4997

92I/10E

REPORT

ON 92I/10E

GEOPHYSICAL SURVEYS

AT PAM

DUFFY CREEK, KAMLOOPS MINING DIVISION,
BRITISH COLUMBIA

FOR

ABCO PETROLEUMS LTD.

BY

DOMINION EXPLORATION SERVICES LIMITED

LATITUDE - 50° 43' N

LONGITUDE - 120° 37' W

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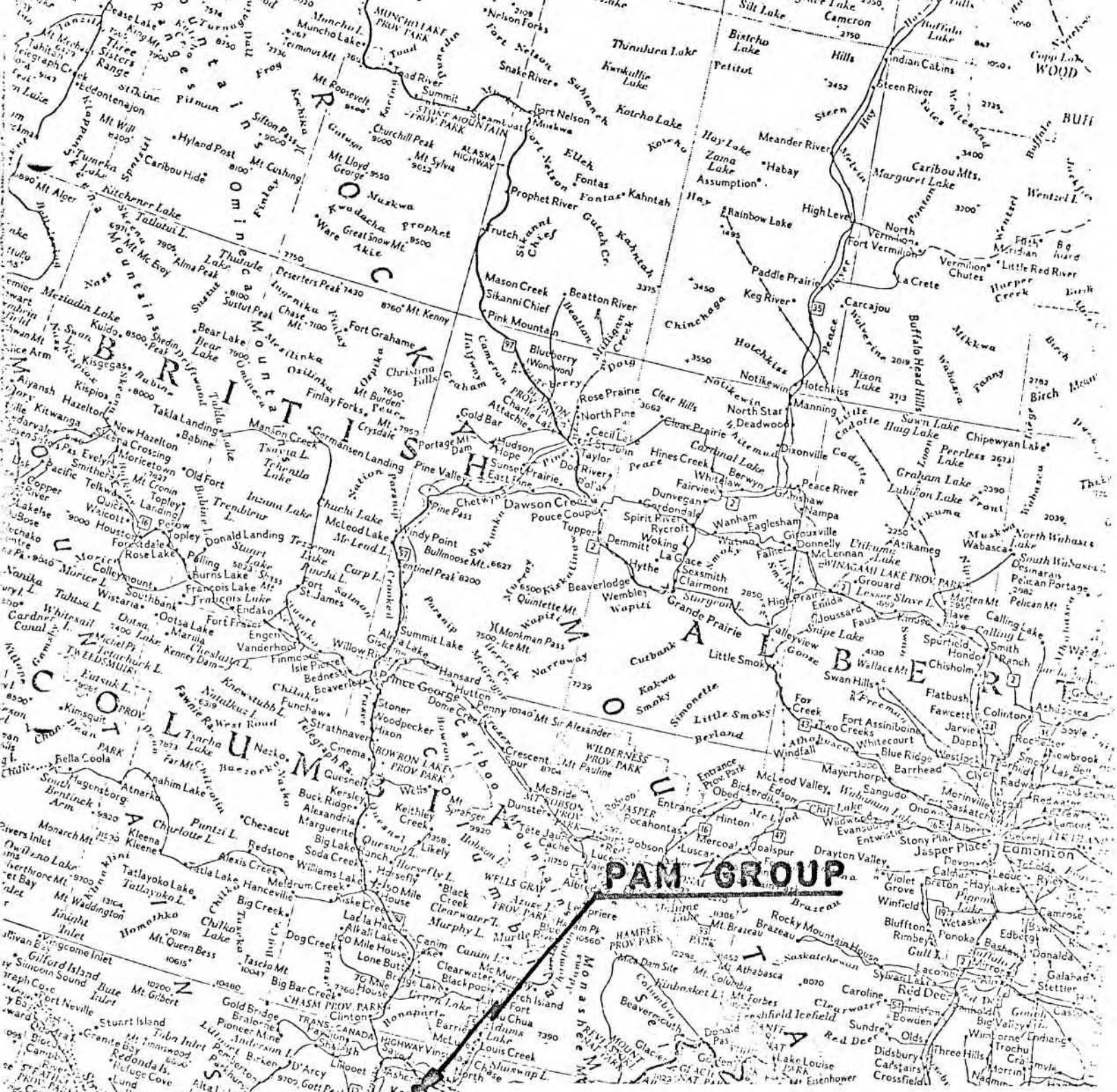

INDEX MAP

PAM Group - Duffy Creek Area

Kamloops Mining Division, British Columbia

ABCO PETROLEUMS LTD.

