DIAMOND DRILLING ASSESSMENT REPORT

ON THE

ROO 1 - 3 CLAIM GROUP

for

TECK EXPLORATIONS LTD.

by

G. THOMSON B.Sc.

DECEMBER, 1990

LOCATED IN THE EAST KOOTENAY DISTRICT
FORT STEELE MINING DIVISION
NTS 82G/2W, 3E
40°01' North Latitude
115°00' West Longitude

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1.0 SUMMARY AND INTRODUCTION

This report comprises the work carried out on the Roo 1 - 3 claims during the 1990 field season. Work began July 12 and was completed by August 21 with a total of 31 days devoted to the exploration program.

The 1990 exploration program was a continuation of the geological and trenching program carried out by Teck Explorations in September 1989. The 1990 program consisted of additional property-wide geological mapping, minor soil sampling and 605.6 metres of NQ diamond drilling carried out in 8 holes.

A total of 28 soils were taken and analysed by 32 element I.C.P. analysis and 29 drill core samples were assayed for copper and 32 element I.C.P. analysis.

The Roo copper showings are hosted by Proterozoic quartzites, conglomerates and quartzo-feldspathic wackes immediately below a stromatolitic dolomite horizon. The showings demonstrate several characteristics in common with stratabound red-bed copper deposits such as have been recently discovered within the same Proterozoic basin in northwestern Montana.

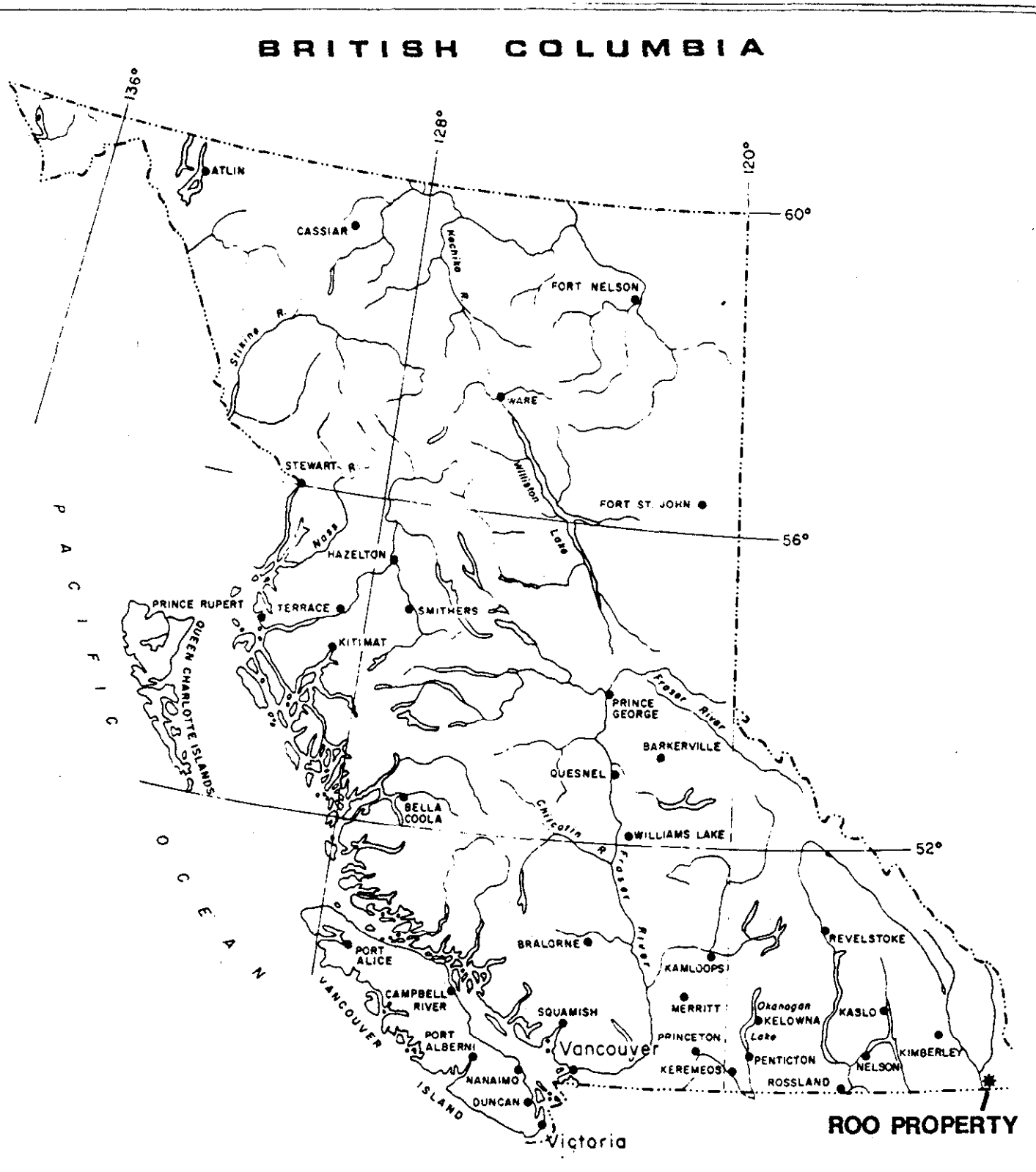
Copper grades generally between 1 - 2% were obtained from four out of the 8 holes drilled. Mineralization is restricted to a 1 - 5 m zone and consists of malachite-clalcocite coatings within strongly weathered and fractured quartzo-feldspathic wacke and conglomerates.

2.0 LIST OF CLAIMS

Records of the British Columbia Ministry of Energy, Mines and Petroleum Resources indicate that the following claims (Figure 2), are currently being held in trust, by Teck Corporation Ltd.

Claim Name	Record Number	No of Units	Record Date	Expiry Date
Roo 1	3393	20	Apr. 26, 1989	Apr. 26, 1994
Roo 2	3394	20	Apr. 26, 1989	Apr. 26, 1994
Roo 3	3395	20	Apr. 16, 1989	Apr. 26, 1994
	Total	**60**		

The location of the legal corner posts for the Roo 1-3 claims has been verified by the author.



TECK EXPLORATIONS LIMITED

LOCATION MAP

ROO PROPERTY

SCALE: 1:7,500,000 | FIGURE: 1

3.0 LOCATION, ACCESS, GEOGRAPHY

The Roo claim group is located at Phillipps Creek in the Galton Range of the Rocky Mountains, approximately five kilometres northeast of the Roosville border post and seventy kilometres southeast of Cranbrook, in the East Kootenay district of southeastern British Columbia (Figure 1). It lies within the Fort Steele Mining Division, centred at 49°01' north latitude and 115°00' west longitude.

Highway 93, which connects Cranbrook and Fernie to northwestern Montana passes less than one kilometre to the west of the Roo 1 claim. A good logging road climbs from the highway up the drainage of Phillipps Creek, passing through the Roo 1 and Roo 3 claims. Spur roads, which provide access to most of the Roo 1 and Roo 3 claims, including the known copper showings, have been rehabilitated and are currently passable.

The Roo 1-3 claims lie almost entirely within the Phillipps Creek drainage, confined mainly to the northwestern part of the watershed (Figure 2). Topography is moderately steep, with elevations ranging from less than 1000 metres on Phillipps Creek to over 2280 metres on the ridge which separates the Phillipps Creek drainage from the Wigwam River drainage on the Roo 2 claim.

The property is covered by open forest composed of lodgepole pine, Douglas fir, ponderosa pine and alder, with little undergrowth. Summers are hot and dry, but winters are cold, with several metres of snow commonly falling at higher elevations.

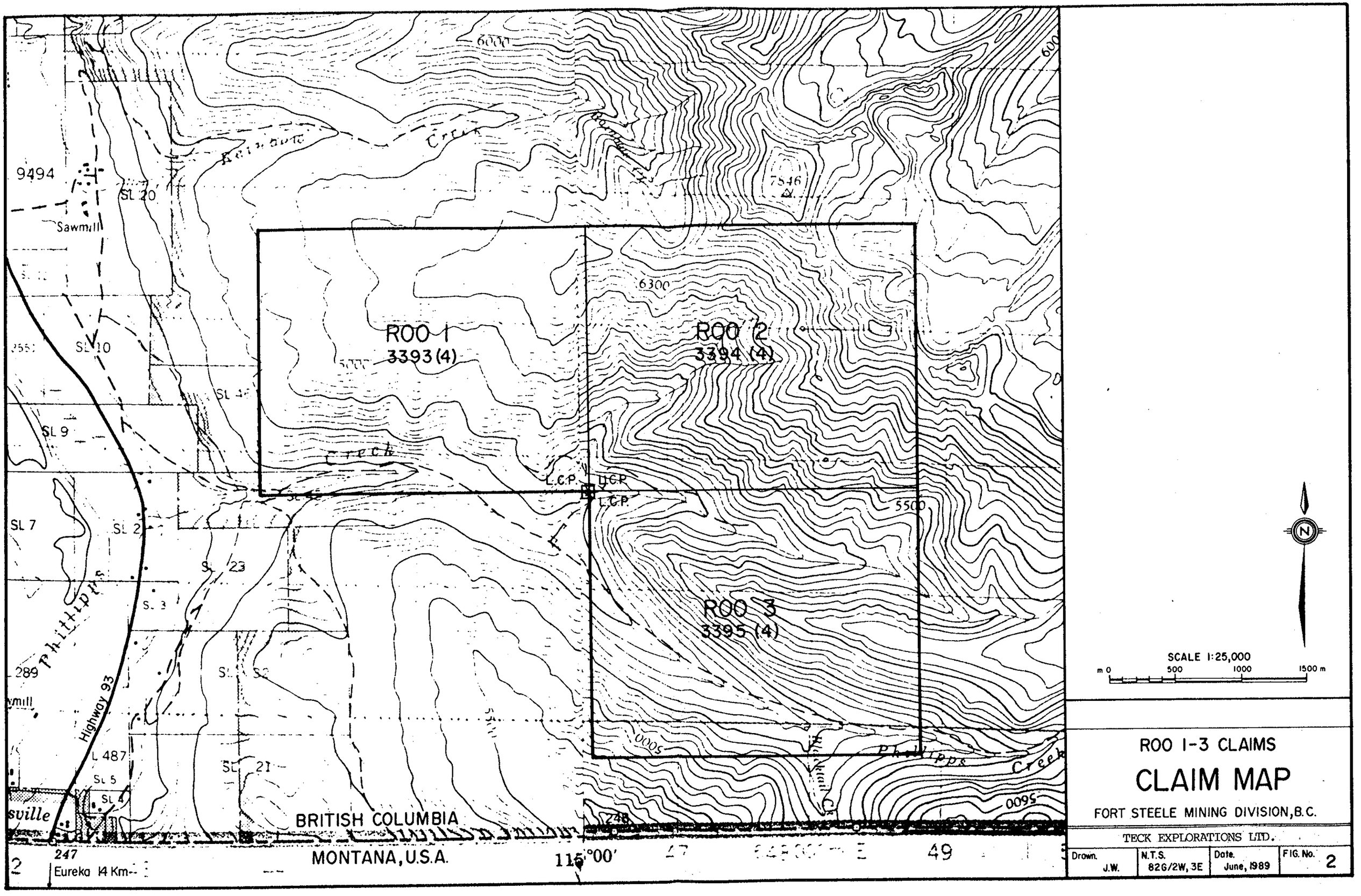
4.0 PREVIOUS WORK

The first reported work on the Roo property dates from 1902, with four claims

> "There has been much less work done on the Phillips Creek during the past year than in previous years, because no capital has yet come into this part of the country abd the cost of transport prevents the working miner from shipping at the present price of copper. Work has been done on the following claims during this year: *Belle Vue* - shaft sunk to a depth of 60 feet. *Irene* - 50 foot shaft in ore. From the *Copper Giant* a considerable amount of rich ore has been taken out and piled ready for shipment. The ore on Phillipd creek is a copper pyrites, with some borite and malachite, and the lead may be traced for a considerable distance."

These workings were apparently directed at quartz-chalcopyrite-chalcocite-barite veins. No further work is documented until 1967, but Wolfhard (1967) reports a total of four short shafts, four adits up to 30 meters in length and six open cuts completed before 1940, with shipment of one carload of barite in the 1920's or 1930's.

In 1967, Cominco re-evaluated the copper occurrences for their porphyry potential with geological mapping, soil sampling and five bulldozer trenches. They concluded that the veins were economically uninteresting, but recognized significant stratabound



ROO 1-3 CLAIMS

CLAIM MAP

FORT STEELE MINING DIVISION, B.C.

TECK EXPLORATIONS LTD.

Drawn.	N.T.S.	Date.	FIG. No.
J.W.	82G/2W, 3E	June, 1989	2

disseminated mineralization associated with the contact between quartzite and stromatolitic dolomite (Wolfhard, 1967). However, Cominco believed the mineralization to be due to syenitic dyking and allowed their claims to lapse.

Teck Explorations Ltd. carried out reconnaissance geological mapping, soil sampling and a backhoe trenching-sampling program on the Roo property over the period of Sept 1 - 18, 1989.

The majority of this work was carried out in an area of sediment hosted copper mineralization in the central part of the Roo 1 claims last explored by Cominco in 1967. Copper assays as high as 4% were obtained from trench sampling.

5.0 REGIONAL GEOLOGY

The Belt/Purcell Supergroup comprises up to 15,000 metres of Proterozoic clastic and carbonate sediments, which extend over the East Kootenay area of south-eastern British Columbia, northern Idaho and northwestern Montana. They were deposited in an intracratonic basin, which may have been related to rifting. In the Galton range of the East Kootenays, on the eastern margin of the Rocky Mountain Trench, this sequence consists of Helikian sandstones, argillites and dolomites (Figure 3).

The Siyeh Formation (Unit 7) is composed predominantly of fine-crystalline dolomite and limestone, with thin upper and lower members of green argillite. Overlying the Siyeh Formation are up to 180 metres of andesitic flows (Unit 5b) termed the "Purcell Lavas" by Price (1961) and the "Nicol creek Formation" by Hoy and Carter (1988). This unit includes pillowed, vesicular or amygdaloidal flows ranging from andesite to basalt in composition.

The Sheppard Formation (Unit 8), termed the "lower member of the Gateway Formation" by Leech (1960), unconformably overlies the Nicol Creek Formation with a total thickness of approximately 50 metres. It consists of a basal conglomerate overlain by "light-coloured, dolomitic and quartzitic, fine-or medium-grained quartz sandstone, dolomite and oolitic dolomite. The upper part comprises light-coloured very fine crystalline dolomite, sandy and silty
dolomite, and stromatolitic dolomite with minor amounts of dolomitic sandstone" (Price, 1961).

The Gateway Formation upper member (Unit 8) is composed of about 300 metres of greenish grey and grey argillaceous siltstones in thin beds with partings of red argillite. Salt casts, mud-cracks, ripple marks and intraformational conglomerates are common.

The Phillipps Formation (Unit 9) consists of 200 metres of red and purplish red quartz sandstone and siltstone, with partings of argillite and micaceous argillite. These are gradational into the overlying Roosville Formation (Unit 10), which consists of over 1000 metres of green and grey argillite, siltstone and sandstone with lesser argillaceous and stromatolitic dolomite.

6.0 PROPERTY GEOLOGY AND MINERALIZATION

6.1 Property Geology

Several geological traverses were made in areas of exposed outcrop during the investigation period. These traverses are represented in figure 5 (Geology) at the back of this report.

Outcrop exposures are generally limited to steep, southward facing valley sides. The most easily recognizable outcrop features are buff-weathering, prominent dolomitic cliffs which form the base of the Upper Sheppard Formation. Overlying and underlying clastic beds have been recessively weathered and are poorly exposed. Cliffs of Nicol Creek basalts are exposed at lower elevation.

As all known copper occurrences are found either adjacent to or immediately below the lowermost dolomite unit of the Upper Sheppard Formation, most geologic work was directed towards this stratigraphic horizon.

Wolfhard (1967) recognized three Proterozoic volcanic and sedimentary rock units on the Roo property (Figure 3). The oldest is the basaltic Nicol Creek Formation (Unit 5b), which is composed of

> "a lower pillowed unit 80 feet thick, overlain by green amygdaloidal volcanics and purple massive and amygdaloidal volcanics. The abundance of purple rocks increases up section. The upper 50 feet occasionally contains lenticular beds of angular to sub-rounded volcanic detritus of coarse sand size."

The Nicol Creek basalts are unconformably overlain by Sheppard Formation clastic sediments and dolomites, subdivided by Wolfhard (1967) into two units.

> "The lower unit (Unit 8a) varies from 15 feet to 300 feet in thickness. In the thicker parts, the section includes a basal conglomerate, overlain by purple siltstones and sandstones, probably composed mainly of volcanic detritus, weathered very little chemically before deposition. Higher up section, sediments grade to arkose, feldspathic sandstone, quartz sandstone, and sub greywacke. Medium to thick bedded, cross-bedded and current ripple marked, quartzitic and dolomitic sandstones usually complete the upper 10 to 30 feet of the section...
>
> The upper Sheppard (8b) begins at the base of the first stromatolitic dolomite above the top of the Purcell lavas. Above this 5 to 15 foot member, the unit includes 20 to 40 feet of medium bedded grey quartzite with minor argillite and siltstone. Cross bedding and ripple marks are fairly common. The quartzite is overlain by a second 5 to 15 foot stromatolitic dolomite, followed by 10+ feet of red siltstone and dolomitic sandstone. The top is not exposed."

