FINAL REPORT TO THE
NORTHERN TERRITORY DEPARTMENT
OF MINERALS AND ENERGY FOR
EXPLORATION LICENCE 2734.

OPEN FILE

Licence Holder: Yuendumu Mining Company.
Operator: Yuendumu Mining Company
Prepared for the Yuendumu Mining Company
by R.T.Gardiner and Associates.

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List of Maps and Plans.

1.SUMMARY.

Previous work on the licence was reviewed. A magnetic survey was done to attempt to define the edge of the uranium prospective Mt. Eclipse Sandstone. It is concluded that the Mt.Eclipse Sandstone does extend west of the outcrop.
A magnetic survey was run over Coonega Clay Pan to test the hypothesis that the circular clay pan represents the surface expression of a kimberlite body. The results are not inconsistent with that hypothesis but can be interpreted in other ways.

2. INTRODUCTION.

Exploration Licence No 2734 was granted to the Yuendumu Mining Company on the 2nd of November 1982. The area is prospective for uranium within the Carboniferous Mt Eclipse Sandstone. Due to some unfortunate events strongly affecting the usefullness of uranium prospects in the Northern Territory exploration was concentrated in the vicinity of the Coonega Clay Pan where it as felt that the possibility of a kimberlitic body existed.

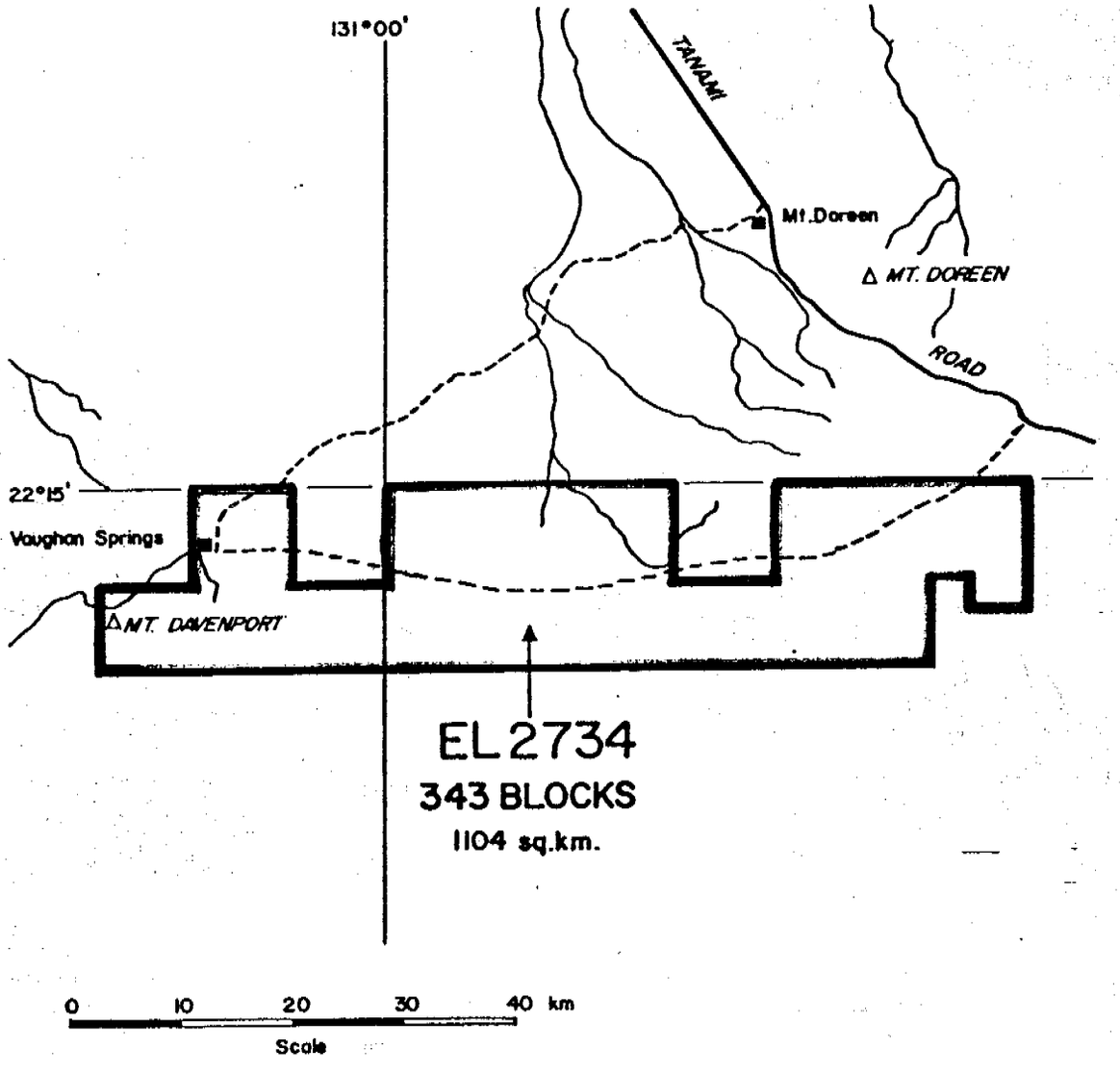
3. DESCRIPTION OF THE EXPLORATION LICENCE.

Figure 1 shows the location of the Licence at 1:250,000.