A991 M1

INDEX MAP

Pam Mineral Claims
Kamloops Mining Division

Scale 1 inch = 2 miles

4997 M2

REPORT

ON

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AT

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INTRODUCTION

Magnetometer and Induced Polarization surveys were performed over the claim group of Abco Petroleums Ltd., known as the PAM Group in the Duffy Creek area of the Kamloops Mining Division. Some 96,600 feet of magnetic survey and 4,000 feet of Induced Polarization profiling were completed. All work was carried out under the direction of J.B. Prendergast.

The results of the work indicate the claims to be underlain by medium to basic volcanic material with the possibility of localized intrusive activity. A chargeability anomaly turned up by the Induced Polarization work correlates well with a magnetic low possibly due to local alteration of the rocks.

A recommendation for percussion drilling of the area of interest has been made with a budget of $20,000.00 set as a maximum. Should this next programme prove successful then more detailed geophysical work would be warranted.

PURPOSE

The magnetic survey was carried out to help resolve the underlying geology and to set targets for a limited amount of Induced Polarization check work. Any areas of interest so discovered would be recommended for drill testing.

PROPERTY

The mining property under discussion herein may be more particularily described as follows:

Claim Number	Record Number	Expiry Date
PAM 1 - 14 inclusive	124957-124970 inclusive	April 12, 1974.

LOCATION AND ACCESS

The property is located approximately 16 miles due west of the City of Kamloops in Central British Columbia. Kamloops, in turn, is situated about 300 air miles northeast of Vancouver.

Access to the Kamloops area is readily available, it being astride the major transcontinental road and rail lines. Several flights a day from Vancouver, Calgary and Edmonton land at the Kamloops airport.

The property is reached by driving west on the Trans Canada highway about 15 miles from Kamloops and then south along a secondary road that follows the Duffy Creek drainage. The distance along this gravel road is 3.5 miles. Travel over the property was by walking along cut and chained picket lines.

WATER, TIMBER AND TOPOGRAPHY

Duffy Creek traverses the centre of the property and would supply ample water for any exploration or development programme.

The usual forest cover of the high country of the Kamloops area is present, that is, a reasonably dense growth of pine, spruce, cedar and hemlock with scattered birch and poplar trees intermixed. The underbrush is not extreme.

Elevations range from 2,500 to 3,500 feet above sea level with reasonably precipitious sides to the valley of Duffy Creek.

GEOLOGY

The oldest rocks in the area are Palaeozoic sediments and volcanics; these are badly deformed, altered

and sheared. These in turn are overlain by the Triassic age, Nicola Group of altered volcanics with minor sedimentation in this period. Intrusive rocks of widely varying composition, likely of Jurassic Age cut the older formations and are probably the source of much of the economic mineralization in the area. Post Coast Intrusive formations include Cretace ous and Tertiary sediments and lavas, relatively unaltered, and later Cenozoic formations of similar description. A few occurrences of acidic intrusives of late Cretaceous or Tertiary age intrude older formations north of Kamloops Lake along the Carabine and Criss Creek drainages.

In the area near Kamloops Lake, Triassic rocks seem to have northwesterly trending fold axes. Airborne magnetic data indicates that most of the other trends in the general area strike slightly west of north. Major structural lineaments are expressed topographically by the west striking South Thompson River and Kamloops Lake depressions and by the north - south North Thompson River and Guichon Creek features.

