5-20-70

INDUCED POLARIZATION AND RESISTIVITY SURVEY

CALICO HILLS, AFTERTHOUGHT, AND WEBER RESERVOIR AREAS MINERAL AND LYON COUNTIES, NEVADA

FOR

OCCIDENTAL MINERALS CORPORATION

mining
geophysical surveys

#37

FOR GOVERNMENT USE ONLY

INDUCED POLARIZATION AND

RESISTIVITY SURVEY

PROPRIETARY

CALICO HILLS, AFTERTHOUGHT, AND WEBER RESERVOIR AREAS

MINERAL AND LYON COUNTIES, NEVADA

FOR

OCCIDENTAL MINERALS CORPORATION

PROJECT 0007

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INDUCED POLARIZATION AND RESISTIVITY SURVEY CALICO HILLS, AFTERTHOUGHT, AND WEBER RESERVOIR AREAS MINERAL AND LYON COUNTIES, NEVADA

FOR

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INTRODUCTION:

This survey is the continuation of previous IP surveys in adjacent areas by CAMS, conducted during the early part of 1970. Except for Calico Hills Line C-7, this work was done during the period April 18 through May 6, 1970.

The Afterthought Area lies NW of the Calico Hills Area just west of Highway 95, about 9 miles north of Schurz, Mineral County, Nevada. Line WB-1 lies near Weber Dam in Sec. 28.

The purpose of the survey was to find extensions of previous anomalous trends, if any, and to test the magnetic anomaly in Sec. 28 (Weber Reservoir) for possible sulphide mineralization.

Originally three lines in the Afterthought Area and one line in Weber Reservoir Area were proposed. Two more IP lines were added as the survey progressed. The Calico Hills Line C-7 was surveyed during March 27, 28, 1970.

SURVEY PROCEDURE:

Induced polarization and resistivity measurements were made in the time-domain mode of operation. A conventional system of measurement which uses a time cycle of 2.0 seconds "on" and 2.0 seconds "off" - 2.0 seconds "on" and 2.0 seconds "off" (current reversed), was employed.

The commencement of the measurement of the secondary voltage is delayed by 0.45 seconds to avoid coupling and other transient effects. The integration is performed during the period from 0.45 seconds to 1.10 seconds after the cessation of current.

To conform to a standard presentation, the integral time constant is adjusted to give induced polarization readings equivalent to those obtained with transmitter cycles of 3.0 seconds "on", 3.0 seconds "off", with integration of the secondary voltage during the first second of the "off" period.

Throughout the survey, a conventional pole-dipole array of six current electrodes was used with reference electrode set approximately 10,000' at right angles to the direction of the line. Potential electrodes occupied positions on both sides of the current electrodes and measurements were made for dipole separation factors (n) of 1 to 6. This resulted in obtaining a total line coverage approximately 9 times the dipole length.

Apparent polarization response is in units of millivolt-seconds per volt or milliseconds (ms), and apparent resistivity is in units of ohm-meters. The data from each line is plotted in quasi-sections to facilitate presentation of data at all spacings.

SUMMARY OF RESULTS:

No attempt has been made to discuss the results in detail, as it is understood that Charles L. Elliot, consulting geophysicist, will do the complete interpretation.

However, in the Afterthought and Calico Hills Areas, anomalous IP response (>30 ms) has been noted to the SW on all the lines. This response is associated with very low resistivity (<30 ohm-meters) material and is believed related to volcanic (tuff) formations.

The higher resistivity material that lies in the center of the profiles is believed related to intrusives. These rocks exhibit anomalous response; however, the depth extent of the response is questionable. Apparent negative readings are possibly caused by the edge effects of the high response, high resistivity material lying above or adjacent the very low resistivity tuffs.

At the Weber Reservoir Dam Area one line was surveyed at N35°E as close to the southeast end of the reservoir as possible. This line checks out an airborne magnetic anomaly whose causitive body is interpreted to be in the SW quarter corner of Section 28, at a depth of 1300'±. An indication of surface IP response is noted about the line center. However, the very low resistivity (less than 10 ohm-meters) of the alluvium and tuffs (?) reduced signal levels such that readings at n's of greater than 3 could not be obtained.

The surface anomaly characteristics are interpreted as coincident to the Weber Dam facility and not related to the magnetic body at depth. The uniform resistivity pattern indicates the low resistivity tuffs (?) extend to a depth of 1500' or greater. It is therefore likely the magnetic anomaly is related to the tuffs and not a bedrock feature.

This information is offered as a short summary of our work and is not intended to supercede or modify the interpretation submitted by C. L. Elliot.