4. WORK DONE.

A literature survey of previous work in the area was done.
A trial magnetic survey was caried out in the eastern part of the Exploration Licence. This survey was done with a McPhar Fluxgate Vertical Field magnetometer M700 Serial Number 7049. Calibration is relative to an arbitary base station located close to the start of

SECOND SCHEDULE
Plan of area



Traverse 1. The azimuth stability of the instument was excellent (less than the reading error). The results are corrected for diurnal-instrument drift The precision of individual results is about 40 gammas relative to the base and 25 gammas relative to adjacent stations.A short repeat line run as a test of reproducibility gave good results. The start of each traverse is marked with a steel peg and the (normal) station interval is 30m. Where the gadient exceded 50 gammas per station infill stations were used. There is very little lateritic material in this area and in general readings are not noisy. In a few cases where rapid fluctuations of magnetic intensity were noted averaging of closely spaced readings was resorted to.

The objectives of the magnetic survey were twofold.

In the first instance to determine if there is any magnetic responce associated with the Coonega Clay Pan, a circular depression located at the intersection of the Yuendumu Fault and a large North West trending tensional fault system containing pegmatite and quartz veins,

and secondarily to determine if magnetic survey is an appropriate method for accuratly location the lower most parts of the Mt Eclipse Sandstone to the North West of the fault line scarp of the Yuendumu Fault.

5 RESULTS.

5.1 Review of Previous Work.

Review of the previous exploration for uranium carried out over parts of the area by Central Pacific Minerals, Afmeco and Agip led to the conclusion that the most likley places for uranium mineralaisation to occur at reasonable depths are those two areas where the basal parts of the Mt Eclipse Sandstone are deformed into steeply dipping zones on the Yuendumu Thrust and the western margin of the Ngalia Basin.

5.2 Geology.

The licence covers part of the Ngalia Basin, an intracratonic basin with marine and continental sedimentation extending from the Upper Proteozoic until Mid Paleozoic time. The Mt Eclipse Sandstone,(Uppermost Devonian to Mid Carboniferous) is a thick sequence of continental conglomerate, sandstone and shale. The unit is partly synorogenic and partly post-orogenic. Along faults marginal to the basin,and along horst like features within the basin, the Mt Eclipse Sandstone is deformed into narrow steeply dipping and overturned zones. These zones have proven to be the most productive parts of the Formation for uranium mineralisation. Within Exploration Licence 2734 two such zones can be identified.
The first north of Vaughan Springs Homestead has been previously explored in some detail by Central Pacific Minerals with negative results and so was not consideres worthy of further attention.
The second such zone lies in the extreme east of the Licence south east of 20Mile Bore. Within the Licence (but excluded by virtue of pr-eexisting Mineral Claim Applicatoions) lie a small group of uranium prospects within steeply dipping Mt Eclipse Sandstone

adjacent to the Yuendumu Thrust. Consideration of the local stratigraphy lead to the hypothesis that the most prospective basal part of the Mt Eclipse Sandstone is in fact not exposed but concealed below alluvium to the west of the fault line scarp of the Yuendumu Thrust.
The Coonega Clay Pan is a circular depression located at the intersection of the Yuendumu Fault and a large North-West trending fault and vein system. A magnetic disturbance is seen on the 1:250,000 scale aeromagnetic map close to this position. It was considered on structural grounds that the pan may represent the surface expression of a Kimberlite body.

5.3 Magnetic Survey.

Ground magnetic survey appeared to offer a reasonably priced method of investigation both the hypothesis advanced, and accordingly a series of test lines were run. Unfortunatly due to local heavy rain the centre of the clay pan was not accessible and it was necessary to be content with lines run as close as possible.
The results are shown as figures 1 to 5 and Figures 1A to 5A showing the relative vertical magnetic intensity reported as corrected values and 3 point running averages. It should be noted that the convention adopted in the calcul;ation of the 3 point averages displaces the peaks 1 station along the profile.

Profile 1.Figs 1 & 1A.
This profile commences on outcrop of Mt Eclipse Sandstone and runs tangental to the south side of the Coonega Lake. A fault contact between Mt Eclipse Sandstone and basement rocks, (in this area granite), is apparent at stations 8-9, that is 240 metres from the first outcrops of Mt Eclipse Sandstone.
A broad low intensity magnetic depression of low intensity extends from station 11 to 22 coincident with the greatest topographic depression. This represents the magnetic low marginal to the anomaly

seen in profiles 2 & 3.

Profile 2. Figs.2 & 2A.
This profile commences on outcrop of Mt Eclipse Sanstone near a costean containg carnotite mineralisation. No clear feature marking the edge of the Mt Eclipse Sanstone is visible, there are possibilities near stations 2 & 8. A weak but well defined magnetic body is located between stations 9 & 25 centered around station 20, or 600 meters at 305 degrees from the edge of the outcrop. The profile suggests that this body is faulted on the western side.

Profile 3. Figs. 3 & 3A.
This line passes north of the Coonega Lake. As in traverese 2 the edge of the Mt Eclipse Sanstone is not unambiguosly defined. Posiible locations are near station 1 (the edge of the outcrop), or at stations 11 or 25. It is believed that the pronounced magnetic low near station 24 is the same as that seen at station 31 on traverse 2 and it is noted that both lie in the axis of a topograpgic depression.

Profile 4. Figs. 4 & 4A.
No suggestion of the magnetic body of profiles 2 & 3 can be seen on this line. It is suggested that the edge of the Mt. Eclipse Sandstone is located at Station 15 450 metres from the last outcrop.

Profile 5. Figs 5 & 5A.
This long profile was desiegned to cross the plotted position of the peak of the airborne anomaly. It should be noted that the figures are plotted at double the horizontal scale and 10 times less sensitivity than the other profiles.
The profile shows a magnetic anomaly of about 700 gammas centered at station 122, 3.425 kilometers at 180 degress from the commencement of the traverse on the Vaughan Sprinds Road. It is reasonable to

interpret this anomaly as due to a shortsteep dyke like feature about 400 metres wide approaching the surface at about this point.

