5186

93N/14E,14W

GEOLOGICAL

DC, ME, ST

GEOPHYSICAL AND GEOCHEMICAL REPORT

on the

DC GROUP OF MINERAL CLAIMS

DUCKLING CREEK AREA, B.C.

for

CANADIAN SUPERIOR EXPLORATION LIMITED

by

JOHN BAKER, B.Sc.

Property Name:

DC Group

Location:

Lat 55° 52'N, 125° 20' W (NTS 93 N/14)

Date Started:

July 2, 1974

Date Completed:

August 15, 1974

93N/14E&14W

Mining Recorder's Office RECORDED

OCT 1 0 1974

AT

SMITHERS, B.C.

Department of

Mines and Petroleum Resources

ASSESSMENT REPORT

No. 5186

MAP

TABLE OF CONTENTS

INTRODUCTION	1
SUMMARY	1.
CONCLUSIONS & RECOMMENDATIONS	1 + 2
LOCATION & ACCESS	2
CLAIM STATUS	2
REGIONAL GEOLOGY	2
PROPERTY GEOLOGY	2, 3 + 4
ECONOMIC GEOLOGY	4
GEOCHEMISTRY	4, 5 + 6
MAGNETOMETER SURVEY	6 + 7
I.P. SURVEY	7 + 8

APPENDICES

I Certificates of Work

II Assessment Details

III Cost Statement

IV Certificate - John F. Baker

ILLUSTRATIONS

#| #1 #|-2Claim Location Map (1" = 1/2 mi., 1" = 4 mi.) #3 Airborne Magnetics (1" = 1 mile) #4 Magnetic Survey (1" = 400') #5 Geology (1" = 400') #6 Geochemistry (1" = 400') #7 Chargeability & Resistivity Profiles (1" = 400') #8 Chargeability & Resistivity Contour Plans (1" = 400')

INTRODUCTION:

The DC property comprises a group of 40 contiguous claims held by Canadian Superior Explorations Ltd., and is located twenty miles WNW from Germansen Landing, B.C.

Geological, geochemical, I.P. and magnetometer surveys conducted in July and August 1973 form the basis of this report. Work was carried out by Manex Mining Ltd. on behalf of Canadian Superior.

SUMMARY:

Exploration has been directed towards the North contact of a syenite plug intruding Takla volcanic rocks.

Geochemical work has outlined a strong copper soil anomaly North of the contact, flanking an area of propylitised andesites carrying minor chalcopyrite. Magnetic surveys show a poorly defined depression approximately coincident with the geochemical anomaly.

I.P. surveys defined a large Easterly trending anomalous zone parralleling the intrusive contact and encompassing the geochemical/magnetic target, although peak values lie to the North.

CONCLUSIONS AND RECOMMENDATIONS:

Work to date has indicated a concentration of copper within a large I.P. anomaly, probably representing a pyritic zone 3000' x 6000', occurring within a favourable geologic situation.

The scarcity of outcrop and float renders further inference difficult,

and determination of the extent or tenor of the mineralisation will necessarily be accomplished by either trenching or percussion drilling. A limited trenching program is therefore proposed for 1975, and is estimated to cost approximately \$ 5,000.

LOCATION AND ACCESS:

The claims straddle a small Creek valley 22 miles ENE of Germansen Landing, and are accessible via the BCDM road from Fort St. James. Relief is moderate with elevations ranging from 3200' in the SE to 3600' in the NW. Vegetation consists of mature pine, balsam and spruce, with swampy areas in the Eastern sector of the property.

CLAIM STATUS:

ST 11-16 and ME 7-10 are held under option from Consolidated Fortune Channel Mines Ltd., while the DC claims were staked by Canadian Superior in 1974. All claims are valid to 1975.

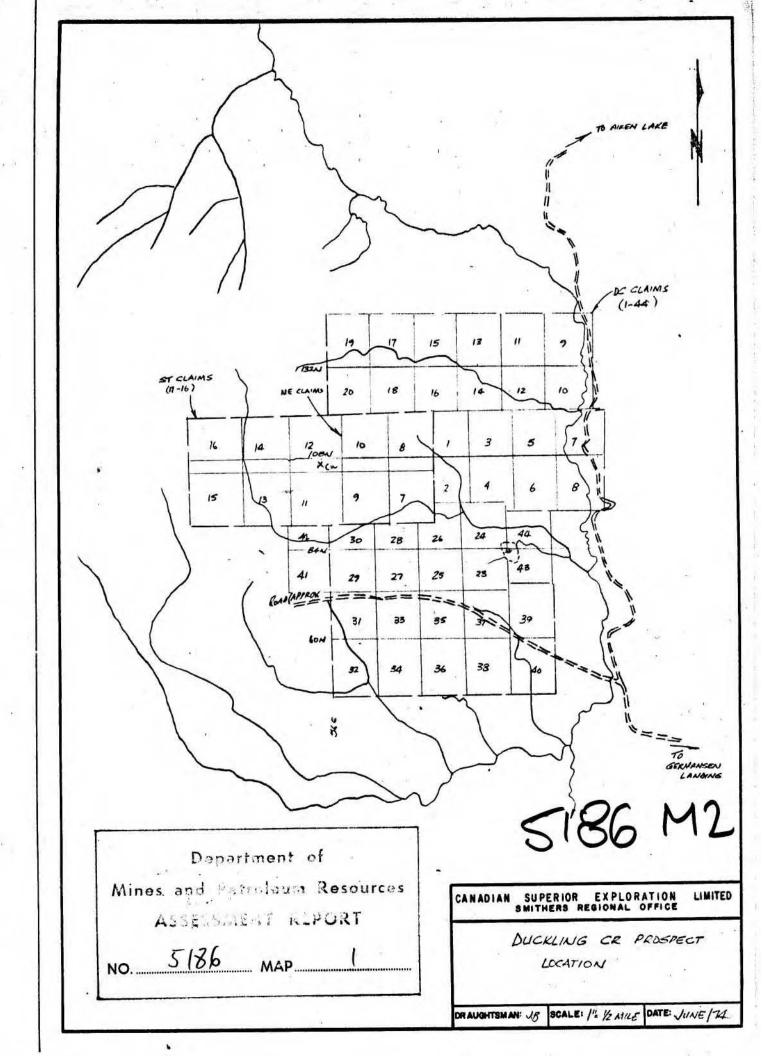
REGIONAL GEOLOGY:

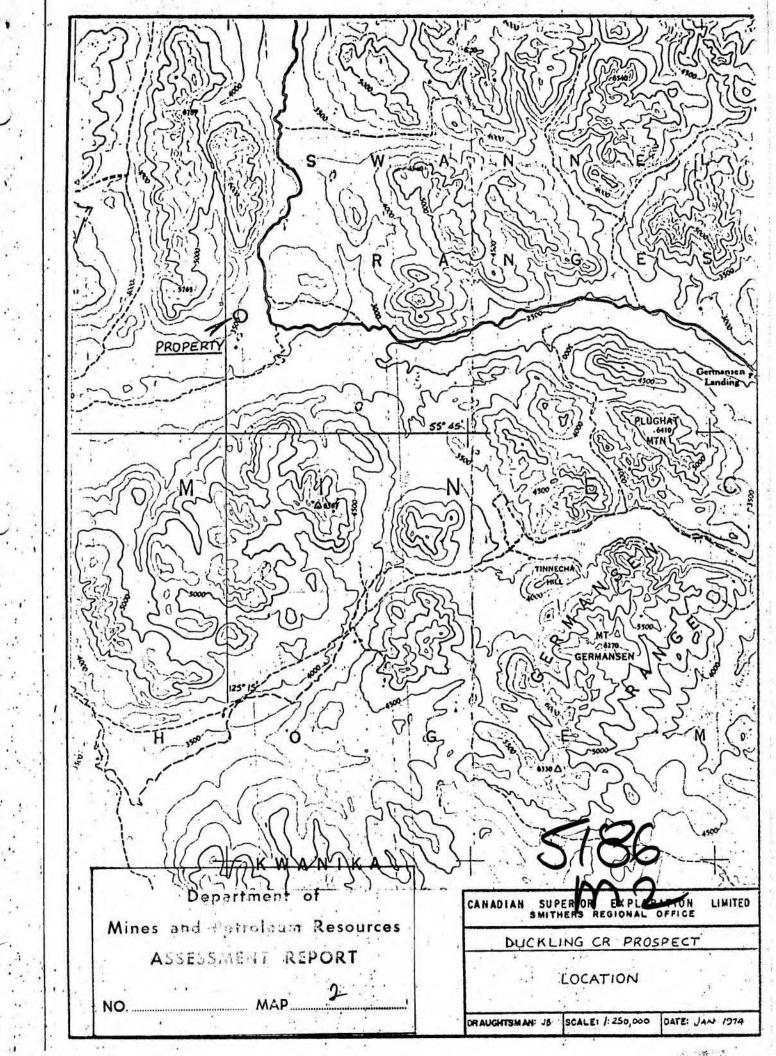
The property is largely underlain by Triassic Takla volcanic units near the Eastern margin of a syenite complex similar in age which forms part of the Hogem batholith. A small syenite outlier outcrops in the southern claim area.

A major NNW trending structure paralleling the batholithic contact has been projected to pass through the central claim area.

PROPERTY GEOLOGY:

Planimetric control for mapping was provided by chained grid lines at





400! intervals.

Outcrops are restricted to the Western claim area, the remainder being covered by a mantle of glacial till, eskers and swampy regions. Interpretation of air photographs and magnetic data has aided in defining the intrusive contact, which appears to outline an L-shaped body of resistant syenite, the North contact occupying a topographic depression, possibly reflecting structural control.

Lithology:

In hand specimens the syenite is a brick red to tan coloured, coarsely crystalline, leucocratic rock composed almost entirely of K-feldspar. The red colouration may in part be due to finely disseminated iron oxides which have been observed locally.

Takla rocks consist of dark green breccias and andesitic to basaltic flows characterised by blocky 2-5 mim pyroxene phenocrysts. Magnetite and locally weak disseminated pyrite appear as accessory minerals. There is insufficient exposure to map stratigraphy.

Structure:

The dominant fracture attitudes on the property trend NNW and Easterly, paralleling major structures along the batholitic contact and the North contact of the syenite plug respectively. These fault/shear zones have been observed in exposures outside the present claim boundaries. Fracturing of exposed rock on the DC group is nowhere intense, but becomes moderately strong near L. 52E 105N. It has not been possible at this stage to determine attitudes. of Takla units which here appear to be massive thick bedded horizons.

Alteration and Mineralisation:

In the wicinity of L. 52E 105N, pyroxene addesites are strongly pyritised, the sulphides commonly occurring in association with abundant epidote stringers and to a lesser extent as disseminations. Chalcopyrite occurs here in minor quantities, associated with pyrite.

Two small boulders of andesite, veined with Kspar and associated chalcopyrite, were discovered near L 76E 92N. The tenormof mineralization is estimated to lie within the range of 0.1 - 0.25% Cu.

ECONOMIC GEOLOGY:

Propylitised andesites 2000' North of the syenite contact may represent the fringes of a copper-rich, pyrite-poor zone adjacent to the contact. In that glacial lineaments trend Easterly, the mineralised float boulders lend support to this hypothesis. Geophysical data is encouraging in that the relative magnetic low may represent hydrothermal destruction of the ubiquitous magnetite within the volcanic rocks.

Trenching to bedrock in the vicinity of the soil geochemical anomaly should therefore effectively test this hypothesis. Of particular importance is the need to determine whether the two small rock exposures within the geochemical anomaly are in fact outcrops, as they are unmineralised.

GEOCHEMISTRY:

Survey Method:

Silt sampling was of a reconnaissance nature and consisted of 10 samples taken from drainage within the claim area. Fine silt was collected by hand

from active parts of streams, care being taken to avoid inclusion of organic or bank material.

In addition, 758 soil samples were taken, by means of a mattock, from the B horizon (generally 6" - 12" depth) at chained 200' intervals along lines 400' apart. All samples were analysed for total Copper and Molybdenum by Acme Laboratories in Vancouver.

Sample Treatment:

Analyses for Copper and Molybdenum were performed on the minus 80 mesh fraction of soils. Procedure for copper involved digestion of the fines with fuming perchloric acid, followed by standard atomic absorption techniques. Determination for molybdenum was performed on a test solution derived by diluting with water a fused mixture of sample fines, 5 parts Na₂ CO₃, 4 parts NaC₄ and 1 part KNO₃.

