspar porphyry sill</u> ; light greyish-green, fractured and pitted; phenocrysts equigranular, white and micaceous; contact steep and irregular, 90° to the horizontal axis of the core; grades into calc silicate skarn							
47.49	48.56	<u>magnetite-pyrrhotite</u> skarn with very minor specks of chalcopyrite (<0.5%) and some pyrite; (47.49-47.95) primarily magnetite, intergrown with pyrrhotite, appears somewhat banded; (47.95-48.15) decrease in mineralization, very little magnetite; (48.15-48.28) grey-greenish-yellow talc-serpentine minerals filling possible fracture in calc silicate skarn; (48.28-48.62) mineralization decreasing; (at 48.43) band of pyrrhotite (2.5cm), no observable magnetite, skarn grades into calc silicate skarn.	30004	47.49	48.56	1.07	0.10	0.30	0.28
48.56	52.83	<u>calc silicate skarn (breccia?)</u> , creamy white with fragments of light green to grey blue mineral, some serpentine, minor blebs of pyrrhotite with occasional specks of pyrite and chalcopyrite (<1%) intergrown with the pyrrhotite; (at 50.95, 51.17, 51.31, 51.43) chalcopyrite mineralization; (48.56-48.94) calc silicate skarn, dirty grey tinge; (48.94-49.26) calc silicate skarn and magnetite-pyrrhotite skarn, bands of disseminated magnetite and pyrrhotite, minor pyrite (core blueish-grey in colour); (at 51.88) alteration zone with soft green mineralization 2cm in length; (52.40-52.47) blueish-grey chalcopyrite-rich calc silicate skarn, chalcopyrite disseminated; (52.47-52.83) greenish-grey brecciated calc silicate skarn with minor disseminated chalcopyrite (0.5%), some soft white alteration minerals	30005	48.56	49.26	0.70	0.10	2.66	0.15
			30052	49.26	50.85	1.59	0.069	0.34	0.03
			30053	50.85	52.38	1.53	0.069	2.06	0.22
52.83	53.69	greenish <u>diopside-chalcopyrite-pyrrhotite</u> skarn, massive chalcopyrite mineralization seen as disseminated particles, at times chalcopyrite (5%) intergrown with pyrrhotite (3%); (at 52.92, 52.93, 52.95, 52.96, 52.97) distinct beds of pyrrhotite seen (0.5cm width); (at 53.30) less heavily mineralized, whiteish-grey, slightly fractured, very little pyrrhotite (1%), chalcopyrite (1-2%); (at 53.57) skarn grading into quartzite	30006	52.38	53.69	1.31	0.860	35.66	2.70
53.69	59.61	thinly bedded, lightly fractured <u>quartzite</u> , greyish-green beds alternating with black-dark green beds, some biotite beds (very occasional minor pyrite coating on fracture planes); (56.58-57.08) more siliceous quartzite, frequency of biotite rich bands begins to increase;							
				53.69	59.61	5.92	NO SAMPLE		

59.61	60.48	(at 57.92) bedding dip changes (5°), less siliceous, less biotite-rich greenish <u>chalcopyrite-pyrrhotite skarn</u> , chalcopyrite (3-5%) present as disseminated particles throughout section, at times chalcopyrite intergrown with pyrrhotite (3-5%), section lightly fractured, fractures appear filled with quartz, mineralization appears heaviest in the initial 20cm and the final 20cm of the section	30007	59.61	60.71	1.10	0.80	18.66	3.72
60.48	60.71	abrupt contact to granular greenish-black <u>magnetite skarn</u> with minor chalcopyrite and pyrrhotite as disseminated particles and blebs							
60.71	61.96	thinly bedded <u>quartzite</u> with biotite, quartz, and dark black and occasional green beds alternating, some minor sericitic alteration appears to grade into black schist							
61.96	64.68	black <u>schist</u> with bands (beds) of quartz (1cm width), quartzite, green calc silicate skarn, biotite, minor pyrite on fracture planes; (62.44-62.54) section of schist with brown nodules (garnets?)							
64.68	68.12	light grey to greenish, thinly bedded <u>quartzite</u> , some sericitic alteration in places, some interbedded black schist and biotite beds, minor fracturing, minor pyrite as disseminated specks							
68.12	68.67	light green (<u>epidote?</u>), fine grained, <u>calc silicate skarn bands</u> (3-15cm in width) alternating with black mica schist bands (3-12cm in width)							
68.67	68.78	<u>magnetite-pyrrhotite skarn</u> (greenish-black) with white specks; minor mineralization							
68.78	69.10	light green, fine grained, thinly bedded, <u>calc silicate skarn</u> with mica schist beds (minor) and minor dark green (actinolite?-rich) beds							
69.10	69.45	fragmented <u>black skarn</u> with light green to white beds (soft alteration minerals-talc?)							
69.45	69.69	<u>calc silicate skarn</u> (sea greenish-white) with thin dark grey and white bands, very mushy at end of section (soft alteration minerals-like gouge)							
69.69	70.98	well banded/bedded black <u>magnetite skarn</u> (sea green mineral-epidote?, occasional schist, and black non-magnetic beds interspersed throughout section) with minor pyrrhotite mineralization; (69.69-69.94) magnetite blebs intermixed with epidote? blebs (brecciated?), minor quartz filled fracture, minor pyrrhotite, small splashes (very occasional) of chalcopyrite, disseminated pyrite on fracture planes; (70.52-70.98) increase in pyrrhotite (5-10%) and chalcopyrite (1%) but still minor mineralization, magnetite (20%) seen as distinct bands (0.5cm in width)	30008	69.69	71.09	1.40	0.034	1.37	0.26
70.98	73.55	whiteish <u>limestone (marble)</u> with light grey banding, some bands and fractures infilled with dark black material, minor epidote beds; (70.98-71.08) gradual transition from skarn to limestone, minor pyrrhotite, chalcopyrite; (at 71.79, 73.05, 73.29) minor reddish-brown skarn beds (2-5cm in width); (at 73.05) very tiny splash of chalcopyrite on contact between skarn/limestone							

