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GEOPHYSICAL REPORT

of the

GROUND MAGNETOMETER SURVEY

on the

DARK MINERAL CLAIMS

MINTO AREA, Y.T.

Long. 137°16'W
Lat. 62°32'N

N.T.S. 115I/11

Whitehorse Mining District

on behalf of

GEO-DYNE RESOURCES LTD.(N.P.L.)

Claim Name	Record Number	Expiry Date
Dark #41 - #46	Y76961 - Y76966	September 6, 1974
Dark #55 - #60	Y76975 - Y76980	September 6, 1974
Dark #62	Y76982	September 6, 1974
Dark #64 - #70	Y76984 - Y76990	September 6, 1974

by

P. P. NIELSEN, B. Sc., GEOPHYSICIST

and

G. C. GUTRATH, B. Sc., P. ENG.

NIELSEN GEOPHYSICS LTD.

Vancouver, B.C.

February 19, 1974

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered representation work to the amount of $200.00

Geologist or Engineer

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

ADMINISTRATOR OF THE YUKON TERRITORY

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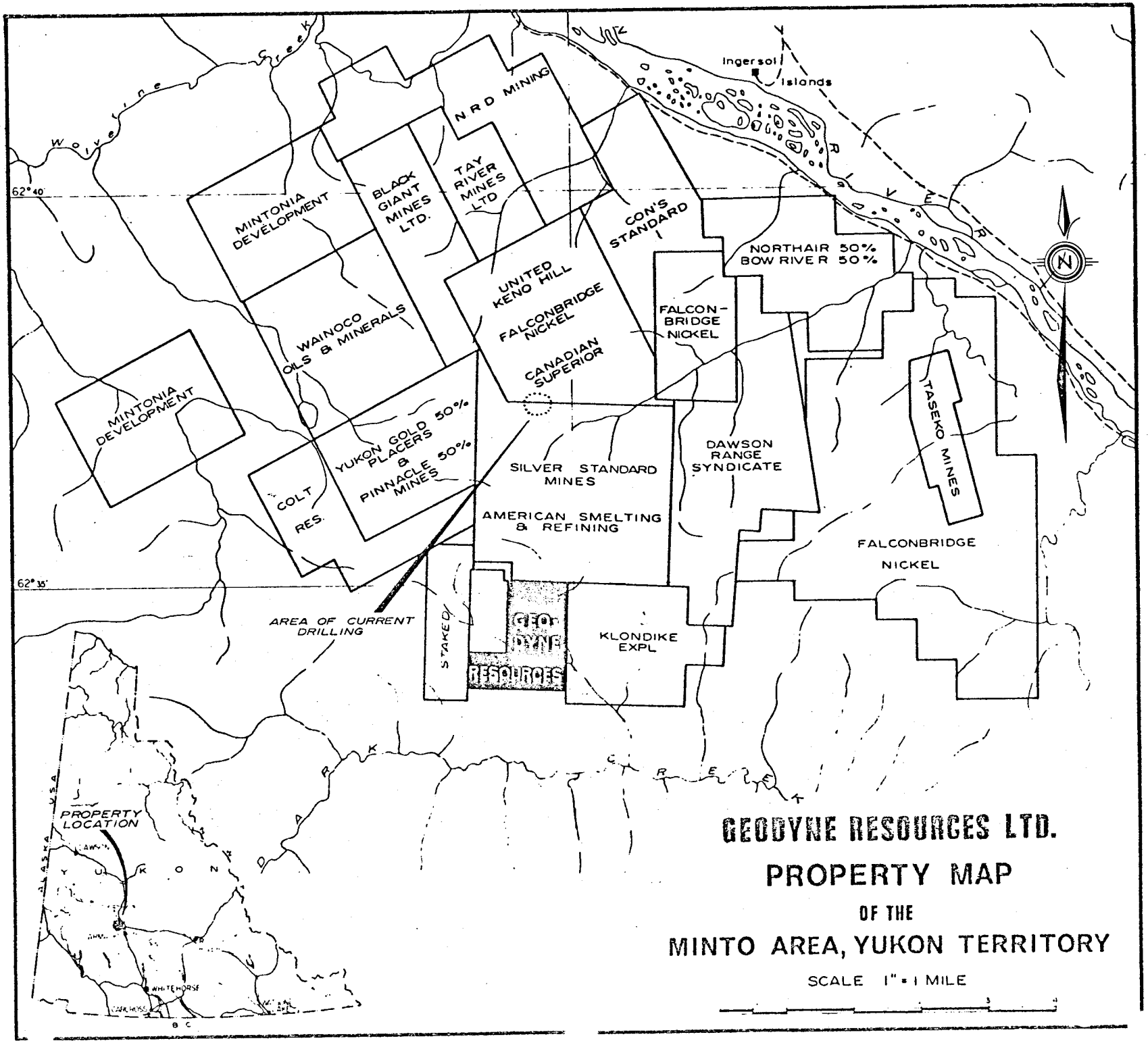
INTRODUCTION