LEGEND

19	**GLENOGLE FORMATION:** graptolitic shale and fine-grained siltstone, generally limy, shaly limestone; **WONAH FORMATION:** quartzite, sandstone

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN AND LOWER ORDOVICIAN

18	**Mc KAY GROUP:** limestone, shale, intraformational limestone conglomerate

CAMBRIAN
MIDDLE AND/OR UPPER CAMBRIAN

17	**JUBILEE AND ELKO FORMATIONS:** dolomite

MIDDLE CAMBRIAN

16	**BURTON FORMATION:** shale, limestone; sandstone, conglomerate at base

LOWER AND (?) MIDDLE CAMBRIAN

15	**CRANBROOK FORMATION:** quartzite, grit, conglomerate, sandstone; **EAGER FORMATION:** shale, limestone, siltstone, sandstone

WINDERMERE OR LATER

14	Conglomerate

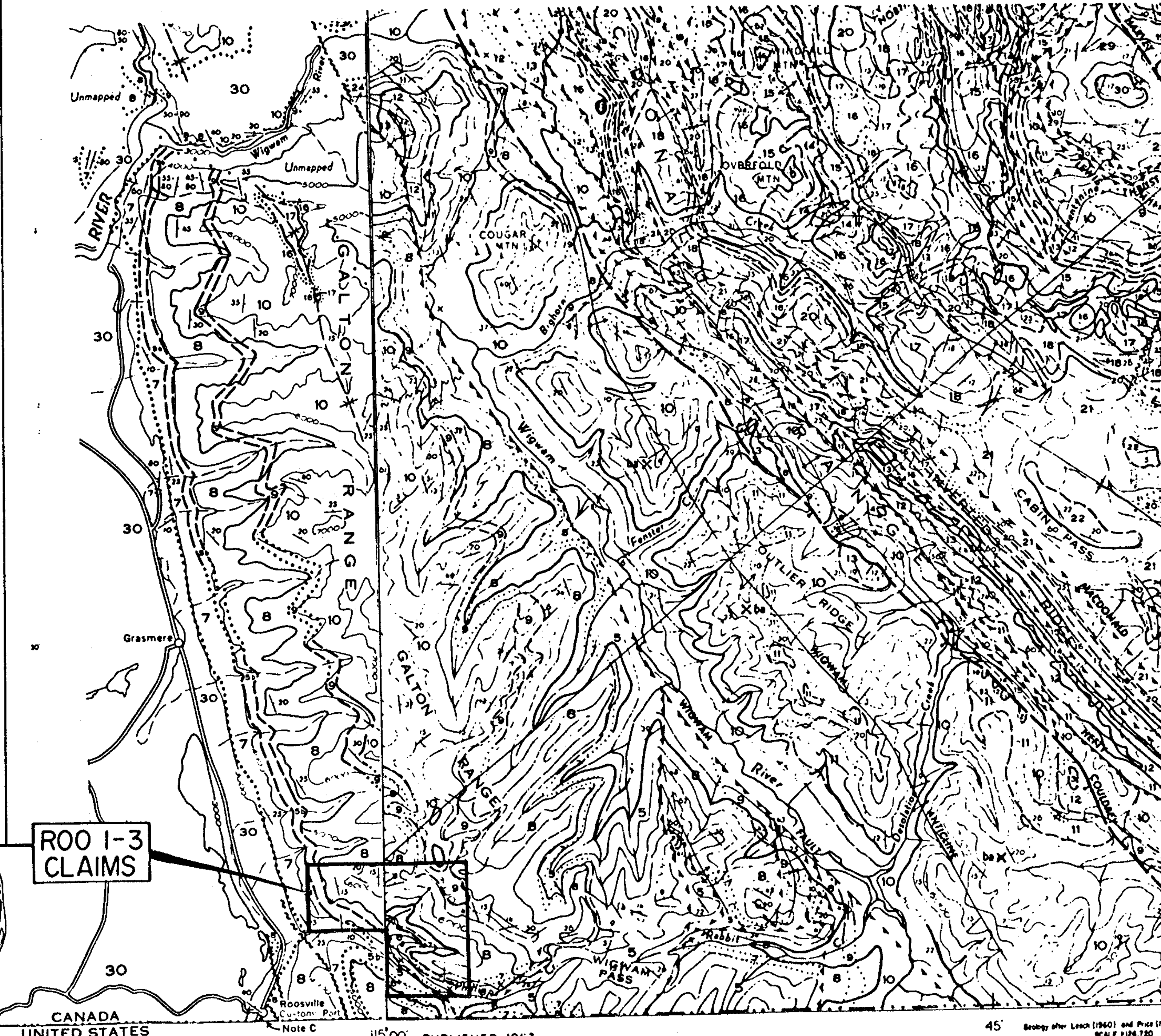
WINDERMERE

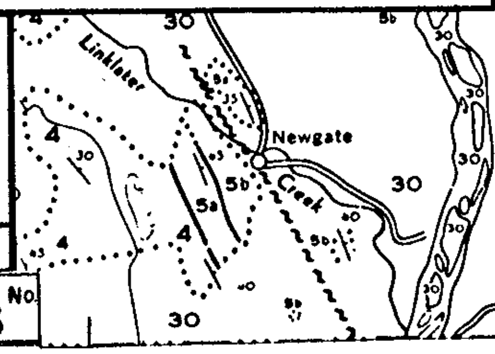
13	**TOBY FORMATION:** conglomerate, argillite, sandstone

PURCELL

PRECAMBRIAN

12	**MOUNT NELSON FORMATION:** argillite, dolomite, quartzite
10	**ROOSVILLE FORMATION:** laminated green argillite and siltstone, dolomitic in part; laminated black and grey argillite, grey quartzite; orange-weathering grey dolomite and grey-weathering limestone, both commonly stromatolitic and oolitic
9	**PHILLIPS FORMATION:** red quartzite, siltstone, and argillite
8	**GATEWAY FORMATION:** grey and green argillite and siltstone, partly dolomitic, grey quartzite, buff and orange weathering dolomite, commonly stromatolitic and in part oolitic; conglomerate; 8a, lower contact may be above base of rest of Gateway formation
11	**DUTCH CREEK FORMATION:** equivalent to units 8, 9, and 10
5	5a, green, grey, and purple siltstone, argillite, and quartzite; 5b, chiefly andesitic lava, breccia, and tuff except in Purcell Mountains south of latitude 49°30' where accompanied by green and grey argillite and siltstone, dolomitic in part, and quartzite
6 | 7	6. Comprises units 4 and 5 undivided 7. **SIYEH FORMATION:** red-weathering grey dolomite and argillaceous dolomite, grey dolomitic argillite and siltstone; quartzite, green argillite, grey-weathering grey limestone. Equivalent to 5a and part (most ?) of 4
4	**KITCHENER FORMATION:** grey and green argillite and dolomitic argillite, grey dolomite, sandy in part (dolomitic rocks weather buff to brown); quartzite; grey limestone
3	**CRESTON FORMATION:** grey and green argillite and siltstone, grey, green, white, and purple quartzite
2	**ALDRIDGE FORMATION:** grey quartzite and siltstone, commonly massive, interbeds, partings, and bed-tops of dark argillite; thinly laminated platy dark argillites and siltstones dominant in upper part, mostly rusty weathering; 2a, dark grey to black laminated argillite grey siltstone and quartzite, rusty weathering. May be equivalent to only upper part of 2
1	**FORT STEELE FORMATION:** white siliceous quartzite, grey argillaceous quartzite, dark argillite, grey and black dolomitic and calcareous argillite, dolomite May be equivalent to lower part of 2





ROO 1-3 CLAIMS
REGIONAL GEOLOGY

Teck Explorations Ltd.

Drawn.	N.T.S.	Date.	FIG. No.
J. W.	82G/2W, 3E	June, 1989	3

115°00'

PUBLISHED, 1962
COPIES OF THIS MAP MAY BE OBTAINED FROM THE DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA

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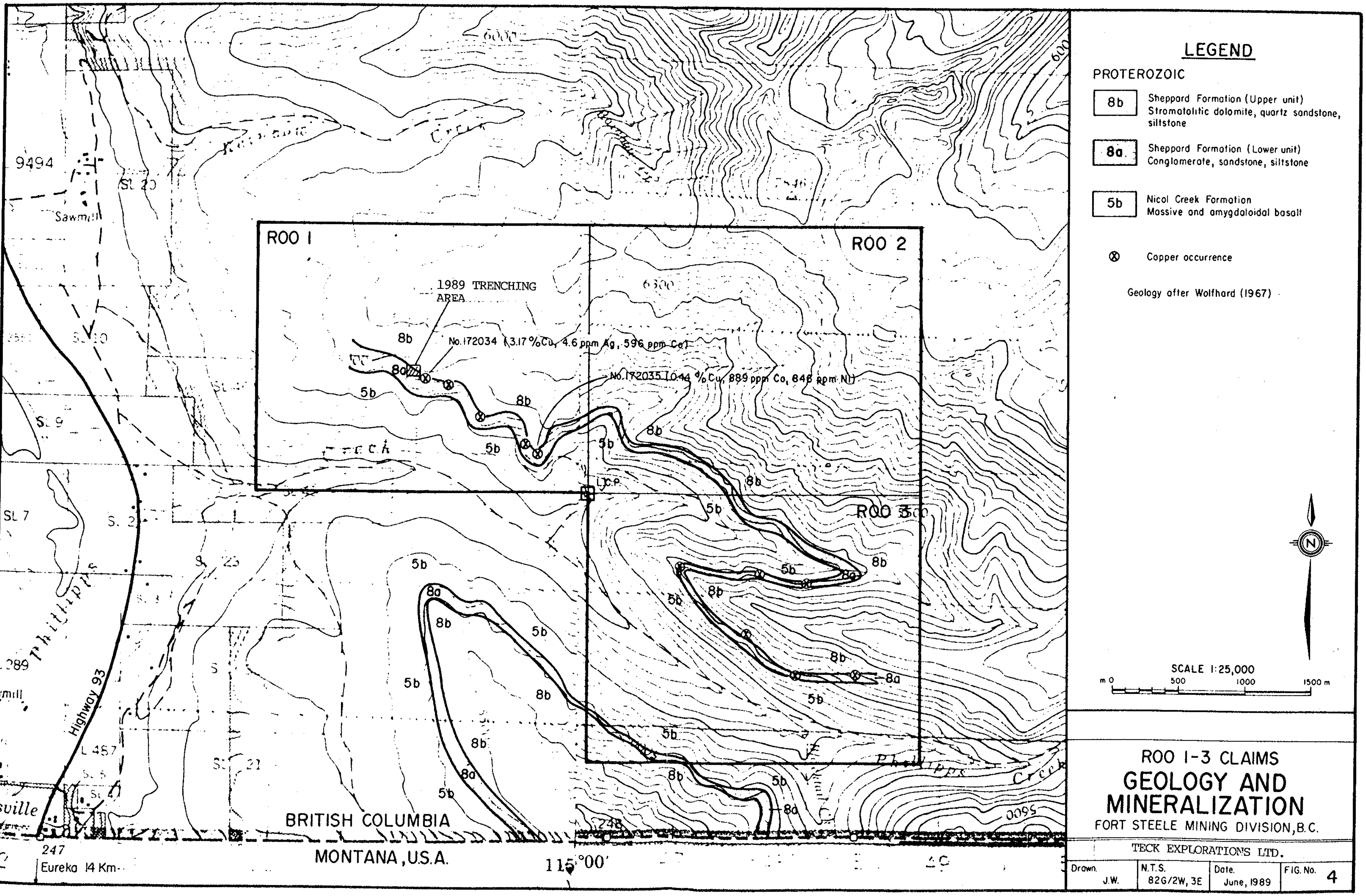

ROO 1-3 CLAIMS
GEOLOGY AND MINERALIZATION
FORT STEELE MINING DIVISION, B.C.

TECK EXPLORATIONS LTD.

Drawn.	N.T.S.	Date.	FIG. No.
J.W.	82G/2W, 3E	June, 1989	4

ROO PROPERTY - GENERALIZED GEOLOGY

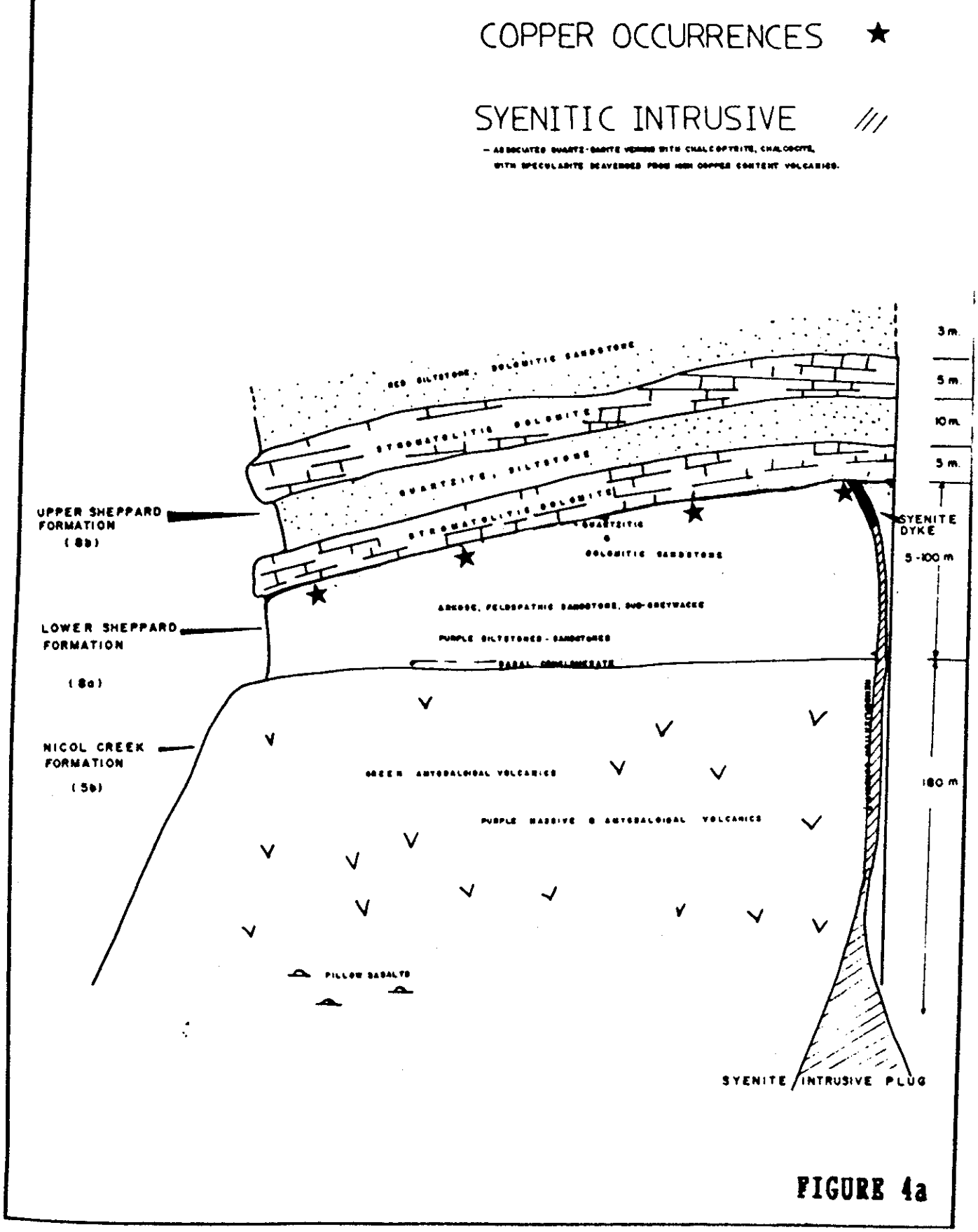

FIGURE 4a

Wolfhard (1967) interpreted a very shallow anticline in the Nicol Creek Formation, with an amplitude of 160 metres and wave length of approximately two kilometres. The Sheppard Formation is gently warped, with dips up to 15° to the east.

In addition to the above generalized geology of the Roo property, the following comments will describe aspects of the Lower Sheppard Formation.

A. Arkosic Greywacke (Quartzo-feldspathic sandstone) - Unit 2

This upper unit of the Lower Sheppard Formation is from 40 - 80 m thick and hosts all significant occurrences of copper mineralization on the Roo property. The unit consists of homogenous fine - medium grained indurated sandstone. In the uppermost part of this unit is a porous, 1 - 5 m thickness of quartz rich, leached, coarse sandstone/conglomerate. This narrow upper zone hosts the most economically promising copper showings of the Roo property. Below the upper porous zone is a continuous zone of weakly -moderately hematized sandstone with hematite occurring on spots, patches, clast replacements and as hairline - 2 mm veinlets, In the upper, more weathered sections the sandstones are pervasively limonite stained after hematite/pyrite.