LOCAL GEOLOGY

The PAM Group is underlain by rocks of the Nicola Group of Triassic age (refer Geological Survey of Canada, Map 886A). These are in the main andesitic and basaltic with some minor sediments associated with the lavas. They have been altered by epidotization and chloritization to a grey-green colour.

Variations from the typical "greenstone" appearance are due to different amounts of contained iron oxides. The Iron Mask Batholith of Jurassic, or later age lies to the north and east of the property, while minor intrusives of the same age have been mapped near Diary Lakes to the south. Aeromagnetic data in the immediate area of the claims shows an intensity of activity only slightly less than that over the Iron Mask Batholith and a strike of about N20°W. The magnetic work performed by Dominion Exploration Services Limited, and discussed later in this report, apparently confirms the presence of the volcanic rocks but also suggest that small intrusive bodies may have been emplaced within these. Sulphide mineralization in the area is mainly associated with Coast Range type intrusive activity controlled by structural and alternation patterns.

FIELD MEASUREMENTS

A grid of picket lines was cut in a north west - south east direction, spaced at 400 foot intervals with stations chained and picketed along them at 100 foot intervlas. Using this system as control magnetometer readings were taken at each station and tied in to a base station net along the main base line. A Scintrex MF1 magnetometer having a sensitivity of 10 gammas on the lowest scale was used to collect this information.

An area was selected for Induced Polarization check work and two lines read across the strike of the magnetic trends. A McPhar P66Q receiver was used with a 2.5 kw transmitter. Two frequencies, 5 Hz and 0.3 Hz, were read for each station and the Percent Frequency Effect (PFE) and resistivity ($\rho/2\pi$) obtained and plotted.

The magnetic data was posted on a base map of 1" = 400' scale and contoured. The Induced Polarization information has been plotted as profiles of PFE and of resistivity.

DISCUSSION OF RESULTS

Magnetometer Survey

The contoured results of this survey indicate an area of moderately changing susceptibility. Most of the trending is irregular but if any direction predominates it is from north to northwest. The cause of the changes in intensity is undoubtedly varying magnetite content in the underlying volcanics or intrusive rocks. This is in accord with the geological mapping in the area with the exception that small intrusive bodies may exist with their centres about 42 + 00 SW, 3 + 00 NW and 43 + 00 SW, 25 + 00 NW. The low area along the Induced Polarization trend may well be due to lesser magnetite content brought about by the alteration of the underlying rocks by hydrothermal activity.

Induced Polarization Survey

Two lines in the northeast part of the property were run using the Frequency method. On line zero a strong well formed IP Zone evidently extending to the subcrop is located between 9 NW and 11 NW. On this same line a deeper less definite zone has been indicated at 21 NW. There is a slight low resistivity match up with the first mentioned zone and no particular correlation in this sense with the second zone. On Line 12 + 00 SW a large broad anomalous area, probably not having a sub outcrop, occurs between 22 NW and 27 NW. There is no particular resistivity correlation with this feature.

SUMMARY AND CONCLUSIONS

A complete magnetic survey was carried out on the PAM Group of claims for Abco Petroleums Ltd. The property is located in the Kamloops Mining Division and consists of 14 located mineral claims. The results of the survey reveal,

1.) Induced Polarization anomaly associated with a low magnetic feature of prime importance, and

2.) Deeper and less definite anomalies, one of which is again associated with a magnetic low.

There is visible copper alterations at surface towards the north end of Line 12 SW and although the property is

probably underlain by volcanic/crops out it would be well worth while to determine the cause of at least the strong anomoly on Line Zero.

RECOMMENDATIONS

Considering the above conclusions a programme of shallow drilling to determine the cause of the prime anomoly is recommended. This should take the form of two diamond drill holes. The first 7 + 50 NW drilling to the NW at 45° for a distance of 350 feet, and the other from 13 + 50 NW and drilling to the SE at 45° for a distance of 450 feet. The estimated cost of this 800 feet of drilling is $8,000.00.

