



GEOLOGICAL-GEOCHEMICAL REPORT

Duncan #1-6 (Y33073-Y33078) }  
Avenue #1-6 (Y33067-Y33072) } Claim Blocks

Mayo Mining District, Yukon



Claim Sheet 105-M-14

Latitude 63°58'N

Longitude 135°06'W

FOR

CANADIAN RESERVE OIL & GAS LTD.

BY

T.J. ADAMSON

December 1972

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$1200.00

*J.B. Craig*  
Resident Geologist or  
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

*[Signature]*  
Commissioner of Yukon Territory



LIST OF CLAIMS

<u>Claim Name</u>	<u>Grant Number</u>	<u>Owner</u>	<u>Anniversary Date</u>
Duncan 1-6	Y33073-Y33078	Silver Spring Mines Ltd.	Nov. 27, 1972
Avenue 1-6	Y33067-Y33072	Silver Spring Mines Ltd.	Nov. 27, 1972



DUNCAN - AVENUE M.C.

KEY MAP

LOCATION + ACCESS 1" = 1 MILE

105-M-14



135°15'

BEAUVETTE HILL +

'DUNCAN' AND 'AVENUE' CLAIM GROUPS

KENO SUMMIT  
MINTO HILL  
6065 MONUMENT HILL

approx. 85 miles

road

63°55'

KENO HILL

LIGHTNING CREEK

SOURDOUGH HILL 4739

BUNKER HILL +

DUNCAN

CREEK

MOUNT HINTON +

## INTRODUCTION

For approximately one week during September 1972, the writer and an assistant conducted a geological-geochemical examination of the Duncan #1-6 and adjoining Avenue #1-6 mineral claims located in the Keno Hill-Galena Hill area of the Yukon Territory. These claim groups are held, under option, by Canadian Reserve Oil & Gas Ltd., from Silver Spring Mines Ltd. (N.P.L.).

During September 1971, a brief property examination was made and an evaluation report written by R.J. Hilker, P.Eng, a consultant geologist in Whitehorse, Yukon Territory.

The 1972 program on this property consisted of geological mapping, prospecting, and geochemical soil sampling. Grid lines were located and topographic control was by chain, compass, and altimeter.

## LOCATION AND ACCESS

The Duncan-Avenue mineral claims are located in the Keno Hill-Galena Hill mining area. The claims are situated on claim sheet 105-M-14 at approximately 63°58' N latitude and 135°06' W longitude. The claims are found just west of Beauvette Hill, in a broad saddle between Beauvette Hill and Caribou Hill.

Keno City is the nearest settlement to the Duncan-Avenue claims. There is good all-weather road access to Keno City from Whitehorse.

The claim area is accessible from Keno City by a very rough four-wheel drive truck type of road. This road branches to the east from the Keno Summit road, about one mile from Keno City. The road follows the north side of Lightning Creek, and then turns northerly to the area of the Duncan #1 claim post. The total road distance from Keno City is about ten miles. About two days' work, with a D-8 bulldozer, repairing washouts and slide areas, was required in September to make the road passable for a four-wheel drive vehicle.

For the duration of the 1972 work on these claims, the crew was accommodated at the Silver Spring Mines Ltd.'s camp located just off the Hansen Lake road, between Elsa and Keno City.

## REGIONAL GEOLOGY

Sediments in the Keno Hill-Galena Hill area consists mainly of quartzites, graphitic and sericitic schists and phyllites, and minor argillite and limestone. These rocks were originally thought to belong to the Yukon Group and to be Precambrian in age. On the above basis, the rocks were divided into three formations: a lower schist division, a central quartzite (Keno Hill Quartzite), and an upper schist division. However, recent stratigraphic and paleographic work, mainly by Green and Tempelman-Kluit of the G.S.C., has shown that much of the above is incorrect. The Keno Hill Quartzite, the only usable marker bed in the area, is now thought to be Lower Cretaceous in age. The lower schist division is Jurassic and the upper schist division is Precambrian. The terms "lower schist" and "upper

schist" refer to the apparent position of these units with respect to the Keno Hill Quartzite even though the upper schist unit is much older than the lower schist unit.

