

5411 - A

93A/3W

Wk 1-6, 8, 9, 11, 16, 34

GEOPHYSICAL REPORT
EXPLORAM MINERALS LTD.

on
MAGNETOMETER
and
INDUCED POLARIZATION SURVEYS

W.L. Mineral Claims 8 miles SE of Horsefly,
B.C., Cariboo Mining Division.
Lat. $52^{\circ}14'30''N$ Long. $121^{\circ}22'W$ N.T.S. 93 A/3

AUTHOR: Glen E. White, B.Sc., Geophysicist
P. ENG: E. D. Cruz

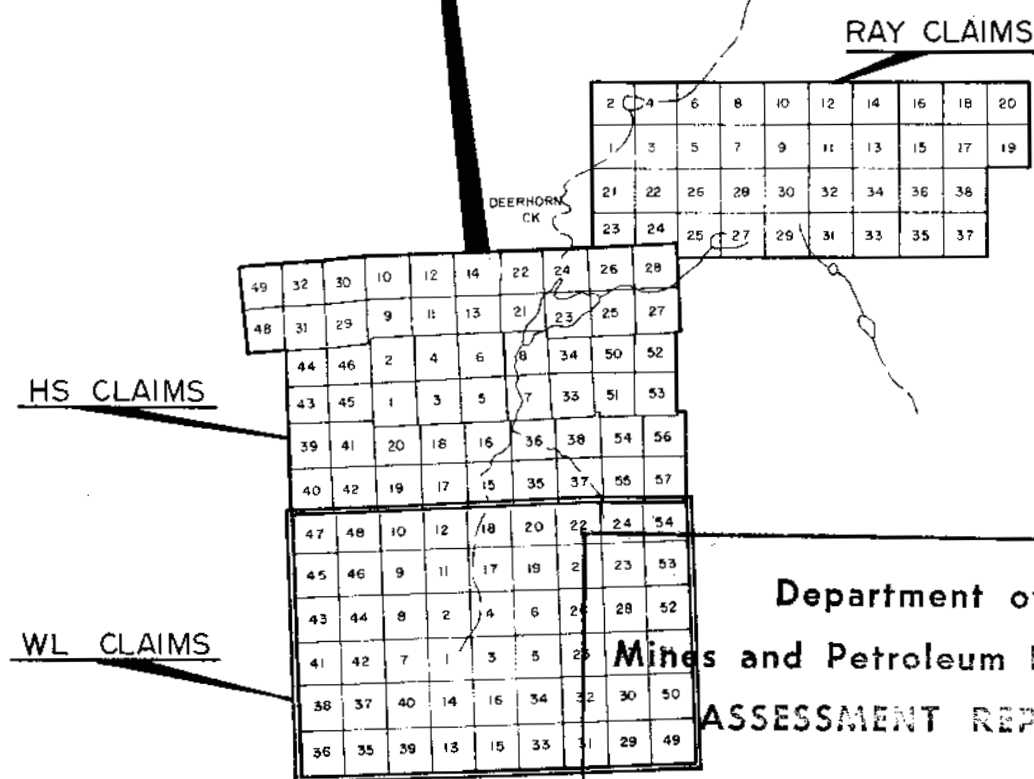
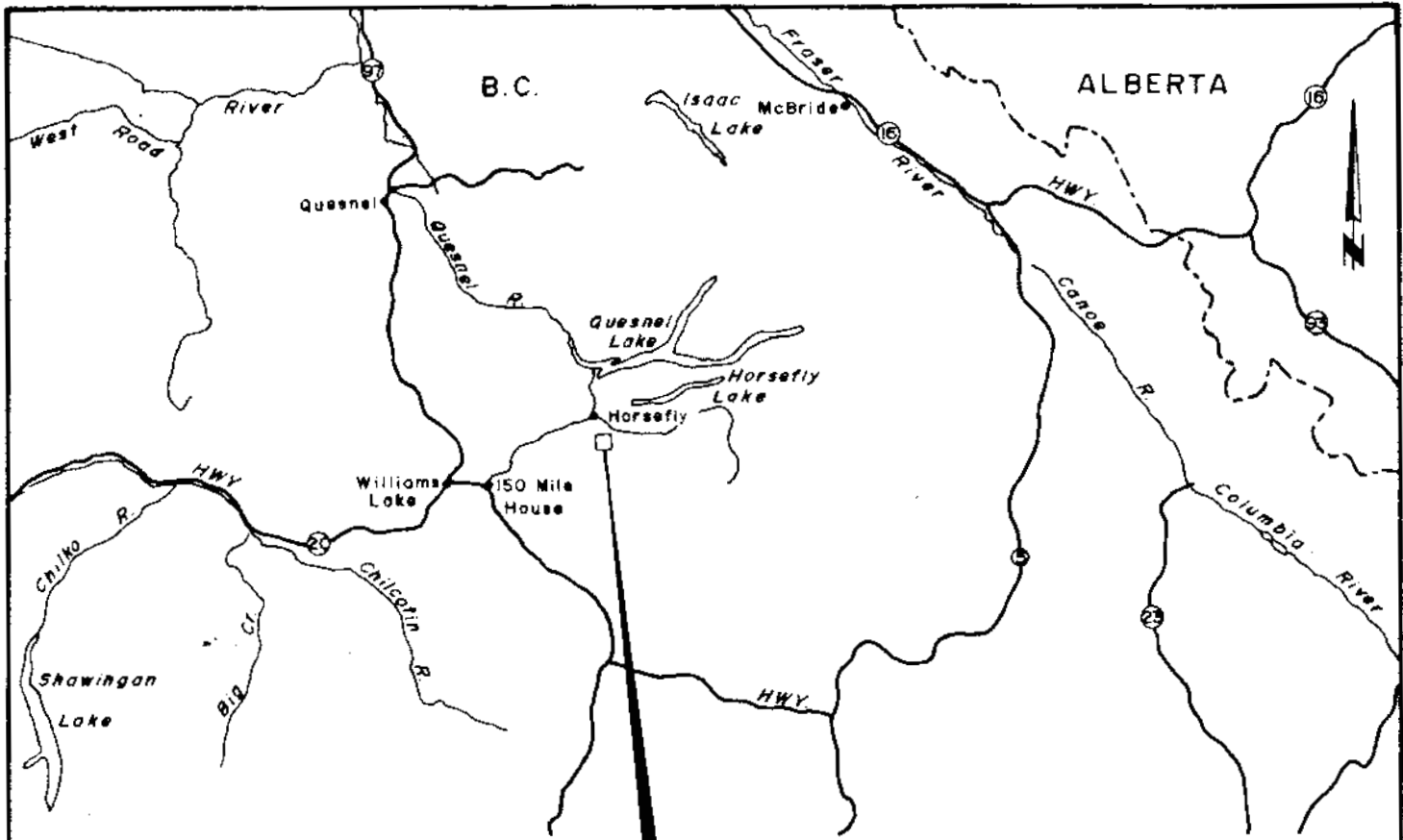
DATE OF WORK: August 30 - September 12, 1974

