

A VLF-EM And Geological Report
on the
Dave Claims
located in the
Likely Area, Cariboo Mining Division
Map M93A/12E
Latitude $52^{\circ}37'N$ and Longitude $121^{\circ}35'W$
for
Raymond A. Cook
(owner and operator)
by
Raymond A. Cook B.Sc., M.Sc., Geology
July 31, 1984

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

Raymond A. Cook

12,515

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I. INTRODUCTION

A VLF-EM16 and geological survey was conducted central to the Dave claims and adjacent to known epidote skarn alteration of andesitic volcanics.

Property

The Dave claims include twenty contiguous units located in the Quesnel Lake area of the Cariboo Mining Division, British Columbia. The claims are held by Raymond A. Cook and have record number 1773.

Location and Access

The claims are situated approximately one kilometer southwest of the town of Likely, British Columbia. Likely is some eighty-three kilometers from One Hundred and Fifty Mile House, by a partially paved and gravelled road. The claims are accessible by the Horsefly-Likely gravel road. Slum Gulch Creek traverses diagonally across the property from Slum Lake.

Topography and Vegetation

The elevation varies on the property from 750 meters at Quesnel River to 1200 meters for the Slum Gulch plateau. A marked change in slope occurs with the northeastern half of the property steeply dipping away from the higher southwestern plateau. The vegetation cover is dense with several periods of regrowth. Cedar plus lesser abundant birch, fir, pine and alder predominate in a temperate environment.

Previous Work

Ardo Mines conducted a geochemical and geophysical examination of the northern half of the property when held in the early 1970's. Several anomalies were delineated with some follow up diamond drilling. Ardo Mines drilling detected copper and gold mineralization immediately north of the present Dave claims. One Ardo Mines drill hole has been located on the Dave claims adjacent to Slum Gulch Creek.

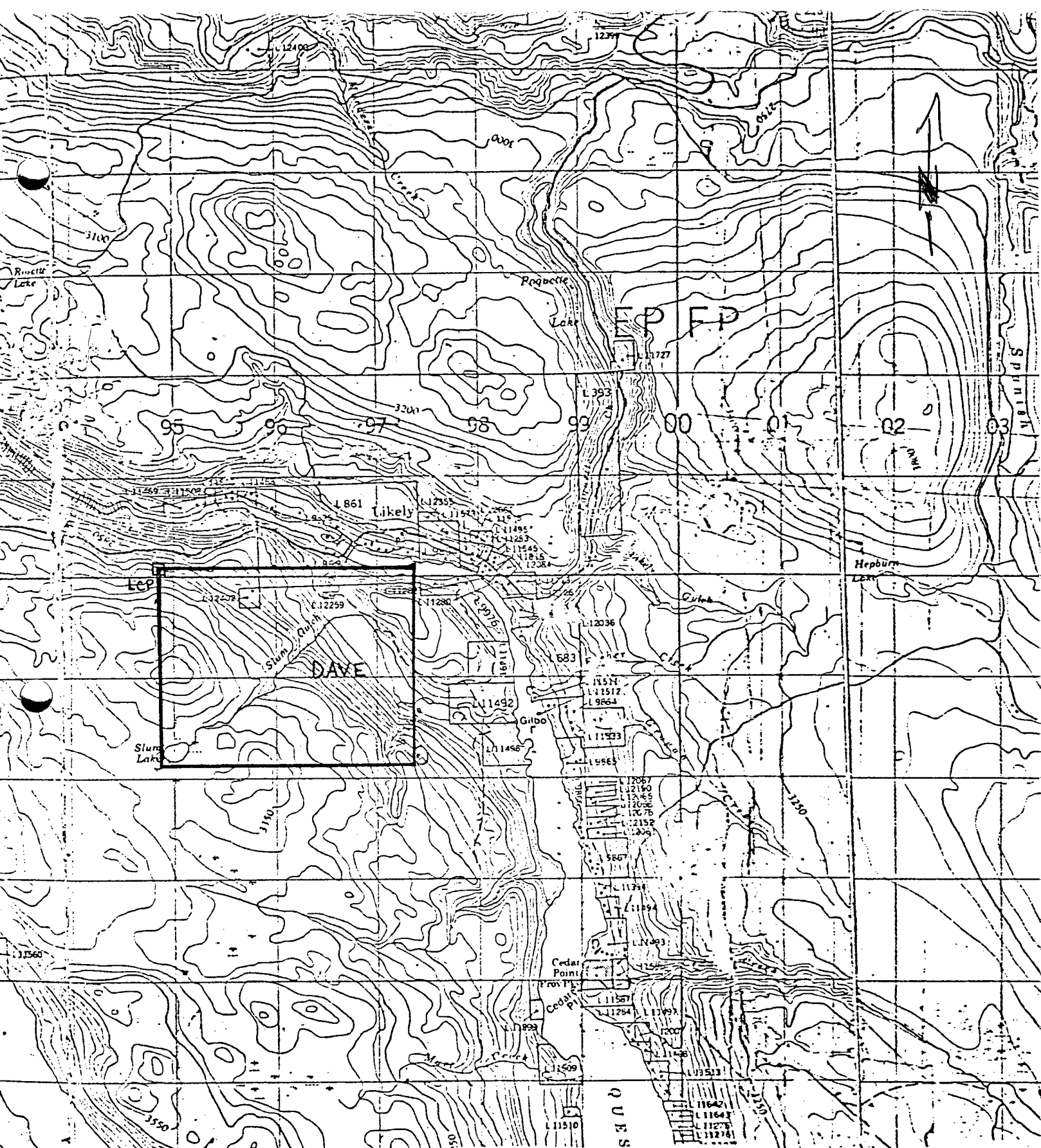
The Dave claims have been partially mapped at a 1:11000 scale and prospected in 1981 with followup rock geochemistry. A Winkie diamond drill hole was drilled in 1982 to test for mineralization in epidote skarn at Slum Gulch Creek roadcut.

