

# 4324

MIN-EX SERVICES LTD.

GEOPHYSICAL REPORT  
ON  
GROUND MAGNETOMETER SURVEY  
DERBY 1-22 MINERAL CLAIMS

STUMP LAKE AREA  
KAMLOOPS M.D.

50°26'N, 120°25'W  
NTS 92-1/8

FOR  
MONITOR RESOURCES LTD.

January 17-February 28, 1973

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4324 MAP.....



M. J. Fitzgerald, P.Eng.  
North Vancouver, B. C.

May 11, 1973

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## INTRODUCTION

This report describes the results of a ground magnetometer survey conducted during 1973 on the DERBY 1-22 mineral claims located approximately 20 miles south of Kamloops, B. C. The claims are owned by Monitor Resources Ltd. and the survey was conducted by personnel of Direct Development Ltd. under the indirect supervision of the writer. Mr. J. L. LeBourdais, President of Direct Development Ltd., contacted the writer early in January, 1973, prior to initiation of the survey, and survey procedures were reviewed at that time. Upon completion of the survey, the raw data were reduced by the writer, reviewed, and plotted at the scale of 1 inch = 400 feet.

## PROPERTY, LOCATION, AND ACCESS

The DERBY 1-22 mineral claims were staked on April 23, 1972 and were recorded on April 26, 1972. Record numbers of the claims are 113238-113259, inclusive.

The DERBY claim group is located approximately 20 miles south of Kamloops, B. C., in the Kamloops Mining Division. Lac Le Jeune lies about 5 miles to the northwest of the property. Longitude and latitude of the claims are 50°26'N, 120°25'W, respectively.

Access is by four-wheel drive vehicle along bush roads from the Merritt-Kamloops Highway and/or Lac Le Jeune. Further alternative access is available from Knutsford via McLeod Lake and Droppingwater Creek.

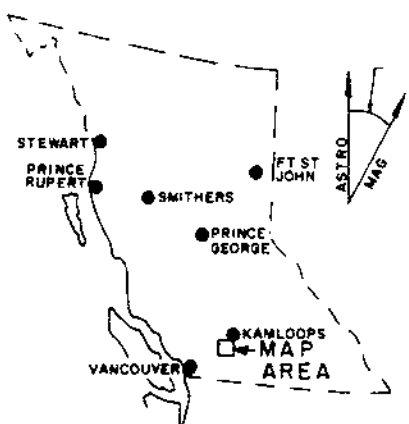
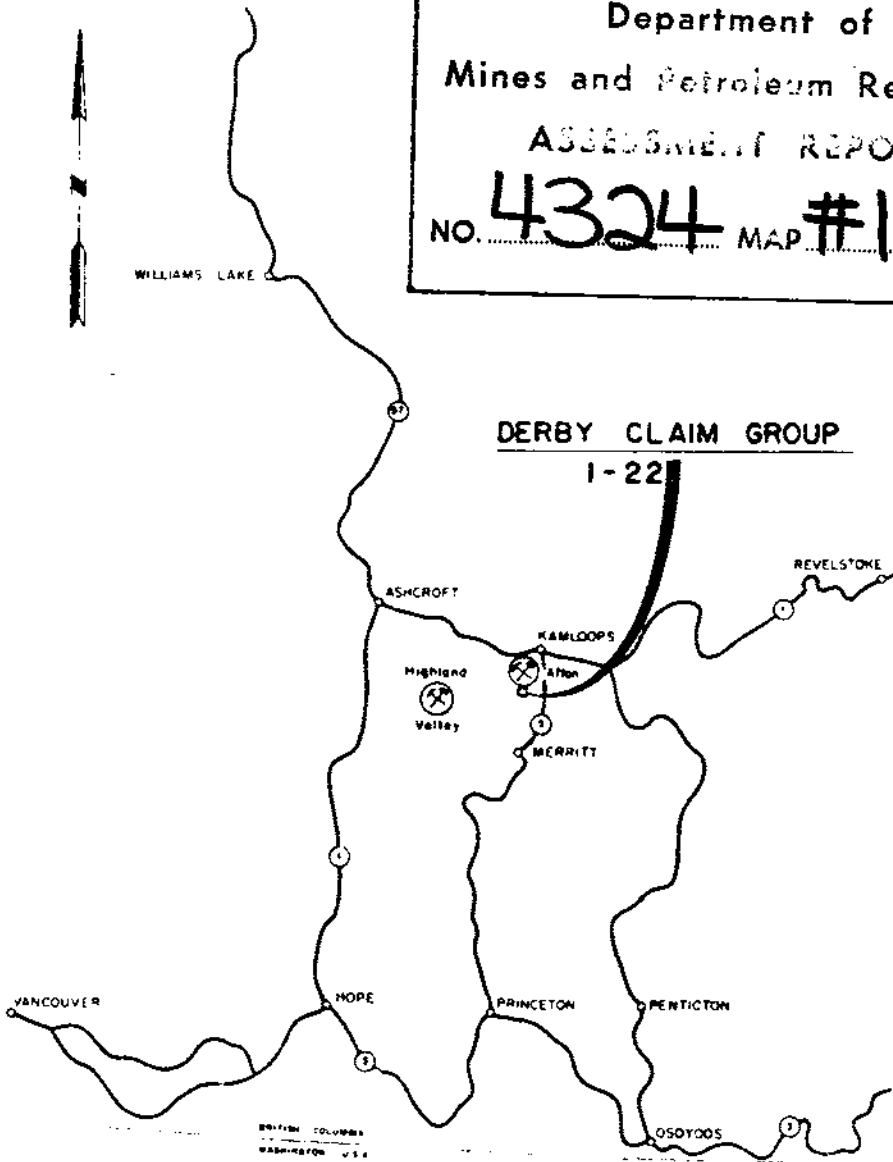
The claim group is characterized by hilly, undulating topography with pine, spruce, and poplar cover dominant on higher ground. Elevations range between 3500 and 3900 feet ASL.