DATE OF REPORT: December 5, 1974

93A/3W

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5411 MAP



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5411 MAP #1

EXPLORAM MINERALS LTD.
WL CLAIMS
LOCATION AND CLAIMS MAP

5411

SCALE LOCATION MAP 1" = 40 MILES APPROX CLAIMS MAP 1/4" = 1500 APPROX

MAP 1

John C. White
geophysical consulting
&
mining ltd.

DEC. 2, 1974
FIG. 1

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- Plate 1 - Detail Profile - Line 16N

INTRODUCTION

In the interim August 30 - September 12, 1974, Glen E. White Geophysical Consulting & Services Ltd. conducted a program of ground magnetometer and induced polarization surveying over a portion of the WL claim group on behalf of Exploram Minerals Ltd.

PROPERTY

The WL claim group consists of 54 full sized contiguous mineral claims numbered WL 1-54 inclusive. The survey area discussed in this report covered portions of mineral claims WL 1-6, 8, 9, 11, 16 and 34. The relationship of the various claims is illustrated in Figure 1.

LOCATION AND ACCESS

The WL mineral claims are located some 8 miles southeast of Horsefly, B.C. on the headwaters of Deerhorn Creek between Starlike Lake and Cossack Lake, Cariboo Mining Division, N.T.S. 93 A/3, Latitude $52^{\circ}14'30''N$, Longitude $121^{\circ}22'N$.

Access to the survey area is by a rough 4x4 cat road from the Starlike Lake road via Mica Lake.

GENERAL GEOLOGY

The general geology of the survey area, as shown on Geological Map 3-1961, Quesnel Lake, consists of volcanics and sediments of Upper Triassic or Jurassic age which have been intruded by various compositions of granodiorite, monzonite and syenite intrusives of Jurassic and/or Cretaceous age. The area is largely covered by glacial deposits and recent alluvium.

SURVEY SPECIFICATIONS

Survey Grid

The baseline for this survey is line 144E which extends southwestward from the HS mineral claims. Lines were turned off at right angles every 400 feet in a northwest-southeast direction (approximately 295°) and numbered at 100 foot intervals.

Some 7 line miles of magnetometer and 5 line miles of induced polarization surveying were conducted.

Electrode Array

The data was obtained using the "three electrode" array. This array consists of one current (C_1) and two potential electrodes (P_1 and P_2) which are moved together along the survey line at a fixed distance apart which is known as the "a" spacing. The second current electrode (C_2) is placed at "infinity". This survey was conducted with an "a" spacing of 400 feet. Detailing was completed with "a" spacings of 200 and 600 feet. In each case, $n = 1$.

Induced Polarization System

The equipment used on this survey was the Huntec pulse-type unit. Power was obtained from a JLO motor, coupled to a 2.5 KW 400 cycle three-phase generator, providing a maximum of 2.5 KW D.C. to the ground. The cycling rate is 1.5 seconds "current on" and 0.5 seconds "current off", the pulses reversing continuously in polarity. Power was transmitted to the ground through two current electrodes C_1 and C_2 , and measurements taken across two potential electrodes, P_1 and P_2 .

The data recorded in the field consist of careful measurements of the current (I) in amperes flowing through electrodes C_1 and C_2 , the primary voltage (V_p) appearing between electrodes P_1 and P_2 during the "current on" part of the cycle, and the secondary voltage (V_s) appearing between electrodes P_1 and P_2 during the "current off" part of the cycle.

The apparent chargeability (M_a), in milliseconds, is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity, in ohm-feet, is proportional to the ratio of the primary voltage to the measured current, the proportionality factor depending on the geometry of the electrode array used. The chargeability and resistivity obtained are called "apparent" as they are values which that portion of the earth sampled by the array would have if it were homogeneous. As the earth sampled is usually inhomogeneous, the calculated apparent chargeability and apparent resistivity are functions of the actual chargeabilities and resistivities of the rocks sampled and of the geometry of these rocks.

Magnetometer Survey

The magnetometer survey was conducted using a Scintrex MF-1 Fluxgate magnetometer. This instrument measures the vertical component of the earth's magnetic field to an accuracy of 10 gammas. Corrections for diurnal variation were made by tying into previously established base stations at intervals not exceeding one and one half hours. Readings were taken at 100 foot intervals along the traverse lines.