73.55	75.57	whiteish <u>limestone</u> with light grey thin banding with minor epidote filling small fractures; (75.12-75.14) reddish-brown skarn bed (garnet?)							
75.57	75.82	<u>epidote</u> skarn with minor quartz beds, some soft white beds (talc?) and actinolite							
75.82	76.20	<u>calc silicate (tremolite-rich?) skarn</u> with bands of quartz							
76.20	77.05	fine grained, dark green, <u>epidote</u> skarn with minor disseminated chalcopyrite especially from 76.49-76.56, mineralized section appears bounded by quartz veins; (76.59-76.69) brownish-red garnet-rich calc silicate skarn	30009	76.20	77.06	0.86	0.755	2.40	0.38
77.05	78.56	creamy white <u>marble</u> with light grey to dark green banding in places, some minor fractures filled with quartz							
78.56	87.11	thinly bedded <u>calc silicate (tremolite?) skarn</u> with light green (diopside?) to dark green (actinolite) to dark grey banding; (78.58-79.08, 79.90-80.30) sections pitted and having black mineral specks, some intermixing with marble; (80.40-80.75) less siliceous, small splashes of pyrrhotite; (84.29-84.31) black band containing small specks of pyrrhotite; (at 85.00) blackish band containing very minute specks of pyrrhotite and chalcopyrite; (at 86.32) blackish band containing very minute specks of sulphide minerals							
87.11	87.31	finely banded black <u>mica schist</u>							
87.31	89.91	well banded, medium to light green <u>actinolite-epidote calc silicate skarn</u> , some quartz as bands and infilling fractures; occasional pyrite as coating on fracture planes, some very small splashes of chalcopyrite (<0.5%), black mica schist beds (3-8cm in width) increasing towards end of section; (89.59-89.72) very light chalcopyrite mineralization (disseminated) to larger blebs of chalcopyrite intergrown with pyrrhotite (associated with epidote-rich calc silicate skarn following mica schist bed of 8cm width)							
89.91	92.14	fine grained dark green-brown green <u>mica schist</u> , section begins following a 5cm quartz band, pyrite on fracture faces, some bands of slightly siliceous material at times; (89.91-90.41) schist mixed with epidote calc silicate skarn, lightly mineralized with pyrrhotite and minor pyrite							
90.14	95.09	<u>interbedded epidote</u> skarn and mica schist, minor pyrite disseminated in skarn and on fracture planes, minor disseminated chalcopyrite in epidote-rich calc silicate skarn and infilling fracture	30010	93.81	94.88	1.07	0.069	2.06	0.25
95.09	96.65	black <u>mica schist</u> with light green bands (epidote/diopside?), minor splashes of pyrite							
96.65	97.40	<u>epidote-rich calc silicate skarn</u> ; (96.96-97.40) interbedded with mica schist, pyrite and chalcopyrite observed surrounding carbonate filled fractures and within carbonate filled fractures, one band of pyrite observed to be 0.5cm in width, alteration at end of section	30011	96.60	97.38	0.78	0.034	0.69	0.06

98.46	100.16	black mica schist; (98.08-98.38) quartz vein running length of core (0.5cm in width); (98.39-98.93) mottled appearance (calc silicate skarn intermixed with schist), quartz filled fractures running parallel to the length of the core, minor specks of pyrite, pyrrhotite in calc silicate skarn							
100.16	100.90	medium green (epidote-rich?) calc silicate skarn and mica schist (biotite-rich), speckled appearance; (100.49-100.51) calcite vein with stringers							
100.90	101.25	light yellowish-green (diopside-rich?) calc silicate skarn, at times having a spotty texture; (101.07-101.10) band of turquoise-green mineral (serpentine?); (101.10-101.25) chalcedony zone							
101.25	104.83	dark green (actinolite?) skarn with light to medium pyrrhotite and chalcopyrite mineralization, appears to be concentrated as small splashes of disseminated material (somewhat as bands), some areas with quartz and dark mica schist bedding; (101.25-101.28, 102.10-102.20, 103.09-103.17) creamy yellow-greenish zones with quartz filling fractures (alteration zones?); (at 103.84) sections becoming lighter in colour (more siliceous) and micaceous beds increasing in number; (104.24-104.74) speckled and mottled appearance, mixture of diopside/actinolite/epidote calc silicate skarn, mica schist	30012	101.24	103.02	1.78	0.446	5.49	0.92
			30013	103.02	104.18	1.16	0.137	2.74	0.33
104.83	105.16	thinly bedded, more siliceous calc silicate skarn with very minor interbedded schists (initial 5cm mica schist)							

END OF HOLE

CASAL CORPORATION LTD.
DIAMOND DRILL RECORD

Length	72.54 m	Contractor	Kiwaue Drilling Ltd.	Hole No.	HA-89-2
Bearing	GRID WEST	Core Size	BQ Casing	Project	Hop-Acme Claims
Dip	-70°	Started	01:00 pm, Sept. 27 '89	NTS Map	115 E/7
Lat.	3100 N	Completed	09:00 am, Sept. 29 '89	Claim	
Long.	2796.5 E.	Logged by	S. Feulgen, J.C. Stephen	# Page	5
Elev.	1139.5	Stored	Geoff Lattin	Purpose	to test geophysical anomaly
C.B. Thickness	23.09 m		WHITEHORSE		

Footage (m)		DESCRIPTION	Sample#	From	To	Assays			
From	To					Length(m)	Au(g/t)	Ag(g/t)	Cu(%)
0.00	23.09	overburden; (0.00-20.83) no record; (20.83-23.09) core box contains fragments of material (schist, feldspar, porphyry dyke, basalt dyke, calc silicate skarn), oxidized in places							
23.09	25.27	(carbonaceous?) magnetite skarn (black and white motley appearance), carbonaceous? material seen throughout section infilling veins and fractures, appears to be branching or slumping into thin fractures in calc silicate skarn, heavy magnetite mineralization (50% in some sections), magnetite present as bands of disseminated particles as well as globular groups, minor pyrrhotite and chalcopyrite (primarily in thin fractures); (23.09-24.55) fragmented and oxidized (some alteration); (24.55-24.81) less carbonaceous, more siliceous calc silicate skarn, less magnetite (10%), small splashes of chalcopyrite	30014	23.09	24.55	1.46	1.132	8.23	1.25
		more siliceous, light green tremolite-rich skarn, much less magnetite, much more chalcopyrite (3%) and pyrrhotite (3%), very little black (carbonaceous?) material, some alteration minerals on contact between magnetite-rich skarn and calc silicate skarn (soft); (25.27-25.42) well banded, some altered breccia fragments; (26.08-26.11) band of globular magnetite grains	30015	24.55	25.27	0.72	0.412	3.42	0.36
25.27	26.12	chalcopyrite-rich skarn, heavy chalcopyrite (30%) and pyrrhotite (20%) mineralization, increase in carbonaceous material (appears as needle-like crystals crisscrossing)	30016	25.27	26.04	0.77	1.749	18.86	2.66
26.12	26.67	magnetite skarn with irregular calc silicate skarn zones (predominantly black with white splashes), magnetite present in globular form (grape like bunches-very heavy mineralization) which is aligned in bands, minor splashes of chalcopyrite, primarily in siliceous portions; (26.92-26.98) seemingly unmineralized band of creamy, light green calc silicate skarn; (at 27.32) increasing amount of black mineral beds, initially parallel	30017	26.04	26.71	0.67	1.646	78.20	11.36
26.67	27.98		30018	26.71	27.99	1.28	0.034	0.69	0.04