Performed Work

The Dave property was geologically mapped and geophysically surveyed from July 10 to July 23 1984. Seven thousand meters were tested by VLF-EM16 at 50 meter stations. Survey lines were compassed, cut, flagged and chained.

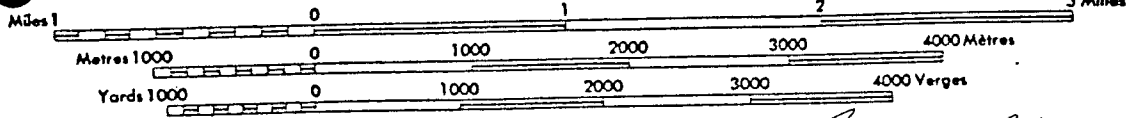
Geological mapping was by chain and compass with rare outcroppings available for observation. Heavy vegetation plus a thick moss undergrowth limited mapping to mainly outcrop in roadcuts.

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CARIBOO LAND DISTRICT
 BRITISH COLUMBIA

Scale 1:50,000 Échelle



This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 100 FEET
 Elevations in Feet above Mean Sea Level
 North American Datum 1927
 Transverse Mercator Projection

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The VLF-EM survey was conducted using a Geonics Limited Ronka portable VLF-EM16. The VLF-EM transmitting station used was Seattle with a frequency of 18.6 kHz. Survey lines were cut east-west at right angles to the transmitting station. All EM16 readings were taken facing west. Topographic relief over the surveyed area was gradational and cumulatively less than 50 meters from east to west.

II. RESULTS

VLF-EM16 Survey

A map was compiled with quadrature percentages contoured and inphase percentages profiled along the seven 1000 meter by 50 meter gridlines (Map in pocket). This technique is the opposite method recommended by Fraser plus Patterson and Ronka for the plotting of EM16 data however in this study it accentuates the presence of skarn through high negative quadrature contours.

Quadrature percentages fluctuate from (-)18 to (+)6 with 75% of the values zero and negative (Profiles 1 to 7). Quadrature values change gradually throughout all but the eastern part of the grid.

Inphase percentages range widely from (-)15 to (+)34 with 84% of the values zero and positive. Inphase values demonstrate large fluctuations along each gridline while parallel stations between gridlines exhibit strong similarities (Profiles 1 to 7).

Geology

Mapping established four types of lithology in the survey area:

1.) Rock outcrop along roadcuts at the eastern edge of the study area contains silicified and felsitized massive epidote skarn. Skarn development is crosscut and incorporates felsic and mafic diorite dyke complexes. Numerous fractures occur throughout the skarn - dyke complexes with chloritization and slickenside striae along the fracture planes. Trace mineralization of chalcopyrite and magnetite occur throughout the altered rocks.

2.) Flanking the skarn to the west are outcrops of slight to moderately altered volcanic andesite. Silicification and epidotization are present but decrease to the west.

3.) Two thirds of the western surveyed area contains very slightly altered andesite flows and agglomerate. Carbonate infilled amygdules and augite phenocrysts are common in a finely crystalline mafic groundmass.

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4.) Outcrop in the southwestern corner of the survey area contains brecciated mafic and ultramafic volcanics with a massive habit. Pyroxene phenocrysts are the dominant mineralogy in hand specimens suggesting a pyroxenite with abundant fracturing and carbonate cement.

III. INTERPRETATION

1.) The negative quadrature contours are highest where epidote skarn alteration is best developed.

2.) VLF-EM16 readings of quadrature plus inphase values delineate conductive (metallic) targets where profiles crossover. Two zones of primary interest occur with one zone encompassing stations 8 to 10 west and the second zone including stations 18 to 20 west. Both zones with conductive targets trend north-south across all gridlines.

Conductive targets of secondary interest are similarly delineated by profile crossover and profile approach. Stations 2 and 3 west appear conductive across gridlines 1 to 3 north and a conductive target occurs at station 14 west on line 3 north.

3.) Conductive targets, based on their profile characteristics, are narrow in width, disseminated in composition and dip (within an alteration or fault zone) at low angles to the east.

4.) Four distinct blocks of bedrock with differing electromagnetic characteristics occur within the study area. Bedrock blocks appear separated by the previously described zones of high (relative) conductivity with conductive trends of north-south and north northwest to south southeast:

a.) Block I, encompasses stations 00 to 4 west with high to low negative quadrature and high to low positive inphase readings.

b.) Block II, includes stations 5 to 10 west with low negative to low positive quadrature plus medium to high positive inphase percentages.

c.) Block III, includes stations 11 to 17 west with characteristic medium to high negative quadrature and medium positive inphase percentages.

d.) Block IV, encompasses stations 18 to 20 west with low negative to low positive quadrature and low negative to low positive inphase values.

5.) Mapped bedrock although limited by exposure partially explains the different electromagnetic properties observed in the study area: Block I, was well mapped noting extensive skarn development of the host volcanic andesites. Block II, appears transitional between the altered and unaltered andesite. Block III, contains an outcropping of unaltered flows and agglomerate of porphyritic amygdaloidal andesite. Block IV, contains outcrops to the south of massively brecciated mafic to ultramafic

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volcanics with abundant carbonate fracture filling and alteration.

