13. ANOMALY 2 (EL 2367)

13.1 Introduction

Anomaly 2 is located approximately 14km west of Ivy Camp and 3km south of the Ivy - Dead Bullock Soak haul road.

Gold mineralisation at Anomaly Two is associated with an extensive, quartz veined shear zone in Madigan Beds of the Tanami Complex. Significant gold values greater than 0.1ppm and up to 4ppm were intersected in two parallel, east - west trending zones 500m long and individually up to 50m in width. Recent exploration has not significantly upgraded the potential of the prospect.

The mineralisation model inferred for Anomaly Two is that of a brittle - ductile, quartz filled shear zone with mineralisation confined mainly to early quartz veins. The coincidence of an 80nT airborne magnetic anomaly with sheared metasediments suggests that the shear zone is more extensive than originally interpreted.

Anomalous results from the 1990 second phase vacuum drilling program were confined to a linear, low amplitude magnetic anomaly which extends east to Anomaly One. Further vacuum drilling and rock chip sampling highlighted anomalous gold and arsenic geochemistry within a quartz veined shear zone hosted by Madigan Beds.

First pass rotary air blast (RAB) drilling intersected significant gold mineralisation. Best RAB drilling intersections of 6mT at 3.22ppm, and 4mT at 1.36ppm were obtained from following up original vacuum drilling bulk cyanide leach (BCL) results of 1.33ppb and 1.40ppb at the Imogene and Kate areas respectively.

13.2 Work Undertaken

Main activities for the reporting period were a ground magnetic survey, RAB and vacuum drilling, costeaning, mapping, composite rock chip sampling (CRC) and RC drilling. Details of work carried out are summarised as follows:

Mapping, Composite Rock Chip and Lag Sampling

The area was mapped at a scale of 1:2500. 137 composite rock chip samples were collected, together with 13 lag samples.

Costeaning

A total of four costeans were excavated within the Imogene area. Three costeans were excavated within the drill indicated mineralised zone, and one 100m to the west to test for immediate strike extensions of the shear. Samples were collected over 1m intervals and dispatched for analyses by Analabs for Au by method 334 and As by method 115.

Ground Magnetic Survey

Two ground magnetic traverses, each 4km in length were carried out over a twin peaked airborne magnetic anomaly. In addition, several shorter lines were surveyed within the mineralised zone for further ground magnetic traverses if required.

RAB Drilling

RAB drilling was undertaken on Sections 20100E, 20300E, 21700E, 21900E, 22000E, 22200E and 22600E with the purpose of infilling and extending coverage in the Imogene area. Hole spacing was 15m with holes angled at 60 degrees to grid south; a down hole depth of 31m provided width coverage in the vertical plane. This drilling extended coverage to the edge of the anomalous results in the previous bedrock vacuum drilling programme.

Drill samples were composited into three metre samples on site and dispatched for analysis for Au by method 334 (30g aqua regia with carbon rod finish) and As by method 115 (perchloric acid digestion/hydride generation with AAS finish.)

Representative samples were collected from each drill composite to assist geological interpretations and for petrological work if required.

Vacuum Drilling

Vacuum drilling was conducted at 200-400m x 50m spacings. The program was designed to define the extent of mineralisation within the Anomaly 2 grid, as well as to test the southern magnetic horizon for indications of mineralisation. Holes were drilled to identifiable bedrock. A colluvium and a bedrock sample were taken.

Drill samples were composited on site and dispatched for analysis for Au (334) and As (115).

Representative samples were collected from each drill composite to assist geological interpretation and for petrological work if required.

RC Drilling

8 holes were drilled for a total of 561 meters and 548 samples on sections 21700E, 21800E and 21900E. All holes were orientated towards grid south at -60°except A2RC004 which was drilled at -60°to the north. A2RC005 and 006 were drilled on section 21700E; A2RC001, 002, 003, 004, and 008 were drilled on section 21800E; A2RC007 was drilled on section 21800E.

13.3 Results

Mapping, Composite Rock Chip and Lag Sampling

Mapping identified two major generations of quartz veining; an earlier, sheared and a later, relatively undeformed vein set. Both generations were individually sampled to determine their mineralisation characteristics.

A single, main sheared quartz vein was traceable in outcrop and sub outcrop for over 2000m in an east - west direction. This vein is thin (less than 0.5m thick), cream to white coloured, striated and frequently banded. Its appearance in outcrop is typical of the early veining. The banded appearance had formerly lead to the erroneous interpretation of these veins as chert beds. Gold values in these veins are often greater than 100ppb with arsenic up to 1000ppm in mineralised zones and between 100 and 1000ppm along strike from mineralisation.