The vast majority of all quartz-barite veining occurs within this unit and is generally very narrow (<3 cm) and barren of mineralization except for very minor chalcopyrite/pyrite blebs and disseminations. Quartz veins up to 3 m in width were encountered in drill hole R-90-4, but were also barren. Quartz veins typically have limonitic rims and pits, a probable corrosion result of associated hematite/pyrite.

Most fracture zones/faults were seen within the homogenous greywacke unit. Fracture zones are generally subparallel to core axes thus indicating steep attitudes.

B. Turbidite Sequence (Unit 3)

The homogenous quartz-feldspathic is conformably underlain by a mixed sequence of fresh (unaltered) purple siltstones, fine to coarse sandstones and fine conglomerate. The overall texture consists of angular to sub-angular clasts, generally not greater than 0.5 cm, consisting mostly of purple-red volcanic (basalt) and cherty composition. Bedding thicknesses are irregular with gradual downward coarsening to a 3 - 5 meter bed of coarse amygdaloidal basalt fragment conglomerate. The turbidite sequence is approximately 20 - 30 metres thick overlying fresh amygdaloidal Nicol Creek basalts.

The turbidite sequence displays negligible alteration or quartz-barite veining and lacks evidence of faulting.

6.2 Mineralization

Several modes of mineralization occur on the Roo property:

1. Disseminated chalcopyrite, with accompanying values in silver, cobalt and barium in sandstones below a stromatolic dolomite horizon.

2. Quartz barite veins containing scattered patches of primary chalcopyrite (± specularite, chalcocite).

3. Weak disseminated chalcopyrite within lowermost one metre of stromatolitic dolomite at base of Sheppard Formation - upper unit.

4. One occurrence of fine grain syenite dyke with quartz-barite veinlets carrying disseminated chalcopyrite - possibly related to #2 above.

The mode of copper (silver-cobalt) mineralization within quartzo-feldspathic sandstones, below a stromatolitic dolomite horizon, appears to be the most economically promising on the Roo property.

This type of occurrence has the highest and most consistent assay values. Anomalous values in barium, cobalt and silver are also associated with high copper assay values.

To date, this type of occurrence is known to occur in two separate areas; the first being the 1989 trenching area and the second located approximately 1 km southeast of the trenched area. This second area is adjacent to the trench area access road and is obscured by overburden except for about 5 metres of locally mineralized sandstones. This second area is significant in that copper (silver-cobalt) mineralization occurs in similar sandstones as the trenches area giving a favourable horizon over at least a one kilometre strike length. Two samples (24100, 23801) gave respective assay values of 0.47% and 0.70% copper over 1.0 m and 0.5 m intervals with anomalous accompanying values in silver and cobalt.

Copper mineralization associated with quartz barite veining (± specularite) occurs in several locations throughout the Roo claims. Mineralization of this type is present at the upper end of trench #8 and in dump material from an old shaft located approximately 150 m east of the trenched area. The quartz barite veining with accompanying copper mineralization probably represents remobilization of primary mineralization from sandstone horizons. The heat source for the remobilization process is likely from a deeper seated syenitic intrusive body. The probable source of the copper mineralization is the Nicol Creek basalts. One float sample of basalt contained fine grained chalcopyrite within pore spaces.

The suggested sequence of events resulting in mineralization on the Roo property is as follows:

1. Emplacement of Nicol Creek basalts containing high copper content.

2. Deposition of lower unit Sheppard Formation (conglomerate, sandstone, siltstone) with subsequent deposition of copper sulphide detrital grains trapped within sediment matrix.

3. Later stage remobilization process caused by syenite intrusive with scavenging of copper from surrounding sediments by quartz-barite veins (Tertiary?).

4. Concentration of copper through fault action and later stage ground water infiltration (Post Tertiary?).

6.3 Structure

Within the claim area, the observed structures are:

1. A gentle (amplitude 150 m, wavelength > 1.5 km) anticlinical structure in the Purcell, which may be depositional/tectonic.

2. Very gentle warping (dips to 15°) in the Sheppard, interpreted as tectonic, because the sediments are mainly shallow water types, probably deposited in a plane, with low initial dips.

3. A few northerly striking normal faults with vertical displacements on the order of one to six metres.

4. One thrust fault dipping about 10° - 15° to the west, with a maximum horizontal movement of 30 metres.0

The less competent beds often have a foliation readily visible on the weathered surface, striking 170 - 180° and dipping very steeply west. This is interpretated as a fracture cleavage associated with the deformation of the beds.

About one half of the observed quartz veins occupy the N-S trend, while the other half, with a very few exceptions, strike 090° - 120° and dip very steeply S-W to vertical.

Orientaions of bedding, veining, shearing, faulting indicates one period of deformation along N-S axis, possibly followed by minor tilting on an E-W axis.

7.0 SOIL GEOCHEMISTRY

A total of 29 soil samples were taken from three separate areas on the Roo property during the course of reconnaissance geologic mapping.

The three area are as follows:

1) SS 1-9 Sampling along base of Stromatolite Horizon (S.W. corner of Roo 2)

2) SS 10-19 Sampling to cover westward extension of 1989 soil survey (N.W. portion of Roo 1)

3) SS 25-34 S.W. corner of Roo 3

All samples were taken from the B Soil horizon dried, sieved to -80 mesh and subjected to nitric-aqua regia digestion.

Only samples from the south-west corner of Roo 3 (particularly SS-29, 30, 31, 32, 34) exceeded background values. Their values may be a reflection of proximity to amygdaloidal basalts.

The soil sample locations and associated copper geochemical values are plotted on the Geology Map (figure 5) located at the back of this report.

8.0 DIAMOND DRILLING

8.1 Diamond Drill Program

A diamond drill program on the Roo property consisting of 605.7 m of NQ drilling in 8 holes was carried out by Connors Drilling over the period August 7 - 20, 1990. Road widening and preparation of one large drill site was carried out August 1 - 6. Five of the eight holes were drilled from the one main prepared site located, approximately 50 m northeast and uphill from a corner of trench 1 and trench 4 (1989 program). These 5 holes were drilled in an attempt to intersect the sandstone hosted copper mineralization as was located in the 1989 trenching program. Hole no. 6 (R-90-6) was drilled from the main access road approximately 600 m down the road and southeast from the trenching area.

Holes 7 and 8 were again drilled from a common road site to test a minor sediment hosted copper occurrence, possibly related to a local syenite (trachyte) sill.

All drill core for the 1990 drill program is stored on the property in the trenching area (Roo 1)

A summary of drill information is as follows:

	Start	Finish	Depth	Dip	Azimuth	Elevation (Approx)
R-90-1	Aug 7/90	Aug 8/90	85.0 m	-70	205°	1493
R-90-2	Aug 8	Aug 11	93.0	-70	205°	1493
R-90-3	Aug 11	Aug 12	76.5	-70	290°	1493
R-90-4	Aug 13	Aug 15	111.25	-55	100°	1493
R-90-5	Aug 15	Aug 16	34.44	-60	40°	1493
R-90-6	Aug 16	Aug 17	68.6	-70	90°	1402
R-90-7	Aug 18	Aug 19	72.9	-60	50°	1402
R-90-8	Aug 19	Aug 20	64.0	-45	0°	1402
			605.7 m			

8.2 Drilling Results

Of the eight holes drilled on the Roo property, four produced interesting, but non-economic copper values. In all cases, the greatest copper concentration occurred at the top of a thick sequence of quartzo-feldspathic wackes close to their interface with overlying stromatolitic dolomites/dolomitic sandstones.

Mineralization occurs mainly in the form of fracture coatings as malochite-chalcocite within porous, leached and broken quartzo-feldspathic greywacke or fine conglomerates.

Mineralization appears to have been concentrated as a result of groundwater movement through a porous sandstone host-rock lying below an impervious dolomite barrier. Additional concentrations may have been brought about by fault action through existing porous rocks. The appearance of narrow zones of 1 - 2% disseminated chalcopyrite in holes R-90-4 and R-90-6 suggest a possible syngenetic origin for the copper occurrences, however most mineralized sections show little evidence of primary copper sulphides with only the secondary malachite-chalcocite coatings producing the high copper values. The bed of weathered strata carrying the copper values may represent a possible placer occurrence with coarse sediments trapping detrital chalcopyrite followed by secondary formation of malachite and chalcocite concentrated through groundwater movement. The source of chalcopyrite is not certain, but may have been derived from weathering of copper rich basalts or quartz-barite veins which are widespread and commonly carry blebs and disseminations of chalcopyrite.

It is concluded that the majority of copper values on the Roo property have been concentrated through epigenetic processes such as faulting with subsequent groundwater infiltrations providing secondary copper enrichment.

Summary of Drill Results (1990)

Hole No.	Interval	(m)	Copper (%)	Silver (ppm)	Cobalt (ppm)
R-90-4	20.80 - 21.50	0.70	0.20	3.6	401
	21.50 - 22.50	1.05	0.99	3.4	460
	22.55 - 23.77	1.22	0.03	2.2	55
	23.77 - 25.15	1.38	0.11	3.4	222
	25.15 - 25.90	0.76	0.93	5.2	299
	25.90 - 27.43	1.53	0.97	6.8	127
	27.43 - 28.96	1.52	1.73	4.6	376
	28.96 - 30.00	1.04	1.87	4.4	249
	30.00 - 30.63	0.63	1.02	3.2	371
	30.63 - 31.85	1.22	0.16	2.6	176
R-90-5	17.68 - 19.50	1.83	1.23	3.2	871
	19.50 - 20.73	1.23	1.19	33.8	1340
	20.73 - 21.79	1.06	0.64	4.2	727
R-90-6	3.00 - 4.57	1.57	0.77	2.2	1325
	4.57 - 6.10	1.53	1.04	3.2	1475
	6.10 - 7.62	1.52	0.87	2.4	382
R-90-7	16.92 - 18.13	1.21	0.89	2.6	399

9.0 RECOMMENDATIONS

The 1990 drilling program on the Roo property produced several intersections of weak copper mineralization within weathered, fractured quartzo-feldspathic sandstones and conglomerates. Thicknesses of mineralization were between one to 5 meters and were in the range of 1 to 2% copper.

The copper showings are interesting, though presently uneconomic. The original source for the copper mineralization is not certain, but appears to be the result of secondary emplacement and not that of a syngetic red-bed copper style of mineralization.

It is interesting to note that mineralization occurs beneath the stromatolitic horizon in all three drilling locations, thus indicating some stratigraphic continuity of the mineralization.

It is suggested that further exploration be carried out along the Lower-Upper Sheppard Formation interface to locate greater thicknesses or different styles of copper mineralization.

10.0 EXPENSES; ROO PROJECT - 1990

1. Salaries

G. Thomson (Geologist)		
30 days @ 250.25/day	$7,507.50	
R. McDonald (Geologist)		
30 days @ 217.50/day	6,525.00	
C. McDonald (Geologist)		
25 days @ 217.50/day	5,437.50	
Sub-total	**$19,470.00**	
		$19,470.00

2. Meals & Accomodation

Ksanka Motel - Eureka, Mont.		
85 man days @ 31.14/day		$2,647.23

3. Travel & Transportation

2 - 4x4 Truck Rentals (including gas)		
@ 53.30/day		$1,599.04

4. Diamond Drilling Costs

Connors Drilling Ltd.		
a. 605.64 meters (1987') of NQ core in 8 holes @ $110.31/m	$66,808.67	
Dixon Trucking		
b. Cat rentals for road construction, drill moves, etc	$9,500.77	
Sub-total	**$76,309.44**	
		$76,309.44

5. Assaying

Chemex Labs		
a. 28 soil samples (32 element I.C.P. analysis) @ 8.52/sample	$238.56	
b. 29 drill core samples (copper assay+32 element I.C.P. analysis) @ 15.39/sample	446.31	
Sub-total	**$684.87**	
		$684.87

6.	**Equipment Rentals**	
	(Binocular Microscope, Core Splitter)	$506.48
7.	**Petrographic Study**	
	Vancouver Petrolgraphics Ltd.	$469.65
8.	**Report Preparation**	
	5 days @ 250/day	$1,251.25
9.	**Drafting and Typing**	$600.00
	TOTAL	**$103,537.96**

11.0 BIBLIOGRAPHY

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APPENDIX A

Certificate of Author

STATEMENT OF QUALIFICATIONS

I, Gregory R. Thomson, hereby certify that:

1. I am currently employed as a geologist by Teck Explorations Ltd. with offices at #960-175 Second Ave., Kamloops, B.C.

2. I graduated from the University of British Columbia in 1970 with a major in Geology.

3. I have worked continuously as a geologist in British Columbia.

4. The work described herein was done under my direct supervision.

G. R. Thomson

APPENDIX B

Methods of Analysis
Chemex Labs Ltd.

Chemex Labs Ltd.

Analytical Chemists *Geochemists* *Registered Assayers*

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1

Phone: (604) 984-0221
Telex: 04-352597
Fax: (604) 984-0218

32 ELEMENT GEOCHEMISTRY PACKAGE - ICP-AES

Prepared sample (0.5g) is digested with concentrated nitric-aqua regia acid at medium heat for approximately 2 hours. The acid solution is diluted to 25 ml with demineralized water, mixed and analyzed on a Jarrell-Ash 1100 Plasma unit after calibration with proper standards. Results are corrected for spectral interelement interferences.

Detection Limits:

*Al	0.01	%	*Cr	1	ppm	Mn	5	ppm	*Na	0.01	%
Sb	5	ppm	Co	1	ppm	Hg	1	ppm	*Sr	1	ppm
As	5	ppm	Cu	1	ppm	Mo	1	ppm	*Tl	10	ppm
*Ba	10	ppm	Fe	0.01	%	Ni	1	ppm	*Ti	0.01	%
*Be	0.5	ppm	*Ga	10	ppm	P	10	ppm	*W	10	ppm
Bi	2	ppm	*La	10	ppm	*K	0.01	%	U	10	ppm
Cd	0.5	ppm	Pb	2	ppm	Sc	1	ppm	V	1	ppm
*Ca	0.01	%	*Mg	0.01	%	Ag	0.2	ppm	Zn	2	ppm

*Elements for which the digestion is possibly incomplete.

Cu % - Chemex Code 301

A 2 gram subsample is digested in a hot perchloric-nitric acid mixture for two hours, cooled, then transferred into a 250 ml volumetric flask. The solution is then analyzed on an atomic absorption instrument.

APPENDIX C

Drill Core and Soil Analyses

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: TECK EXPLORATION LTD.

960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 1375
Comments: ATTN: FRED DALEY

Page Number : 1-A
Total Pages : 1
Invoice Date: 31-JUL-90
Invoice No. : I-9019537
P.O. Number :