DISCUSSION OF RESULTS

The apparent resistivity in ohm-feet, the percent chargeability in milliseconds, and the vertical magnetic intensity in gammas, are illustrated in Figures 2-4 respectively.

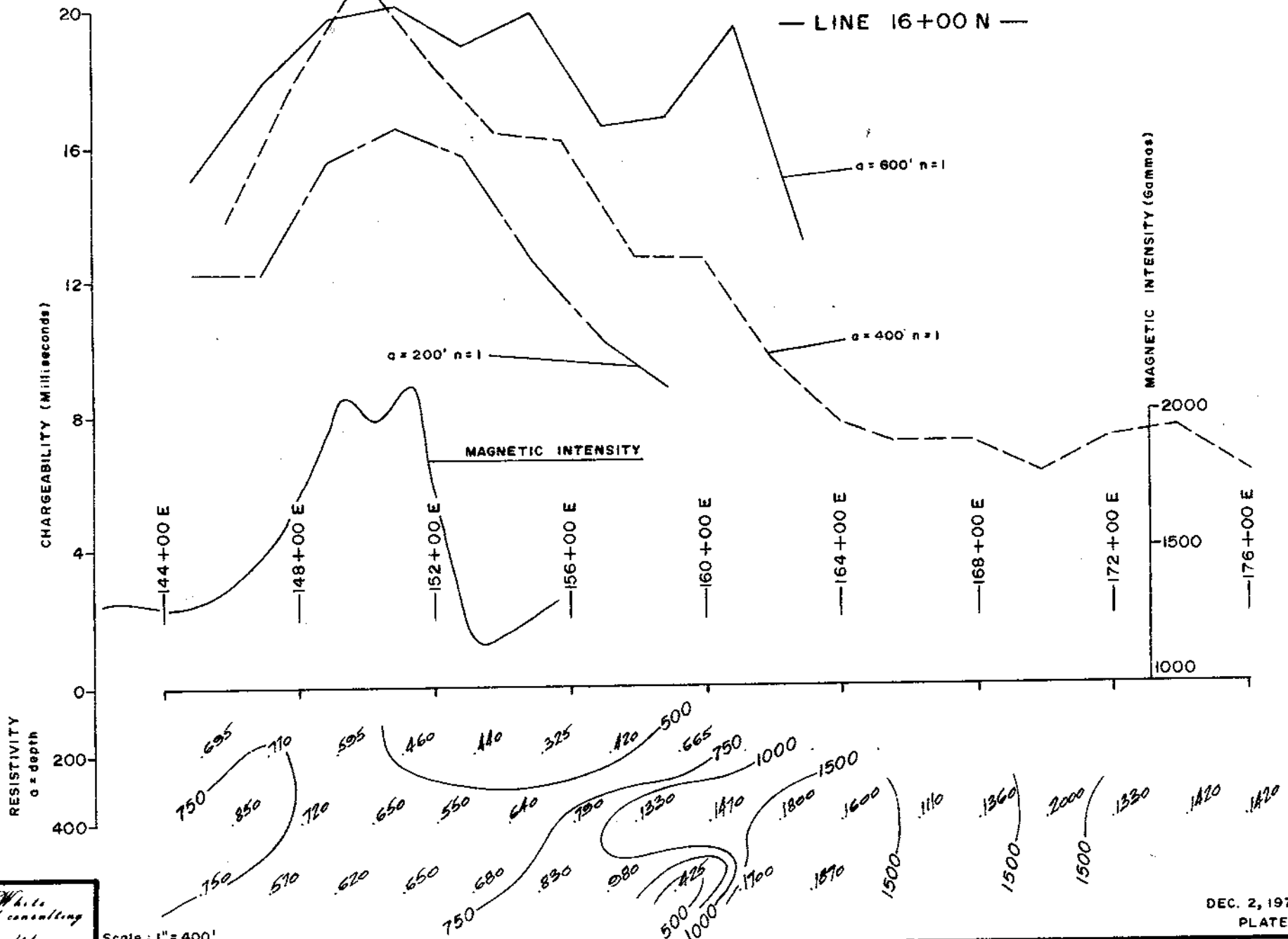
The apparent resistivity data showed only moderate variations from a low of 30 ohm-feet to a high of 1060 ohm-feet. This area in general is an area of low resistivity likely reflecting a mantle of clay-bearing glacial alluvium. The apparent resistivity data is largely a function of the near surface overburden cover, type of overburden and depth to bedrock.

The chargeability map, Figure 3, delineates a portion of a strong anomaly which is open to the southwest and northeast. This anomaly reached a high of 24.2 milliseconds above a regional background value of some 3 milliseconds.

EXPLORAM MINERALS LTD.

DETAILED INDUCED POLARIZATION PROFILES

— LINE 16+00 N —



Glen E. White
geophysical consulting
services Ltd.

Scale: 1" = 400'

DEC. 2, 1974
PLATE I

The general anomaly appears to be orientated in a north-east-southwest direction but contains local more north-south directed features as illustrated by the 18 millisecond contour.

The ground magnetometer data located several magnetic anomalies which are biased in a north-northeast to south-southwest direction. Local highs of 3700 and 2875 gammas were recorded; however, values of 2000 gammas and over form the main magnetic ridges above a plateau of some 1100 gammas. A strong magnetic low linear which trends southward from 32N - 168E to 8N - 151E, localizes into a major depression on lines 24 and 28N between stations 158E to 166E. Such a feature is usually associated with a change in rock type.

