# 1983 ASSESSMENT REPORT

ON THE

MILLIGAN GROUP

SQUAMISH AREA, VANCOUVER MINING DIVISION

NTS 92G/11E

LAT. 49° 41'N LONG. 123° 04'W

by

S. Enns, Geologist

G. Hendrickson, P. Geophysicist

Owned and Operated by:

KIDD CREEK MINES LTD.

DECEMBER, 1983 VANCOUVER, B.C.

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## APPENDICES

## LIST OF ILLUSTRATIONS

# INTRODUCTION

## Location, Access and Terrain

The Mulligan property (Lat. 49°41'N, Long. 123° 05'W) is located in southwestern British Columbia, about 7 km east-southeast of the port of Squamish (Figure 1). The claim is situated on Ray Creek, a tributary of the Stawamus River (Figure 2).

Access to the main area of the claim is by a logging road which turns south up the hill from the B.C. Hydro line maintenance road. This road winds its way up the hill ending up in Ray Creek basin; the extreme upper 1 km of road is un-navigable. Access to the extreme west end of the claim is by B.C. Hydro line access roads on either side of Ray Creek. The southwest corner must be approached from a road running north from the second Stawamus Creek bridge.

Terrain on the claim is varied with elevations ranging from 400 m to 1250 m. The steepest topography is situated in the western part of the claim. 40° slopes are common here and Ray Creek canyon is particularly hazardous. Upper Ray Creek basin is relatively flat with alpine swampy clearings. Most of the property is timbered; approximately 35 percent has been logged off and is covered with second growth brush accompanied by partly regenerated timber.

Annual periods of heavy rainfall in spring and autumm characterize the moderate climate of this region. Heavy snowpack may be anticipated until early summer. The entire property was clear of snow by July 7. By mid-October, permanent snow may be expected.

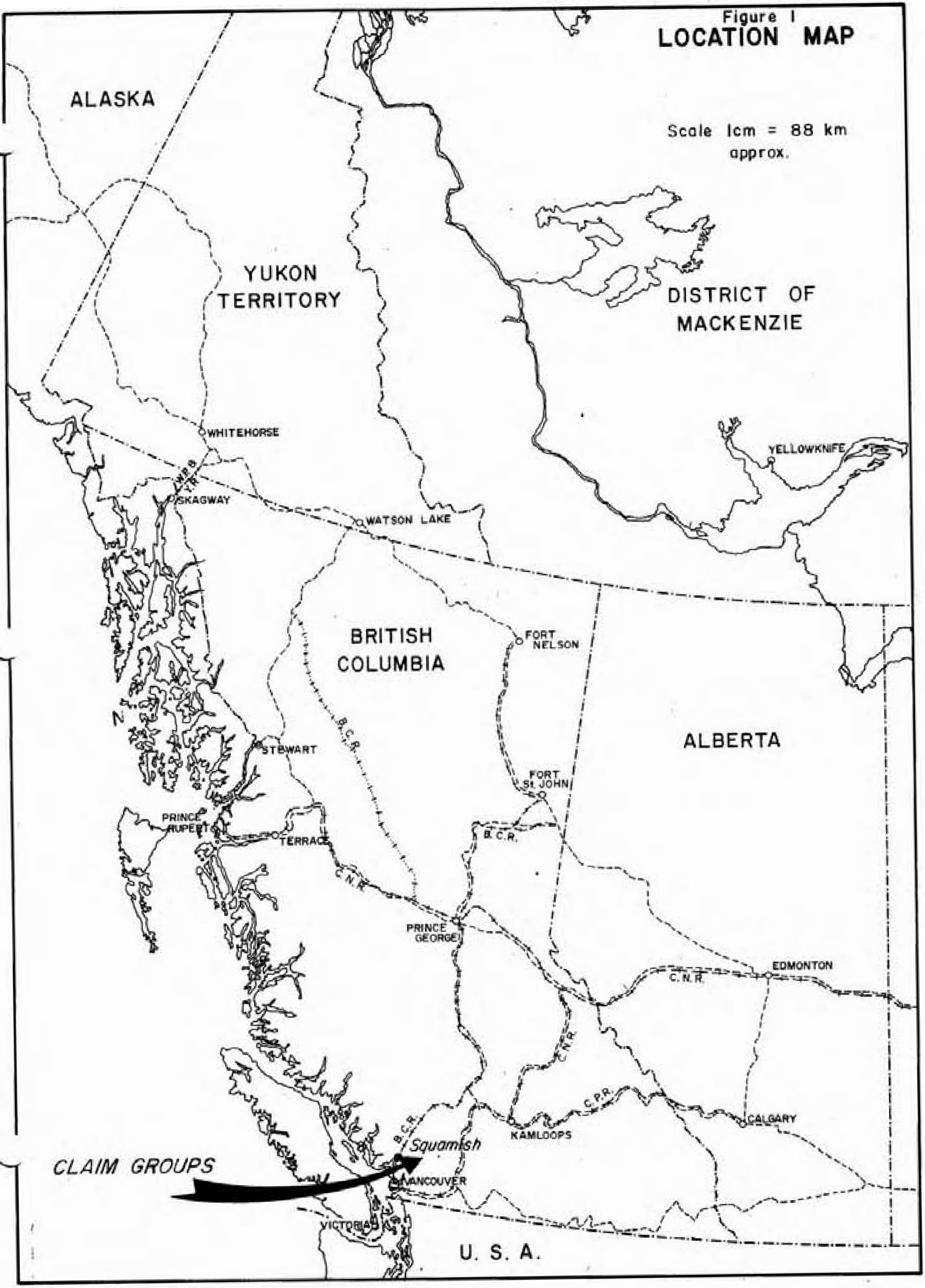
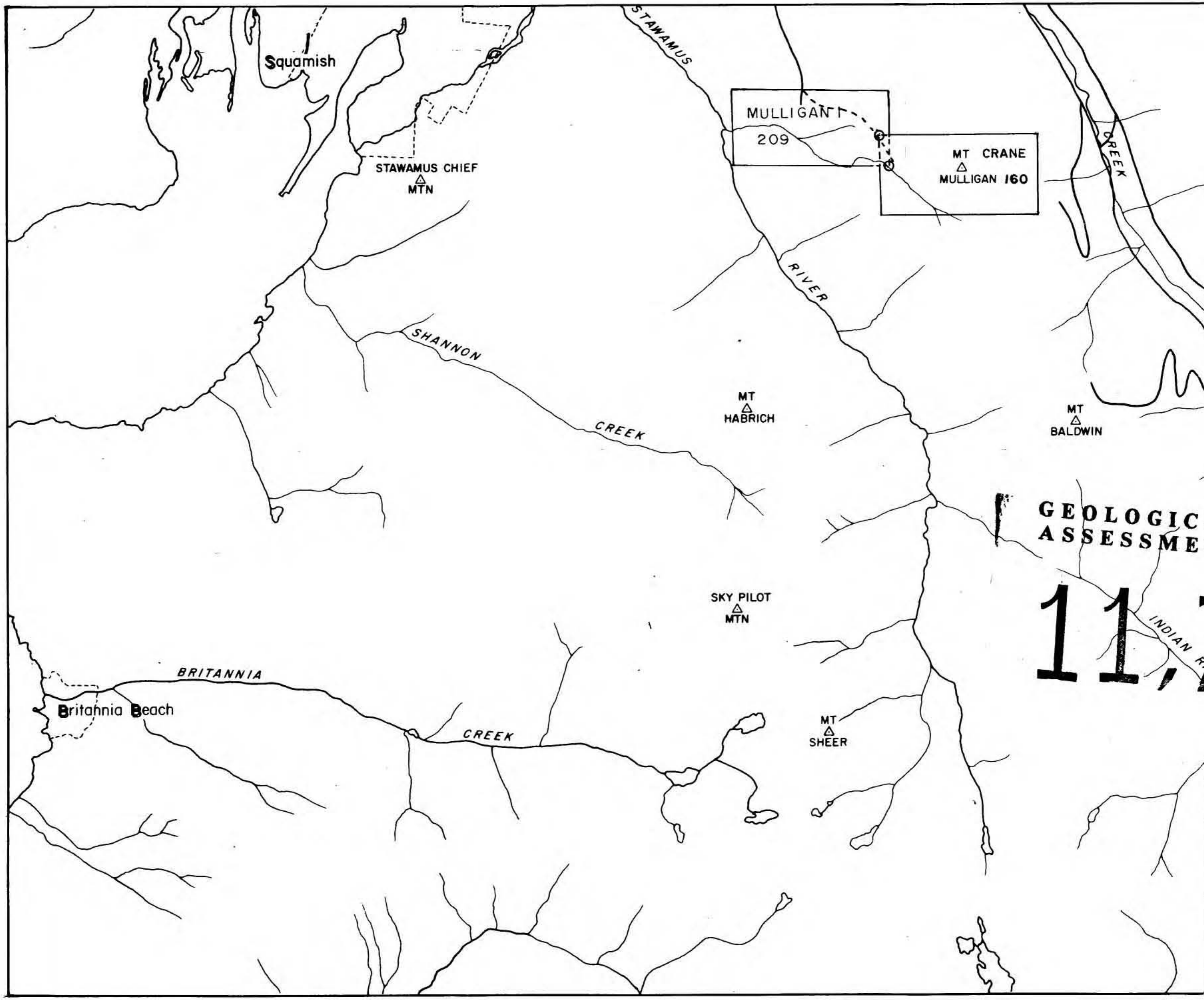



