

58-196

Magnetic Anomalies 4S/4, 4S/6 & 2S/4
SVENOR BECK
GIBLIN RIVER AREA

(2 COPIES)

Magnetic Anomalies - Svenor Beck -
Giblin River Area

17/1/58

A. E. G.

(+ ATTACHED FIGURES).

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AMG REFERENCE POINTS ADDED

17th January, 1958

Magnetic Anomalies 48/4, 48/6 and 28/4

Svenor Beach - Giblein River Area

INTRODUCTION

The above aerial magnetic anomalies were visited in January, 1958. Groundwork shows them to be weak magnetic anomalies arising from small basic plugs intruding quartzites and schists.

The basic intrusives carry Fe and Cu sulphides.

One interesting copper prospect was found.

Anomaly 48/4

Location:

Approximately 1 mile N. of Svenor Creek.

Geophysics:

The anomaly centre was easily located and three traverse lines bearing 008° mag. showed that the anomaly was weak, giving broad flat peaks as shown on the plan L.R.E. P34.

Geology:

Approximately 200 ft. E. of Traverse 5 outcrops of dark basic rock were found. The rock is medium grained and composed of dark equigranular amphibole subhedra studded with abundant pink garnet grains. Accessory amounts of dull feldspar and glassy assimilated quartz are also present (LRE 321).

The rock outcrops within an area 500' x 500' and is obviously a plug of basic intruding the quartzites.

Quartzite also outcrops, but meagrely, and when near basic outcrops appear coated with limonite (LEE 322). This coating on the surface and in joints is not derived from pyrite but apparently from Fe rich solutions arising from the weathering of the basic which then infiltrate joints, fissures, etc. in the quartzite of the immediate vicinity.

The basic weathers easily to ochreous limonite rock (LEE 323). This produces limonite soils which were encountered whilst collecting geochemical samples.

No sulphide was found on the anomaly site.

Geochemistry:

Traverse 3: Samples composed of blue-black peaty soil and in a few locations quartz gravels were encountered.

Traverse 1: Samples of blue-black peaty soils mainly with limonitic soils appearing towards the N. end of the line.

Traverse 5: Mainly yellow-brown limonitic soils derived directly from weathered basic rock.

The samples were collected along a gentle hill slope at a depth of approximately 12" below the surface. Traverse 5 was the line having the highest elevation.

Other Basics:

1. A small outcrop of basic, identical in appearance to that found on anomaly 4S/4 occurs on the S. side of Svenor Creek approximately $\frac{1}{2}$ mile from Svenor Beach.

11. Two lamprophyne dykes were found on Svenor Beach near the "Svenor" wreck which contained fine pyrite and abundant black biotite flakes. (LEE 324).

Anomaly 4S/6Location:

Approximately 1 mile S. of Svenor Creek.

Geophysics:

The ground results as plotted on plan LEE 32 indicate the anomaly to be a small feature approximately 300' wide and striking 310° giving rise to flat profiles with broad anomaly peaks, very similar in nature to anomaly 4S/4.

The readings obtained however were higher and the peaks more definite than 4S/4.

Geology:

The anomaly area yielded no outcrop since it is covered by alluvium. Aerial photograph 33/892/135 indicates that the anomaly is situated on the N. edge of a large sheared zone striking at approximately 300° .

On the coast approximately 3500' WSW of the anomaly copper staining was found in sheared garnet mica schist (LEE325). The staining on the rock surfaces was derived from disseminated chalcopryrite through the schist with obvious cleavage control. Sulphide mineralisation was apparently introduced through shears. Subsequent shearing since mineralisation with appreciable displacement has produced an orebody 100' long and 12' wide terminated at both ends.

The same cupriferous band was located 100' (?) east of the first find again terminated by post mineralisation shearing (See sketch map).

Assays show the schist to contain from 0.78% to 3.65% Cu. indicating that for a width of 12' the average Cu % would approximate 1%.

A few hundred feet west of the Cu. showing fault breccia (LEE 328) contains pyritic lenses carrying 0.06 % Cu.

Another interesting feature was the occurrence of small basic plugs 5000' S. of the anomaly area. These intrude garnet mica schists (LEE 327) through the agency of well defined shears. The intrusive is a fine grained feldspar garnet amphibole rock containing disseminated chalcopyrite grains and assaying 0.08% Cu. (LEE 326) The intruded bodies are small, ranging from 200 to 10000 square feet. They are bounded by local tension shears in the schists around their peripheries and are themselves sheared at their contact with the schist. This suggests that they are pipe-like bodies intruded into shears and/or shear junctions under strong pressure at a low temperature but there is a lack of obvious lineation which would confirm this.

