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MICROFILMED

EM. SP AND MAGNETIC SURVEY
ADAMSFIELD, E.L. 13/65 TASMANIA.

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JUNE, 1968

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INTRODUCTION

Adamsfield is in the eastern part of E.L. 13/65 covering south-west Tasmania (Fig.1). Deposits of osmiridium have been mined in the area since their discovery in 1925. The osmiridium is derived from an ultrabasic intrusion now largely converted to serpentinite.

An aeromagnetic survey by Adastral Hunting for Mt. Lyell - Electrolytic Zinc Exploration Co. detected a large anomaly over the ultrabasic belt. A ground magnetic survey by the Company (Taylor, 1966) defined the anomaly more precisely and allowed correlation with the known geology.

The aim of the survey was to detect conducting zones within, and in the vicinity of the ultrabasic belt, using the EM and SP methods. A magnetic survey was also conducted. The interpretation of the EM results was limited because the rugged terrain in parts of the area severely affected the EM staff geometry.

Advantage was taken of traverses prepared for the 1966 survey. Six traverses totalling 4.3 miles and two infill traverses totalling 0.61 miles, with station spacing of 100 feet, were covered from 15th April to 29th April, 1968 by P. Hilledon assisted by B. Reilley and W. Cherrie. The traverses were levelled by J. Williamson assisted by P. Crawley. The location of the traverses is shown on Fig. 2.

The instruments used were:

ABEM, EM Gun using staff separation of 100 feet.

Austral potentiometer RP-2A

Jalander magnetometer serial no. 7300.

RESULTS

Profiles of EM, SP and magnetic results together with the corresponding geological sections are plotted on Fig.3.

Profiles of the EM imaginary component do not indicate any conducting zones caused by mineralisation. Minor fluctuations in the profiles are caused by irregularities in the weathered zone of the ultrabasic belt.

The EM real component varied greatly ($\pm 40\%$ on traverse 4, stations 1600E to 2100E) with variations in the height difference between the two staffs and with variations in staff separation caused by rugged terrain. Corrections cannot be made for variation in staff separation. This limits the usefulness of the EM results as the real component is a better indicator of conductors than the imaginary. There are no major SP anomalies. Minor fluctuations are caused by surface irregularities in the ultrabasic belt. The magnetic results agree with those obtained by Taylor (1966) and so are not plotted in this report.

CONCLUSIONS AND RECOMMENDATIONS

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The results of the EM survey of the ultrabasics at Adamsfield were limited by the rugged terrain. They do not indicate any conducting zones caused by mineralisation. The minor fluctuations were caused by shallow irregularities in the ultrabasics.

The SP results support the EM results. From the experience gained in this survey, the EM method should be used in level areas for detailed surveys rather than reconnaissance.

