



42A12NE8903 2.15269 LOVELAND

010

GEOPHYSICAL SURVEY  
property of  
**PLACER DOME INC.**

#491 KAMISKOTIA RIVER Project  
Loveland Township  
Province of Ontario  
November 1992

P. Lortie            R. Turcotte

92-873

92-873



42A12NE8903 2.15269 LOVELAND

010C

-i-

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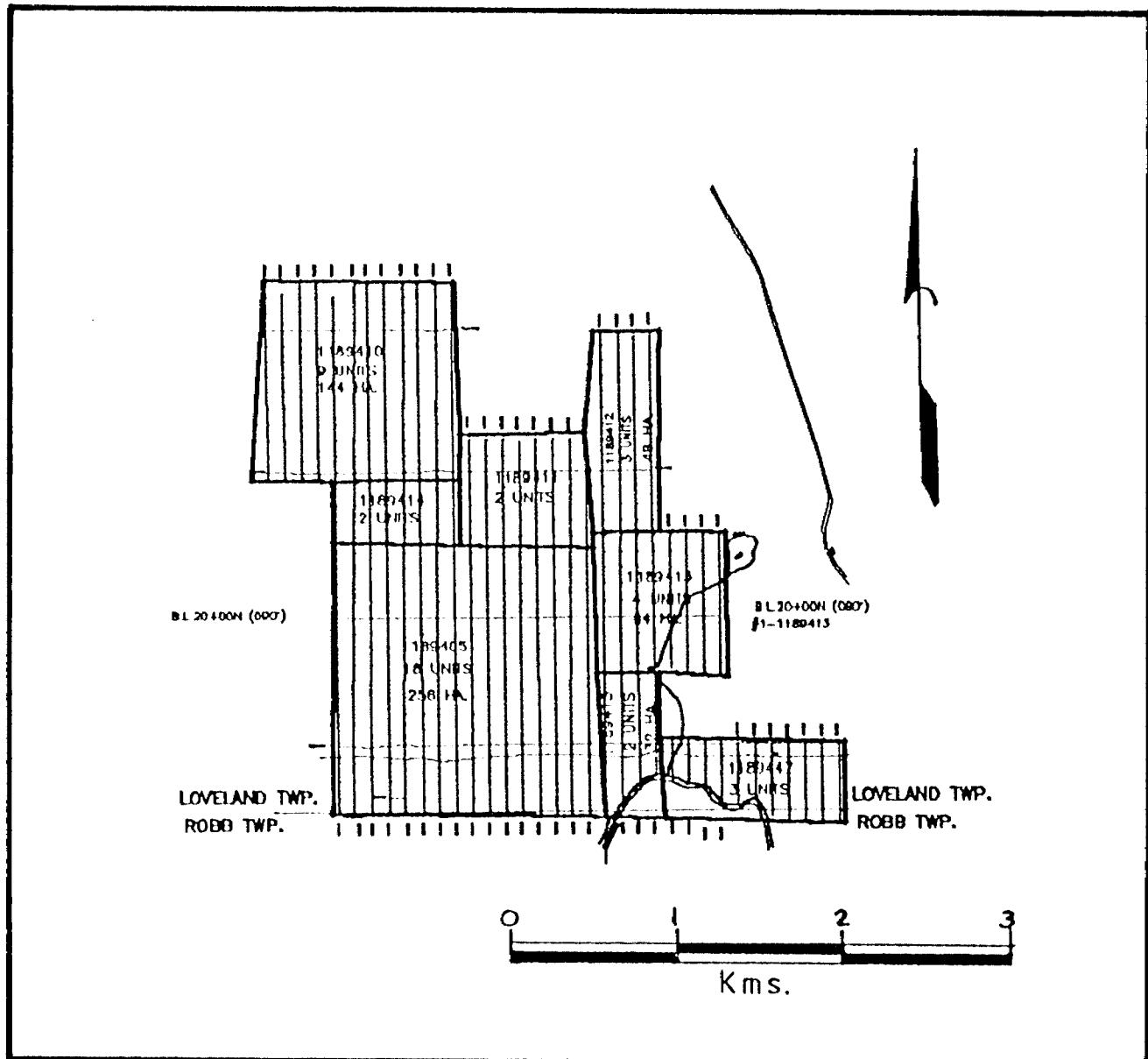
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DRAWING NO.	MAGNETIC SURVEY
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1.1	Total Field Contours
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**PLACER DOME INC.**  
**#491 KAMISKOTIA RIVER Project**  
Figure #1: Index of claims and survey area

## INTRODUCTION

In September 1992, a magnetic survey was carried out on a property owned by PLACER DOME INC., #491 KAMISKOTIA RIVER Project, Province of Ontario.

This survey was designed to locate horizons and/or structures favorable for base metal or gold deposition.

## PROPERTY, LOCATION AND ACCESS

The property is located approximately 30 km to the WNW of the town of Timmins and covers the southern part of Loveland Township, Province of Ontario.

This property is easily accessible via trails taken from a secondary road off to the North of Timmins, which road is located to the East of the property.

The property claim numbers and the area covered by this survey, shown in figure #1 of the present report, have been registered with the Ministry of Northern Development and Mines of Ontario.

## GEOPHYSICAL SURVEY

A total magnetic field survey was carried out on part of the property on September 16 to 21, 1992. A total of 77.8 km was covered by the magnetic survey using a GEM magnetometer, model GSM-19.

## SURVEY SPECIFICATIONS

The magnetic survey was carried out along grid lines oriented N-S and cut at a 100-metre interval. The grid lines were chained and stations marked every 25 metres.

The magnetic readings were taken with a portable magnetometer operating with the Overhauser sensor principle. The total magnetic field was measured every two seconds in a continuous reading mode with a precision of 0.1 nanoTesla (nT). The readings were systematically controlled for location every 12.5 metres. The magnetometer was operated with the sensor mounted on top of a backpack frame. The noise envelope is estimated at 5 nT after a short wavelength filter was applied to remove noisy spikes.

A base station magnetometer measuring the total magnetic field every 20 seconds was used as a reference for correction of the diurnal variation.

## RESULTS AND INTERPRETATION

The magnetic relief is moderately active with small variations of the observed total field amplitude. An exception to this is present in the northwestern part of the property where a broad zone of positive magnetic anomalies are observed, possibly associated with a sequence of foliated to massive tonalitic rocks.



The magnetic grain is also dominated by series of narrow and continuous anomalies of slightly higher magnetic susceptibility, which anomalies are possibly associated with mafic intrusive rocks such as diabase dykes. There appear to be two or three generations of intrusive rocks with preferred orientations of NW-SE, WNW-ESE, and N-S. These orientations are in sharp contrast to the broad magnetic zone which strikes NE-SW.

The general magnetic background ranges around 58550 nanoTeslas (nT), with anomalous values from less than a 100 to more than 1000 nT above background. With the exception of the above anomalies, the general magnetic grain of the property is dominated by lithologies of felsic to intermediate composition, probably oriented ESE-WNW to E-W and characterized by little or no magnetic susceptibility contrasts.

The structural and lithological features of the property are not easily interpreted because of the little contrast in the magnetic susceptibility of the rocks and the presence of several narrow anomalies. However, major structural orientations are defined by the intrusive rocks which were certainly injected along late weakness planes.

Magnetic gradients of the anomalous sources indicate a moderate overburden thickness of less than 25 metres for most of the survey area. The broad magnetic zone located in the northwestern part of the property is intersected by several late diabase dykes and appears to be constituted by a complex series of narrow magnetic horizons.

## CONCLUSION AND RECOMMENDATIONS

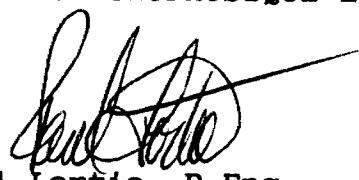
The magnetic survey was successfull in delineating some of the major lithotectonic features of the #491 KAMISKOTIA RIVER Project.

Two to three series of mafic intrusive rocks appear to cross-cut the probable ESE-WNW to E-W strike of the local felsic to intermediate lithologies. The presence of a broad NE-SW striking magnetic zone in the northwestern part of the property is interpreted to be associated with a sequence of tonalitic rocks.

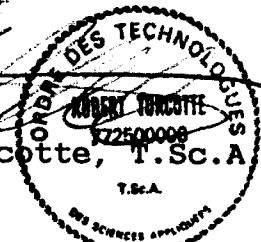
It is recommended to carry out a detail structural and lithologic interpretation of the magnetic results in conjunction with the geologic and geochemical databases of the property.

Respectfully submitted,  
VAL D'OR GEOPHYSIQUE LTD

By:

  
Paul Lortie, P.Eng.  
Geophysicist

And by:

  
Robert Turcotte, T.Sc.A  


## CERTIFICATE

THIS IS TO CERTIFY THAT:

I reside at 681 Boulle, Beloeil, province of Quebec, since 1990.

I am a graduate of Ecole Polytechnique, Universite de Montreal, where I have received a B.Sc.A. in Geological Engineering in 1979.

I have been engaged in exploration geophysics since 1977, have been practicing as a professional engineer since 1979.

I am a member of the Ordre des Ingenieurs du Quebec since 1979.

I am a member of the Society of Exploration Geophysicists, the Prospectors & Developers Association of Canada, the Quebec Prospectors Association, the Association des Professionnels en Geologie et Geophysique du Quebec, the Societe de Geophysique du Quebec and the Canadian Institute of Mining & Metallurgy.

I do not hold nor do I expect to receive an interest of any kind in the claims held by PLACER DOME INC., on the #491 KAMISKOTIA RIVER Project.

Signed this November 4, 1992.

By:



Paul Lortie, P.Eng.  
Geophysicist



## CERTIFICATE

THIS IS TO CERTIFY THAT:

I am a resident of Val d'Or, province of Quebec, since 1977.

I am a technologist graduated from "College du Nord-Ouest", Rouyn-Noranda, Quebec in 1977.

I have been actively engaged in geophysical exploration since 1977 and have acquired a wide range of experience in geophysical methods and techniques.

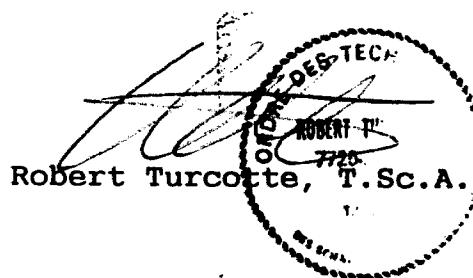
I am a member of "Corporation professionnelle des Technologues des Sciences Appliquees du Quebec" and also a member of the Quebec prospectors association and of the Canadian Institute of Mining and Metallurgy.

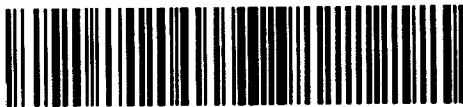
I do not hold nor do I expect to receive an interest of any kind in these claims held by PLACER DOME INC.

Signed in Val d'Or, this November 4, 1992.

By:

Robert Turcotte, T.Sc.A.





42A12NE8903 2.15269 LOVELAND

020

2.15269

INDUCED POLARIZATION SURVEY  
Property of  
PLACER DOME INC.

#491 KAMISKOTIA RIVER Project  
Loveland Township  
Province of Ontario  
November 1992

P. Lortie            R. Turcotte

92-873

## **SUMMARY**

In November 1992, a phase domain induced polarization survey was carried out on 19.9 line-kms of a grid located on a property owned by **PLACER DOME INC., #491 KAMISKOTIA Project, province of Ontario.**

The survey detected only few narrow, very weak and, at places, questionable polarizable sources. The residual amplitudes of the anomalies are less than 2 milliradians above background. The apparent resistivity values are dominated by variations of the overburden thickness and, locally, by the presence of suboutcropping lithologies.





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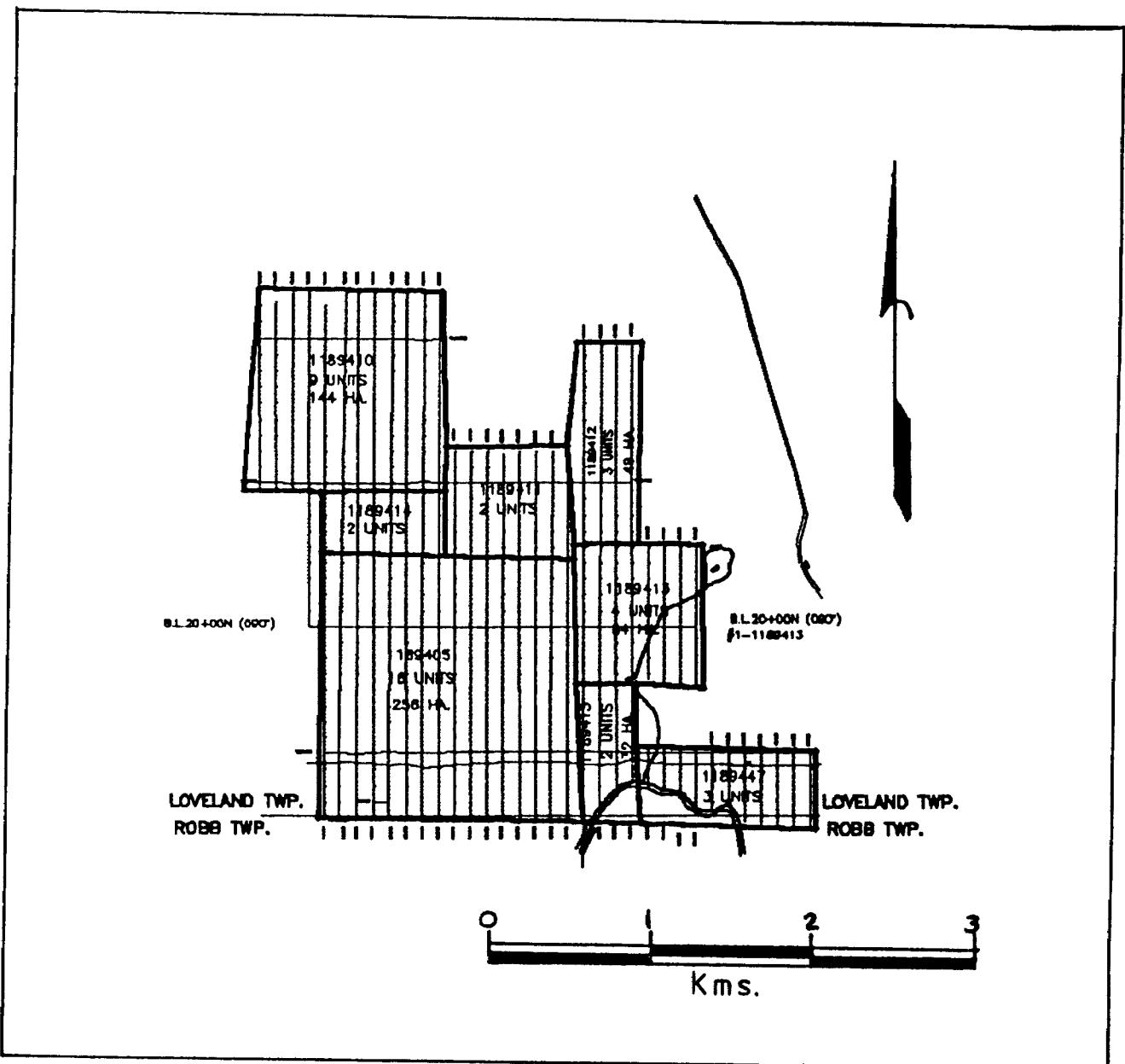
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DRAWING NO.	INDUCED POLARIZATION SURVEY
4.2	Resistivity Contours

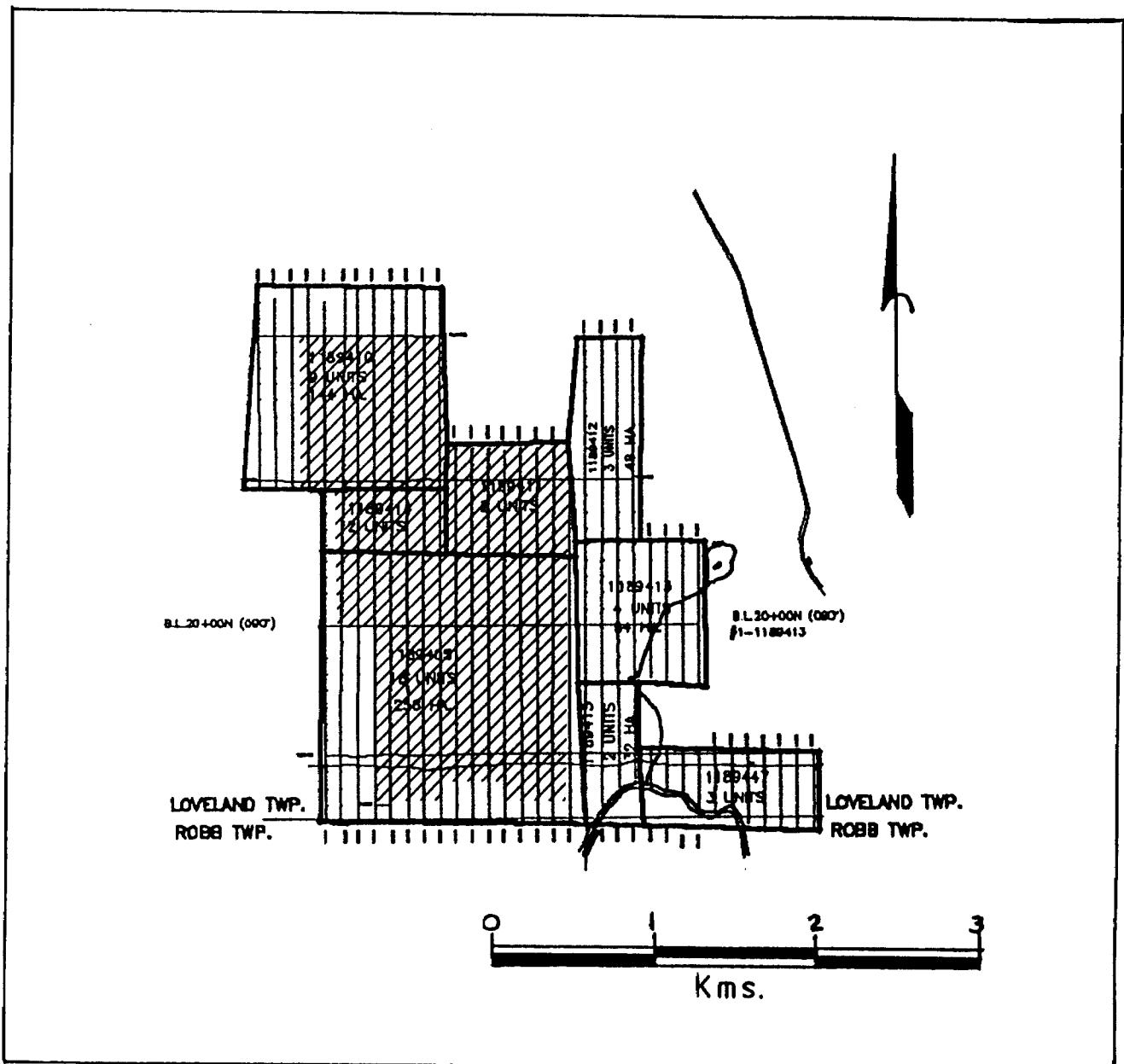




PLACER DOME INC.

#491 KAMISKOTIA RIVER Project

Figure #1: Index of claims



PLACER DOME INC.  
#491 KAMISKOTIA RIVER Project  
Figure #2: Survey area

## INTRODUCTION

In November 1992, an induced polarization survey was carried out on a property owned by **PLACER DOME INC., #491 KAMISKOTIA RIVER Project**, in Loveland Township, province of Ontario.

The survey was designed to locate horizons and/or structures favorable for base metal or gold deposition.

## PROPERTY, LOCATION AND ACCESS

The property is located approximately 30 kms to the WNW of the town of Timmins and covers the southern part of Loveland Township, province of Ontario.

This property is easily accessible via trails taken from a secondary road off to the North of Timmins, which road is located to the East of the property.

The property claims, shown in figure #1, have been registered with the Ministry of Northern Development and Mines of Ontario. The property area covered by this survey is presented in figure #2.

## **GEOPHYSICAL WORK**

The induced polarization survey was conducted during the period of November 3 to 14, 1992, over a total of 19.9 kms using a Phoenix IPT-1/MG-1 transmitter system and a Phoenix IPV-2 receiver.

## **SURVEY SPECIFICATIONS**

The geophysical survey was carried out along grid lines oriented N-S and cut at a 100-metre interval. The lines were chained and stations marked every 25 metres.