Results:

Molybdenum is shown to be of only secondary importance. Background values are of the order of 1-2 ppm Mo with several weakly anomalous readings up to 19 ppm Mo, largely supporting copper anomalies.

Copper background is 30 ppm over the syenite, and 45 ppm in areas underlain by Takla units, with an anomalous condition established at 100 ppm Cu. Soil values show a strong anomaly 1200' x 2400' centred L 56E 90N with values ranging up to 1450 ppm Cu. Single station anomalies to the East probably reflect glacial dispersion from this centre. Two weaker, Easterly elongated anomalies to the North are not considered important at this stage in that peak values are generally lower, and outcrops within the Western part are poorly mineralised.

Conclusions:

Soil sampling has been successful in outlining a copper geochemical anomaly within a favourable geologic and geophysical environment. The somewhat erratic nature of the anomaly may be caused by non-uniform overburden conditions such as eskers, which are present near the Southern and Southeastern parts of the anomaly.

Silt sampling has supported soil geochemical response mainly with respect to the Northern anomalies, probably because of better stream gradients in this area.

Further definition and testing of the target area near L 56E 90N would be better accomplished by physical work.

MAGNETIC SURVEY:

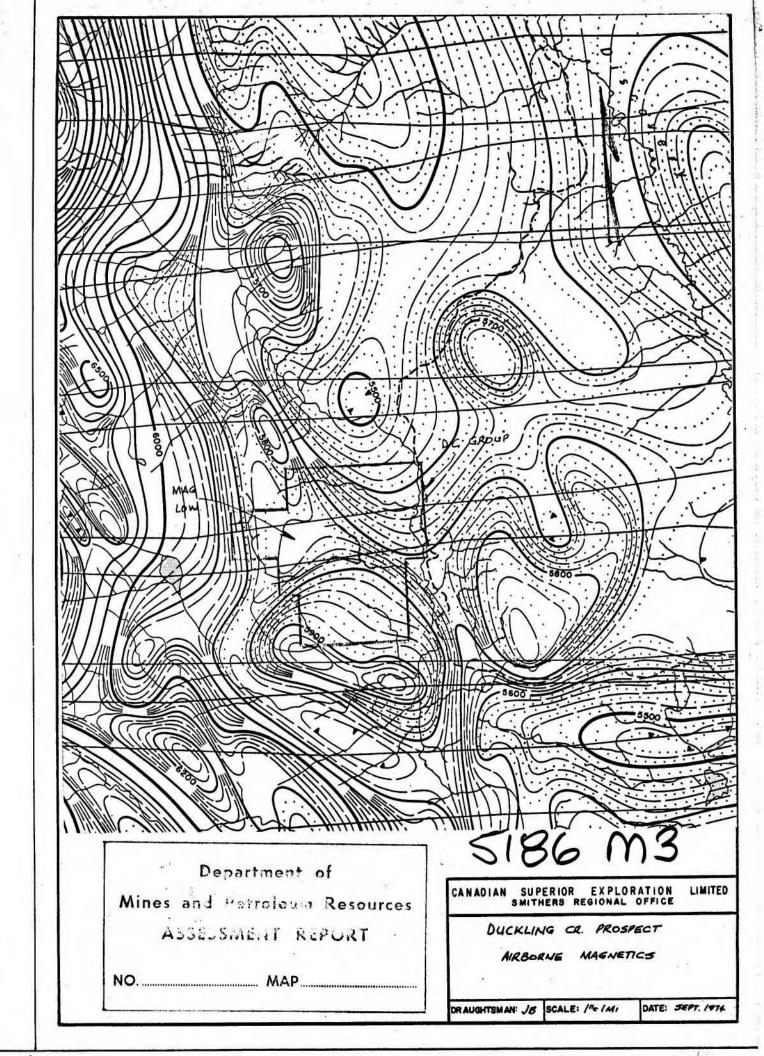
Survey Method:

Magnetometer readings were taken with two McPhar M-700 magnetometers at chained 200' intervals along lines 400' apart. All readings were corrected with respect to diurnal variation by establishing base stations along line 80N.

Results:

Maximum relief on the property is 4000 %, however magnetic gradients are frequently gentle. The syenitic intrusion is reflected by a broad, magnetically higher plateau region lying generally to the South of 80N. The SE trending belt of higher readings to the North probably represents volcanic units with increased accessory magnetite.

An imperfectly defined depression exhibiting approximately 250 % relief,



immediately North of the syenite contact correlates well with the soil geochemical anomaly, and may represent an area of hydrothermal destruction of magnetite.

Conclusions:

Results of the magnetometer survey have supported the geochemical anomaly and aided in definition of gross geological boundaries.

I.P. SURVEY:

Survey Method:

Scintrex Surveys Ltd. carried out IP surveys along 9 lines 5000' long and 800' apart. Instrumentation involved an Scintrex Mk. VII 2.5 kw time domain induced polarisation unit, employing a pole-dipole array with 300' a-spacing, and readings at n= 1,2,3.

Details relating to survey method and instrument capabilities are described in the attached report submitted by Scintrex.

Results:

The dominant feature is a 1400' wide interrupted zone of high chargeability extending Easterly across the surveyed area, situated approximately along 110N. However virtually the entire area surveyed is anomalous as represented by chargeabilities in excess of 10 milliseconds, although values decrease to the South across the syenite contact.

Resistivities show a prominant zone of highs trending Easterly between 110 N and 120 N, probably reflecting a series of andesitic flows.

The areas of the geochemical anomaly is not represented by any distinct feature, lying along a chargeability gradient within a broad area of lower resistivity.

Conclusions:

Results of the IP survey show a large area to be anomalous, encompassing the geochemical/magnetic target, but with peak values lying generally to the North.

It would appear that the anomalous response is in part due to formational pyrite and magnetite; however, alternatively, the large anomaly may represent a pyritic zone as seen in many porphyry copper deposits, within which is contained a copper rich core frequently represented by more subdued charge-abilities.

John Baker, B. Sc.

REPORT ON
INDUCED POLARIZATION SURVEY
GERMANSEN LANDING AREA B.C.
ON BEHALF OF
CANADIAN SUPERIOR EXPLORATION LTD.