Correlation of the magnetic and chargeability data reveals that the 18 millisecond contour follows quite closely a strong magnetic ridge which reaches a high of 3700 gammas. Several other magnetic ridges are apparent which have no direct chargeability correlation, though several secondary responses show correlation around the periphery of the main magnetic - chargeability zone.

Both the induced polarization and magnetometer data show the same general northeast-southwest trend. Plate 1 illustrates the geophysical data across line 16N where the direct magnetic - chargeability correlation is readily apparent. An increase in "a" spacing shows an increased chargeability response which would indicate a chargeability source of sizeable dimensions. The larger response of the 600 foot spacing near 161E is likely due to side effects from the north.

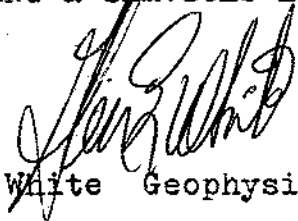
Both the chargeability and magnetic data appear to be offset by northwest-southeast trending linears which likely reflect regional faults. The strong magnetic low which likely represents a change in rock type, is surrounded by high chargeability values, and in the area of line 24N - 163E there is a coincidence of low magnetic and high chargeability intensities.

CONCLUSION AND RECOMMENDATIONS

A magnetometer and an induced polarization survey were completed over a portion of the WL mineral claims, Horsefly area, Cariboo Mining Division during the summer of 1974 on behalf of Exploram Minerals Ltd.

The geophysical surveys located a coincident, strongly magnetic - chargeability zone which is peripheral to a pronounced magnetic depression. This depression may represent a change in rock type. Both the magnetic and chargeability data trend in a general northeast-southwest direction and show several other areas of coincidence between secondary magnetic and chargeability responses. Thus, it is recommended that the diamond drilling of the magnetic ridges be orientated more in a northwest-southeast direction to intersect the trend of the magnetic and chargeability data at right angles. It is also suggested that the magnetic depression be tested, particularly in the area of line 24N - 163E where there is excellent chargeability correlation.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.



Glen E. White Geophysicist

STATEMENT OF QUALIFICATIONS

Name: WHITE, Glen E.

Profession: Geophysicist

Education: B.Sc. Geophysics - Geology
University of British Columbia

Professional Associations: Associate member of Society of Exploration Geophysicists.

Active member B.C. Society of Mining Geophysicists.

Experience: Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass.

Two years Mining Geophysicist with Sulmac Explorations Ltd. and Airborne Geophysics with Spartan Air Services Ltd.

One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates.

Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions, with Geo-X Surveys Ltd.

Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd.

Three years Consulting Geophysicist.

Active experience in all Geologic provinces of Canada.

A P P E N D I X

Instrument Specifications

INDUCED POLARIZATION SYSTEM

A. Instruments

- (a) Type - Pulse
- (b) Make - Hunttec
- (c) Serial No. - transmitter #107 - receiver #207

B. Specifications

- (a) Size and Power - 2.5 KW
- (b) Sensitivity - 300 x 10.5 volts
- (c) Power Sources - 2.5 KW 400 cycle - three-phase generator.
- (d) Power by JLO motor, 5.2 H.P. @ 3,600 R.P.M.
- (e) Timing - electronic, remote and direct.
- (f) Readings - (i) amps (ii) volts primary and secondary
- (g) Calculate (i) Resistivity - ohm-feet
(ii) Chargeability - milliseconds

C. Survey Procedures

- (a) Method - power supplied to mobile probe along TW 18 stranded wire from stationary set-up.
- (b) Configuration - Pole-dipole (three electrode array)
Plot point midway between C₁ and P₁.

D. Presentation

- Contour Maps (i) Chargeability - milliseconds
(ii) Resistivity - ohm-feet

A P P E N D I X

Instrument Specifications

MAGNETOMETER

- A. Instrument
 - (a) Type - Fluxgate
 - (b) Make - Sharpe MF-1

- B. Specifications
 - (a) Measurement - Vertical Magnetic Field
 - (b) Range - ± 100 K gammas in 5 ranges
 - (c) Sensitivity - Maximum 20 gammas per scale division
 - (d) Accuracy - ± 10 gammas

- C. Survey Procedures
 - (a) Method - One and one half hour loops
 - (b) Corrections - (i) Base
(ii) Diurnal
 - (c) Station relationship - each station read for intensity of vertical magnetic field.


C E R T I F I C A T E

I, Ernesto D. Cruz, DO HEREBY CERTIFY AS FOLLOWS:

- (1) That I am a Consulting Mining Engineer and reside at 8596 Terrace Dr., Delta, B.C.
- (2) That I am a Graduate of Mapua Institute of Technology Phillipines (B.A.Sc.) and University of Washington (M.A.Sc.) in the Faculty of Mining Engineering.
- (3) That I am a registered P. ENG in the association of Professional Engineers in the province of British Columbia.
- (4) That I have practised geological engineering for eleven (11) years.
- (5) That I have reviewed a report dated December 5, 1974 based on work conducted by Glen E. White Geophysical Consulting and Services Ltd. under the supervision of Glen E. White, B.Sc., Geophysicist, and concur with the findings therein.
- (6) That this report consists of 9 typewritten pages and two maps.
- (7) That I have no interest directly or indirectly in the WL mineral claims or the securities of Exploram Minerals Ltd. nor do I expect to acquire or receive any.

DATED at Vancouver, British Columbia, this 5th day of December, 1974.