Figure 1
**LOCATION MAP**






| Kidd Creek Mines Ltd. | | |
|---|---|---|
| MULLIGAN | | |
| CLAIM LOCATION | | |
| WORK BY: S.E. | DRAWN BY: J.S. | DATE |
| Scale: 1:50,000 | | |
| Figure: 2 | | |

**Property History**

In the early 1900's, several open-cuts and adits were driven on lenses of massive to semi-massive pyrite outcropping in upper Ray and Little Ray Creeks. Local concentrations of chalcopyrite and sphalerite are associated with a few of these showings. Claims at that time included the Bruce, Radiant and Contact groups.

In 1929, a "Radiore Electrical Survey" was conducted in the area of Ray Creek basin by Radiant Copper Ltd. The survey indicated a number of weak conductors, which appeared to be caused by "pyritic shear zones."

Later work focused on a copper showing at the head of the basin; (on the Crane claim) three diamond drill holes tested this showing but results were unencouraging.

In March 1977, M. Levasseur staked the Crane claims (Figure 2) over the Ray Creek basin area; assessment work included some Cat trenching on the copper showing. On October 1977, Texasgulf Inc., (now Kidd Creek Mines Ltd.,) staked the Mulligan 1 claim centred on Ray Creek. On March 13, 1978 the Crane claim was optioned by Texasuglf Inc. from Eagle River Mines, who had acquired the ground from M. Levasseur.

During 1978, work on the property included geological mapping at a scale of 1:5,000, limited geochemical (silt and soil sampling along Ray Creek and in Ray Creek basin) and limited geophysical (VLF and horizontal loop follow-up) surveys. The Crane claim option was dropped in 1979.

In 1982, the Mulligan 1 claim was covered as part of a larger airborne electromagnetic, magnetic and VLF-EM survey flown by Aerodat Ltd. Results over the property were negative.

**Property Definition**

The Mulligan 1 currently consists of a single MGS claim comprised of 8 units (200 hectares) as shown in Figure 2. This claim was staked September 29, 1977 and recorded on October 7, 1977. The annual work requirement is $1600. 1983 field work applied to the claims ($11,600) should keep the claim in good standing until 1992.

**1983 PROGRAMME**

The 1983 fieldwork was conducted to systematically explore the entire property for Au and bases metals sulphides in conjunction with fieldwork conducted on the nearby Baldwin McVicar property.

The work consisted of line cutting, grid surveying, geological mapping, soil sampling and a detailed IP/resistivity and magnetometer survey.

Van Alphen Exploration of Smithers, B.C. completed 11-km of line cutting on the property. East-west grid lines were spaced at 200 m intervals cut to a specified average width of 0.9 m and deviation of less than 25 m per km. Hazardous slopes in the deeply incised Ray Creek terminated some of these lines where local slopes averaged more than 45° in this vicinity.

Grid stations were chained at 20 m intervals using a clinometer and slope corrections were added to within 0.1 m. Existing roads, streams, claim posts and trenches were tied into the grid.

**REGIONAL GEOLOGY**

As shown by Figure 3, the property lies within a belt of intermediate volcanic and volcaniclastic rocks belonging to the Cretaceous Gambier Group which forms part of the Indian River Pendant. This pendant is one of many remnants of stratified rock within the Coast Crystalline Complex. Regional grade of metamorphism is generally greenschist rank and strong contact metamorphism is present near some plutonic bodies.

The pendant, measuring about 4 km by 20 km, trends north-northwest and is connected to the Britannia Belt (lying 10 k to the southwest) by a "bridge" of volcanic rock. The Indian River Pendant tapers to the southeast and is in contact with younger Garibaldi volcanic rocks to the north. This pendant generally contains a greater proportion of pyroclastic material and a smaller marine sedimentary component, than the Britannia Belt.

Rocks of the Indian River Pendant probably are correlative with the upper part of the Gambier Group of Upper Jurassic to Lower Cretaceous age. Details of regional geology are described by Roddick (1965) and James (1929) as listed in the Bibliography.