CERTIFICATE OF ANALYSIS A9019537

SAMPLE DESCRIPTION	PREP CODE		Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
SS-01	201	238	< 0.2	2.51	5	580	0.5	< 2	0.22	< 0.5	6	11	8	2.22	< 10	< 1	0.13	10	0.30	710	1
SS-02	201	238	< 0.2	2.56	5	610	0.5	< 2	0.22	< 0.5	6	9	8	2.66	< 10	< 1	0.12	10	0.34	455	1
SS-03	201	238	< 0.2	2.67	< 5	660	0.5	< 2	0.25	< 0.5	9	8	16	2.25	< 10	< 1	0.14	10	0.26	440	< 1
SS-04	201	238	< 0.2	2.04	10	670	< 0.5	< 2	0.34	< 0.5	10	10	24	2.33	< 10	< 1	0.11	20	0.33	480	< 1
SS-05	201	238	< 0.2	2.06	< 5	920	< 0.5	< 2	0.41	< 0.5	9	7	13	2.29	< 10	< 1	0.27	20	0.26	1545	< 1
SS-06	201	238	< 0.2	2.75	< 5	640	< 0.5	< 2	0.35	< 0.5	7	7	13	2.37	< 10	< 1	0.18	10	0.27	625	< 1
SS-07	201	238	< 0.2	1.75	10	390	< 0.5	< 2	0.31	< 0.5	7	7	15	1.93	< 10	< 1	0.15	20	0.29	570	< 1
SS-08	201	238	< 0.2	2.79	5	460	< 0.5	< 2	0.14	< 0.5	9	10	17	2.24	< 10	< 1	0.13	10	0.32	540	< 1
SS-09	201	238	< 0.2	2.22	< 5	770	< 0.5	< 2	0.22	< 0.5	6	10	4	1.98	< 10	< 1	0.14	10	0.28	995	< 1
SS-10	201	238	< 0.2	2.92	< 5	690	< 0.5	< 2	0.34	< 0.5	6	9	10	2.41	< 10	< 1	0.25	20	0.30	350	< 1
SS-11	201	238	< 0.2	2.40	< 5	770	< 0.5	< 2	0.35	0.5	6	8	8	1.91	< 10	< 1	0.25	10	0.28	820	< 1
SS-12	201	238	< 0.2	1.26	< 5	320	< 0.5	< 2	0.17	< 0.5	6	9	9	2.19	< 10	< 1	0.19	20	0.38	295	< 1
SS-13	201	238	< 0.2	2.44	< 5	940	< 0.5	< 2	0.40	0.5	8	9	10	2.34	< 10	< 1	0.33	20	0.33	1185	< 1
SS-14	201	238	< 0.2	3.53	< 5	830	< 0.5	< 2	0.29	< 0.5	6	9	10	2.30	< 10	< 1	0.25	10	0.38	210	< 1
SS-15	201	238	< 0.2	1.60	< 5	410	< 0.5	< 2	0.20	< 0.5	6	9	6	1.96	< 10	< 1	0.22	20	0.33	445	< 1
SS-16	201	238	< 0.2	1.34	< 5	360	< 0.5	< 2	0.22	< 0.5	7	10	10	2.09	< 10	< 1	0.20	20	0.38	595	< 1
SS-17	201	238	< 0.2	2.49	5	670	< 0.5	< 2	0.35	< 0.5	10	9	20	2.56	< 10	< 1	0.27	20	0.40	480	< 1
SS-18	201	238	< 0.2	1.69	< 5	590	< 0.5	< 2	0.33	< 0.5	6	6	10	1.83	< 10	< 1	0.20	10	0.28	815	< 1
SS-19	201	238	< 0.2	1.65	< 5	550	0.5	< 2	0.32	< 0.5	13	7	23	2.65	< 10	< 1	0.19	20	0.40	515	< 1
SS-25	201	238	< 0.2	2.18	10	420	0.5	< 2	0.11	< 0.5	30	10	33	2.92	< 10	< 1	0.06	20	0.40	125	< 1
SS-26	201	238	< 0.2	3.59	< 5	370	< 0.5	< 2	0.19	< 0.5	10	11	22	2.60	< 10	< 1	0.07	10	0.25	335	< 1
SS-27	201	238	< 0.2	1.94	< 5	430	< 0.5	2	0.14	< 0.5	9	12	11	2.48	< 10	< 1	0.08	20	0.47	315	< 1
SS-28	201	238	< 0.2	2.39	< 5	990	< 0.5	< 2	0.44	< 0.5	34	11	29	2.76	< 10	< 1	0.12	10	0.33	1050	1
SS-29	201	238	0.2	2.77	15	940	0.5	< 2	0.26	0.5	34	7	152	2.46	< 10	< 1	0.11	10	0.25	295	1
SS-30	201	238	< 0.2	2.60	< 5	590	0.5	< 2	0.16	< 0.5	27	6	58	2.61	< 10	1	0.08	10	0.28	250	< 1
SS-31	201	238	< 0.2	2.39	< 5	620	< 0.5	< 2	0.15	< 0.5	54	10	80	3.15	< 10	< 1	0.09	20	0.36	190	< 1
SS-32	201	238	< 0.2	2.61	< 5	330	0.5	< 2	0.34	< 0.5	10	14	155	4.84	< 10	< 1	0.09	20	0.33	1145	3
SS-33	201	238	< 0.2	1.75	< 5	450	< 0.5	< 2	0.27	< 0.5	9	8	29	2.88	< 10	< 1	0.07	20	0.29	315	< 1
SS-34	201	238	< 0.2	1.48	< 5	610	< 0.5	< 2	0.26	< 0.5	28	9	74	6.57	< 10	< 1	0.16	20	0.34	1535	1

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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PHONE: 604-984-0221

TECK EXPLORATION LTD.
960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 1375
Comments: ATTN: FRED DALEY

Invoice Date: 31-JUL-90
Invoice No. : I-9019537
P.O. Number :

CERTIFICATE OF ANALYSIS A9019537

SAMPLE DESCRIPTION	PREP CODE		Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
SS-01	201	238	0.01	12	290	10	< 5	3	10	0.07	< 10	< 10	22	< 10	34
SS-02	201	238	0.01	14	310	6	< 5	4	10	0.07	< 10	< 10	25	< 10	32
SS-03	201	238	0.02	14	280	26	< 5	3	13	0.08	< 10	< 10	24	< 10	32
SS-04	201	238	0.01	12	350	14	< 5	4	11	0.06	< 10	< 10	20	< 10	32
SS-05	201	238	0.01	9	560	2	< 5	4	15	0.05	< 10	< 10	17	< 10	36
SS-06	201	238	0.02	9	430	8	< 5	4	16	0.08	< 10	< 10	19	< 10	38
SS-07	201	238	< 0.01	11	480	4	< 5	3	11	0.05	< 10	< 10	18	< 10	36
SS-08	201	238	0.01	15	1310	4	< 5	3	9	0.08	< 10	< 10	23	< 10	44
SS-09	201	238	0.01	10	580	< 2	< 5	2	9	0.06	< 10	< 10	20	< 10	30
SS-10	201	238	0.02	11	620	16	< 5	4	16	0.09	< 10	< 10	19	< 10	40
SS-11	201	238	0.02	11	560	2	< 5	3	16	0.07	< 10	< 10	18	< 10	58
SS-12	201	238	< 0.01	10	160	2	< 5	3	8	0.04	< 10	< 10	20	< 10	32
SS-13	201	238	0.01	13	460	< 2	< 5	4	15	0.07	< 10	< 10	19	< 10	60
SS-14	201	238	0.02	19	1860	< 2	< 5	3	17	0.10	< 10	< 10	24	< 10	76
SS-15	201	238	< 0.01	8	220	4	< 5	3	10	0.06	< 10	< 10	19	< 10	38
SS-16	201	238	< 0.01	8	230	10	< 5	3	9	0.05	< 10	< 10	19	< 10	32
SS-17	201	238	0.01	9	540	8	< 5	5	12	0.07	< 10	< 10	17	< 10	44
SS-18	201	238	0.01	6	400	8	< 5	2	10	0.05	< 10	< 10	15	< 10	52
SS-19	201	238	< 0.01	9	250	10	< 5	4	10	0.04	< 10	< 10	19	< 10	38
SS-25	201	238	< 0.01	12	940	10	< 5	2	7	0.07	< 10	< 10	36	< 10	32
SS-26	201	238	0.02	14	1170	6	< 5	3	14	0.12	< 10	< 10	31	< 10	38
SS-27	201	238	< 0.01	11	550	6	< 5	2	6	0.05	< 10	< 10	25	< 10	40
SS-28	201	238	0.02	15	440	4	< 5	3	16	0.09	< 10	< 10	26	< 10	44
SS-29	201	238	0.03	23	520	6	< 5	3	17	0.11	< 10	< 10	26	< 10	38
SS-30	201	238	0.02	16	1190	2	< 5	2	11	0.10	< 10	< 10	29	< 10	34
SS-31	201	238	0.01	19	400	12	< 5	2	9	0.09	< 10	< 10	34	< 10	40
SS-32	201	238	0.01	15	400	10	5	4	10	0.08	< 10	< 10	34	< 10	34
SS-33	201	238	< 0.01	10	650	< 2	< 5	3	11	0.05	< 10	< 10	24	< 10	28
SS-34	201	238	< 0.01	15	1000	14	< 5	6	11	0.05	< 10	< 10	25	< 10	42

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221

TECK EXPLORATION LTD.
960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 1375
Comments: ATTN:F. DALEY

Invoice Date: 23-AUG-90
Invoice No. : I-9021210
P.O. Number :

CERTIFICATE OF ANALYSIS A9021210

SAMPLE DESCRIPTION	PREP CODE		Cu %	Al %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
502285	258	295	0.02	0.95	2.8	50	240	< 0.5	< 2	2.55	< 0.5	1	48	244	5.42	30	< 1	0.69	90	1.99	735
502286	258	295	0.20	1.25	3.6	160	2820	< 0.5	< 2	3.96	< 0.5	401	127	2230	3.31	40	< 1	0.90	130	0.18	990
502287	258	295	0.99	1.01	3.4	80	1340	< 0.5	< 20	0.18	< 0.5	460	123	>10000	3.54	30	2	0.71	70	0.12	710
502288	258	295	0.03	1.64	2.2	5	1610	0.5	< 2	1.56	1.5	55	27	357	1.35	30	< 1	1.22	80	0.18	500
502289	258	295	0.11	1.60	3.4	85	670	< 0.5	4	3.22	< 0.5	222	127	1185	4.16	30	6	1.14	110	1.08	1285
502291	258	295	0.93	1.15	5.2	90	380	< 0.5	< 20	1.64	< 0.5	299	120	>10000	4.75	30	< 1	0.87	110	0.77	730
502292	258	295	0.97	0.94	6.8	55	350	1.5	< 20	0.07	< 0.5	127	98	>10000	3.49	40	< 1	0.70	70	0.09	115
502293	258	295	1.73	0.82	4.6	80	280	2.0	< 20	0.04	< 0.5	376	150	>10000	3.71	30	< 1	0.59	50	0.07	510
502294	258	295	1.87	0.81	4.4	65	290	1.5	< 20	0.05	< 0.5	249	116	>10000	3.48	40	1	0.66	60	0.07	100
502295	258	295	1.02	1.55	3.2	10	620	1.5	< 20	0.33	< 0.5	371	32	>10000	1.60	60	< 1	1.27	140	0.12	735
502296	258	295	0.16	1.23	2.6	15	310	1.5	2	3.89	< 0.5	176	36	1695	3.24	40	< 1	1.02	110	1.34	1455
502297	258	295	0.01	1.24	2.0	5	250	2.0	< 2	5.29	< 0.5	18	20	91	3.30	30	< 1	1.06	100	2.00	1745
502298	258	295	0.15	1.10	2.2	5	370	2.5	6	3.31	< 0.5	144	32	1675	5.09	40	< 1	0.96	110	1.14	1565

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
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TECK EXPLORATION LTD.

960 - 175 2ND AVE.
KAMLOOPS, BC
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Project : 1375
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Page Num 1-B
Total Pages : 1
Invoice Date: 23-AUG-90
Invoice No. : I-9021210
P.O. Number :

CERTIFICATE OF ANALYSIS A9021210

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
502285	258	295	4	0.06	5	1020	4	< 5	8	79	0.01	< 10	< 10	5	< 10	66
502286	258	295	2	0.03	69	890	24	< 5	8	17	0.01	< 10	< 10	44	< 10	22
502287	258	295	7	0.03	72	400	10	< 5	4	12	< 0.01	< 10	< 10	23	< 10	46
502288	258	295	< 1	0.03	15	1060	2	< 5	6	13	0.01	< 10	< 10	25	< 10	6
502289	258	295	8	0.03	61	1040	32	< 5	7	21	0.01	< 10	< 10	41	< 10	18
502291	258	295	12	0.03	120	600	24	< 5	6	18	0.01	< 10	< 10	34	< 10	48
502292	258	295	16	0.02	36	200	18	< 5	3	9	< 0.01	< 10	< 10	16	< 10	36
502293	258	295	25	0.02	84	200	< 2	5	4	5	< 0.01	< 10	< 10	18	< 10	64
502294	258	295	28	0.02	67	200	10	5	4	5	< 0.01	< 10	< 10	13	< 10	68
502295	258	295	3	0.02	62	1400	14	< 5	11	15	0.01	< 10	< 10	6	< 10	38
502296	258	295	2	0.03	35	1070	10	10	11	38	0.01	< 10	< 10	4	< 10	16
502297	258	295	1	0.03	6	1100	8	< 5	12	58	0.01	< 10	< 10	3	< 10	12
502298	258	295	1	0.03	26	1010	< 2	25	9	29	0.01	< 10	< 10	3	< 10	34

CERTIFICATION: B. Caughlin

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1. TECK EXPLORATION LTD.
960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : ~~1397~~ 1375
Comments: ATTN: FRED DALEY

Invoice Date: 29-AUG-90
Invoice No. : I-9021448
P.O. Number :

CERTIFICATE OF ANALYSIS A9021448

SAMPLE DESCRIPTION	PREP CODE		Cu %	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
502051	258	295	1.23	3.2	0.54	120	5260	< 0.5	16	0.06	< 0.5	871	64	>10000	2.60	30	< 1	0.33	60	0.07	695
502052	258	295	1.19	33.8	1.22	90	1640	1.0	20	0.11	< 0.5	1340	101	>10000	3.62	30	< 1	0.73	60	0.14	1450
502053	258	295	0.64	4.2	0.90	155	790	< 0.5	14	0.09	< 0.5	727	117	6740	3.36	30	< 1	0.58	60	0.10	655
502054	258	295	0.02	1.8	1.06	15	840	0.5	< 2	4.56	< 0.5	158	26	184	3.09	40	< 1	0.72	100	1.20	1060
502055	258	295	0.77	2.2	0.90	105	290	< 0.5	28	1.79	< 0.5	1325	157	8140	4.00	20	< 1	0.63	60	0.63	1565
502056	258	295	1.04	3.2	0.65	150	170	< 0.5	18	0.97	< 0.5	1475	150	>10000	4.46	20	1	0.50	60	0.35	840
502057	258	295	0.87	2.4	0.81	60	410	< 0.5	16	0.19	< 0.5	382	196	9150	3.80	20	1	0.56	50	0.12	650
502058	258	295	0.03	1.0	0.57	5	520	< 0.5	2	3.34	< 0.5	41	61	319	3.06	30	< 1	0.45	80	1.68	1935
502059	258	295	< 0.01	1.0	1.12	< 5	810	< 0.5	6	1.32	< 0.5	3	63	51	7.99	30	< 1	0.74	90	1.90	830

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: TECK EXPLORATION LTD.
960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : ~~1857~~ 1375
Comments: ATTN: FRED DALEY

Page Num 1-B
Total Pages : 1
Invoice Date: 29-AUG-90
Invoice No. : I-9021448
P.O. Number :

CERTIFICATE OF ANALYSIS A9021448

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
502051	258	295	18	0.01	127	370	20	< 5	2	13	< 0.01	< 10	< 10	7	< 10	56
502052	258	295	11	0.02	209	470	8	< 5	6	9	< 0.01	< 10	< 10	12	160	96
502053	258	295	32	0.02	161	410	34	< 5	5	6	< 0.01	< 10	< 10	8	< 10	40
502054	258	295	2	0.02	36	1290	50	5	11	33	0.01	< 10	< 10	2	10	32
502055	258	295	9	0.02	368	350	62	5	5	13	< 0.01	< 10	< 10	11	< 10	40
502056	258	295	5	0.01	524	340	38	< 5	3	8	< 0.01	< 10	< 10	6	< 10	48
502057	258	295	23	0.01	119	280	18	< 5	2	8	< 0.01	< 10	< 10	6	< 10	36
502058	258	295	< 1	0.02	21	300	16	5	2	43	< 0.01	< 10	< 10	6	< 10	8
502059	258	295	< 1	0.04	< 1	1070	< 2	5	8	44	0.01	< 10	< 10	< 1	< 10	48

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: TECK EXPLORATION LTD.

960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 21
Comments:

Invoice Date: 18-SEP-90
Invoice No. : I-9022686
P.O. Number :

CERTIFICATE OF ANALYSIS A9022686

SAMPLE DESCRIPTION	PREP CODE		Au ppb RUSH	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
502060	255	295	-----	2.6	0.75	40	270	< 0.5	< 2	1.09	< 0.5	399	43	9730	5.42	40	3	0.53	90	0.16	4410

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 21
Comments:

Page Number : 1-B
Total Pages : 1
Invoice Date: 18-SEP-90
Invoice No. : I-9022686
P.O. Number :

CERTIFICATE OF ANALYSIS A9022686

SAMPLE DESCRIPTION	PREP CODE		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
502060	255	295	11	0.01	78	1180	28	< 5	7	13	0.01	< 10	< 10	7	10	60

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: TECK EXPLORATION LTD.

960 - 175 2ND AVE.
KAMLOOPS, BC
V2C 5W1

Project : 21
Comments:

Page Number : 1
Total Pages : 1
Invoice Date: 17-SEP-90
Invoice No. : I-9022687
P.O. Number :

CERTIFICATE OF ANALYSIS A9022687

SAMPLE DESCRIPTION	PREP CODE	Cu %
502060	299 --	0.89

APPENDIX D

Stratabound, Red-Bed Copper Deposits

Stratabound, Red-bed Copper Deposits

Red-bed copper deposits, although not important in Canada account for 27% of world copper reserves, in large-tonnage, moderate-grade orebodies, with varying quantities of by-product silver and cobalt. Examples include Mufulira in Zambia, with 282 million tonnes of ore grading 3.47% copper; Rokana; also in Zambia, with 3.12 million tonnes of ore grading 2.81% copper and 0.15% cobalt; and White Pine in Michigan, with approximately 550 million tonnes grading 1.2% copper and 40 grams/tonne silver. Spar Lake, hosted by Proterozoic quartzites approximately 110 kilometres southwest of the Roo claims in Montana, contained 58 million tonnes of ore grading 0.8% copper and 58 grams silver per tonne (Gustafson and Williams, 1981). These deposits are hosted by very distinctive lithological sequences within a restricted geological and tectonic environment. Most major deposits are Proterozoic in age.

Renfro (1974) recognized five general characteristics of red-bed copper deposits. Each deposit is:

> "(1) Contained within strata that accumulated along the shoreward fringe of a shallow, semirestricted marine lagoon or inland sea.
>
> (2) Hosted by reduced, gray to black sandstone, shale, or dolomite that generally is stromatolitic.
>
> (3) Underlain by red-bed or otherwise oxidized continental clastic sediment.
>
> (4) Overlain by strata that contain dolomite, gypsum, anhydrite, and/or halite.
>
> (5) Laterally and vertically zoned with respect to metal content."