ERNESTO D. CRUZ, P. ENG


Ernesto D. Cruz
Ernesto D. Cruz, P. ENG

DOMINION OF CANADA:
 PROVINCE OF BRITISH COLUMBIA.
 To Wit:

In the Matter of Linecutting and
 Geophysical Surveys WL mineral Claims

I, Glen E. White

of Glen E. White Geophysical Consulting & Services Ltd.

in the Province of British Columbia, do solemnly declare that the costs for the above surveys were as follows:

<u>PERSONNEL</u>	<u>PERIOD</u>	<u>WAGES</u>	<u>TOTAL</u>
T. Ashworth.....	Aug. 30 - Sept. 12/74.....	\$75/day.....	\$1050.00
B. Morrison	"....."	60/day.....	840.00
M. Griffin.....	"....."	55/day.....	770.00
O. Schmid.....	"....."	55/day.....	770.00
Meals and Accomodations.....			1120.00
Vehicle - 4x4 including gas.....			420.00
Instrument lease - I.P.....			910.00
- Magnetometer.....			210.00
Materials.....			30.00
Interpretation Maps and Report.....			650.00
Total.....			<u>\$6770.00</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the
 of _____, in the
 Province of British Columbia, this
 VANCOUVER, B. C.
 day of _____, A.D.



DEC 12 1974
[Signature]
 Sub-Mining Recorder

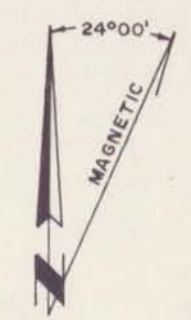
A Commissioner for taking Affidavits for British Columbia or
 A Notary Public in and for the Province of British Columbia

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 5411 MAP _____

121°22'

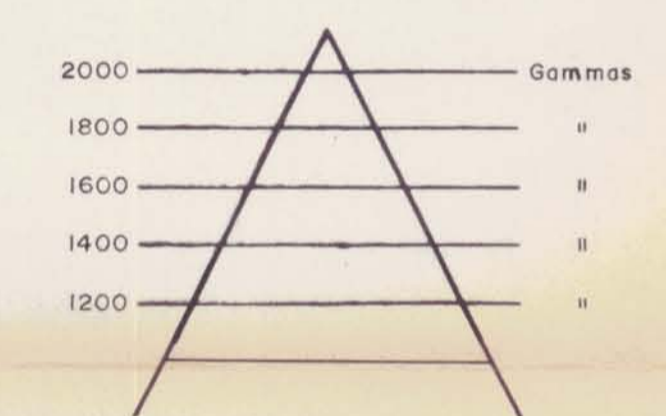


LEGEND

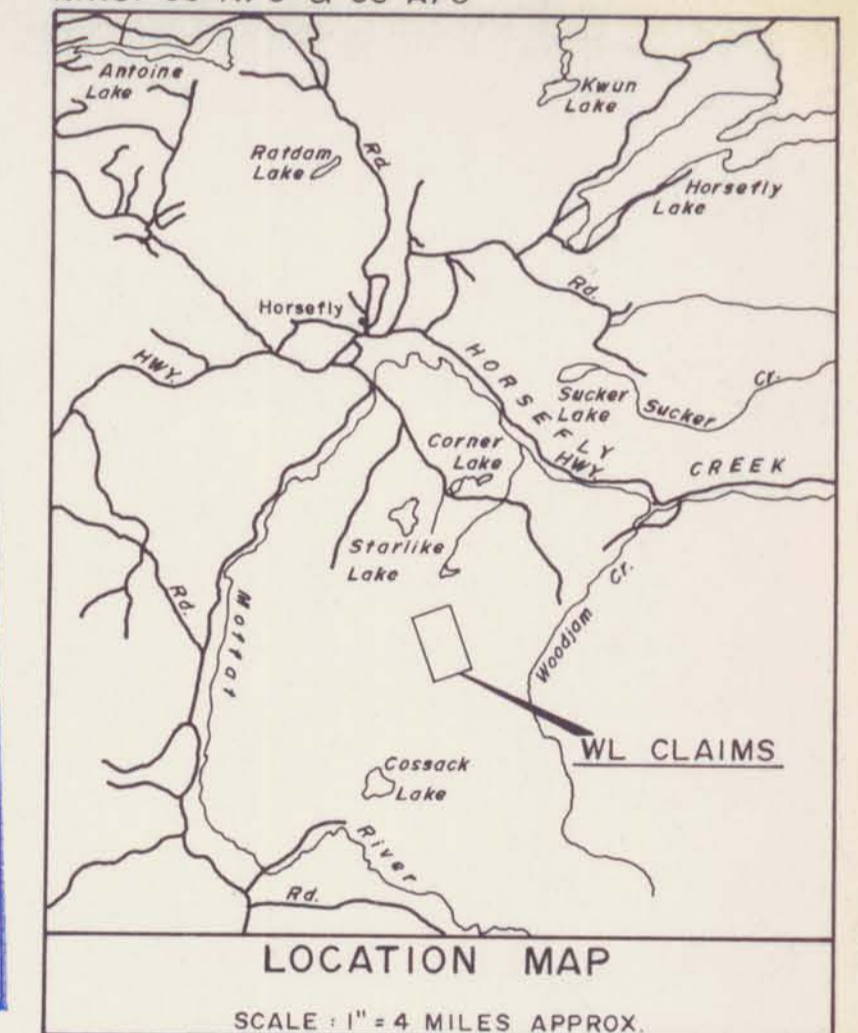
- Contour Line, Contour Interval: 800, 1000, 1200, 1400, 1600, 1800, 2000, 2200 Gammas
- Stations
- Outline of Claims
- Claim Posts
- Unpaved Roads