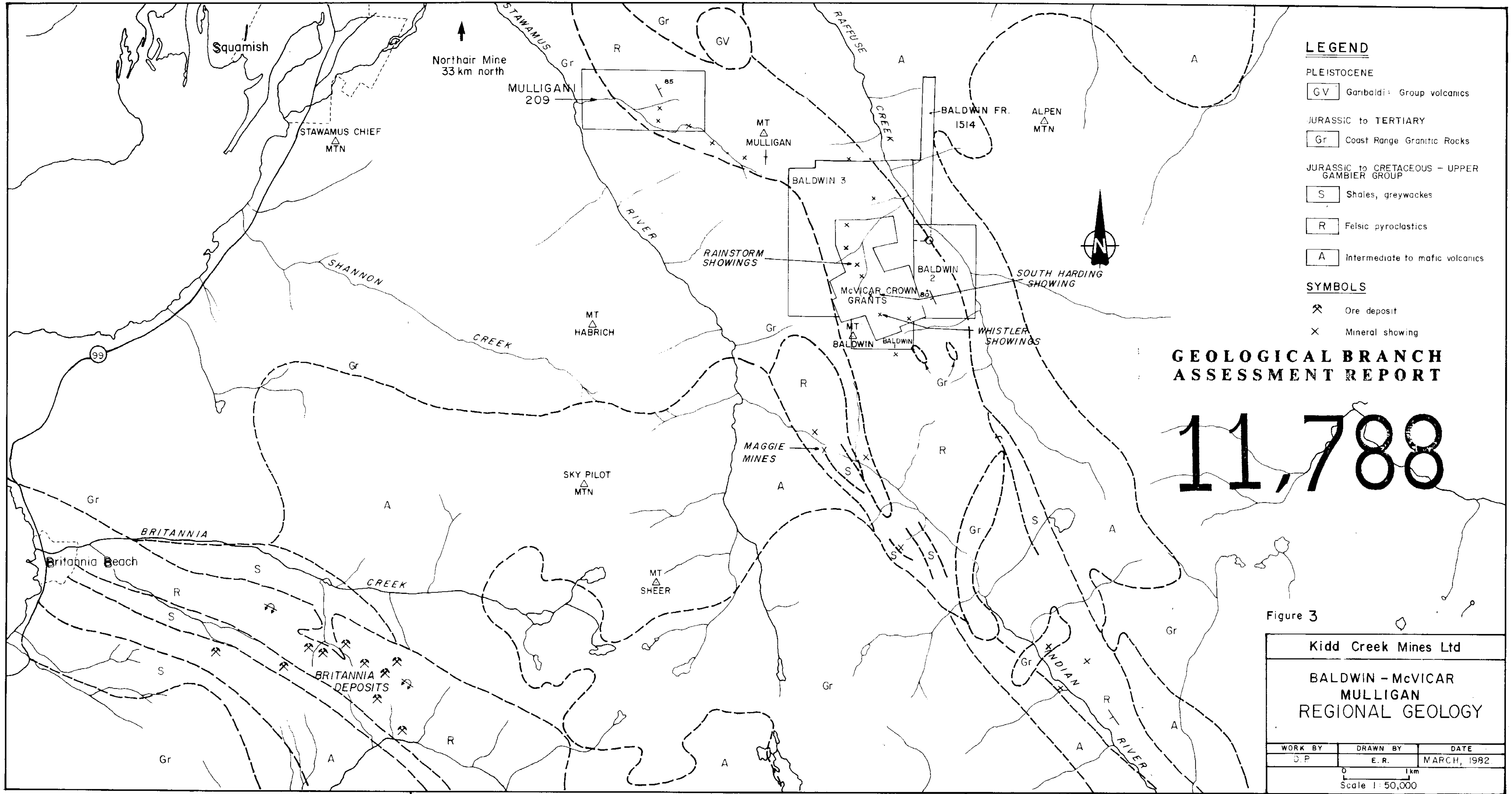



Figure 3

Kidd Creek Mines Ltd

BALDWIN - McVICAR MULLIGAN REGIONAL GEOLOGY

| WORK BY | DRAWN BY | DATE |
|---|---|---|
| D.P | E.R. | MARCH, 1982 |

Scale 1:50,000

# PROPERTY GEOLOGY

## Introduction

Geologic mapping was conducted at a scale of 1:2,500 using a cut grid for control. Bedrock was mapped along and approximately 50 m either side of cut lines and along some stream beds.

The outcrop available for mapping is generally quite sparse with less than 3 percent exposure mainly limited to steeper slopes and incised stream beds. Much of the outcrop is moss-covered except for bedrock slopes undergoing active erosion.

## Description of Lithologies

Seven units were mapped on the property and are shown on Figure 4. The property geology is very similar to Baldwin McVicar and consists of a volcanic sequence in contact with Coast Range plutonic rock which is generally restricted to the southwest third of this property. The volcanic sequence is comprised of predominantly felsic flows and related pyroclastic debris and subordinate andesitic flows and pyroclastic rocks; sedimentary rock is very rare. The respective age of each unit is unknown and the designation of volcanic units' numbers are arbitrary.

Unit 1 consists of mafic pyroclastic rock located mainly in the southwest part of the property near the granodiorite contact. This lithology is massive and brown weathering; fresh rock is a dark green colour. Clasts range in size from lapilli to block tuff and are composed of andesite and minor granodiorite. This unit is interbedded with andesite.

Unit 2 is a dark green andesite flow which weathers to massive outcrop. The rock consists of about 15 percent subhedral to euhedral white plagioclase phenocrysts about 1 mm in size and up to 5 percent hornblende phenocrysts about 0.5 mm in size. Matrix is aphanitic dark green to black in colour.

Unit 3 occurs as a broad band of felsic flows running northwest across the claim. The composition varies from rhyolite to dacite. In appearance, the rock is pale grey, grey-green or white and often siliceous (cherty). Outcrops weather white and are massive. Locally, up to 10 percent double terminated quartz crystals are present, and range in size from 1 to 3 mm. 10 to 15 percent euhedral to subhedral feldspars are the most common phenocrysts and range in size from 1 to 4 mm. In places, delicately laminated flow textures are present.

Unit 4 is composed of felsic to intermediate pyroclastic rock which occurs as a broad northwest-trending band. This unit is intimately interbedded with felsic flows. Outcrops commonly display knoby differential weathering of clasts. Clasts range in size from ash tuff to block tuff; coarse lapilli tuff are most common. Clast composition is heterogeneous, composed of cherty rhyolite, dacite and minor andesite. The matrix is fairly siliceous in places, elsewhere it appears to be composed of a dirty mixture of chlorite-rich material.

Near the granodiorite contact this unit contains significant pyrite as 2 to 3 percent medium- to coarse- grained disseminations, and fracture filling; pyrite which locally reaches a total of 7 to 8 percent in places.

Unit 5 is a black argillite of restricted occurrence interbedded with felsic pyroclastic rocks. A bedding attitude dipping steeply to the northeast was observed along a road cut at about 18+00W north of L 50 but argillite bedding is regarded as unreliable due to its incompetence in shearing.

Unit 6 is a medium- to coarse-grained, grey granodiorite which underlies the southwest third of the property. The granodiorite belongs to the Coast Range intrusions and is probably an offshoot from the Squamish batholith.

A complex dyking relationship between the granodiorite and andesite is indicated at about 21+00W on L 54 and 20+00W on L 51. This contact is further complicated by extensive faulting and fracturing.