Thick, massive, conformable lenses and sills of greenstone, of Cretaceous age, occur in the lower schist division and in the Keno Hill Quartzite.

In the general Keno Hill-Galena Hill area the rock units dip south to southeast and form the south limb of a broad gentle northeast trending open anticline.

Economic lead-silver mineralization in the area is found in northeast trending, generally steeply dipping vein faults, generally in competent quartzites and greenstones.

## TABLE OF GEOLOGIC FORMATIONS

after L.H. Green, 1971

### Cenozoic

#### Pleistocene and Recent

12 Drift

#### Tertiary

11 Quartz porphyry and granite porphyry

### Mesozoic

#### Cretaceous

10 Quartz monzonite, granodiorite

9 Greenstone (diorite gabbro, and altered equivalents)

#### Lower Cretaceous

8 Keno Hill Quartzite

#### Jurassic

7 Lower schist division, graphitic phyllite

7a Phyllitic sericitic quartzite

### Paleozoic

#### Ordovician to Silurian

6 Massive dolomite

5 Black phyllite, shale, chert

### Precambrian

4 Limestone

3 Grit division, gritty quartzite, argillites

2 Phyllitic quartzite, quartz-muscovite-chlorite schist

1 Upper schist division

## CLAIM AREA GEOLOGY (Duncan-Avenue Mineral Claims) (See Map)

Outcrop is abundant on the claims, to the north of the base line, and to the east of line 4S (Beauvette Hill). South of the base line, west of line 4S, there are only scattered areas of outcrop on a relatively smooth gentle slope. Overburden appears to be quite thin over much of this area, however very thick vegetation of willow and alder covers the lower slope.

The claim area is underlain by graphitic phyllites and schists, and phyllitic sericitic thinly bedded quartzites of the Jurassic lower schist division. These sediments have been intruded by thick, massive, conformable lenses and sills of greenstone of Cretaceous age. Greenstone is by far the most abundant rock type in the Duncan-Avenue claims area, and forms all positive prominent topographic features. The schists and phyllites are found in saddles and depressions. All the rock units are trending generally east-west and dipping moderately ( $40^{\circ}$ - $60^{\circ}$ ) to the south.

A careful examination was made in the areas of the bulldozer trenches that were made in previous years on Duncan #1 mineral claim. The observations made by Hilker in his 1971 report were generally confirmed. Trench 2 is underlain by graphitic phyllite and there is no evidence of any vein material in the trench. All the other trenches are in areas of greenstone. The trenches are badly slumped. Some material containing minor wad and limonite was seen in rubble from Trench 1 and Trench 3. No samples were seen that would suggest a vein zone of any more than 1 - 2" wide. No sulfide mineralization was seen. The vein zone does not seem to extend at all to the northeast, beyond Trench 3, into an area of bedrock exposure.

No vein material could be found in rubble southwest of Trench 1. Assays of the vein material, as noted in Hilker's report, did not give any results of economic significance for silver, lead, or zinc.

North of the base line, between line 3S and line 4S, a small (maximum width 4") vein of massive pyrrhotite was found. The vein is exposed for a strike length of about 10 feet, pinches out to the west, and extends into rubble to the east, but could not be found in outcrop a further 200 feet east.

No other significant sulfide mineralization, or any indication of sulfide veins, could be found within the claims area.