INSTRUMENT: SCINTREX MF-1 FLUXGATE

MAGNETIC KEY

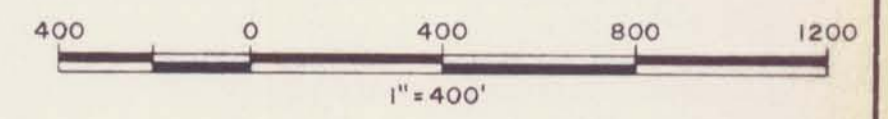


NTS 93 A/3 & 93 A/6



LOCATION MAP

SCALE: 1" = 4 MILES APPROX.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5411 MAP #4

5411-A
MAP 4

EXPLORAM MINERALS LTD.	
WL CLAIMS	
CARIBOO MINING DIVISION - BRITISH COLUMBIA	
GEOPHYSICAL MAP	
VERTICAL MAGNETIC INTENSITY (Gammas)	
Glen E. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: CHECKED BY: DATE: DEC. 2, 1974 FIG. No.: 4

To Accompany Geophysical Report on
THE WL CLAIM GROUP
Date: December 17, 1974
By: GLEN E. WHITE - B.S. GEOPHYSICIST

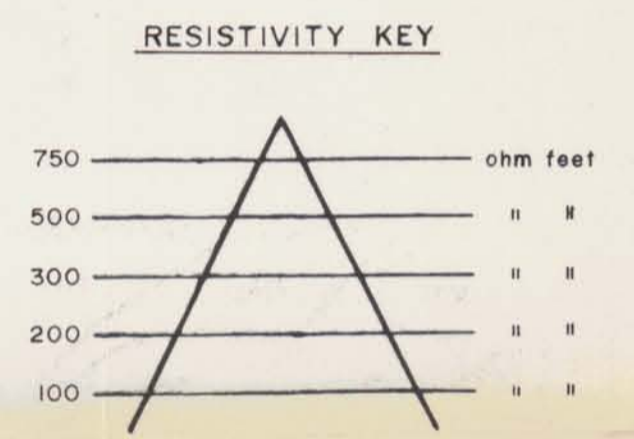
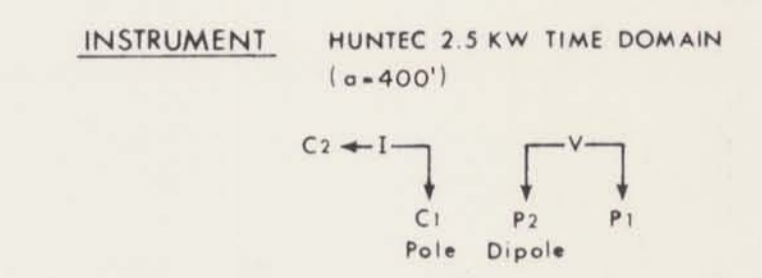
121°22'

52°14'30"