If the results of the drilling are successful then the neighbouring group of claims, which are under option at the present moment, should be acquired and a systematic programme of evaluating the property commenced.

Respectfully submitted,

DOMINION EXPLORATION SERVICES LIMITED,

J.B. Prendergast, P.Eng.,
President.

JBP/mjh

STATUATORY DECLARATION

I, JOSEPH BENOIT PRENDERGAST of the City of Calgary, Province of Alberta HEREBY CERTIFY

1. That I am a geophysicist-geologist resident at 1720-110th Avenue S.W. in the City of Calgary, Alberta.

2. That I am a graduate of the University of Toronto with a Bachelor of Arts degree (1950) in Physics and Geology and a Master of Arts degree (1951) in Geophysics.

3. That I have been practising my profession continuously for 23 years in Canada and internationally both in the mineral and petroleum exploration industries.

4. That I am a member of the Associations of Professional Engineers for the Provinces of Ontario, Alberta, and British Columbia.

5. That this report is based on data derived from work carried out under my direct supervision and from pertinent published maps and reports.

DATED this 10th day of April, 1974 at the City of Calgary, Province of Alberta.

J.B. Prendergast, M.A., Prof. Eng.

DECLARATION OF WORK AND EXPENDITURE

I, JOSEPH BENOIT PRENDERGAST of the City of Calgary, Province of Alberta, HEREBY DECLARE

1. That the following work was carried out on the PAM Group of claims in the Duffy Creek area of the Kamloops Mining Division, Province of British Columbia on behalf of Abco Petroleums Ltd.

a) 1.6 miles of base line cut and chained.

b) 18.3 miles of picket line, cut and chained.

c) 18.3 miles of magnetometer survey run, corrected, compiled and interpreted.

d) 4 days of Induced Polarization surveying, compiled and interpreted.

2. That the above work was invoiced to Abco Petroleums Ltd. at:

a) and b)	at $100.00 per mile:	$1,990.00
c)	at $ 75.00 per mile:	1,372.50
d)	at $495.00 per day for 4 days: .	1,980.00
	TOTAL FIELD EXPENDITURES:	$5,342.50

DATED this 10th day of April, 1974 in the City of Calgary, Province of Alberta.

DOMINION EXPLORATION SERVICES LIMITED,
J.B. Prendergast, M.A., P.Eng.,
President.

APPENDIX A

FIELD PROCEDURE SUMMARY

Survey: Ground Magnetics

Instruments: Scintrex MF - 1, vertical force flux-gate magnetometer

Operator: Micheal Hayes

Helper: None

Field Technique:

Using a grid of established base lines and picket lines the base line intersections with the picket lines are double read magnetically. These are related in time to some arbitrary point on the grid usually 0 + 00 on the base line, and corrected for DIURNAL variations. The multiple base station values thus obtained are averaged and thereby point values for each of the picket line intersections established. Using these DIURNAL corrections are made for each point according to the pertinent picket line(S). If necessary these readings are converted to gammas or if a direct reading instrument is used then the values thus obtained are available for plotting. No attempt is made to establish the absolute value of the magnetic field on the property and all posted values are relative to an arbitrary master base station value.

Compilation:

The base station and picket line values are posted on a map of suitable scale showing the grid of lines. These are contoured using an appropriate contour interval and are available in this form for further analysis or evaluation.

Physical Principle:

The magnetic minerals magnetite and pyrrhotite occur in varying amounts in nearly all rock types. At times there is sufficient magnetite by itself to provide an iron ore body or there maybe magnetite and pyrrhotite intimately associated with other economic mineralization as for example copper zones or nickel-copper zones where increased magnetic susceptibility allows a direct search for minerals using ground or airborne magnetometers. In nearly every instance magnetics have indirect value in that they help the geologist to follow lithology under over-burden or to identify structure or sometimes lower susceptibility will be associated with alteration zones. Rarely, iron ore explorations being an exception, are magnetic anomalies in themselves drill targets; such surveys are normally supplemented by other geophysical methods, geochemical sampling or geological mapping.