During the period December 1 - 8, 1973 a ground magnetometer survey was executed on the Dark Mineral Claims in the Minto, Yukon Territory area on behalf of Geo-Dyne Resources Ltd. (N.P.L.).

The survey was performed by Nielsen Geophysics Ltd. personnel under the field supervision of Mr. G. H. Rayner, consultant geologist.

The purpose of the survey was to assist in the geological mapping of the property which is thought to be similar to the nearby copper deposit presently being developed by Asarco and Silver Standard Mines Ltd.

A total of 17.8 line-miles including the baseline was magnetically surveyed by two operators during five field days. Harsh winter conditions, although normal for this time of year, resulted in slow progress.



GEODYNE RESOURCES LTD.

PROPERTY MAP

OF THE

MINTO AREA, YUKON TERRITORY

SCALE 1" = 1 MILE

LOCATION AND ACCESS

The Dark mineral claims are located about 55 miles northwest of Carmacks and 160 miles northwest of Whitehorse, Y.T. The town of Minto lies 12 miles east of the property on the all-weather Dawson-Whitehorse Highway.

An access road is presently being constructed from Carmacks along the west side of the Yukon River to the Asarco - Silver Standard copper deposit recently discovered 2 miles to the north of the Geo-Dyne property.

Access at the time of the survey was by helicopter from the Dawson-Whitehorse Highway. A tent camp was used on the property resulting in easy accessibility on foot to all parts of the survey grid.

TOPOGRAPHY AND GROUND CONDITIONS

The Dark Claims are situated in mainly light overburden-covered, gently rolling terrain. Elevations vary from 2,300 to 3,000 feet above sea level and local drainage is to the southeast.

At the time of the survey snow cover was about one foot and temperatures as low as $-40^{\circ}F$. The entire grid was covered by stands of spruce with very little underbrush.

GRID INSTALLATION

Prior to the magnetometer survey a grid was cut over the entire 20 claims using a 7,200 foot baseline on a bearing of 360° and cross-lines spaced 400 feet apart with a station interval of 100 feet.

All lines were installed using the compass, chain and flagging method. Stations were marked on flagging tied to blazed trees.

A total of 17.8 line-miles (including the baseline) was installed.

CLAIMS

The property consists of 20 mineral claims presently owned by Geo-Dyne Resources Ltd. (N.P.L.)

Claim Name	Record Number	Anniversary
Dark #41 - #46	Y76961 - Y76966	September 6
Dark #55 - #60	Y76975 - Y76980	September 6
Dark #62	Y76982	September 6
Dark #64 - #70	Y76984 - Y76990	September 6

GEOLOGY

The regional geology of the area is described by H. S. Bostock, G.S.C. Memoir #189.