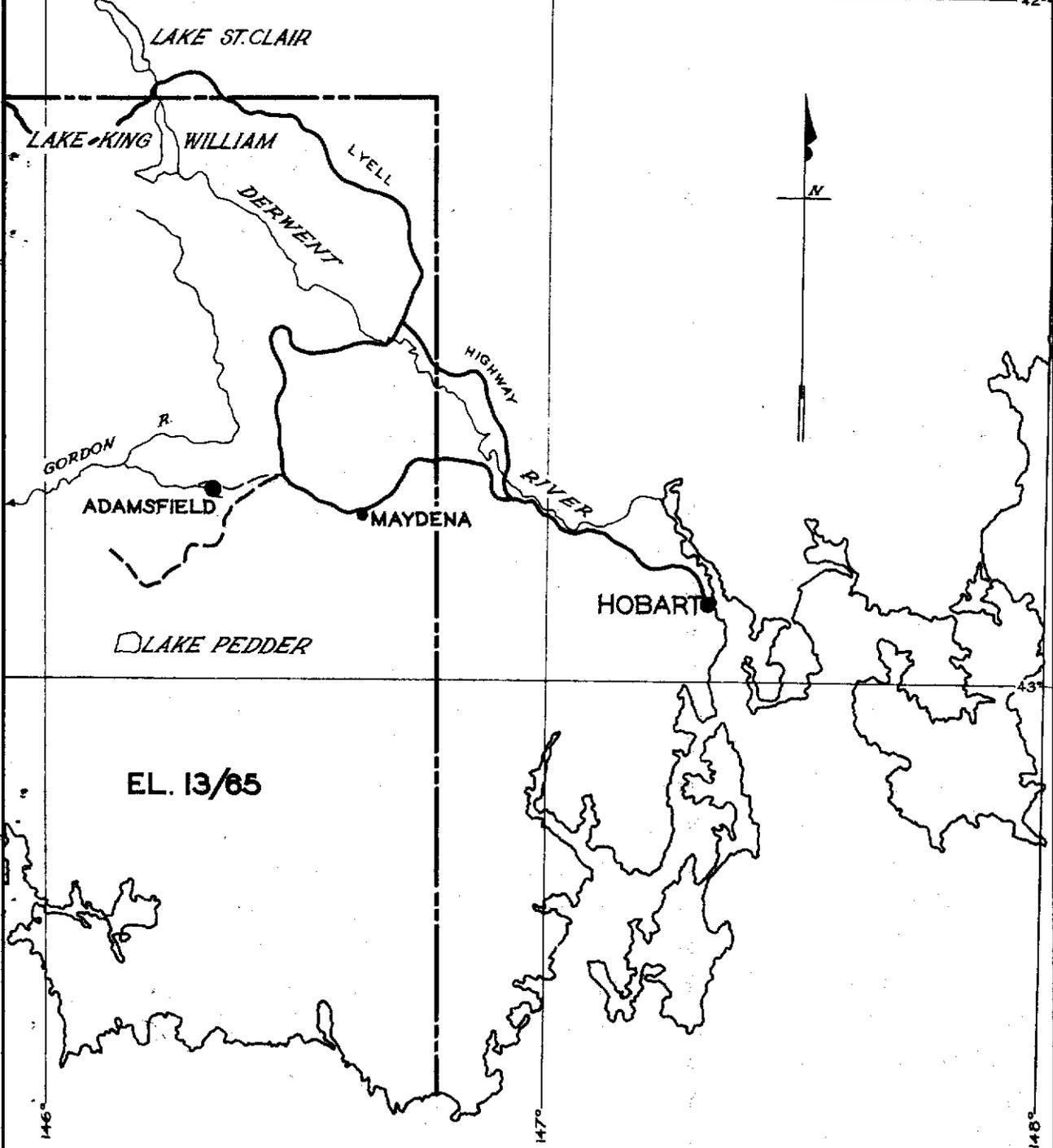
Further geophysical exploration of the ultrabasics to a greater depth would require longer traverses. This is impractical due to the rough country and no further work is recommended.

REFERENCE

Taylor, C.P. 1966 "Magnetic Survey Adamsfield, Tasmania",
Company Report.

FIG. I

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EL. 13/65

LOCALITY MAP
ADAMSFIELD - TAS.