37.70	37.70	more siliceous, fine grained <u>light grey porphyry feldspar dyke</u> , phenocrysts larger than in previous dykes (34.08-36.19), 2mm in size ranging in colour from white, reddish-brown, light and dark green, contact with previous dyke fairly sharp with alteration zone (fractured and oxidized at contact); (at 37.08) quartz vein running length of core (2-5cm in width) containing fragments of dyke material, after this dyke becomes quite oxidized with yellowish tinge predominant towards the end of the section							
37.70	38.18	<u>dark grey feldspar porphyry dyke</u> , similar to dyke described at (35.40-36.19); (37.93-38.03) much more siliceous zone (altered on boundaries)							
38.18	40.39	more siliceous, <u>light greenish-grey porphyry dyke</u> , fairly equigranular, phenocrysts black, dark green, white, core breaking on oxidized fractures; (38.54-39.54) occasional lcm shapeless white phenocrysts, larger than the others; (39.89-40.39) dark grey green in colour with predominantly white phenocrysts							
40.39	41.26	thinly bedded, light grey, fine grained <u>quartzite with interbedded mica schist</u> (biotite-rich), contact with dyke fairly sharp with intermediary quartz; (40.83-40.98) light fracturing and alteration							
41.26	41.75	light grey, fine grained <u>quartzite</u> ; (41.26-41.39) altered, oxidized small fractures; (41.67-41.75) altered, oxidized fractures							
41.75	41.96	biotite-rich <u>mica schist</u>							
41.96	42.30	grass green <u>(diopside?)</u> - skarn, fine grained, chalcopyrite (1%) seen as finely disseminated particles in splashes throughout	30023	41.96	42.95	0.99	0.240	4.12	0.54
42.30	42.95	<u>mixed skarn and black (carbonaceous?) material (breccia?)</u> , chalcopyrite (2%), pyrrhotite (5-7%), and magnetite (7-10%) mineralization, pyrrhotite and chalcopyrite observed intergrown primarily, magnetite seen as particles in globular groups, some serpentinized slips and talc seams at contacts; (42.46-42.95) heaviest zone of mineralization, material appears very mixed							
42.95	50.05	<u>mica schist</u> (clean contact with calc silicate skarn), varies from black-dark brown-red to more siliceous beds, bands of pale to medium green calc silicate skarn and occasional veins of quartz (parallel to bedding), pyrite as coating on fracture planes, also some disseminated pyrrhotite occasionally ; (42.95-44.45) disseminated chalcopyrite as small specks; (43.23-43.48) medium green (epidote?) calc silicate skarn mixed with mica schist and quartz beds; (43.63-43.77) light-medium green (diopside) calc silicate skarn mixed with mica schist beds, a little more chalcopyrite present; (43.82-44.02) light grey with brownish tinges alteration zone (skarnified), diopside? stringers running through core carrying chalcopyrite and pyrrhotite as small splashes; (44.21-44.56) mica schist containing occasional round nodules (1-3mm in diameter) which appear to have parted the mica beds, ie. grown out of solution							

(possibly garnet?); (44.32-44.35) alteration zone, yellowish-green-black with speckled appearance, contains disseminated chalcopyrite and pyrrhotite; (44.60-44.86) diopside calc silicate skarn, no apparent mineralization; (44.86-45.29) mica schist with nodules; (45.29-45.45) oxidized, lightly fractured (some fragments), yellowish-green calc silicate skarn; (45.45-46.35) lightly oxidized; (45.72-45.90) alteration zone?, mottled yellowish-grey, more siliceous calc silicate skarn; (45.90-45.95) dark grey feldspar porphyry dyke; (46.15-46.33) quartzite; (46.47-46.57) dark grey feldspar porphyry dyke, phenocrysts white and dark green; (46.95-48.05) mica schist with nodules, slight oxidation along fractures; (at 47.11) minor chalcopyrite and pyrrhotite in quartzite band; (48.15-50.05) oxidized along more frequent fractures, minor chalcopyrite seen in small veins, pyrite on fracture planes as a coating, nodules of garnet seen occasionally throughout section; (49.92-49.95) altered calc silicate skarn zone, green-white-black speckled appearance

- 50.05 50.45 light green (tremolite) calc silicate skarn with a band (5cm) of light grey-white marble and some actinolite beds and soft serpentine minerals, minor splashes of chalcopyrite and pyrrhotite (appear to be primarily observed in dark black carbonaceous? material)
- 50.45 51.32 light grey to almost white limestone with thin bands of black mica schist parallel to bedding plane and also intermixed with limestone (infilling small fractures)
- 51.32 51.76 tremolite calc silicate skarn with thin fractures parallel to bedding planes infilled with mica schist, some serpentine minerals at contact between calc silicate skarn and limestone; (51.56-51.59) oxidized zone, light orange, tinge carried to end of section (51.76); (51.59-51.64) band of limestone
- 51.76 53.91 light grey to yellowish-white limestone with calc silicate minerals and mica schist infilling fractures; (51.76-51.96) lightly oxidized
- 53.91 54.61 lightly banded white marble
- 54.61 54.93 light green diopside calc silicate skarn with minor dark green actinolite banding and mottled sections of limestone and calc silicate skarn mixtures
- 54.93 56.07 dirty light grey limestone; (55.15-55.45) mixture of limestone, primarily actinolite-rich calc silicate skarn, and black material, minor pyrrhotite and even less chalcopyrite within calc silicate skarn material; (55.57-56.07) dirty grey limestone with minor light green silicate mineral and black material infilling fractures and as minor flecks on bedding planes
- 56.07 56.55 white to light grey, lightly banded marble
- 56.55 56.65 altered, mottled light green to yellowish-white calc silicate skarn