Secondary, later stage quartz veins are generally wider, more abundant than the sheared veins and are usually not anomalous in gold. They are typically blue to smokey grey in colour and fracture conchoidally. These veins occur mainly as an envelope 200 - 400m wide on the margins of the shear zone and are anomalous in arsenic.

Lag sampling yielded gold values upto 190ppb.

Costeaning

Geology of the costeans comprised sheared, alternating fine and coarse grained, quartz veined metasediments. Primary sedimentary structures are mostly obliterated by the effects of shearing and metamorphism. Costean mapping concentrated on recording shearing textures, quartz vein orientations, and the various styles and generations of quartz veining. Selective resampling was carried out to identify the source of mineralisation in the intervals where primary assays exceeded 1m at 0.1ppm Au.

ANOMALY 2

VACUUM DRILLING										COSTEANS		RAB DRILLING			RC DRILLING			
Laterite	Lag	CRC	Petrology	Holes	Metres	Samples	BCL	Magnetics (Km)	EM (Km)	Metres	Samples	Holes	Metres	Samples	Holes	Metres	Samples	Period Ending
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	June 90
40	-	-	-	115	902	115	115	-	-	-	-	-	-	-	-	-	-	Dec 90
-	-	51	2	78	1261.5	307	64	-	6	-	-	-	-	-	-	-	-	June 91
-	**	5	13	210	1354.2	420	-	-	-	517	517	154	4934	1600	-	-	-	Dec 91
-	13	137	-				-	12.45	-	800	800	81	2480	810	8	561	548	June 92
-	*	-	-	146	835.8	292	-	-	-	-	-	34	809	228	-	-	-	Dec 92
40	**13**	**193**	**15**	**549**	**4353.5**	**1134**	**179**	**12.45**	**6**	**1317**	**1317**	**269**	**8223**	**2638**	**8**	**561**	**548**	**TOTALS**

** Orientation lag sampling Chadwick (1992).

* Orientation lag sampling Mazzachelli (1992).

Costean results are summarised as follows (Au assays in ppm):

21400E	no significant assays
21700E	1m @ 2.18 ppm 2m @ 1.06 ppm
21800E	1m @ 1.95 ppm 1m @ 2.05 ppm 1m @ 1.22 ppm
21900E	1m @ 4.13 ppm

Results of costean resampling showed that most of the gold is associated with thin, mm scale up to 7cm wide, sheared, black to sugary quartz veins, as well as cherty quartz veins. Thicker, glassy blue to smokey grey, relatively undeformed quartz veins up to 0.5m wide are not mineralised. These late stage veins, however are anomalous in arsenic over a wide area, providing a potentially useful "path finder" in further regional exploration.

Quartz vein orientations consist of two main populations. Most veins dip steeply to the south-south-west. The smaller population dips steeply to the north-north-east. This second population is probably a reflection of the dominant south dipping veins, which in some places appear to have "tipped" over due to the effects of soil creep.

Ground Magnetic Survey

Ground magnetics defined two east - west trending, 60-100nT amplitude horizons at an average vertical depth of 200m below the surface. The two horizons appear to converge to the west, indicating a possible anticlinal structure. Computer modelling suggests a steep south dipping magnetic source, possibly reflecting magnetic sulphides associated with the mineralising fluid. The low amplitude suggests the anomaly is not likely to be produced by units of the Davidson Beds.

The mapped shear system coincides with the northernmost magnetic horizon. See attached appendix for consultant's report.

RAB Drilling

Significant drilling results are summarised as follows:

Hole No	Intersection (m)		Significant Assays (Au)
	From	To	
A2RB161	10	13	3m @ 1.31 ppm
A2RB180	7	10	3m @ 1.17 ppm
A2RB195	25	31	6m @ 1.42 ppm
A2RB241	22	28	6m @ 6.95 ppm

Vacuum Drilling

Significant drilling results (>10ppb Au) are summarised as follows:

Hole No	Depth (m)	Intersection (m)	Assays (Au ppb)	Unit
A2V418	1.4-3.0	1.6	15	Ptm

Vacuum drilling has been confined to the extent of the mineralised Anomaly 2 system; drilling to the east was hindered by the deep alluvial cover. Analytical results of vacuum drilling from the southern magnetic horizon were discouraging.