APPENDIX B

FIELD PROCEDURE SUMMARY

Survey: Induced Polarization-frequency domain

Instrument: McPhar, Model 660 receiver, 2.5 KW transmitter

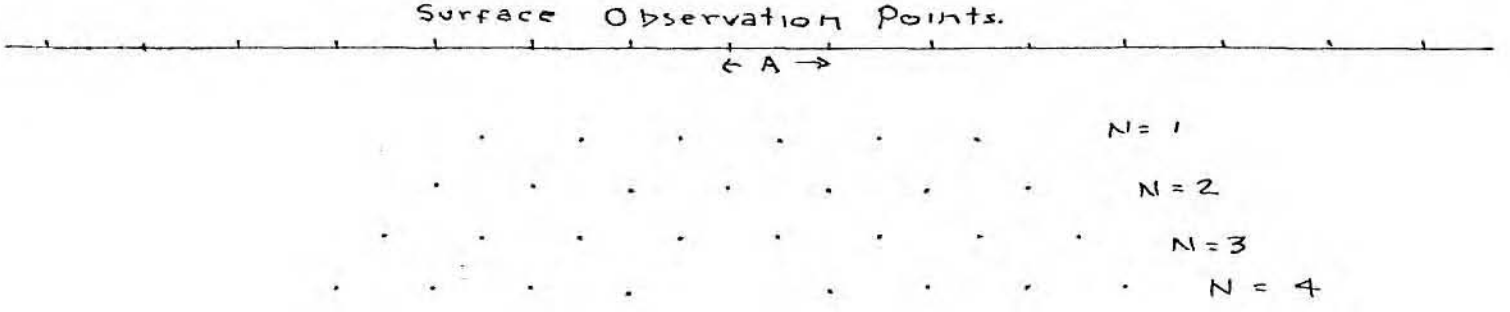
Frequencies: 0.3 and 5 H_2

Operator: Rob Pearson

Helper: Mike Hayes, Dale Richard, Joe Prendergast

Field Technique:

Single line conductors are laid along the grid line so that multiple electrode spacings and separation values may be read from one transmitter set up. The electrode spacing value "A", and the number of values for "N", the separation factor, will determine the length of cabling laid out along the lines and the amount of horizontal and vertical coverage obtained from each transmitter setup. A typical case for the first four separations is shown diagramatically below.

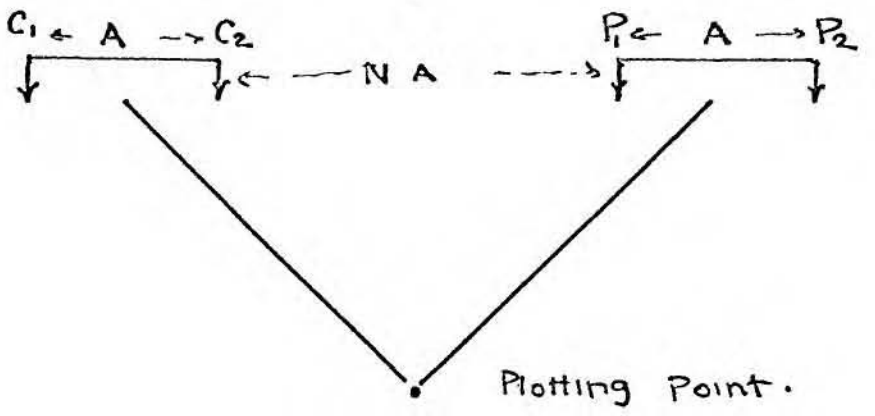


Values taken from the Receiver Console and recorded are attenuation, vernier voltage and frequency effect. The transmitter operator records the current for each station. From these data and the geometry of the spread the resistivity value, $\rho/2\pi$ may be calculated.