#### GEOCHEMISTRY (See Map)

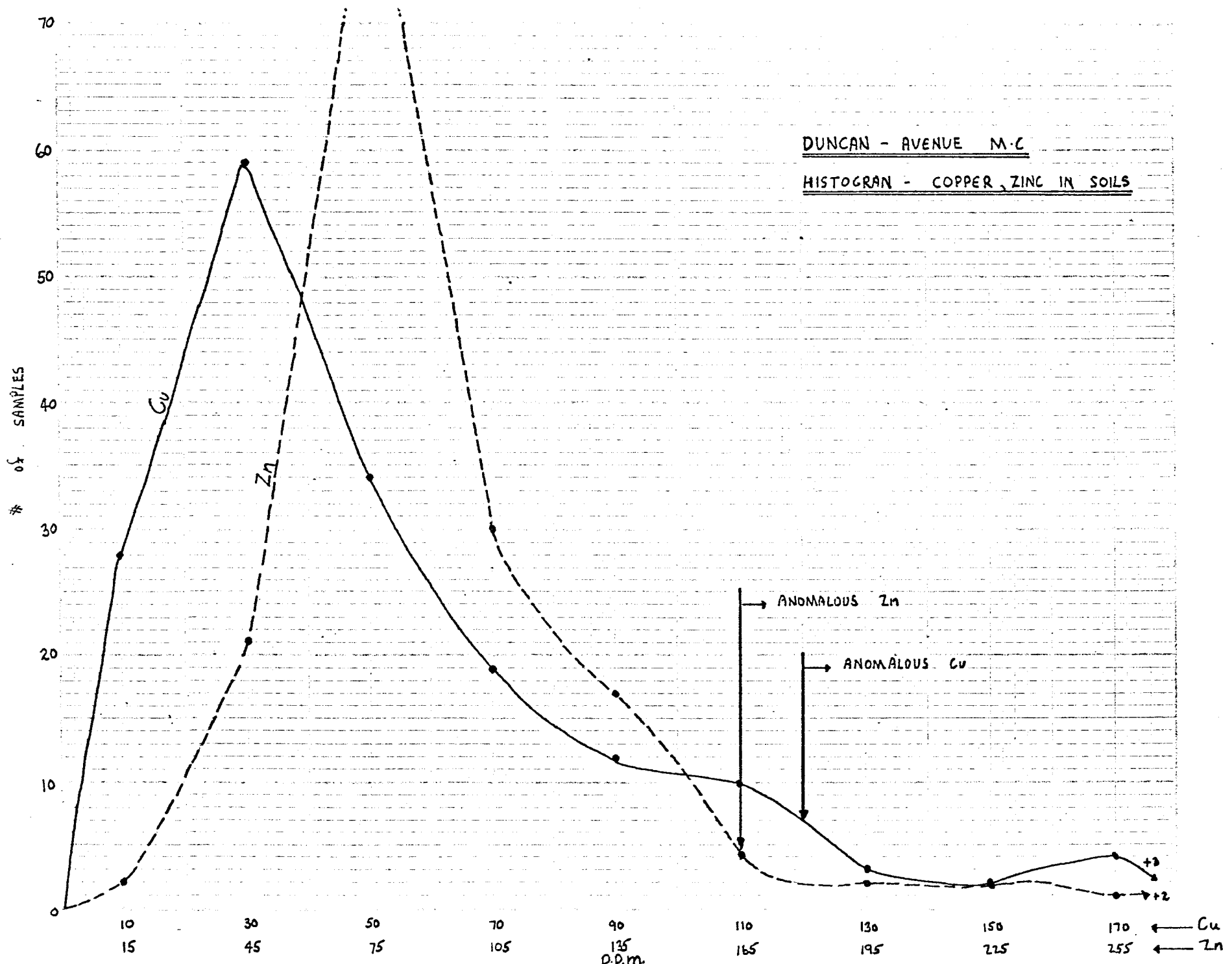
Soil samples were collected on flagged grid lines across the Duncan and Avenue mineral claims. Samples were collected at 200' intervals on lines 0 to 5 south of the base line. Samples were collected at 50' intervals on lines 0 to 7, north of the base line, in the vicinity of the old bulldozer trenches.