IV. CONCLUSIONS

A VLF-EM and geological survey central to the Dave claims have outlined two primary plus two secondary conductive (metallic) targets. The primary EM targets occur within the contact zones of changing bedrock lithologies.

Previously mapped dyke controlled epidote skarn has been extended west by 250 to 300 meters with an additional alteration envelope of decreasing intensity a further 300 meters in width.

Disseminated sulphide mineralization noted in skarn from prior assessment work and this survey suggests that potential gold-sulphide mineralization in anomalous quantities could exist on the Dave property.

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APPENDIX I

COST STATEMENT - DAVE CLAIMS

VLF-EM16 and Geological Survey July 10 to July 23, 1984.

<u>Name</u>	<u>Work</u>	<u>Dates Worked</u>	<u>No. of Days</u>	<u>Salary/Day</u>	<u>Cost</u>
R. Cook	Geologist, EM16 operator, cut and flag line	July 10 to 23, 1984	14	\$150.	\$2100.
					Subtotal <u>\$2100.</u>

GENERAL EXPENSES

Van rental and gasoline	\$950.
VLF-EM16 rental	\$450.
Accomodation	\$220.
Meals	\$210.
Misc. (laundry, flagging, topofil.etc.,)	\$ 70.
Report compilation	\$400.

Subtotal \$2300.

Total \$4400.

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APPENDIX II
Qualifications

I, Raymond A. Cook have been practising my profession as a geologist since 1973.

I have an honours B.Sc., in Geology from the University of Alberta, Edmonton 1973 and a M.Sc., Geology from the University of British Columbia, Vancouver 1981.

In applying my profession I have worked with Eldorado Nuclear, Cominco, Terra Mines Ltd., Union Carbide, Crowdis Oil Consultants, Belloy Petroleum Consultants, Home Oil and Rhamco Resource Explorations and Consultants Inc., in mineral and oil-gas exploration/development.

I have worked on research projects in geology for the University of Alberta, Edmonton, Alberta and the University of British Columbia, Vancouver, British Columbia.

I have worked privately on interests of my own in British Columbia and the Northwest Territories since 1975.

I hold interest in the property described in this report and have supervised and directed all exploration activity.

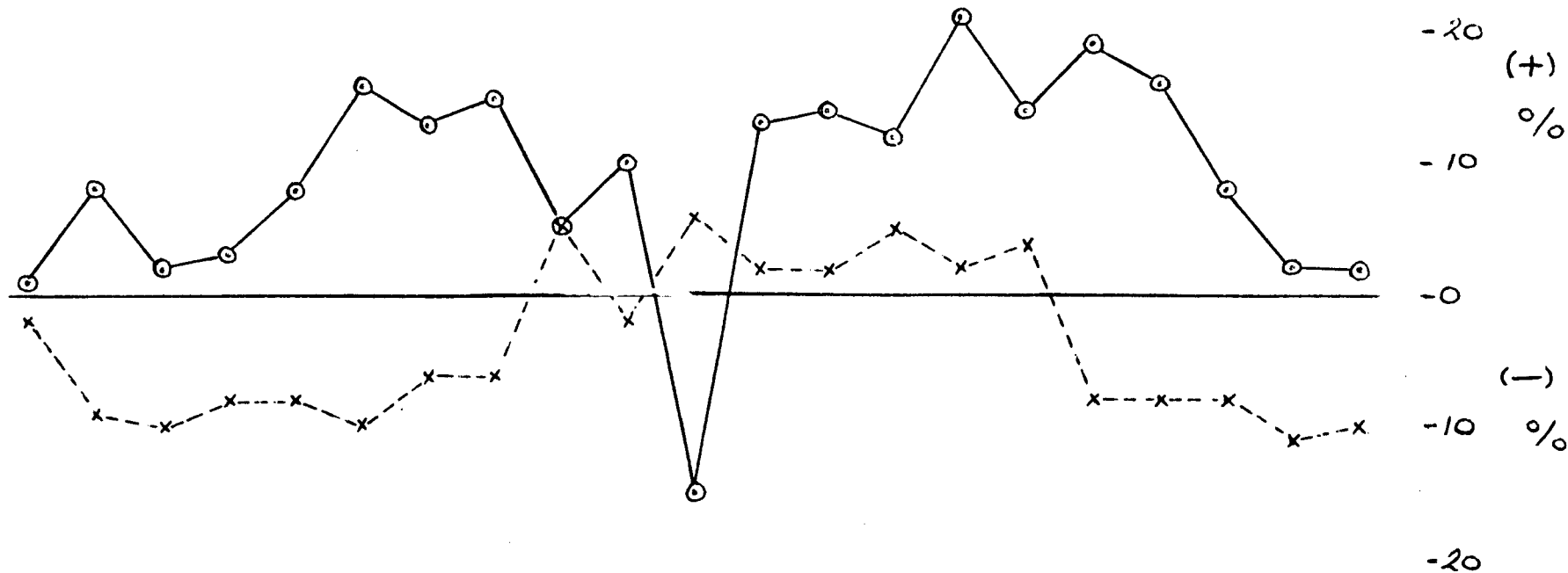
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Profile 1 LINE 3 SOUTH