6. CONCLUSIONS.

It is very probable from the magnetic results that the basal 200 to 400 metres of Mt. Eclipse Sanstone, (given the dips in the area this is very nearly true thickness), are not exposed along the Yuendumu Thrust. This repesents a prospective horizon for uranium exploration. Unfortunatly under present conditions it has proven impossible for Yuendumu Mining Company to interest anY joint venture partners in the area.

The results of the preliminary magnetic survey over Coonega Clay pan are capable of several interpretations but are not incompatable with a kimberlitic body plunging north east and elongate in that direction. The results may be equally well explained by in change inb the suseptibility of the basement rocks or a small intrusion of basaltic composition.

Profile 5 confirms the anomaly detected by the BMR airborne magnetic survey and shows the presence of a moderate sized magnetic body approaching from between 80 to 240 meters of the surface. The areomagnetic data show this body to be of very limited strike extent (strike not more than 4 times the thickness). There is no surface expression, soil types and lack of outcrop do not suggest a fresh dolerite. A basic igneous rock occuring as a pipe like body is the favoured interpretation.

7. EXPENDITURE.

Note. All expenditure was incurred in the Northern Territory.

Contract Geological Services.	$1600.00
Field Assistant Wages	$ 240.00
Materials.	$ 107.00
Car Hire.	$ 220.00
Fuel.	$ 54.00
Food and accomadation.	$ 280.00
Hire of Magnetometer.	$ 125.00
Typing.	$ 24.00
Drafting.	$ 240.00
Report Preparation.	$ 400.00
Overheads. (25%).	$ 822.00
Total.	$4112.00