A petroleum-product pipeline from Kamloops to Merritt traverses the claim group.

## HISTORY AND PREVIOUS WORK

The claim group was examined by D. W. Tully, P.Eng., on May 28, 1972 on behalf of Monitor Resources Ltd. Mr. Tully's report of June 2, 1972 states that no evidence of previous exploration work was found on the claims although he recommended a through search for copper and molybdenum deposits.

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 No. **4324** MAP #1



MONITOR RESOURCES LTD.

LOCATION MAP  
DERBY CLAIMS

KAMLOOPS M.D.

BRITISH COLUMBIA



MAY, 1973

FIGURE 1

BRITISH COLUMBIA

Useful references to the area of the claim group are Geological Survey of Canada Map 886A, Geophysics Map 5213G, Topographic Map 92-I/8 (1:50,000), and British Columbia Department of Mines and Petroleum Resources Claim Map 92-I/8W(M).

#### GRID

A grid was established over the claim group to provide control for the magnetometer survey and later surveys. The baseline is 7200 feet long and is oriented N45°E along the claim line of the DERBY 1-10 claims. Cross-lines were established every 400 feet and were extended 1400 feet to the northwest and 3600 feet to the southeast. Stations were established at 200-foot intervals on the cross-lines and each was plainly marked. A total of 17 line-miles of line was cut.

#### GENERAL AND PROPERTY GEOLOGY

The following description of geology in the area is taken from the report on the claim group by D. W. Tully, P.Eng., dated June 2, 1972.

"Outcrops of Nicola volcanics cover probably ten percent of the surface area of the DERBY claim group. These rocks are considered to be Triassic in age.