Respectfully submitted,

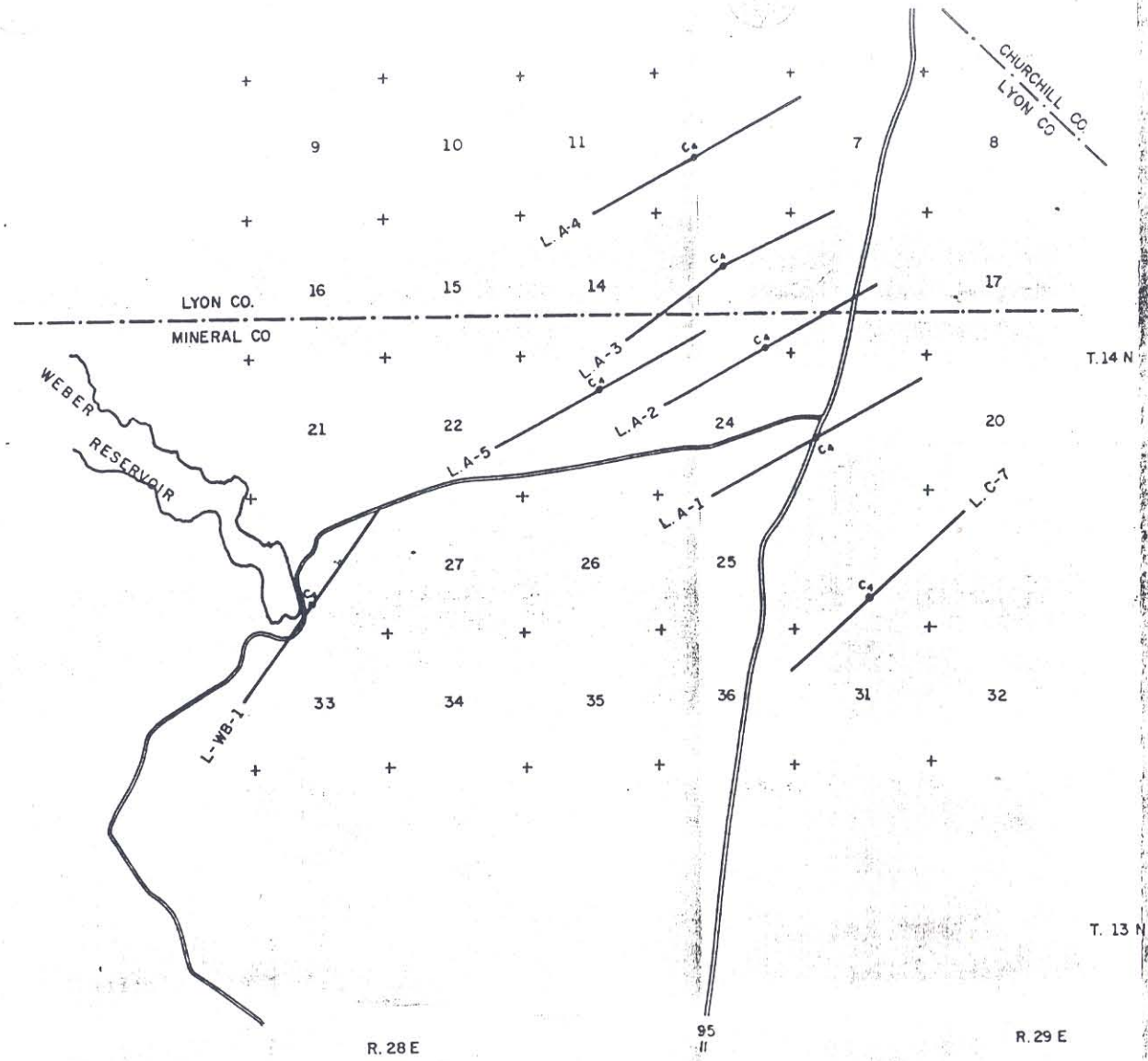
A. V. Hardas/mw

A. V. Hardas, M.S.

W. Gordon Wieduwilt

W. Gordon Wieduwilt
Geophysicist

May 20, 1970
Tucson, Arizona



- N -

SCALE 1 : 62500

I.P. SURVEY

PLAN MAP

CALICO HILLS, AFTERTHOUGHT,
& WEBER RESERVOIR AREAS

MINERAL & LYON COUNTIES, NEVADA

for

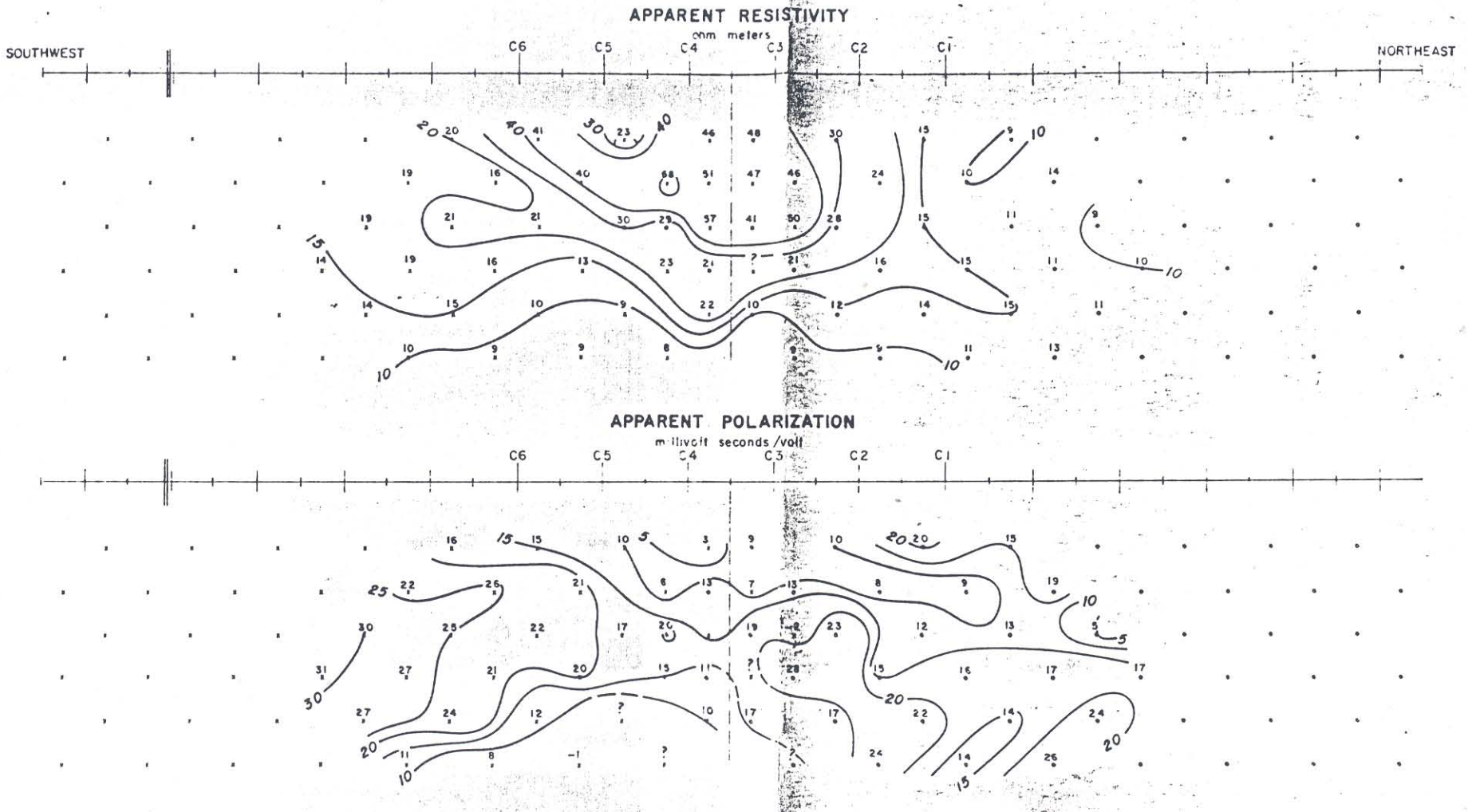
OCCIDENTAL MINERALS CORPORATION

by

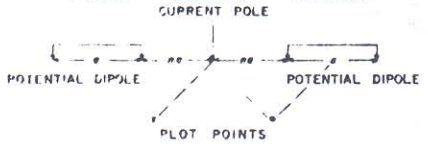