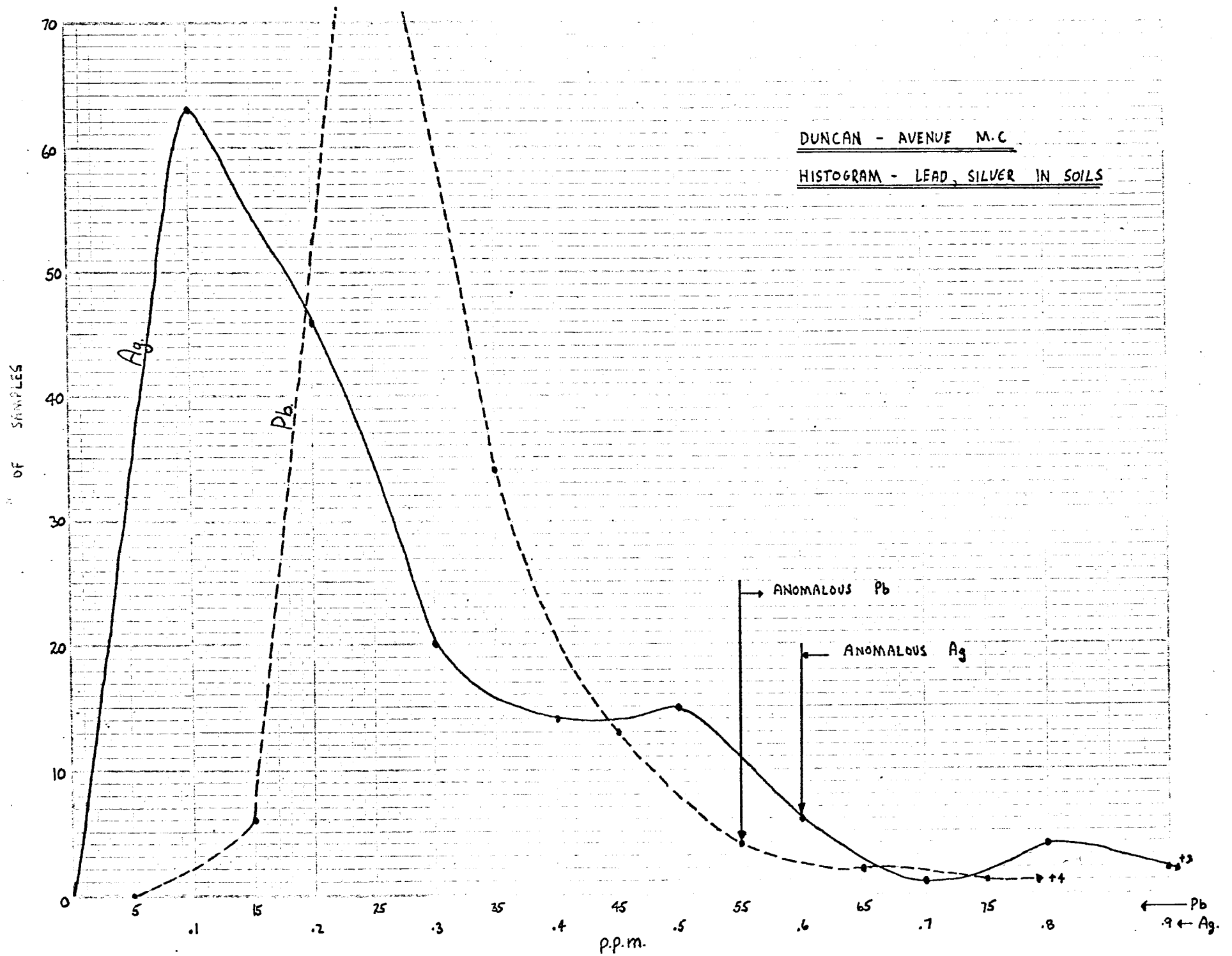
All samples were analyzed for copper, lead, zinc, and silver. Metal content determinations were made by atomic absorption methods after digestion in hot perchloric acid. All geochemical determinations were made by Barringer Research Ltd., in their Whitehorse, Y.T., geochemical laboratory.

The soil sample results were plotted on a 1":200' base map. A histogram was plotted for each element, from which the threshold of anomalous values for each element was visually determined.

DUNCAN - AVENUE M.C

HISTOGRAM - COPPER, ZINC IN SOILS





The threshold value for each element analyzed is as follows:

Copper	120 p.p.m.
Lead	55 p.p.m.
Zinc	165 p.p.m.
Silver	.6 p.p.m.

Sample results at or above the threshold values are circled and coloured on the values map.

South of the base line there are only a very few anomalous sample sites, for any element, and these sites are not adjacent. The most significant results are at line 0, station 1 south (anomalous lead, zinc, silver) and at line 0, station 3 south (anomalous in copper, lead, zinc, silver). Both of these samples are from areas of what appears to be in situ greenstone rubble. No evidence of mineralization that could account for the very high geochemical values was observed. The only other anomalous results south of the base line are from 3 scattered isolated sites: line 0, station 8 south (.6 p.p.m. Ag), line 2, station 1 south (.9 p.p.m. Ag), and line 4, station 23 south (165 p.p.m. Zn).