Inclusions of dacite and andesite are present along the west end of L 58 and L 60. Some of the rock mapped as andesite on L 60 may also be post-granodiorite dykes related to late stages of the Coast Range intrusion.

Unit 7 is a black basalt dyke related to the Garibaldi volcanic rocks of late Tertiary age.

**Structure**

The volcanic stratigraphy has a northwesterly strike. A single attitude in argillite indicates a steep northwest dip but the magnetic data indicate a consistent, shallow, west dip to the beds. Interbedding of rhyolite and tuffs is more prevalent than indicated by the geology map. This is supported by the apparent resistivity pattern, Figure 8

Numerous northwest-trending subvertical shear zones have been identified by mapping. The shear zones are accompanied by development of quartz sericite schist with varying amounts of pyrite. These shear zones are often weakly mineralized with minor chalcopyrite and sphalerite.

The granodiorite contact subparallels stratigraphy; in places it is accompanied by intense fracturing zones related to faults. A complex intrusive relationship is indicated at about 20+00W in L 52 and 21+00W on L 54.

**Mineralization**

Numerous small pits, a few trenches and a vertical shaft were driven by prospectors on the property. These are located as shown on Figure 4.

Most of the mineral occurrences are pyritic shear zones; pyrite is accompanied occasionally by small amounts of chalcopyrite and minor sphalerite. The pyrite content is variable and occurs as strong disseminations, veinlets and stringers and rarely in a semi-massive mode. True widths of strongly mineralized pyrite reach a maximum of 0.3 m.

The strongest mineralization was seen in a long trench located immediately north of L 52 at about 17+00W. Poorly exposed bedrock and boulders display two types of pyrite: the common medium-grained, disseminated and veined variety of pyrite, and an unusual, very aphanitic muddy-looking pyrite. The appearance of the latter type of pyrite closely resembles sedimentary pyrite. Little or no visible chalcopyrite was noted. This showing marks the south end of the strongest chargeability anomaly on the property.

A small, 10 to 15 m shaft, driven at about 12+00 W just north of L 50 appears to have intersected barren rock. Granodiorite and pyritic andesite and dacite are represented on the dump.

The best base metal showing in this area is the main vein on the adjacent Crane claim. This showing has been trenched and drilled with disappointing results. Mineralization consists of a strong disseminated pyrite zone with silicified shear-controlled pyrite, chalcopyrite and minor sphalerite seams up to 0.1 m wide and with attitude 050°/80E. Host rock is coarse lapilli tuff with white and grey cherty rhyolite clasts, black altered intermediate volcanic clasts and rare pyritic clasts. The tuff is clast-supported or lapilli stone. The texture of some of the pyrite mineralization suggests recrystallization.

## GEOCHEMISTRY

### Introduction

Soil geochemistry and selective rock sampling were used as aids in the exploration for gold and base metal mineralization.

Approximately 200 soil samples were collected along cut grid lines and along several abandoned roads. Sample spacing was approximately 50 m. The B-Fe horizon was systematically sampled to depths ranging from 20 to 75 cm; on average the B-Fe depth was shallower than at Baldwin-McVicar. Sample excavations were made using a heavy mattock with a root-cutting edge on one end.

Humic podsols predominate on the west-facing slope covered by partially logged off mature timber. Most of the property is well drained.

Samples were collected by hand in Kraft paper envelopes, dried and shipped to Acme Analytical Laboratories in Vancouver, B.C., where they were dried and sieved. The minus 80 mesh fraction was analysed as follows:

> A 0.5 gm sample was digested with 3 ml of 3:1:3 HCl: $HNO_3$:$H_2O$ for 1 hr at 90°C then diluted to 10 ml with $H_2O$ and analysed by ICP method for Cu, Pb, Zn and Ag. Au analysis used a similar digestion for a 10 gm sample. Au was extracted with MIBK and analysed using AA with a lower detection limit (5 ppb).

### Presentation of Results

The locations of all geochemical samples together with analytical results for samples are given in Figures 5 and 6.

Visual inspection of results was used to establish element threshold values. The following element values were used to define first and second order anomalies herein respectively termed strong and weak anomalies.

| Element | Strong Anomaly | Weak Anomaly | Background |
|---|---|---|---|
| Au | > 100 ppb | > 50 ppb | 5 - 10 ppb |
| Ag | > 2 ppm | > 0.9 ppm | 0.1- 0.3 ppm |
| Cu | > 200 ppm | > 100 ppm | 10 -20 ppm |
| Pb | > 150 ppm | > 75 ppm | 10 -20 ppm |
| Zn | > 300 ppm | > 200 ppm | 75 -100 ppm |

**Results**

The data do not show any significant and coherent soil anomaly on the Mulligan property. Instead, isolated anomalous samples are present within a low background of low base metal values.

The strongest individual Cu and Zn sample is situated on L 58 at 22+00W and nearby the strongest Au sample (560 ppb) is located on the same line at 22+50w.

A broad but very weak Ag anomaly lies along L 58 from 18+00W northeast to the baseline.

None of the two mentioned anomalies are related to known mineralization. Their source is unexplained. The former is underlain by felsic pyroclastic rocks and the latter by rhyolite flows.

The two isolated Cu and Pb anomalous soil samples along L 54N between 18+00W and 17+00W and the sample at 18+00W on L 52 N may be related to weak base metal mineralization associated with shear zones mapped in this vicinity. The strongest chargeability anomaly also underlies this region.

# GEOPHYSICS

## Introduction

The purpose of this geophysical work was to outline the spatial position and strength of a known sulphide zone and to examine the whole property for additional zones. Sulphide zones may be related to base metal and/or pyrite mineralization containing a significant gold association. In all, 10 km of geophysical surveying was completed on the property.

The grid covered some extremely rough mountainous topography. Good stands of commercial timber and dense new growth cover most of the survey area necessitating a cut grid. In most cases, the slope distance corresponding to a 20 metre horizontal interval greatly exceeded 20 metres due to the steep terrain.

## Equipment

1- Scintrex I.P.R. 10 time domain receiver
1- Scintrex 250 watt time domain transmitter
1- Scintrex MP-3 portable total field magnetometer
1- Scintrex MP-3 base station total field magnetometer

Further details regarding this equipment is available from the manufacturer.

## Data Presentation

Geophysical data are given on property grid maps which show an ideal grid. All maps are at a distance scale of 1:2500.

The chargeability and resistivity plans (Figure 7 and Figure 8) are contoured to show continuity between lines. The magnetic data (Figure 9) is in plan profile form to aid in interpretation of individual anomalies.

For the Induced Polarization survey, current electrodes (AB) were stainless steel while potential electrodes(MN) were porous ceramic pots filled with copper sulphate and containing a copper electrode. These more elaborate potential electrodes are considered necessary to prevent undesirable electrode polarization in a high accuracy survey such as this. This type of potential electrode works on the principle that an electrode immersed in a solution of one of its own salts cannot polarize.