Renfro (1974) also notes that all major deposits are associated with copper-enriched source rocks. "Terrigenous clastics underlying metalliferous deposits in the Roan, the Dzhezhazgan, and the Kupferschiefer were derived from metal-enriched, igneous sources". Gustafson and Williams (1981) also show that all important deposits of this type are hosted within intracratonic basins, commonly associated with rifting.

Renfro (1974) suggests a simple genetic model for red-bed copper deposits, based upon modern Sabkha environment, such as occur along the Persian Gulf. A coastal Sabkha forms along the supratidal margin of a regressive shoreline in a hot,m arid environment. They are underlain by saturated, porous and permeable coastal sediments, capable of transporting water to the surface for evaporation. Sabkhas are essentially flat, rising no more than a few feet above high tide level. Below the high tide level, the mudflat is generally covered by a mat of blue-green algae, which may transgress laterally over the continental sediments.

Lithification produces continental, oxidized sandstones (red-beds) overlain by stromatolitic dolomites, fine-grained organic-rich clastic sediments, evaporites and grey, reduced sandstones, commonly in several cycles of transgression and regression.

In Renfro's model, metal-enriched source rocks underlying the Sabkha are leached by groundwater which is then transported by evaporation through the permeable red-beds towards the surface. Hydrogen sulphide, from decaying algae, reduces the dissolved metals to form metallic sulphides in proximity to the organic-rich sediments. The copper sulphides show a distinct zoning from chalcocite through bornite to chalcopyrite upwards and basinwards, related to their solubility in the presence of hydrogen sulphide.

Red-bed copper deposits are roughly stratabound, although mineral zonation crosses bedding planes. They are generally restricted vertically, but very extensive laterally. The Spar Lake deposit, for instance, which is moderate in size, extends laterally for 2,225 metres by 450 metres, with a thickness of 15 to 24 metres.

APPENDIX E

Drill Logs

TECK EXPLORATIONS LIMITED

HOLE No. DDH-R-90-01

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.

PROJECT ROO

PROPERTY

NTS

CLAIM ROO 1

ELEVATION 1493 m

GRID COORD.

NORTHING

EASTING

*45m at 50° from 0,0 point

DATE : COLLARED Aug. 6, 1990

: COMPLETED Aug. 8, 1990

: LOGGED Aug. 8, 1990

LOGGED BY : G.T., C.Mc

CORE SIZE : NQ

DEPTH	DIP	AZ.
8.50 m	-70	205

LENGTH : 85 m

DEPTH OF OVB : 6.4 m

CASING REMAINING :

WATERLINE LENGTH :

PROBLEMS :

DEPTH (metres) FROM TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
0 - 6.4		Casing - up to 5.8m rubble sandstone										
6.4-10.0		Quartzitic sandstone (9.1 - 10.0 rubble)	60									
10.0-12.5		Stromatolitic dolomite	80									
		top and bottom contacts are rubbled										
12.5-14.0		Purple fine grained sandstone with rusty carbonate	100									
		fractures. Has calcite amygdule looking patches										
		B.C. 13.1 - 13.7m										
14.0-14.6		Laminated stromatolitic dolomite < T.C.A. = 70°	100									
14.6-15.55		Medium grained greywacke has a lam. siltstone										
		interbed - bedding at 60° to C.A.										
15.55-16.46		As 12.5 - 14.0 - 5cm quartz vein with rusty	100									
		weather at 15.5m vein at 40° to C.A.										
		Upper contact broken core										
16.46-27.74		Fine to medium grained, limonite stained greywacke.	100									
		Strongly fractured. Rusty brown color.										
		- 24.4m small fracture (2mm) with hematite.										

TECK EXPLORATIONS LIMITED

HOLE No. DDH-R-90-01

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
16.46	27.74 (cont'd)		Local sericite-altered fragments approximately 2 - 3mm										
27.74 -	37.2		Same as 16.46 - 27.74 but with 2-3mm sericite (chlorite?) altered fragments throughout.	100									
			29.6m minor small fracture with hematite										
			34.1m,3cm quartz vein with minor rusty weather vein at 80° to C.A.										
			35.7 - 37.2 local bleached (buff colored) intervals										
37.2	53.0		Limonite stained, medium grained greywacke similar to 16.4 - 27.7										
			41.1 - 6cm quartz vein with minor rusty weather vein at 80° to C.A.										
			42.05 - 50.0 - minor 2-3mm hematite filled microfractures										
			44.2 - 44.5 - 1cm rusty fracture with .5cm quartz and fragment pyrite										
			45.1 - small rusty quartz vein sub parallel to C.A.										
			52.1 - 8cm white quartz vein at 80° to C.A.										
53.0	53.95		Same as 37.2 - 53.0 but does not have limonite staining. Hairline fractures with hematite. Minor 1mm alteration spots. Grey in color.										
53.95	59.4		Red-brown to green. Medium to coarse arkosic sandstone with interbedded pebbly section. Pebbles are 2.15mm subangular to angular. Also interbedded fine sandstone. Fines upwards in cycles. Larger fragments are amygdaloidal basalt (2%). Majority of fragments are cherty, fine grained.										

TECK EXPLORATIONS LIMITED

HOLE No. DDH-R-90-01

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
59.4-62.5			Fine to medium arkosic sandstone. Rare pebbles 3mm. 204' - large red clast, 5cm x 3cm chert - 3cm pebble band										
62.5			9cm band finely laminated green to purple-green siltstone. Minor eroded pyrite cubes subparallel to core axis. Bedding at 85° to C.A.										
62.5-72.85			Fine to medium grained arkosic sandstone. Local pebbly sections (not > 20cm). Moderate to strongly fractured. Strong fracture from 70.4 - 72.85m	100									
72.85-73.3			Fault zone. Most strongly developed 72.85-73.15 Fault gouge. 73.07 - 73.25 quartz veining with interveining fault gouge.	80									
73.3-77.1			Fine grained grey arkosic sandstone 75.0m Band of euhedral pyrite cubes within pebbly section. 10 cm band hematized angular pebbles 2-4 mm. Pyrite cubes are up to 1cm.	100									
77.1-80.2			Finely laminated siltstone with repetitive coarser interbeds. Grey in color. Pebbles in coarser interbeds are angular, up to 1cm. Bedding at 80° to C.A.	100									
80.2-82.0			Pebbly Sandstone	100									
82.0-84.65			Coarse basalt-fragment conglomerate. Fragments are rounded. Dark and green amyg. basalt frags, some hematization. Matrix is arkose. Also siltstone frags. Color is purple-grey.	100									

TECK EXPLORATIONS LIMITED

HOLE No. DDH-R-90-01

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO	FROM	TO	LENGTH	RESULTS
84.65-84.9			Fine grained, greyish purple siltstone Bedding approximately 80° to C.A.	100									
84.9-85.0			Grey-purple amygdaloidal basalt. Round amygules up to 4mm. Possibly a large pebble - appears to be basalt unit	100									
85.0			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. DDH R-90-02 PAGE 1 of 4

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.
PROJECT 1375
PROPERTY R00

NTS
CLAIM R00 1
ELEVATION 1493
GRID COORD.
NORTHING
EASTING
45m @ 50° from 0+00

DATE : COLLARED Aug. 8, 1990
: COMPLETED Aug. 11, 1990
: LOGGED Aug. 10, 1990
LOGGED BY : G. Thomson
CORE SIZE : NQ

DEPTH	DIP	AZ.
930	-70	230°

LENGTH : 93.0
DEPTH OF OVB : 6.0m
CASING REMAINING : --
WATERLINE LENGTH : 1.8 km
PROBLEMS : Clutch Repair (August 10)

DEPTH (metres) FROM TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
0 - 6.0		Casing - overburden										
		grey - green fine grained dolimitic sandstone										
6.0-13.1		Massive, fine grained buff colored dolomitized S.S	80									
		- moderately broken										
		- may be in part stromatolitic										
		- strongly broken @ 12.8 - 13.1										
13.1-19.35		Greywacke - fine grained	80									
		- pervasive purple (hematite) and limonitic stained										
		- strongly broken throughout section, abundant carbonate coatings										
19.35-33.83		Brown, limonite stained fine to medium grained greywacke/arkose sandstone	100			limon. - pervasive Carbonate weak						
		- sporadic patches of sericitized? clasts to 3.0mm										
		- rock has general weathered appearance; weak to moderate fractures.										
		- 1cm - patchy to diffuse zone of quartz veining with sporadic euhedral pyrite cubes @ 32.23 - 32.83m				← Parallel to C.A.						
		- similar veining as above (hairline 0 1cm) from 32.84 - 33.83										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-02

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %
33.83	34.23		Greywacke as above, but with greenish tinge due to weak malachite infiltration - malachite derived from sporadic chalcopyrite blebs contained within 2 - 3mm quartz veinlets sub-parallel to core axis.	100				Cpy (< 1%)	502297	33.83	34.44	0.61	0.01
34.23	36.1		Greywacke Sandstone - fine to medium grained brown (arkose?) - hairline to 3mm quartz veinlets subparallel to C.A. (2 - 5% by vol.) - 3cm quartz veinlets @ 80° to C.A. @ 36.1m	100			Lim. - pervasive						
36.1	46.0		Brown-purplish fine to medium grained arkose sandstone (greywacke) - similar to above sections but with marked increase in hematitic patches, spots and hairline fracture fills. - hematite veinlets occasionally accompanied by quartz veinlets 1- 3mm - strongly broken and fractured along quartz/hematite veinlets @ 38.1 - 39.9m subparallel to C.A. - overall hematite-quartz veinlets approximately 5 - 10% by vol.	100			Lim. - hematite pervasive						
46.0	51.8		Brown fine grained to medium grained arkosic sandstone - green bleached zone due to quartz veinlets 0.5 - 1.0cm subparallel to C.A. @ 50.14 - 50.75, leached limonitic patches throughout veins.	100			Lim. - pervasive hem. veinlets - trace						

TECK EXPLORATIONS LIMITED

HOLE No. R-90-02

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
51.8	52.6		Dark purple fine grained to medium grained volcanic lastic sandstone	100									
			- conspicuous feldspathic and hematitic alteration spots (5-10%)										
52.6	57.3		Medium to coarse heterolithic sandstone	100									
			- possible turbidite sequence										
			- angular clasts generally 1 - 2mm with rare clasts to 1cm										
			- coarse section (conglomerate) at 55.5 - 56.4										
			- fragments to 2.0cm subangular of porph. basalt and chert										
			- coarse frags approximately 30% by vol.										
			- grey matrix - fine grained sandstone										
57.3	74.8		Grey-brown fine grained > medium grained arkosic sandstone	100									
			- sporadic narrow green-purple siltstone interbeds										
			- occasional coarsening to coare sandstone										
			- bedding @ 80° to C.A.										
			- conglomerate section (23cm) @ 64.5 - 64.75m										
			- heterolithic angular frags to 1.0cm										
			- laminated chert frag. (10cm) @ 60.0m										
74.8	77.65		Siltstone (purplish grey)	100									
			- finely laminated @ 80-90 to C.A.										
			- interbedded with medium-to coarse heterolithic sandstone in narrow bands (0.5 - 3.0cm)										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-2

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
77.65	79.6		Coarse arkosic sandstone - fine grained conglomerate	100									
			- round - subangular frags to 2.0cm										
			- most clasts are 1 - 3mm										
			- larger clasts are dark amyg. basalt										
79.6	81.7		Coarse volcaniclastic conglomerate	100									
			20 - 30% dark and hematitic round amyg. basalt										
			clasts 3 - 10cm										
			- groundmass - coarse heterolithic sandstone										
81.7	82.9		Siltstone - purplish	100									
			- 2 narrow bands of coarse heterolithic sandstone										
			in upper 30cm of section										
			- amygdaloidal zone (17cm) @ 82.6m										
82.9	92.95		Basalt - amygdaloidal (10-30%)	100									
			- dark purple - brownish purple										
			- amygdales are irregular white quartz; rounded and										
			irregular 0.5 - 2.0cm commonly with hematite rims										
			and spots										
			- disseminated pyrite across 0.3m at 89.3m										
			- weakly to non amygdaloidal @ 91.74 - 92.95m										
92.95			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-03

DIAMOND DRILL LOG

COMPANY CONNORS DRILLINGS LTD.

PROJECT 1375

PROPERTY ROO

NTS

CLAIM ROO 1

ELEVATION 1493

GRID COORD.

NORTHING

EASTING

45m @ 50° AZ from 0+00

DATE : COLLARED Aug. 11, 1990

: COMPLETED Aug. 12, 1990

: LOGGED Aug. 12, 1990

LOGGED BY : G. Thomson

CORE SIZE : NQ

DEPTH	DIP	AZ.
76.5	-70	290°

LENGTH : 76.5 m

DEPTH OF OVB : 7.0

CASING REMAINING :

WATERLINE LENGTH :

PROBLEMS :

DEPTH (metres) FROM / TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
0 - 7.0		Casing - pinkish brown - green dolomitic sandstone Silstone (rubble)										
7.0-13.1		Dolomite/Dolomitic sandstone/siltstone - fine grained; beige, pink - broken 7.0 - 9.75m - minor hematite on fracture surfaces - occasional green silty interbeds - bedding indistinct @ 80 - 90 to C.A.	80									
13.1-16.75		Dolomite - stromatolitic - pink - beige bedding indistinct @ 70-80° to C.A. - minor green siltstone interbeds - weathered, buff colored fol. @ 16.15 - 16.75 - broken @ 13.1 - 13.72m	100									
16.75-21.3		Lost core - 16.75 - 21.3m rubbled oxidized fine to medium grained arkosic sandstone (1.2m in box over 4.6m section) * Zone of strong weathering	25			Lim, hem						

TECK EXPLORATIONS LIMITED

HOLE No. R-90-03

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
21.3	31.09		Arkosic sandstone/greywacke Fine to medium grained, brown homogenous, patchy zones of sericitized clasts. - 3 quartz veinlets 3mm - 2cm	100			Lim - perv.						
31.09	42.98		Same lithology as above, but with increased quartz veining and hematite fracture healing, patches and clast replacement - quartz veining is minor and occurs concordant with bedding at 90°, but occasionally subparallel to C.A. - 10cm q.v. @ 90° @ 35.0m - irregular quartz barite veining subparallel to core axis @ 39.62 - 40.92m - veins exhibit limonitic spots throughout from weathering of pyrite	100			Lim, Hem.						
42.98	51.51		Arkosic brown sandstone as above - lacking hematite alt. Quartz veins concordant with bedding @ 44.65m - 5 cm @ 46.0m - 6.4 cm @ 46.48 - 15.2 cm - oxidized borders due to pyrite weathering	100			Lim.						
31.5	55.2		Medium to coarse arkosic sandstone - homogenous, rhythmically banded with fine sandstone/silty narrow interbeds	100			Lim. Weak						

TECK EXPLORATIONS LIMITED

HOLE No. R-90-03

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
55.2	56.9		Coarse sandstone - fine grained conglomerate - 10 - 20% angular - rounds clasts (chert, amyg. basalt) 0.5 - 3.0 cm - [redacted] - downward coarsening	100			Lim - weak						
56.9 - 64.0			Fine to medium grained grey sandstone - several angular clasts to 1cm at 61.9m - very homogenous 0.18m quartz flooded zone @ 60.0m with several pyrite (euhedral) blebs	100									
64.0	64.3		Conglomerate - fine grained - rounded clasts to 1.0cm - 50% by vol.	100									
64.3	76.5		Fine to medium grained arkosic sandstone with rhythmically narrow interbeds of coarse sandstone and silty sandstone - bedding @ 80 to C.A. - grey - euhedral pyrite crystals to 2cm in coarse sandstone @ 75.5m.	100									
76.5			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-4

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.
PROJECT 1375
PROPERTY 800

NTS
CLAIM
ELEVATION 1493
GRID COORD.
NORTHING
EASTING
45m from 0+00 @ 50° AZ

DATE: COLLARED Aug. 13 1990
: COMPLETED Aug. 15, 1990
: LOGGED
LOGGED BY: G. Thomson
CORE SIZE: NQ

DEPTH	DIP	AZ.
111.25	-55	100

LENGTH: 111.25 m
DEPTH OF OVB 12.8 m
CASING REMAINING:
WATERLINE LENGTH:
PROBLEMS: Pump breakdown August 14, 1990.