MINING
GEOPHYSICAL SURVEYS

TIME DOMAIN INDUCED POLARIZATION AND RESISTIVITY SURVEY

CALICO HILLS AREA — MINERAL COUNTY, NEVADA
for
OCCIDENTAL MINERALS CORPORATION



POLE DIPOLE ARRAY



LINE C7
LOOKING . . NW
DIPOLE LENGTH 1000'
DATE: MAR. 28, 1970

LEGEND
FENCE
PIPELINE
POWERLINE

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TIME DOMAIN INDUCED POLARIZATION AND RESISTIVITY SURVEY

AFTERTHOUGHT AREA – MINERAL COUNTY, NEVADA
for
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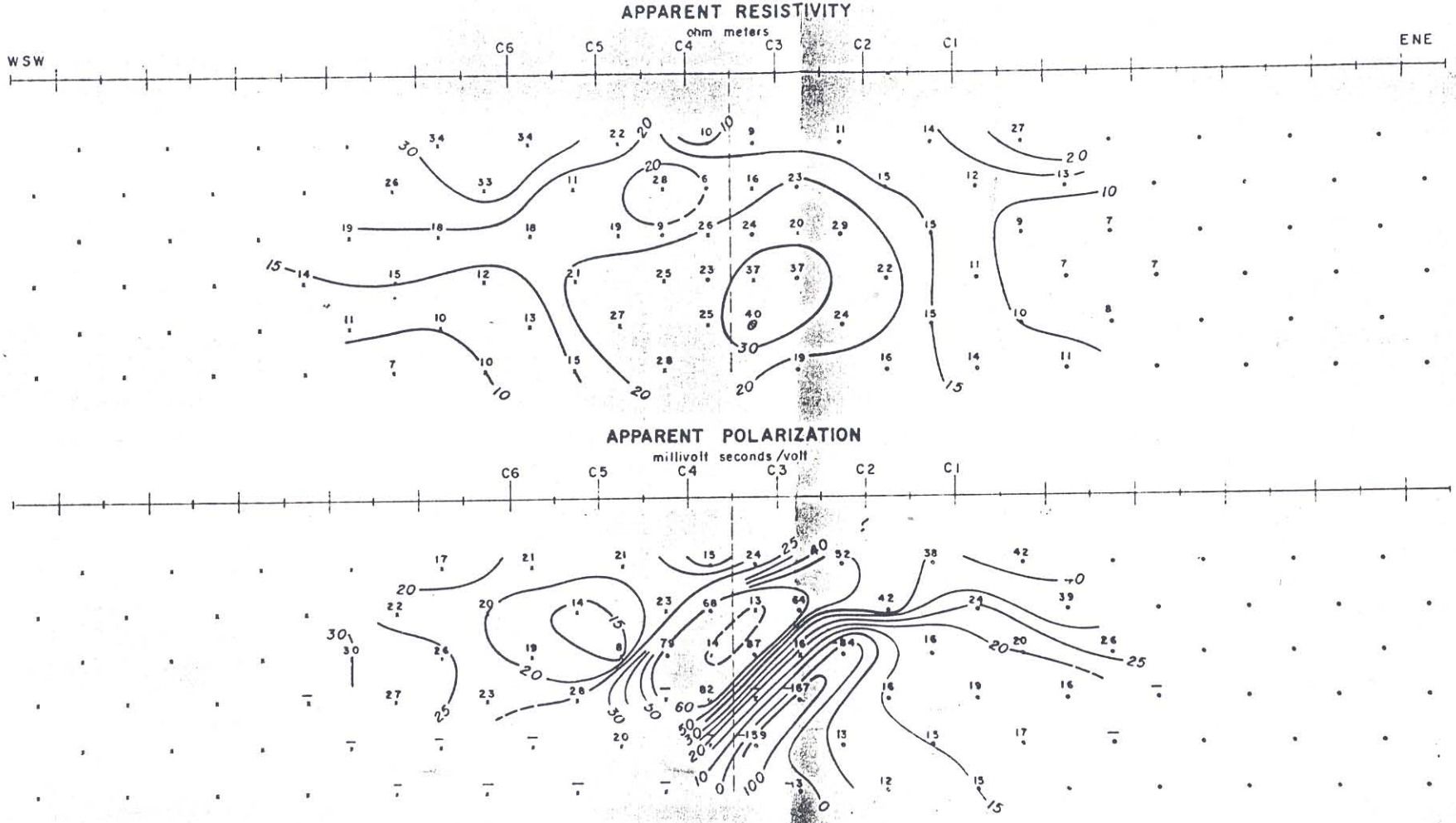
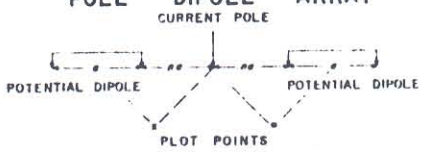


POLE DIPOLE ARRAY



LINE A-1
LOOKING NNW
DIPOLE LENGTH 1000'
DATE APR. 21, 1970

LEGEND
FENCE
PIPELINE
POWERLINE

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AFTERTHOUGHT AREA – MINERAL COUNTY, NEVADA
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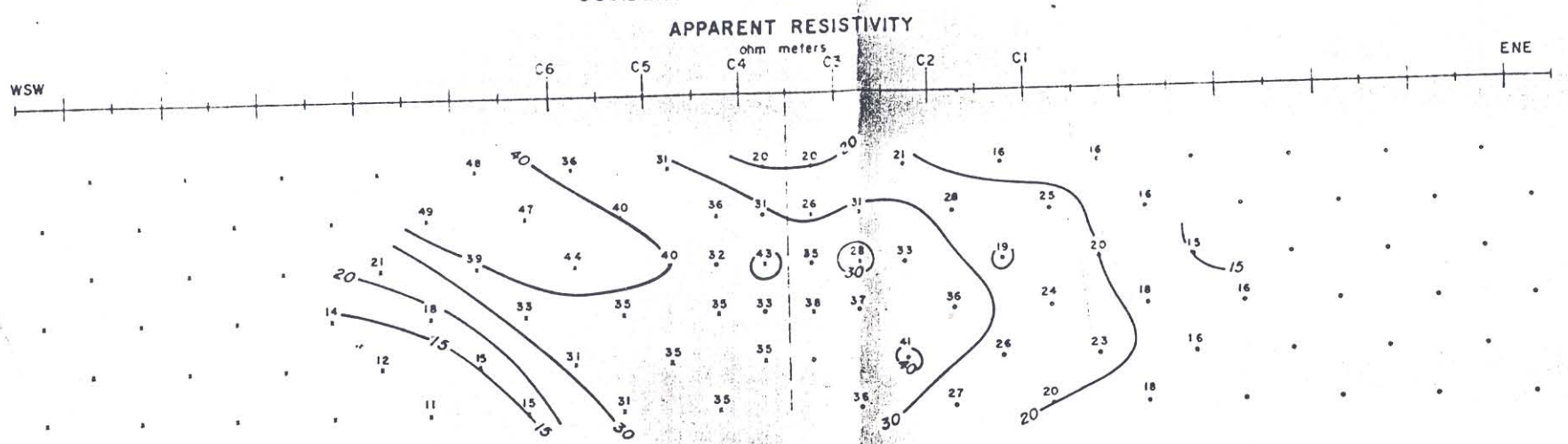