By:

Jan Klein, M.Sc., P. Eng. Geophysicist

TABLE OF CONTENTS

		Page
SUMMARY.		
INTRODUCT	ION	1,
METHOD AN	D INSTRUMENTATION	1.
PRESENTAT	ION OF RESULTS	2
DISCUSSION	OF RESULTS	2
CONCLUSIO	NS AND RECOMMENDATIONS	3
''Induced Pol	arization Method", by Dr. H.O. Se	igel, 1970
Figure 1	Location Map	Scale 1:500,000
Plate 1	Chargeability & Resistivity Profiles	Scale 1" = 400'
Plate 2	Chargeability & Resistivity	Scale 1'' = 400'

SUMMARY

An Induced Polarization and Resistivity survey was executed over nine approximately one mile long lines over the Duckling/Fortune Project near Germansen Landing B.C.

The Chargeability backgrounds range from 4 to 10 msec. for the n=1 and 3 spacings respectively.

A broad, 1400' wide, anomalous zone runs across the grid. The amplitudes rise to 30 msec. with a peak amplitude of 61 msec. Due to the complexity of the data no source determination could be made. On some lines it seems however, that the source is shallow (lines 40E, 48E and 104E) on others the source (s) appears deeper (lines 64E - 80E). No direct correlation with the Resistivity results is apparent.

Our Ref. 74-V1004-01/02

REPORT ON INDUCED POLARIZATION SURVEY GERMANSEN LANDING AREA B.C. ON BEHALF OF CANADIAN SUPERIOR EXPLORATION LTD.

INTRODUCTION

During the period July 18 - August 3, 1974, an induced polarization survey was conducted over the Duckling/Fortune project, Germansen Landing area, on behalf of Canadian Superior Exploration Limited.

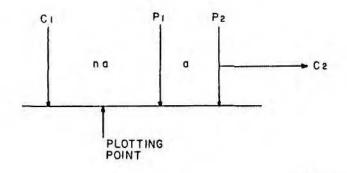
The survey crew was under the direction of Mr. Jim Carver of Scintrex Surveys Limited.

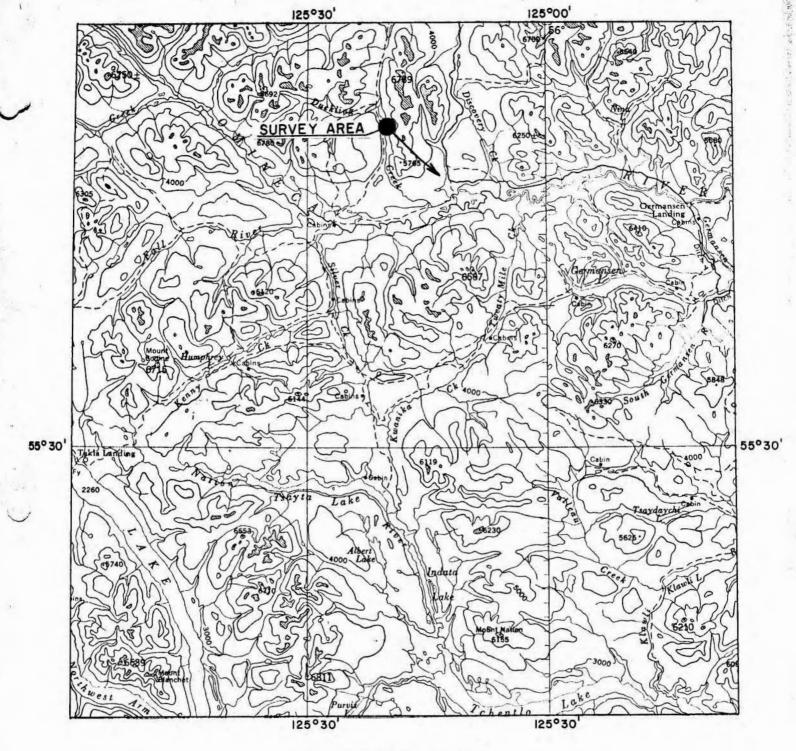
The survey grid is centred approximately 55° 52'N and 125° 20'W in the Omineca Mining division and can be reached by road 22 miles west of Germansen Landing (see Fig. 1). The survey covered nine lines, approximately 5000' long, 800' apart. The purpose of the survey was to detect, any polarizable bodies present in the grid area.

METHOD AND INSTRUMENTATION

A Scintrex Mark VII 2.5 Kw time domain induced polarization unit was utilized on the present survey. This unit has a current "on" time of 2.0 seconds and a current "off" time (potential measuring time) of 2.0 seconds. The polarization/transient voltages are integrated between the .45 and 1.1 second part of the "off" cycle and normalized to the "on" cycle voltage at the receiver. The resulting Chargeability, in milliseconds, is a measure of the induced polarization effect. The Resistivity, in ohmmeters, of the rocks in the measurement zone, is computed from the formula R = CVp/I where Vp = on cycle voltage at the receiver, I = current output from the transmitter; C = a constant depending on the array geometry.

For the present survey the Pole-Dipole Array was employed. This array is shown schematically below in Fig. 2. The C1 current electrode was to the south of the P1 - P2 dipole.





LOCATION MAP

CANADIAN SUPERIOR EXPLORATION LTD.

GERMANSEN LANDING AREA, B.C.

GROUND GEOPHYSICAL SURVEY

Scale 1: 500,000

A potential spacing ("a") of 300' with n = 1, 2 and 3 was utilized throughout for reconnaissance purposes. Readings were taken at intervals of 200'. The plotting point for the Pole-Dipole Array is the midpoint between the C1 and P1 electrodes (see Fig. 2). Topographic variations and geologic inhomogenities may result in the centre of the anomalous zone being shifted from its apparent location using this midpoint convention.

Induced polarization responses may arise from metallic or non-metallic agencies. The former include sulphides (except sphalerite), arsenides, a few oxides such as magnetite and, unfortunately, graphite. Non-metallic sources include alteration minerals such as sericite, chlorite, serpentinite and some clay minerals. There is no reliable criterion for differentiating between over-voltage responses from metallic or non-metallic minerals or for distinguishing between the responses of one type of sulphide and another.

A more detailed description of the induced polarization method is contained in the attached copy of H.O. Seigel's paper entitled "Induced Polarization Method" dated 1970.

PRESENTATION OF RESULTS

The results of the present survey are presented in profile form on Plate 1 on a scale of 1'' = 400'. The vertical scales are 1'' = 20 msec. for the Chargeability and 2'' = one decade in a logarithmic form for the Resistivity in ohmmeters. The latter has a base level of 325 ohmmeters.