- 56.65 57.94 dirty grey to white, banded limestone; (56.90-58.97) altered zone, greenish-yellow, mottled calc silicate skarn; (57.36-57.70) lightly fractured zone with fractures infilled with black material (carbonaceous?), thin bands of mica schist and actinolite-rich calc silicate skarn parallel to bedding
- 57.94 67.02 calc silicate skarn, varies from white to light green to dark green in colour, some areas containing thinly bedded dark schists, minor serpentine beds, some light fracturing; (58.07-58.20) thinly bedded red-brown-black mica schist; (58.20-58.26) actinolite-rich calc silicate skarn; (58.26-58.44) thinly interbedded actinolite-rich calc silicate skarn, quartzite, and mica schist; (58.44-58.80) thinly interbedded tremolite calc silicate skarn, quartzite, marble (very siliceous); (58.80-58.90) actinolite-rich calc silicate skarn; (58.90-59.86) speckled light greenish-white calc silicate skarn, lightly banded; (59.86-59.94) actinolite-rich calc silicate skarn bounded by white bands of serpentine minerals (2-3cm thick) on each side; (61.31-61.62) light green calc silicate skarn with heavy mica schist banding; (62.45-62.80) actinolite-rich calc silicate skarn speckled with white, very minor splashes of disseminated chalcopyrite; (66.47-66.63) speckled black, green, white calc silicate skarn
- 67.02 67.29 alteration zone, mixture of light green calc silicate skarn and dark mica schist, fractured, minor pyrrhotite, small specks of sulphide minerals along fractures; (67.19-67.29) primarily schist
- 67.29 72.54 light grey to light green feldspar dyke, phenocrysts quartz and hornblende; (67.29-67.39) mottled green contact zone with large fragment of schist and some small phenocrysts of quartz and black hornblende; (67.57-67.72) mottled, small fractures, alteration?; (68.32-69.46) light green smudged appearance; (69.70-72.54) dyke becoming more granitic in appearance; (at 69.98, 71.84, 72.33) areas having splashes of green (calc silicate minerals?), appear less quartz-rich and show abrupt contacts with the dyke at times

END OF HOLE

soft serpentine minerals (soft, crushed with clay grade) on lower contact; (24.74-24.89) grading into schist

24.89 25.50 thinly bedded, grey-black-brownish-red mica schist, sometimes with nodules, bedding at 80° to core; (25.30-25.50) thin bands of actinolite-rich calc silicate skarn

25.50 25.92 calc silicate skarn; (25.50-25.67) primarily diopside-rich calc silicate skarn with specks of actinolite giving a spotted appearance and some mica schist; (25.67-25.92) more siliceous (tremolite-rich calc silicate skarn), mica schist beds increase in amount

25.92 26.74 mica schist, thinly bedded, dark grey to brownish red; (26.23-26.48) increase in actinolite-rich calc silicate skarn beds, some minor fracturing in calc silicate skarn zone

26.48 26.69 light green diopside calc silicate skarn intermixed with actinolite and mica schist fragments giving a swirly appearance

26.69 26.84 mica schist, minor nodules (garnet?)

26.84 27.18 actinolite calc silicate skarn, minor chalcopyrite and pyrrhotite as disseminated particles

27.18 27.33 mica schist, minor nodules, small specks of sulphide minerals

27.33 28.46 light grey quartzite schist interbedded with mica schist

28.46 28.72 mica schist with nodules

28.72 29.28 greyish-white quartzite schist; (at 28.75) carbonate filled fracture, rock lightly mineralized with chalcopyrite in the vicinity of this fracture; (28.98-29.28) micaceous schist beds increasing in number

29.28 34.56 thinly bedded mica schist, dark grey to black to reddish-brown with occasional sections (30cm in width) interbedded with calc silicate skarn (diopside and actinolite); (29.28-31.58) oxidized, lightly fractured; (at 31.55) increasing number of nodules in schist, appears to become quite garnet-rich, some pyrrhotite appearing in calc silicate skarn bands

34.56 37.68 light grey to creamy white marble; (34.56-35.8°) micaceous schist beds with serpentine on boundaries and fractures, some diopside calc silicate skarn beds throughout section, many small, fairly thin fractures; (at 36.14, 36.46, 36.87) lime green mineral infilling fractures; (37.33-37.68) marble interbedded with micaceous schist, lime green mineral in fractures approaching contact with calc silicate skarn

37.68 38.20 light green diopside calc silicate skarn grading into darker green actinolite-rich calc silicate skarn, very minor splashes of disseminated chalcopyrite and pyrrhotite, upper contact with marble has a serpentinized zone (7cm in width), lower contact with marble is sharp at 50° to core

38.20 39.14 white marble, lower contact irregular; (38.20-38.50) intermixed with diopside calc silicate skarn; (39.01-39.14) intermixed with diopside calc silicate skarn

38.00	38.80	<u>Diopside</u> skarn with actinolite-rich bands, chalcopyrite (1%), pyrrhotite (1%), and pyrite (1%) mineralization, skarn quite altered (serpentine, gouge?) at lower contact with dyke (45' to core), skarn appears intruded by dyke	30026	38.14	38.60	0.46	0.009	13.01	1.39
39.60	39.75	dark black <u>basalt? quasi porphyritic dyke</u> grading into light grey feldspar porphyry dyke within 3cm (sharp contact)							
39.75	40.38	light green, fine grained <u>diopside calc silicate skarn</u> with very minor splashed of disseminated chalcopyrite; (40.36-40.38) band of blueish-grey material	30027	39.74	40.39	0.65	0.034	1.37	0.16
40.38	40.81	light grey <u>marble</u> ; (40.61-40.81) marble mixed with black material, very minor splashed of pyrrhotite							
40.81	41.27	light green <u>diopside</u> skarn banded by 2cm of blueish-grey material on each side, minor splashes of disseminated pyrrhotite and chalcopyrite, evidence of tremolite bands, serpentine	30028	40.81	41.29	0.48	0.034	0.69	0.06
41.27	43.15	light grey to white <u>marble</u> , light banding evident; (41.83-41.88) band of dark mica schist, bounded by serpentine on each side; (42.30-43.15) lightly fractured, fractures infilled with black material and/or epidote?							
43.15	44.10	medium green (spring green) <u>actinolite-rich</u> skarn with pyrrhotite (1%), chalcopyrite (0.5%), and pyrite (1%) mineralization, small zones of soft black material intermixed with calc silicate skarn, appear semi-banded, blotchy, some small quartz veins	30029	43.15	44.10	0.95	0.034	1.71	0.24
44.10	44.63	interbanded very pale green <u>calc silicate skarn and quartz</u>							
44.63	45.44	light grey to white <u>quartzite</u> , lightly bedded with thin beds of quartz, calc silicate skarn; (45.25-45.30) speckled calc silicate skarn along fracture							
45.44	46.05	interbanded <u>quartzite and mica schist</u> with bands of light green diopside							
46.05	49.97	actinolite-rich <u>calc silicate skarn</u> with some quartz veins parallel to bedding and mica schist beds; (46.05-46.70) fractured and infilled with white non-carbonaceous material, core also pitted and crumbly in spots; (49.38-49.68) fractured and somewhat pitted (alteration?)							
49.97	53.92	greyish, blue-green, less siliceous (<u>actinolite?</u>) <u>calc silicate skarn</u> , lightly banded, some quartz and micaceous schist beds							
53.92	64.54	light green <u>diopside calc silicate skarn</u> with zones of actinolite-rich calc silicate skarn and mica schist, some minor fracturing and quartz veining (parallel to bedding); (62.52-62.97) speckled mixture of actinolite/diopside (appear as if interwoven)							
64.54	64.73	dark <u>mica schist</u>							
64.73	65.22	light green, very fine grained (<u>aphanitic?</u>) <u>rhyolitic dyke</u> , black phenocrysts, irregular upper contact with schist (40' to core); (64.87-64.96) breccia zone with calc silicate skarn and mica schist fragments							