Some very anomalous results were obtained on the short lines north of the base line in the vicinity of the old bulldozer trenches. The highest silver result was obtained from a site immediately adjacent to Trench 1. Anomalous lead-silver results do not extend west of line 1 north. Some very high results for all elements on lines 4 and 5 north and for copper on line 7 north are unexplained. Outcrop and in situ rubble are relatively abundant in this area. No mineralization was seen. The writer suspects that the source of these anomalous values is a vein zone or zones of very small and insignificant size similar to the one encountered in Trench 1.

## CONCLUSIONS AND RECOMMENDATIONS

Careful prospecting over the Duncan #1 - 6 and Avenue #1 - 6 mineral claims did not result in the discovery of any mineralization of any economic interest whatsoever.

The known vein zone on Duncan #1 mineral claim was examined and it appears to be very small, discontinuous, and uneconomically mineralized.

Soil sample results revealed a number of anomalous values for copper, lead, zinc, and silver in the vicinity of the known vein zone and also to the east of this zone on line 4 north and line 5 north. Rock exposure is relatively abundant in this area and no evidence of significant mineralization could be found. It is thought to be very unlikely that these results represent mineralization having any size potential.

The only further work that can be "recommended" on the Duncan-Avenue claims is a small amount of bulldozer trenching in the area of line 4 N and in the vicinity of the anomalous sample sites at L 0, station 1 S and at L 0, station 3 south. However, the writer would assign a very low priority to this work and feels that the results would be of academic rather than economic interest.

Respectfully submitted,

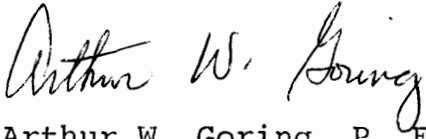


T.J. ADAMSON.

December 1972

All of the work noted in this report was done under the actual direction and supervision of the undersigned.

January 8, 1973.

  
Arthur W. Goring, P. Eng.

SOLEMN DECLARATION

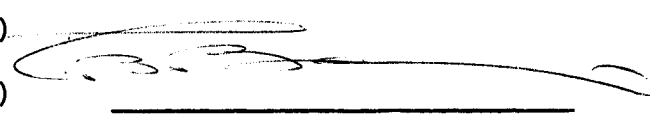
I, R. Bruce Bailey of the City of Calgary in the Province of Alberta solemnly declare that:

1. I am Vice President of Canadian Reserve Oil and Gas Ltd. with head office at the City of Calgary aforesaid;
2. That I am advised and do verily believe that the said Canadian Reserve Oil and Gas Ltd. has expended the following sums upon the properties hereinafter described:

\$1,200 - wages and chemical analyses on the claims known as the Duncan #1-6 and Avenue #1-6 claims in the Mayo Mining District, Yukon Territories.

I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

Declared before me at the City )  
of Calgary, in the Province )  
of Alberta, this 13th day of )  
June, A.D., 1973. )



R. Bruce Bailey



A Notary Public in and for the Province of Alberta.