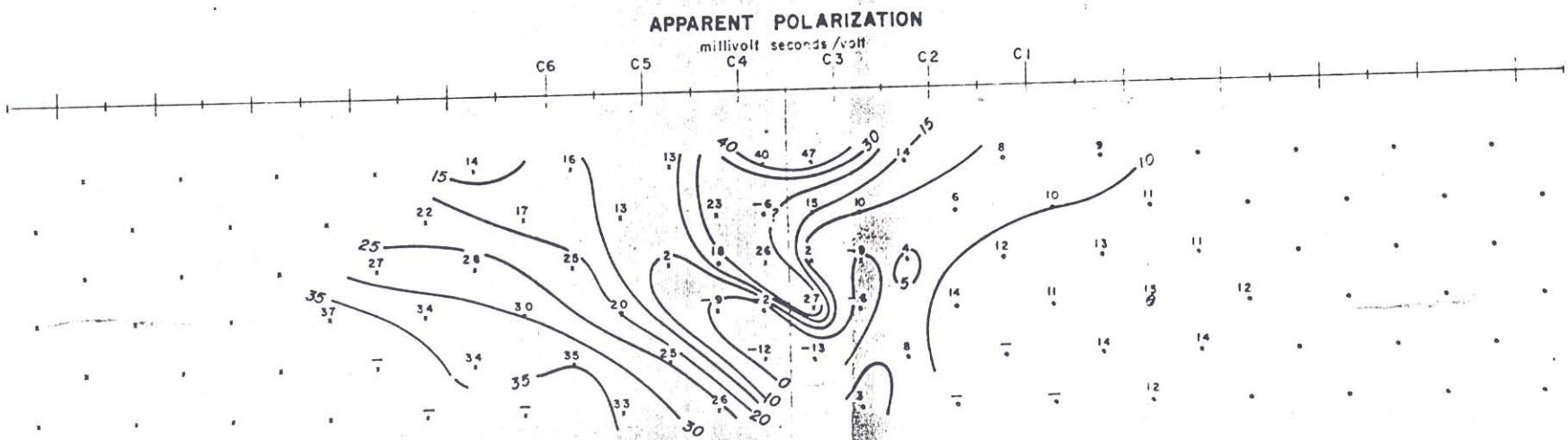

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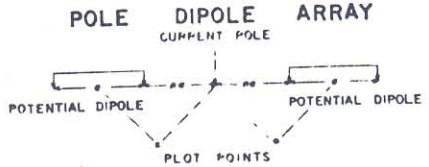

LINE A-2

LOOKING . . . NNW

DIPOLE LENGTH. . . . 1000'

DATE. APR. 23, 1970

LEGEND

FENCE

PIPELINE

POWERLINE

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AFTERTHOUGHT AREA – MINERAL COUNTY, NEVADA
for
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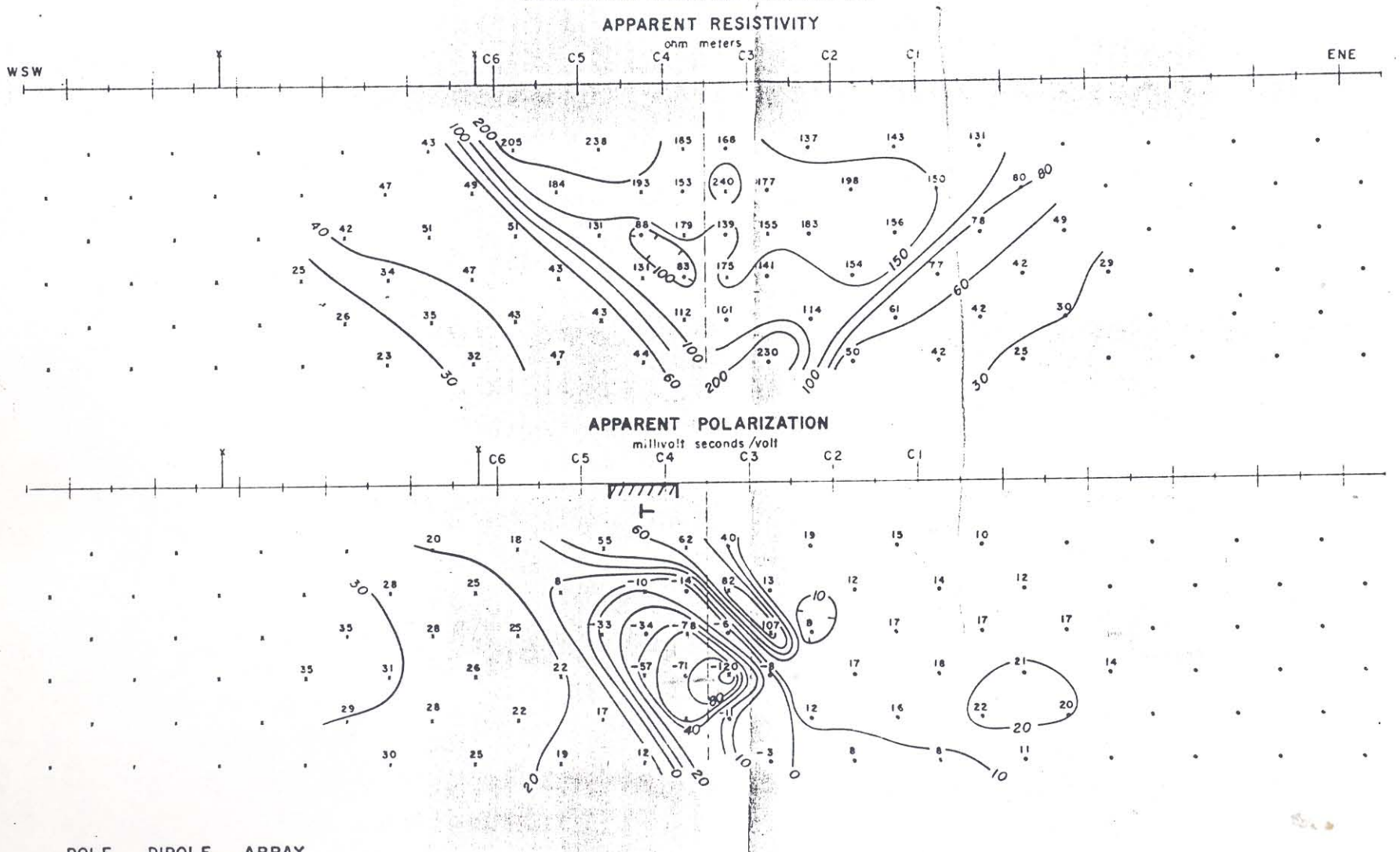