SCALE: 1 INCH = 16 MILES

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GSS 354

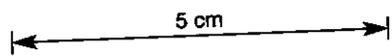
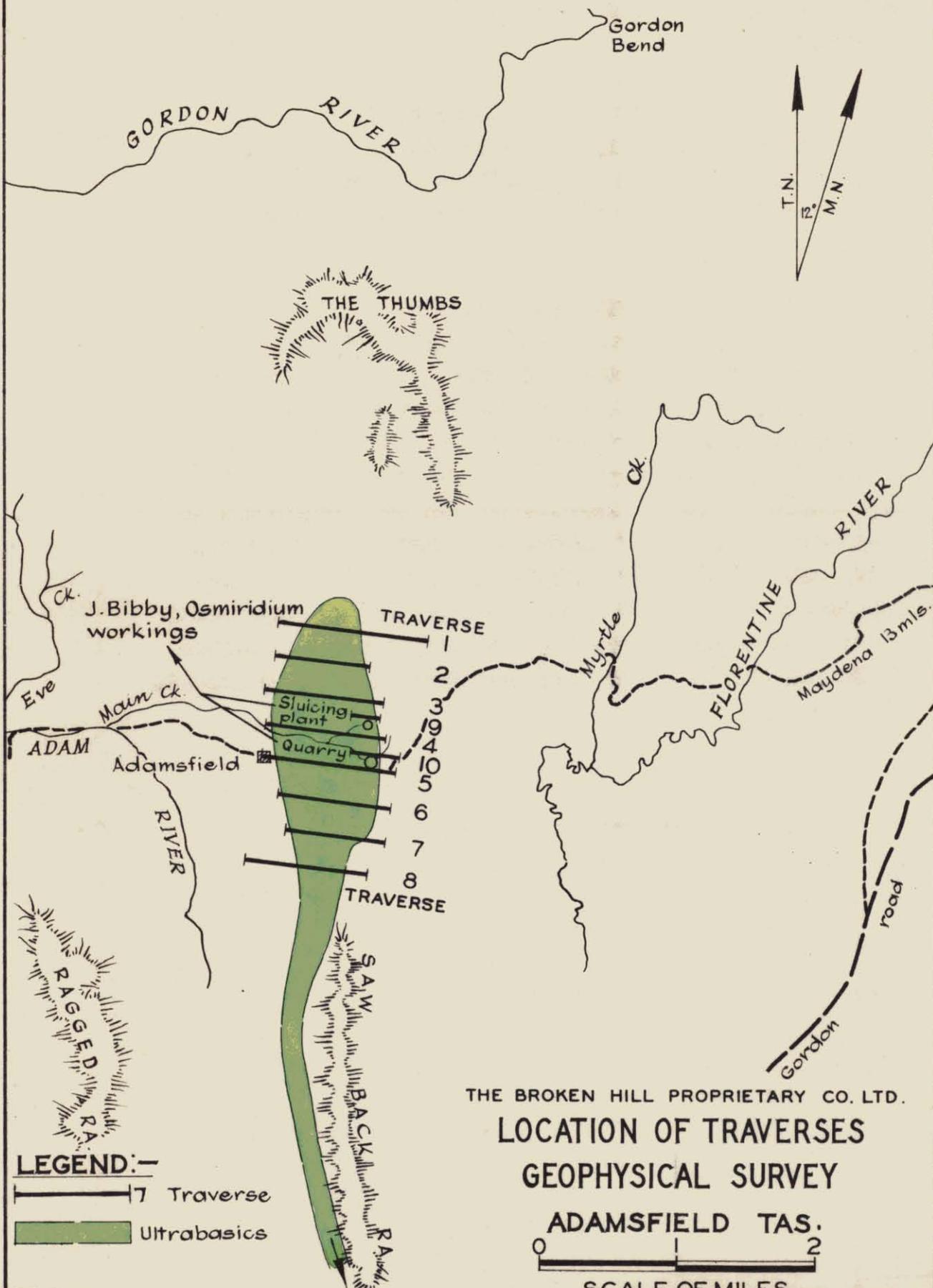


FIG. 2

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LOCATION OF TRAVERSES
GEOPHYSICAL SURVEY

ADAMSFIELD TAS.