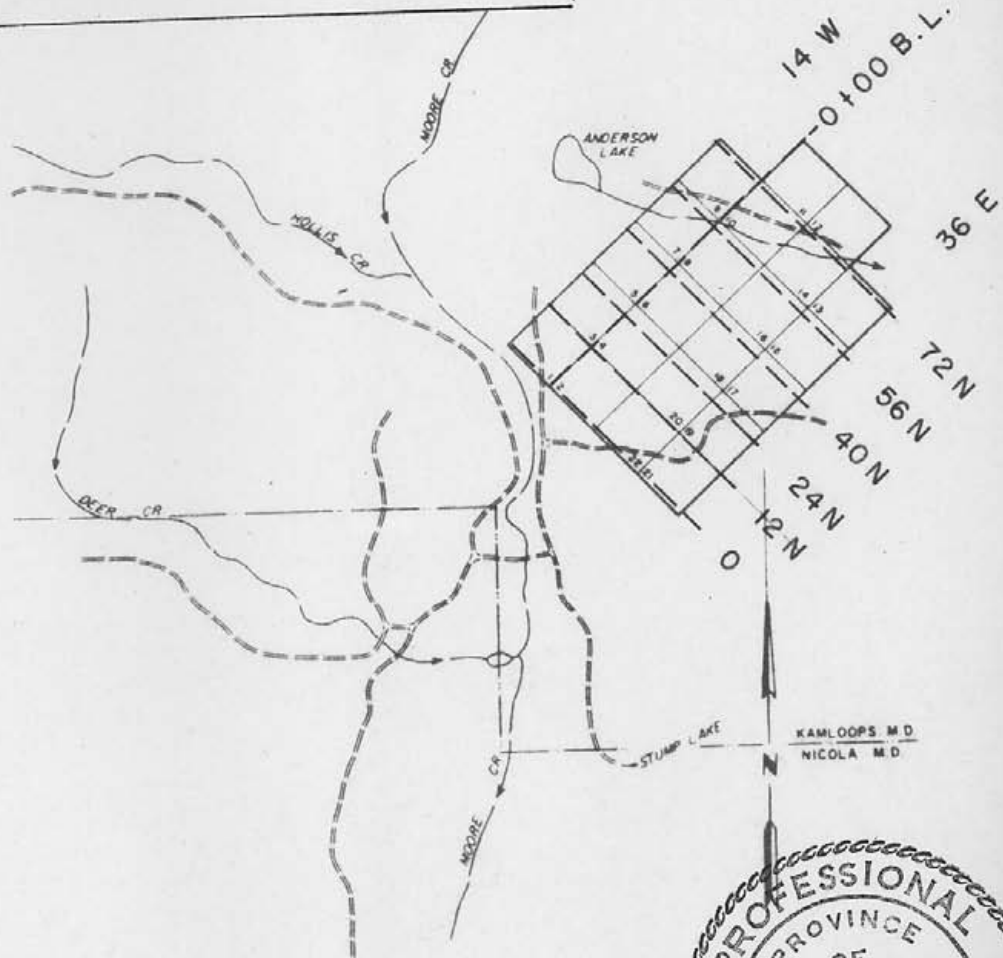
"The volcanics are mainly andesite and basalt. Phases of medium grained diorite-like rock are common and probably represent intrusive dykes and sills related to the volcanic complex.

"Structurally, the trend of the volcanics is northeasterly. Fracturing on a minor scale was noted in both the northwest and northeast quadrants."

At the writer's request, the Direct Development Ltd. work crew collected representative rock specimens of all outcropping rock exposures encountered during the magnetometer survey. A total of 37 exposures were sampled in this manner and each specimen was collected in a kraft paper bag with the grid location marked on the outside of the bag. Each outcrop specimen was examined under a binocular microscope and notes were taken on rock type, grain size, colour, alteration, mineralization, and magnetic characteristics.

Examination of the outcrop specimens confirm Mr. Tully's description. With one exception, all specimens are flow rocks of andesitic to basaltic composition. The volcanics range from

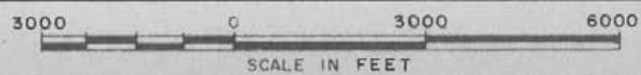
Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. **4324** MAP **#2**



**MONITOR RESOURCES LTD.**

**GRID LOCATION  
 AND  
 CLAIMS MAP  
 DERBY CLAIMS**

KAMLOOPS M.D. BRITISH COLUMBIA



MAY, 1973

FIGURE 2

BRITISH COLUMBIA

fine to medium grained and from dark gray to green to purple in colour. Although the specimens include fine grained flows, fine to medium grained fragmental units, porphyritic units, and some glossy units, no volcanic stratigraphy can be established due to the fragmentary nature of the sampling.

Alteration (regional and hydrothermal) of the volcanics ranges from nil to strong; the alteration products consist largely of chlorite, epidote, and carbonate. In general, the mafic minerals are altered to chlorite and plagioclase is altered to epidote and carbonate. Some specimens contain hairline veinlets filled with quartz, carbonate, and/or epidote. More rarely, specimens contain vugs and amygdules filled with epidote and carbonate.