The Schlumberger electrode array was used for the following reasons:

(a) simple anomaly shape

(b) provides some information on dip

(c) least affected by topography

(d) better signal-to-noise ratio for a given depth of investigation (important when using a small portable transmitter).

(e) operational ease in rough topography

(f) good lateral resolution provided "MN" is kept small

The current dipole (AB), while remaining parallel to, was separated from the receiving dipole (MN) by a few metres. This separation avoided or reduced any inductive and/or capacitive coupling problems. In addition, three slices of the decay curve were monitored to ensure curve shape was normal. Extra effort was made to ensure electrode contacts with the ground were always well under 50 k ohms. The care taken with the survey, plus strong primary signals (generally much greater than 50 mV) ensured data accuracy to within one or two milliseconds. The survey tested the 10 to 70 metre depth with prime emphasis on the upper 25 metres. A curve showing the typical depths of investigation characteristics for the array (assuming homogeneous ground) is included as Appendix A.

For the magnetic survey a base station magnetometer was run continuously (sampling every 10 seconds) to monitor the diurnal shift of the earth's magnetic field. A portable magnetometer was used with the sensor attached to a tall staff to ensure against errors created by magnetic objects on the operator. Both magnetometers were total field microprocessor-controlled instruments capable of performing automatic diurnal corrections and plotting when connected to each other and a suitable printer. These state of the art instruments proved to be very convenient to use and durable under field conditions. A base station standard of 56000 nanotesla was assumed for all diurnal corrections.

An additional procedure not normally needed but essential on this project was the supply of studded boots (corks) to the crew to assist in climbing the steep, vegetated and often slippery slopes.

**Discussion of The Results**

A moderately strong, short strike length chargeability anomaly exists on lines 52 and 54 north at approximately 17+00W. This anomaly consists of several parallel bands extending to approximately 18+60W. The trenching done by a previous operator at the south end of this anomaly uncovered pyrite in shear zones which partially explains the source of the anomaly. The structural pattern suggested by the shape of this anomaly is unusual.

Other weaker chargeability anomalies exist, however, pyrite observed in outcrop tends to explain these. All of the chargeability zones tend to flank the granodiorite intrusive.

The resistivity plan shows the intrusive on the west side of the grid to be very resistive (> 5000 ohm-m) which is normal. Most of the grid excluding the intrusive area is underlain by rocks of approximately 500 to 1000 ohm-m, values typical of tuffaceous rocks or metasediments. Intermediate volcanic rock probably occurs in areas where the resistivity increases to 2000 to 3000 ohm-m. The resistivity map is a useful geologic tool when calibration in outcrop areas is possible.

The magnetic survey revealed strong dual anomalies on line 58N at approximately 18+50W. These anomalies have appreciable width however they do not have any direct chargeability response thus magnetite is the likely cause. Dip of these two anomalies is steeply to the west.

Strong, yet erratic magnetite concentations in the intrusive at the western end of line 50N are quite unusual. The intrusive on other lines tends to be relatively non-magnetic, which is more normal.

Other minor magnetic zones exist, however, are not of interest other than for giving local dip indications, most of which suggest a westerly dip to the strata.

**CONCLUSION**

The fact that the anomalies tend to follow the eastern flank of the intrusive suggests they are related to contact metamorphic effects. Additional trenching and sampling is warranted on the main chargeability anomaly to ensure the gold potential is fully tested. If the results of this proposed trenching are negative, there would be little reason to continue geophysical work on the property.

S. Enns.

G. Hendrickson

**BIBLIOBGRAPHY**

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JAMES, H.T. 1929. Britannia Beach Map-area, B.C. Geological Survey of Canada. Memoir 158, 139 pages.

JAMES, S.C. and SCOTT-HOGG, R.L. 1982. Geophysical Report on the Mulligan Claim. Assessment Report. Kidd Creek MInes Ltd., 8 pages.

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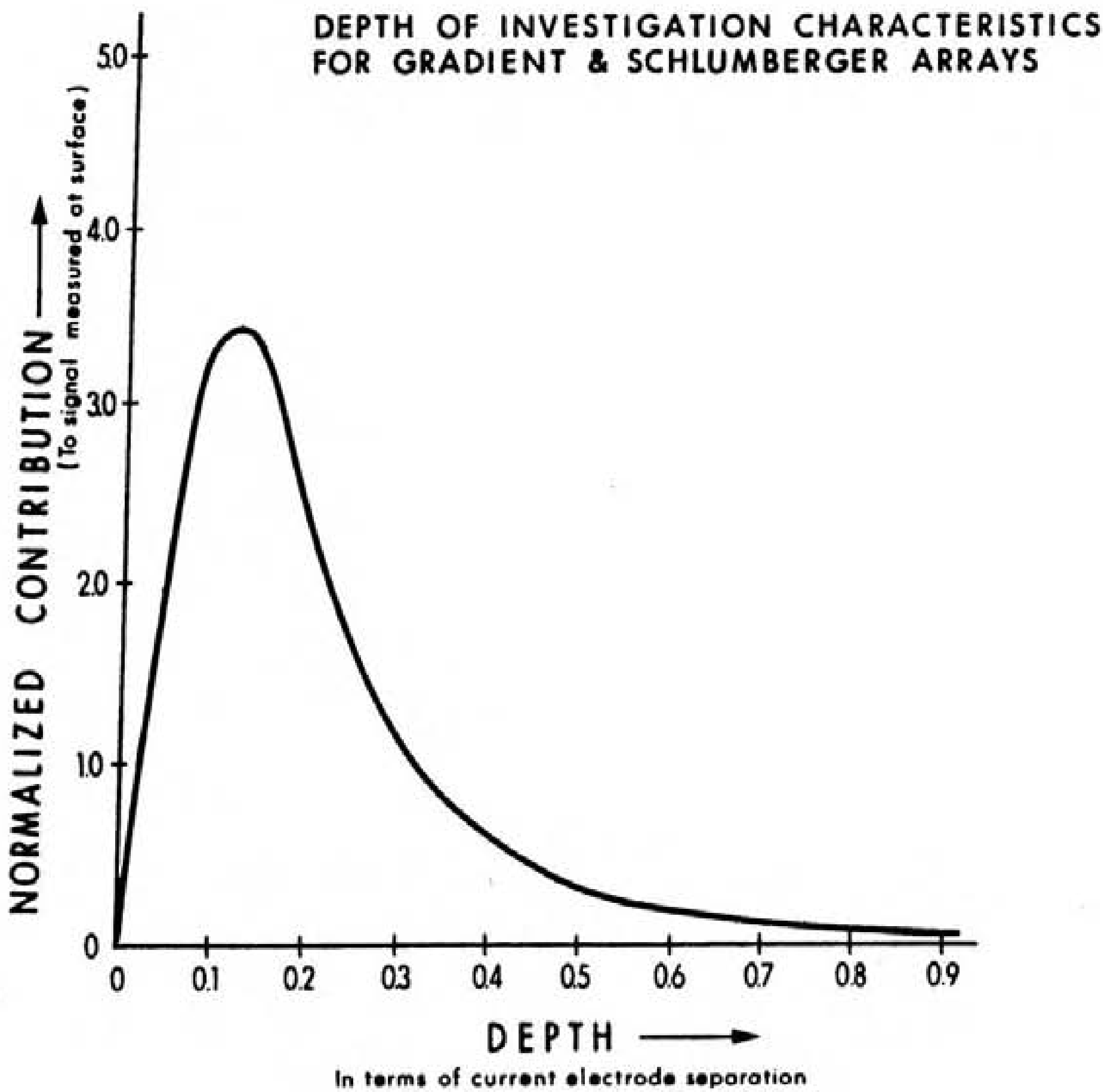
RODDICK, J.A. 1965. Vancouver North, Coquitlam, and Pitt Lake Map-Areas, B.C. G.S.C. Memoir 335.