Compilation:

Having obtained and corrected the frequency effect values and calculated the resistivity values these are plotted in pseudo profile form where the plotting point with respect to the surface array is indicated in the diagram below.

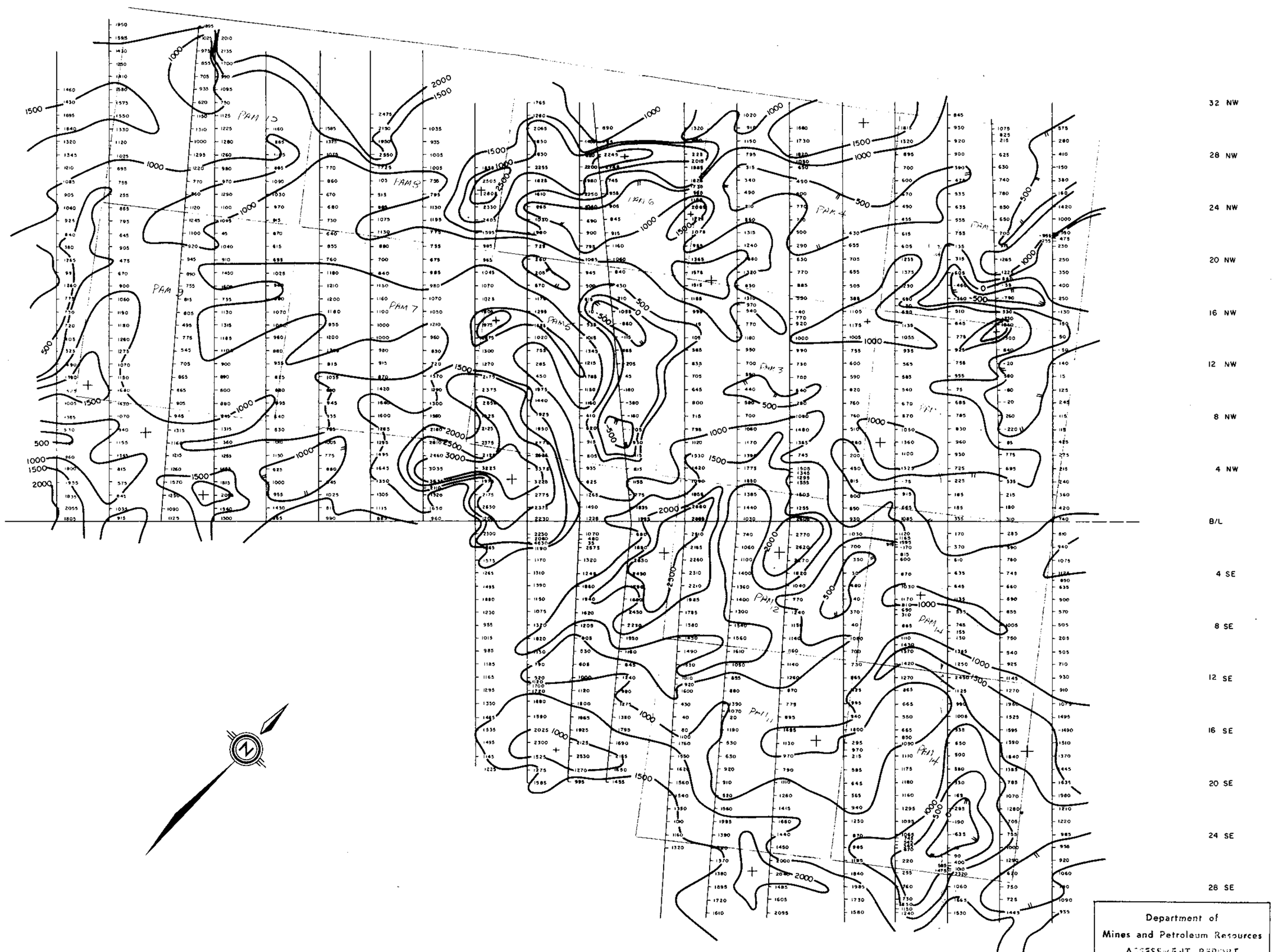
.....2



If a regular pattern of coverage is obtained then values of the PFE or may be plotted at grid points and contoured for various values of "N". In either form a geological evaluation may be made and drilling or trenching programs designed.