Geochemistry:

The anomaly area was covered by black peaty soils containing wind blown and water transported sands and these soils are probably underlain by gravels. Thus the geochemical samples collected may not provide a satisfactory medium for heavy metal traces from the hidden anomaly.

Anomaly 2S/4

Location:

On the S. side of Giblin River $\frac{1}{2}$ mile E. of the river mouth in Nye Bay.

Geophysics:

See LEE plan P33. The traverses indicated that an anomaly exists but it is very weak, the profile being broad and scale readings low.

Geology:

The anomaly area is ^{masked} covered by tree covered sand dunes. Quartzite (LEE330) containing varying amounts of muscovite and quite schistose in parts outcrops around the anomaly. The quartzites are cut by numerous faults in the area and a major linear passes the southern tip of the anomaly. Floaters of dolerite (LEE 329) were found near a large shear 4000' W. of the anomaly.

A black mineral assumed to be rutile or ilmenite occurs in abundance along the banks of the Giblin River as fine grains in the quartz sands. This mineral is also prominent in the creeks throughout the immediate vicinity.

Geochemistry:

As the anomaly was covered by dunes no geochemical samples were collected.

General Conclusions

Anomaly 4S/4 showed quite clearly that a basic intrusive, when of a certain size produces a magnetic high.

Anomaly 4S/6 and 2S/4 were both ^{observed} ~~observed~~ but small occurrences ^{of} ~~for~~ basic rock were found in the near vicinity of both anomalies.

The even shaped anomaly contours obtained over anomaly 4S/6 are very suggestive of a small basic plug. It is reasonable to assume that 2S/4 is due to a similar body.

Of particular interest is the Cu occurrences in the vicinity of 4S/6. Chalcopyrite in the basic plugs and in the garnet mica schists as described previously leads to the following thoughts:

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1. A basic magma exists which carries above average percentage of Cu, Fe and S.

2. The magma is capable of introducing Cu and Fe sulphides through shears into favourable host rock.

3. Mineralisation need not be expected on a magnetic high but can, in this area, be a likely centre around which to prospect if favourable host rocks exist.

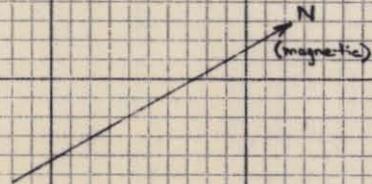
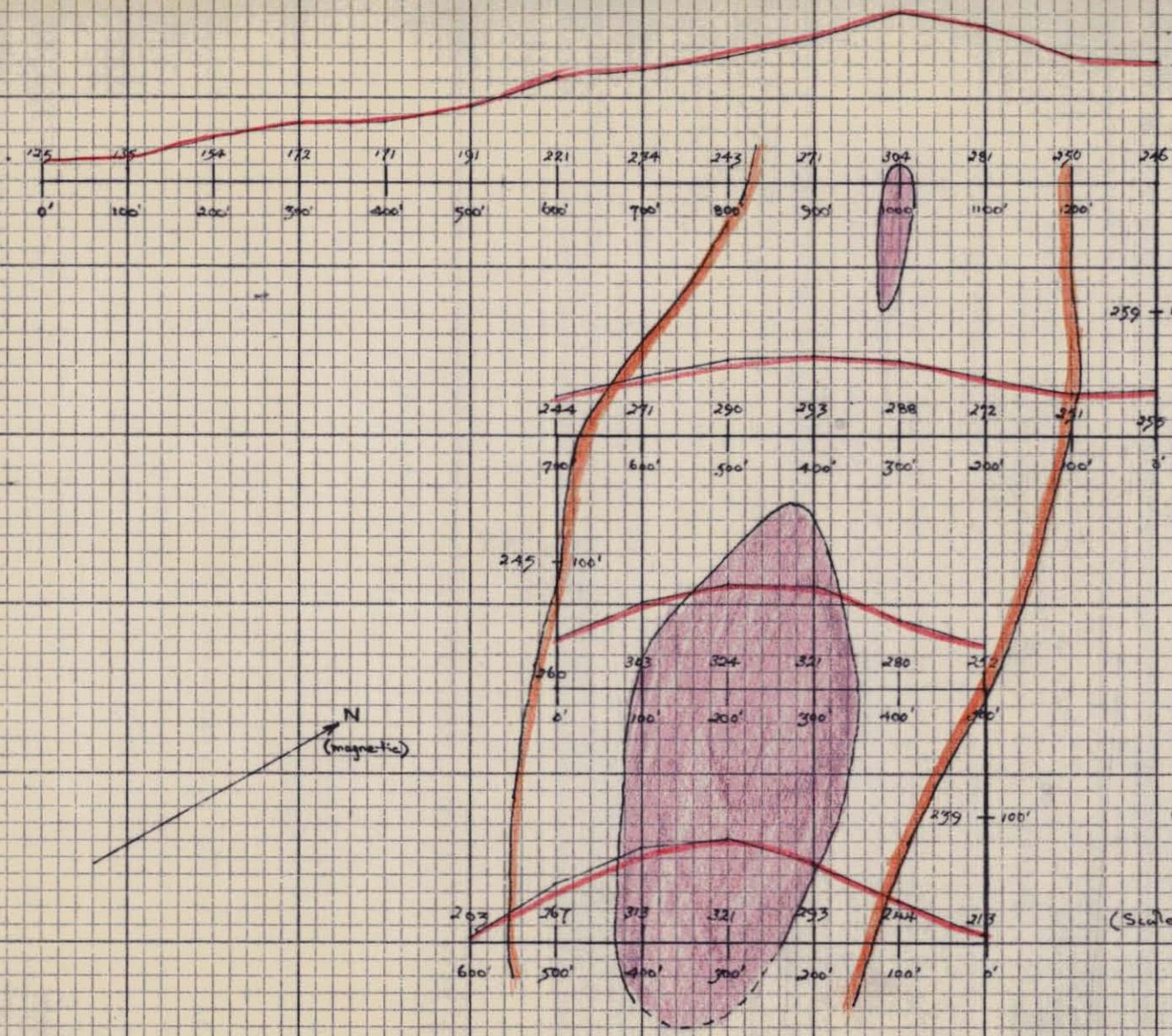
Of the three anomalies 4S/6 would be the logical choice for further prospecting in the future, to ascertain more fully the possibilities of Cu. mineralisation derived from an underlying basic body.