# APPENDIX A
# DEPTH OF INVESTIGATION CHARACTERISTICS
# AND SLUMBERGER ARRAYS




Taken from a paper by: B.B. Bhattacharya & Indrajit Dutta
Geophysics Vol. 47 No. 8 page 1201

# APPENDIX B

## STATEMENT OF EXPENDITURES

APPENDIX B

STATEMENT OF EXPENDITURES

**Mulligan 1**

SUMMARY OF WORK: Line cutting and Grid survey

PERIOD OF WORK: June 28 to AUgust 29, 1983

COSTS:

Line cutting July 2 - July 5, 1983

| | | | | |
|---|---|---|---|---|
| VanAlphen Exploration, Smithers, B.C. 11 line km @ $300 | | | | 3,300.00 |
| Grid Surveying June 29 - July 7, 1983 | | | | |
| Personnel - Kidd Creek Mines Ltd. | | | | |
| S. Enns | (geologist) | 4 days @ 185.39 | 741.56 | |
| F. Renaudat | (geol. assist.) | 3 days @ 65.38 | 196.14 | |
| P. Mouldey | (geologist) | 2 days @ 72.11 | 144.22 | |
| B. Holmes | (geol. assist.) | 3 days @ 55.76 | 167.28 | |
| | | | 1,249.20 | 1,249.20 |
| Room and Board: | | 12 man-days @ $27 | | 324.00 |
| Transportation: | | | | |
| Airways Rental, Vancouver, B.C. Jimmy 4 x 4 | | days @ $30 | | 210.00 |
| | | | | $ 5,083.20 |

**$4,800 of this work to be applied to:**

Mulligan 1 (Rec. No. 209 Oct) for 3 years

APPENDIX B

STATEMENT OF EXPENDITURES

**Mulligan 1**

SUMMARY OF WORK: Geological Mapping, Geochemical Survey, Geophysical Survey
PERIOD OF WORK: June 28 - August 29, 1983
COSTS:

Personnel - Kidd Creek Mines Ltd. Jul 1 - August 20, 1983

| | | | |
|---|---|---|---|
| F. Renaudat (geol. assist.) | 5 days @ 65.38 | 326.90 | |
| M. Peters (geol. assist.) | 4 days @ 55.76 | 223.04 | |
| S. Enns (geologist) | 4 days @ 185.39 | 741.56 | |
| P. Mouldey (geologist) | 4 days @ 72.11 | 288.44 | |
| G. Hendrickson (geophysicist) | 1 days @ 185.39 | 185.39 | |
| D. Flentge (geophys.) | 9 days @ 69.23 | 623.07 | |
| T. Huttemann(geophys. assist.) | 10 days @ 63.46 | 634.60 | |
| | | | 3,023.00 |
| Room and Board: | 40 man-days @ $27 | | 1,080.00 |
| Transportation: | | | |
| Redhawk Rentals, Burnaby, B.C. Toyota Diesel 4x4 | 12 days @ $25 | | 300.00 |
| Airways Rental, Vancouver, B.C. Jimmy 4 x 4 | 7 days @ $30 | | 210.00 |
| Magnetometer Rental: | | | |
| Scintrex, Richmond, B.C. MP 3 - 1 week pro-rated @ $2,975/mo | | | 743.75 |
| Geochemical Analysis: | | | |
| Acme Analytical Laboratories, Vancouver, B.C. 219 soil samples for Cu, Pb, Zn, Au, Ag @ $ 8.25 | | | 1,806.75 |
| Report Preparation: | | | 500.00 |
| | | | $ 7,663.50 |

**$6,400 of this work to be applied to:**

Mulligan 1 (Rec. No. 209 Oct) 4 years

# APPENDIX C
# STATEMENT OF QUALIFICATIONS

## STATEMENT OF QUALIFICATIONS

NAME: S. G. Enns

ADDRESS: 701-1281 W. Georgia, Vancouver, B.C. V6E 3J7

EDUCATION:

4 years B.Sc. - Honours Geology 1967
University of Manitoba

M.Sc. - Economic Geology 1971
University of Manitoba

EXPERIENCE

| | | |
|---|---|---|
| Geol. Assist. | Manitoba Mines Branch | - 1964 (field season) |
| Geol. Assist. | Sherritt Gordon Mines | - 1965 (field season) |
| Geol. Assist. | Amax Exploration Inc. | - 1966-70 (field season) |
| Geologist | Cerro Mining of Canada | - 1971 |
| Geologist | Hudson's Bay Oil & Gas | - 1972 |
| Geologist | BP Minerals of Canada | - 1973-75 |
| Geologist | BP Alaska Exploration | - 1975-79 |
| Geologist | Amax of Canada | - 1979-81 |
| Geologist | Kidd Creek Mines Ltd. | - 1982 - present |


**GEOLOGICAL BRANCH ASSESSMENT REPORT**

# 11,788

## —LEGEND—

**MAP UNITS**

| | |
| --- | --- |
| 7 | Garibaldi Basalt |
| 6, 6a | Coast Range Granodiorite; Syenite |
| 5 | Black argillite |
| 4 | Felsic pyroclastic rocks |
| 3 | Felsic flows, rhyolite to dacite |
| 2 | Andesite flows |
| 1 | Andesitic pyroclastic rocks |

**SYMBOLS**

- Road, Track
- Outcrop, Float
- Adit, Trench, Shaft
- Lithology Contact; defined, inferred
- Fault; defined, inferred
- Shear Zone; vertical, inclined
- Foliation; vertical, inclined
- Abundant Quartz Veining
- 2% Py — Pyrite estimated in
- Cpy — Chalcopyrite

**Kidd Creek Mines Ltd.**

**MULLIGAN GEOLOGY**

| WORK BY | DRAWN BY | DATE |
| --- | --- | --- |
| S.E. | S.E. | DECEMBER 14, 1983 |

50 0 100 200 m
SCALE IN METRES 1 : 2500

Figure: 4


**GEOLOGICAL BRANCH ASSESSMENT REPORT**

# 11,788

○ Soil Sample Au, Ag (ppb, ppm)

| Weakly Anomalous | Strongly Anomalous |
|---|---|
| Au > 50 ppb | >100 ppb |
| Ag > 0.9 ppm | > 2.0 ppm |

**Kidd Creek Mines Ltd.**

MULLIGAN

**Au, Ag GEOCHEMICAL RESULTS**

| WORK BY | DRAWN BY | DATE |
|---|---|---|
| S.E. | J.S. | DEC. ,1983. |

50 25 0 100 200m

SCALE IN METRES 1 : 2500

Figure: **5**


GEOLOGICAL BRANCH
ASSESSMENT REPORT

# 11,788

○ Soil Sample Cu, Pb, Zn (ppm)

| | Weakly Anomalous | Strongly Anomalous |
| --- | --- | --- |
| Cu | >100 | >200 |
| Pb | >75 | >150 |
| Zn | >200 | >300 |

Kidd Creek Mines Ltd.