Physical Principle:

Induced Polarization surveying was originally developed to provide a means of exploring for low sulphide content copper zones. Its use has been expanded to include any sulphide deposit and some mineral zones where a few of the metal oxides may be important. The method depends on an ability to impose an "overvoltage" on certain mineral occurrences by applying a D.C. charge or low frequency A.C. current to the near surface material. The decay of the "overvoltage" may be observed after the current is cut off, in the first instance, or a directly related effect known as the Frequency Effect measured by comparing two low frequency A.C. resistivities. In either case, a measure of the materials ability to accept an " Induced Polarization " is related to its content of metallic sulphides or oxides, graphite or some clay minerals. I.P. has been successfully used in coal exploration however the phenomenon measured is not clearly understood as yet.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4997 MAP #3

4997
M3

PROFESSIONAL ENGINEER
BRITISH COLUMBIA

Expiry Date: May 28, 1974

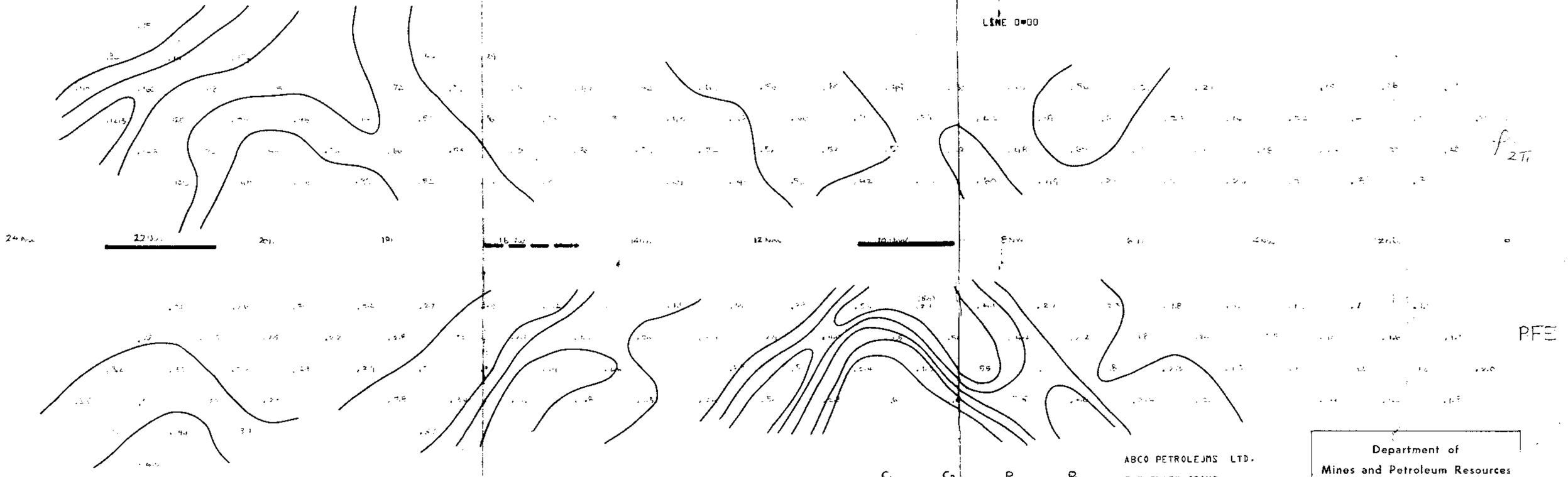
ABCO PETROLEUM LTD.