Maps

LEEP 32, 33, 34, 35,

Plans 1-3 Untitled

Zofarne



ANOMALY 45/6
1 M S of SENEOR BEACH
MAGNETOMETER TRAVERSES
 (Scale readings only using mm scale 28 cms.)

E.E.P. 32

28 - 1400'
 30 - 1300'
 32 - 1200'
 34 - 1100'
 35 - 1000'
 37 - 900'
 38 - 800'
 39 - 700'
 40 - 600'
 42 - 500'
 43 - 400'
 44 - 300'
 45 - 200'
 46 - 100'
 47 - 0'

TRAVERSE 1



38 - 0'
 39 - 100'
 40 - 200'
 41 - 300'
 42 - 400'
 43 - 500'
 44 - 600'
 45 - 700'
 46 - 800'
 47 - 900'

TRAVERSE 2

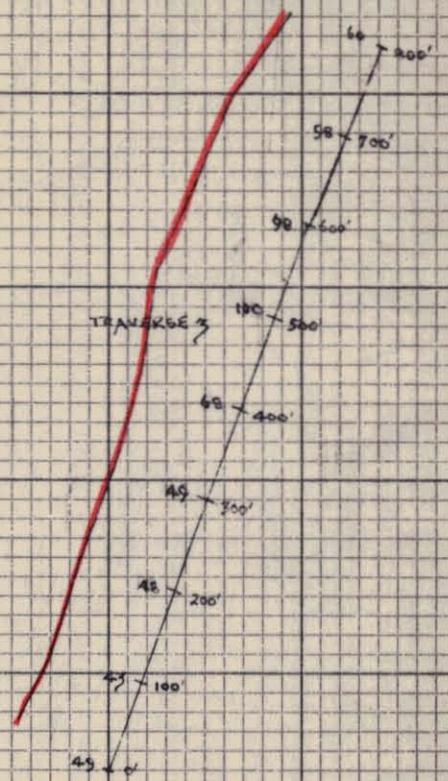


ANOMALY 25/A GIBLIN RIVER

MAGNETOMETER TRAVERSES

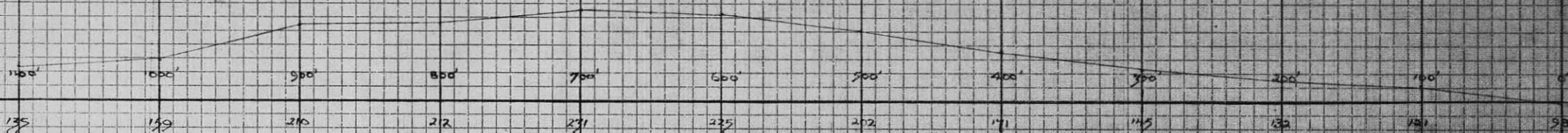
(Scale readings only using mm5128cms)