Plate 2 on a scale of 1'' = 400' shows the Chargeability and Resistivity results of the n = 2 spacing in contour form.

DISCUSSION OF RESULTS

The Chargeability background increases gradually from south to north. In the south, e.g. lines 48E, 64E, 96E and 104E stations 70N-90N, the backgrounds range from 4-10 msec. The lower values are in general measured with the shorter spacings e.g. line 64E.

On most lines values reach peak amplitudes of 30 msec. or more which can be equivalent to 2 to 4% by volume of polarizable materials such as sulphides, graphite and some clays, cerisite etc. The highest Chargeability value was measured on line 88E station 107 $\frac{1}{2}$ N; 61 msec. with the n = 1 spacing.

A broad zone of anomalous Chargeabilities runs slightly askew the grid from line 40E, stations 93N-107N to line 104E, station 112N-124N. This 1400' wide zone widens on lines 80E and 88E but is less clear on lines 64E and 72E. It is most likely that this zone is of a formational origin e.g. carbonaceous/sulphide rich sediments. However, the writer



has no geological information available and the interpretation is of a pure hypothetical nature.

On several lines are the shorter spacings producing the higher Chargeability values e.g. lines 40E, 48E, 96E and 104E. On other lines it is the n = 3 results that produce the higher values e.g. lines 64E, 72E, 80E. The former suggest more localized near surface sources while the latter indicate a larger or more polarizable source at depth.

The broadness and complexity of the results does not allow for any detailed, source interpretation.

The Resistivity values range from 99 ohmmeters (line 104E, station $85\frac{1}{2}$ N; n = 1) to 85.000 ohmmeters (line 88E, station $117\frac{1}{2}$ N; n = 1). In general the lower values have been measured in the south eastern part of the grid where an average value of 250 ohmmeters is measured against 2000 ohmmeters over the western and northern part of the grid.

No direct correlation is present between the Chargeability and Resistivity results. However, the area with higher Chargeabilities is underlain by a region of higher Resistivities as well.

CONCLUSIONS AND RECOMMENDATIONS

An induced polarization and Resistivity survey was executed over nine approximately one mile long lines over the Duckling/Fortune Project near Germansen Landing B.C.

The Chargeability backgrounds range from 4 to 10 msec. for the n=1 and 3 spacings respectively.

A broad, 1400' wide, anomalous zone runs across the grid. The amplitudes rise to 30 msec. with a peak amplitude of 61 msec. Due to the complexity of the data no source determination could be made. On some lines it seems however, that the source is shallow (lines 40E, 48E and 104E) on others the source (s) appears deeper (lines 64E - 80E). No direct correlation with the Resistivity results is apparent.

Due to the lack of geological information and due to the complexity of the data, no drill hole targets have been selected. Senior members of Scintrex Surveys Limited are at all times available to discuss the results with Canadian Superior Exploration Ltd. and to recommend drilling if so required.

Respectfully submitted

Jan/Krein/M. Sc., P. Eng.

Geophysicist

APPENDIX II

ASSESSMENT DETAILS

PROPERTY NAME:

DC GROUP

OWNER:

Canadian Superior Exploration Limited

2201- 1177 West Hastings Street

Vancouver, B.C.

LOCATION:

20 miles WNW of Germansen Landing, B.C. Lat. 55° 52' N, Long. 125° 20' W

NUMBER OF CLAIMS:

40

NATURE OF SURVEYS:

Geological Mapping

Geochemical (silt and soil)

Magnetometer and I.P.

CREDIT APPLIED FOR:

2 years to DC 1-6, 11-20, 23-31, 33, 35, 37, 41-42

4 years to ST 11-16, ME 7-10

APPENDIX III COST STATEMENT

In support of an affidavit on application for certificates of work on ST 11-16, ME 7-10, DC 1-6, 11-20, 23-31, 33, 35, 37, 41, 42 claims. Costs incurred in conducting geological geochemical, magnetometer and I.P. surveys from July 2 to August 10, 1974.

ITEM	GEOCHEMICAL SURVEY	MAGNETOMETER SURVEY	IP SURVEY	GEOLOGY SURVEY	TOTAL
Groceries	\$ 1060	\$ 78	\$ 500	\$	\$1638
Operating supplies(topofils,		V	11 15 23		100000000000000000000000000000000000000
flagging, stove oil, etc.)	350	68	350		768
Equip. Rental(2 magnetometers, IP equipt. operators, radios, tents,	CCSALANN				
powersaws)	900	500	3621		5021
Transportation(3 vehicles, gas	40000		- V		
repairs)	1000	200	200	100	1500
Sample Analysis(geochemical analyse					1043
Drafting, printing, etc.	60	25		20	105
Salaries M. Beley (contractor, Manex Mining)					1
33 days @ \$ 125	1625	625	1250	625	4125
B. Schultz (Manex) 43 days @ \$40	720	400	600		1720
R. Roberge (Manex) 20 days @ \$45	900				900
B. Van Doorninck (Manex) 42 days @ \$45	765	1,50	CDE	4	7.000
		450	675		1890
G. Lafontaine (Manex) 18 days @ \$56		7.00	700	-00:	1008
K. Verster (Cook) 1 mo. @ \$728	300	100	300	28	728
J. Baker (Expln. Mgr.) 7 days @ \$50 R. Dujardin (Dir. of Expl'n)	100	1,00	100	50	350
2 days @ \$100			200		200
TOTALS	\$ 9831 \$	2546 \$	7796	\$ 823 \$	20996