WEST

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1 : 5000

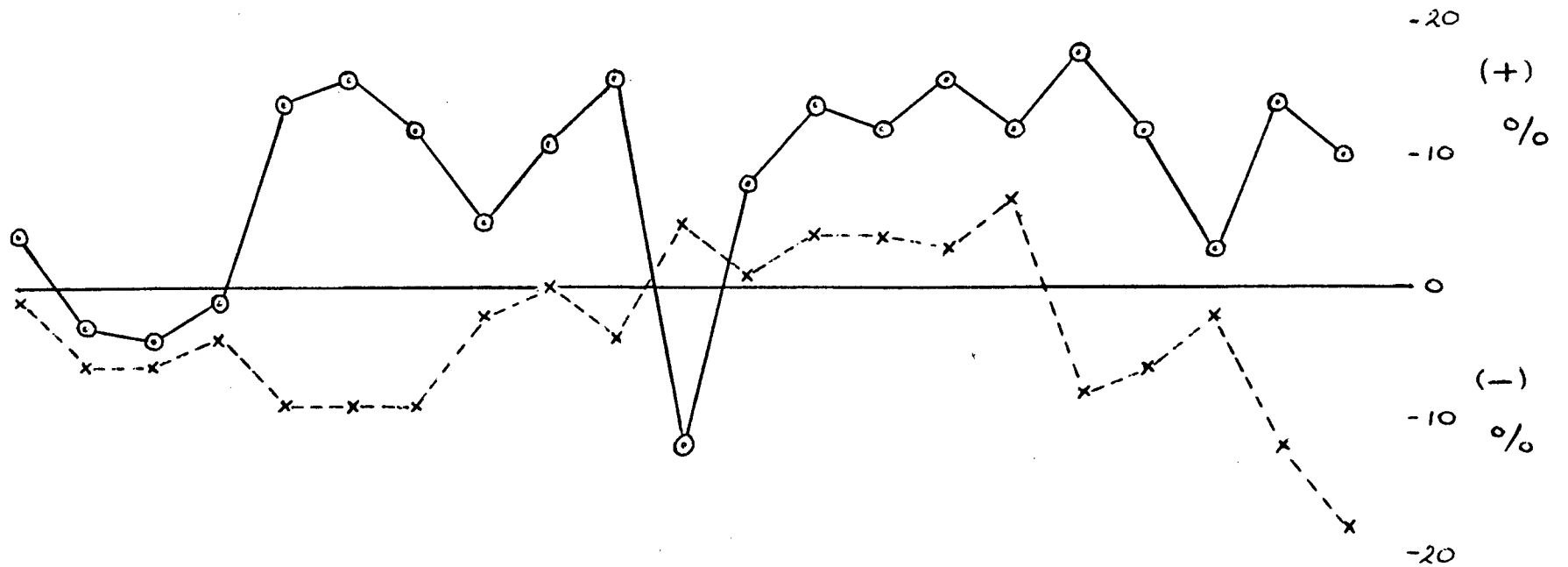
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Profile 2 LINE 2 SOUTH

WEST

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1:5000

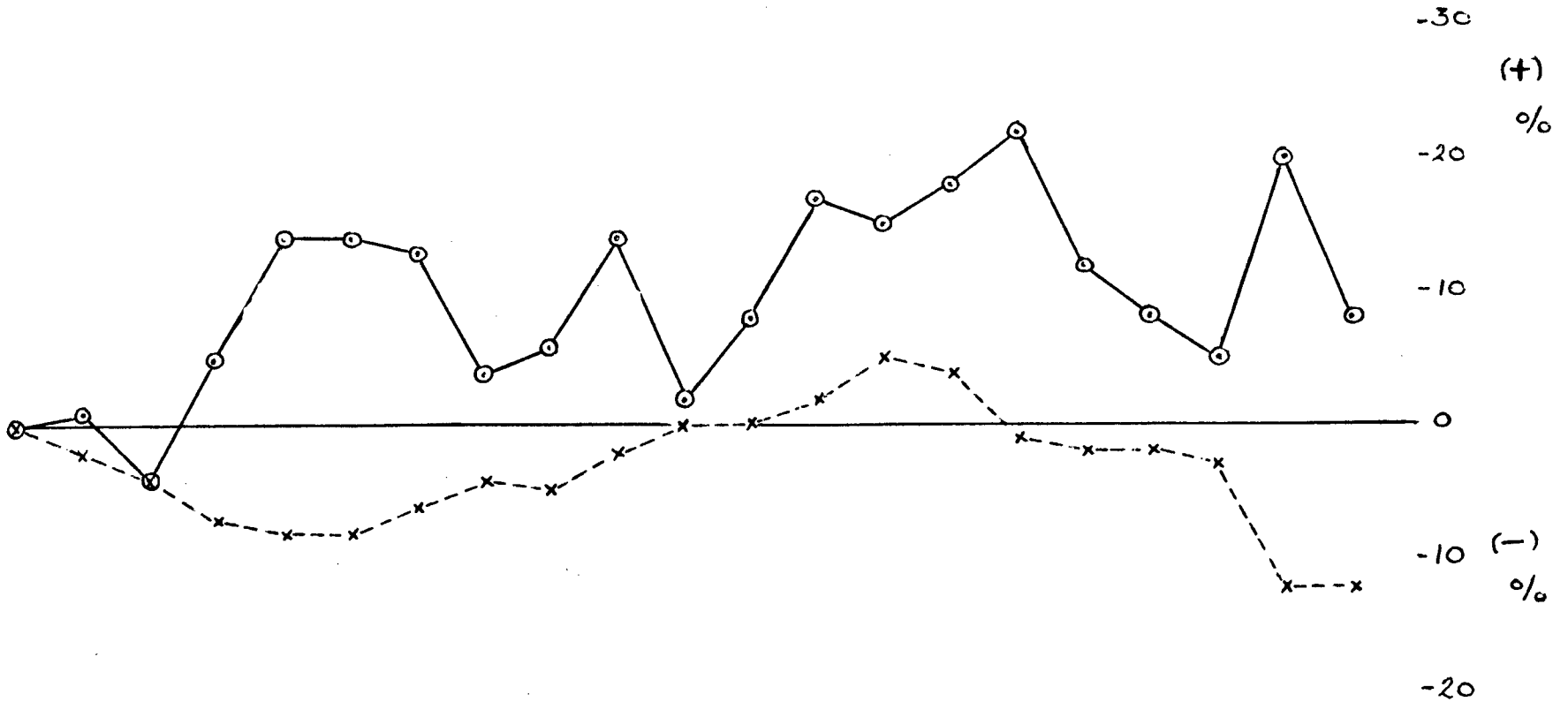
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Profile 3 LINE 1 SOUTH

