DONALD W. SMELLIE, P.ENG.
CONSULTING GEOPHYSICIST
1666 WEST BROADWAY
VANCOUVER 9, B.C.
REGENT 1-6584

573

GEOPHYSICAL AND GEOCHEMICAL REPORT

KAT GROUP

82K/3E

CONTENTS

INTRODUCTION

Electromagnetic and geochemical soil surveys have been carried out on the KAT group. This property is located east of Retallack, B.C., and is owned by the author. At the time of the surveys the property was under option to Mastodon-Highland Bell Mines Ltd. Field work was carried out between October 7 and 24, 1963, by J. C. Stephen and E. Wozniak of Mastodon-Highland Bell Mines Ltd., under the general supervision of the author. Locally-hired helpers were used mainly for line-cutting. Work was carried out on claims KAT 1, 2, 3, 4, 10, 11, 13 and 17.

INSTRUMENTATION

The electromagnetic survey was carried out using a Ronka Mark IV unit. This instrument has a "horizontal loop" transmitter coil several feet in diameter that is carried suspended from the shoulders of one man and surrounding him. A cable connects a reference loop wound adjacent to the transmitter coil with a compensator unit carried by the second man. He also carries a receiver coil that is similar to the transmitter. The signal from it is also fed into the compensator, where both the in-phase and quadrature components are measured as a percentage of the primary field. The system is operated with the coils coplanar.

In the present survey, the transmitter-receiver spacing was fixed at 200 feet.

The geochemical soil samples were subjected to semi-quantitative spectrographic analysis for lead by Coast Eldridge Ltd.

FIELD PROCEDURE

Picket lines were laid out at 200 foot intervals from the upper Base Line, and at 400 foot intervals from the lower Base Line, with stations every 100 feet.

Electromagnetic readings were taken at 100 foot intervals. For successive stations, the system is moved along the traverse line with the transmitter-receiver spacing fixed at 200 feet. The in-phase and quadrature measurements were plotted on the accompanying plan at the mid-point between the transmitter and receiver coils.

Geochemical soil samples were taken at 25 foot intervals across the electromagnetic anomalies. The soil type was silt. The bottom of the B horizon was sampled by means of a grub hoe, at a depth varying from ten inches to two feet. The spectrographic method of analysis measured the total lead content of the sample.

GEOPHYSICAL RESULTS

The electromagnetic survey shows two strong anomalies. Anomaly 1 is at 100 S from the upper Base Line on lines 2W and 0. Anomaly 2 is at 850 S from the main Base Line on lines 12W, 8W and 4W.

GEOCHEMICAL RESULTS

The soil sample analyses for lead are plotted on the accompanying figure. A weak indication appears at 100 S on line 0, correlating with E.M. anomaly 1. Strong lead anomalies occur at 750 S on 4W and 790 S on 8W, correlating with E.M. anomaly 2.

PHYSICAL TESTING

Bulldozer stripping to bedrock was carried out on E.M. anomaly 1 in October 1963 and on E.M. anomaly 2 in September 1964. The electromagnetic responses appeared to be chiefly due to graphite. Oxidized quartz veins were uncovered on both zones. Assaying of samples from zone 2 disclosed low values in silver, lead and zinc.

Respectfully submitted,

D. W. SMELLIE, P.Eng.

DWS:ds

September 30, 1964

GEOCHEMICAL SURVEY

Kat Group

Lead in P.P.M., soil samples

Scale :- 1" = 200'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 573 MAP 1