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %	Ag ppm	Co ppm
0	12.8		Casing												
12.8	19.0		Sandstone - Fine - medium grain - broken, pervasive limonitic staining - strongest on coarser sediments - bedding approximately 50° to C.A.	80											
19.8	20.8		Medium to coarse sandstone, strongly broken, weathered and limonite coated	70											
20.8	21.5		Conglomerate - pervasive lim. staining - clasts 20 - 30% 1 - 3cm - green felsics - subangular - rounded	80					502286	20.8	21.5	0.7	0.2	3.6	401
21.5	22.6		Medium grained sandstone - strongly weathered and limonitic stained, fracts @ 60° to C.A. - prevalent microfracture fillings of malachite and chalcocite - gouge section approximately 3-4cm @ 22.55m	80					502287	21.5	22.55	1.05	0.99	3.4	460
22.6	23.8		Fine grain sandstone - siltstone - bedding @ 30° to C.A. - green weak limonitic stains - shearing extends to 229m	90					502288	22.55	23.77	1.22	0.03	2.2	55

TECK EXPLORATIONS LIMITED

HOLE No. R-90-4

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %	Ag	Co
23.8	25.9		Conglomerate - coarse sandstone downward coarsening with last 0.9m of section having subangular clasts to 4.0 cm comprising 20 - 30% by volcanic - clasts, green	90				Cpy-Py (3 - 8%)	502289	23.77	25.15	1.38	0.11	3.4	222
									502291	25.15	25.9	0.76	0.93	5.2	299
			- beige felsics												
			- pervasively limonitic stained												
			- mal-chalcocitic fract coatings @ 24.23												
			- 1 - 3% diss pyrite, cpy occuring as clast replacements, clast rims and disseminations from 25.15 - 25.9m												
			- also associated with mal, chalcite within microfractures.												
25.9	30.0		Sandstone - medium - medium coarse	90					502292	25.9	27.43	1.53	0.97	6.8	127
			- pervasively limonitic stained						502293	27.43	28.96	1.52	1.73	4.6	376
			- pervasive malachite, chalcocite coatings along fracture planes and locally disseminated within porespaces						502294	28.96	30.0	1.04	1.87	4.4	249
30.0	31.85		Sandstone - fine - medium grained	100					502295	30.0	30.63	0.63	1.02	3.2	371
			- fresher rock than above						502296	30.63	31.85	1.22	0.16	2.6	176
			- decreased limonite except on localized fracts.												
		*	- broken, limonitic @ 30.0 - 30.6m - with mal-chalcocite coatings												
			- sporadic mal-chalcocite coatings throughout section												
31.85	91.13		Sandstone - fine - medium grained pale green	100					502297	31.85	32.6	0.8	.01		
			- very competent, continuous zone												
			- marked by variable width zones of limonitic staining centering on fracture planes												
			- (veining (quartz) weak except as noted below; minor associated pyrite/hematite)												

TECK EXPLORATIONS LIMITED

HOLE No. R-90-4

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %
81.85-91.13			- weak sporadic hematite alteration overprint and narrow veinlets not> 3mm										
(cont'd)													
			Fracture Zone @ 41.15 - 43.3										
			- fracturing generally subparallel to C.A.										
			- pervasive limonite stain										
			- malachite fracture coatings @ 42.37 - 42.67m and 45-46m						502298	45	46	1.0	0.15
			(mal and Chcte)										
			Series of 6 quartz + (barite?) veinlets										
			1.0 - 2.0cm @ 60° to C.A. from 63.47 - 64.31m										
			64.9 - 67.8m - quartz vein										
			- contains S.S. fragments to 66.14m										
			- sporadic, limonitic after pyrite pits.										
			- contacts @ 60° to C.A.										
			- minor specular hematite in quartz veinlets @ 68.27 - 68.6 m										
91.1-92.6			Sandstone (fine-medium grain)	100									
			- dark, probable continuation of above unit, but with greater mafic composition										
			1 cm jasperoid veinlet @ 60° to C.A. @ 91.53										
			1 cm quartz-barite veinlet @ 60° to C.A. @ 91.74										
92.6-97.23			Fine - medium grained grey sandstone	100									
			- coarser factions with frags to 1.0cm @ 92.6 - 93.57 and 96.06 - 96.4										
			- broken 94.8 - 96.0										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-4

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
97.23	97.84		Mixed quartz and S.S. inclusions - broken, limonitic - contacts irregular	100									
97.84	98.45		Medium fine grained grey green sandstone	100									
98.45	101.8		Quartz vein - microfractured limonite along fracts - broken chloritized green S.S. @ 99.21 - 100.17 - mixed (50 - 50%) pink coarse barite and quartz @ 100.17 - 100.74 m	100									
101.8	104.55		Medium green arkosic S.S. - broken - interspersed with quartz and quartz-barite veinlets (2-10 cm) comprising approximately 10 - 15% of section - veining is barren with minor associated hematite and lim. in micro-fracts.	100									
104.55	111.25		Purplish-grey fine to moderate grained arkosic S.S. - several coarse S.S. factions with hematized clasts to 0.5 cm - coarse section approximately 10 - 30 cm - predominantly fine grained laminated siltstone @ 109.73 - 111.25 @ 60° to C.A.	100									
111.25			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-5

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.

PROJECT 1375

PROPERTY ROO

NTS

CLAIM ROO 1

ELEVATION 1493

GRID COORD.

NORTHING

EASTING

DATE : COLLARED Aug. 15, 1990

: COMPLETED Aug. 16, 1990

: LOGGED

LOGGED BY : G. Thomson

CORE SIZE : NQ

DEPTH	DIP	AZ.
	-60	40°

LENGTH : 34.44 m

DEPTH OF OVB : 6.0 m

CASING REMAINING :

WATERLINE LENGTH :

PROBLEMS :

DEPTH (metres) FROM / TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	SAMPLE DATA FROM	SAMPLE DATA TO	SAMPLE DATA LENGTH	RESULTS
0 - 6.0		Casing										
6.0 - 9.90		Dolomitic sandstone	90									
		- dark - beige - fine grain										
		- bedding laminations @ 50° to C.A.										
		- uniform, moderately broken										
9.9-12.8		Stromatolitic Dolomite	90			Lim						
		- laminated - buff colored limonitic coatings										
12.8-13.72		Greywacke - fine to medium grained	100			Lim						
		- prominant network of Fe-Carb alt. mudcracks (0.5 - 1.0cm)										
		- limonite stained, pale green on fresher surfaces										
13.72-17.68		Brown fine to medium grained feldspathic sandstone with minor green-purple silty interbeds	100			Lim						
		- bedded @ 50% to C.A. - broken										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-5

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %	Ag ppm	Co ppm
17.68	21.64		Fine to medium grained quartz sandstone	90					502051	17.68	19.5	1.83	1.23	3.2	871
			- strongly leached and weathered						502052	19.5	20.73	1.23	1.19	33.8	1340
			- broken throughout						502053	20.73	21.79	1.06	0.64	4.2	727
			- malachite-chalcocite coatings developed within sections especially along bedding planes (up to 21.8m)												
			- copper coatings obvious result of ground water movements												
			- bedding @ 50° to C.A.												
21.64	34.44		Fine to medium grain felspathic (arkose-greywacke) sandstone	100											
			- localized limonite zones centering on fracture/ bedding planes						502054	21.79	22.86	1.07	0.02		
			- broken, strongly limonitic 28.2 - 29.26m												
			minor quartz-barite veinlets (hairline - 1.5cm) @ 60° to C.A.												
			- malachite along fractures across 6.0cm @ 24.7m												
			- very rare hematite veinlets to 2mm												
34.44			End of Hole												

TECK EXPLORATIONS LIMITED

HOLE No. R-90-6

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.

PROJECT 1375

PROPERTY R00

NTS

CLAIM R00, 1

ELEVATION 1402 m

GRID COORD.

NORTHING

EASTING

DATE : COLLARED Aug 16, 1990

: COMPLETED Aug 17, 1990

: LOGGED

LOGGED BY : G. Thomson

CORE SIZE : NQ

DEPTH	DIP	AZ.
	-70	90

LENGTH : 68.58 m

DEPTH OF OVB : 3.0 m

CASING REMAINING :

WATERLINE LENGTH :

PROBLEMS :

DEPTH (metres) FROM TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %	Ag ppm	Co ppm
0 - 3.0		Casing - a few pebbles of dark siltstone with mudcracks and beige fine grained dolomitic sandstone.												
3.0-7.62		Medium coarse grain arkosic sandstone	75					502055	3.0	4.57	1.57	0.77	2.2	1325
		- pervasively leached with weak to moderate limonite stains						502056	4.57	6.1	1.53	1.04	3.2	1475
		- strongly broken with mud seams @ 3.0 - 4.0 m						502057	6.1	7.62	1.52	0.87	2.4	382
		- pervasive malachite coating - chalcocite coatings with associated fine grained disseminated pyrite, chalcopyrite (< 1%)					Py, Cpy (< 1%)							
7.62-41.0		Fine to medium grain arkosic sandstone	100					502058	7.62	9.14	1.52	0.03		
		- uniform - grey green				Hematite weak								
		- sporadic quartz-barite veinlets (0.3 - 3.0cm) @ 60% to C.A.; minor spec. hematite veinlets (hairline - 1.0 cm) often associated with quartz-barite veinlets						502059	32.0	32.6	0.6	<0.01		
		- localized limonite stains												
		- pervasive hematite stain @ 8.53 - 9.14m												
		- pyrite blebs (1cm) and associated disseminated Chalcopyrite with 1cm quartz/barite veinlet @ 28.96m												

TECK EXPLORATIONS LIMITED

HOLE No. R-90-6

DEPTH (metres) FROM / TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE: ANGLES	STRUCTURE: VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: FROM	SAMPLE DATA: TO	SAMPLE DATA: LENGTH	RESULTS
7.62-41.0 (con't)		0.3m quartz/barite vein @ 21.95 @ 30° to C.A. 2.5cm quartz/barite vein (30.40 - 30.78m) @ 30° to C.A.										
		32.0 - 32.6m - zone of approximately 20% mixed quartz/barite veinlet and 1 - 2mm hematite veinlet										
41.0-41.75		Dark green fine to medium grained sandstone with 2mm hematite veinlet @ an oblique angle T.C.A. from 41.6 - 41.75	100									
41.75-45.72		Medium grained red sandstone 41.75 - 43.6 medium grained green sandstone 43.6 - 45.72 @ 44.8, 10cm veinlet of quartz with 15% ecoded pyrite 50° T.C.A.	100									
45.72-46.63		Medium to coarse sandstone mottled grey and red Minor quartz veinlets										
46.63-58.75		Rythmic beds of coarse grained, medium grained and siltstone silt laminations @ 60° T.C.A. 80% of the unit is fine to medium grained material	100									
58.75-63.25		90% laminated siltstone 10% coarse polymictic sandstone 60° TCA	100									
63.25-65.53		Purple pebbly sandstone cobbles of amyg. Bas. from 63.25 - 63.55, 63.55 - 63.85 bedded siltstone and sandstone at 60° TCA	100	30° TCA	63.32 Qtz/ Barite 1cm							

TECK EXPLORATIONS LIMITED

HOLE No. R-90-6

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
65.53 -	68.58		Amyg. Bas. cobble conglomerate purple	100									
68.58			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-07 PAGE 1 of 2

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.
PROJECT 1375
PROPERTY R00

NTS 82G/3E
CLAIM R00 1
ELEVATION 1402 m
GRID COORD.
NORTHING
EASTING

DATE : COLLARED Aug. 18, 1990
: COMPLETED Aug. 19, 1990
: LOGGED
LOGGED BY : R. McDonald
CORE SIZE : NQ

DEPTH	DIP	AZ.
	-60	50°

LENGTH : 72.85
DEPTH OF OVB 3.0 m
CASING REMAINING :
WATERLINE LENGTH :
PROBLEMS :

DEPTH (metres) FROM TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS Cu %	Ag ppm	Co ppm
0-3.0		Casing												
3.0-5.18		Medium to fine grained greywacke with occasional pebbles	100											
5.18-8.68		Coarse grain greywacke with 3% pebbles	100											
		- 3cm quartz vein @ 8.68m		70°										
8.68-37.8		Alternating red and green; generally fine grained and some coarse sections	100											
		- minor disseminated pyrite												
		- quartz barite vein @ 16.76 - 16.92m		60°										
		16.92 - 18.13						502060	16.92	18.13	1.21	0.89	2.6	399
		Fractured interval with weak malachite coatings, malachite ends at lower contact as a narrow quartz vein												
		- interval is limonite stained												
		18.13 quartz vein		70°	2 cm									
		28.2 quartz vein		70°	2 cm									
		28.8 quartz hematite vein		70°	3 cm									

TECK EXPLORATIONS LIMITED

HOLE No. R-90-07

DEPTH (metres) FROM	TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
37.8	57.0		Rhythmically bedded coarse to fine sandstone unit, generally purple; bedding @ 40° to C.A.	100									
57.0	58.83		Fine grained sandstone - siltstone, purple volcanically derived sediments, sharp lower contact @ 58.83 with amygdaloidal basalts	100									
58.83	72.85		Amygdaloidal Basalt (Nicol Creek Formation)	100									
72.85			End of Hole										

TECK EXPLORATIONS LIMITED

HOLE No. R-90-08 PAGE 1 of 1

DIAMOND DRILL LOG

COMPANY CONNORS DRILLING LTD.
PROJECT 1375
PROPERTY ROO

NTS
CLAIM ROO 1
ELEVATION 1402 m
GRID COORD.
NORTHING
EASTING

DATE : COLLARED Aug. 19, 1990
: COMPLETED Aug. 20, 1990
: LOGGED
LOGGED BY : R. McDonald
CORE SIZE : NQ

DEPTH	DIP	AZ.
	-45	0°

LENGTH : 64.0 m
DEPTH OF OVB 3.0 m
CASING REMAINING :
WATERLINE LENGTH :
PROBLEMS :

DEPTH (metres) FROM TO	GRAPHIC	DESCRIPTION	RECOVERY	STRUCTURE ANGLES	STRUCTURE VEINS	ALTERATION	METALLIC MINERALS (%)	SAMPLE DATA SAMPLE NO.	FROM	TO	LENGTH	RESULTS
0-3.0		Casing - overburden										
3.0-7.62		Medium grain arkosic greywacke sandstone	100									
7.62-9.45		Coarse grain greywacke with 10% pebbles	100									
9.45-44.8		Alternating fine to medium grain red and green units	100									
		13.56 - 13.87m quartz-barite vein		80°								
		32.9 - 33.0m quartz-barite vein		60°								
44.8-64.0		Rhythmically bedded coarse-fine sandstone, generally purple	100									
64.0		End of Hole										

APPENDIX F

Petrographic Study

PETROGRAPHIC STUDY

Three rock samples were collected and sent for examination by Vancouver Petrographics Ltd., during the course of the 1990 exploration period.

The purpose of the petrographic study was to determine the model composition of the sedimentary rocks hosting copper mineralization, as well as to determine the genesis of the copper mineralization.

The three samples were designated as Roo 1, Roo 2 and Roo 3 and were obtained from the following locations:

Roo 1 - 1989 trench area	(malachite stained conglomerate)
Roo 2 - ≈ 1 km S.E. of 1989 trench area (road cut)	(malachite stained sandstone)
Roo 3 - Same general location as as Roo 2, but ≈ 25 m uphill	(pink aphanitic trachytic sill)

The discussions pertaining to rock petrography and mineral genesis are given in the following reports by Vancouver Petrographics Ltd. The three rock samples are shown on the accompanying Geology Map (fig 5) as PS-1, PS-2, and PS-3.

COPY

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
CRAIG LEITCH, Ph.D. Geologist
JEFF HARRIS, Ph.D. Geologist
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39
8080 GLOVER ROAD,
FORT LANGLEY, B.C.
V0X 1J0
PHONE (604) 888-1323
FAX. (604) 888-3642

Report for: Greg Thomson,
Teck Explorations Ltd.,
960-175 Second Ave.,
Kamloops, B.C
V2C 5W1

Job #33

August 10th, 1990

Samples:

3 rock samples from the Roosville area (Project 1375) for sectioning and petrographic examination.

Samples are numbered R00-1, 2 and 3. Two sections (A and B) were made from the last sample, representing texturally distinctive variants.

Summary:

Sample R00-1 is a conglomerate of felsite rock fragments and quartz grains in a sericitic matrix. It contains disseminated limonite after pyrite, and is cut by a stockwork of late microfractures which are filled by malachite - of apparent exogenic (transported or introduced) origin.

Sample R00-2 is a sand-sized clastic of similar composition to R00-1, but with interstitial clumps of partially limonitized calcite. It contains minor, disseminated, partially oxidized pyrite and traces of chalcopyrite.

Sample R00-3A is a fresh, mafic-free, microporphyritic trachyte, containing scattered porphyroblast-like crystals of carbonate and peculiar atoll forms of limonite. It includes traces of fine-grained disseminated pyrite, now largely oxidized.

Sample R00-3B is a partially sodic variant of the trachyte, in which carbonate and atoll-form limonite are absent. It is cut by veinlets and fractures filled by quartz and vuggy limonite. Traces of a mineral which may be scorodite (Fe arsenate) are also seen.

No Cu minerals were recognized in either of the ROO-3 slides.

Estimated Cu contents based on the petrographic observations are 3% in ROO-1 (as introduced malachite); 0.1% in ROO-2 (as primary chalcopyrite), and no more than traces in ROO-3. These estimates could be verified by assaying the respective cut-off blocks - which represent the closest approximation to the material examined in the thin sections.

Individual petrographic descriptions are attached.

J.F. Harris Ph.D.

(929-5867)

SAMPLE ROO-1 **CONGLOMERATE**

Estimated mode

Quartz	35
K-feldspar	30
Sericite	25
Malachite	5
Limonite	5
Pyrite	trace

As is clearly apparent from macroscopic examination of the stained cut-off block, this rock is composed of a close-packed aggregate of various lithic fragments and mineral grains, in a fine-grained, sericitic matrix.