FIG 1 COONEGA. MAGNETIC TRAVERSE 1 . TRAVERSE TO 300°

RAW DATA

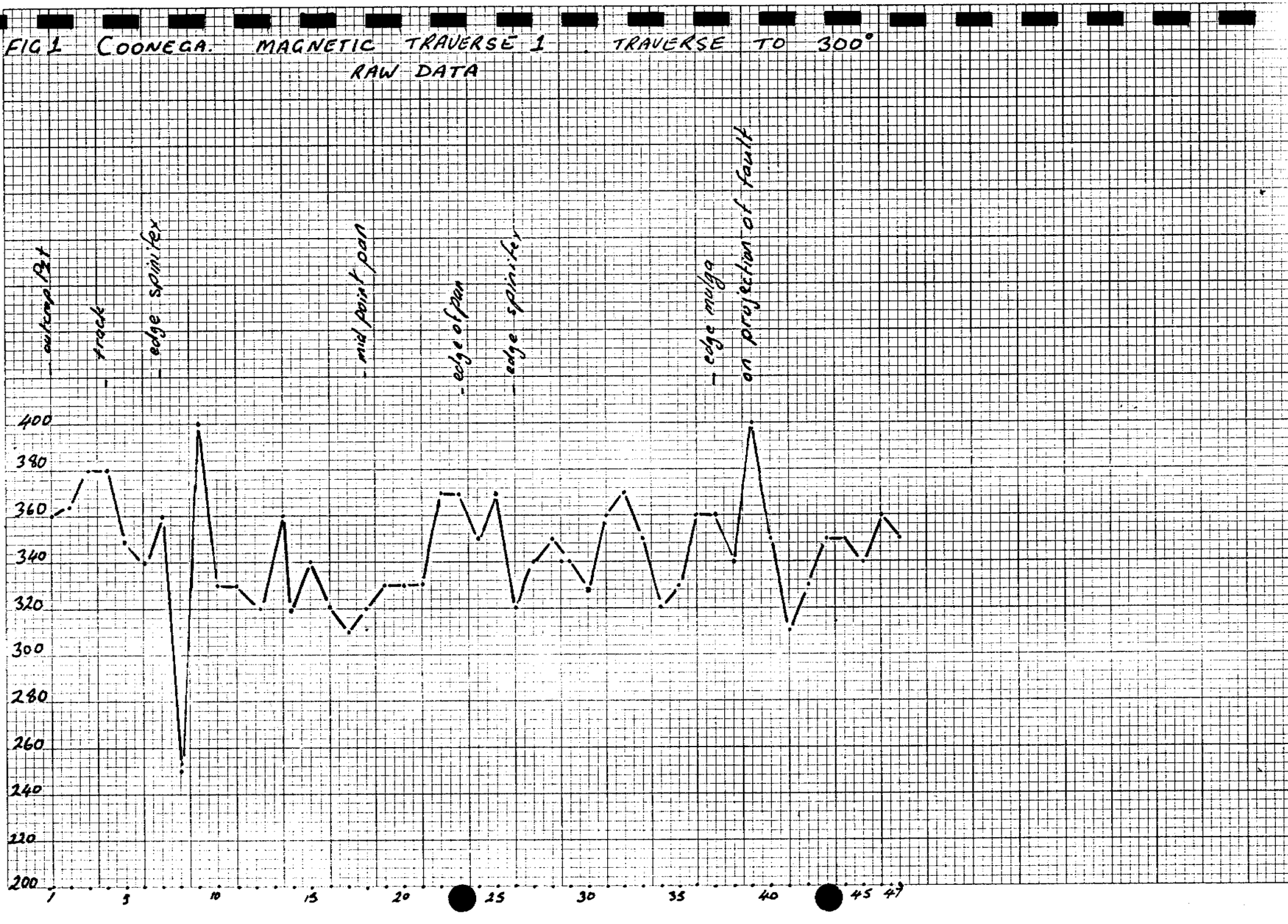


FIG 4A

COONEGA MAGNETIC PROFILE TRAVERSE 4

3 POINT RUNNING AVERAGE

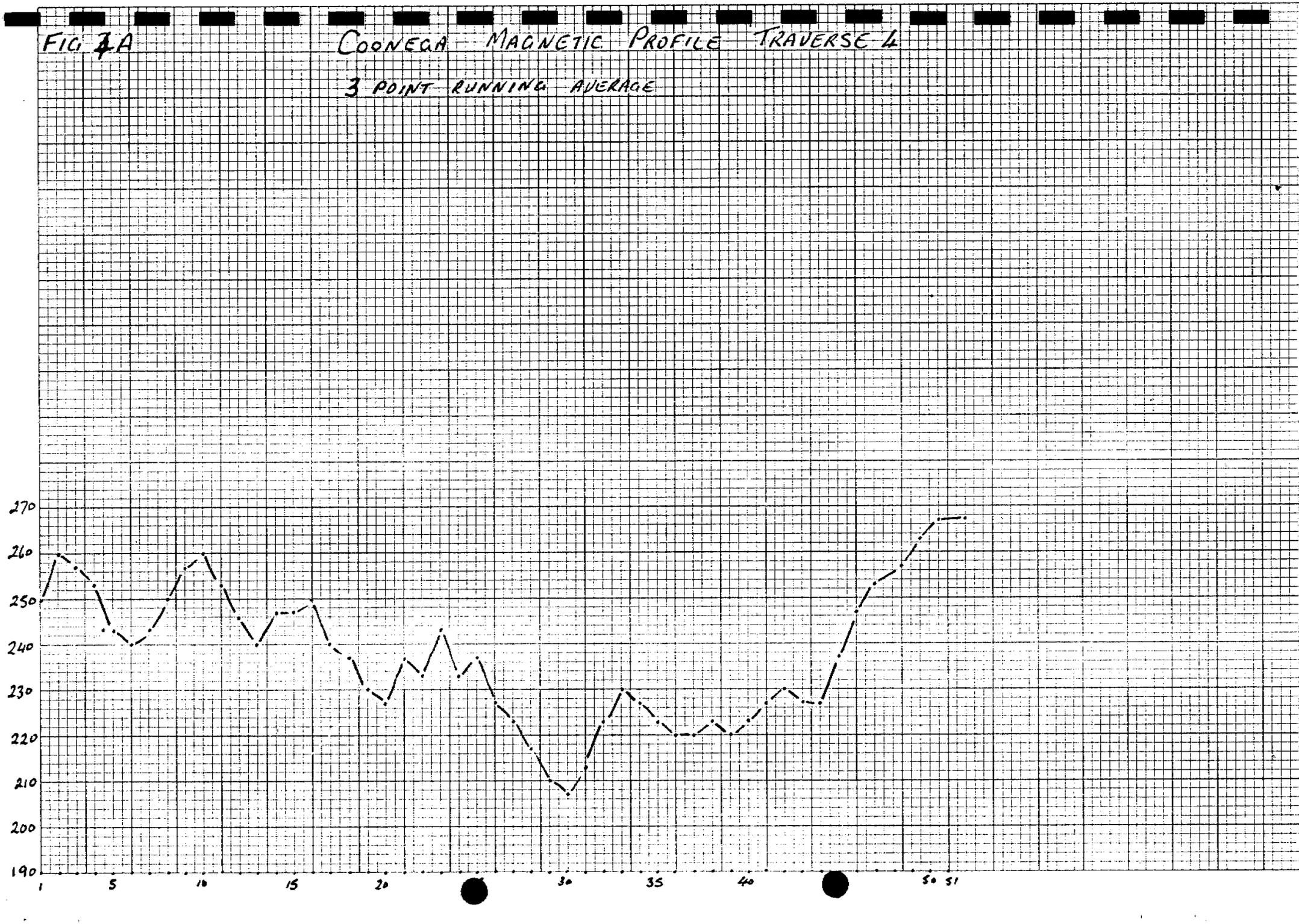


FIG 2 COONEGA MAGNETIC TRAVERSE 1 TRAVERSE TO 305°

RAW DATA.