PAM CLAIMS GROUP
DUFFY CREEK AREA
KAMLOOPS, BRITISH COLUMBIA

MAGNETOMETER SURVEY

Scale: 1" = 400' Contour Interval: 500 gamma
October 1973

DOMINION EXPLORATION SERVICES LTD.



$f_{2\pi}$

PFE

C_1 C_2 P_1 P_2

a — na — a

Di-Pole - Di-Pole array
C_1, C_2 - Current electrodes
P_1, P_2 - Potential electrodes
a = 100 (hundred) feet
n = 1, 2, 3, and 4

PROFESSIONAL ENGINEER
Expiry Date: May 28, 1978

ABCO PETROLEUMS LTD.
PAM CLAIM GROUP
KAMLOOPS MINING DIVISION, B.C.
INDUCED POLARIZATION PROFILE

Positive I.P. anomaly - surface trace
Possible I.P. anomaly - surface trace

Department of
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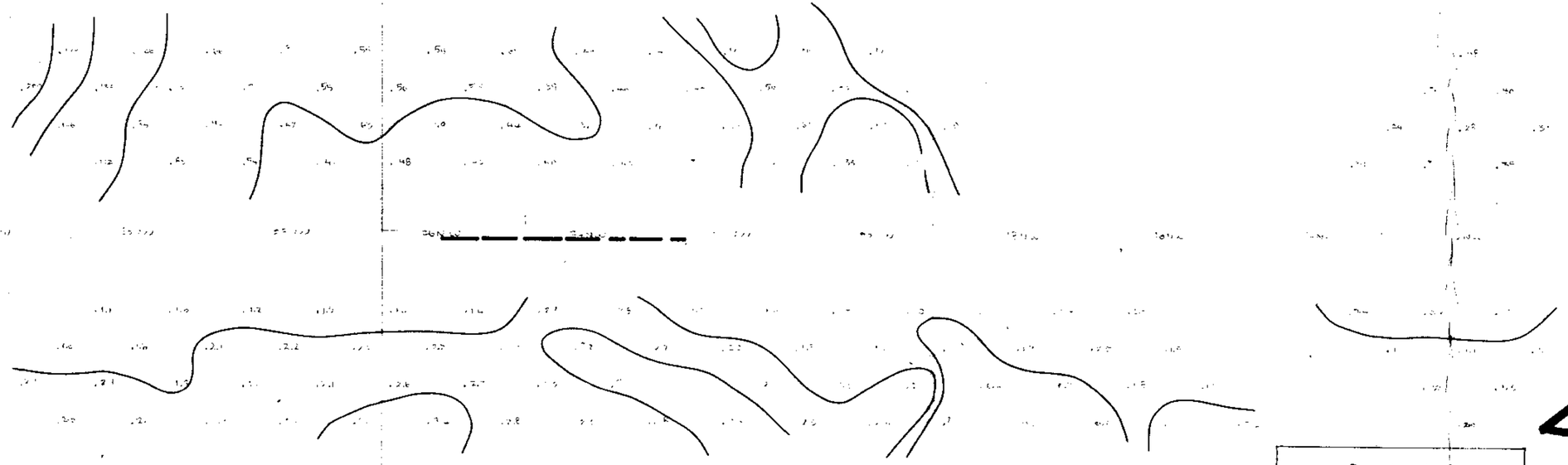
ASSESSMENT REPORT
Scale 1 inch = 100 feet
NO. 4997 MAP #4

4997 M4

LINE 12 + 00 S.W.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4997 MAP #5

ABCO PETROLEUMS LTD.
PAM CLAIM GROUP
KAMLOOPS MINING DIVISION B.C. Scale 1 inch = 100 feet
INDUCED POLARIZATION PROFILE
Possible I.P. anomly urface trace

Expiry Date: May 20, 1974

C_1 C_2 na P_1 P_2
a a

Di-Pole - Di-Pole array
C_1, C_2 - Current electrodes
P_1, P_2 - Potential electrodes
a = 100 feet
n = 1, 2, 3 and 4

PFE
4997
M4