The clasts range from 0.1 - 10.0mm or more in size, and are sub-angular to sub-rounded in form. Many of the lithic pebbles are of strongly potassic composition. The mineral grains are principally quartz.

In thin section the lithic fragments are found predominantly to be variants of trachytic to rhyolitic volcanics and porphyries. These most often consist of minutely felsitic material, variably sericitized, and sometimes with small quartz phenocrysts. One large clast is of non-potassic (probably dacitic) composition, but the majority are apparently composed predominantly of K-spar. A few show different textural character, including meshwork and equigranular mosaic aggregates. These lithotypes all appear essentially devoid of mafics.

The mineral clasts (sand grains) are monocrystalline quartz, plus rare feldspars. A few coarser clasts of polygranular quartz are also seen.

The clasts are set in a matrix, or intergranular cement, of minutely felted sericite.

The rock contains limonite as disseminated equant/angular grains and grain clumps, 0.02 - 0.5mm in size. These have the aspect of pseudomorphs after pyrite - substantiated by the presence of occasional small, ragged remnants of pyrite within a few of them.

The pyrite clusters appear predominantly to be in an inter-clast relationship. A few clasts do, however, contain more or less abundant limonite pseudomorphs - though the majority are devoid.

The rock is cut by abundant, sub-parallel, anastomosing micro-fractures which are infilled by malachite. These extend through fragments and matrix alike, and are clearly a late feature. Some malachite is also seen impregnating the sericitic matrix and/or rimming clasts.

Sample ROO-1 cont.

The malachite fractures generally seem independent of the limonite clumps, or cut and/or envelope them, and the impression is that the malachite is of exogenetic origin.

SAMPLE ROO-2 QUARTZO-FELDSPATHIC WACKE

Estimated mode

Quartz	40
K-feldspar	5
Felsite	34
Sericite	5
Carbonate	10
Pyrite	2
Chalcopyrite	trace
Limonite	4
Malachite	trace

This rock is of similar general type to ROO-1, but the costituent clasts are much smaller and better sorted. It is an arkosic wacke composed of quartz and feldspathic lithic sand grains, 0.1 - 1.0mm in size. It shows banded variations in average grain size and ratio of clasts to matrix.

It also differs from Sample 1 in containing accessory carbonate and relatively abundant, partially oxidized, disseminated sulfides (including chalcopyrite).

As in the previous sample, the clasts are sub-rounded and consist of mineral grains of quartz and minor K-feldspar, and lithic fragments of minutely felsitic texture. The latter show varying degrees of pervasive sericitization and - judging from the cobaltinitrite stain reaction - range from strongly potassic (trachytic) to non-potassic (keratophryic?) composition. The clasts are set in a fine-grained sericite matrix.

Carbonate occurs as scattered individual grains and small clumps, comparable in size to the clasts, but typically showing angular, subhedral form. These clumps are presumably of diagenetic origin, representing the local replacement of matrix and/or particular clasts.

The carbonate typically shows rims and irregular impregnations of limonite, locally rendering it totally sub-opaque. This would suggest a possible Fe-rich carbonate composition; however, the mineral effervesces readily with dilute acid and, thus, is apparently predominantly calcite.

The rock contains minor proportions of disseminated sulfides. These are predominantly pyrite, as individual euhedral-subhedral grains, 0.02 - 0.5mm in size. Minor proportions of chalcopyrite (as separate grains to 0.2mm) are also seen. Both minerals are typically rimmed and more or less replaced by limonite.

The sulfides appear mainly to occur in an interclast relationship though, in a few cases (especially of chalcopyrite), they are seen within individual felsitic clasts.

Sample ROO-2 cont.

There is no apparent relationship of sulfides to the carbonate, and the associated limonite is of a different type.

One end of the slide includes parts of some much larger lithic clasts (possibly representing a change to a conglomeratic unit like ROO-1. These contain minor, fine-grained, disseminated pyrite, and are cut by anastomosing hairline veinlets of malachite, as in ROO-1.

No malachite or other secondary Cu minerals are seen elsewhere in the slide, even in the immediate vicinity of disseminated chalcopyrite grains.

SAMPLE ROO-3 Slide A: : TRACHYTE

Estimated mode

K-feldspar	88
Carbonate	7
Limonite	4
Quartz	1
Pyrite	trace

As is apparent from the intense, even cobaltinitrite stain reaction on the off-cut, this sample consists almost entirely of K-feldspar.

The thin section shows that this is predominantly in the form of a sub-trachytic aggregate of lath-like grains of turbid (but otherwise unaltered) K-spar, 0.05 - 0.1mm in size. This forms the groundmass to moderately abundant, small, blocky microphenocrysts of K-spar, 0.1 - 0.5mm in size. Extremely rare accessory quartz is also present, as occasional flecks and tiny phenocrysts. Mafics are absent.

The other constituents are carbonate and limonite. The carbonate occurs as evenly scattered, individual, equant/irregular grains, 0.1 - 1.0mm in size. These range from skeletal clusters to homogenous subhedral crystals, and appear to be of porphyroblastic nature. The carbonate sometimes shows patchy impregnation by limonite.

Limonite mainly concentrates as atoll-like bodies, similar in size to the carbonate porphyroblasts, and prominently visible in the stained off-cut. These consist of rims of intense limonite staining, enclosing what is apparently normal, unaltered trachyte matrix. In one case the limonite rims outline an elongate, veniform zone. The origin of these features is unknown, but is probably related to that of the carbonate porphyroblasts - which are locally seen incorporating the limonite atolls.

Tiny equant grains (0.02 - 0.1mm) of more compact limonite occur sparsely and randomly disseminated. These occasionally contain remnant cores of pyrite, indicating their origin as traces of (primary?) disseminated sulfides.

The slide includes a central zone in which clumps of carbonate and limonite appear to be related to a microfracture.

No primary or secondary Cu minerals were recognized in this slide.

SAMPLE ROO-3: Slide B

Estimated mode

Feldspars	84
Quartz	10
Sericite	2
Mineral X	trace
Limonite	4
Pyrite	trace

This portion of ROO-3 appears to represent a variant of the "A" portion. It takes a much less intense cobaltinitrite stain - suggesting that there is a substantial proportion of a more sodic alkali feldspar (albite) intergrown with the K-spar. It is cut by a sub-parallel series of limonitic veins and fractures.

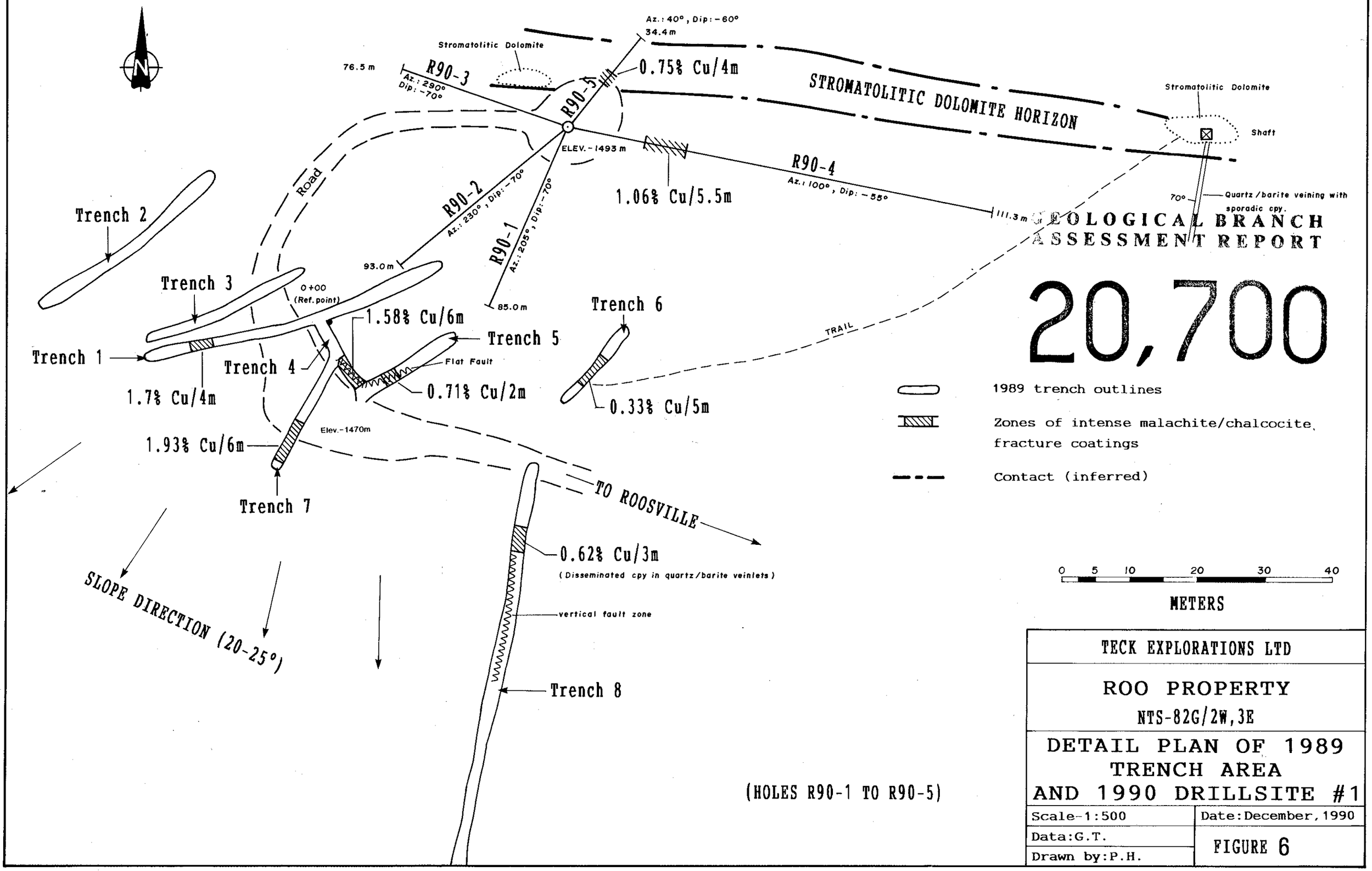
In thin section the appearance of the primary matrix is essentially identical to that of Slide A, though fine-grained flecks of interstitial quartz appear a little more abundant. Also, the rock shows very mild, pervasive sericitization, as minute dispersed flecks and occasional tiny felted clumps.

The rock contains rare, tiny, disseminated grains of limonite, 10 - 50 microns in size, which sometimes include remnants of pyrite. Note that the prominent carbonate porphyroblasts and limonite atolls of Slide A are absent.

The veinlets consist of vuggy limonite fracture coatings or, in the case of the thickest one (5 - 7mm), of granular quartz with clusters of limonite (after sulfides?), clumps and selvedges of felted sericite, and vuggy boxworks of limonite.

Mineral X is a golden yellow to pale greenish, felted-textured, high relief mineral. It is seen associated with limonite in some of the fractures, as hairline threads in its own right, and as tiny disseminated pockets and equant pseudomorphs(?) or coatings of empty casts. It has the appearance of jarosite and/or scorodite, and is probably a secondary product after original sulfides (including arsenopyrite?).

No primary or secondary Cu minerals were recognized in this slide.



GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,700

TECK EXPLORATIONS LTD
ROO PROPERTY NTS-82G/2W,3E
DETAIL PLAN OF 1989 TRENCH AREA AND 1990 DRILLSITE #1

Scale-1:500	Date:December, 1990
Data:G.T.	FIGURE 6
Drawn by:P.H.	

Stromatolitic dolomite.

COLLAR 1493m

NW

SE

1490m

1450m

1400m

Casing

Qtz SS.

Strom. dolomite.

SS – fine med. gr., broken, pervasive, limonite stain. bedding at 50°.

med.-coarse SS, weathered, limonitic.
Conglomerate – clasts 20–30%, 1–3 cm.
med. gr. SS – strongly weathered, limonitic, prevalent microtilting of mal. & chalcte.
fine gr. SS/SLTS, green w limonitic stains.
Conglomerate – coarse SS (20–30% clasts to 4.0 cm)
1–3% py, cpy as clast replacements + disseminations; also mal., chalcte macrofracture fillings.
Sandstone – med. to med. coarse, limonite stained, pervasive mal., chalcte coatings along fractures.
Broken limonitic SS. with mal. – chalcte coatings.
Sandstone – fine to med. gr.; decreased limonite, sporadic mal. & chalcte coatings.

%Cu	
50 2286	0.2
87	0.98
88	0.03
89	0.11
91	0.93
92	0.97
93	1.73
94	1.87
95	1.02
96	0.16
97	0.01

Fracture zone : subparallel to core axis.

mal. fract. coatings

50 2298 0.15

Sandstone : fine to medium gr., pale green, limonite staining bands centering on fractures, weak sporadic quartz veinlets, weak sporadic hematite alteration & narrow hematite veinlets not > 3mm.

6 quartz-barite veinlets, 1–2 cm at 60°.

Quartz vein at 60°, with SS inclusions.

Dark SS.

Fine to med. gr. SS with coarser fractures.

Mixed quartz & SS inclusions.

Quartz-barite veining with chloritized SS inclusions.

Med. gr. arkosil SS., 10–15% quartz-barite veinlets.

Purplish fine to med. gr. arkosic SS, several interbeds of coarse SS. (10–30 cm).

Laminated SLTS at 60°

Casing

Strom. dolomite

25% recovery oxidized SS.

Arkosic SS. patchy zones of sericitized clasts.

Increased qtz veinlets & hematite alteration.

Qtz. vein (10 cm at 90°)

Qtz vein

Hematite alteration.

Qtz veins (5–15 cm)

Med. to coarse arkosic SS. with silty interbeds.

Coarse SS. : f. gr. conglomerate., 10–20% volc. clasts (0.5–3.0 cm)

Fine to med. gr. SS.

Fine gr. conglomerate.

Fine to med. gr. arkosic SS. with rhythmic narrow interbeds of coarse SS & silty SS., bedding at 80°

R90-3
-70°, az.290°

Fine to med. gr. limonite stained greywacke, locally sericitized frags 2–3 mm, fractured.

Med. gr. arkosic SS., limonite stained sporadic qtz veinlets & hematite fract. fillings.

Red/brown – green arkosic SS. with interbedded pebbly sections, larger frags (2–15 mm) amygd. basalt, chert.

Fine to med. gr. arkosic SS., local pebbly sections (not > 20 cm), mod. to strongly fractured.

Fault zone : gouge with qtz. veining.

Fine laminated SLTS with repetitive coarse interbeds, bedding at 80°

Pebbly SS.

Coarse amygd. basalt conglomerate.

Purple SLTS at 80°

10 cm band of purple amygd. basalt.