END OF HOLE

CASAM EXPLORATION LTD.
DIAMOND DRILL RECORD

Length	72.24 m	Contractor	Kluane Drilling Ltd.	Hole No.	WA-89-4
Bearing	GRID WEST	Core Size	BQ Casing	Project	Hop-Acme Claims
Dip	-60°	Started	11:00 am, Oct.02'89	NTS Map	115 H/7
Lat.	32 00 N.	Completed	08:00 pm, Oct.03'89	Claim	
Long.	26 98 E.	Logged by	S. Feulgen, J.C. Stephen	# Pages	5
Elev.	1166	Stored	Geoff Lattin	Purpose	to test geophysical-anomaly
C.B. Thickness	2.94 m		WHITEHORSE		

<u>Footage (m)</u>		<u>DESCRIPTION</u>	<u>Sample#</u>	<u>From</u>	<u>To</u>	<u>Length(m)</u>	<u>ASSAYS</u>			
<u>From</u>	<u>To</u>						<u>Ag(g/t)</u>	<u>Ag(g/t)</u>	<u>Cu(%)</u>	<u>MoS₂(%)</u>
0.00	2.94	<u>overburden</u> , no fragments in core box								
2.94	11.86	very dark, thinly bedded <u>mica schist</u> with minor quartz veins parallel to bedding, slightly fractured and oxidized; (4.53-6.17) fragmented; (5.00-5.22) light green dyke with black phenocrysts								
11.86	12.24	<u>fault zone</u> , fragments and gouge material								
12.24	18.29	<u>mica schist</u> with minor quartz veins parallel to bedding, slight fracturing, lightly oxidized, some fragments; (16.70-16.96), light grey quartzite with minor thin fractures; (18.11-18.13) fault? (fragmented, gouge-like) quite oxidized								
18.29	19.28	light grey-green mottled <u>calc silicate skarn</u> with thin light fracturing (fractures often infilled with chalcopyrite), some micaceous beds, minor splashes of disseminated chalcopyrite, pyrite (<0.5%), and pyrrhotite; (18.61-19.28) heavily oxidized; (19.00-19.03) mica schist	30032	18.29	19.28	0.99	0.103	0.34	0.04	
19.28	20.61	speckled <u>actinolite-diopside calc silicate skarn</u> with finely disseminated chalcopyrite (1%) and pyrrhotite (2%) throughout section, lightly oxidized on fractures, some serpentine	30030	19.28	20.61	1.33	0.137	3.43	0.40	
20.61	21.57	dark green <u>actinolite-rich skarn</u> , some diopside, chalcopyrite evident throughout section as disseminated particles, a few carbonate filled fractures, some serpentine; (20.61-20.81) heavy chalcopyrite mineralization (10%) with pyrrhotite (10-15%) particles appearing to form alternating bands with chalcopyrite mineralization; (20.81-21.01) chalcopyrite (2%), pyrrhotite (2%)	30031	20.61	21.57	0.96	0.652	20.24	2.52	
21.57	24.95	<u>magnetite-pyrrhotite skarn</u> , dark black fine grained non-carbonaceous material (chlorite?) as parent rock, extremely heavy magnetite mineralization (35%), some minor carbonate filled fractures, some veins of epidote?, splashes of calc silicate skarn intermixed with black parent material at times, magnetite present as globular bunches, some in	30033	21.57	22.74	1.17	0.034	0.69	0.10	
			30034	22.74	23.85	1.11	0.034	0.34	0.01	
			30035	23.85	24.95	1.10	0.034	1.03	0.13	