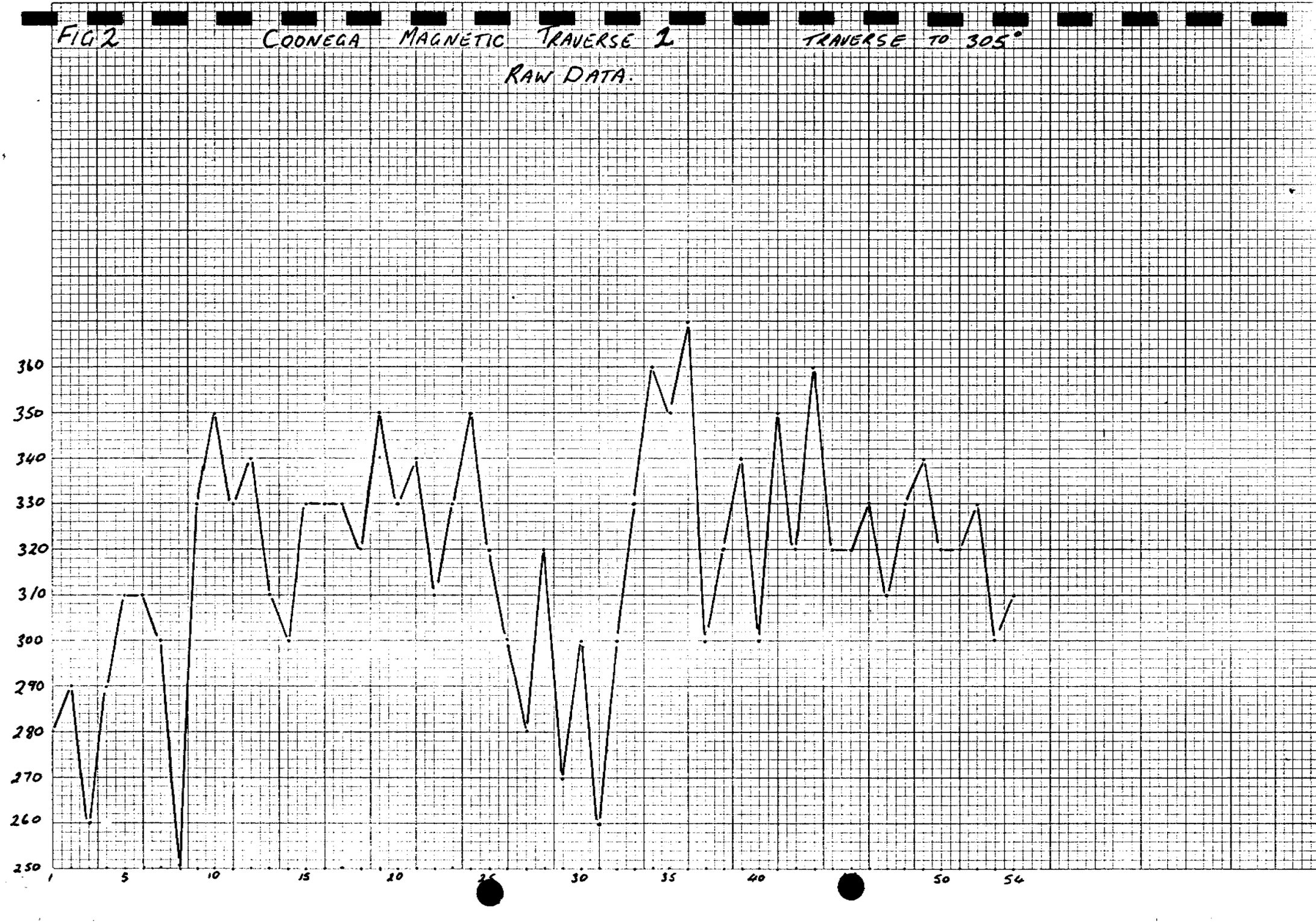


FIG 1A

COONEGA MAGNETIC TRAVERSE 2 TRAVERSE to 305°

3 POINT RUNNING AVERAGE

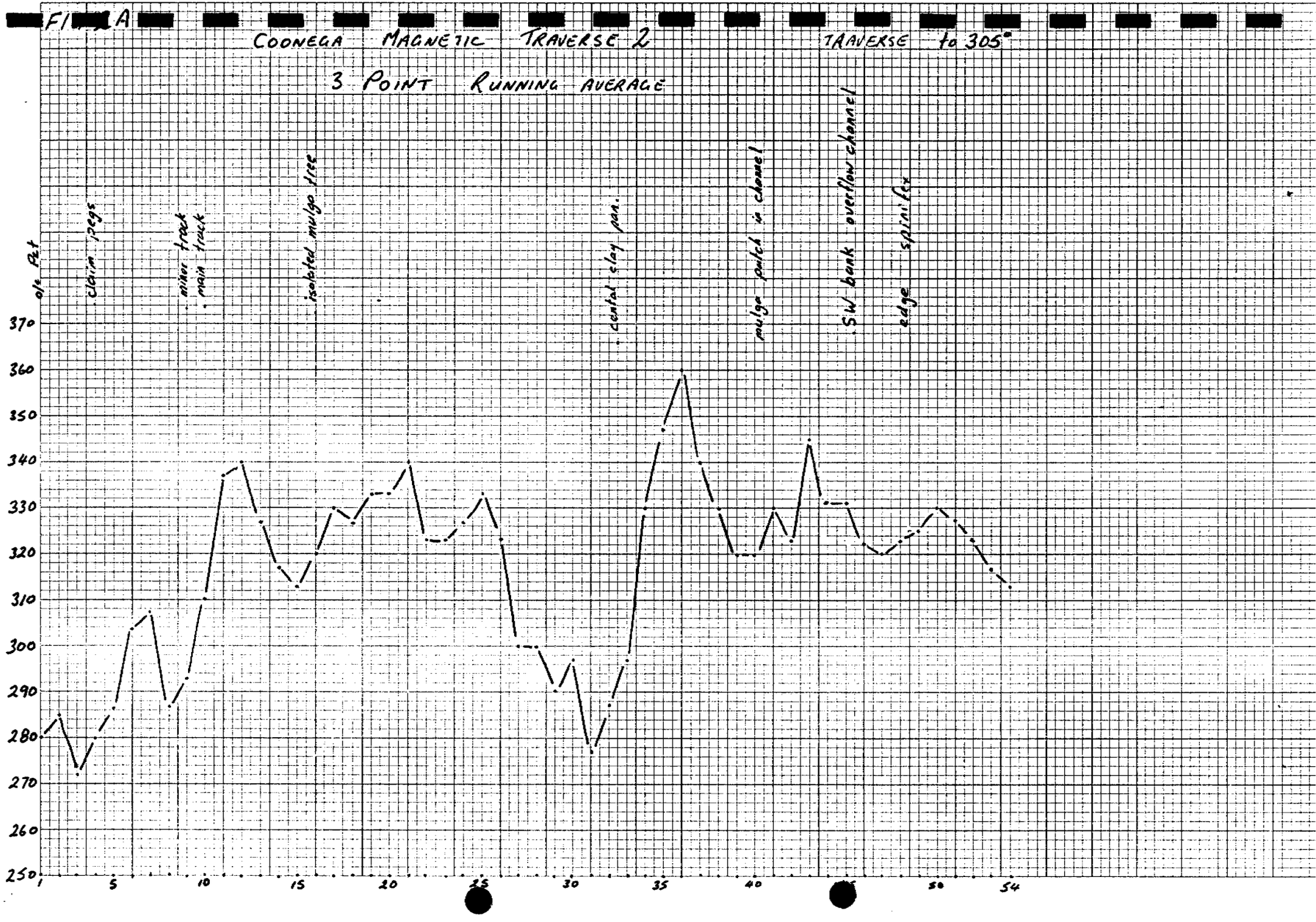


FIG 3 COONEGA MAGNETIC PROFILE TRAVERSE 3

RAW DATA

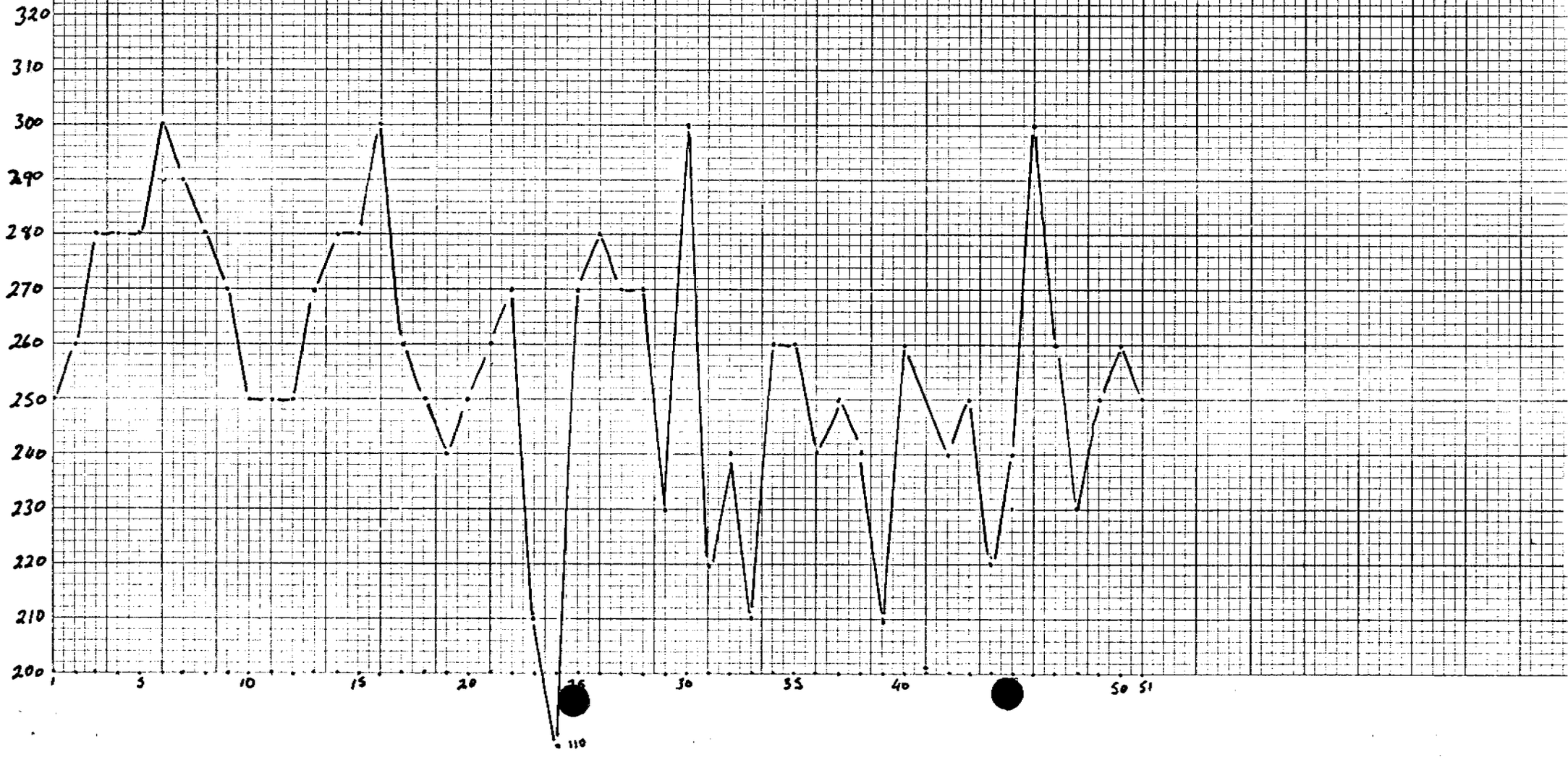


FIG 3A