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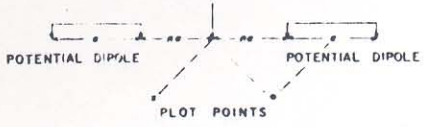

LINE A-3

LOOKING . . . NNW

DIPOLE LENGTH . . . 1000'

DATE APR. 25, 1970

LEGEND

FENCE . . . . .

PIPELINE . . . . .

POWERLINE . . . . .

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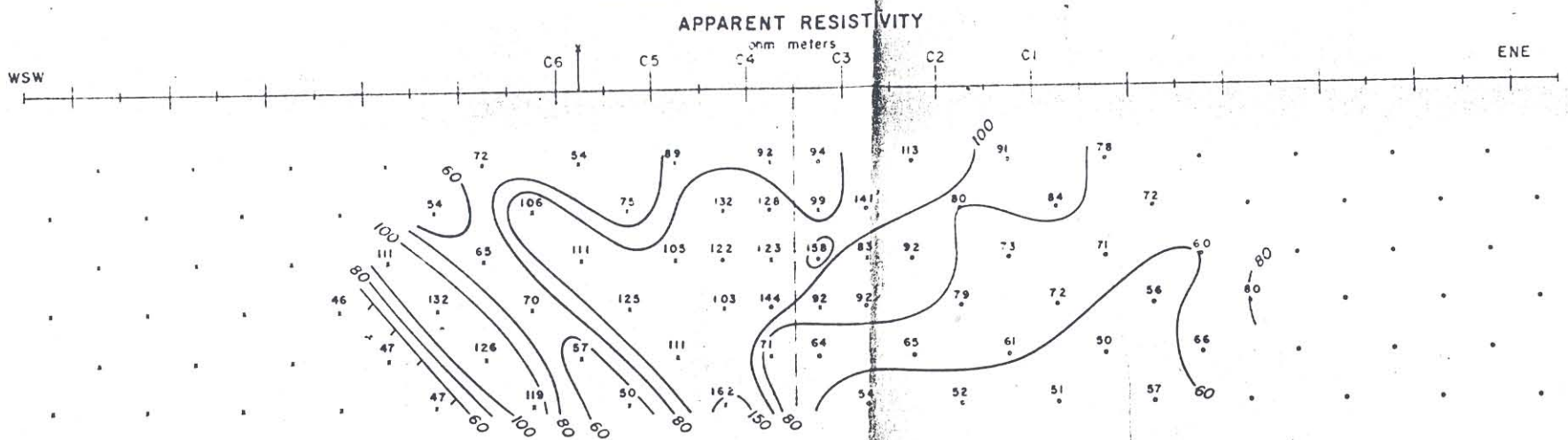