		bands up to 15cm thick, talc observed on some fractures; (21.50-21.71) pyrrhotite (1-2%), chalcopyrite (0.5%), pyrite (1%)							
24.95	25.25	light green <u>diopside calc silicate skarn</u> , minor chalcopyrite and pyrrhotite seen as splashes in primarily dark green actinolite-rich mixture, core very crumbly and soft (serpentine minerals, some alteration?)	30036	24.95	25.25	0.77	0.034	10.40	0.25
25.25	26.01	light green-pinkish tinge, fine grained <u>calc silicate skarn?</u> (K-feldspar dyke?) with serpentine (soft) on fractures, small elongate pockets of actinolite? parallel to bedding plane, at times: these appear to be the only areas with mineralization, minor splashes of pyrrhotite and chalcopyrite	30037	25.25	26.03	0.78	0.034	2.40	0.18
26.01	26.54	light green <u>diopside calc silicate skarn</u> , fine grained; (26.03-26.54) fault? zone (gouge)	30038	26.03	26.52	0.49	0.034	1.71	0.16
26.54	26.94	<u>magnetite-pyrrhotite skarn</u> with disseminated chalcopyrite (5%) throughout, magnetite (30%); (26.54-26.64) more siliceous, light grey-blue, less magnetite	30039	26.52	26.94	0.42	0.514	10.63	1.00
26.94	28.33	<u>diopside</u> <u>skarn</u> with some actinolite-rich bands, chalcopyrite (0.5%) in splashes throughout section, lower contact at 45 to the core	30040	26.94	28.33	1.39	0.034	2.74	0.24
28.33	28.75	<u>magnetite-rich skarn</u> intermixed with light grey-blue calc silicate skarn, some minor pyrrhotite (2%) and chalcopyrite (2%), some serpentine, magnetite (50%)	30041	28.33	28.75	0.42	0.240	6.17	0.71
28.75	29.20	dull green (medium to dark) <u>actinolite-rich</u> <u>skarn</u> , lightly fractured, carbonaceous, massive disseminated chalcopyrite (3-5%) throughout section	30042	28.75	29.20	0.45	2.504	29.15	3.38
29.20	29.96	<u>magnetite-pyrrhotite skarn</u> , some splashes of chalcopyrite (1%), magnetite (20%), pyrrhotite (15%)	30043	29.20	29.96	0.76	0.171	2.05	0.30
29.96	30.53	grass green <u>feldspar porphyry dyke</u> , scattered grey phenocrysts, fractured and fragmented, slightly oxidized (appears altered)							
30.53	31.20	<u>pyrrhotite-magnetite skarn</u> with splashes of chalcopyrite (2%), pyrrhotite (15-20%), magnetite (10%)	30044	30.53	31.20	0.67	0.069	1.03	0.45
31.20	32.00	speckled light grey-green to white <u>limestone</u> mixed with calc silicate skarn, minor pyrrhotite in bands (disseminated), specks of chalcopyrite, lightly fractured, oxidized on fractures; (31.65-32.00) more fractured, fractures filled with black (carbonaceous? chlorite?) material	30045	31.20	32.00	0.80	0.100	1.00	0.14
32.00	32.90	light grey-green mottled <u>diopside calc silicate skarn</u> with small patches of disseminated pyrrhotite and chalcopyrite, pyrite seen as a coating on fracture planes; (at 32.61) calc silicate skarn becomes more actinolite-rich, oxidized on fractures, bedding planes more evident, some light fracturing, less mottled, grading into quartzite	30046	32.00	33.40	1.40	0.034	0.34	0.07
32.90	33.40	quartzite							
33.40	37.54	dark, thinly bedded <u>schist</u> , primarily micaceous (biotite-rich, some							

		garret?), some sections oxidized especially along fracture planes; (33.40-33.85) interbedded with calc silicate skarn; (37.04-37.54) more siliceous, some interbedded calc silicate skarn							
37.54	38.19	intermixed <u>diopside/actinolite calc silicate skarn</u> (altered), speckled to swirly in appearance, minor fractures and oxidation							
38.19	38.82	white <u>marble</u> with sections of light grey material, many fractures (40 to core) filled with black material (chlorite?); (38.56-38.82) heavy pyrrhotite (5-10%) and magnetite (10%) mineralization, some minor pyrite (0.5%)	30047	38.12	38.82	0.70	0.377	0.34	0.12
38.82	39.50	dark grey <u>feldspar porphyry dyke</u> , white-grey-green-black phenocrysts (appears granitic), contact between marble and dyke is fragmented and oxidized, complex lower contact with calc silicate skarn							
39.50	42.00	<u>calc silicate skarn</u> interbedded with zones of mica schist; (39.50-39.80) convoluted swirly mixture of diopside, actinolite, and mica schist beds; (39.62-39.65) granitic-type dyke as at 38.82; (39.80-40.30) mottled yellowish-green (tremolite-rich) calc silicate skarn mixed with mica schist (biotite-rich) beds, swirly appearance, thin fractures; (40.85-41.75) becoming more schistose, rock slightly fragmented and oxidized; (41.75-42.00) actinolite-rich calc silicate skarn (dark green); (41.90-42.00) swirly appearance							
42.00	50.96	<u>mica schist</u> (light-dark grey, black, reddish brown) with some interbedded thin calc silicate skarn beds, some zones of fracturing, light oxidation, some quartzite zones, bedding 70 to core; (44.16-44.41), small zone of primarily actinolite-rich calc silicate skarn, minor chalcopyrite, pyrite, pyrrhotite; (44.42-44.92) nodules (garnet?) in mica schist; (48.17-48.94) calc silicate skarn-rich zone with interbedded schist (gradation in colour: yellowish-green to light grey to light green-dark green), minor pyrrhotite splashes in actinolite-rich area, slight oxidation; (49.85-49.90) light greyish-green calc silicate skarn, pyrrhotite infilling thin fractures; (50.44-50.64) thin fractures in mixed calc silicate skarn and schist, infilled with pyrite and pyrrhotite; (50.74-50.81) actinolite-rich calc silicate skarn with pyrrhotite							
50.96	52.25	<u>calc silicate skarn</u> with bands and splashes of heavy pyrrhotite mineralization, some areas of concentrated chalcopyrite (<1%), some minor magnetite?; (50.96-51.05) lightly banded diopside/actinolite calc silicate skarn with splashes of chalcopyrite, some serpentine; (51.05-51.12) fractured, massive diopside calc silicate skarn; (51.12-51.19) dark black material (chlorite?) with heavy pyrrhotite mineralization in bands, splashes of chalcopyrite, serpentine evident; (51.11-51.12) band of translucent blue-white mineral; (51.19-51.89) calc silicate skarn, light grey to creamy green-pink (garnetiferous?), speckled with	30048	50.96	52.25	1.29	1.063	13.72	1.52