The geological setting of the recently discovered copper deposit of Silver Standard Mines 2 miles to the north and the Williams Creek discovery 25 miles to the southeast has been described by Archer & Cathro Consultants Ltd. and is, in part, as follows.

The deposits occur in a large Cretaceous batholith of granodiorite to diorite composition that has intruded Yukon Group metasediments and Mount Nansen Group volcanic flows and breccias. Tertiary Carmacks Group and modern Selkirk Series volcanics partially cover the older rocks in the general area.

Outcrop is scarce but overburden rarely exceeds 10 feet in thickness above the glaciated valleys and is composed mainly of decomposed bedrock.

Mineral deposits and showings in the area appear to occur in schistose to gneissic zones within the main dioritic intrusion. These zones have a sub-parallel orientation to the Teslin lineament along the Yukon River to the northeast which is the major structural feature of the area.

The main ore minerals are bornite, chalcopyrite, chalcocite and minor molybdenum. Pyrite and pyrrhotite are present in minor quantities as well.

The nearest deposit to the Dark claims is on the Silver Standard - Asarco property 2 miles to the north. Present reserves are approximately 3.5 million tons of open-pittable ore grading 2.12% copper with recoverable precious metal values. Other showings between this deposit and the Geo-Dyne claims still remain to be explored.

THE GROUND MAGNETOMETER SURVEY

A. Comment

A total of 17.8 line-miles was magnetically surveyed over lines spaced 400 feet apart using a station interval of 100 feet. Some 50 foot readings were taken in areas of steep magnetic gradient.

B. Method

The instrument was adjusted to read on the most sensitive scale ($\pm$ 1000 gammas full scale). The baseline was run to provide additional control to the looping of cross-lines.

Loop times of less than 1.5 hours were maintained resulting in good control of the diurnal variations. A base-station near camp was read at the start and finish of each day's surveying for the day-to-day correlation and to monitor any possible magnetic storms.

The datum or 0 magnetic level of the instrument was equivalent to 55,000 gammas vertical field.

C. Instrument Used

A Sharp MF-1 Model Fluxgate magnetometer was used. It is hand held and levelled using a bubble-level on the face of the instrument. This unit measures the vertical force variations of the earth's magnetic field, displayed in gammas (γ) on a meter having five ranges for a total of $\pm$ 100,000 gammas. The MF-1 is very light, fully portable, has good temperature stability, has negligible orientation error and is of rugged construction.

D. Data Compilation and Presentation

The readings and time of readings were recorded in a metal-free field book and transferred to a planimetric map for contouring after the necessary diurnal and day-to-day corrections were made.

The scale of the contour map is 1" = 400 feet. For clarity only peak values are shown on the finished map and a variable contour interval was used. The contour interval was 125 gammas from 1,000 to 2,000 gammas. A 500 gamma contour interval was used below 1,000 gammas (shown "ticked") and above 2,000 gammas (shown "hachured").

For the sake of accuracy and ease the contours were originally drafted at a scale of 1" = 200 feet and then photo-reduced to a scale of 1" = 400 feet for final presentation.

Claim junctions are shown on the map after tying in to one claim post at the south end of the grid. Creek locations are approximate as they have been transferred from the government claim map at a scale of 1" = 2,640 feet.

E. Discussion of Results and Interpretation

The magnetic values range from 50 gammas at Line 120N; Station 97E to 3,600 gammas on adjacent Line 116N; Station 90+50E for a total relative magnetic relief of 3,550 gammas throughout the surveyed area.

A subtle northwest regional trend is observed in the data and is further corroborated by the Dark Creek G.S.C. aeromagnetic contour map (scale 1" = 1 mile).

The most obvious and apparent magnetic features are the numerous elongated dipolar anomalies consisting of highs (above 2,000) and adjacent lows (below 1,000). The elongation of these features is in part due to the 4 to 1 grid sampling bias used.

These magnetic dipoles in conjunction with the high-frequency nature of the contours (especially in the area east of the baseline) is typical of the magnetic response from near-surface, young volcanic flows such as plateau basalts.