N
(magnetic)



TRAVERSE 3

LEEP 33



TRAVERSE 3

TRAVERSE 4

N
(magnetic)

TRAVERSE 2

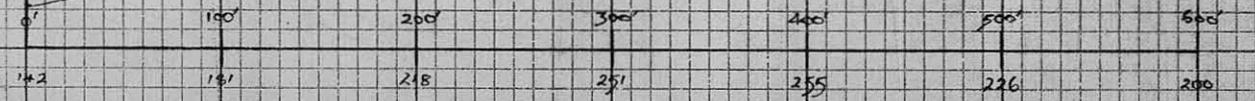


TRAVERSE 1

ANOMALY 45A

MAGNETOMETER TRAVERSE LINES

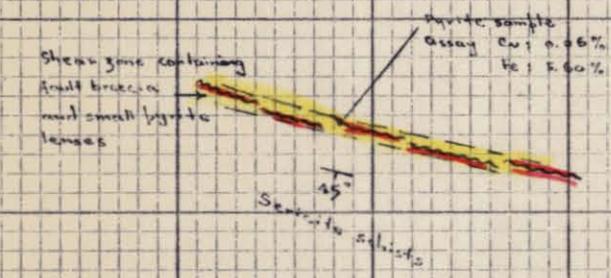
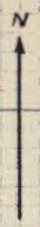
(Scale readings only with mmst 28 cm)



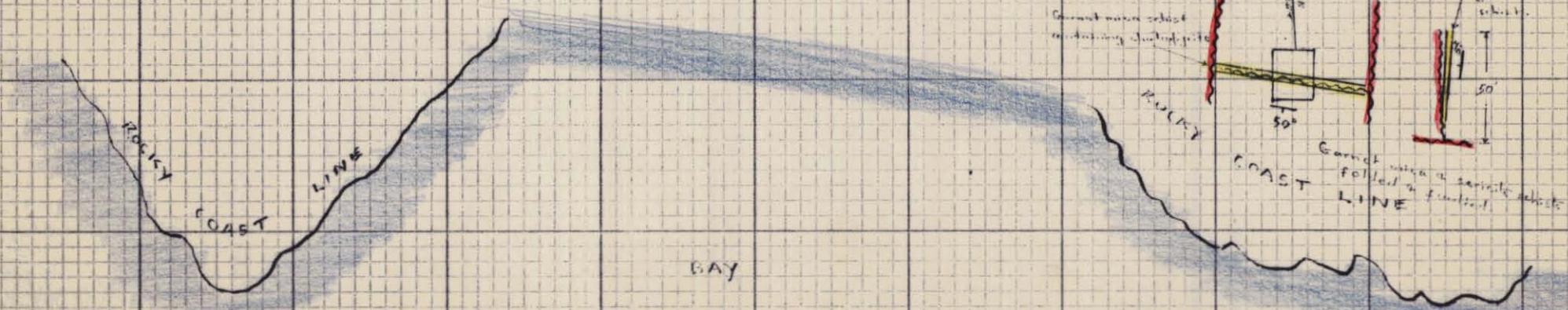
TRAVERSE 5

LEE P3A

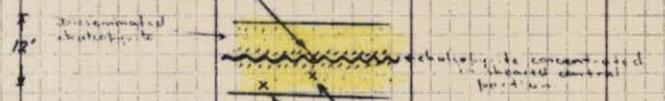
SKETCH MAP OF COPPER SHOW 4000' W OF ANOMALY 45/5



1000'