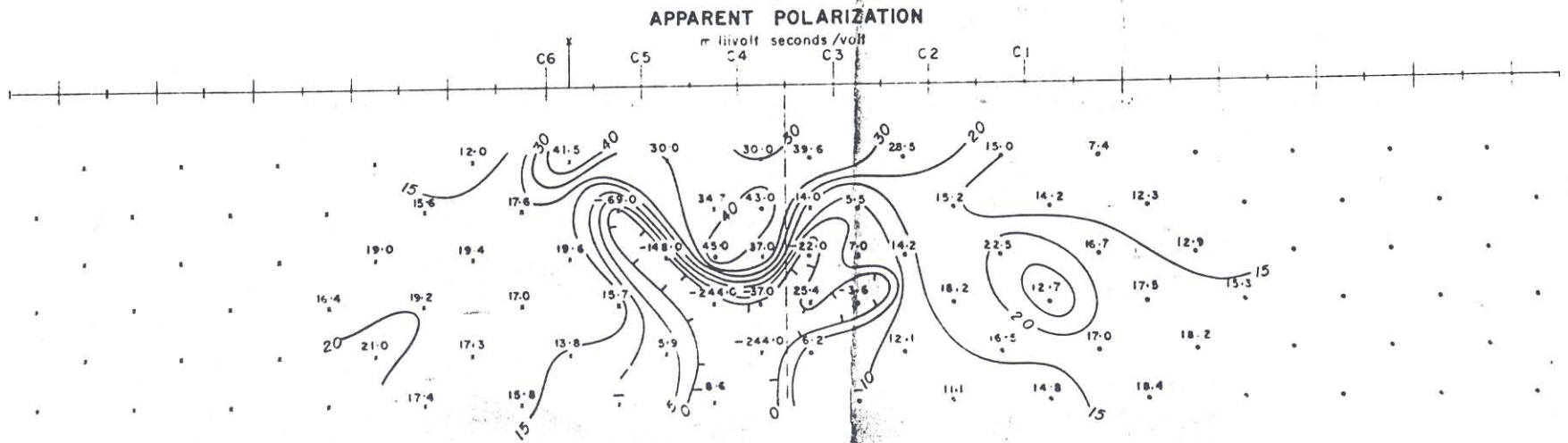

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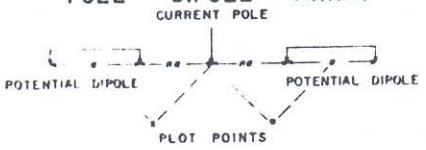

LINE A-4

LOOKING . . . NNW

DIPOLE LENGTH . . . . 1000'

DATE APR. 30, 1970

LEGEND

FENCE . . . .

PIPELINE . . .

POWERLINE . . . . .

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AFTERTHOUGHT AREA – MINERAL COUNTY, NEVADA
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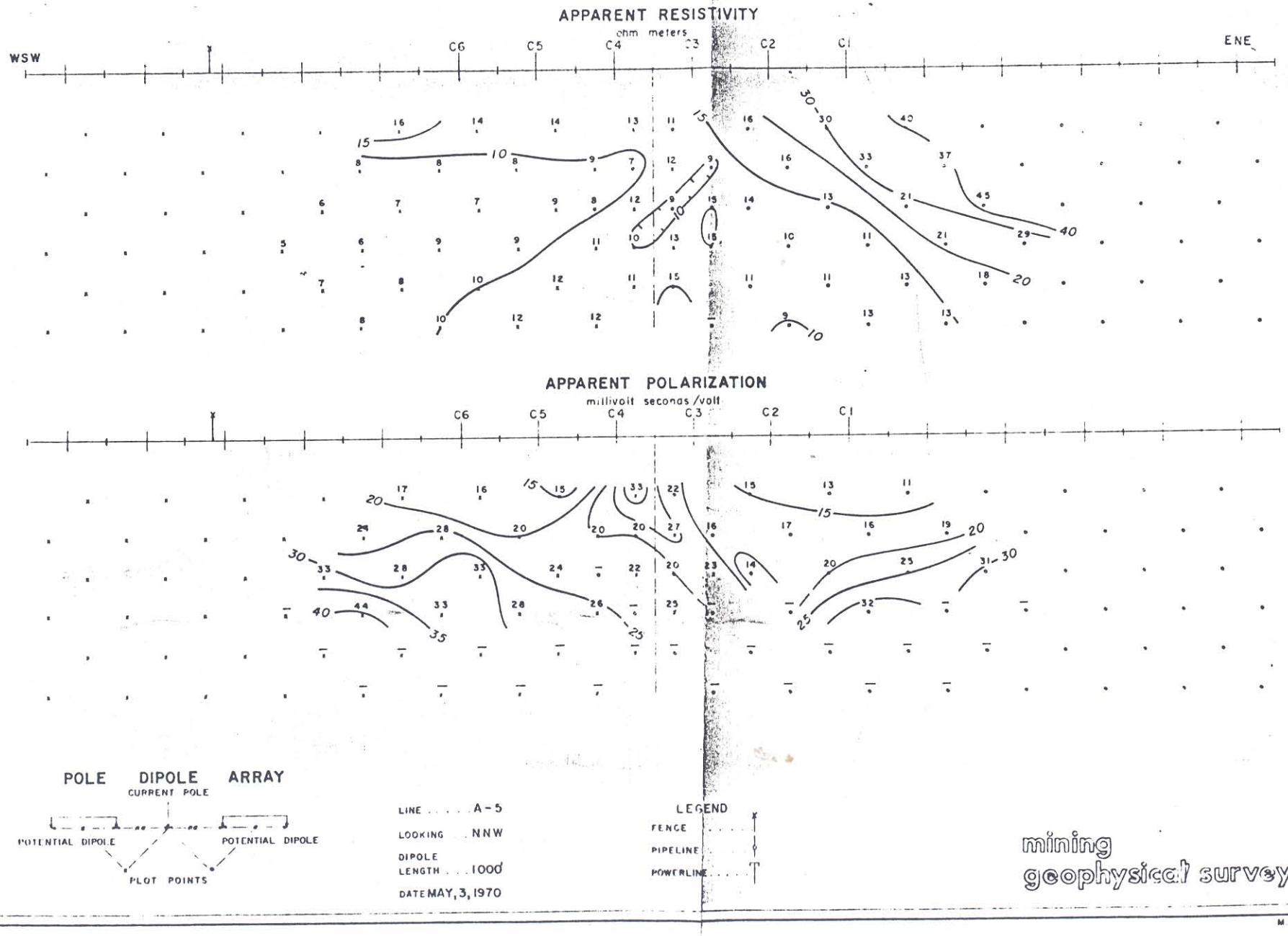