The hachured zone (interpretation map) at the southwest corner of the grid appears to be underlain by basic rocks but appear to be different in composition and possibly, in age to that discussed above.

The very regional G.S.C. geology map and lack of any knowledge of the property geology at this time makes the interpretation of the magnetics highly tennuous. Ideally, the magnetics should be re-interpreted after property geology and soil geochemistry has been carried out.

On the basis of the present magnetometer survey alone two areas shown stipled on the interpretation map could represent areas of pyrrhotite/magnetite mineralization which might be related to sulphides of economic interest. These zones appear to be caused by steeply dipping, dike-like bodies within 20 feet of the surface.

Definite linears are observed in the contour data which are interpreted as due to block faulting.

CONCLUSIONS AND RECOMMENDATIONS

The magnetometer survey appears to have been useful in delineating rock types and faults on the property. A full appreciation of its value is contingent upon future geological mapping and geochemical soil results.

At present, the most interesting magnetic feature is the elongated dipolar anomaly between L112N and L128N, west of the baseline which seems to be due to pyrrhotite and/or magnetite mineralization related to a northeast striking fault.

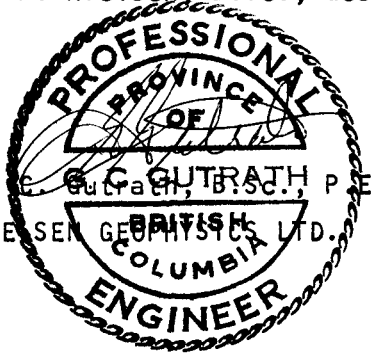
Because the property likely occurs in non-glaciated terrain and as overburden thicknesses are minimal, these magnetic features can be checked and there causes determined with a relatively modest follow-up program. It is therefore recommended that the property be geologically mapped and soil sampled using the same grid and sampling interval as was used for the magnetometer survey.

Initially every second soil sample (i.e. 200 foot station interval) could be analyzed to determine the meaningfullness of the magnetics. The intermediate samples could later be analyzed in areas of interest.

Upon completion of this work the magnetics should be re-interpreted to determine if other geophysics and/or drilling is warranted on the property.

Respectfully submitted,

P. P. Nielsen, B.Sc., Geophysicist



G. C. Gutrath, B.Sc., P.Eng.
NIELSEN GEOPHYSICS LTD.

APPENDICES

STATEMENT OF AUTHOR'S QUALIFICATIONS

I DO HEREBY STATE:

1. I am the author of this report.

2. I have been actively and responsibly involved in mining exploration using airborne, ground and computer applied geophysics in Canada and the United States for the past nine years.

3. I graduated with a B.Sc. degree in Geophysics from the University of British Columbia in 1969.

4. I am President, Nielsen Geophysics Ltd. with business address at 420-475 Howe Street, Vancouver 1, B. C.

5. I am a member of the Society of Exploration Geophysicists, the Canadian Institute of Mining and Metallurgy and the B. C. Geophysical Society.

Signed P. P. Nielsen

P. P. Nielsen

Date Feb 19/74.

ENGINEER'S CERTIFICATE

I, GORDON C. GUTRATH, of 3636 Lakedale Avenue, in the Municipality of Burnaby, in the Province of British Columbia, DO HEREBY CERTIFY:-

1. That I am a consulting geologist with a business address of #420-475 Howe Street, Vancouver 1, B.C.
2. That I am a graduate of the University of British Columbia where I obtained my B.Sc. in geological science in 1960.
3. That I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers in the Province of British Columbia.
4. That I have practised my profession as a geologist for the past fourteen years, and
5. That I have no interest in the property with which this report is concerned, nor do I expect to receive any such interest. I have no interest in the securities of Geo-Dyne Resources Ltd. (N.P.L.)

Gordon C. Gutrath, B.Sc., P. Eng.