WEST

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1:5000

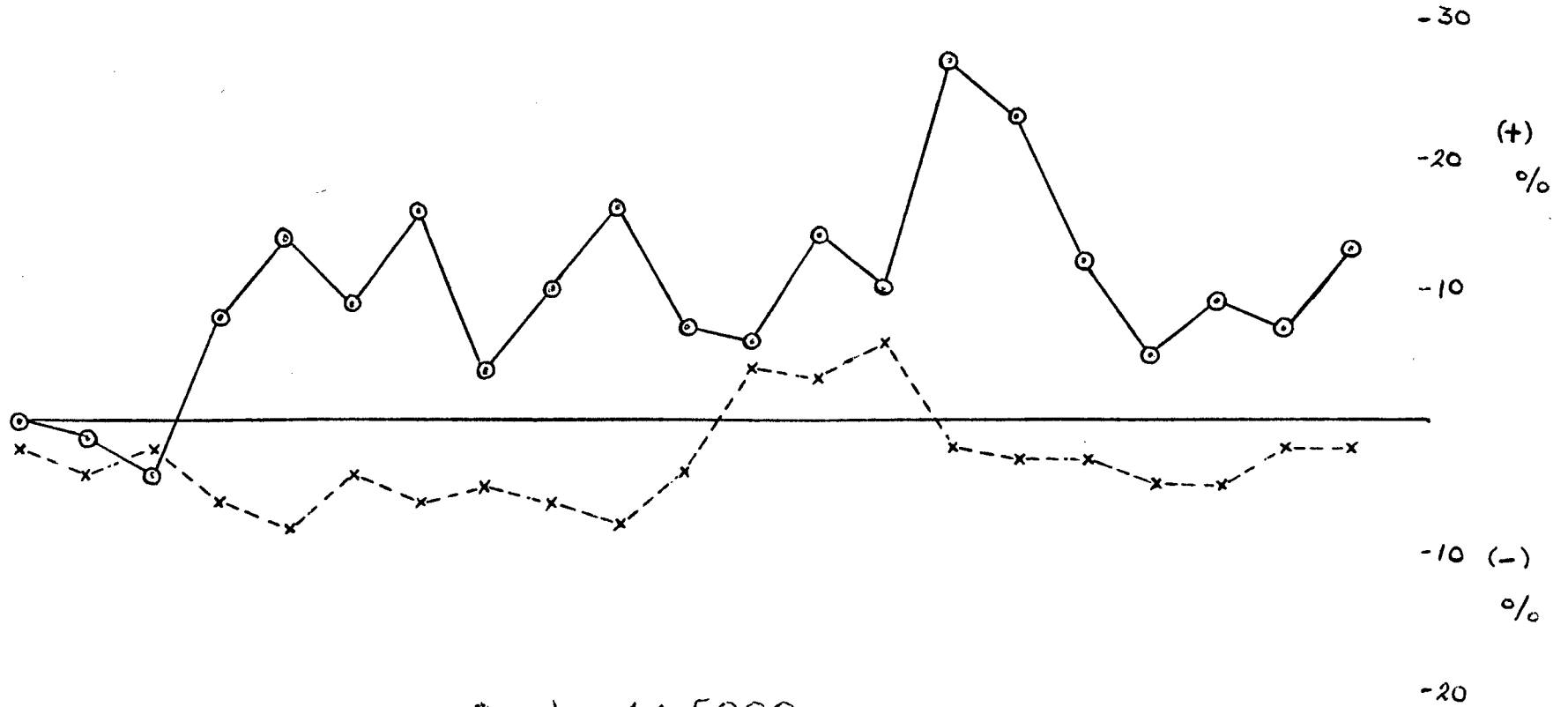
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Profile 4 BASELINE