The induced polarization survey was done with the dipole-dipole array using an electrode spacing ( $a$ ) of 50 metres and dipole separations ( $n$ ) of 1 to 6. Primary voltage and phase angle values were measured every 50 metres along selected grid lines at an operating frequency of 1 Hertz.

## **RESULTS AND INTERPRETATION**

The apparent resistivities measured in the induced polarization survey are mostly dominated by variations of the overburden thickness and, locally, by suboutcropping lithologies.

Apparent resistivity values range from approximately 70 ohm-metres to slightly more than 700 ohm-metres in area covered by overburden. They reached from 1000 to over 3000 ohm-metres in areas of suboutcropping lithologies with a local peak of more than 6000 ohm-metres on grid line 18+00E near 37+25N.

The measured induced polarization effects are generally defined by background phase values of less than 2 milliradians in areas covered by the overburden, and most often no more than 3 milliradians in areas of suboutcropping lithologies (local peak up to 8 milliradians). Such a low background in polarization is often favorable for the detection of weak anomalies.

However, the results of the induced polarization survey defined only very weak and subtle polarizable sources, several of which could possibly be related to variations in overburden and/or suboutcropping lithologies features. None of the interpreted weak anomalies reached over 6 milliradians in amplitude with residual values of generally less than 1 or 2 milliradians.

It is possible that most polarizable sources are only weakly mineralized and/or very narrow with respect to the electrode spacing of 50 metres. If source width is considered to be the probable cause, it is suggested to carry out a test survey with a shorter electrode spacing (25 metres) over selected targets.

Correlation with the results of a magnetic survey (carried out in September 1992 by Val d'Or Geophysique) indicate that the polarization anomalies are non magnetic.

### CONCLUSION AND RECOMMENDATIONS

The induced polarization survey carried out on the #491 KAMISKOTIA RIVER Project of PLACER DOME INC. detected few very weak polarizable sources which are narrow and non magnetic.

It is suggested to carry out a survey test with a shorter electrode spacing (25 metres) over selected targets to investigate if the 50-metre spacing was indeed too large with respect to the polarizable sources width on this property.

Respectfully submitted,  
VAL D'OR GEOPHYSIQUE LTEE

By:

  
Paul Lortie, P.Eng.  
Geophysicist

and by:

  
Robert Turcotte, T.Sc.A.  
T.S.A  
ORDRE DES TECHNOLOGUES  
772504406  
DES SCIENCES APPLIQUEES



## CERTIFICATE

THIS IS TO CERTIFY THAT:

I reside at 681 Boulle, Beloeil, province of Quebec, since 1990.

I am a graduate of Ecole Polytechnique, Universite de Montreal, where I have received a B.Sc.A. in Geological Engineering in 1979.

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I am a member of the Society of Exploration Geophysicists, the Prospectors & Developers Association of Canada, the Quebec Prospectors Association, the Association des Professionnels en Geologie et Geophysique du Quebec, the Societe de Geophysique du Quebec and the Canadian Institute of Mining & Metallurgy.

I do not hold nor do I expect to receive an interest of any kind in the properties held by **PLACER DOME INC.**, on the **#491 KAMISKOTIA RIVER Project**.

Signed in Val d'Or, this November 25

By:

  
Paul Lortie, P.Eng.  
Geophysicist

## CERTIFICATE

THIS IS TO CERTIFY THAT:

I am a resident of Val d'Or, province of Quebec, since 1977.

I am a technologist graduated from "College du Nord-Ouest", Rouyn-Noranda, Quebec in 1977.

I have been actively engaged in geophysical exploration since 1977 and have acquired a wide range of experience in geophysical methods and techniques.

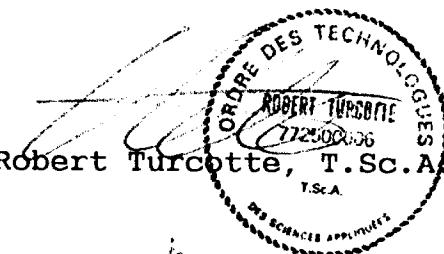
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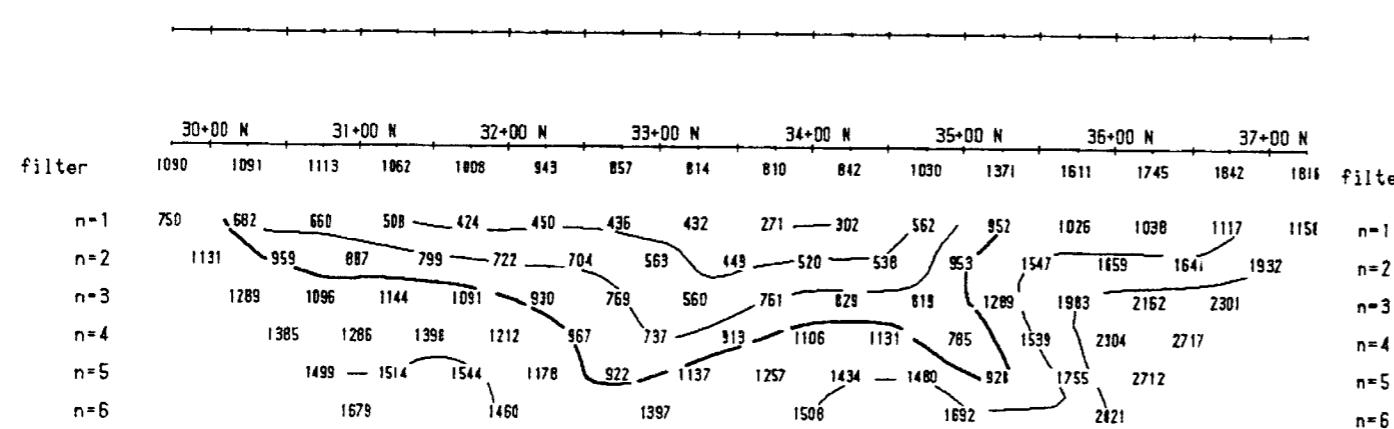
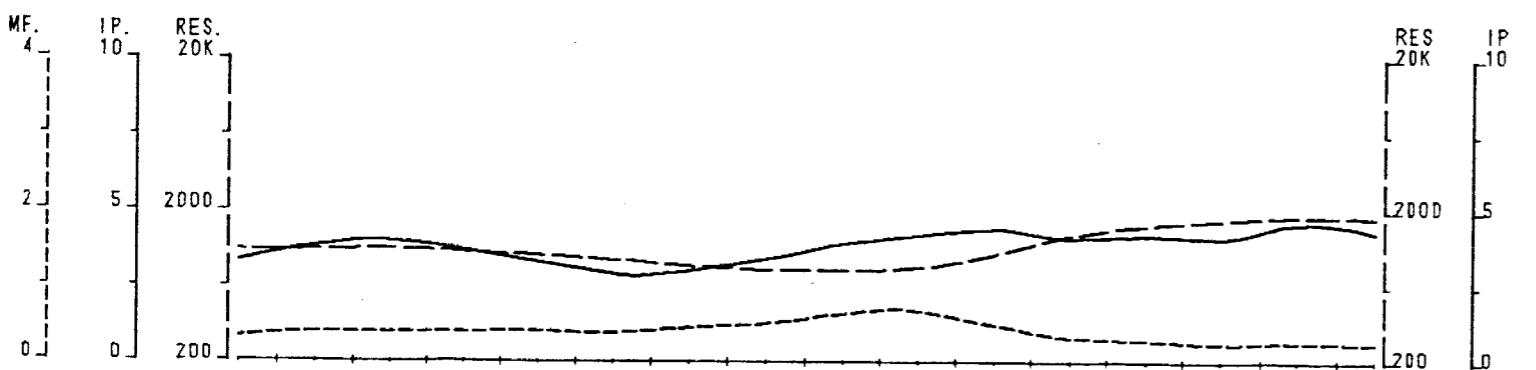
I do not hold nor do I expect to receive an interest of any kind in this property held by PLACER DOME INC.

Signed in Val d'Or, this November 25, 1992.

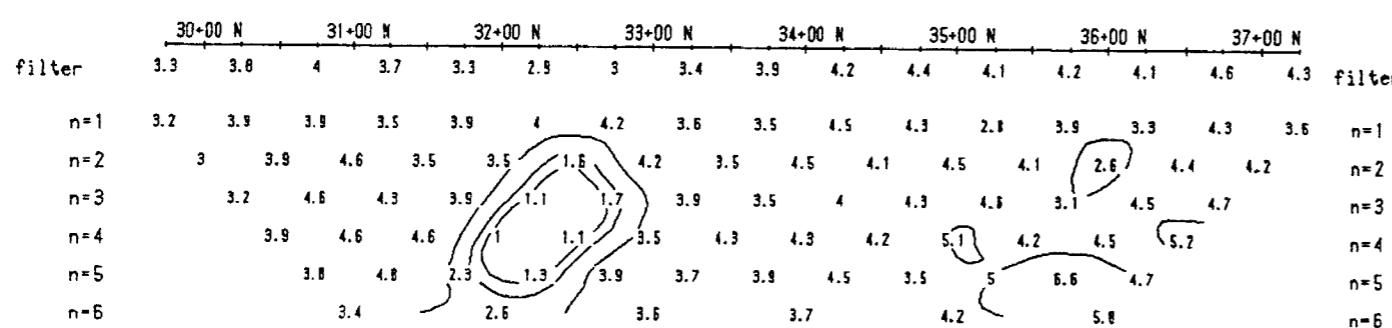
By:

Robert Turcotte, T.Sc.A.



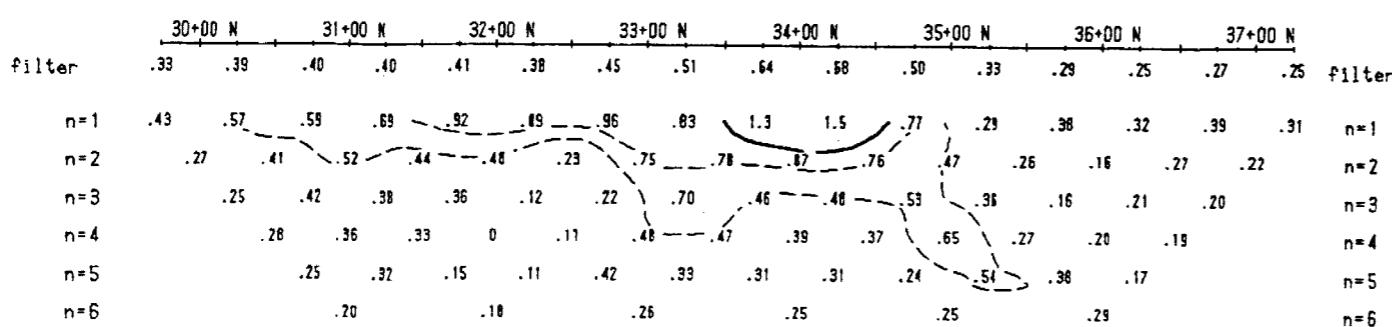


**RESISTIVITY**  
( $\Omega\text{m}$ )



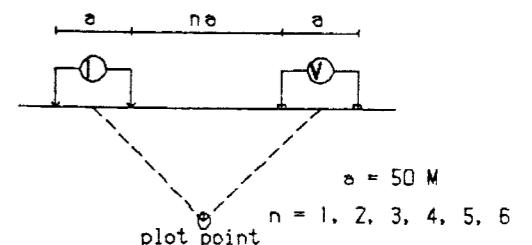
**INTERPRETATION**

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?



## Ligne 14+00 E

Dipole-Dipole Array



Filtered Profiles Filter

Resistivity ————— \* \* \* \* \*  
Polarization ————— \* \* \* \* \*  
Metal Factor ————— \* \* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## Induced Polarization Survey

PLACER DOME INC.

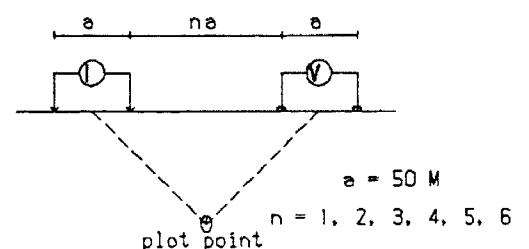
Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

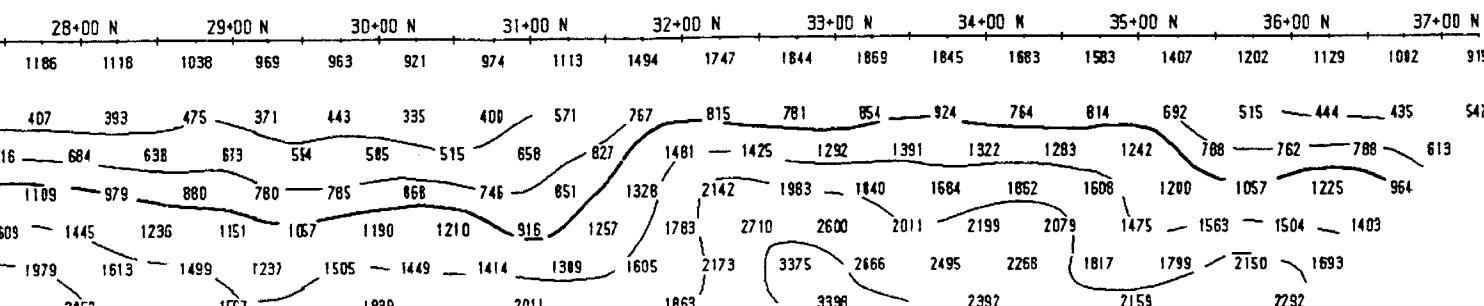
VAL D'OR GEOPHYSIQUE LTEE

# Ligne 16+00 E

Dipole-Dipole Array



## TOPOGRAPHY



RESISTIVITY  
( $\Omega\text{m} \times \text{m}$ )

filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6

Filtered Profiles Filter

Resistivity  
Polarization  
Metal Factor

\* \* \*  
\* \* \* \*  
\* \* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

PHASE  
(milli-rad)

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION

METAL FACTOR  
(ip/res \* 100)

filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6

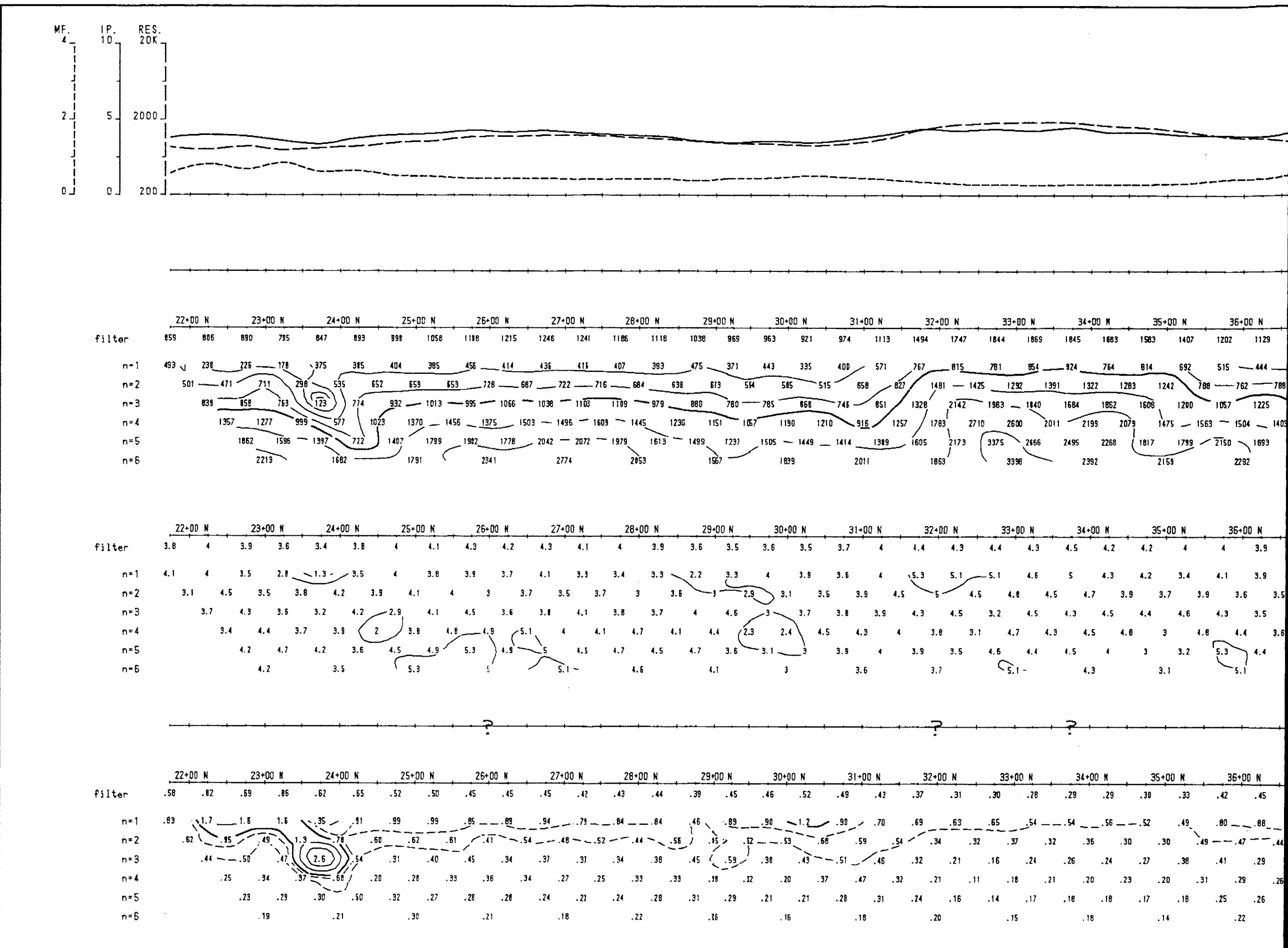
## Induced Polarization Survey

PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

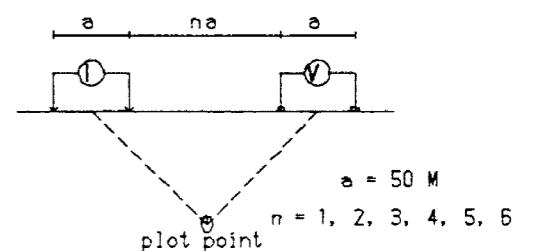
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Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

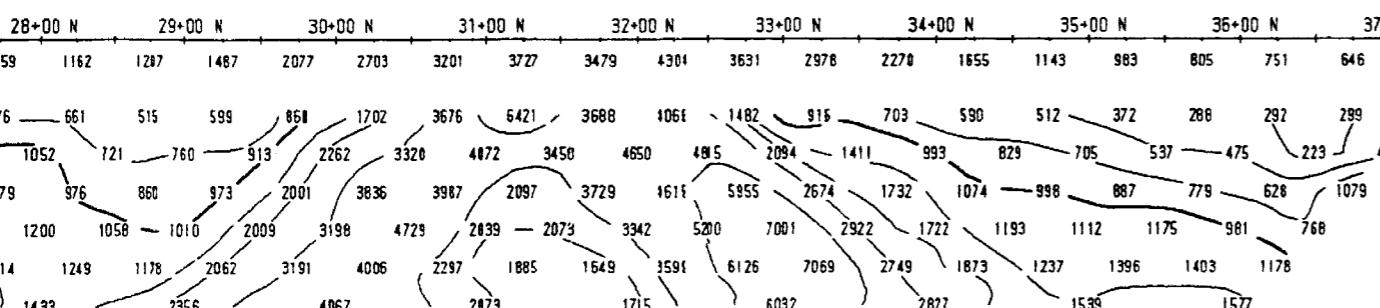


# Ligne 18+00 E

Dipole-Dipole Array



## TOPOGRAPHY



RESISTIVITY  
( $\Omega\text{m} \cdot \text{n}$ )

Filter  
 $n=1$   
 $n=2$   
 $n=3$   
 $n=4$   
 $n=5$   
 $n=6$

Filtered Profiles Filter

Resistivity  
Polarization  
Metal Factor

\* \*  
\* \* \*  
\* \* \* \*

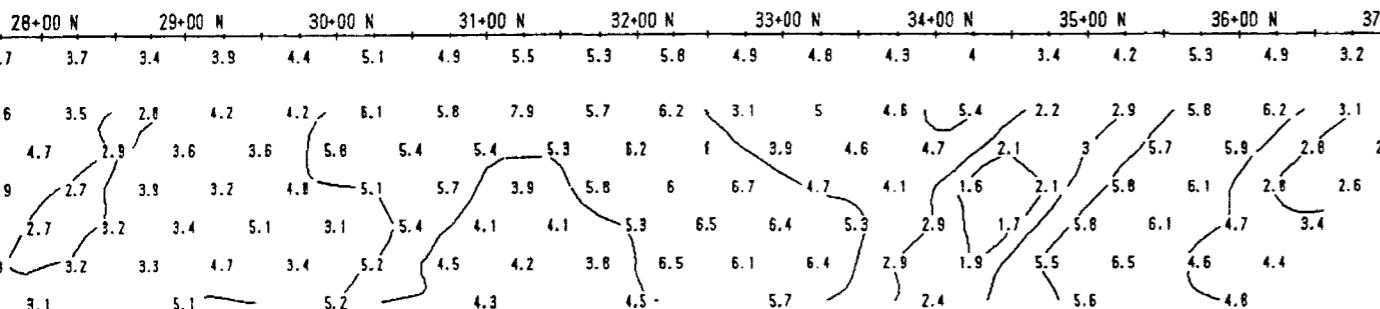
Logarithmic  
Contours

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Baggett

## INTERPRETATION



PHASE  
(milli-rad)

filter  
 $n=1$   
 $n=2$   
 $n=3$   
 $n=4$   
 $n=5$   
 $n=6$

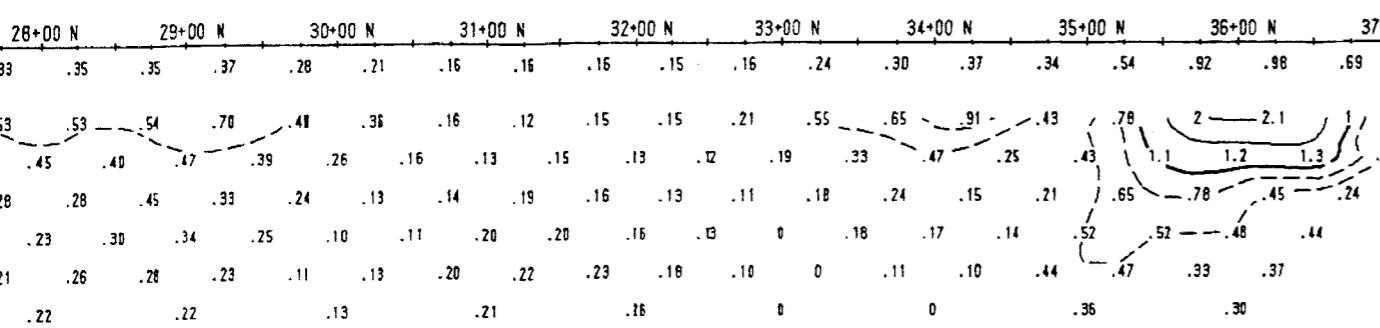
■ Increase in polarization associated to a relative decrease in apparent resistivity.