DATED at the City of Vancouver, Province of British Columbia, this 19th day of February, 1974.

PERSONNEL

P. P. Nielsen, B.Sc., Geophysicist - Supervision and author of report

A. Scott, B.Sc., Geophysicist - Data compiler and magnetometer operator

G. Keyte, B.Sc., Geologist - Magnetometer operator

N. Cukor - Draftsman

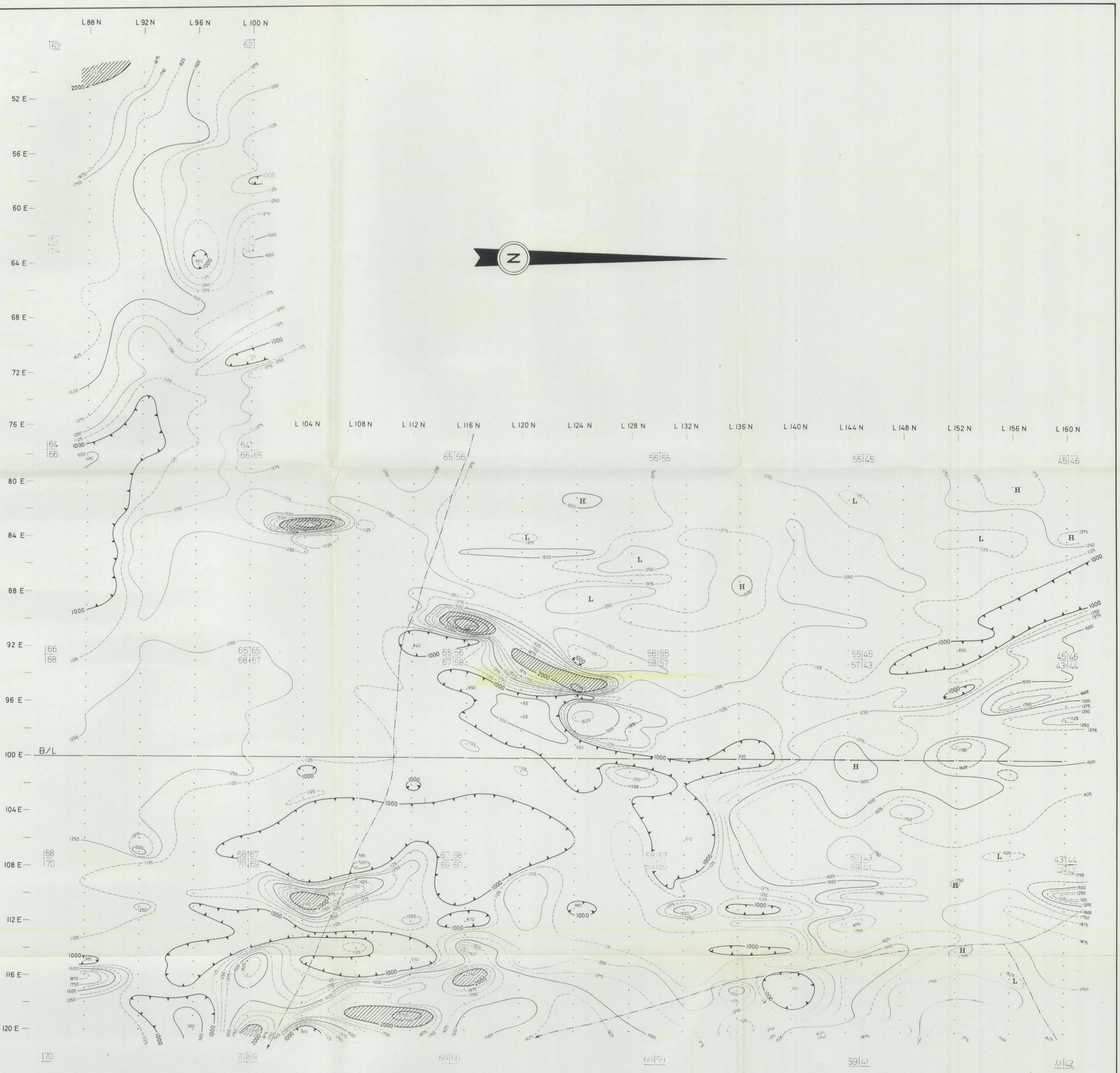
COSTS

The following are Nielsen Geophysics Ltd. charges for conducting 17.8 miles of Magnetometer Survey on the Dark Mineral Claims, Minto Area, Y.T. on behalf of Geo-Dyne Resources Ltd. (N.P.L.)

Local Helicopter, linecutting and camp support costs were the responsibility of the client and are not included below.

Survey

17.8 linemiles @ $80.00/linemile	$ 1,424
Report	250
TOTAL	$ 1,674



L E G E N D

- AREAS OF HIGH RELATIVE MAGNETIC SUSCEPTIBILITY (2000)
- AREAS OF LOW RELATIVE MAGNETIC SUSCEPTIBILITY (1000)
- CREEK (APPROX. LOCATION)
- 67|58 / 69|60 DARK CLAIM JUNCTION
- CONTOUR INTERVAL { 125 γ (FROM 1000 γ – 2000 γ) ; 500 γ (BELOW 1000 γ & ABOVE 2000 γ) }
- BASE MAGNETIC VALUE 55 000 GAMMAS (VERTICAL FIELD)
- INCLINATION 77°
- DECLINATION 33°E

INSTRUMENT USED

SCINTREX MF-1
VERTICAL FORCE
FLUX-GATE MAGNETOMETER

To accompany report by: P.P. NIELSEN, B.Sc., Geophysicist & G.C. GUTRATH, B.Sc., P.Eng. Geologist

