

1975 PROPERTY REPORT

TITLE 1975 DIAMOND DRILL PROGRAM, TEETA CREEK PROSPECT

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LOCATION - Area - Northern Vancouver Island  
- Mining Division - Naniamo  
- Coordinates - 50° 23'N. Lat.; 127° 31'40" W. Long.  
- NTS - 92L /SE

OWNERSHIP CITIES SERVICE MINERALS CORPORATION  
optioned from J. R. Billingsley

WORK DESCRIBED Geologic mapping, geochemistry, I.P. Survey,  
magnetometer survey, diamond drilling and  
previous work by Newmont Mining.

CITIES SERVICE MINERALS CORPORATION

VANCOUVER OFFICE

SUMMARY

The Teeta Creek Property is situated in north western Vancouver Island at latitude 50°23' longitude 127°31'40". Access is via air or truck to Port Alice and by boat across Neroutsos Inlet to the mouth of Teeta Creek. A two-mile hike upstream along a cat road is required to get to the campsite.

Cities Service Minerals Corporation optioned 41 claims from J. R. Billingsley. The claims extend from the mouth of Teeta Creek to some 3 miles upstream. The claims cover copper and molybdenum mineralization found along the Teeta Creek Valley and along the valley walls. Interest in the area was generated by the submission of the property by Billingsley for review. The review indicated an area of copper mineralization carrying greater than 0.20% Cu over a horizontal distance of 800'. This belt was indicated by previous Newmont Mining diamond drill holes.

During the 1968-1969 field season, the Quatsino Syndicate, under the direction of Newmont Mining, carried out a program of geologic mapping, line cutting, soil geochemistry, magnetometer work and diamond drilling. The soil geochemical survey outlined a vaguely linear copper anomaly trending northerly from the campsite. This anomaly is well outlined by the 300 ppm Cu contour line.

Newmont's diamond drilling program yielded the following results:

- a) D.D.H. S-1 70' of .21% Cu.
- b) D.D.H. S-2 Two 20' sections of .21% Cu.
- c) D.D.H. S-3 120' of .36% Cu.
- d) D.D.H. S-4 20' of .36% Cu and 35' of .34% Cu.
- e) D.D.H. S-5 40' of .20% Cu.

## II

No evidence of surface leaching was observed in the drill core.

In 1974 Cities Service carried out a program of line cutting and rechainning the Newmont grid. An induced polarization survey was also conducted over 7.6 line miles.

During the 1975 field season, a program of prospecting, trenching, rock geochemistry and diamond drilling was carried out by Cities Service.

Newmont's mapping and observations of the 1975 drill core by the writer, recognize 14 rock types on the property. A quartz diorite stock intrudes Bonanza volcanics and sediments. The quartz diorite "appears" to have intruded as sills rather than as a plug. The intrusive is located predominantly along the bottom of the Teeta Creek Valley and on the valley walls up to the 600' elevation level. Quartz diorite outcrops have been observed from  $\frac{1}{2}$  mile upstream from the mouth of Teeta Creek to approximately 3 miles upstream from the creek mouth. The main intruded volcanic rocks are tuffs, fragmental tuffs and flows.

A vague hydrothermal alteration zonation is evident from the mapping and drill core. The zoning occurs along the quartz diorite contact northwest and southeast of the campsite and changes towards the bottom of the creek valley northeast of camp. The alteration also trends in a  $N20^{\circ} - 40^{\circ}E$  direction along the major Brooks Peninsula Fault System. Potassic alteration (biotite, k-spar) and minor propylitic alteration occur closest to the volcanic-intrusive contact and the argillic alteration (quartz, clay-carbonate) predominates in the creek valley between Line 16S and Line 16N where major fracturing, faulting and dyking in a northeasterly direction has occurred.

### III

Several periods of alteration have occurred and the various mineral assemblages have been superimposed on each other. Intense argillic altered areas coincide with areas of intense fracturing, faulting and veining. The sulphide mineralization is also concentrated in the argillic altered and intensely fractured area. The alteration and mineralization has become more intense with each fracturing event (at least 4 stages). Late stage mineralization and alteration has occurred with late stage faulting and intrusion of feldspar porphyry dykes although the effects on surrounding rocks are not widespread.

Several sulphide anomalies were indicated by the 1974 induced polarization survey. The 1975 diamond drill holes revealed that the anomalies were caused primarily by abundant pyrite and pyrrhotite. Chalcopyrite was usually encountered in greater concentration around the fringes of the high pyrite areas. A 5% frequency effect anomaly was located along Line 12N between stations 14W and 16W. This anomaly is open to the northeast as no further I.P. survey was carried out beyond this line.