		actinolite, disseminated chalcopyrite (<0.5%) throughout section, fine pyrite (1%); (51.89-52.11) pyrrhotite-rich (15%) skarn, light grey (calc silicate skarn) to black (carbonaceous?) background material. some heavier chalcopyrite (<1%) mineralization, some pyrite (1-2%); (52.15-52.25) light green massive diopside calc silicate skarn, splashes of pyrrhotite							
52.25	53.57	white <u>marble</u> with light thin fractures, some filled with epidote? (seaweed green) and/or serpentine; (52.70-52.98) intermixed with calc silicate skarn beds (partly finely brecciated?), some pyrrhotite mineralization (2cm band) with pyrite as well as very minor splashes of pyrrhotite (occasional) throughout section, usually observed in association with dark bands (actinolite? chlorite?)							
53.57	53.95	<u>pyrrhotite-rich skarn</u> , pyrrhotite (50%) mineralization massive, slightly fractured and oxidized, fine pyrite, some magnetite?	30049	53.57	53.95	0.38	0.171	0.69	0.44
53.95	54.82	very fine grained, dark green <u>actinolite calc silicate skarn</u> , splashes of pyrrhotite, disseminated chalcopyrite intergrown for the most part with pyrrhotite, some fine pyrite (<1%), indistinct small remnants (schist?), 80% core recovery	30050	53.95	54.82	0.87	0.034	0.34	0.09
54.82	55.95	massive <u>pyrrhotite-rich skarn</u> , parent material dark grey to black, pyrrhotite (40-50%), chalcopyrite (<1%), fine pyrite; (55.70-55.95) less heavy mineralization	30051	54.82	55.96	1.14	0.034	0.34	0.38
55.95	59.86	very pure white to light grey <u>marble</u> with small zones of light fracturing, fractures filled with dark material sometimes bearing pyrrhotite, also some serpentine filled fractures; (59.38-59.78) orangy-red mineral (garnetiferous?) within dark grey-black material in <u>marble</u> , as well as within <u>marble</u> only							
59.86	61.14	fine grained, green-grey <u>actinolite-rich skarn</u> ; (59.86-60.16) irregular upper contact, convoluted mixture of <u>marble</u> , actinolite, diopside, and pale green mineral, serpentinized fractures (alteration zone), some minor pyrrhotite along fractures in actinolite beds; (60.17-60.37) pocket? of pure limestone, actinolite calc silicate skarn appears serpentinized; (60.37-61.14) calc silicate skarn becomes distinctively fine grained; (60.48-60.78) fragmented, serpentinized, fractures filled with calcite mineral, also evidence of soft black mineral with vitreous lustre (chlorite?) as vein							
61.14	63.23	white to light grey <u>marble</u> with occasional fractures filled with chlorite?, epidote? (seaweed green), and calcite, serpentinized							
63.23	66.10	fine grained, lightly banded, dark green <u>actinolite skarn</u> with traces of chalcopyrite and pyrite (pyrite primarily on fracture planes), bedding at 70 to core; (63.60-64.30) fragmented, crumbly, quite oxidized; (64.60-66.10) calc silicate skarn lighter green in colour, diopside-rich; (64.66-64.84) intermittent 1cm bands of garnet;							

(65.79-65.90) Highly silicified, white and grey banded calc silicate skarn

66.10 66.20 well banded, light coloured quartzite, bedding 70 to core
66.20 72.24 fairly siliceous white, light grey, dark grey, banded calc silicate skarn; (66.75-66.85) thin bands of garnets in pale green calc silicate skarn zone; (68.11-68.66) medium green actinolite calc silicate schist, fine grained with frequent bands of garnet

END OF HOLE

		with very siliceous calc silicate skarn; (15.32-15.33) sea green coloured vein with garnet, schist garnetiferous								
18.08	18.94	dark black-green, fine grained (andesite?) dyke with very faint phenocrysts (whitish), at upper contact with schist, 2cm oxidized alteration? zone with tiny fragments of schist, lower contact quartz veined at 45° to core; (18.23-18.29) broken, oxidized fragments								
18.94	20.20	quartzite interbedded with mica schist; (18.94-18.98) alteration? zone between dyke and schist, contact sharp at 50° to the length of the core, oxidized; (18.99-20.20) schist lightly fractured and oxidized, some garnet; (19.94-20.02) dyke appears to fill pocket? from fracture, dark grey to black in colour, some tiny fragments of schist? along borders of sharp contact								
20.20	20.73	highly oxidized, fragmented aplitic dyke?, fine grained with tiny black phenocrysts (sulphides?), contact with schist sharp abut jagged, lower contact shows gradation into quartzite								
20.73	21.36	dirty grey quartzite with some calc silicate skarn bedding and mica schist; (20.75-21.05) quite siliceous; (21.05-21.12) dark grey-black material (calc silicate skarn?) with minute specks of pyrrhotite and chalcopyrite								
21.36	22.02	pale green calc silicate skarn with bands and blebs of dark green actinolite giving a speckled appearance, some zones have a pinkish tinge (garnet?), disseminated pyrite and chalcopyrite (combined <1% throughout section, minor splashes of pyrrhotite	30054	21.36	22.02	0.66	0.069	2.40	0.23	
22.02	22.65	predominantly dark green skarn with zone of pinkish tinge (salmon pink, garnet-rich?), intermixing of different skarn minerals gives speckled texture, pyrite, chalcopyrite, and pyrrhotite (1% combined) disseminated throughout section, (22.18-22.43) quite pinkish, minute flecks of white material; (22.34-22.37) fragment of green calc silicate skarn observed apparently perpendicular to bedding planes; (22.43-22.65) dark greenish black (very little pink); (at 22.53) evidence of banded silicates (small zones), evidence of epithermal event?; (at 22.63) brecciated	30055	22.02	22.62	0.60	0.034	1.71	0.20	
22.65	22.97	pale green, lightly speckled calc silicate skarn, minor splashes of pyrite, pyrrhotite, and chalcopyrite?, seemingly concentrated in dark green actinolite-rich blebs	30056	22.62	22.97	0.35	0.034	0.34	0.03	
22.97	23.94	garnet-rich actinolite skarn, very mottled mixture, sporadic splashes of chalcopyrite and primarily pyrite (1% combined) throughout the section, small zones where large garnet crystals seen, some zones more heavily mineralized than others (these appear to be less garnet-rich), minor white to blueish-grey stringer or eyes with delicate epithermal banding observed; (23.36-23.40) very pink in colour; (at 23.47) minor MoS ₂	30057	22.97	23.94	0.97	0.171	2.06	0.31	0.001