MULLIGAN

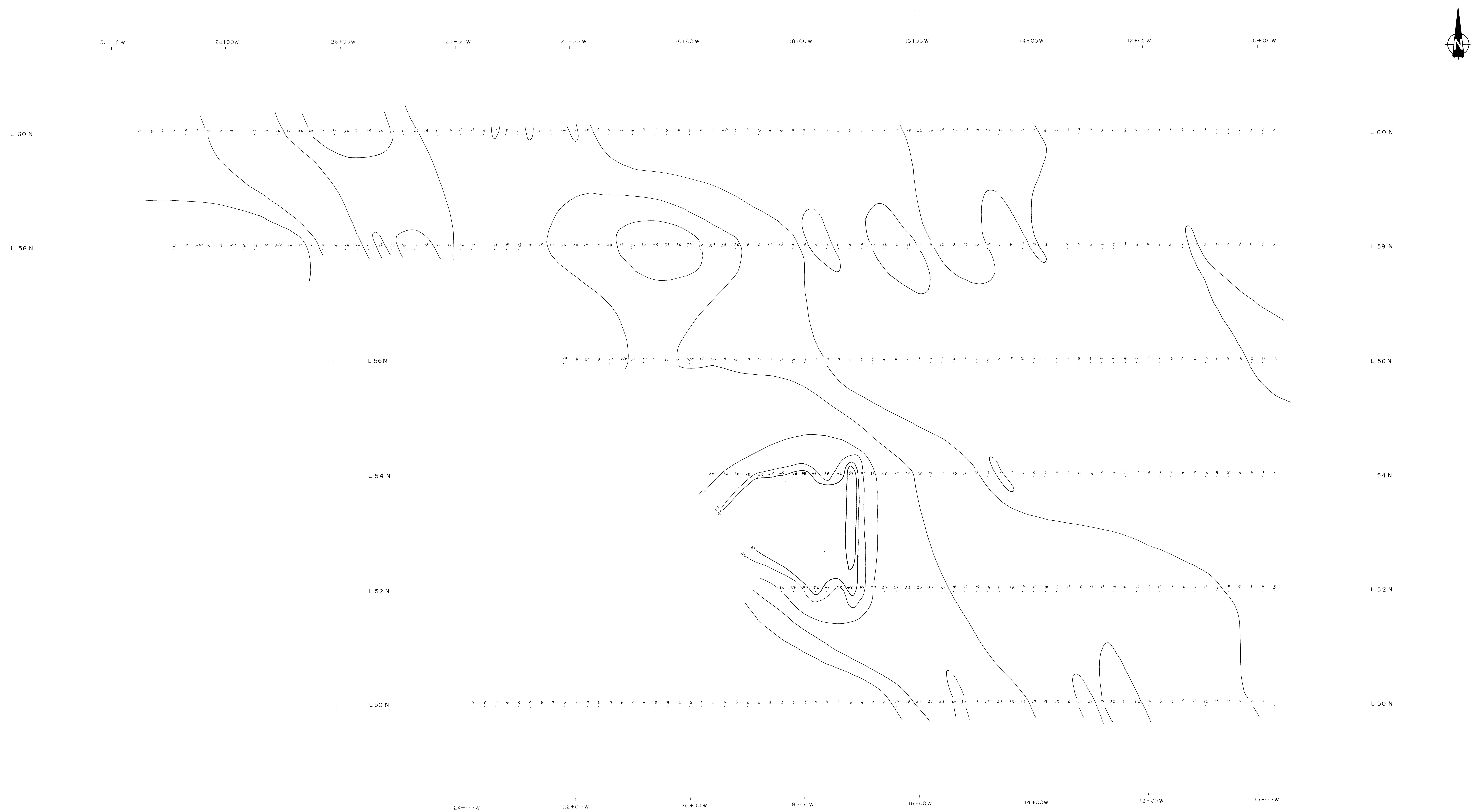
Cu, Pb, Zn GEOCHEMICAL RESULTS

| WORK BY | DRAWN BY | DATE |
| --- | --- | --- |
| S.E. | J.S. | DEC. , 1983. |

50 25 0 100 200m

SCALE IN METRES 1 : 2500

Figure: 6




GEOLOGICAL BRANCH
ASSESSMENT REPORT

# 11,788

## Kidd Creek Mines Ltd.

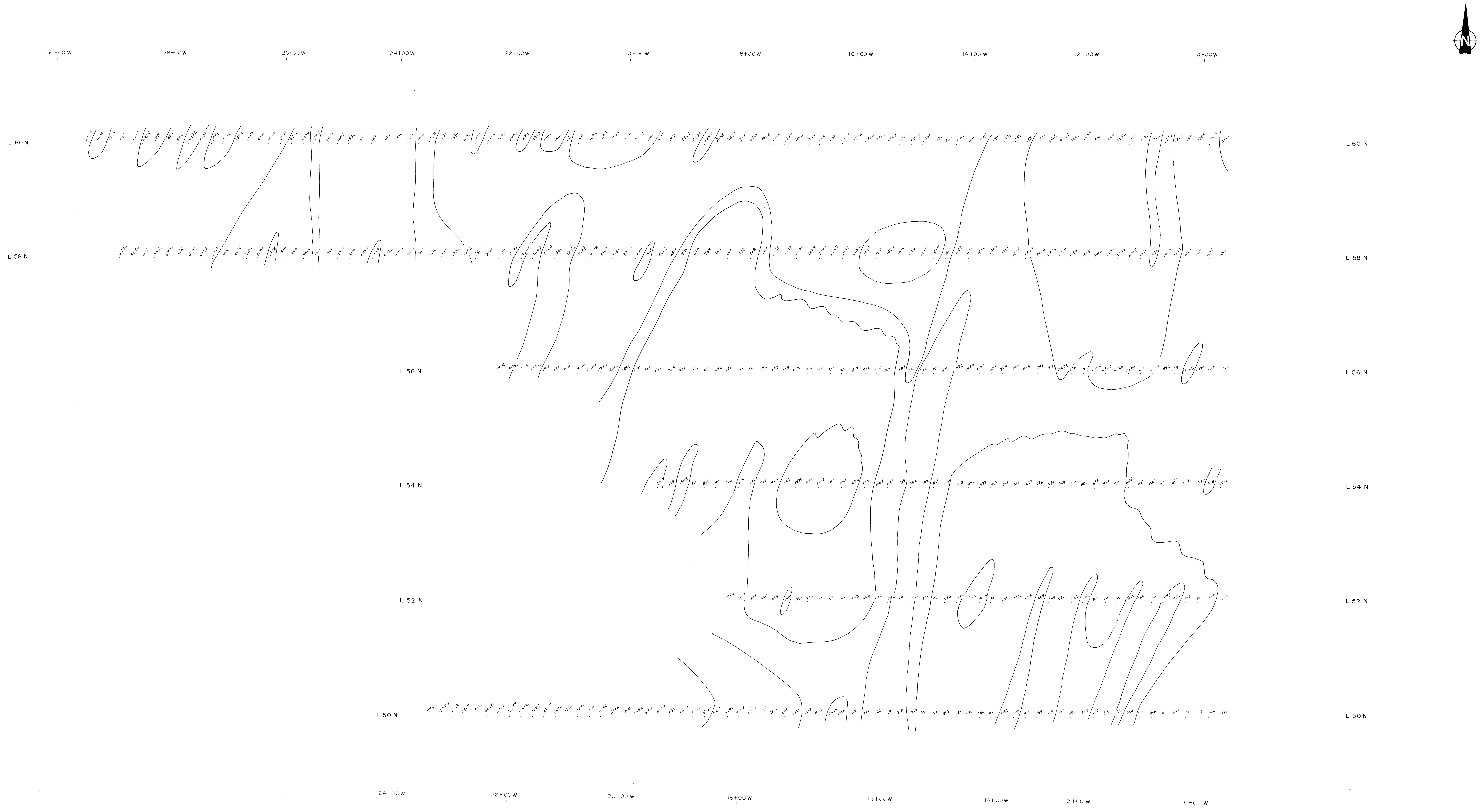
MULLIGAN
APPARENT CHARGEABILITY PLAN

SCHLUMBERGER ARRAY
AB = 140m
MN = 20m
CONTOUR AT : 10,20,30,40,45,50 'MSEC'

| WORK BY | DRAWN BY | DATE: 83/12/6 |
|---|---|---|
| G.H. | D.C. | |

50 25 0 100 200 m
SCALE IN METRES 1: 2500

Figure: 7