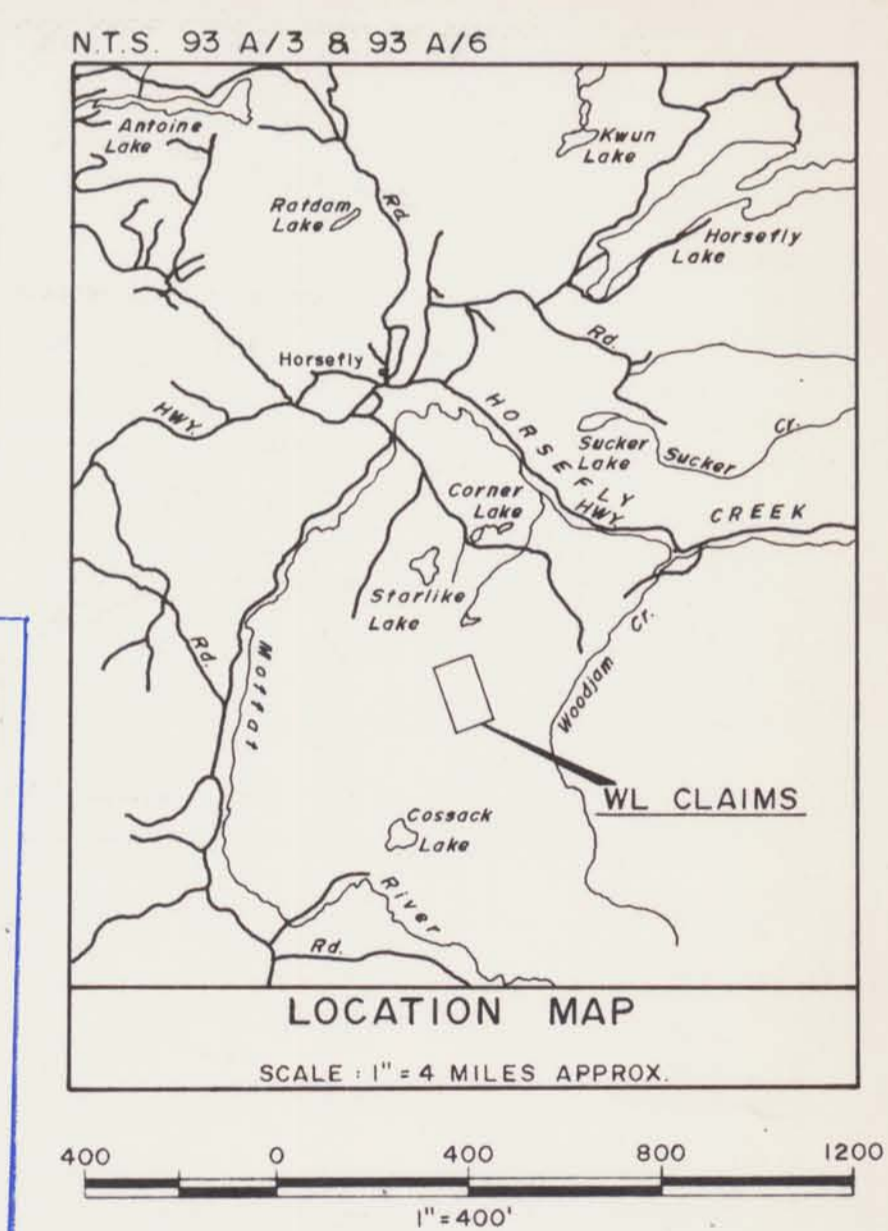




- LEGEND**
- Contour Line, Contour Interval: 100, 200, 300, 500, 750 ohm feet
 - Stations
 - - - Outline of Claims
 - Claim Posts
 - == Unpaved Roads



NOTE: CONTOURED LOGARITHMICALLY



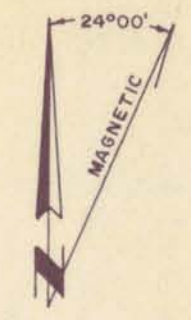
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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5411 MAP #2

5411-A
MAP 2

EXPLORAM MINERALS LTD.	
WL CLAIMS	
CARIBOO MINING DIVISION - BRITISH COLUMBIA	
GEOPHYSICAL MAP	
INDUCED POLARIZATION	
APPARENT RESISTIVITY (ohm feet)	
Glenn E. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: CHECKED BY: DATE: DEC. 2, 1974 FIG No.: 2

To Accompany Geophysical Report on
THE WILLOW GROUP
Date: Dec 2, 1974
By: GLEN E. WHITE
Geophysicist

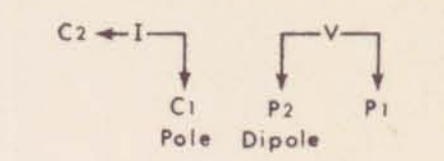
121°22'



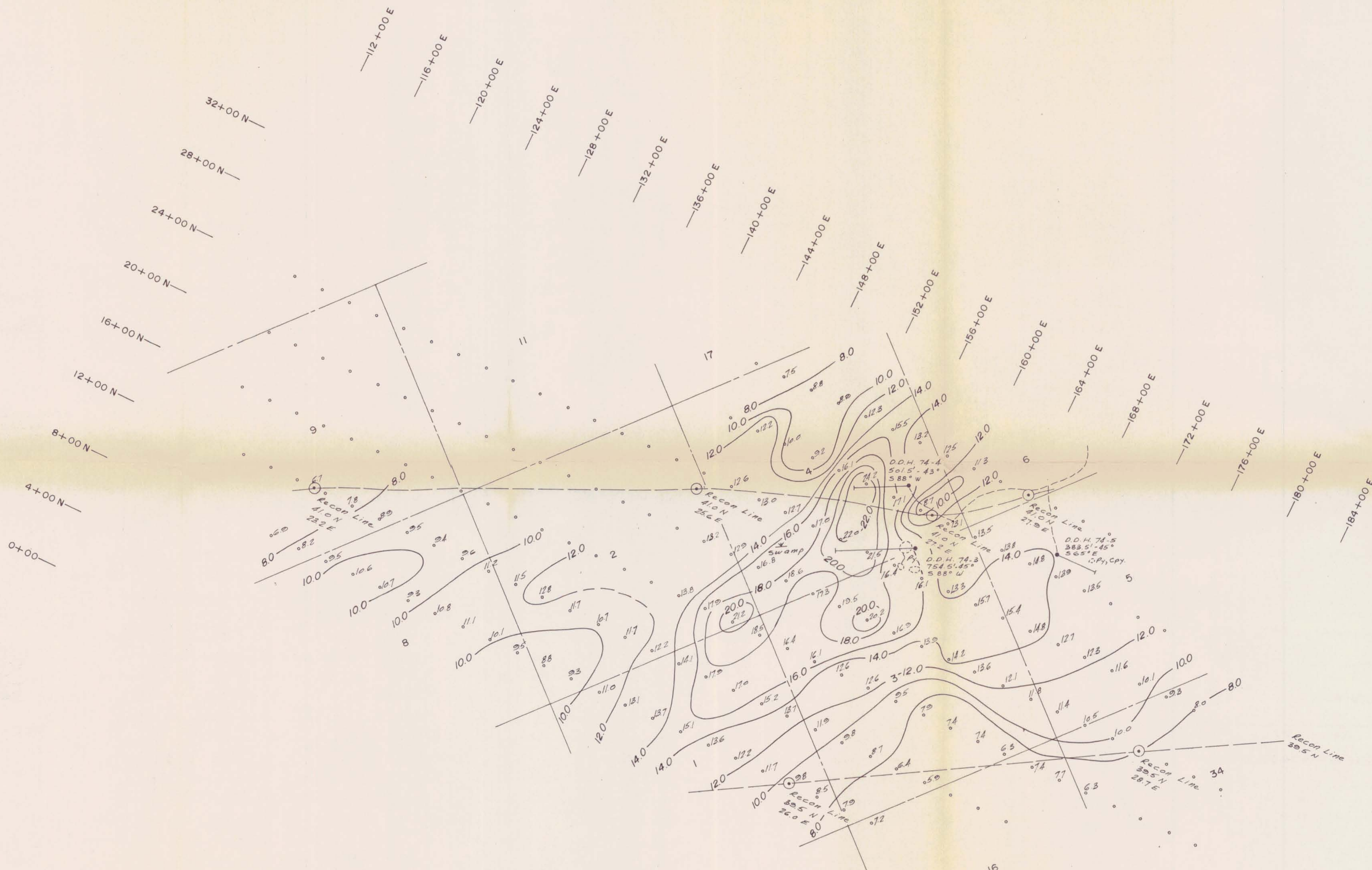
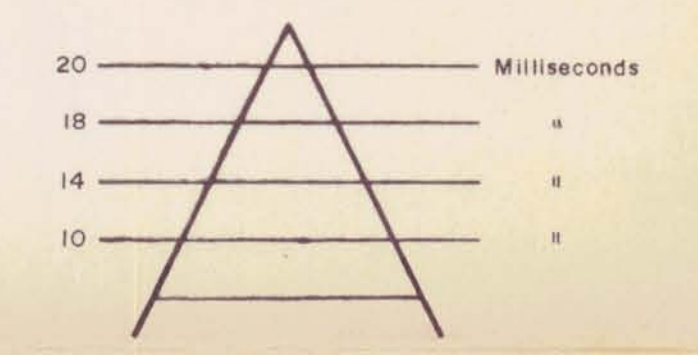
LEGEND