23.94	24.22	dark green, fine grained <u>actinolite</u> <u>skarn</u> , lightly fractured with black material (chlorite?) infilling fractures and tiny branches, chalcopyrite (primarily) and pyrite mineralization (4% combined)	30058	23.94	24.23	0.09	0.123	19.55	0.06
24.22	25.06	medium to light green, fine grained <u>diopside?</u> <u>skarn</u> , texture fibrous at time giving pitted appearance, chalcopyrite and pyrite (2% combined) lightly disseminated or in splashes throughout section; (24.47-24.53) mottled appearance; (24.75-24.83) dark black, fine grained material (chlorite?); (24.95-25.05) garnet-rich skarn	30059	24.23	25.08	0.05	0.103	2.74	0.29
28.66	29.15	pale green to medium green <u>skarn</u> , some light fracturing, minor garnet-rich zones; (25.86-26.13) calc silicate skarn lightly enriched in actinolite, some light banding; (27.35-27.50) frequent thin fractures, usually parallel to bedding, calc silicate skarn appears swirly, some light blue-white serpentine family minerals, minor chalcopyrite mineralization; (27.50-27.60) magnetite-pyrrhotite skarn (fracture filling? or fragment?), minor chalcopyrite, contact at 75° to core length, appears to be sharp to gradational; (27.60-27.74) pinkish-green (garnetiferous), minor chalcopyrite mineralization; (27.74-28.70) light pale green, more siliceous calc silicate skarn, fine grained; (27.88-27.96) calc silicate skarn appears very pure in composition; (28.70-28.90) creamy white quartz carbonate veining within calc silicate skarn; (28.90-29.15) speckled calc silicate skarn intermixed with marble	30060	28.70	29.44	0.74	0.134	0.34	0.04
29.15	29.44	grey-green creamy <u>marble</u> , quite fractured, heavily oxidized on main fractures, pyrite mineralization along fractures, at upper contact with calc silicate skarn, section brecciated and highly oxidized, angle of contact sharp, 30° to the length of the core							
29.44	31.10	fine grained, <u>dark green actinolite-rich</u> <u>skarn</u> , minor specks and splashes of disseminated sulphides, minor fractures some of which are oxidized, some fractures are infilled with calcite minerals	30061	29.44	31.10	1.66	0.134	1.03	0.09
31.10	32.31	fine grained, <u>medium green actinolite-rich</u> <u>skarn</u> , chalcopyrite and pyrite (1% combined) finely disseminated throughout section; (31.23-31.33) speckled section of black material (chlorite?) and calc silicate skarn, appears pitted, lightly fractured, pyrite seen as coating on fracture planes	30062	31.10	32.34	1.24	0.134	0.69	0.08
32.31	32.84	pale green, fine grained <u>diopside-rich</u> <u>skarn</u> , minor pyrite and chalcopyrite; (32.45-32.51) blueish-grey band with pyrrhotite mineralization	30063	32.34	32.84	0.50	0.134	0.34	0.07
32.84	33.39	medium green <u>skarn</u> with mixture of beds (actinolite-rich, tremolite-rich, white <u>marble</u>) and thin carbonate veins, texture varies from swirly to mottled to pure, chalcopyrite (1%) and pyrite disseminated or as splashes throughout section, seem to be more often in	30064	32.84	33.37	0.53	0.514	4.80	0.50

		association with dark black (chlorite?) or actinolite beds							
33.89	34.52	<u>magnetite-pyrite skarn</u> , in less heavily mineralized sections diopside calc silicate skarn evident, magnetite (5%) present as bands and in globular specks throughout section, some quartz carbonate filled fractures, minor pyrrhotite (2%) and chalcopyrite (1%) present as disseminated particles; (34.31-34.41) fine grained, black porphyry dyke with white phenocrysts	30065	33.37	34.52	1.15	0.103	1.03	0.22
34.52	34.89	lightly banded, greenish-grey <u>quartz carbonate</u> , bedding 80° to core; (34.52-34.62) somewhat mottled							
34.89	35.97	heavily banded, light grey-green <u>calc silicate skarn</u> ; (35.06-35.27) pale light grey calc silicate skarn with black speckles (sulphides?) enclosing 2cm actinolite-rich band; (35.75-35.82) dark grey-black to blue-green banded calc silicate skarn, minor sulphide mineralization; (at 35.90) oxidation of rock begins							
35.97	36.88	heavily banded, dark grey to light grey <u>quartzite</u> with some schistose beds, oxidized; (36.64-36.84) fragmented, heavily oxidized, some fractures contain quartz carbonate							
36.88	37.07	<u>dark black altered rock (silicified argillite?)</u> with many fine fractures and some large veins (20° to core) filled with quartz carbonate, upper contact sharp at 20°, lower contact irregular along quartz carbonate veinlet							
37.07	39.66	<u>calc silicate skarn?</u> , very heavily oxidized and fragmented (fault zone), banded, somewhat schistose? (very difficult to see due to heavy oxidation)							
39.66	40.33	light green-grey, fine grained <u>aplitic dyke</u> with small black-dark green phenocrysts, section very heavily oxidized and finely fractured; (39.96-40.11) quartz carbonate vein? running the length of the core, appears to divide coarse grained porphyry dyke (dark grey with white phenocrysts) from fine grained aplitic dyke							
40.33	47.81	dark grey, fine grained <u>K-feldspar porphyry dyke</u> with several subtle changes in appearance throughout the section, white-grey-green-dark phenocrysts, appears to be the end of the fault zone; (40.70-40.90) mottled texture, phenocryst boundaries faint; (41.43-42.16) large white crystals (0.5-1.0cm in size) within groundmass; (42.21-42.66) calc silicate breccia skarn, shards and distinct fragments of foreign material; (at 42.65) gradual change (45° to core length) to a medium green turning grey porphyry dyke with large white phenocrysts within equigranular groundmass; (at 43.52) dyke becoming more granitic in appearance; (43.99-44.02) fine grained fragment of foreign material (black with large white phenocrysts-material from another dyke?); (47.63-47.75) granitic dyke grading into dark grey to black porphyritic dyke (fine grained, white phenocrysts); (47.75-47.81) fragmented schist							

or dyke
 47.81 49.50 mica schist interbedded with calc silicate skarn, some quartzite and actinolite beds, mica schist appears garnet-rich, some zones with nodules
 49.50 50.35 dark grey green, mottled, somewhat granitic feldspar porphyry dyke, contact with schist is sharp and parallel to bedding, lower contact is at 65⁰ to core length (not quite in line with bedding)
 50.35 50.93 dark, thinly bedded mica schist with some beds of calc silicate skarn and quartzite, some zones with garnet nodules
 50.93 59.60 light grey to creamy white, lightly banded marble, light fracturing, fractures infilled with epidote? (seaweed green) or chlorite; (51.53-51.67) zone of garnet-rich mica schist; (51.87-51.88) mica schist; (52.07-52.10) micaceous, serpentized alteration band; (52.18-52.21) fragmented, convoluted bed of garnet-rich mica schist; (52.44-52.52) greenish-blue calc silicate skarn zone; (53.16-53.20) altered, fragmented, oxidized mica schist; (at 53.40) vein of medium green calc silicate skarn surrounded by mica schist (garnetiferous); (58.50-59.15) lightly fractured and oxidized
 59.60 60.96 heavily banded, light grey to dark grey-green calc silicate skarn, some traces of garnet; (60.42-60.80) more siliceous (light grey to white); (60.80-60.87) mottled grey green calc silicate skarn; (60.87-60.96) speckled light grey, dark grey, black, dark green calc silicate skarn

END OF HOLE