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — G. C. GUTRATH

GEO-DYNE RESOURCES LTD (N.P.L.)

DARK CLAIMS
MINTO AREA, Y.T.

GROUND MAGNETOMETER SURVEY CLAIMS & CONTOUR MAP

WHITEHORSE MINING DISTRICT — N.T.S. 115 I / II

NIELSEN GEOPHYSICS LIMITED
VANCOUVER, B.C.

DRAWN BY: NCL — DATE: FEB. 1974

400 0 400 800
Scale in feet

L 88 N L 92 N L 96 N L 100 N

52 E
56 E
60 E
64 E
68 E
72 E
76 E
80 E
84 E
88 E
92 E
96 E
100 E
104 E
108 E
112 E
116 E
120 E

GEO-DYNE PROPERTY BOUNDARY

L 104 N L 108 N L 112 N L 116 N L 120 N L 124 N L 128 N L 132 N L 136 N L 140 N L 144 N L 148 N L 152 N L 156 N L 160 N

N

L E G E N D

- RELATIVELY BASIC ROCS SUCH AS GABRO, BASALT, ETC. LIKELY CARMACKS GROUP VOLCANICS
- REMAINDER OF PROPERTY UNDERLAIN BY ACIDIC ROCK TYPES POSSIBLY GRANITE, GRANODIORITE G.S.C. UNIT #10
- POSSIBLE ZONE OF PYRRHOTITE AND/OR MAGNETITE MINERALIZATION
- INTERPRETED FAULT (BLOCK FAULTING)

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — G.C. GUTRATH

To accompany report by: P.P. NIELSEN, B.Sc., Geophysicist &
G.C. GUTRATH, B.Sc., P. Eng. Geologist

GEO-DYNE RESOURCES LTD (N.P.L.)

DARK CLAIMS

MINTO AREA, Y.T.

INTERPRETATION

WHITEHORSE MINING DISTRICT — N.T.S. 115 I/11

NIELSEN GEOPHYSICS LIMITED
VANCOUVER, B.C.

DRAWN BY: NCL — DATE: FEB. 1974

400 0 400 800
Scale in feet