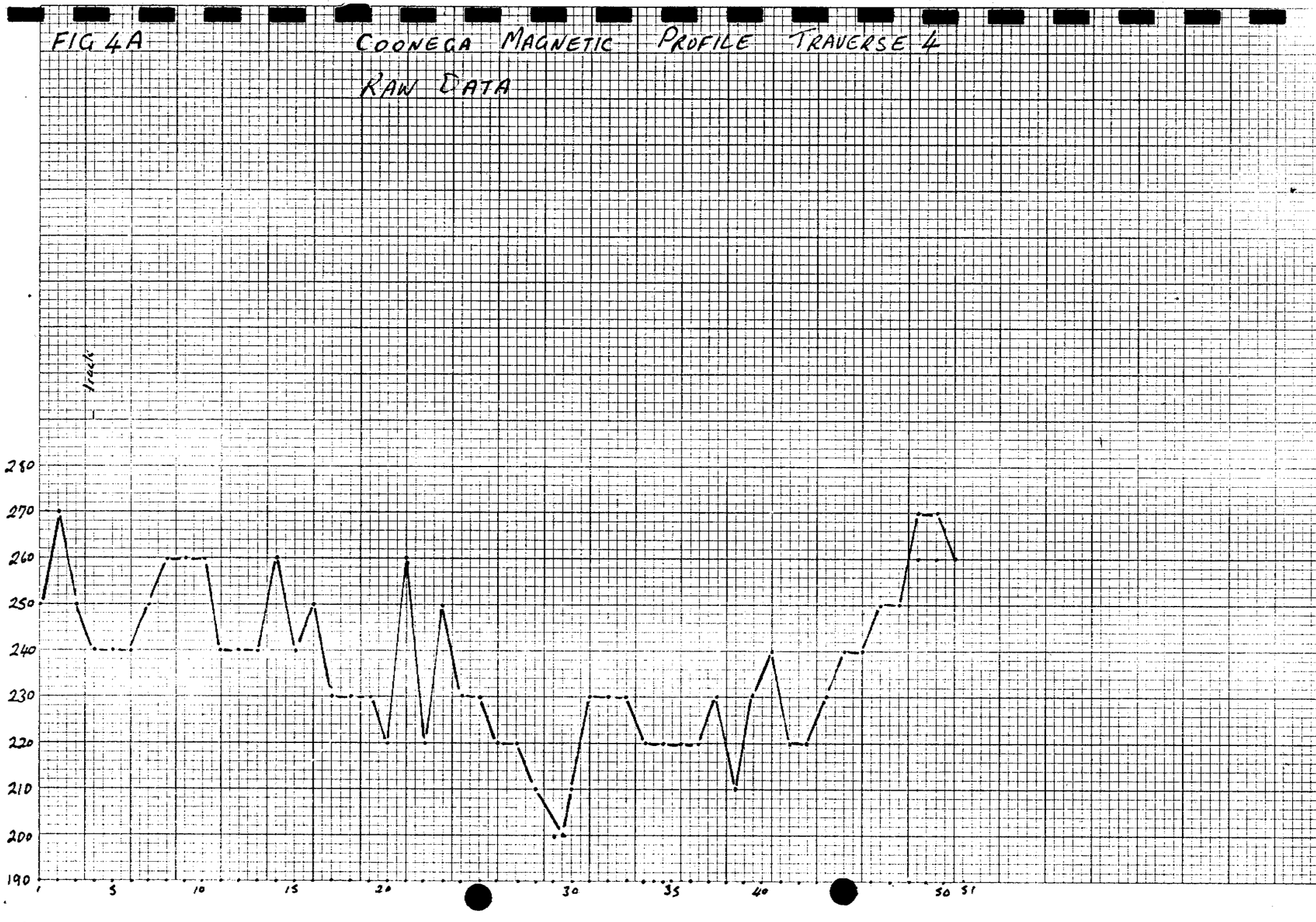
COONEGA MAGNETIC TRAVERSE 3

3 POINT RUNNING AVERAGE

FIG 4A

COONEGA MAGNETIC PROFILE TRAVERSE 4

RAW DATA



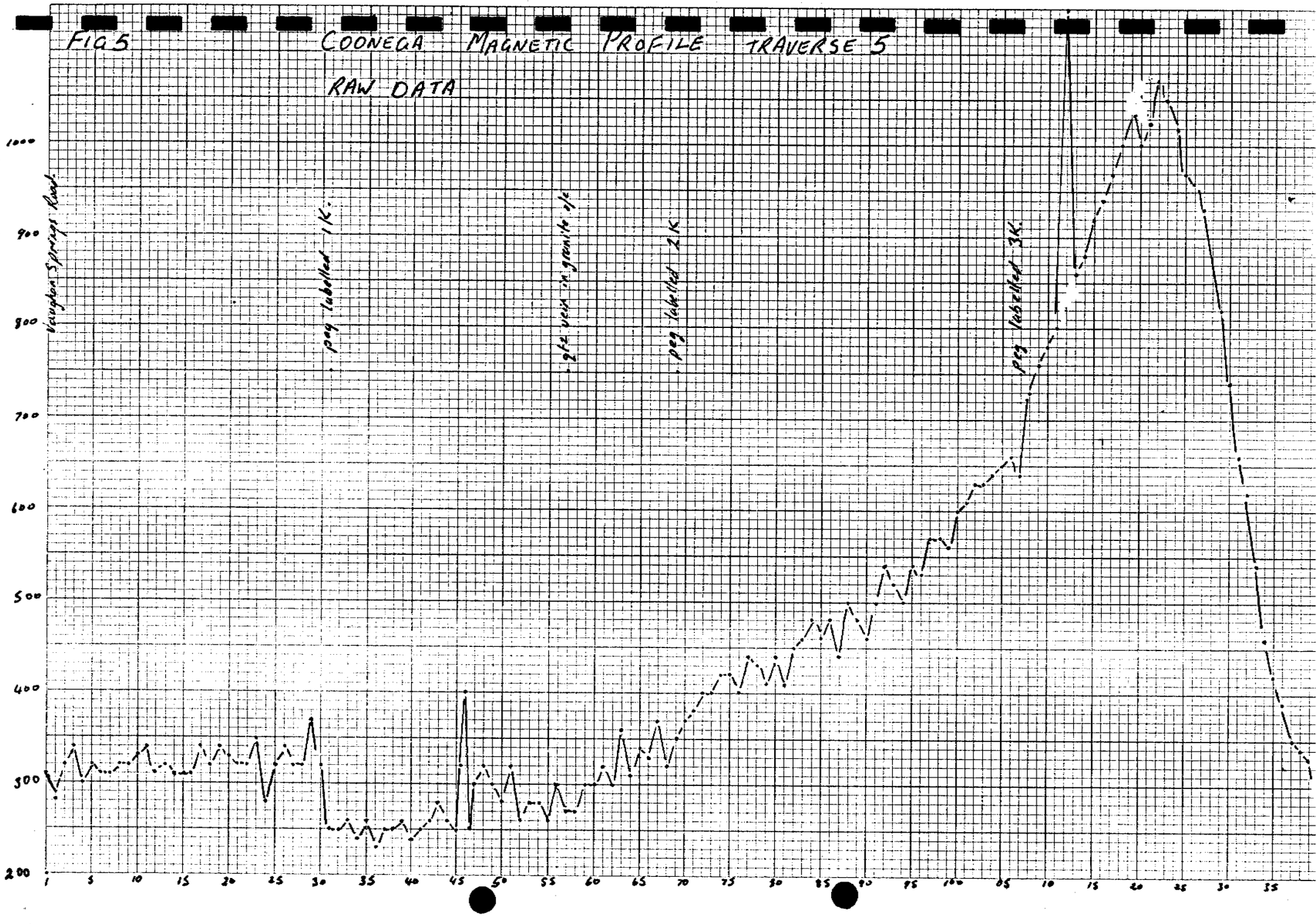


Fig 5
COONEQA MAGNETIC PROFILE TRAVERSE 5
RAW DATA
Vaughan Springs Road
peg labelled 1K.