RC Drilling

Significant drilling results (>1.0ppm Au) are summarised as follows:

Hole No	Depth (m)	Intersection (m)	Assays (Au ppm)	Unit
A2RC001	9-10	1	4.49	Ptm
	12-13	1	2.28	Ptm q2 1%
	18-24	6	1.16	Ptm q2 1-5%,q1 8%
	31-32	1	1.89	Ptm q2 5%
	38-41	3	1.72	Ptm q2 1-2%
A2RC002	73-74	1	2.34	Ptm
	80-81	1	1.19	Ptm q2 1%
A2RC003	23-26	3	1.48	Ptm q2 2%
	45-46	1	2.37	Ptm
A2RC004	23-25	2	1.11	Ptm q2 3%
	37-38	1	1.05	Ptm q2 1%
	42-43	1	2.12	Ptm q2 0.1%
	51-52	1	1.68	Ptm q2 2%
	55-56	1	2.19	Ptm q1 1%
	58-59	1	1.19	Ptm
A2RC005	No Assays >1.0ppm Au			
A2RC006	17-18	1	1.69	Ptm q1 0.1%
	39-40	1	1.47	Ptm q2 5%\
A2RC007	25-26	1	1.34	Ptm q1 2%
	33-35	2	2.19	Ptm q1 0.1-3%
	40-41	1	1.57	Ptm q1 0.1%
	53-54	1	1.00	Ptm
A2RC008	25-26	1	1.34	Ptm q1 2%
	33-35	2	1.29	Ptm q1 0.1-3%
	40-41	1	1.57	Ptm q1 0.1%
	53-54	1	1.00	Ptm

*Ptm : Madigan Beds, sericite schists, quartz-sericite schists, quartz greywackes.
q1 : sheared quartz veins
q2 : later quartz veining

Results of the RC drilling were disappointing. The maximum value of 6ppm gold over 3m discovered during previous RAB drilling could not be repeated. It is inferred that RAB drilling below the watertable (31m downhole) resulted in preferential retention of the quartz material in the samples. The wallrock was essentially washed away. This resulted in a non-representative bedrock sample with unrepresentative proportion of quartz veining. As mineralisation is related to quartz veining, excessively elevated gold grades were achieved. The RC drilling program was unhindered by groundwater due to greater air capacity of the compressor, so samples were collected dry. The result is that the RC drilling is a true indication of the tenor of mineralisation at Anomaly 2. It is recommended that RAB drilling below the watertable be avoided in future programs.

Geology - General

The main stratigraphic unit recognised at Anomaly Two is Madigan Beds comprising alternating fine and coarse grained metagreywacke. Coarse grained units are matrix supported, coarse to fine quartz sand with minor detrital muscovite. Shearing is readily observable in these coarser sequences. The finer grained units are recognised as sheared, quartz sericite schists.

These rocks are interpreted to represent mass flow emplaced sediments of probable turbidite origin.