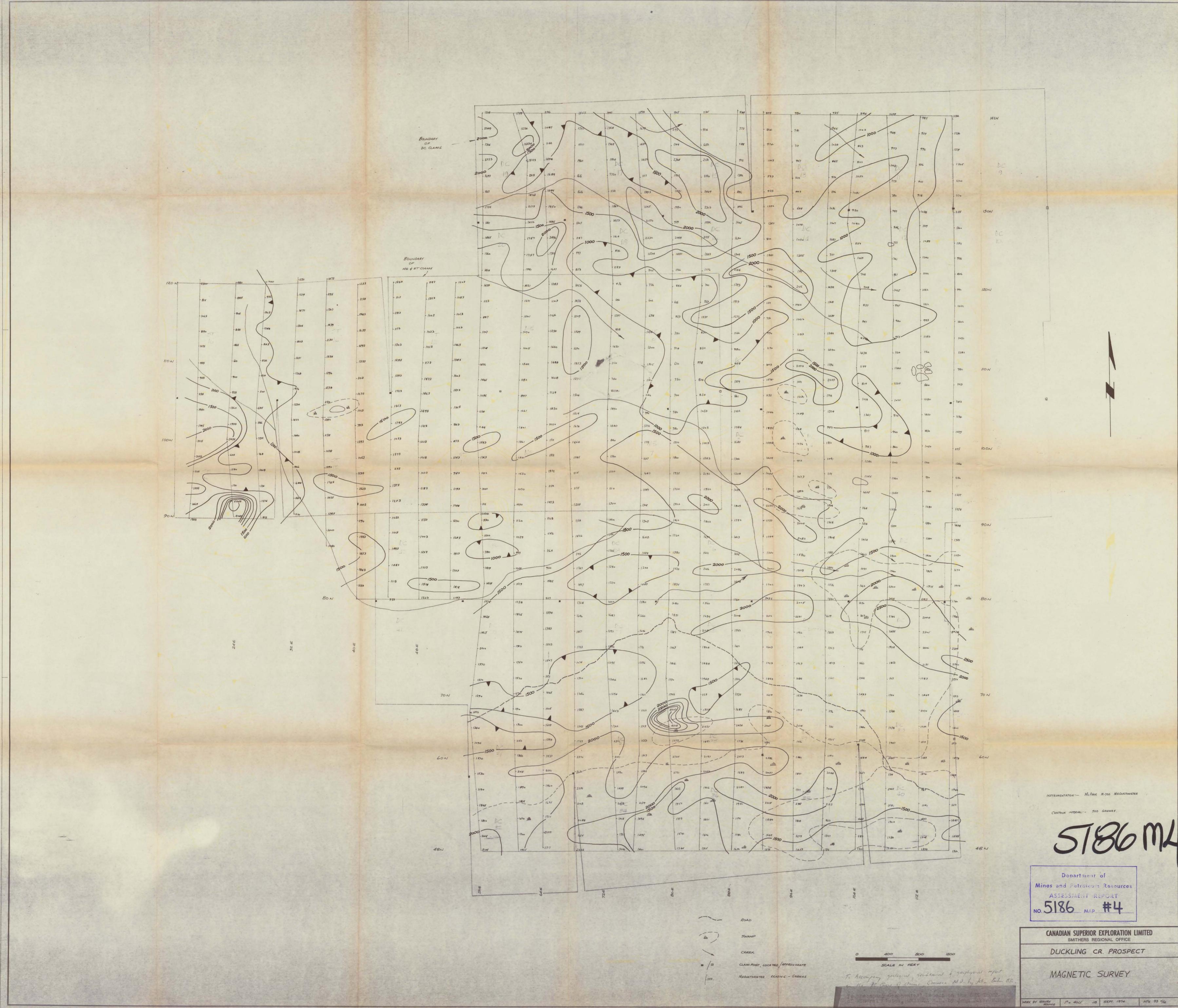
APPENDIX IV

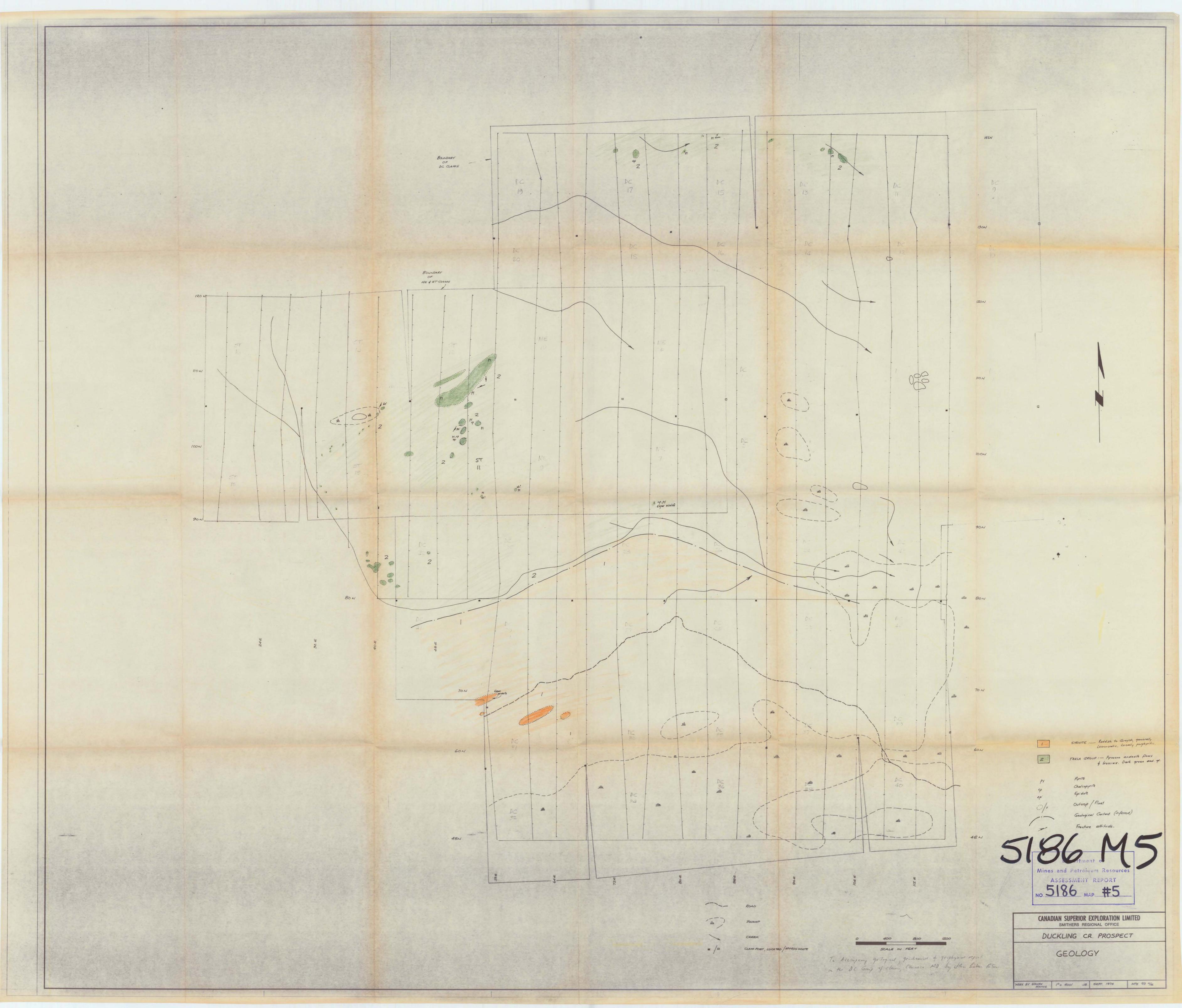
<u>CERTIFICATE</u>

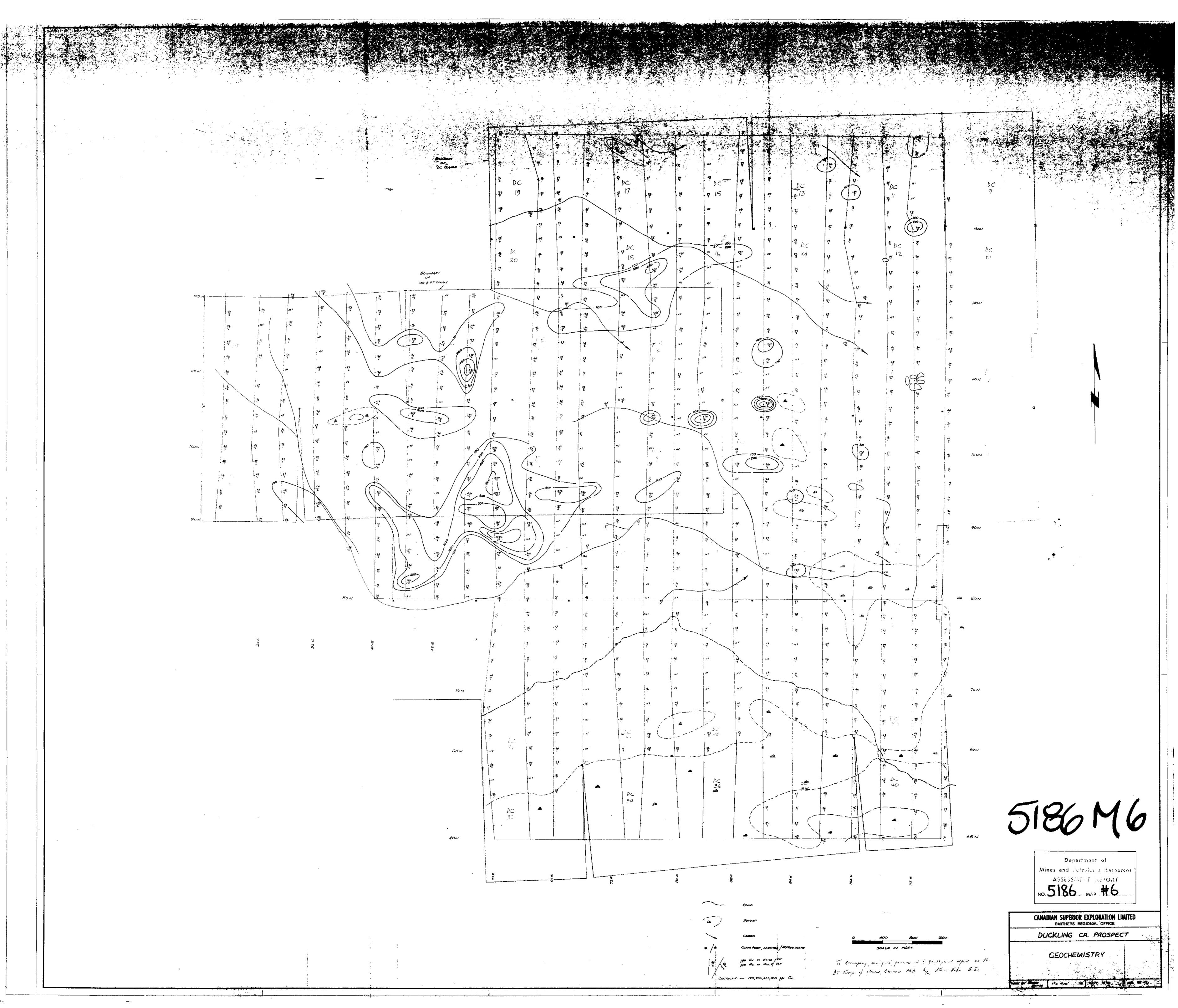
- I, John F. Baker, of the Town of Smithers, Province of British Columbia do hereby certify that:
- 1. I am a geologist resident at Seymour Lake Road, Smithers, B.C.
- 2. I am a graduate of the University of British Columbia (1971) with a B.Sc. degree in Geology.
- 3. I have been employed in the mining industry for ten (10) years, the latter 3-1/2 years in a professional capacity.