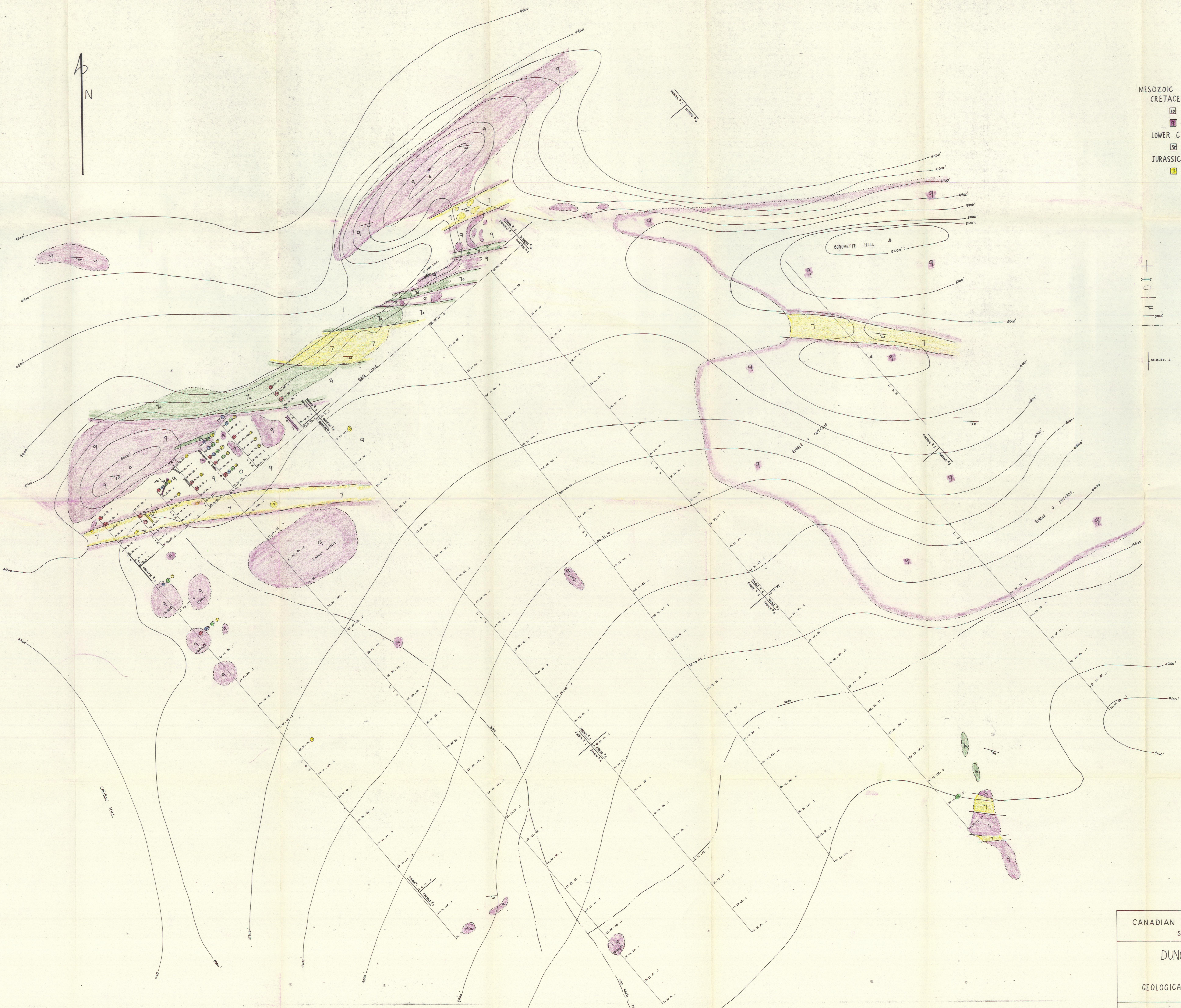
LEGEND AFTER L.H. GREEN, 1971.

- MESOZOIC CRETACEOUS
- QUARTZ MONZONITE, GRANODIORITE.
  - GREENSTONE (DIORITE, GABBRO, ALT. EQUIV.)
- LOWER CRETACEOUS
- KENO HILL QUARTZITE.
- JURASSIC
- LOWER SCHIST DIVISION, GRAPHITIC PHYLITE + SCHIST, ■ PHYLITIC SERICITIC QUARTZITE.

SYMBOLS

- ⊕ CUBIN POSTS
- BUILDING TRENCH
- LIMIT OF OUTCROP + IN SITU RUBBLE
- GEOLOGIC CONTACT
- BEDDING ATTITUDE
- TOPOGRAPHIC CONTOUR
- CAT ROAD

- SOIL SAMPLE VALUES  
Cu Pb Zn Ag (ppm)
- Cu 15.0 ppm +
  - Pb 55 ppm +
  - Zn 165 ppm +
  - Ag 1 ppm +



CANADIAN RESERVE OIL & GAS LTD.  
SILVER SPRING PROJECT

DUNCAN - AVENUE M.C.  
105 - M-14  
GEOLOGICAL - GEOCHEMICAL COMPOSITE MAP

DATE: OCTOBER 1972 SCALE: 1 inch = 200'

BY: T. J. ADAMSON FIGURE No: 1