WEST

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1:5000

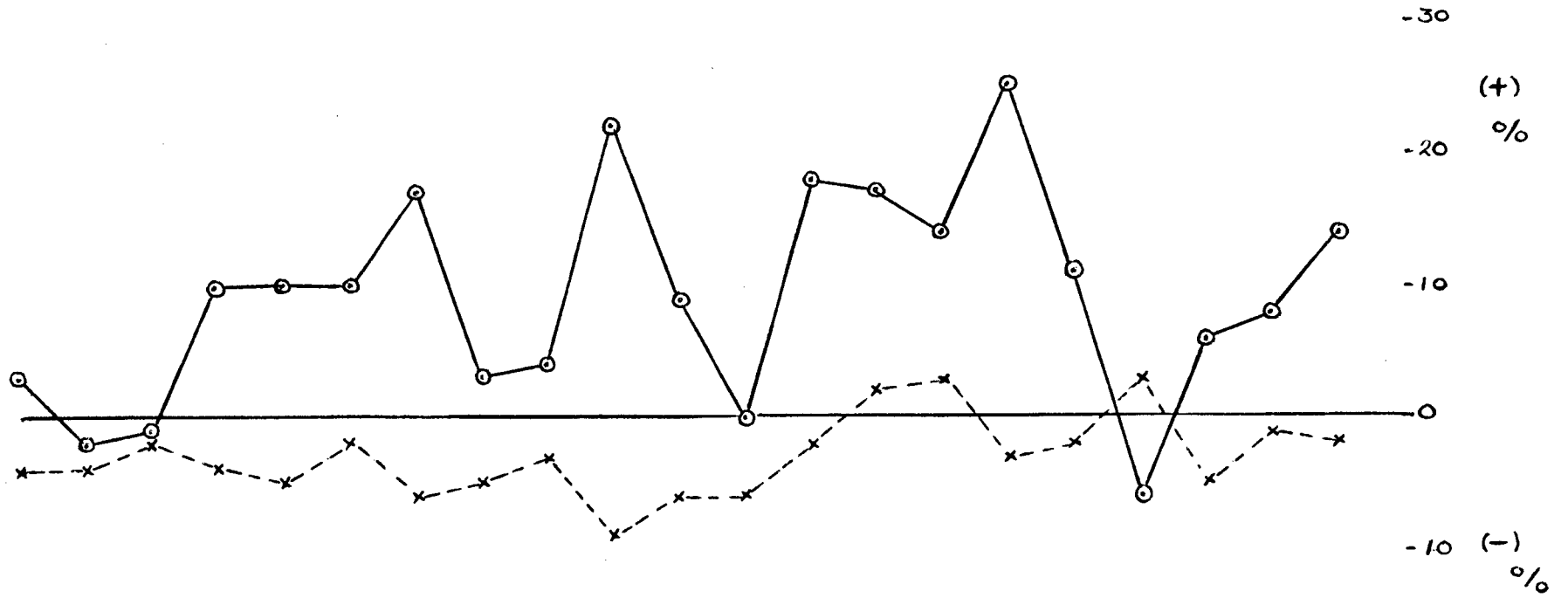
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Profile 5 LINE 1 NORTH

WEST

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1:5000

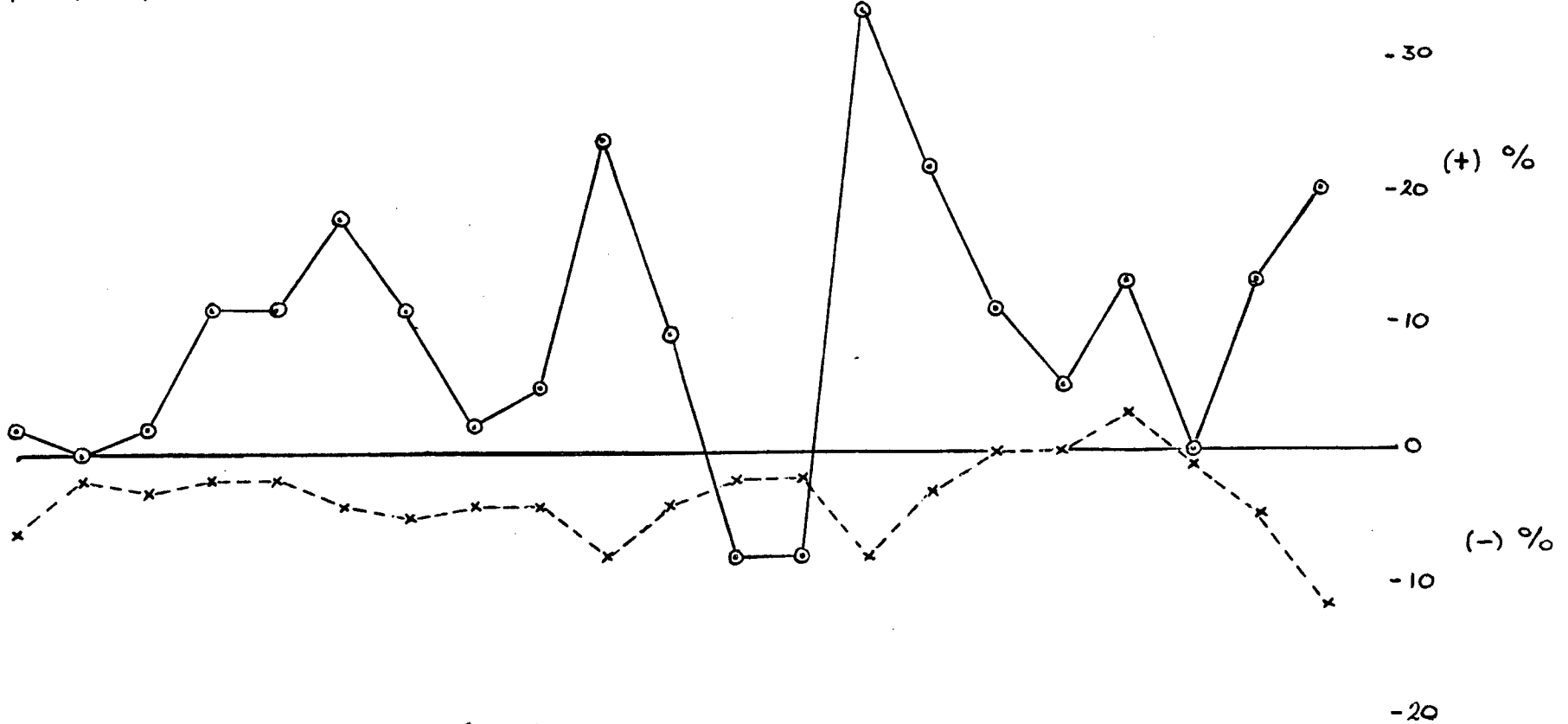
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WEST