□ Increase in polarization with little or no associated decrease in apparent resistivity.

□ Weak or poorly defined polarization anomaly, no resistivity signature.

▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION



METAL FACTOR  
(ip/res \* 100)

filter  
 $n=1$   
 $n=2$   
 $n=3$   
 $n=4$   
 $n=5$   
 $n=6$

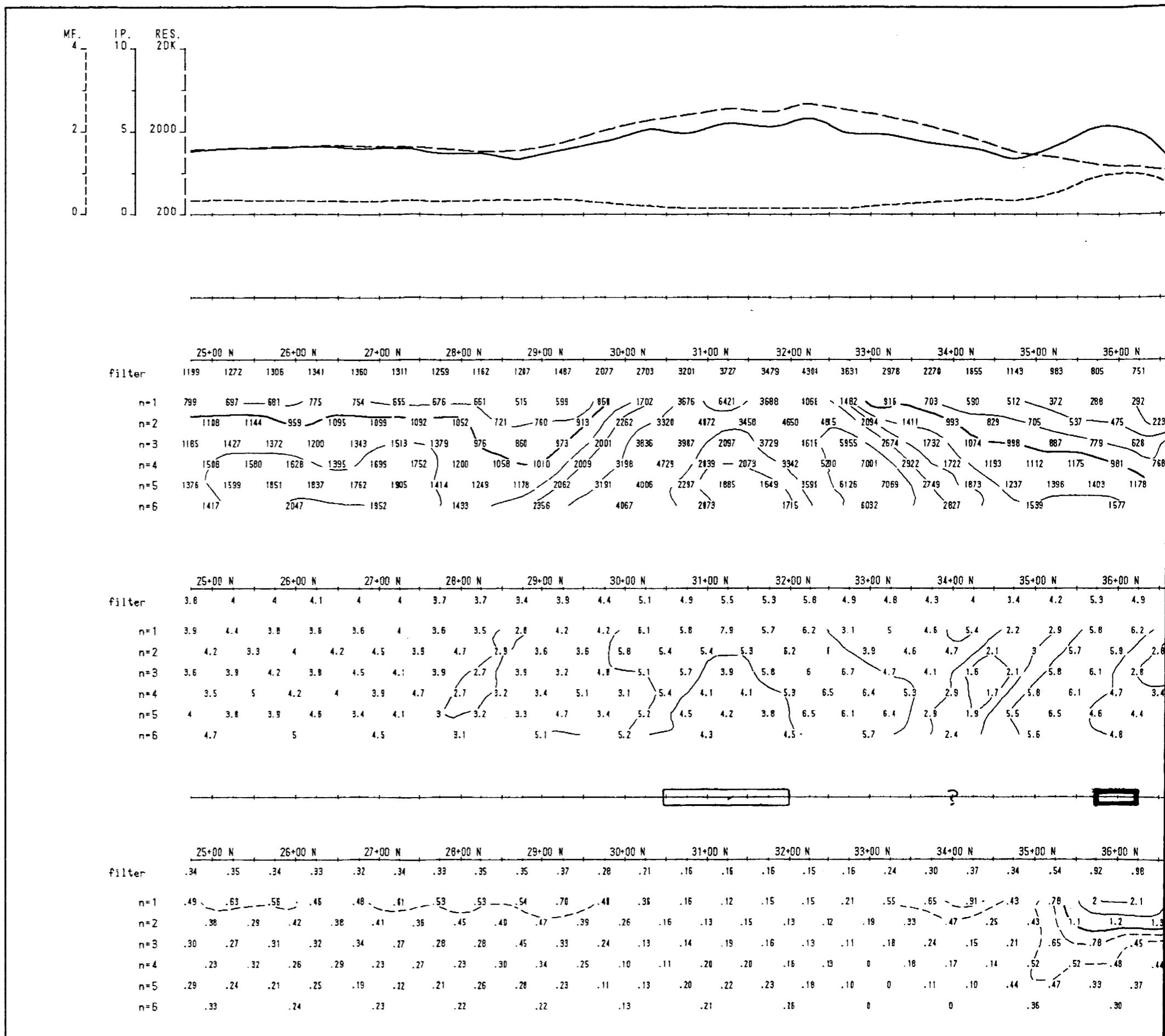
## Induced Polarization Survey

PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

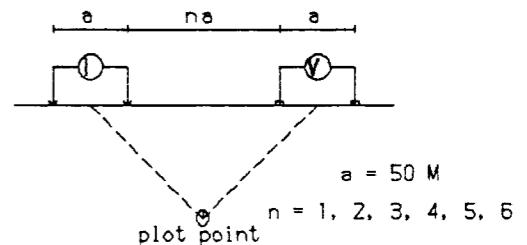
Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

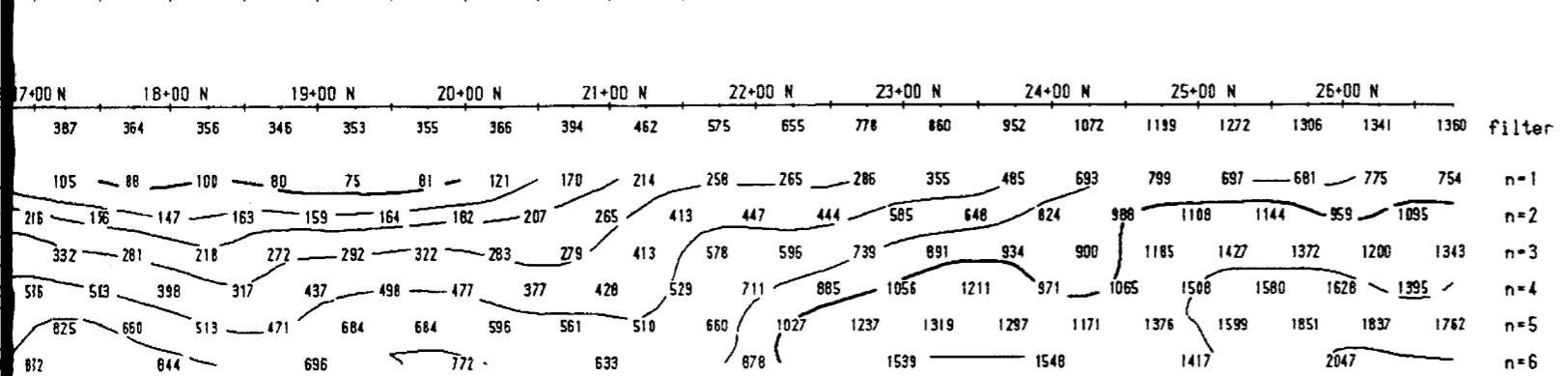


# Ligne 18+00 E

Dipole-Dipole Array



## TOPOGRAPHY



## RESISTIVITY

filter

(Ohm \* m)

Resistivity  
Polarization  
Metal Factor

\*  
\* \*  
\* \* \*  
\* \* \* \*

Logarithmic  
Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1  
Frequency 1 Hz  
Operator: Dave Daggett

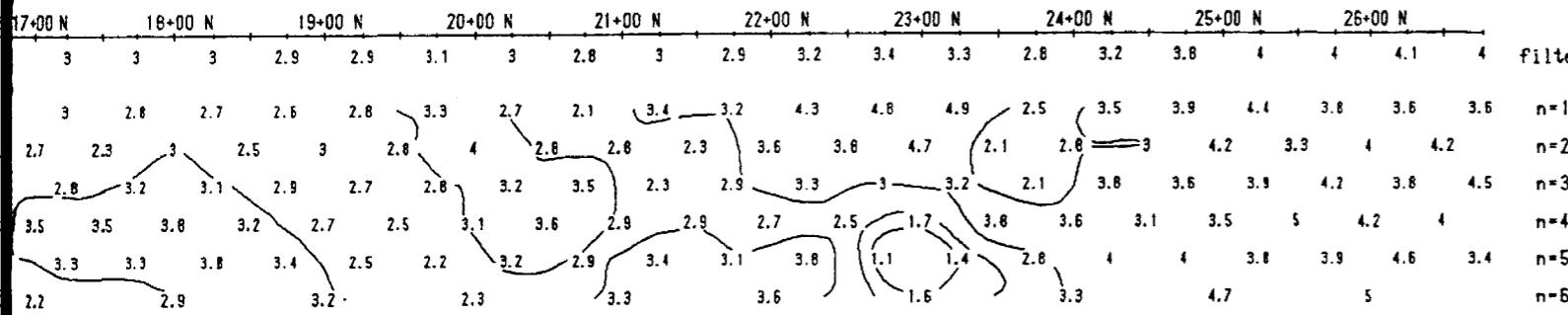
## INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## PHASE

filter

(milli-rad)

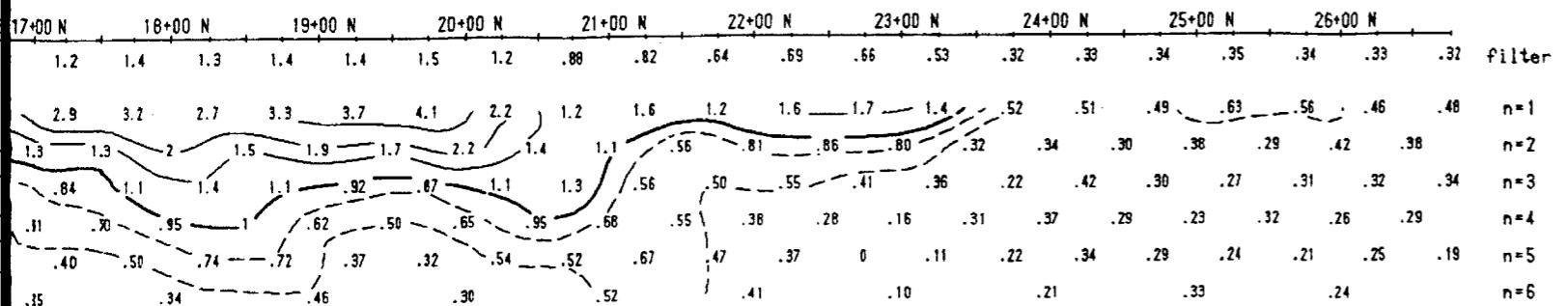


## INTERPRETATION

## METAL FACTOR

filter

(ip/res \* 1000)



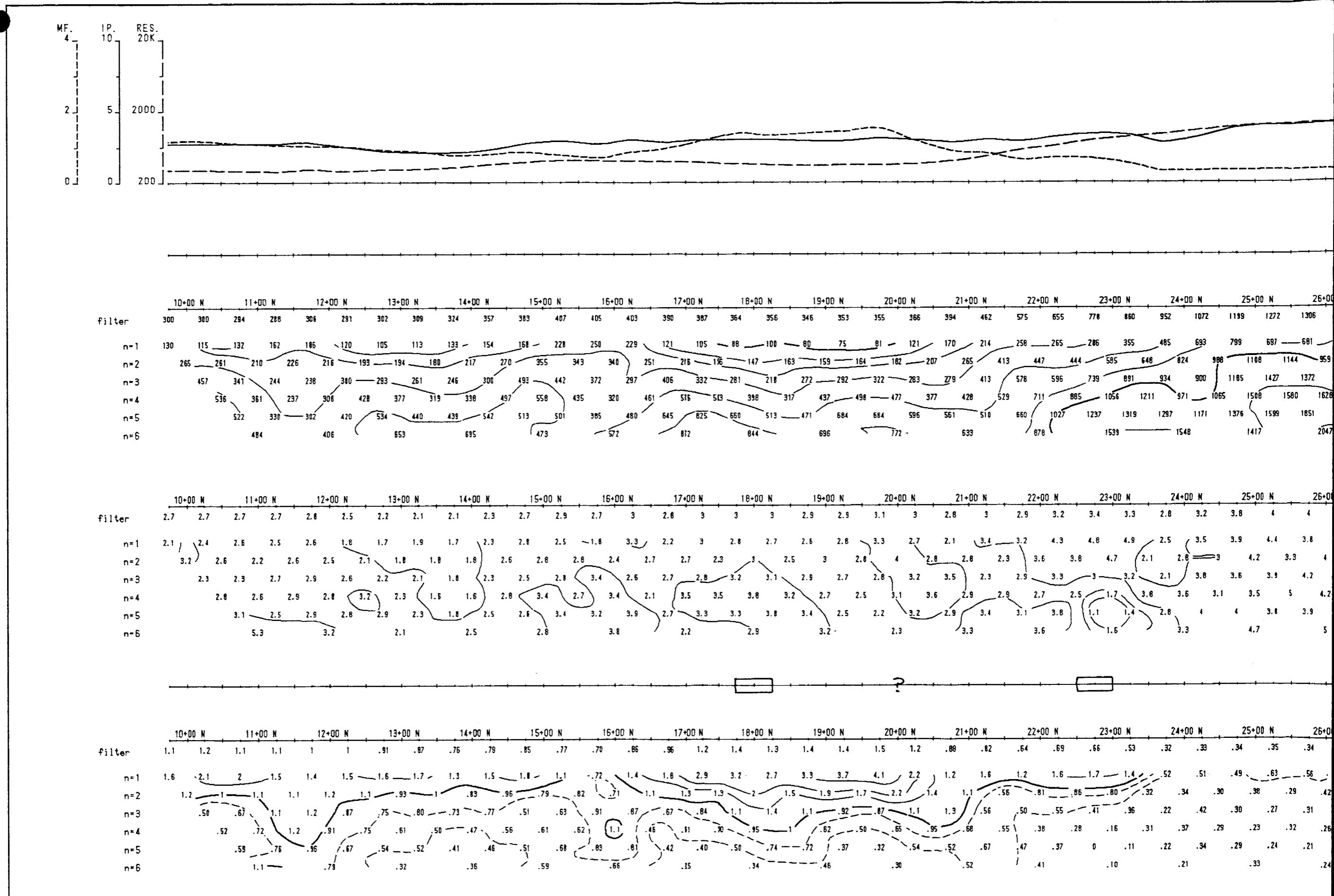
## Induced Polarization Survey

PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

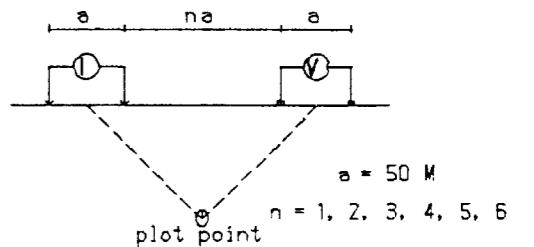
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Interpretation by: P. Lortie P. Eng.  
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VAL D'OR GEOPHYSIQUE LTEE

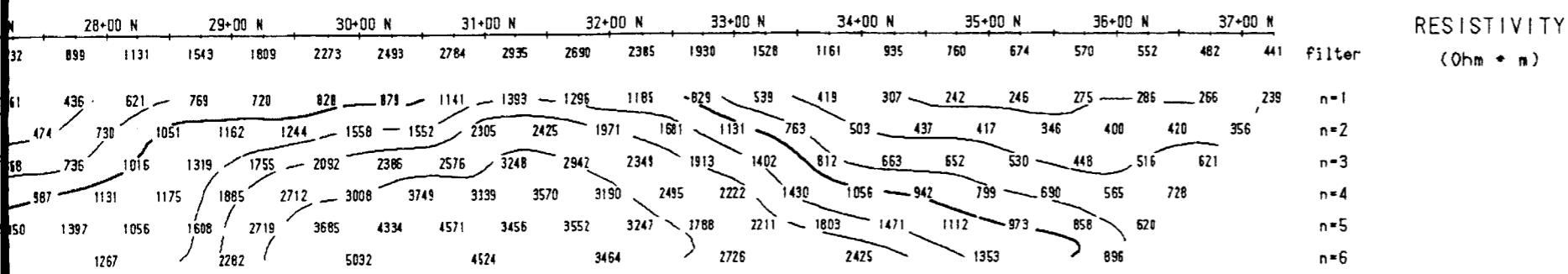


# Ligne 20+00 E

## Dipole-Dipole Array



## TOPOGRAPHY



## RESISTIVITY

( $\Omega\text{m} \times \text{n}$ )

Resistivity  
Polarization  
Metal Factor

Filter \* \* \* \* \*

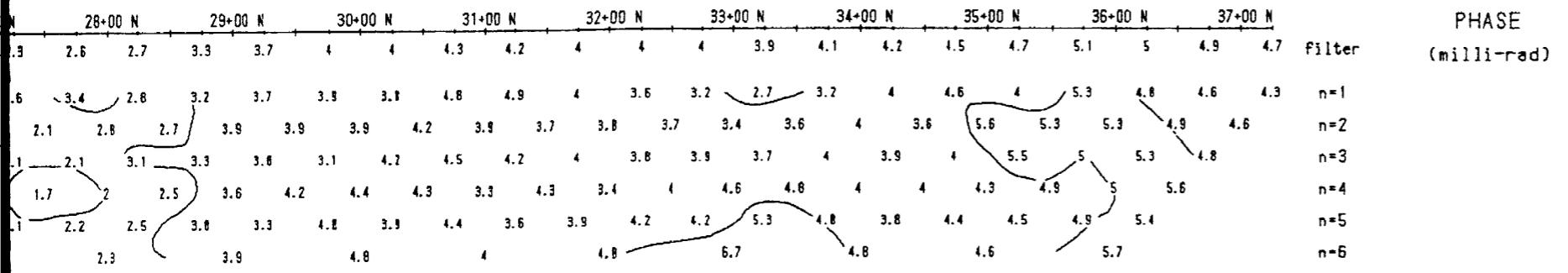
Logarithmic  
Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION



## PHASE

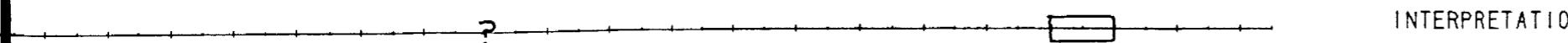
(milli-rad)

Increase in polarization associated to a relative decrease in apparent resistivity.