KAT 3

35
15
35
35
75
50
45
80
40

KAT 4

85
75
40
45
200
30
40
45
30

KAT 1

38
25
77
95
20
30
24
45
94
23
15

65
90

75
20
620
50
35

30
50
35

1500
35
25
15
35
10
25
55
65

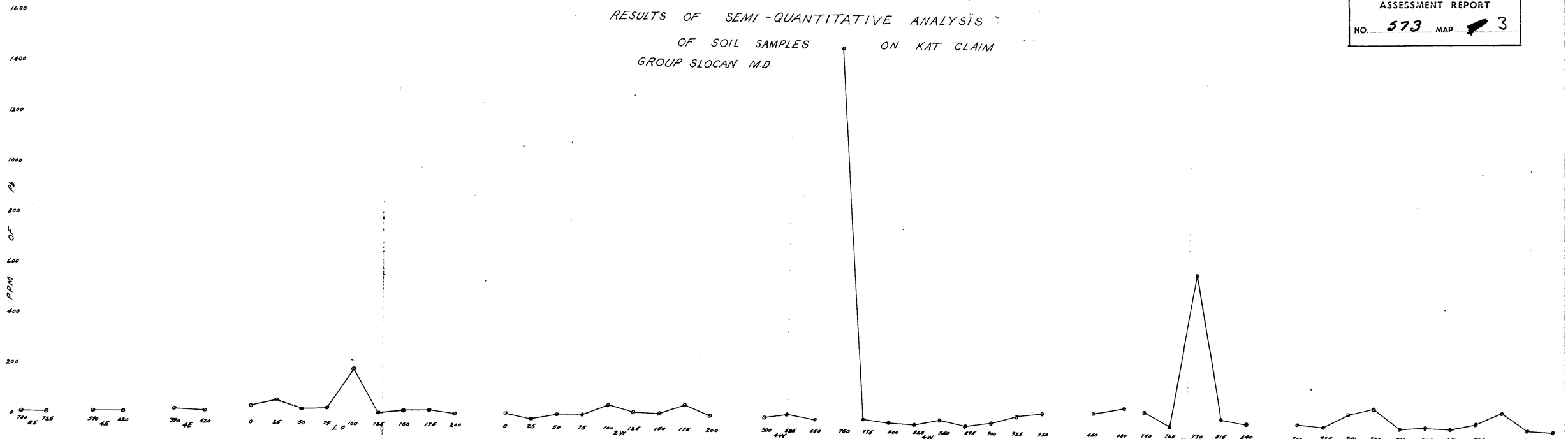
KAT 2

35
30

20
25

15
15

RESULTS OF SEMI-QUANTITATIVE ANALYSIS OF SOIL SAMPLES ON KAT CLAIM GROUP SLOCAN M.D.



ALL SECTIONS ARE FROM MAIN BASE LINE EXCEPT SEC 2+00 W & LINE 0 WHICH ARE FROM UPPER BASE LINE.

KAT 14

KAT 12

KAT 5

KAT 6

KAT 8

KAT 13

KAT 3

KAT 4

KAT 7

KAT 9

ROAD

BASE LINE

UPPER

MAIN BASE LINE

24+00 W

20+00 W

16+00 W

12+00 W

8+00 W

4+00 W

2+00 W

0+00 W

4+00 E

8+00 E

KAT 17 FR

KAT 1

KAT 2

KAT 11 FR

KAT 10 FR

L 5851
AMERICAN

L 2275
OREGON

L 2841
IRON MOUNTAIN

L 15427
MOTHER LODE

L 15421
MOTHER LODE

L 15420
MONTE CHRISTO FR

L 4468
MONTE CHRISTO

ADIT

1500

540-26E

N49-34E

1072.8

1500

1936.4

1500

552-46E

1509.8

N20-11W

593.2

N45-24W

1461.4

S73-06E

1317

S45-06E

320.5

S44-34W

904

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 573 MAP 2

ELECTROMAGNETIC SURVEY

MASTODON HIGHLAND BELL MINES LTD.
RETALLACK AREA, SLOCAN M.D., B.C.

Scale :- 1"=200' | E.M. Anomalies 1"=20'

In Phase Component :- L.H. Figure
Quadrature Component :- R.H. Figure

To accompany Geophysical and Geochemical report by Donald W. Smellie P.Eng., on the KAT group, dated September 30, 1964.