Specimens which are classified as microdiorite were collected from 04N + 6W. These rocks, which are strongly chloritized and moderately magnetic, are probably dykes or irregular intrusive masses related to the volcanic complex.

Slickensided fracture surfaces were noted in specimens from 12N + 21E, 16N + 18E, and 40N + 07W; well fractured specimens were collected at 36N + 22E and 40N + 26E.

Magnetic characteristics of the outcrop specimens were tested using a small hand magnet. The volcanic units range from non-magnetic to strongly magnetic and many of the more magnetic specimens contain visible magnetite. These characteristics are discussed more fully in a following section of this report.

#### MINERALIZATION

No economic sulphide mineralization was noted in the outcrop specimens. However, a specimen of moderately altered and moderately magnetic andesite porphyry was collected at 20N + 09W which contains several fracture surfaces coated with indigenous limonite. The limonite is definitely the residue remaining after the leaching of sulphides and certain characteristics suggest that chalcopyrite may have been one of the sulphide components.

#### MAGNETOMETER SURVEY

##### Equipment and Survey Procedure:

A Sharpe MF-1 magnetometer was used to conduct the survey. A standard looping procedure was used to establish the baseline station values; individual station values were recorded along

with the time of day. Variation in magnetic value at the base station over the time of the loop was distributed on an elapsed time basis over the entire loop. The survey along cross-lines was looped in similar fashion with the loop beginning and ending at the same baseline station. Corrections were calculated by the writer for diurnal variations on all loops. The maximum time recorded for a loop was 1 hour, 46 minutes and the average elapsed time for a loop was 54 minutes.

The survey was begun on January 17, 1973 and, due to an instrument breakdown, was not finished until February 28, 1973.

#### Results:

Results of the survey are shown on Plate I. Maximum magnetic relief in the area of the survey is 740 gammas; maximum and minimum corrected values are 950 and 210 gammas, respectively.

Magnetic relief in the northwest quadrant of Plate I is gentle and appears to largely reflect subtle northeast and easterly structural trends. Outcrop specimens in this area, in general, are weakly to moderately magnetic and are only very weakly altered.

The broad easterly-trending magnetic low lying between 30N and 56N may reflect the aeromagnetic low shown on Geophysics Map 5213G. Three areas of outcrop exposure were found within the area of the magnetic low so it is doubtful that the low is due to increased thickness of overburden. Outcrop specimens from the three areas of exposure are non-magnetic to weakly magnetic when tested with a hand magnet and it appears probable that the magnetic low reflects the presence of rock units of low magnetic susceptibility. Quartz veinlets and some carbonate replacement were noted in the outcrop specimens and it is possible that destruction of magnetite by hydrothermal alteration may contribute to the interpreted low magnetic susceptibility.

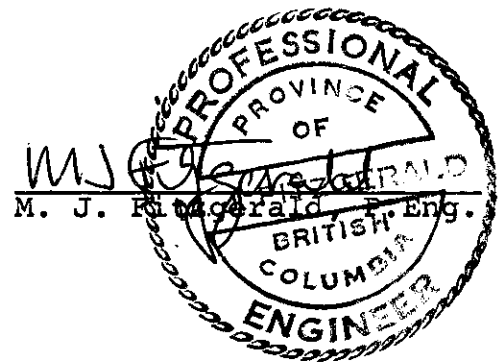
The southern three-fifths of the map is characterized by two parallel, northwest-trending zones of relatively high magnetic response separated by a 400-foot wide zone of relatively low magnetic response. No outcrop exposures are present within the areas of high magnetic response but two exposures are present within the area of low response and specimens from each are distinctly non-magnetic. The two magnetic high zones are probably the reflection of a linear, shallow, tongue-like volcanic unit containing significant amounts of magnetite. The magnetic low lying between the two magnetic high zones may reflect erosion of the more magnetite-rich unit.



The data suggest a northeast-trending fault lying between the baseline and line 4W and extending from line 36N to line 66N. A major east-trending fault is suggested by the alignment of the large magnetic low and the termination of the large northwest-trending magnetic high. This suggested fault would extend roughly between 20N + 10W and 56N + 34E. The intersection of the suggested fault with the termination of the northwesterly-striking magnetic high trend at 20N + 10W coincides with the mineralized outcrop area (indigenous limonite in fractures after sulphides) mentioned in an earlier section of the report and is a suggested area for more intensive exploration work.