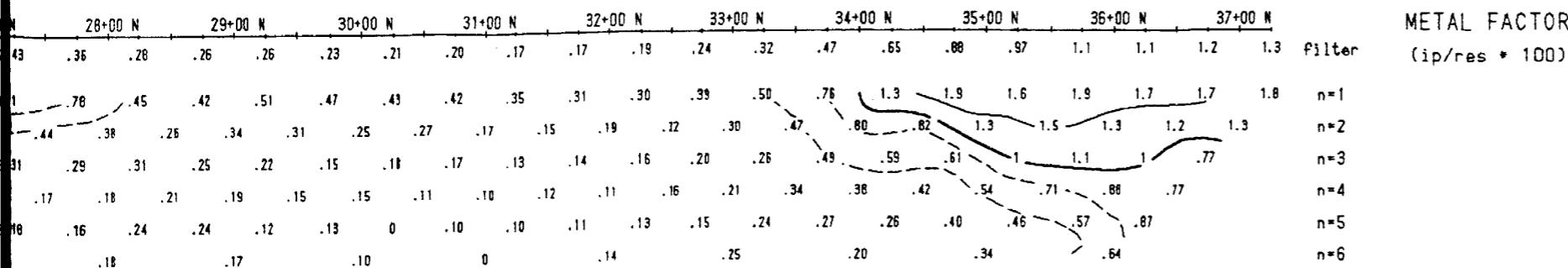
Increase in polarization with little or no associated decrease in apparent resistivity.

Weak or poorly defined polarization anomaly, no resistivity signature.

Low resistivity feature. Bedrock valley or thick overburden. Structural causes?



## INTERPRETATION



## METAL FACTOR

(ip/res \* 100)

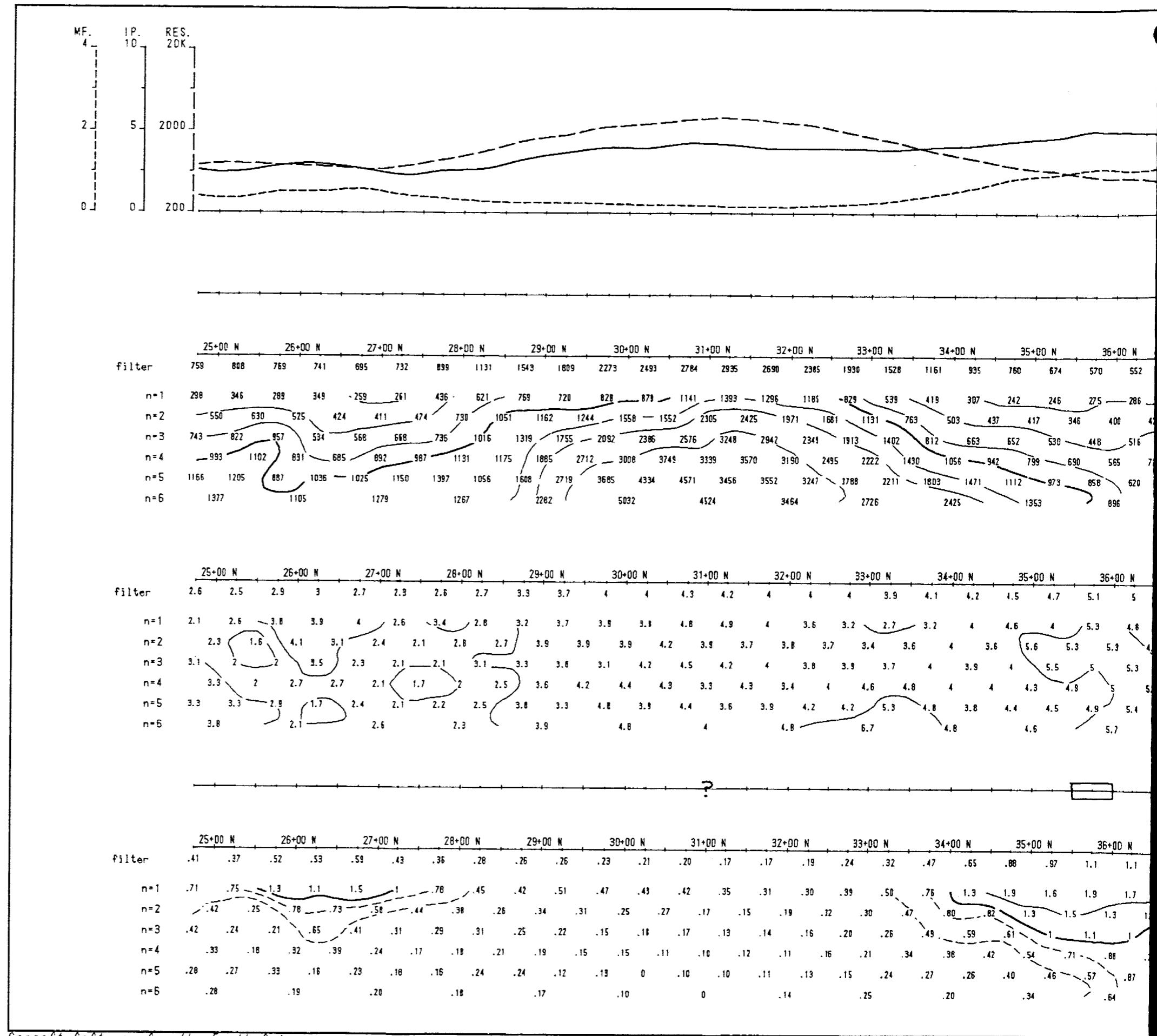
## Induced Polarization Survey

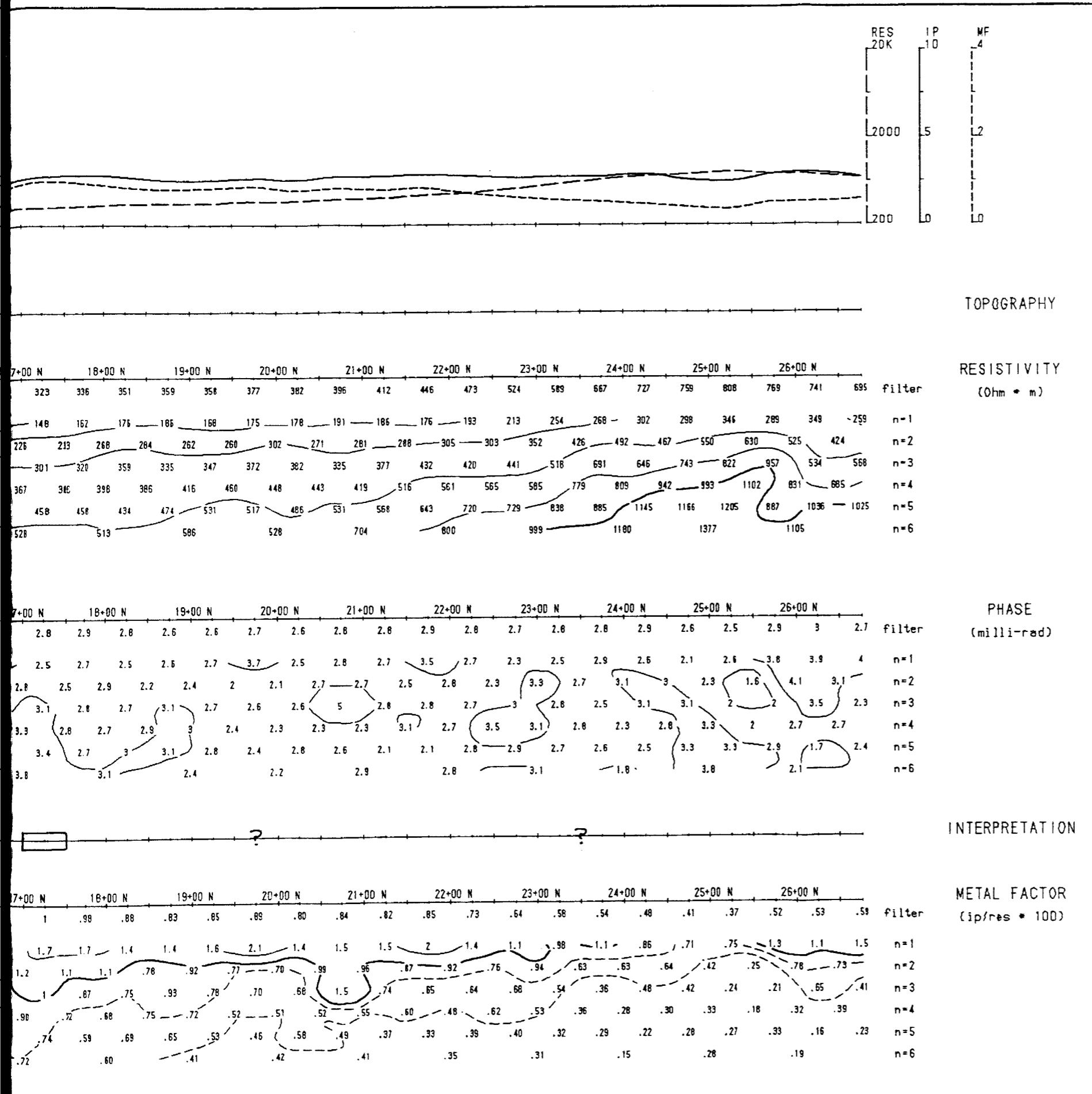
### PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

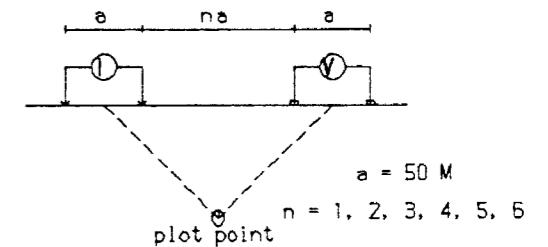
VAL D'OR GEOPHYSIQUE LTEE





## Ligne 20+00 E

Dipole-Dipole Array



Filtered Profiles Filter

Resistivity	-----	* *
Polarization	=====	* * *
Metal Factor	-----	* * * *

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION

METAL FACTOR  
(ip/res \* 100)

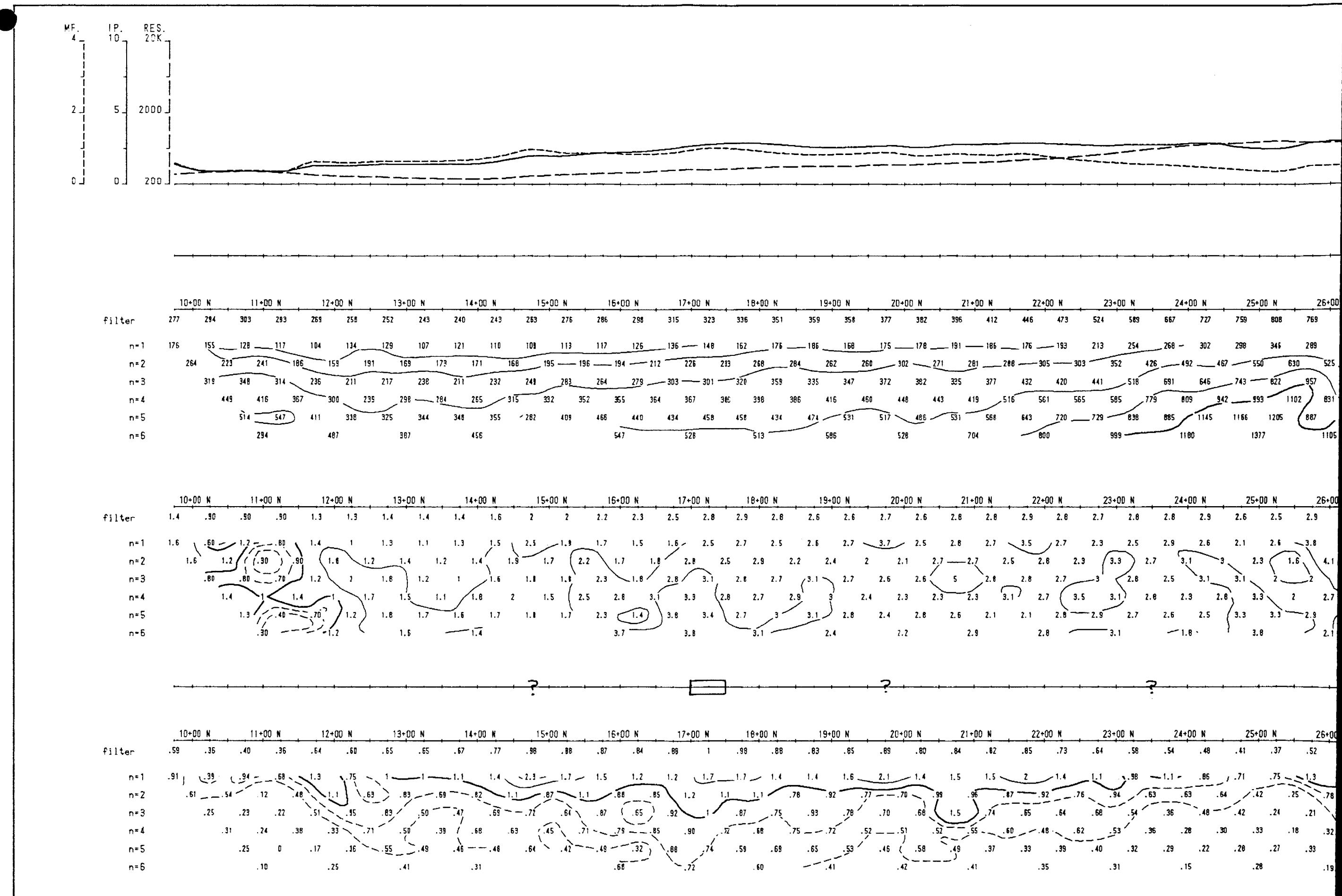
## Induced Polarization Survey

PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

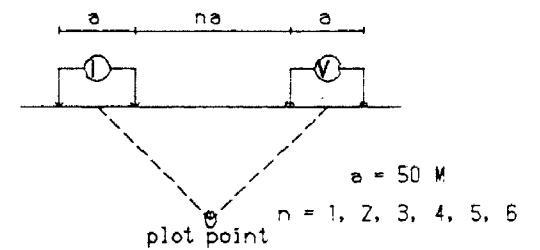
Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

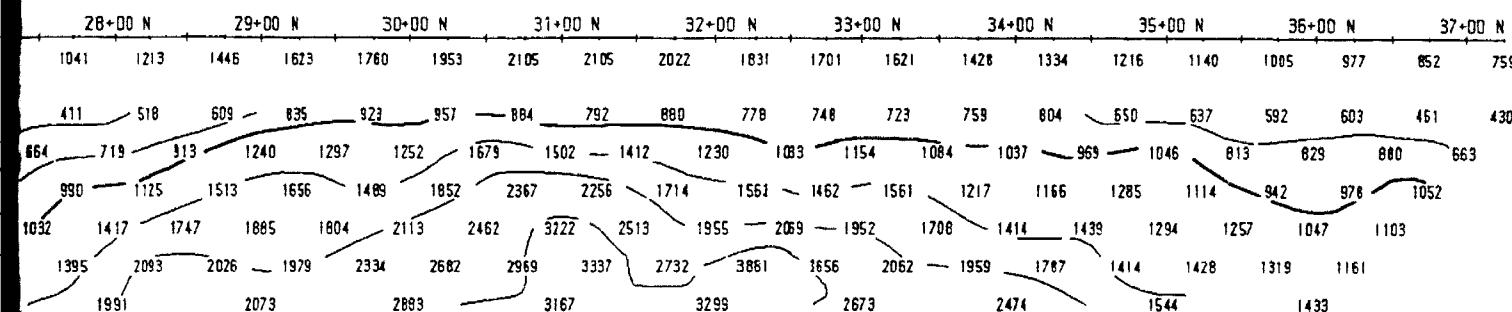


# Ligne 22+00 E

Dipole-Dipole Array



## TOPOGRAPHY



RESISTIVITY  
( $\Omega\text{m}$ )

filter

IP

10

MF

4

2

5

0

2000

200

Filtered Profiles Filter

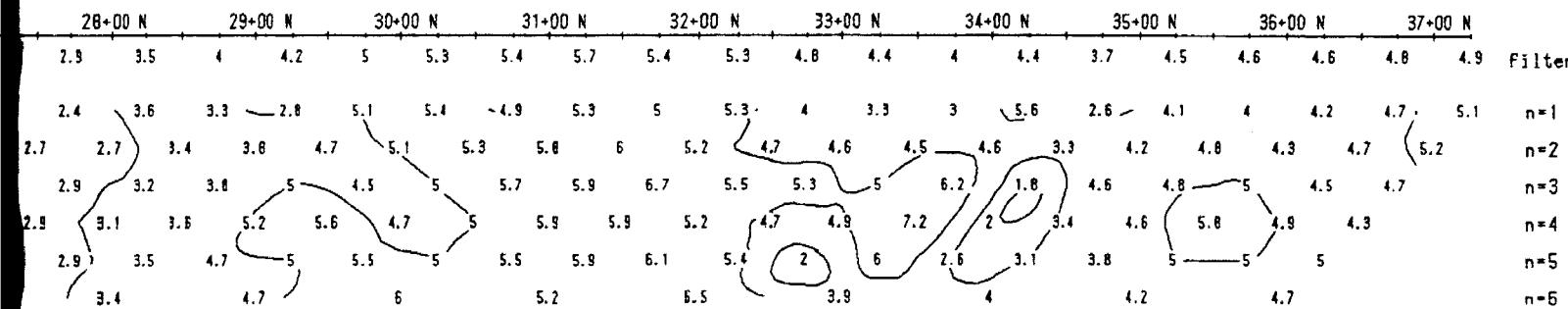
Resistivity  
Polarization  
Metal Factor

----- \* \*  
----- \* \* \*  
----- \* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1  
Frequency 1 Hz  
Operator: Dave Daggett