- Contour Line, Contour Interval: 8,10,12,14,16,18,20,22 Milliseconds
- Stations
- Outline of Claims
- Claim Posts
- Unpaved Roads

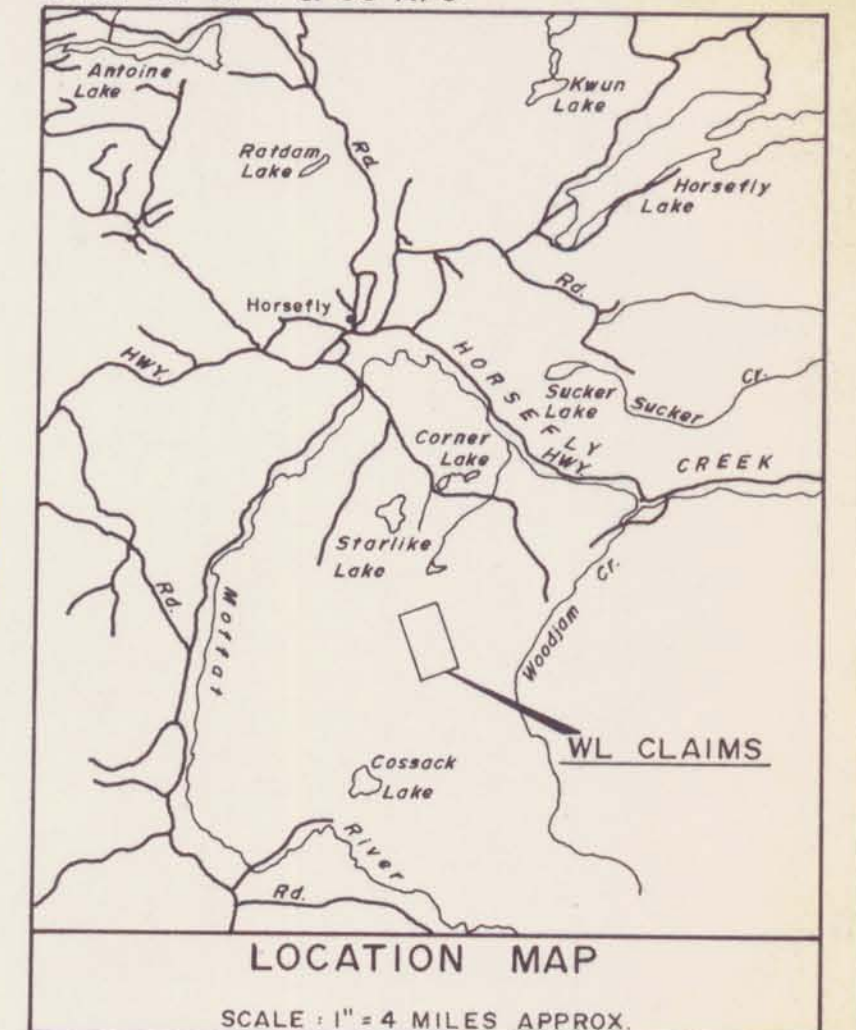
INSTRUMENT HUNTEC 2.5 KW TIME DOMAIN (α=400')



CHARGEABILITY KEY

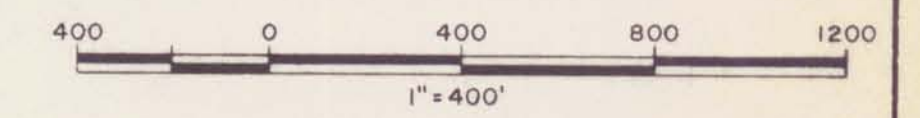


NTS 93 A/3 & 93 A/6



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5411 MAP #3

**S411-A
MAP3**



EXPLORAM MINERALS LTD.
 WL CLAIMS
 CARIBOO MINING DIVISION - BRITISH COLUMBIA
 GEOPHYSICAL MAP
 INDUCED POLARIZATION
 PERCENT CHARGEABILITY (Milliseconds)

<i>Glen E. White</i>	INTERPRETED BY: G.E.W.
<i>Glen E. White</i>	DRAWN BY:
<i>Glen E. White</i>	CHECKED BY:
<i>Glen E. White</i>	DATE: DEC. 2, 1974
<i>Glen E. White</i>	FIG. No.: 3

To Accompany Geophysical Report on
THE WL CLAIM GROUP
Date: December 15, 1974
By: GLEN E. WHITE - B.S. Geophysicist

121°22'