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TIME DOMAIN INDUCED POLARIZATION AND RESISTIVITY SURVEY

WEBER RESERVOIR AREA – MINERAL COUNTY, NEVADA

for

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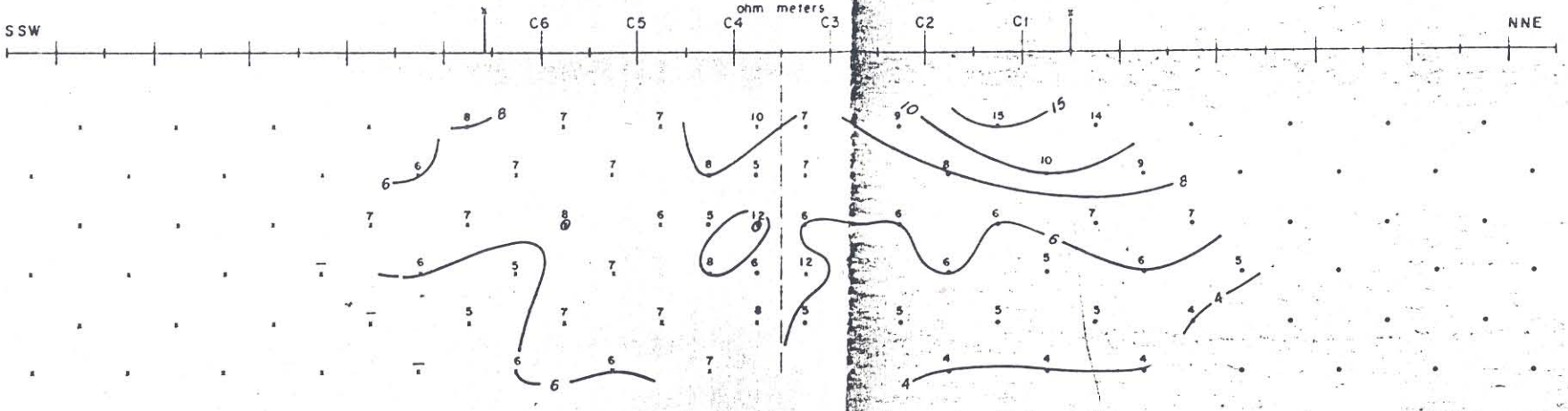
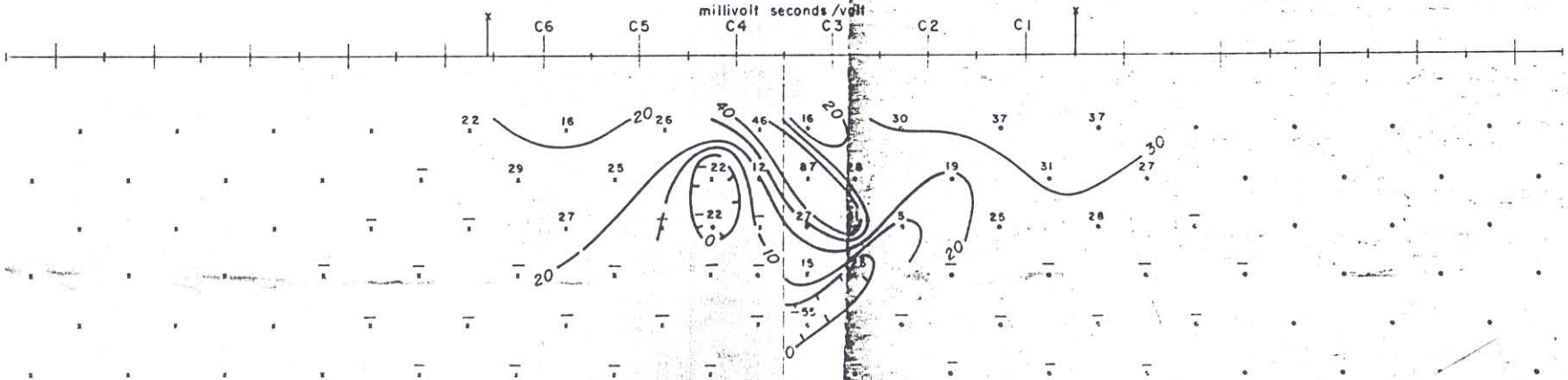
APPARENT RESISTIVITY

ohm meters



APPARENT POLARIZATION

millivolt seconds/volt



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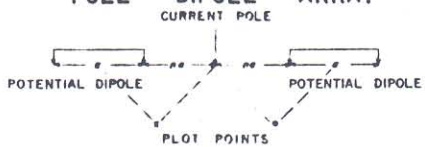

LINE . . . . WB 1

LOOKING . . WNW

DIPOLE LENGTH . . . 1000

DATE APR. 28, 1970

LEGEND

FENCE

PIPELINE

POWERLINE

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