**Kidd Creek Mines Ltd.**

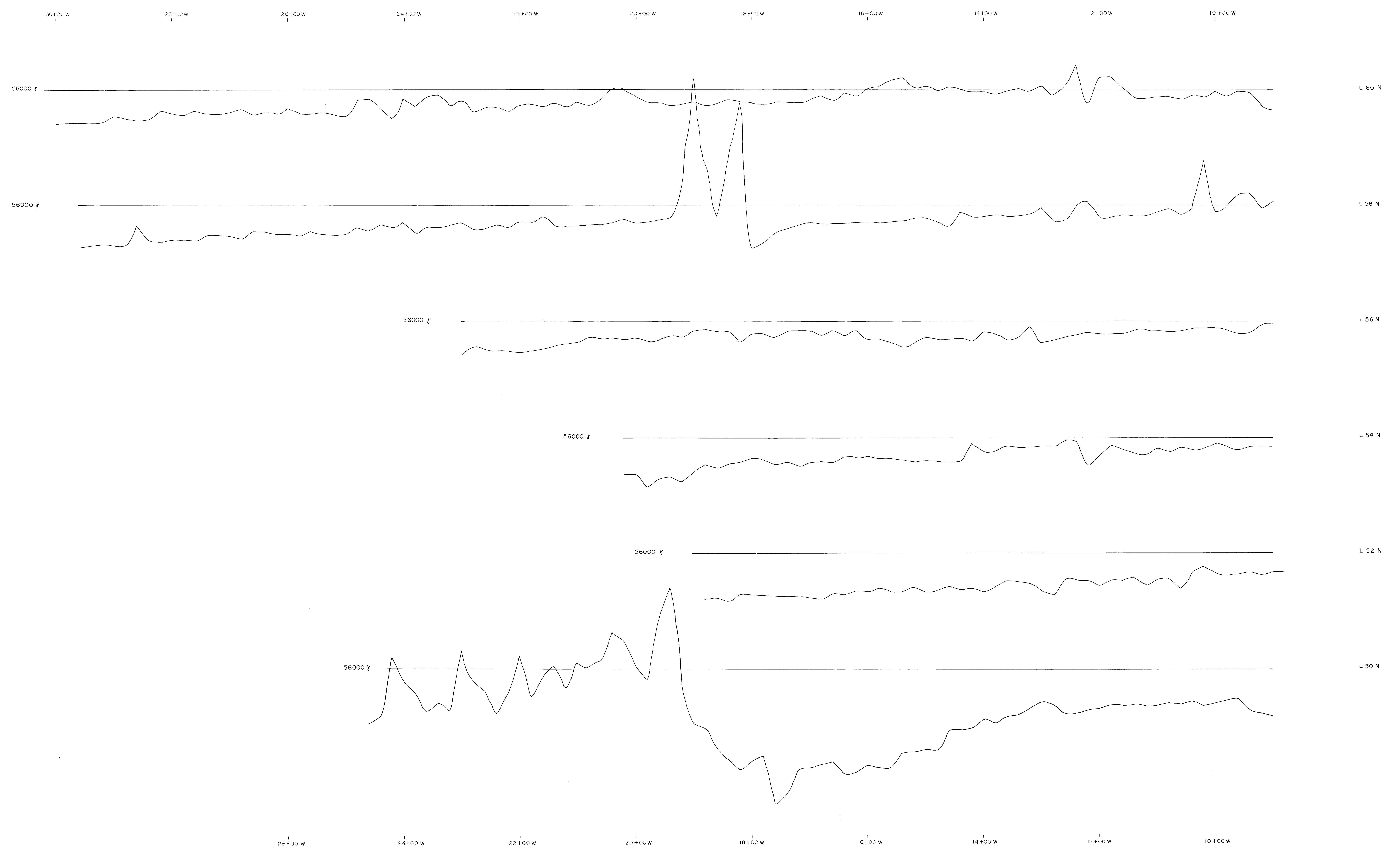
MULLIGAN
APPARENT RESISTIVITY PLAN

SCHLUMBERGER ARRAY
AB = 140m
MN = 20m
CONTOURS AT: 1000, 2000, 5000 OHM-METERS

| WORK BY | DRAWN BY | DATE: 83/12/6 |
|---|---|---|
| G.H. | D.C. | |

50 25 0 100 200m
SCALE IN METRES 1:2500

**Figure: 8**




GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,788

## Kidd Creek Mines Ltd.

MULLIGAN
MAGNETIC INTENSITY
PLAN of PROFILES

TOTAL FIELD DATA
PROFILE SCALE 100 NANOTESLA / CM

| WORK BY | DRAWN BY | DATE: 83/12/6 |
|---|---|---|
| G.H. | D.C. | |

50 25 0 100 200 m
SCALE IN METRES 1:2500

Figure: 9