## INTERPRETATION

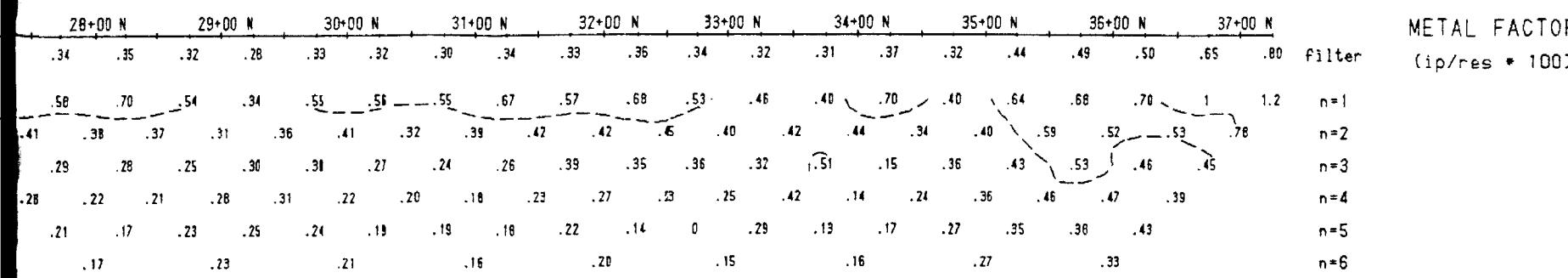


PHASE  
(milli-rad)

filter

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION



METAL FACTOR  
(ip/res \* 100)

filter

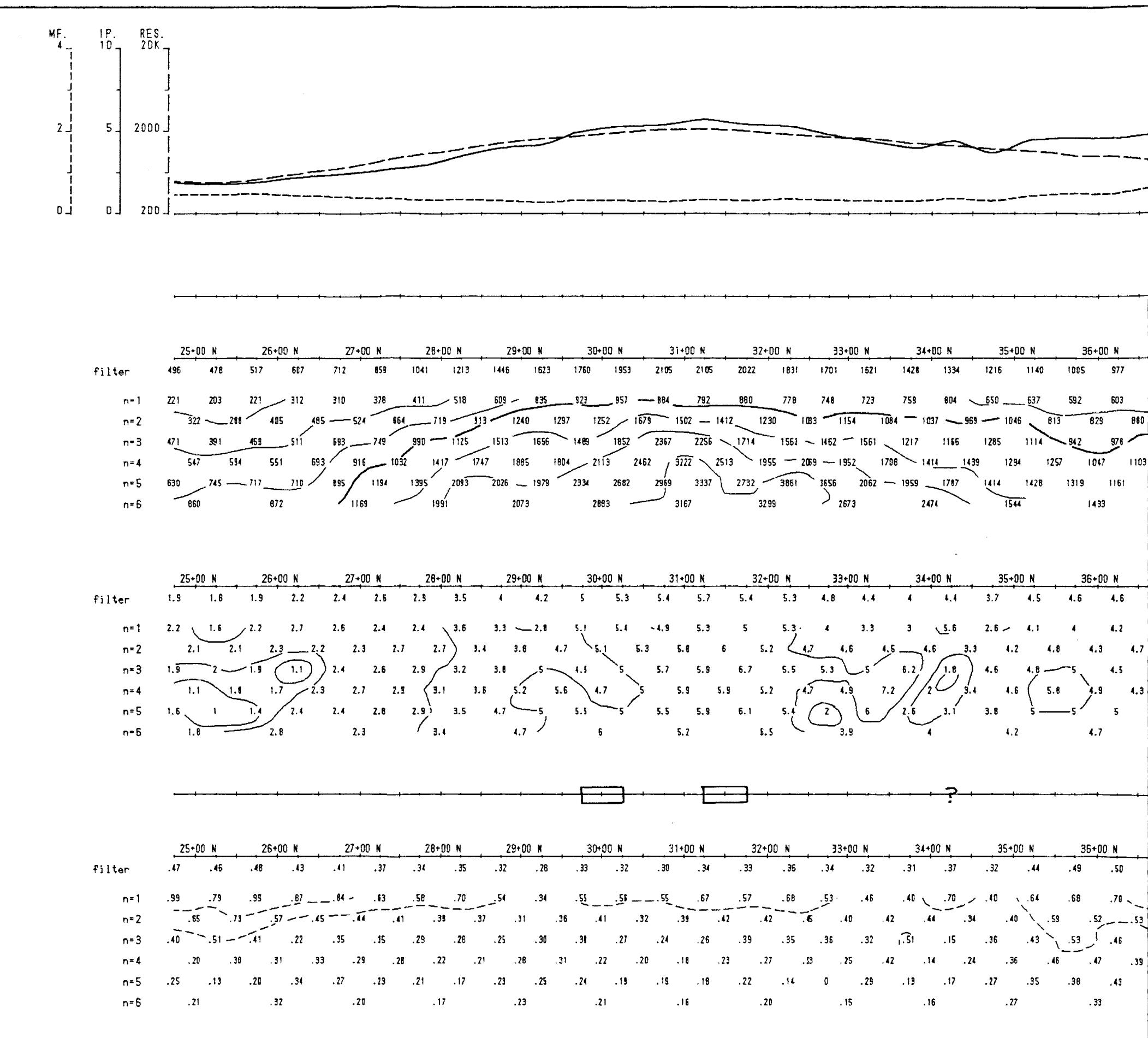
## Induced Polarization Survey

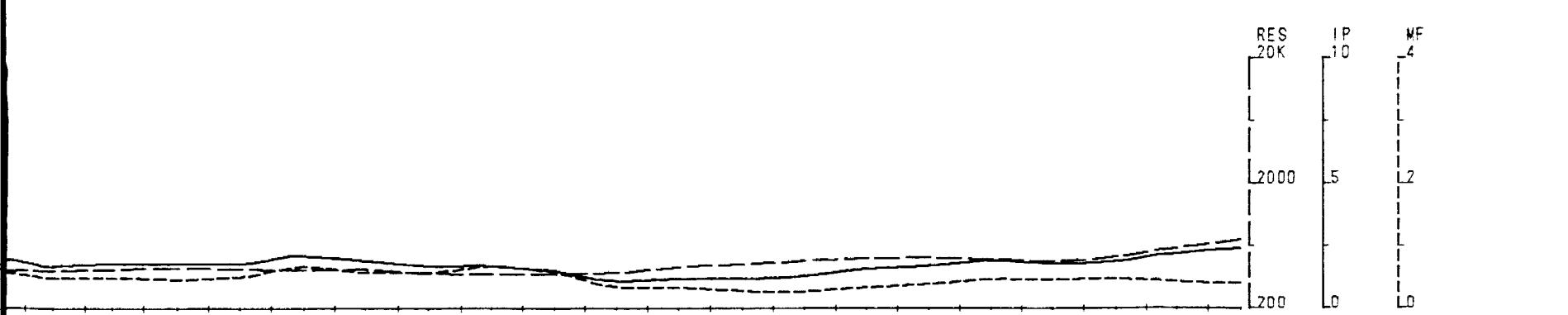
PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

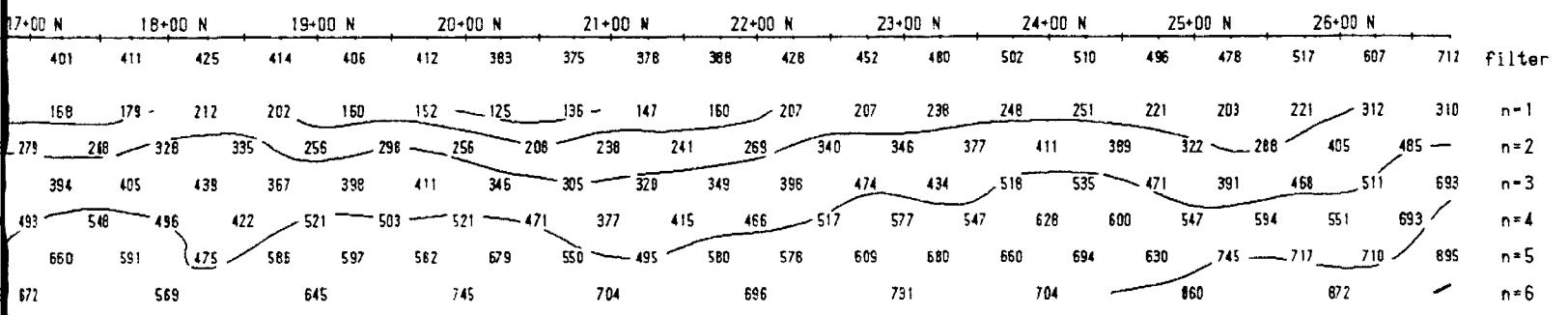
Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE





### TOPOGRAPHY



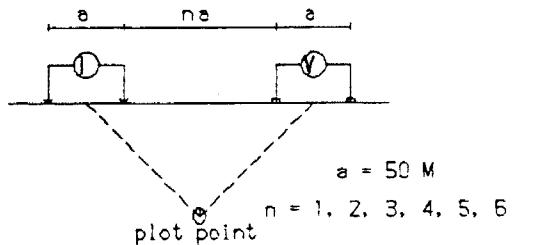
### RESISTIVITY

RESISTIVITY  
( $\Omega\text{m}$ )

filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6

## Ligne 22+00 E

### Dipole-Dipole Array



### Filtered Profiles Filter

Resistivity  
Polarization  
Metal Factor

\* \*  
\* \* \*  
\* \* \* \*

Logarithmic  
Contours  
1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

### INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

### INTERPRETATION

METAL FACTOR  
( $\text{IP}/\text{RES} \times 100$ )

filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6

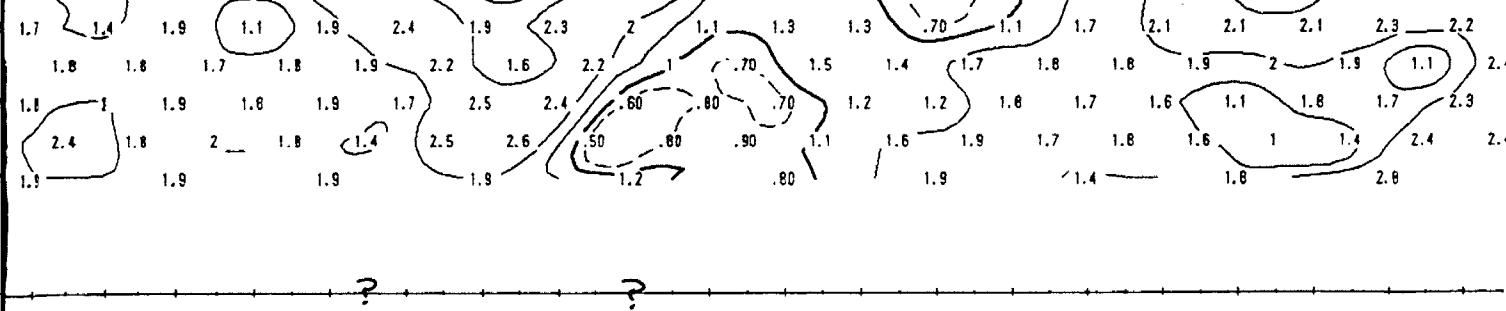
### Induced Polarization Survey

#### PLACER DOME INC.

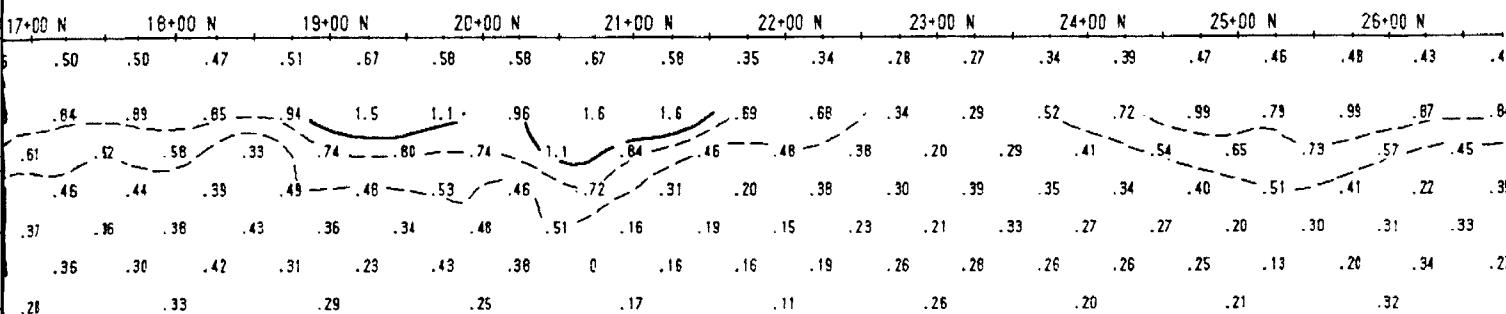
Kamiskotia River 491 Project  
Loveland Township

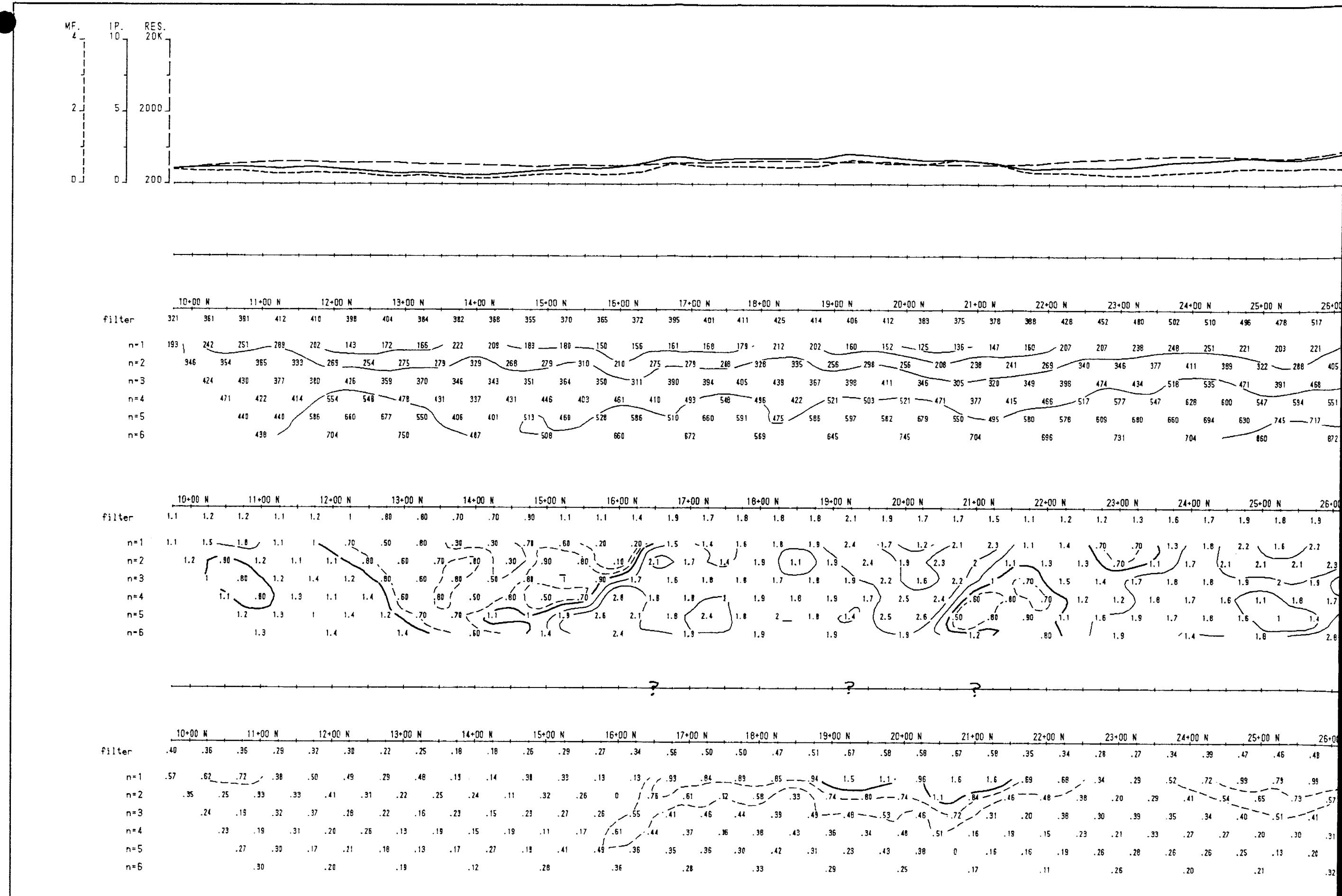
Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

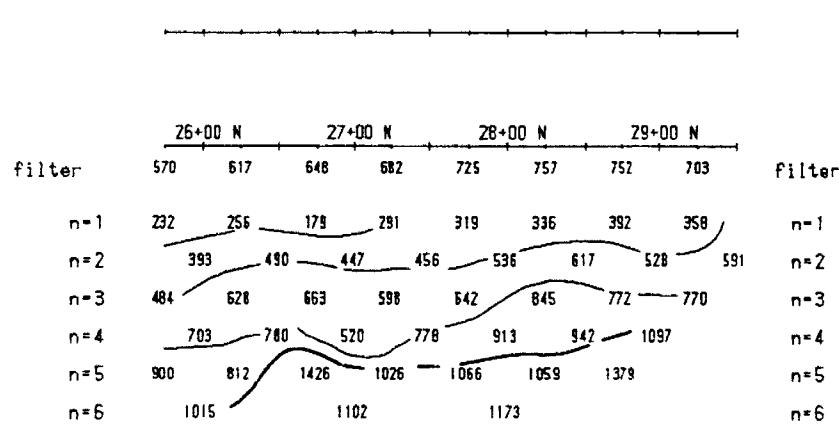
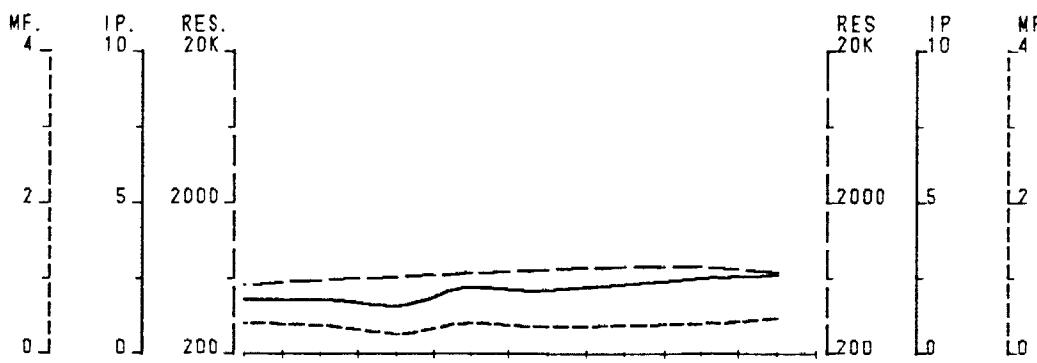
VAL D'OR GEOPHYSIQUE LTEE



QUESTION MARK

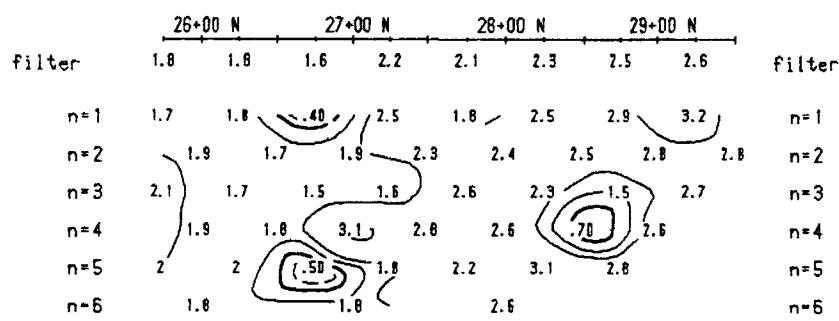




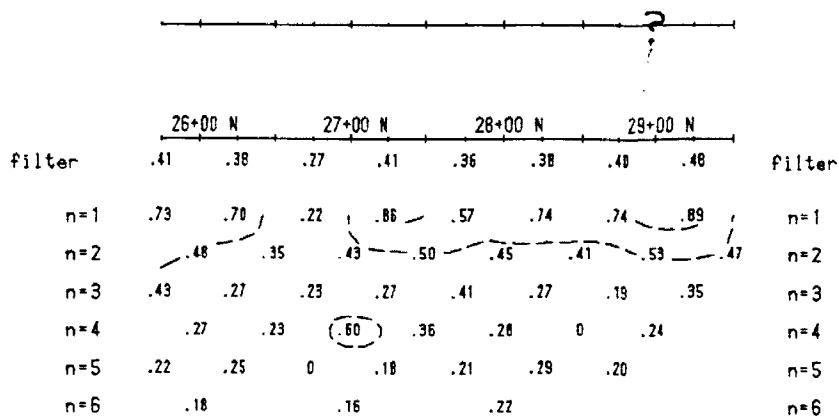


RESISTIVITY  
( $\Omega\text{m}$ )

filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



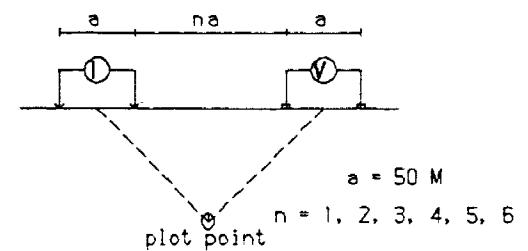
filter  
n=1  
n=2  
n=3  
n=4  
n=5  
n=6



INTERPRETATION

## Ligne 24+00 E

Dipole-Dipole Array



Filtered Profiles Filter

Resistivity  
Polarization  
Metal Factor

\*  
\* \*  
\* \* \*  
\* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

### INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

### Induced Polarization Survey

PLACER DOME INC.

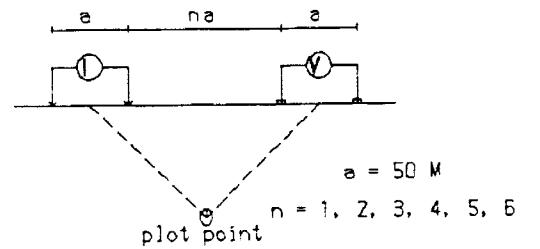
Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

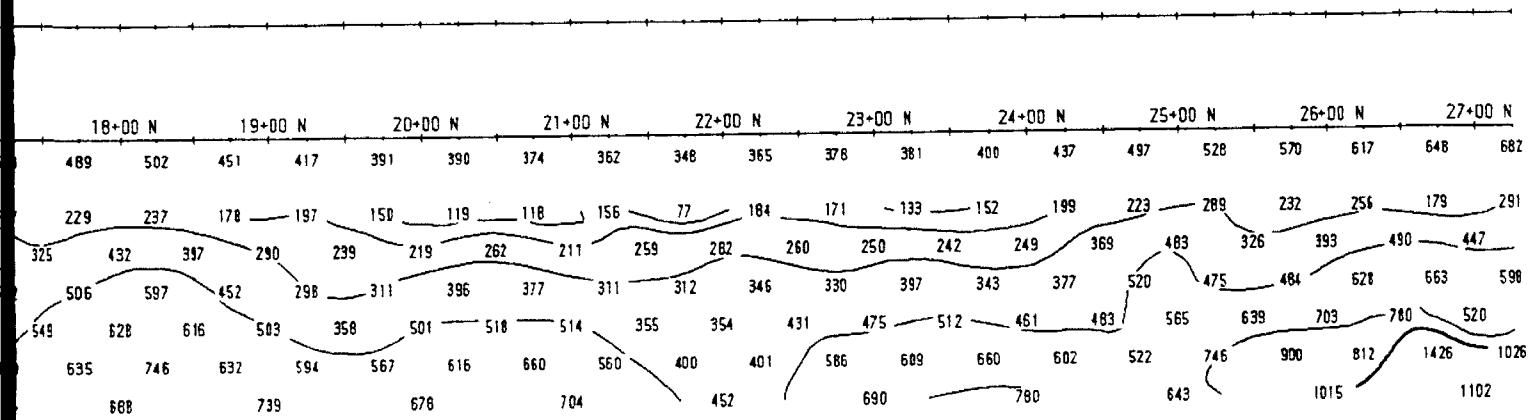
VAL D'OR GEOPHYSIQUE LTEE

# Ligne 24+00 E

## Dipole-Dipole Array



## TOPOGRAPHY



## RESISTIVITY

Filter

Resistivity

Polarization  
Metal Factor

( $\Omega\text{m} \cdot \text{m}$ )

$n=1$  \* \* \* \* \*

$n=2$  \* \* \* \* \*

$n=3$  \* \* \* \* \*

$n=4$  \* \* \* \* \*

$n=5$  \* \* \* \* \*

$n=6$  \* \* \* \* \*

Logarithmic  
Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

### PHASE (milli-rad)

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION

### METAL FACTOR (ip/res \* 1000)

## Induced Polarization Survey

PLACER DOME INC.