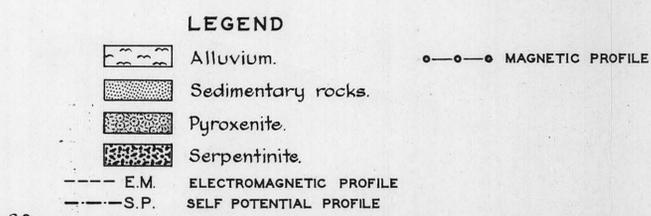
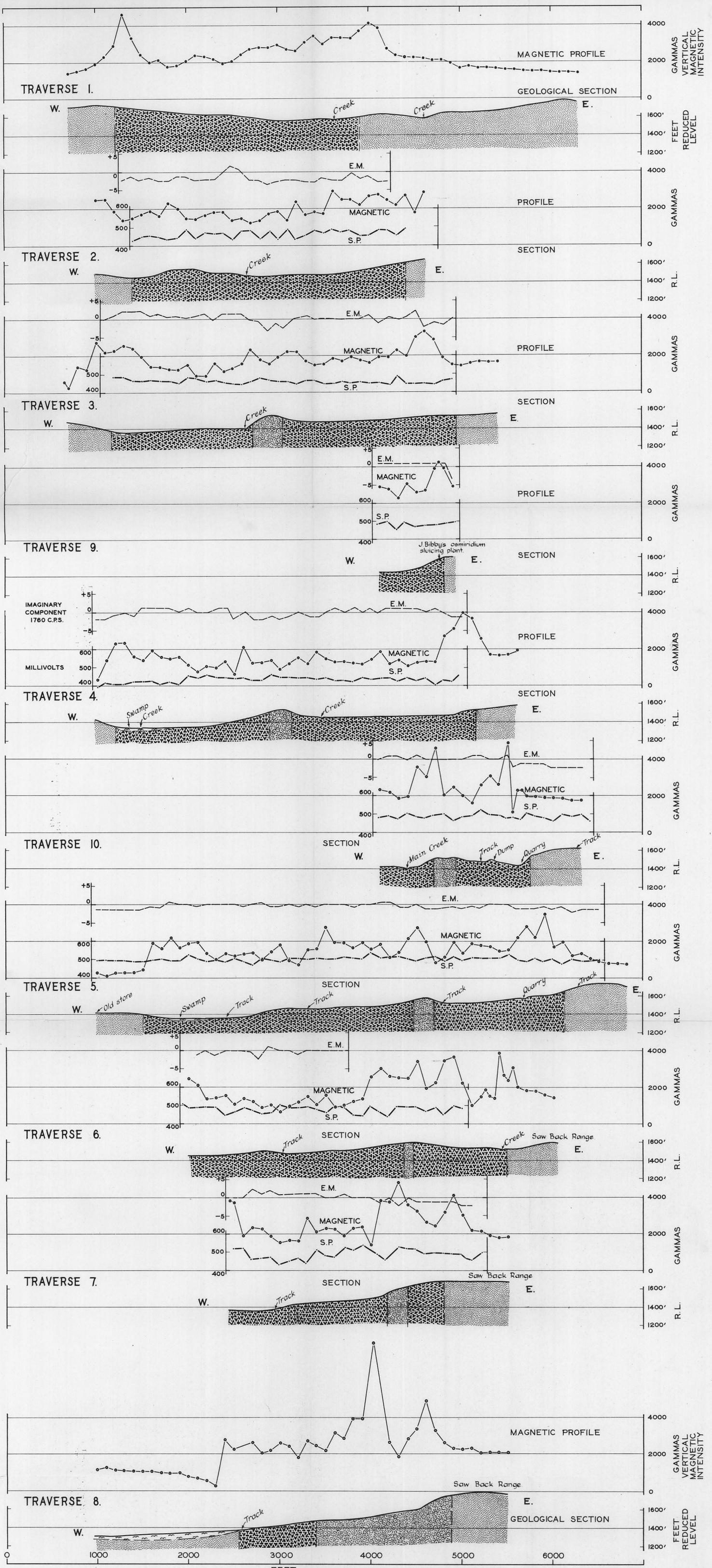
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SCALE OF MILES

LEGEND:-

—|— 7 Traverse

█ Ultrabasics



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 TRAVERSES 1 - 10
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