### RECOMMENDATIONS

The magnetic survey and examination of outcrop specimens suggest the presence of one strong east-trending fault which may be associated with sulphide mineralization. The general magnetic contrast suggests the presence of a variety of rock types including intrusive rocks associated with the volcanic complex. It is recommended that the magnetic survey be followed up with a geochemical soil survey over the entire grid. Care should be taken to take the samples from the "B" soil horizon. Samples should be taken on the cross-lines at 200-foot intervals with fill-in around any indicated anomalous results at 100-foot spacing.



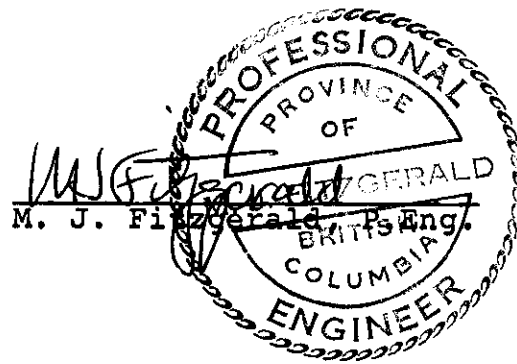
STATEMENT OF EXPENDITURE

Line Cutting:		
17 line miles @ \$60/LM		\$1,020.
Magnetometer Survey:		
17 line miles @ \$50/LM		850.
Data reduction, report, map preparation, typing		475.
		<hr/>
Total:		\$2,345.
		<hr/> <hr/>

(See supporting invoices)

Personnel:

J. L. LeBourdais  
Ray LeBourdais  
Gregory Thompson *MF*  
Robinson



A P P E N D I X

INVOICES

MIN - EX SERVICES LTD.

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GEOLOGICAL CONSULTING  
AND  
MINERAL EXPLORATION MANAGEMENT

M. J. FITZGERALD, P. Eng.  
GEOLOGICAL ENGINEER

2467 KILMARNOCK CRESCENT  
NORTH VANCOUVER, B.C.  
TEL: 980-4312

May 11, 1973

Direct Development Ltd.,  
Box 75,  
150 Mile House, B. C.

INVOICE  
Geophysical Report  
DERBY 1-22 claims

Data reduction, map preparation, report preparation, typing  
- March-April, 1973

Total: \$475.00

Respectfully submitted,

  
M. J. Fitzgerald, P.Eng.

DIRECT DEVELOPMENT LTD.

Box 75-150 Mile House, B.C.

April 13, 1973

Monitor Resources Ltd.,  
101-325 Howe Street,  
Vancouver, B. C.

Re: Derby 1-22 Mineral Claims, Kamloops Mining Division.