Profile 6. LINE 2 NORTH

EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



Scale 1:5000

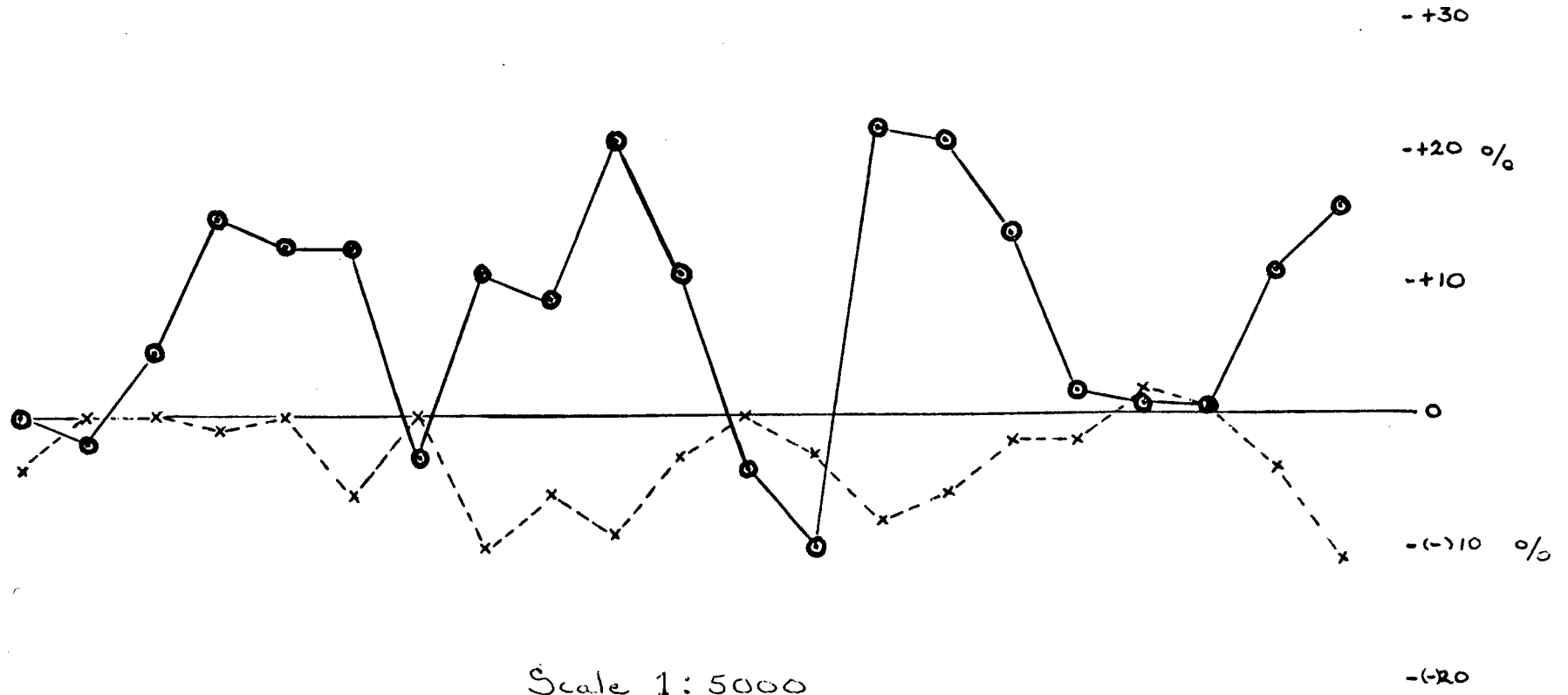
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WEST