Kamiskotia River 491 Project  
Loveland Township

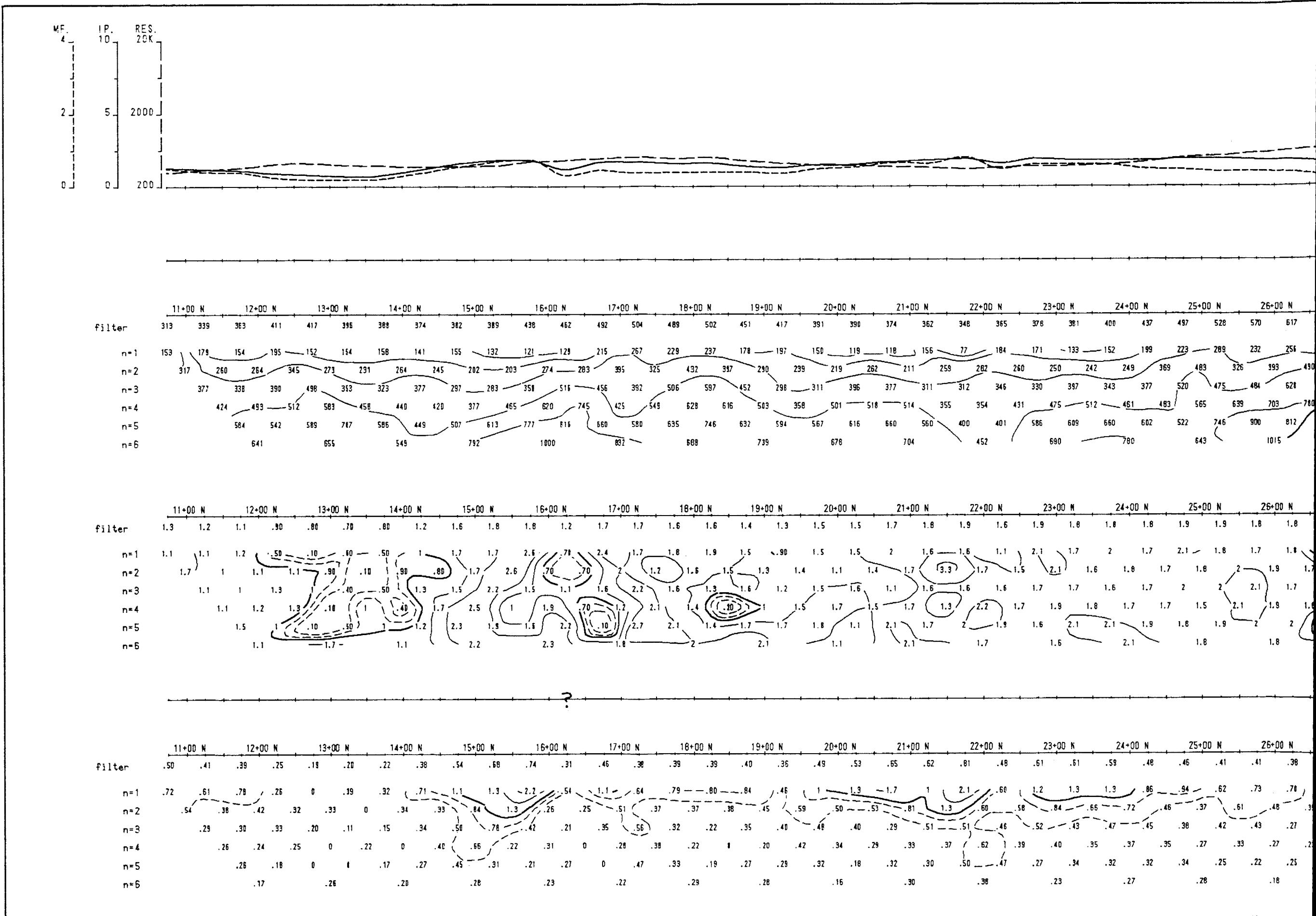
Date: 92/11/17

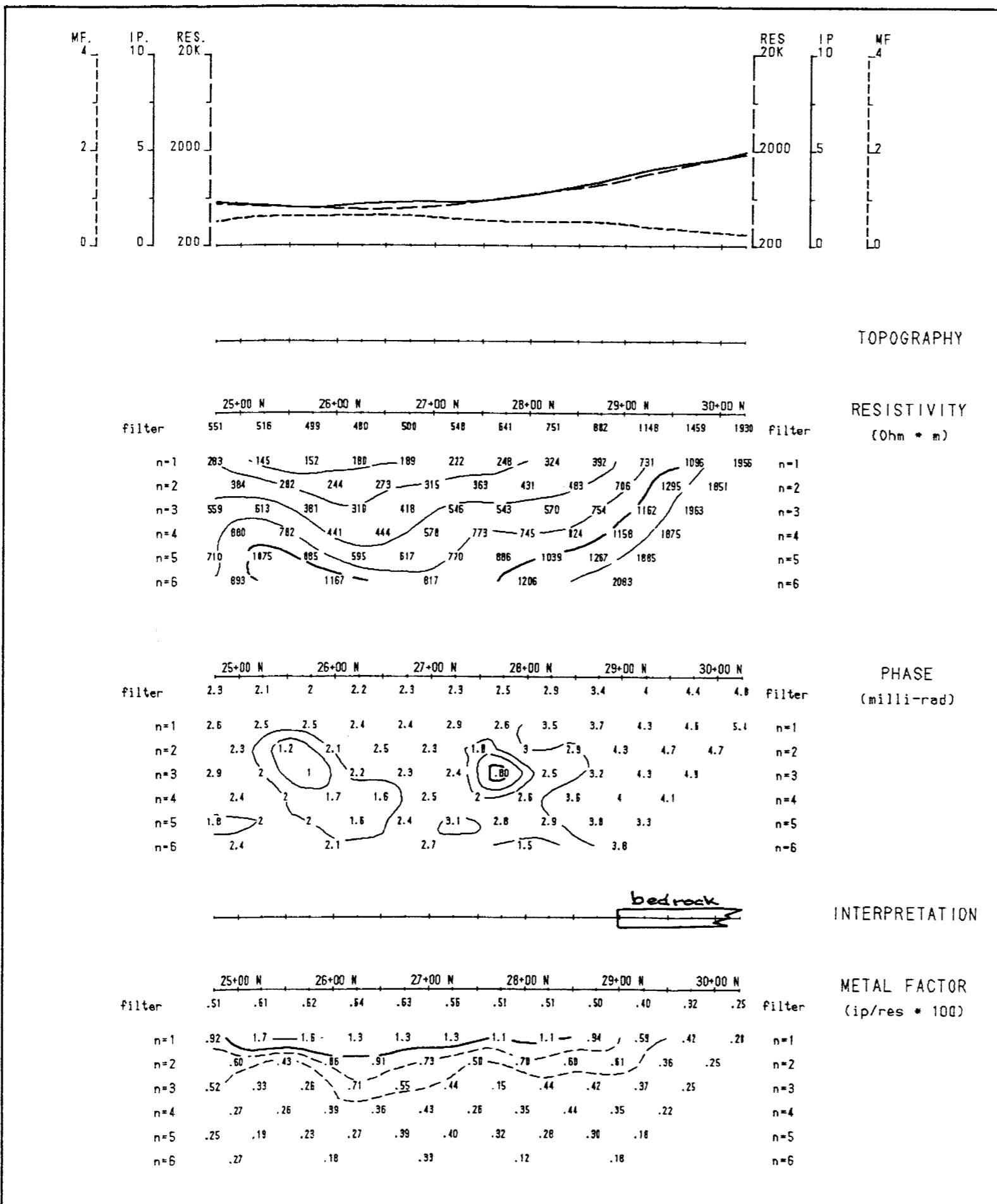
Interpretation by: P. Lortie P. Eng.

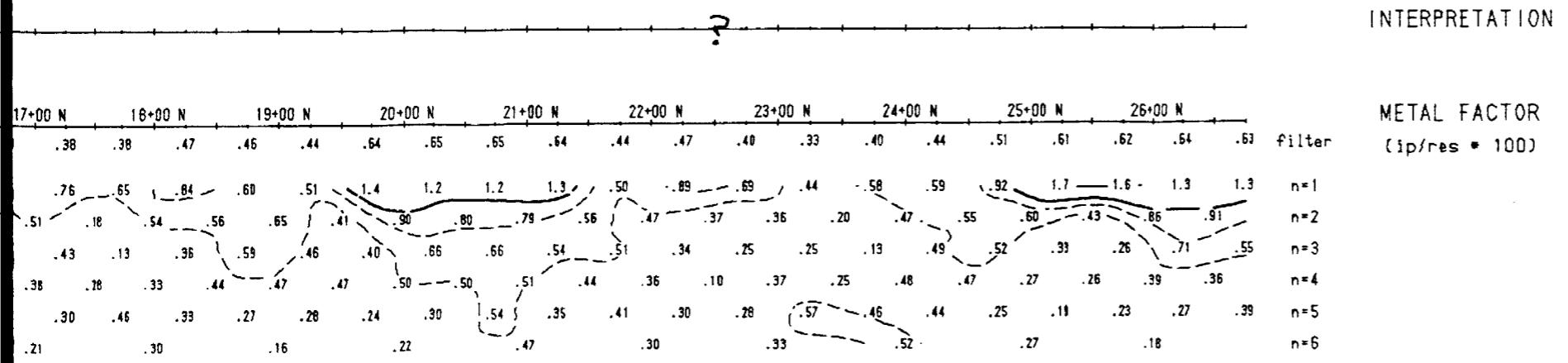
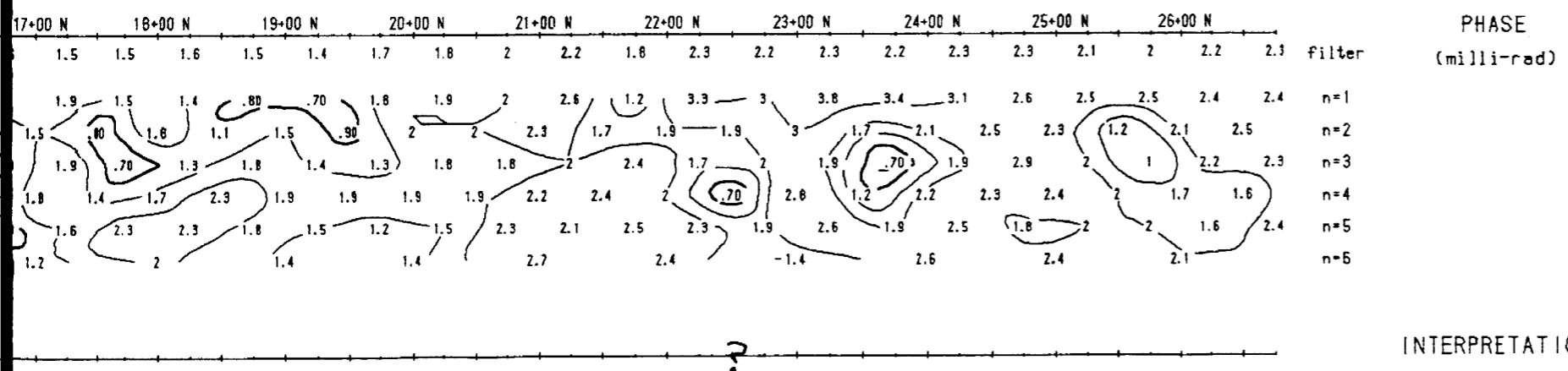
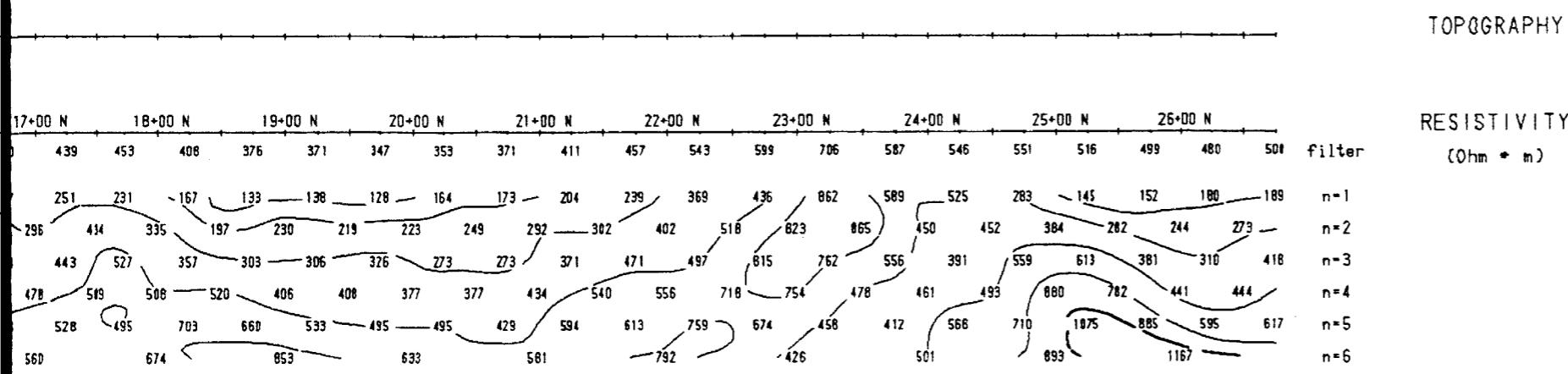
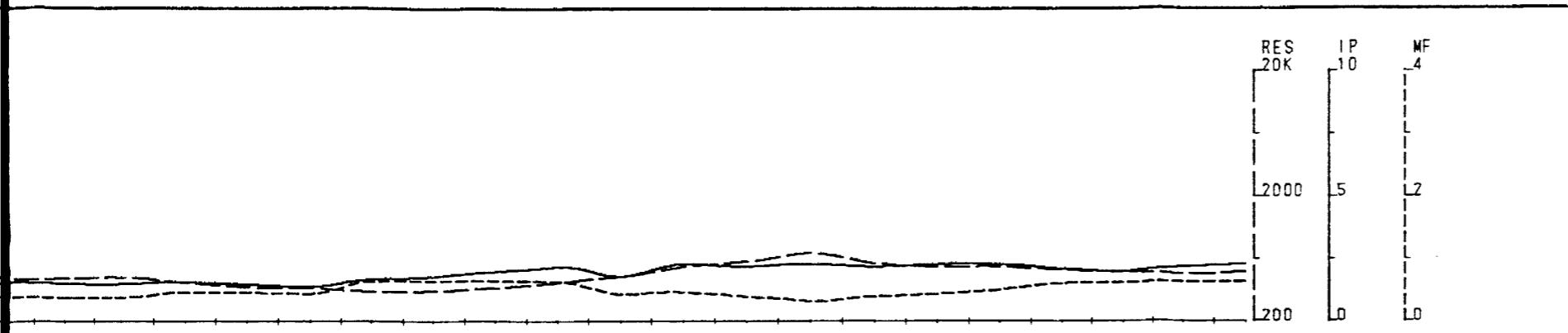
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

92-873

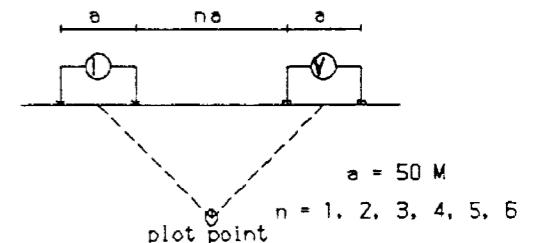






## Ligne 26+00 E

Dipole-Dipole Array



## Filtered Profiles Filter

Resistivity (0 ohm \* m) Polarization Metal Factor

\* \* \* \* \* \* \* \* \* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION

METAL FACTOR (ip/res \* 100)

## Induced Polarization Survey

PLACER DOME INC.

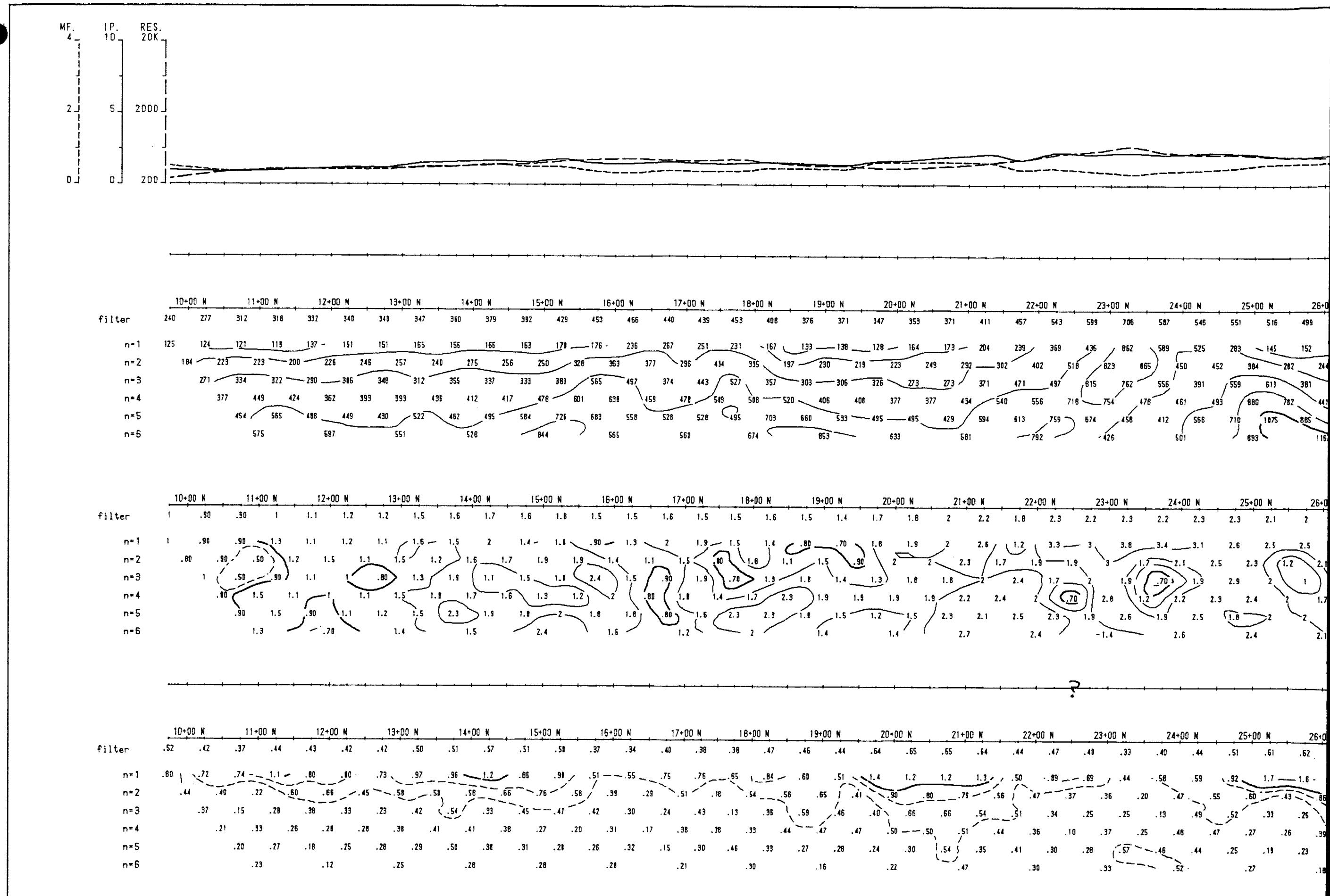
Kamiskotia River 491 Project  
Loveland Township

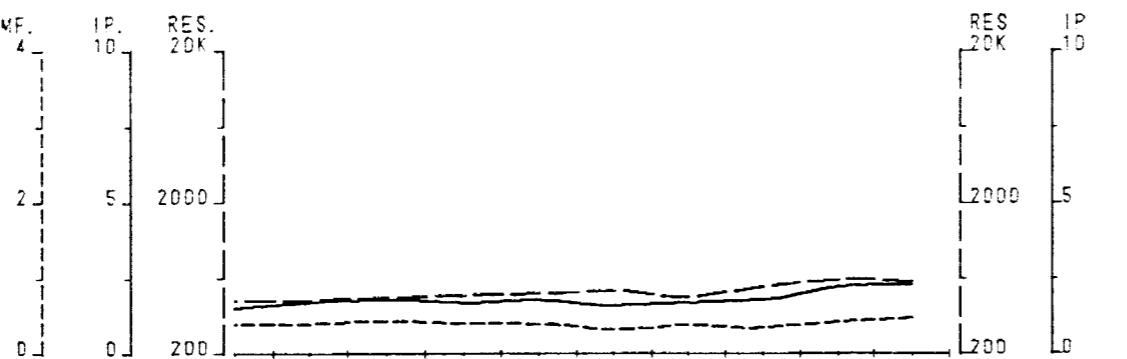
Date: 92/11/17

Interpretation by: P. Lortie P. Eng.