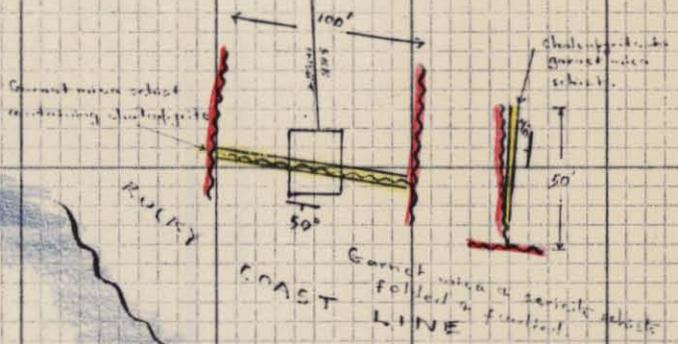


Cu: 3.49
Fe: 12.70



Cu: 0.76
Fe: 7.7

Cu: 1.47
Fe: 9.5



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Q85

AMG
397275E
5233453N



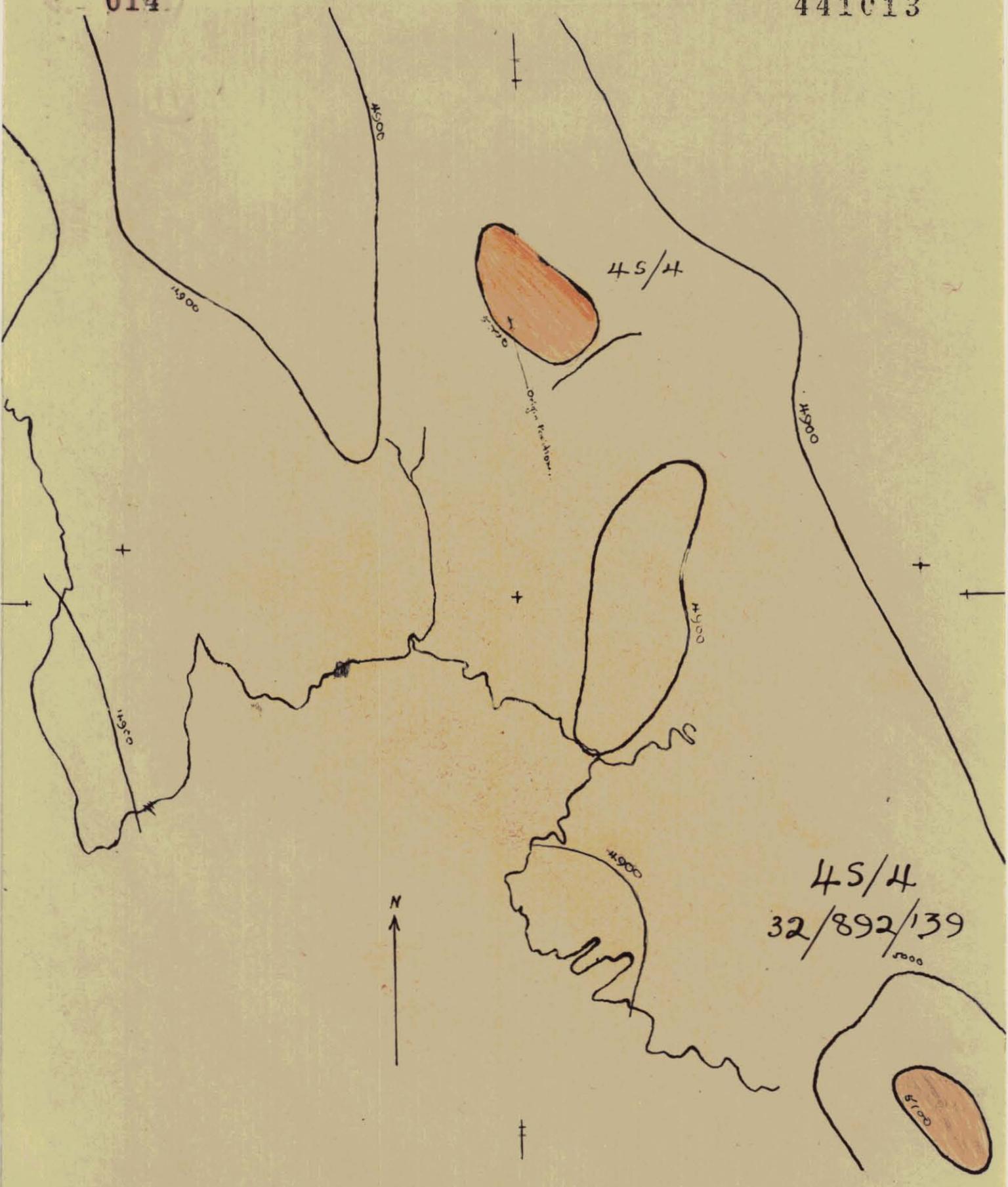
25/4 + 25/8

29/893/62

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AMG REFERENCE POINTS ADDED

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45/6

33/892/135