Geochemical sampling and mapping in 1975 located a pyrite zone coincident with the I.P. anomaly along Line 12N and chalcopyrite and molybdenite are found in zones paralleling the pyrite zone. This I.P. anomaly, although it is rather subtle, requires further exploration work.

Rock samples were collected along one creek southeast of the campsite and on the old Teeta Gold property near the mouth of Teeta Creek. The samples were analyzed for copper, molybdenum, zinc, silver and gold. No anomalous values were obtained.

During the summer of 1975, Cities Service drilled four B.Q. diamond drill holes totalling 4150' of which City paid for 3978' and assayed 3800'.

This was due to the loss and restart of hole 75-4. The results of the drilling program are as follows:

- a) D.D.H. 75-1      220' of .35% Cu or 480' of .256% Cu.
- b) D.D.H. 75-2      A combination of the highest grade sections yielded 379' of .167%.
- c) D.D.H. 75-3      494' of <.10% Cu.
- d) D.D.H. 75-4      113' of .162% Cu.

Three of the four holes drilled did not extend mineralized zones that were indicated by the I.P. Survey. Diamond drill hole 75-1 yielded the highest grade mineralization and extended the proposed mineralized zone found in Newmont's D.D.H. S-3 and S-4 approximately 400' from its original 800' length to 1200'. This mineralized zone is still open to the northeast of D.D.H. 75-1 and requires testing.

Pyrite, pyrrhotite, chalcopyrite and molybdenum occur as disseminations, fracture coatings, blebs in quartz veins and as mafic replacements. To date the highest grades of copper are found in the large area of pale grey, intensely fractured and altered rocks of volcanic and intrusive origin. This unit is found in D.D.H. 75-1. Chalcopyrite and pyrrhotite are also found as disseminations and in silicified fractures in purple biotized porphyritic quartz diorite near its contact with pale grey altered rocks. Newmont's 1968 D.D.H.s, S-3 and S-4 intersect this contact area and a 120' section of .36% Cu occurs. The several periods of mineralization are contemporaneous with the various stages of fracturing, faulting veining and alteration.

The latest stage copper mineralization appears to have occurred with the last stage of faulting and feldspar porphyry dyking.

A small prospecting program was carried out about  $1\frac{1}{2}$  miles upstream from the campsite during the summer of 1975. Chalcopyrite and molybdenite were found which resulted in the staking of 9 units in the Sun Claim. A geochemical soil survey was conducted along four 2000' grid lines. The lines are spaced 400' apart with two lines each on the northwest and southeast sides of Teeta Creek. The copper values range from 16 ppm to 2100 ppm. An 800' to 1000' wide anomaly occurs between Line 3E and Line 8E. The anomaly is made up of samples with copper values greater than 196 ppm Cu. No further work was carried out in this area in 1975.

Work Done in the 1975 Program

From May 26, 1975 to July 11, 1975, a diamond drilling program was carried out on the Teeta Creek Property by Cities Service. Four holes totalling 4156 feet were drilled. The first 356' of hole 75-4 were logged and assayed, then the hole was lost due to a casing shift. Cities Service paid for half of this length. A second hole was started next to the first and was designated 75-4B. This hole was drilled to 800'. The assaying and logging was carried on in the second hole when it reached 356' and was continued to the end of the hole at 800'. Therefore Cities Service paid for 3978' of drilling and assayed 3800'. From this point on in the report the total drilling footage will be referred to as 3800' which was the total assayed and logged.

The lengths of the holes are as follows:

	<u>D.D. Hole Number</u>	<u>Length</u>
1)	75-1	1000'
2)	75-2	1500'
3)	75-3	500'
4)	75-4/4B	800'

Rock geochemistry sampling and mapping was done along two creeks on the Star claims to test the geochemistry of a gossan area found in outcrop.

The Sun Claim was staked in June to cover small copper showings. These showings were found by a previous prospecting program by Cities Service. These claims attach to the Star claim group about 3 miles upstream from the mouth of Teeta Creek (see Claim Map, Fig. 2). A grid consisting of four 2000' lines was run on the claim. Soil and rock sampling was carried out at 100 foot spacings. Geologic mapping was also carried out on this grid. (see Fig. 15).

References

An Exploration Proposal - Teeta Creek Porphyry Prospect  
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Memorandum of Agreement between J.R. Billingsley and  
Cities Service Minerals Corporation, October 15, 1974.

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Quatsino Syndicate Project Report. 1968  
J. H. Trembley  
H. C. B. Leitch  
W. J. Mullin, 1968.

GEOLOGIC SETTING OF THE TEETA CREEK PROPERTY

Regional Geology

Northern Vancouver Island is underlain by the Vancouver Group consisting of a basal Middle Triassic sediment-sill unit, Middle to Upper Triassic Karmutzen Formation marine volcanics, Upper Triassic Quatsino Formation Limestones, Upper Triassic Parson Bay Formation volcanic-clastic and pelitic sediments, and Lower to Middle Jurassic Bonanza Formation effusive basaltic and dacitic rocks as well as pyroclastic volcanics.