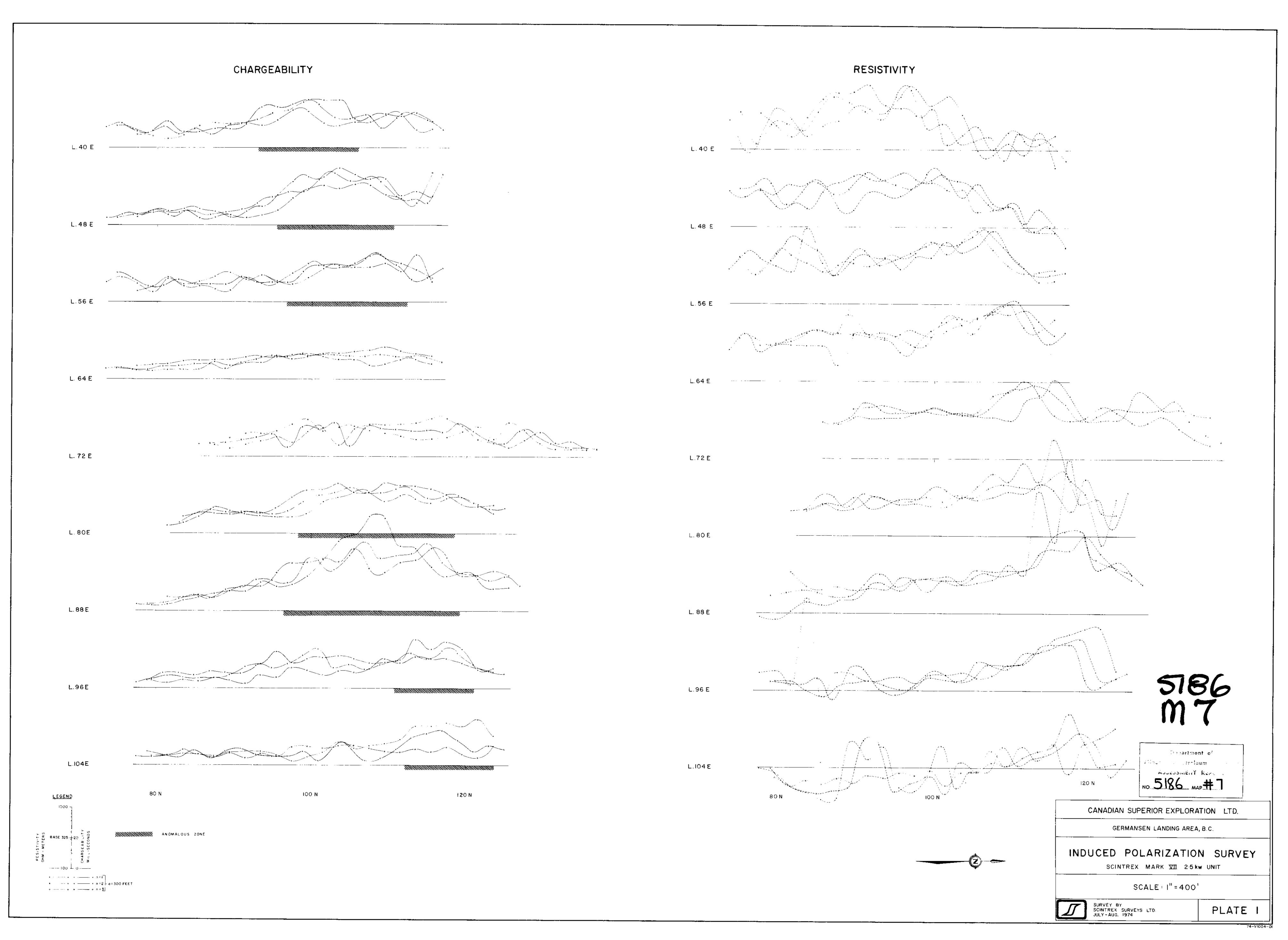
Dated at Smithers, B.C. This 18th day of September, 1974.

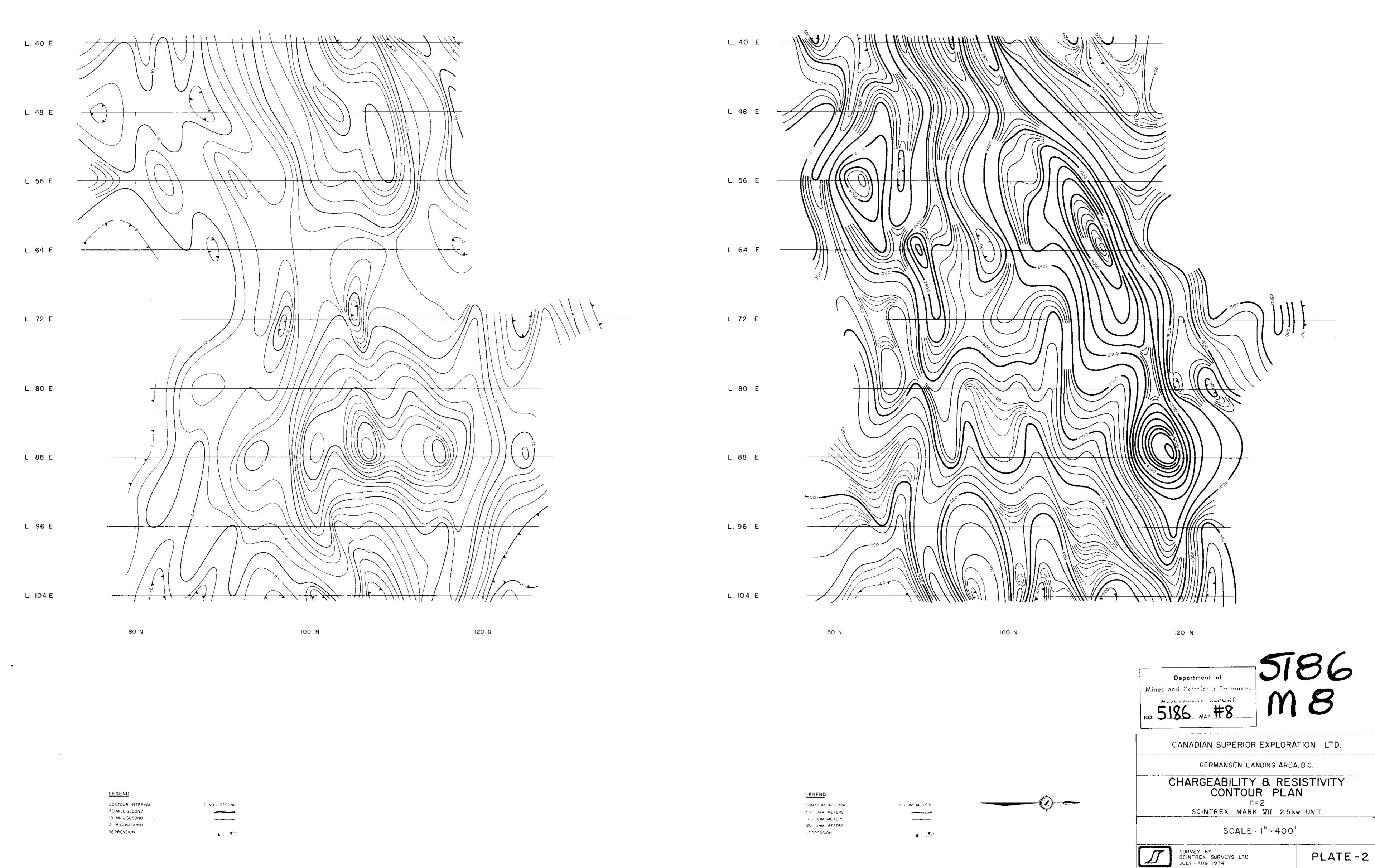
John F. Baker, B. Sc.











74 - V- IQQ4