INVOICE

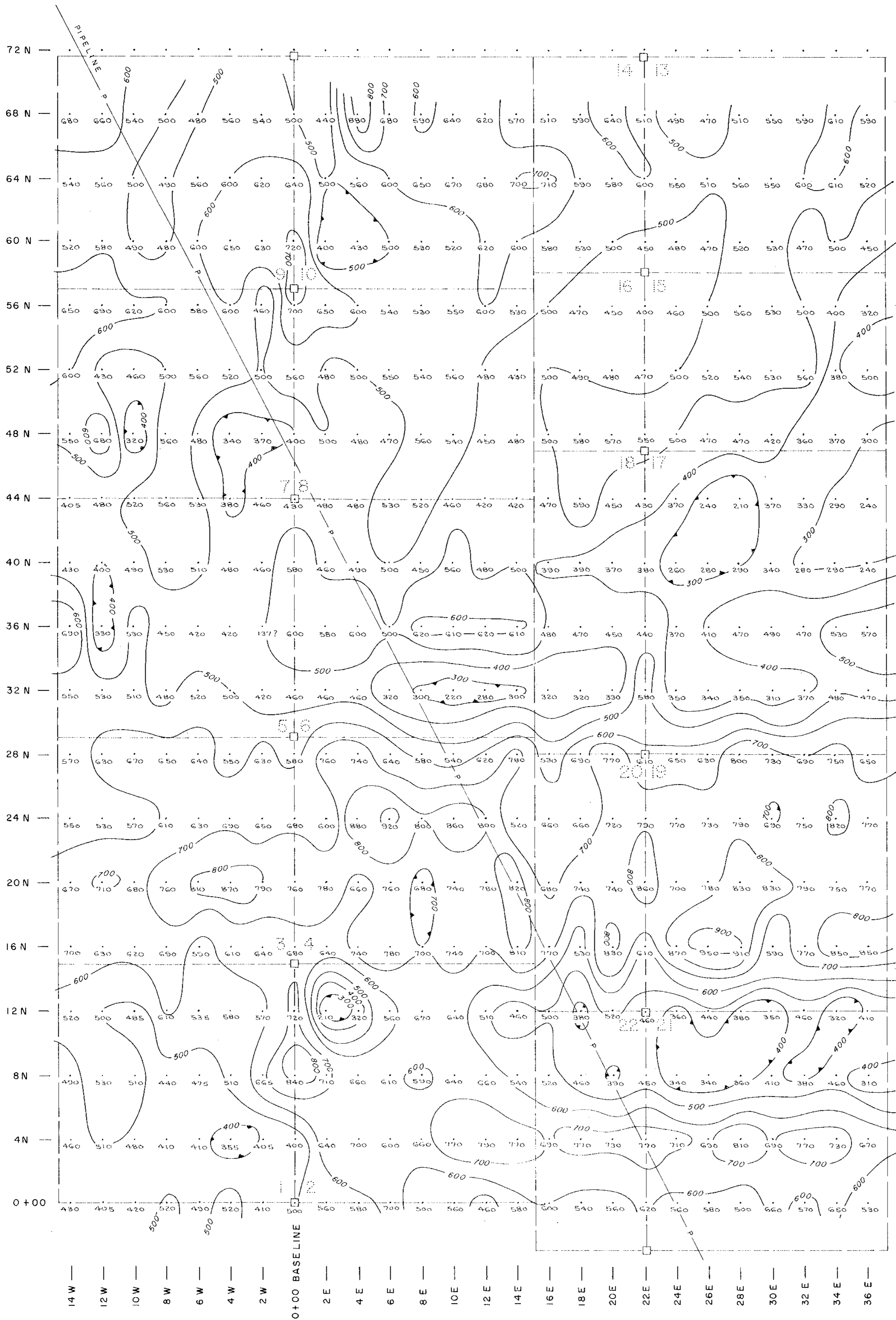
Contract Line Cutting 17 line miles @ \$60 per mile	\$1,020.00
Magnetometer Survey 17 line miles @ \$50 per mile	850.00
Report by M. J. Fitzgerald, P.Eng. including Map Preparation and Typing	<u>475.00</u>
TOTAL:	<u><u>\$2,345.00</u></u>

Personnel employed:  
J. LeBourdais  
R. LeBourdais  
G. Robinson

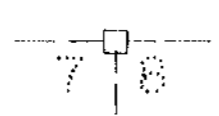

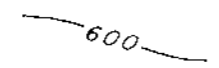
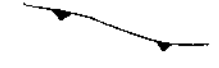
Yours very truly,

DIRECT DEVELOPMENT LTD.

per J. L. LeBourdais  
President



**LEGEND**

-  CLAIM POST & CLAIM NUMBERS (DERBY CLAIMS)
-  MAGNETOMETER READING STATION WITH MAGNETIC INTENSITY IN GAMMAS
-  ISOMAGNETIC CONTOURS 100 GAMMA INTERVAL
-  MAGNETIC DEPRESSION

INSTRUMENT:  
SHARPE MF-1 FLUXGATE MAGNETOMETER

4324 M-3

TO ACCOMPANY A REPORT BY M.J. FITZGERALD, P. ENG. ON THE DERBY CLAIMS DATED

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4324 MAP #3

**MONITOR RESOURCES LTD.**  
DERBY CLAIM GROUP  
KAMLOOPS AREA, B.C.

GROUND MAGNETOMETER SURVEY  
VALUES AND CONTOUR MAP

KAMLOOPS MINING DIVISION NTS 921/BW

DIRECT DEVELOPMENT LTD.  
MIN-EX SERVICES LTD.

SCALE  
400' 200' 0' 200' 400'

DATE: MAY, 1973

NORTH VANCOUVER, B.C.