The Vancouver Group formations are intruded by Middle Jurassic Island intrusives. These intrusives appear to have been emplaced contemporaneously with the deposition of Upper Bonanza volcanics.

Lower Cretaceous clastics rest unconformably on the Vancouver Group of rocks.

In the Teeta Creek area only the Upper Triassic Parson Bay volcanoclastics and sediments, or Lower Jurassic Horbledown? argillites and Lower Jurassic Bonanza volcanics are represented. The Teeta Creek quartz diorite stock is also observed and intrudes these formations. The stock



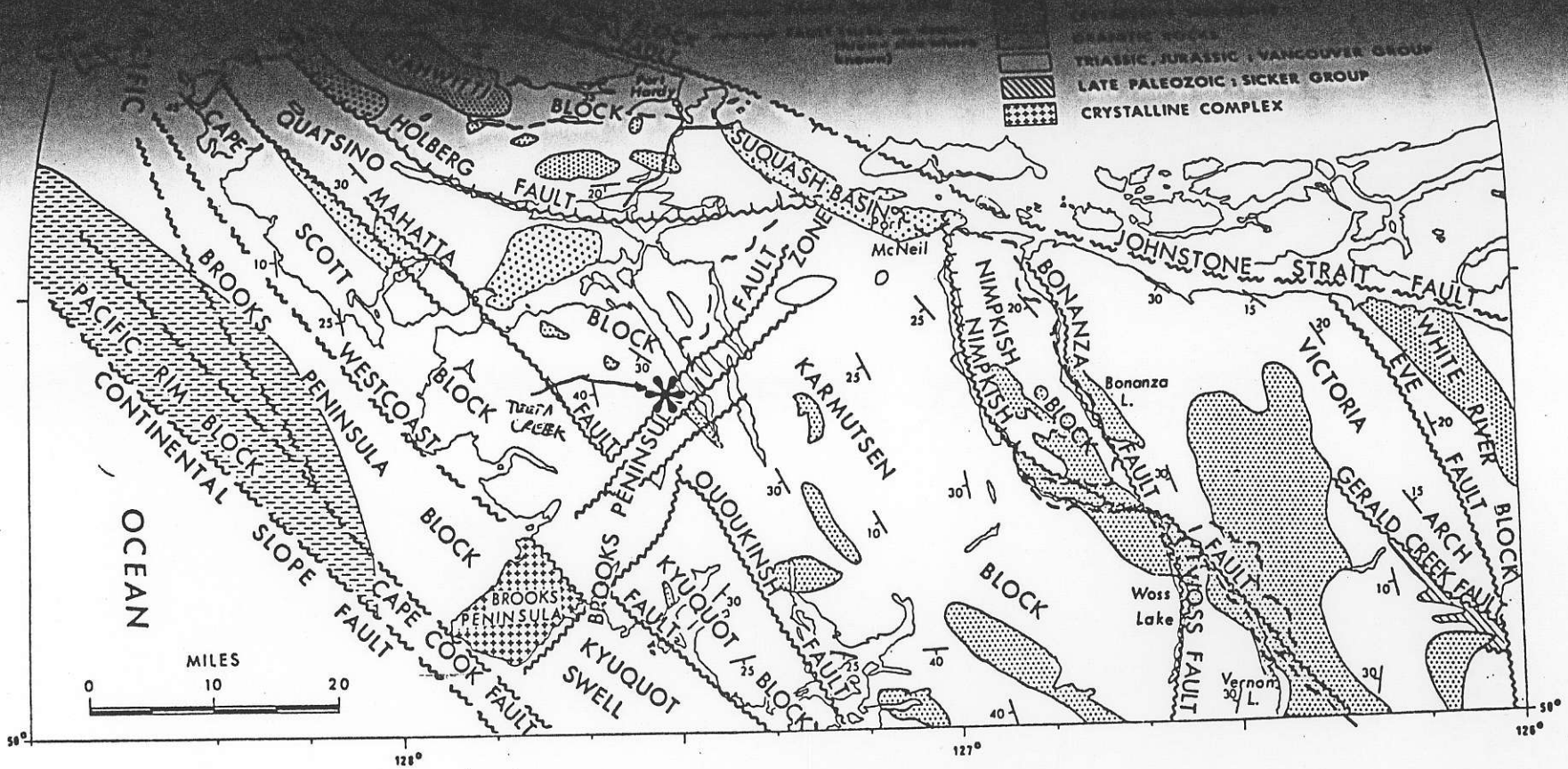


Figure 3. Map of main faults and fault-blocks.