qtz vein in granite o/c
peg labelled 2K
peg labelled 3K.
1000
900
800
700
600
500
400
300
200
1
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
05
10
15
20
25
30
35

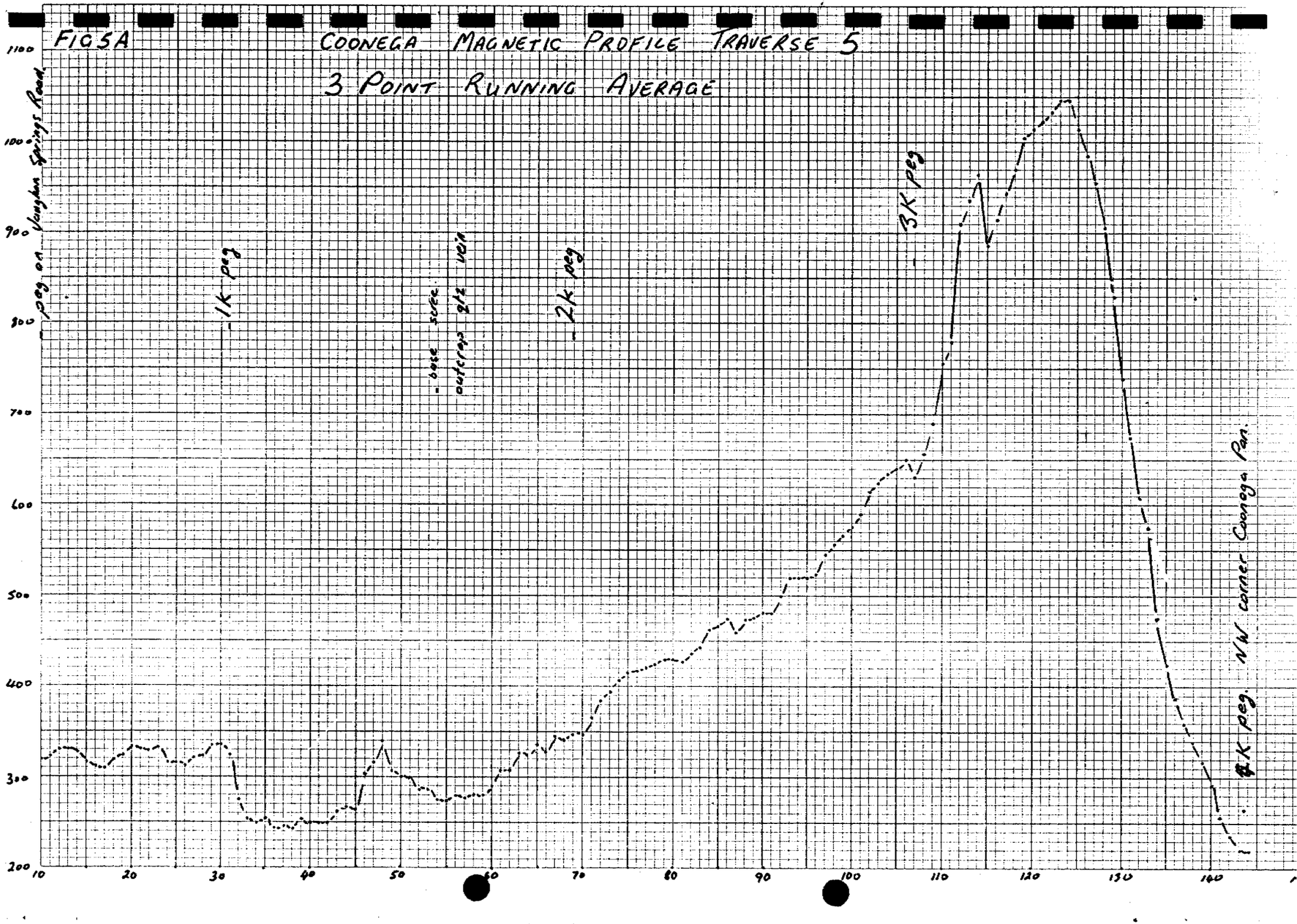


FIG 5A
COONEGA MAGNETIC PROFILE TRAVERSE 5
3 POINT RUNNING AVERAGE
1100
1000
900
800
700
600
500
400
300
200
10
20
30
40
50
60
70
80
90
100
110
120
130
140
peg on Vaughan Springs Road
-1K peg
- base sure
outcrops qtz vein
-2K peg
-3K peg
#K peg. NW corner Coonega Pan.

UNT DOREEN
NORTHERN TERRITORY

MAP 2
LOCATION OF MAGNETIC TRAVERSES 26·4·83