R90-1
-70°, az.205°

R90-4
-55°, az.100°

SECTION LOOKING N10°E

LEGEND

PROTEROZOIC

UPPER SHEPPARD FORMATION

1 Dolomite-A. Sandstone/Siltstone (SS/SLTS)
B. Stromatolitic

LOWER SHEPPARD FORMATION

2 Arkosic greywacke (qtz-feldspathic Sandstone)
Fine, medium grain, homogeneous

3 Mixed purple Siltstone, fine to coarse arkosic Sandstone & Conglomerate (turbidite sequence)

4 Coarse amygdaloidal Basalt Conglomerate

NICOL CREEK FORMATION

5 Amygdaloidal Basalt (Purcell lavas)

mal Malachite
cpy Chalcopyrite
chcte Chalcocite
py Pyrite
hem Hematite
Quartz (barite) veining (>0.5m)
MMM Fault/fracture zone
SS Sandstone
SLTS Siltstone

0 1 2 3 4 5 10 15 20
METERS

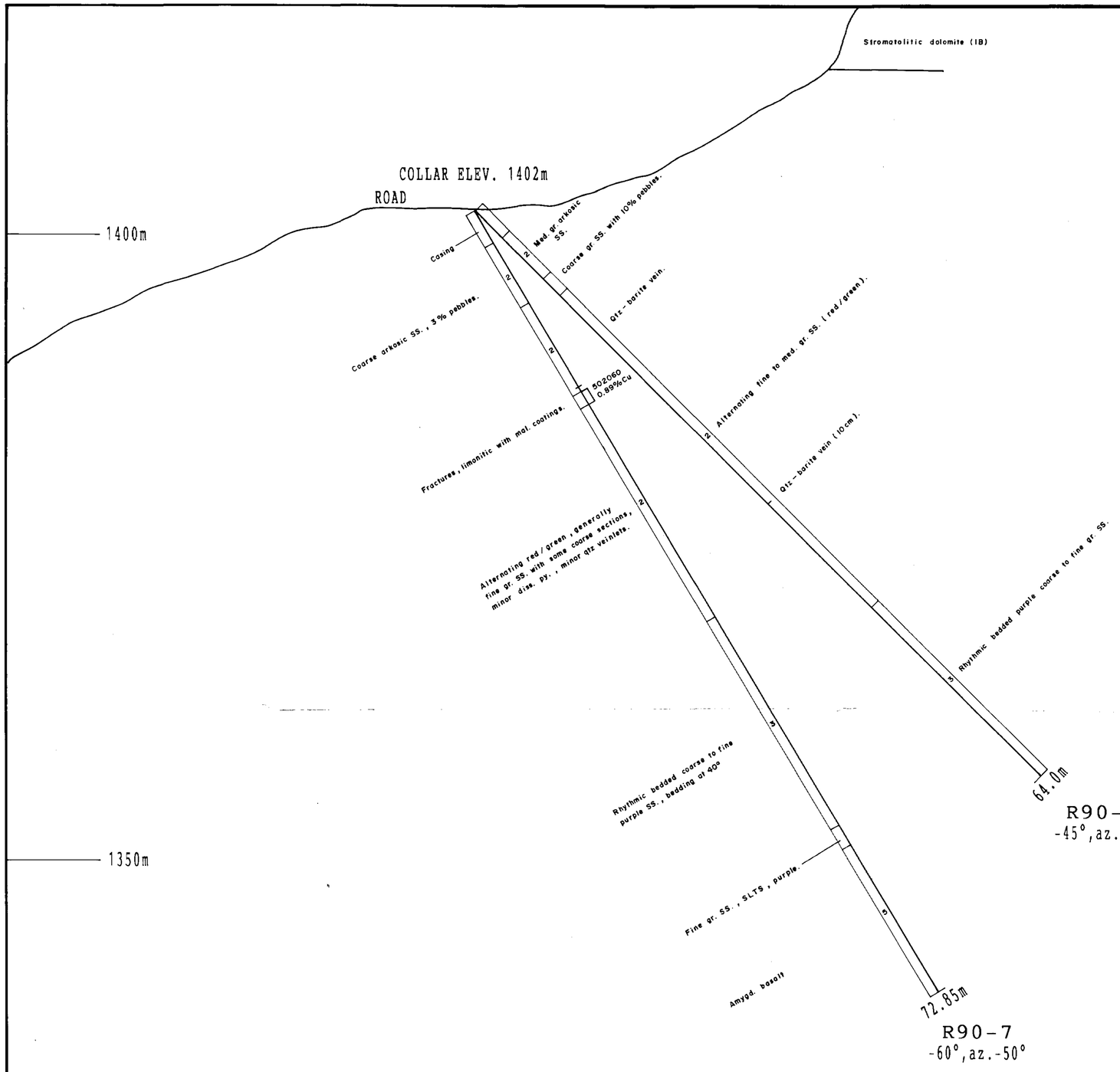
TECK EXPLORATION LTD

ROO PROPERTY

DRILL HOLE SECTION

HOLES R90-1, 3, 4

Scale-1:250	Date:October, 1990
Data by:G.T.	Revised:
Drawn by:P.H.	FIGURE 7



LEGEND

PROTEROZOIC

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cpy Chalcopyrite
chcte Chalcocite
py Pyrite
hem Hematite
Quartz (barite) veining (>0.5m)
ᴧᴧᴧᴧ Fault/fracture zone
SS Sandstone
SLTS Siltsone

0 1 2 3 4 5 10 15 20
METERS

SECTION LOOKING NW

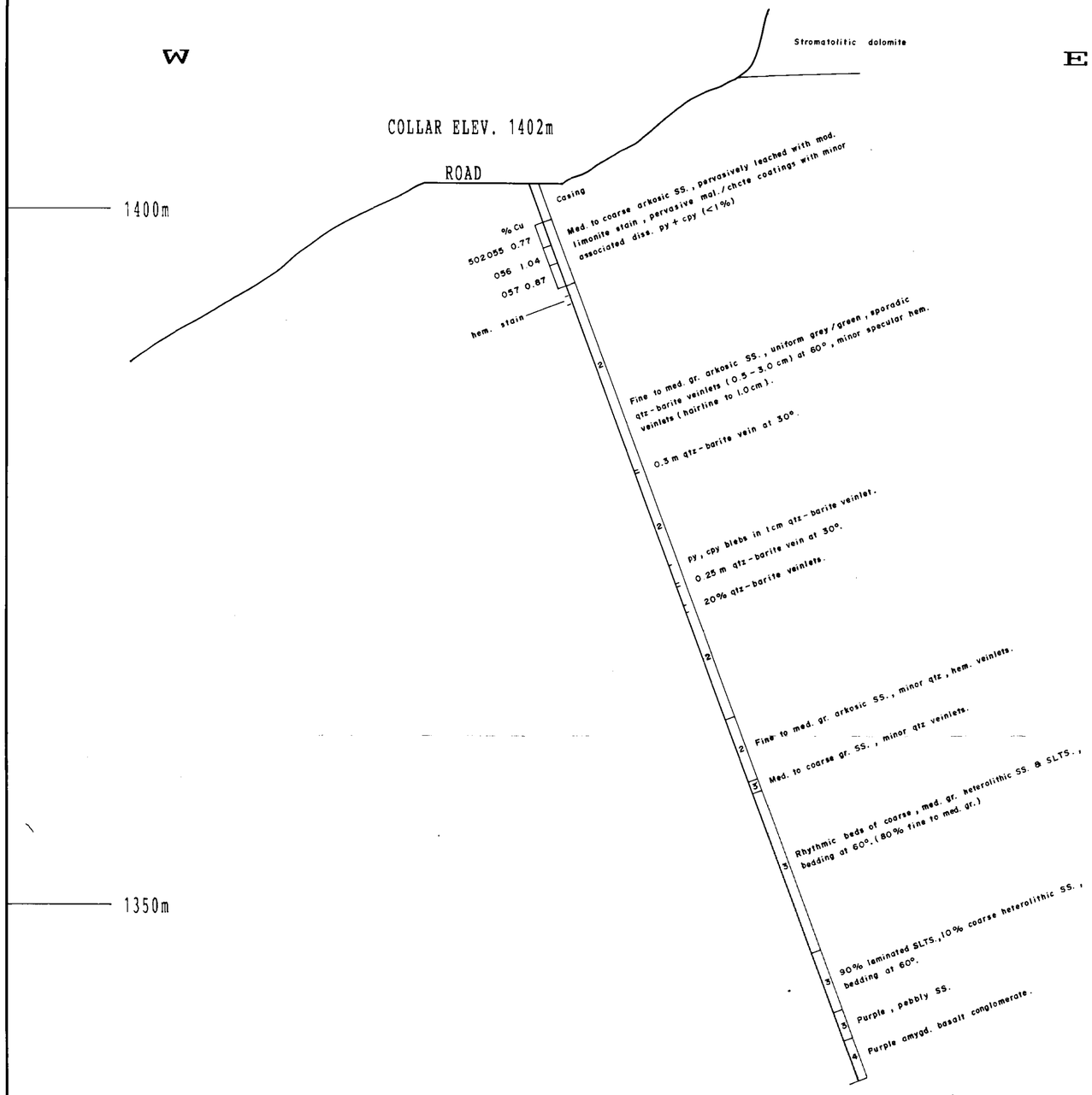
TECK EXPLORATION LTD

ROO PROPERTY

DRILL HOLE SECTION

HOLES 90-7,8

Scale-1:250	Date:October, 1990
Data by:G.T.	Revised:
Drawn by:P.H.	FIGURE 10



R90-6
-70°, az.-90°

SECTION LOOKING NORTH

LEGEND

PROTEROZOIC

UPPER SHEPPARD FORMATION

1 Dolomite-A. Sandstone/Siltstone (SS/SLTS)
B. Stromatolitic

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mal Malachite
cpy Chalcopyrite
chcte Chalcocite
py Pyrite
hem Hematite
Quartz (barite) veining (>0.5m)
Fault/fracture zone
SS Sandstone
SLTS Siltsone

0 1 2 3 4 5 10 15 20
METERS

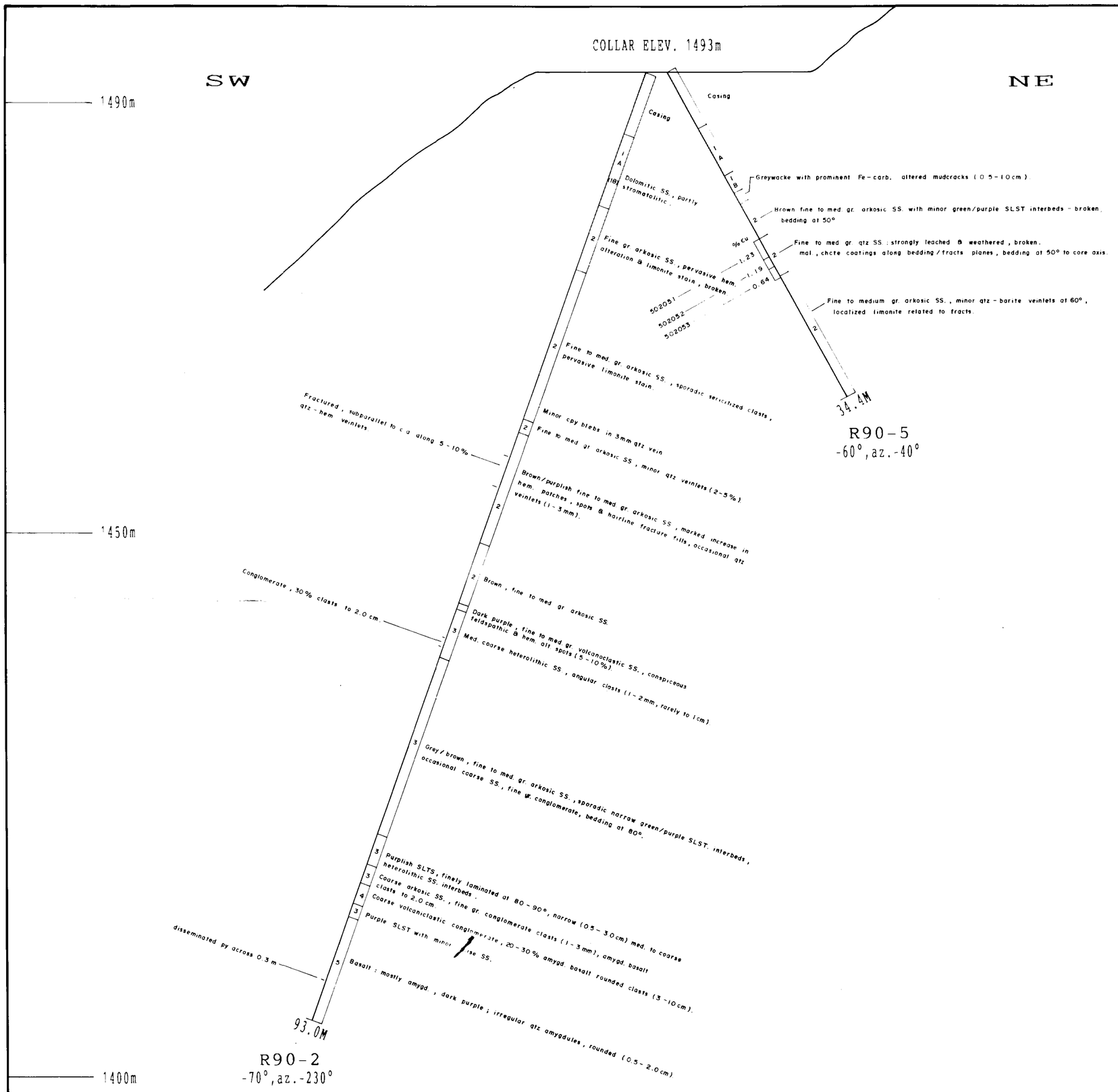
TECK EXPLORATION LTD

ROO PROPERTY

DRILL HOLE SECTION

HOLE R90-6

Scale-1:250	Date:October, 1990
Data by:G.T.	Revised:
Drawn by:P.H.	FIGURE 9



LEGEND

PROTEROZOIC

UPPER SHEPPARD FORMATION

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NICOL CREEK FORMATION

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cpy Chalcopyrite
chcte Chalcocite
py Pyrite
hem Hematite
Quartz (barite) veining (>0.5m)
Fault/fracture zone
SS Sandstone
SLTS Siltsone

0 1 2 3 4 5 10 15 20
METERS

SECTION LOOKING NW

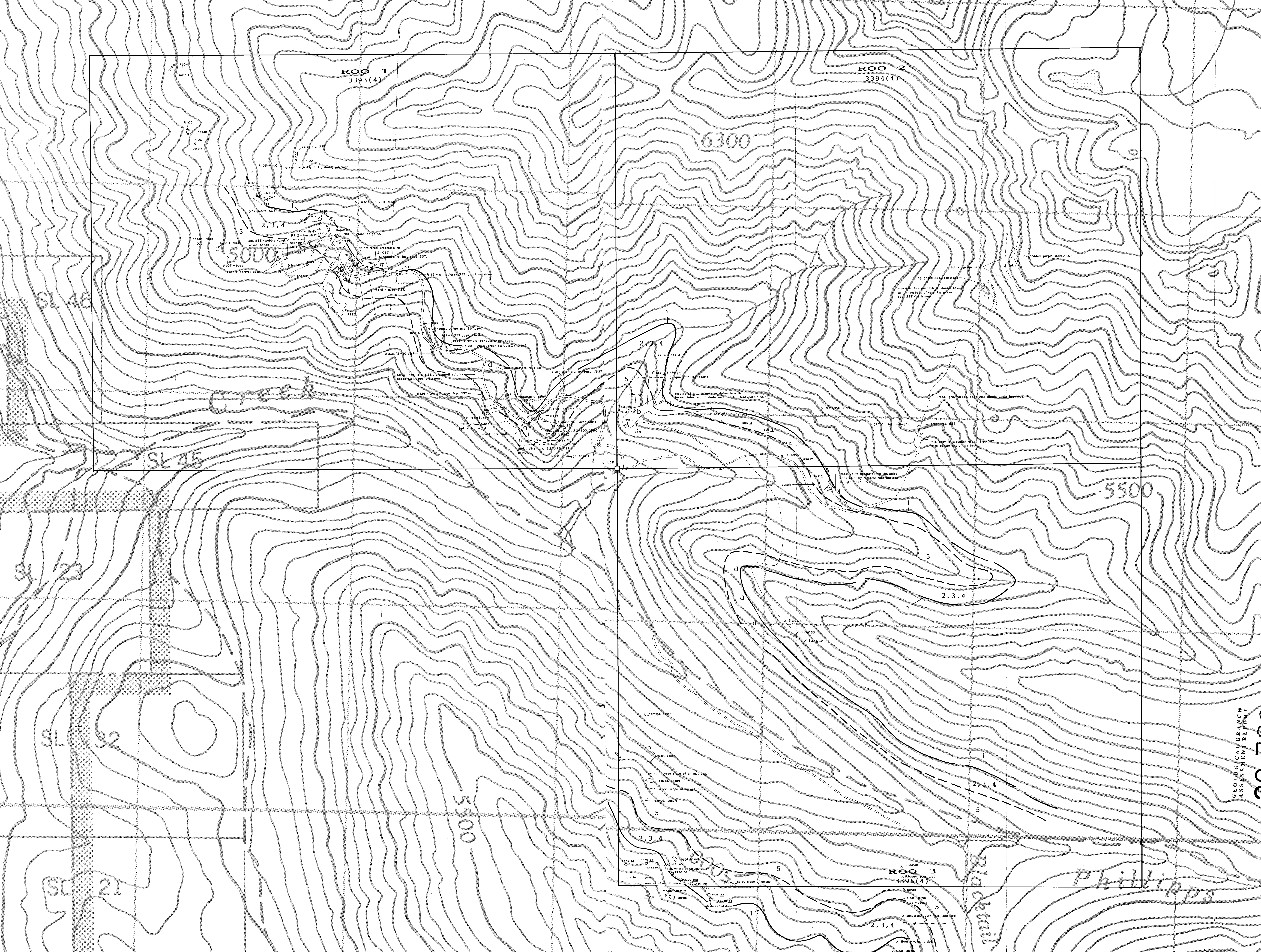
TECK EXPLORATION LTD

ROO PROPERTY

DRILL HOLE SECTION

HOLES R90-2,5

Scale-1:250	Date:October,1990
Data by:G.T.	Revised:
Drawn by:P.H.	FIGURE 8



LEGEND

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NICOL CREEK FORMATION

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MINERAL OCCURENCES - Cu

s Sediment host

q Quartz vein hosted (±barite)

d Dolomite hosted

t Trachyte (Syenite) with associated quartz veinlets

b Barite vein (no Cu)

SST	Sandstone
fsp	Feldspar
qtz	Quartz
q.v.	Quartz vein
	Outcrop
	Talus
	Trench
	Shaft
x	Sample location
	Road
R135	Rock sample
S24101	Assay sample
mal	Malachite
cpy	Calchopyrite
chcte	Calchocite
py	Pyrite
hem	Hematite
	Petrographic sample (PS-1)
	Diamond drill hole (R-90-1)
ss 13	Soil sample location with Cu geochem. value
	Fault/fracture zone

0 50 100 200 300 400
METERS

TECK EXPLORATIONS LTD

ROO PROPERTY

FORT STEELE MINING DIVISION, B.C.
NTS 82G/2W, 3E

GEOLOGY

SCALE-1:5000 | DATE: MARCH, 1990
GEOLOGY BY: T. M. D. B.Y.