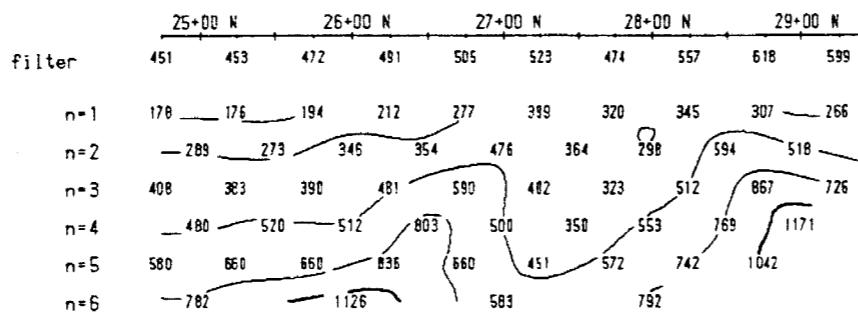
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

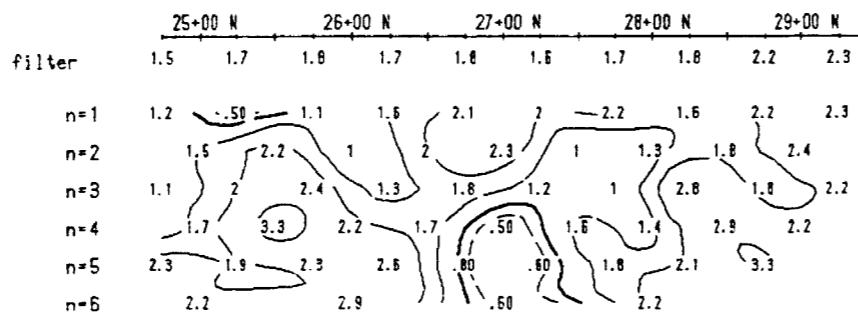




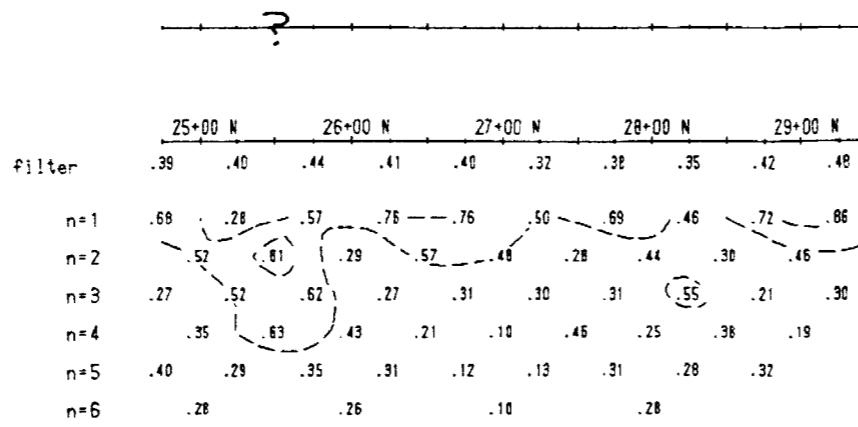
#### TOPOGRAPHY



RESISTIVITY  
( $\Omega\text{m} \times \text{m}$ )



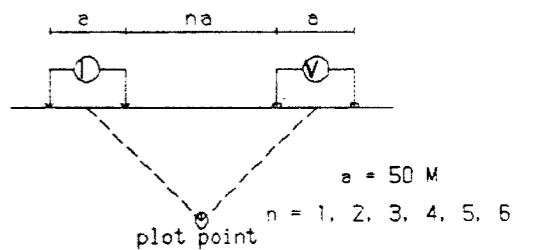
PHASE  
(milli-rad)



METAL FACTOR  
(ip/res \* 1000)

## Ligne 28+00 E

### Dipole-Dipole Array



### Filtered Profiles Filter

Resistivity	-----	* *
Polarization	-----	* * *
Metal Factor	-----	* * * *

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

### INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

### INTERPRETATION

### Induced Polarization Survey

#### PLACER DOME INC.

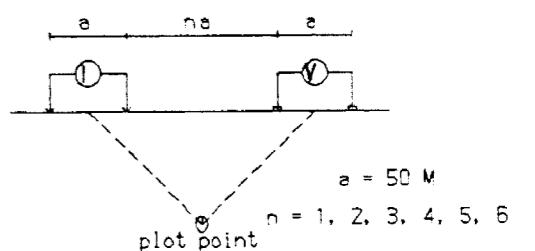
Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

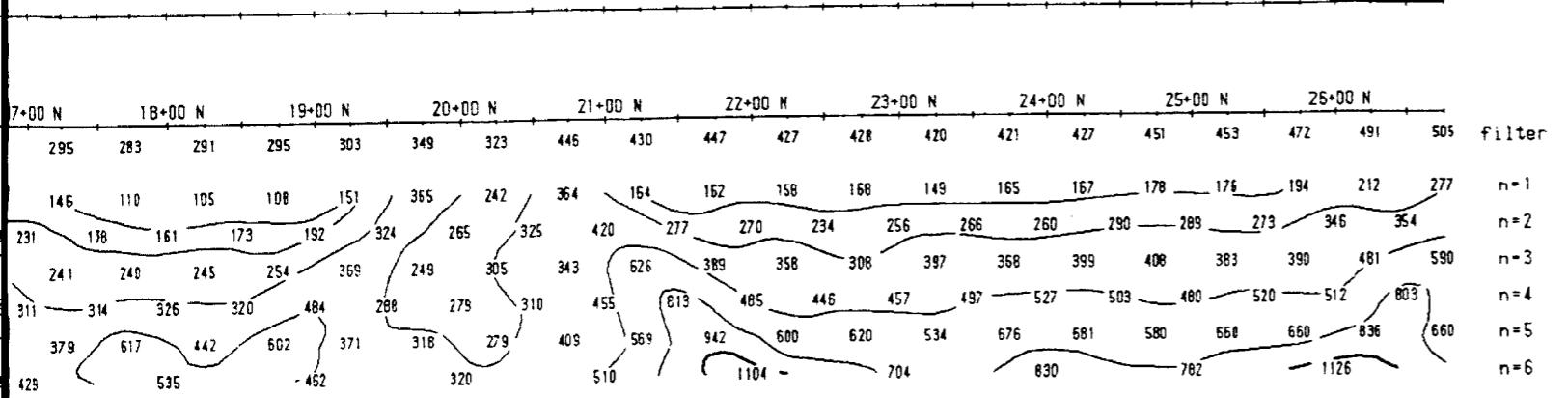
VAL D'OR GEOPHYSIQUE LTEE

# Ligne 28+00 E

Dipole-Dipole Array



## TOPOGRAPHY



## RESISTIVITY ( $\Omega\text{m}$ )

filter n=1

n=2

n=3

n=4

n=5

n=6

## Filtered Profiles Filter

Resistivity  
Polarization  
Metal Factor

\* \* \*  
\* \* \* \*  
\* \* \* \* \*

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10, ...

Instrument: PHOENIX IPV2, IPT1

Frequency 1 Hz

Operator: Dave Daggett

## INTERPRETATION

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## PHASE (milli-rad)

filter n=1

n=2

n=3

n=4

n=5

n=6

## INTERPRETATION

## METAL FACTOR (ip/res \* 100)

filter n=1

n=2

n=3

n=4

n=5

n=6

## Induced Polarization Survey

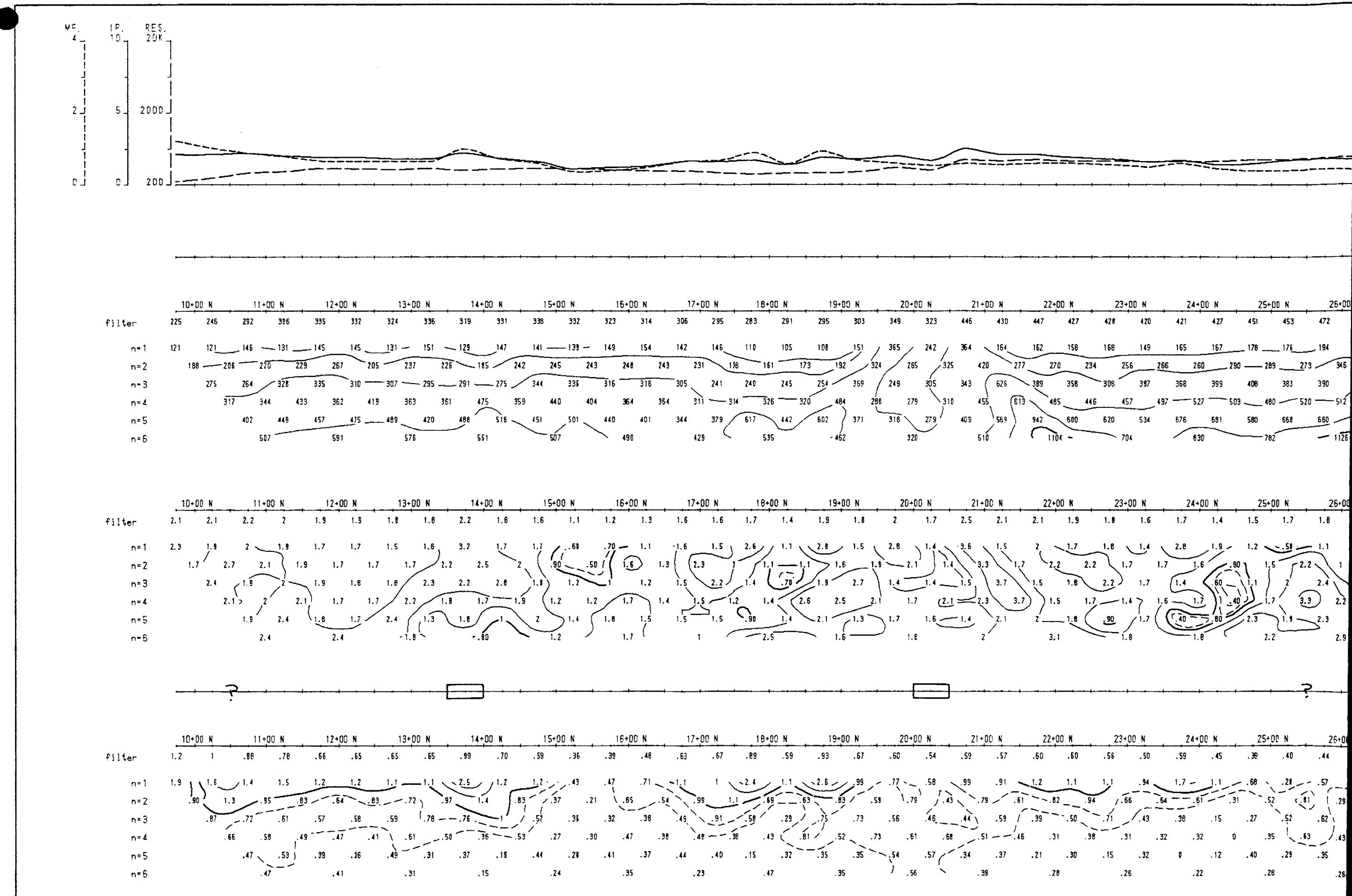
PLACER DOME INC.

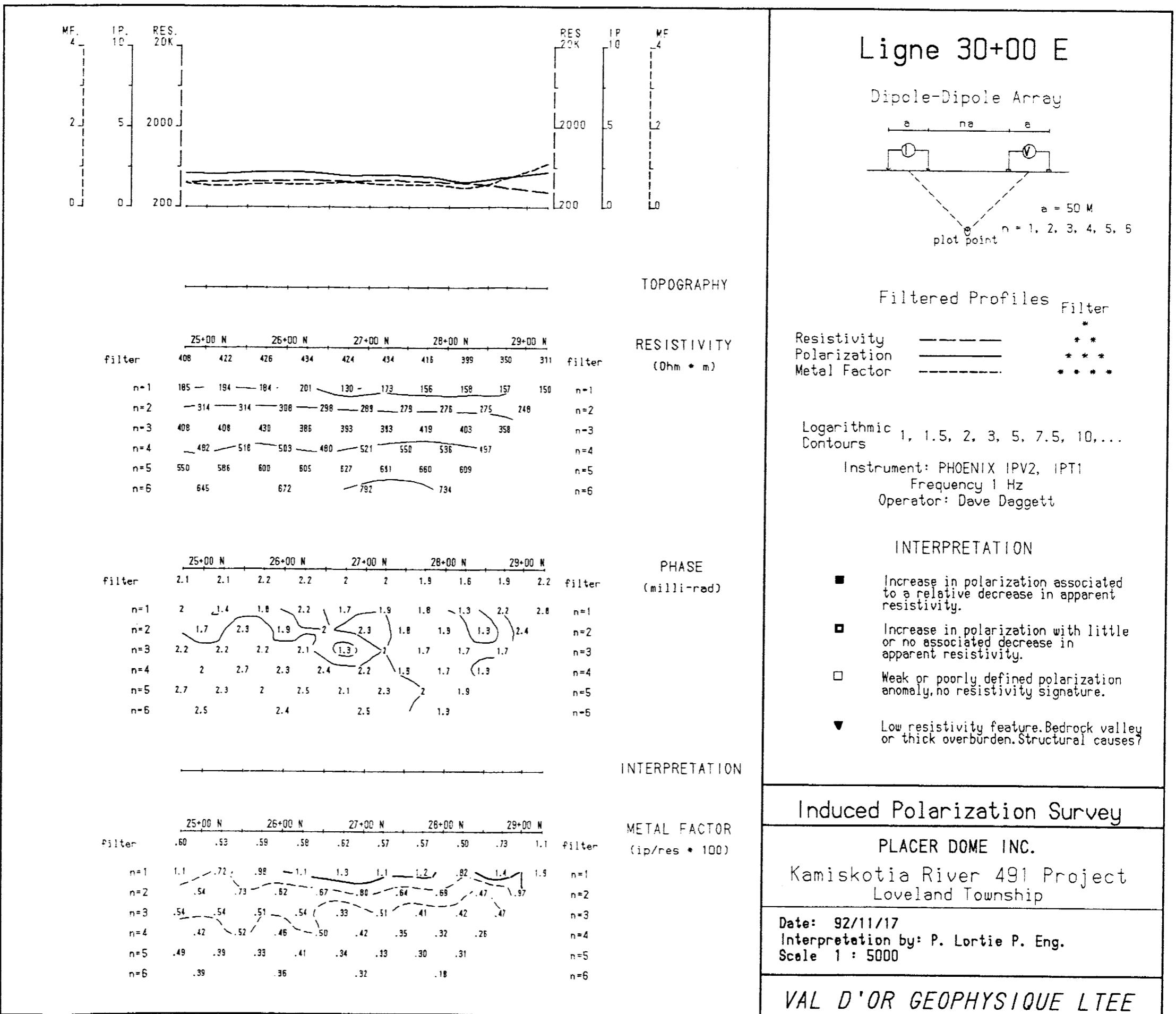
Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

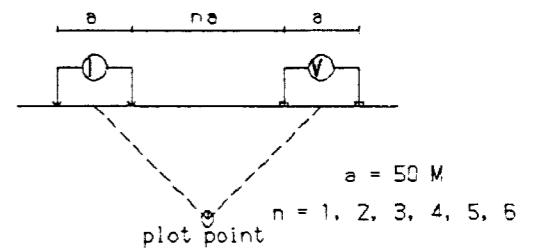
92-873



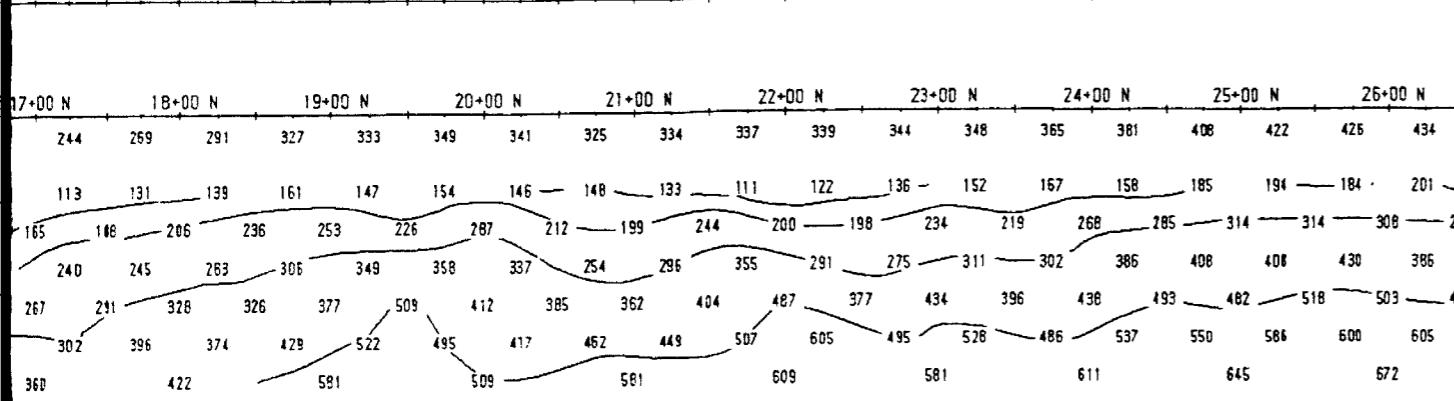


# Ligne 30+00 E

## Dipole-Dipole Array



## TOPOGRAPHY

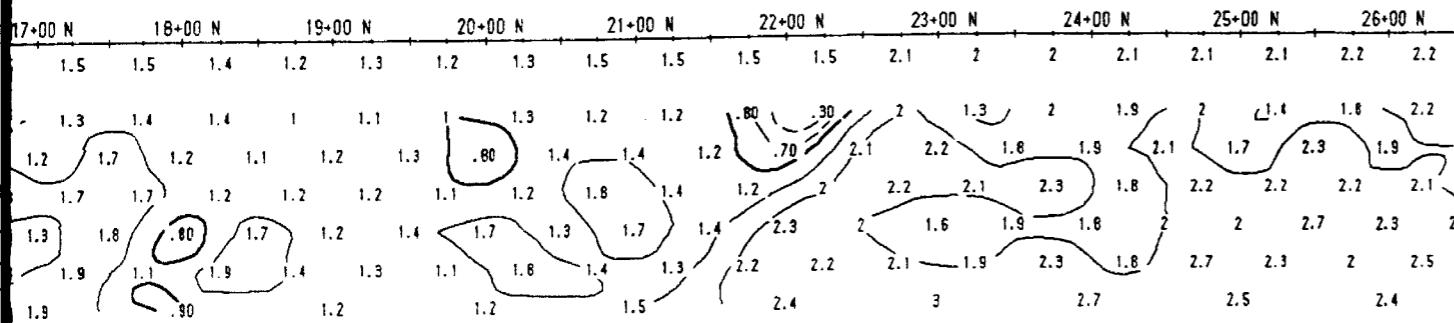


RESISTIVITY  
(0hm \* m)

filter

Resistivity  
Polarization  
Metal Factor

\*  
\* \*  
\* \* \*  
\* \* \* \*

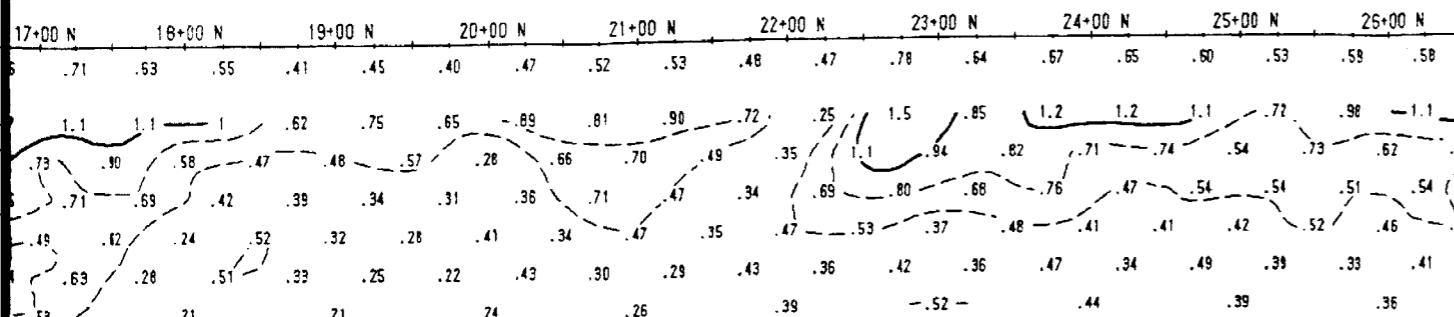


PHASE  
(milli-rad)

filter

- Increase in polarization associated to a relative decrease in apparent resistivity.
- Increase in polarization with little or no associated decrease in apparent resistivity.
- Weak or poorly defined polarization anomaly, no resistivity signature.
- ▼ Low resistivity feature. Bedrock valley or thick overburden. Structural causes?