Profile 7 LINE 3 NORTH

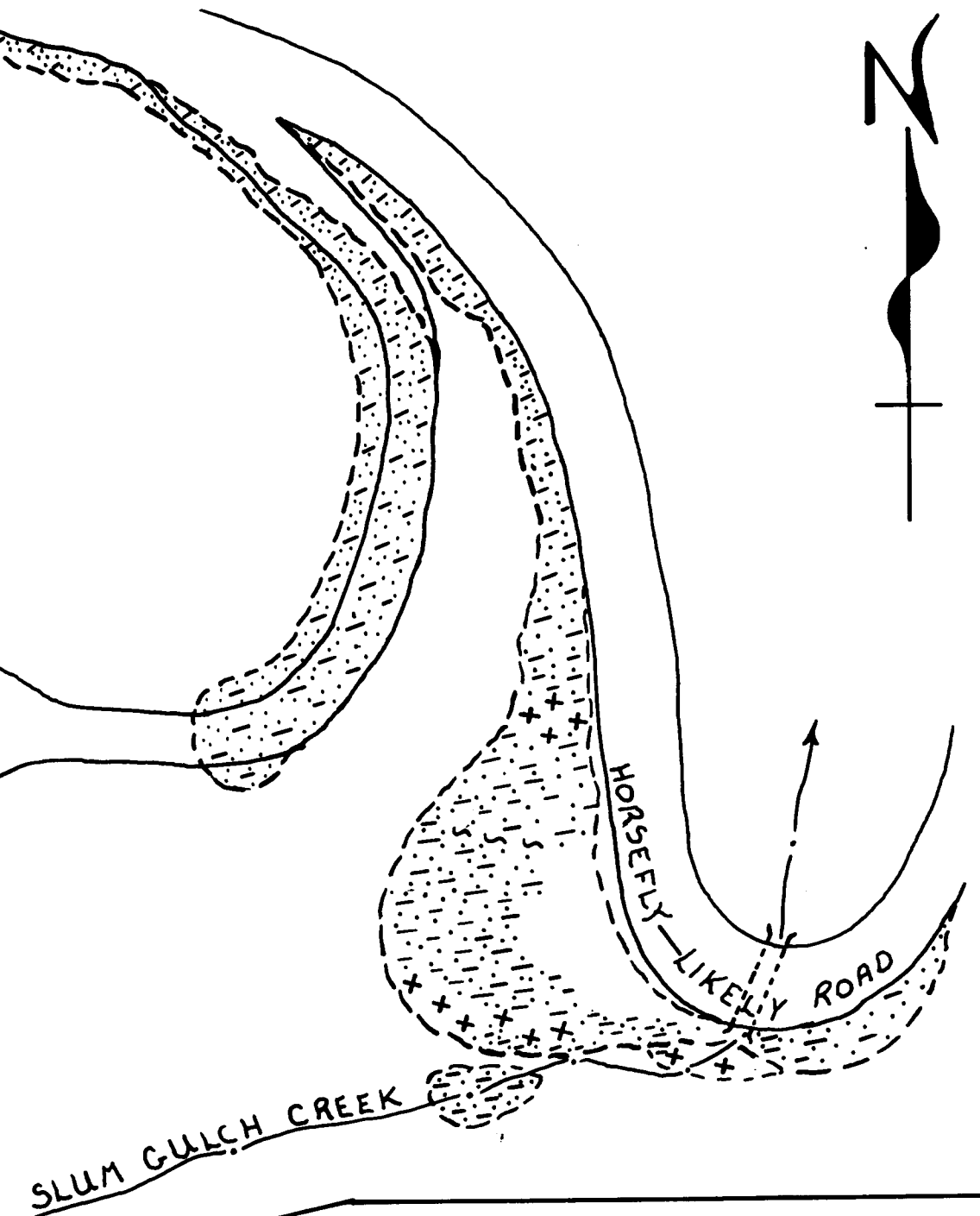
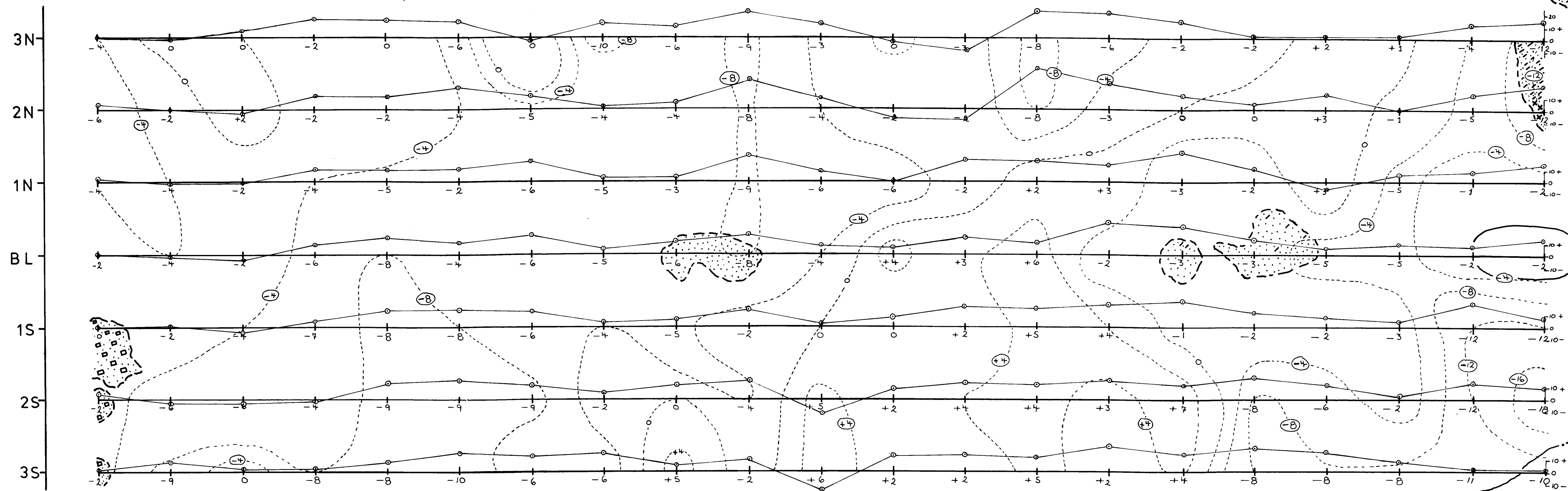
EAST

20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



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20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00



LEGEND DAVE CLAIMS

VLF-EM + GEOLOGICAL SURVEY

- Quadrature contour plus station values
- Inphase profile plus grid with scale
- Mapped outcrop
- Dyke (syenite plus diorite)
- Brecciated andesite
- Andesite flows plus flow breccia
- Andesite with abundant alteration
- Road
- Creek

SCALE 1 : 1667



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Compiled and Drawn by : RAY COOK
 Date: July 20 1984