## INTERPRETATION



METAL FACTOR  
(cip/res \* 1000)

filter

## Induced Polarization Survey

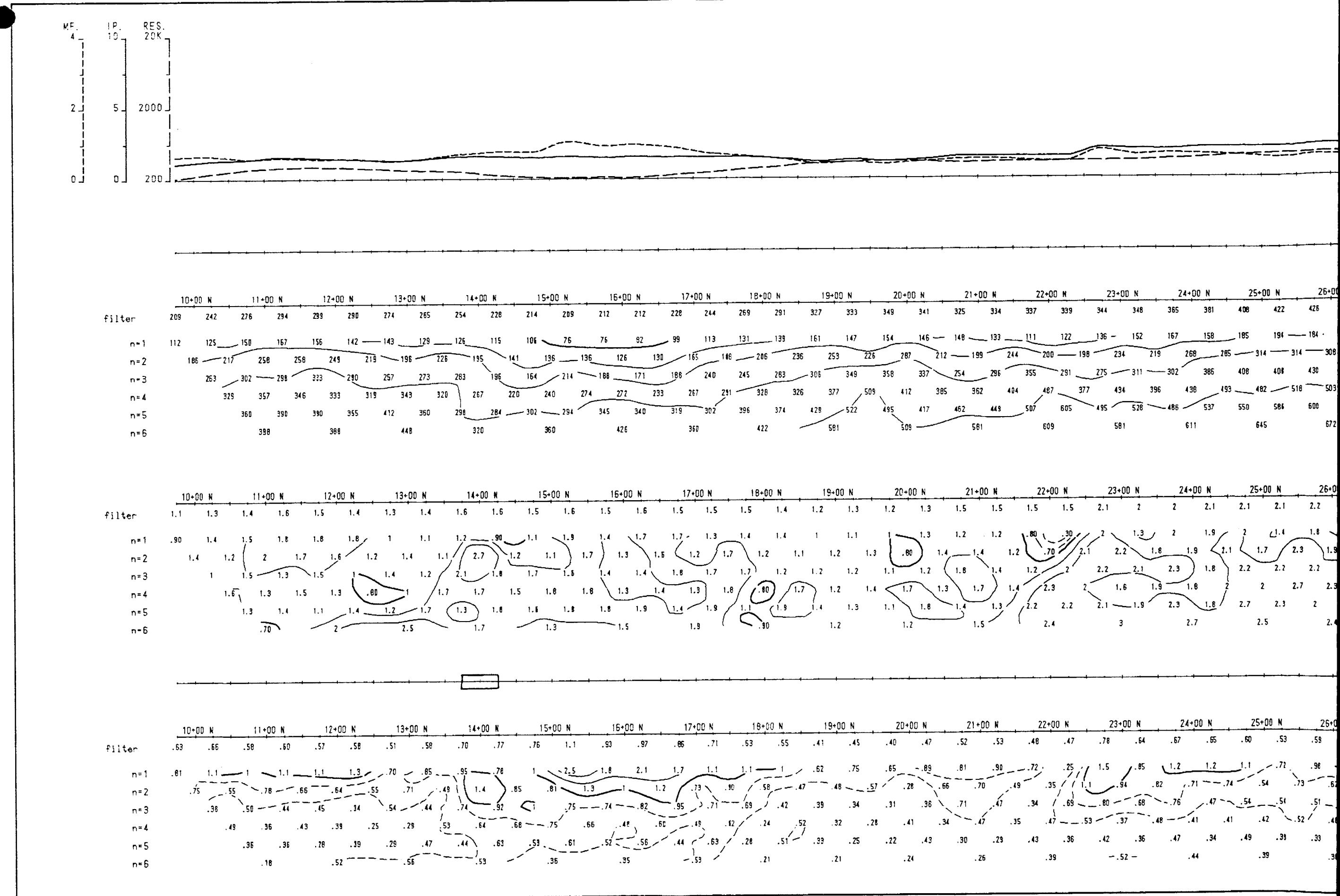
PLACER DOME INC.

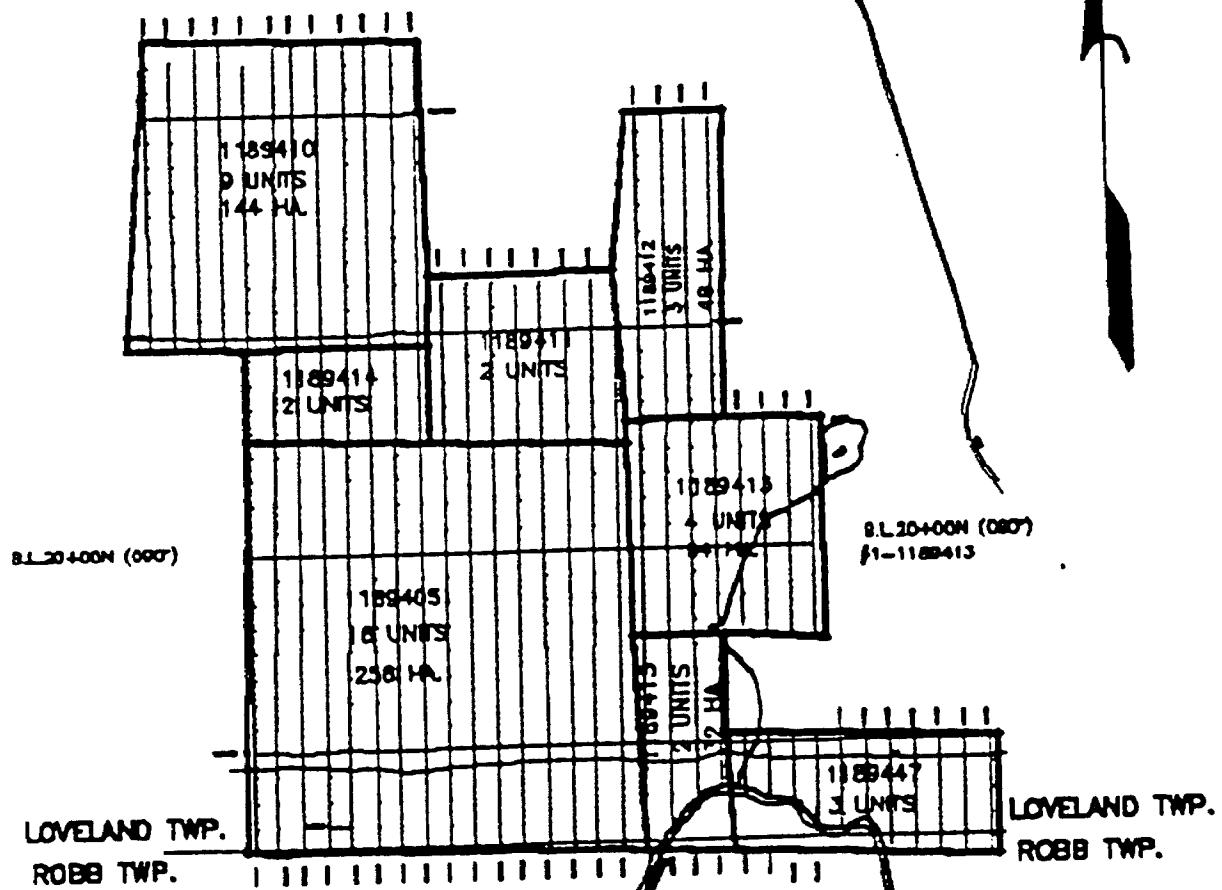
Kamiskotia River 491 Project  
Loveland Township

Date: 92/11/17  
Interpretation by: P. Lortie P. Eng.  
Scale 1 : 5000

VAL D'OR GEOPHYSIQUE LTEE

92-873





# PLACER DOME INC.

## #491 KAMISKOTIA RIVER PROJECT



Ontario



42A12NE8903 2.15269 LOVELAND

900

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

Geoscience Approvals Office  
933 Ramsey Lake Road  
6th Floor  
Sudbury, Ontario  
P3E 6B5

Telephone: (705) 670-5853  
Fax: (705) 670-5863

February 21, 1994

Our File: 2.15269  
Transaction #: W9360.00212

Recording Office  
Ministry of Northern Development  
and Mines  
60 Wilson Avenue  
1st Floor  
Timmins, Ontario  
P4N 2S7

Dear Sir/Madam:

**Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIMS  
P1189405 ET AL IN LOVELAND TOWNSHIP**

---

The assessment work credits for Geophysics filed under Section 14 of the Mining Act Regulations have been approved as outlined in the original submission.

The approval date is February 16, 1994.

If you have any questions regarding this correspondence, please contact Lucille Jerome at (705) 670-5855.

Yours sincerely,

Ron C. Gashinski  
Senior Manager, Mining Lands Section  
Mining and Land Management Branch  
Mines and Minerals Division

KR/jl  
Enclosures:

cc: ✓Resident Geologist  
Timmins, Ontario

✓Assessment Files Library  
Toronto, Ontario

**Report of Work Conducted  
After Recording Claim**

Transaction Number

W9360.00212

**Mining Act**

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

2.15269

- Instructions:**
- Please type or print and submit in duplicate.
  - Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the Mining Recorder.
  - A separate copy of this form must be completed for each Work Group.
  - Technical reports and maps must accompany this form in duplicate.
  - A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s)	PLACER DOME INC.	Client No.	182746
Address	P.O.BOX 350; Suite 2422; Royal Trust Tower; T.D.Centre; TORONTO	Telephone No.	(416) 363 4962
Mining Division	PORCUPINE	Township/Area	MSK 103 Loveland
Dates Work Performed	From: September 1, 1992	To: November 1992	AB AB-

**Work Performed (Check One Work Group Only)**

Work Group	Type
Geotechnical Survey	Mag and IP Geophysical Survey
Physical Work, Including Drilling	L510 RECEIVED
Rehabilitation	
Other Authorized Work	JAN 10 1994
Assays	MINING LANDS BRANCH
Assignment from Reserve	

Total Assessment Work Claimed on the Attached Statement of Costs \$ 43,873.00

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

**Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)**

Name	Address
Val D'Or Geophysique	50, Boul. Lamine, Val D'Or, Quebec, J9P 2H6
	P. Lortie and R. Turcotte
Georgex Exploration	353 Railway Str. Timmins, Ontario, P4N 2P4
	RECORDED
(attach a schedule if necessary)	DEC 21 1993

**Certification of Beneficial Interest \* See Note No. 1 on reverse side**

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date	Received Recorded Holder or Agent (Signature)
	Dec. 16/1993	M. Luba Vcislo; Land Manager

**Certification of Work Report**

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying

P. BURCHELL ; P.O.BOX 670; South Porcupine, Ontario; P0N 1H0

Telephone No.	Date	Certified By (Signature)
(705) 235 8022	December 17/1993	P. Burchell

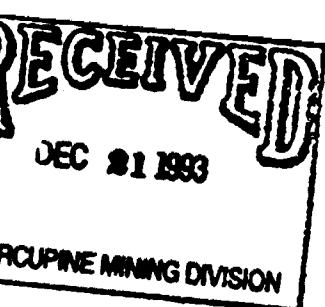
**For Office Use Only**

Total Value Cr. Recorded <i>\$43,873</i>	Date Recorded DEC. 21, 1993	Mining Recorder S. Whit	Received Stamp RECEIVED DEC 21 1993 1145 (C) S.
Deemed Approval Date MAR. 24, 1994.	Date Approved	PORCUPINE MINING DIVISION	
Date Notice for Amendments Sent			

Page No. 1  
12/16/1993

SCHEDULE  
REPORT OF WORK CONDUCTED  
AFTER RECORDING CLAIM

Work Report Number for Applying Reserve	CLAIM NUMBER	Number of Claim Units	Value of Assessment Work Done on this Claim	Value Applied to this Claim	Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date
	P 1189405/	16	17120.00	17120.00	0.00	0.00
	P 1189410/	9	9630.00	9630.00	0.00	0.00
	P 1189411/	2	2140.00	2140.00	0.00	0.00
	P 1189412/	3	3210.00	3210.00	0.00	0.00
	P 1189413/	4	4280.00	4280.00	0.00	0.00
	P 1189414/	2	2140.00	2140.00	0.00	0.00
	P 1189415/	2	2140.00	2140.00	0.00	0.00
	P 1189447/	3	3213.00	3213.00	0.00	0.00
*** Total ***			43873.00	43873.00	0.00	0.00





Ministry of  
Northern Development  
and Mines

Mirage du  
Développement du Nord  
et des mines

# Statement of Costs for Assessment Credit

# État des coûts aux fins du crédit d'évaluation

## Mining Act/Loi sur les mines

Transaction No./N° de transaction

W9360.00212

Project # 491

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7284.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4<sup>e</sup> étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7284.

### 1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'œuvre	456.53	456.53
	Field Supervision Supervision sur le terrain	701.29	1157.82
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type Linecutting & strip prep.	20,156.00	
	Mag Survey	4,668.00	
	IP Survey	16,500.00	\$41,324.00
Supplies Used Fournitures utilisées	Type		
Equipment Rental Location de matériel	Type		
Total Direct Costs Total des coûts directs		42,481.82	

### 2. Indirect Costs/Coûts indirects

\* Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work.  
Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type	233.96	233.96
Food and Lodging Nourriture et hébergement			
Mobilization and Demobilization Mobilisation et démobilisation			
Sub Total of Indirect Costs Total partie des coûts indirects			233.96
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)			
Total Value of Assessment Credit (Total of Direct and Allowable Indirect costs) Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)			43,873.60

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note : Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

### Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	x 0.50 =

### Certification Verifying Statement of Costs

I hereby certify:  
that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as Land Manager I am authorized  
(Recorded Holder, Agent, Position in Company)

to make this certification

### Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Evaluation totale demandée
	x 0.50

### Attestation de l'état des coûts

DEC 21 1993

J'atteste par la présente :

que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer une évaluation sur les terrains indiqués dans la formule de travail ci-joint.

Et qu'à titre de \_\_\_\_\_ je suis autorisé  
(titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

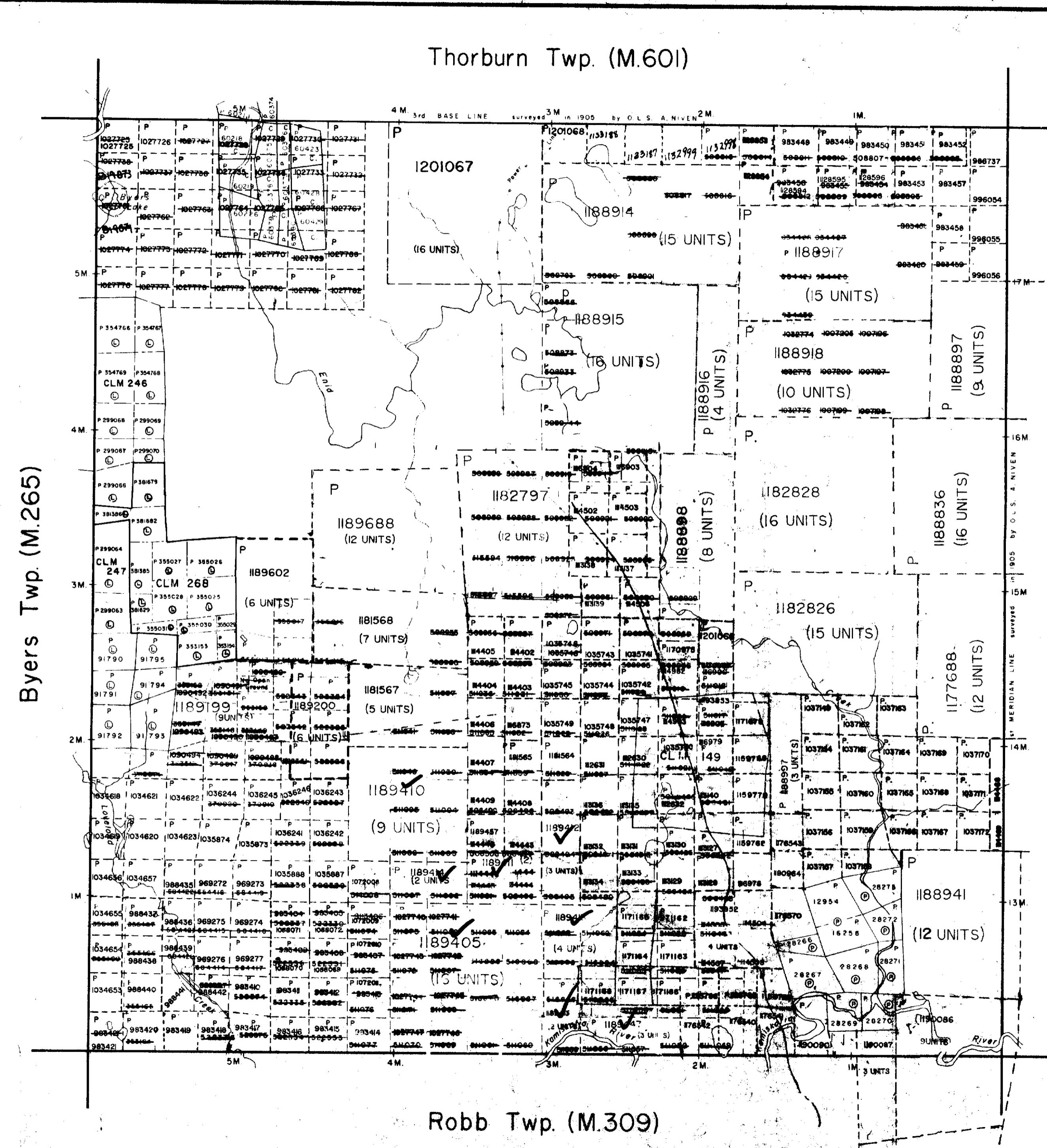
Signature M. Luba Vcisla	Date December 16/1993
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Note : Dans cette formule, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.

卷之三

Thorburn Twp. (M.6C)

Byers Twp. (M.265)



Robb Twp. (M.309)

THE TOWNSHIP  
OF

# LOVELAND

**DISTRICT OF  
COCHRANE**

SCALE: 1-INCH = 40 CHAINS

## **LEGEND**

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	=====
IMPROVED ROADS	=====
KING'S HIGHWAYS	=====
RAILWAYS	=====
POWER LINES	=====
MARSH OR MUSKEG	=====
MINES	=====
CANCELLED	C

## NOTES

400' Surface Rights Reservation along  
the shores of all lakes and rivers

This township lies within the Municipality of CITY of TIMMINS.

**ISSUED**

JAN - 7 1994

#### **REORGANIZATION DIVISION**

ROAD

ISSUED

JAN - 7 1994

PORCUPINE MINING DIVISION

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES. FOR ADDITIONAL INFORMATION ON THE STATUS OF LANDS SHOWN HEREIN.

Rec'd Feb 17/83

**ONTARIO**  
**MINISTRY OF NATURAL RESOURCES**  
**SURVEYS AND MAPPING BRANCH**