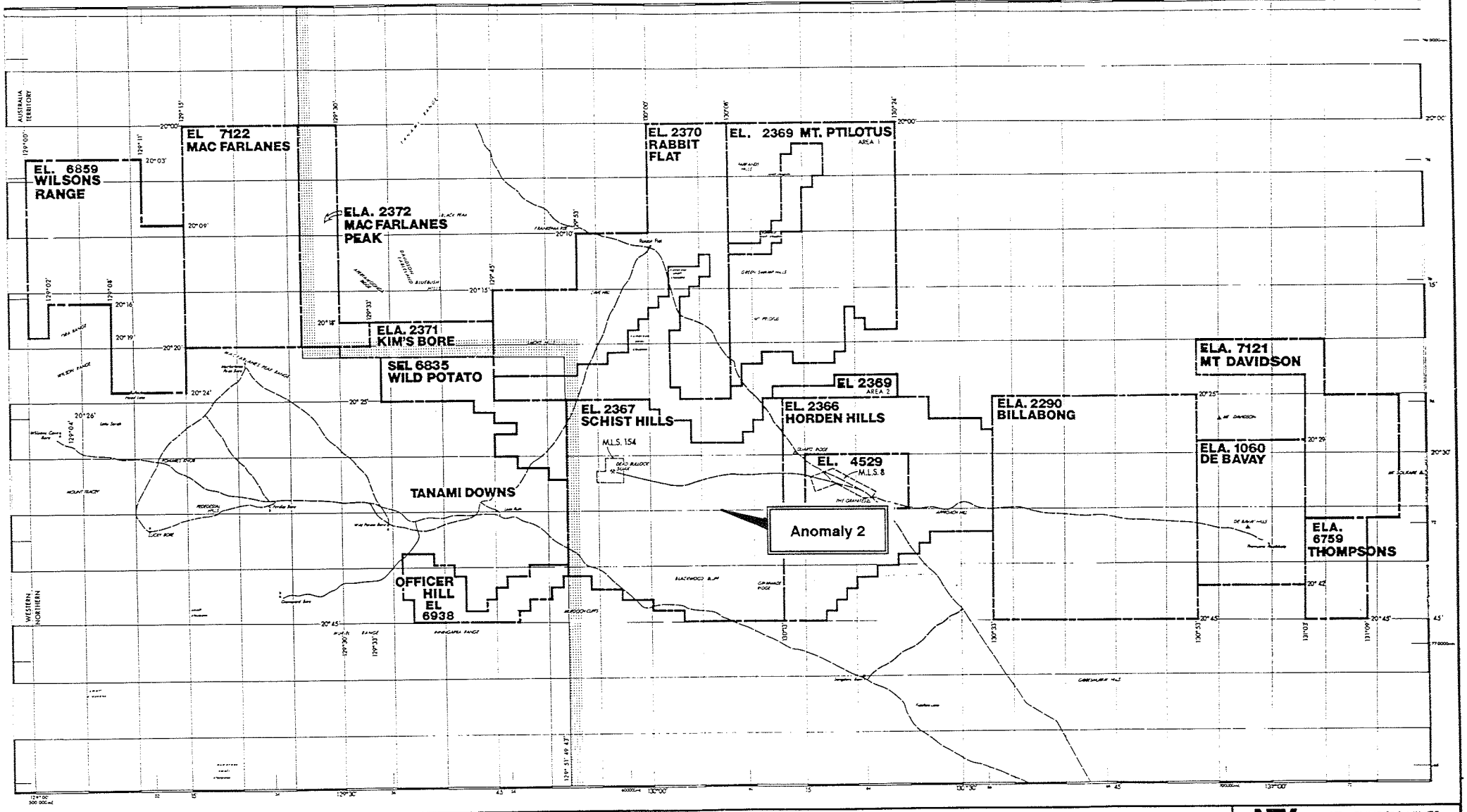
Mineralisation - General

Mineralisation at Anomaly Two is hosted by sheared, quartz veined metasediments. At least two phases of quartz veining are recognised; mineralised, narrow sheared veins and later stage, relatively undeformed quartz veins which are not mineralised. Sheared quartz turbidites (Madigan Beds) comprise the host rock sequence. Mineralisation is confined to discrete parts of the shear.

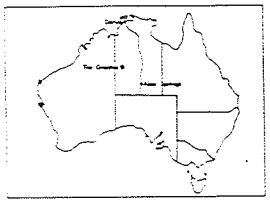
Mineralised fluids are interpreted to have been derived through metamorphic devolatilisation of underlying source rocks (?Davidson Beds) and focussed into dilatent structures within the shear zone. The mechanism for gold deposition is unclear, but it is probably in response to fluid cooling/unmixing, and/or desulphidation reactions within dilatent zones of the shear.

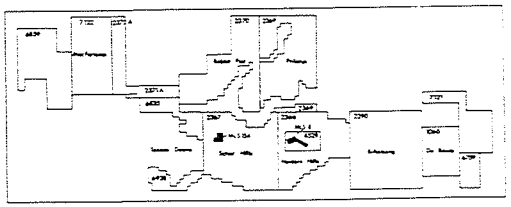
13.4 Plans

Drawing No.	Title	Scale
2100-1535	Anomaly 2 RC Geology & Assay 21700E	1:500
2100-1536	Anomaly 2 RC Geology & Assay 21800E	1:500
2100-1537	Anomaly 2 RC Geology & Assay 21900E	1:500
2100-1445	Anomaly 2 RAB Geology & Assay 20100E	1:500
2100-1446	Anomaly 2 RAB Geology & Assay 20300E	1:500
2100-1447	Anomaly 2 RAB Geology & Assay 22600E	1:500
2100-1298	Anomaly 2 Vacuum Geology & Assay 18800E	1:500
2100-1303	Anomaly 2 Vacuum Geology & Assay 19200E	1:500
2100-1305	Anomaly 2 Vacuum Geology & Assay 19600E	1:500
2100-1307	Anomaly 2 Vacuum Geology & Assay 20000E Sht1	1:500
2100-1314	Anomaly 2 Vacuum Geology & Assay 21400E Sht1	1:500
2100-1316	Anomaly 2 Vacuum Geology & Assay 21800E	1:500
2100-1317	Anomaly 2 Vacuum Geology & Assay 22000E	1:500
2100-1377	Anomaly 2 Geology Sheet 4-1	1:2500
2100-1374	Anomaly 2 Geology Sheet 4-2	1:2500
2100-1557	Anomaly 2 Geology Sheet 4	1:5000
2100-1372	Anomaly 2 Drillhole Location & Bedrock Assays Sht 4-1	1:2500
2100-1369	Anomaly 2 Drillhole Location & Bedrock Assays Sht 4-2	1:2500
2100-1371	Anomaly 2 Drillhole Location & Bedrock Assays Sht 4-3	1:2500
2100-1559	Anomaly 2 Rock Chip Sample Location & Assay Sht 4-1	1:2500
2100-1560	Anomaly 2 Rock Chip Sample Location & Assay Sht 4-2	1:2500



LOCATION MAP





LEGEND

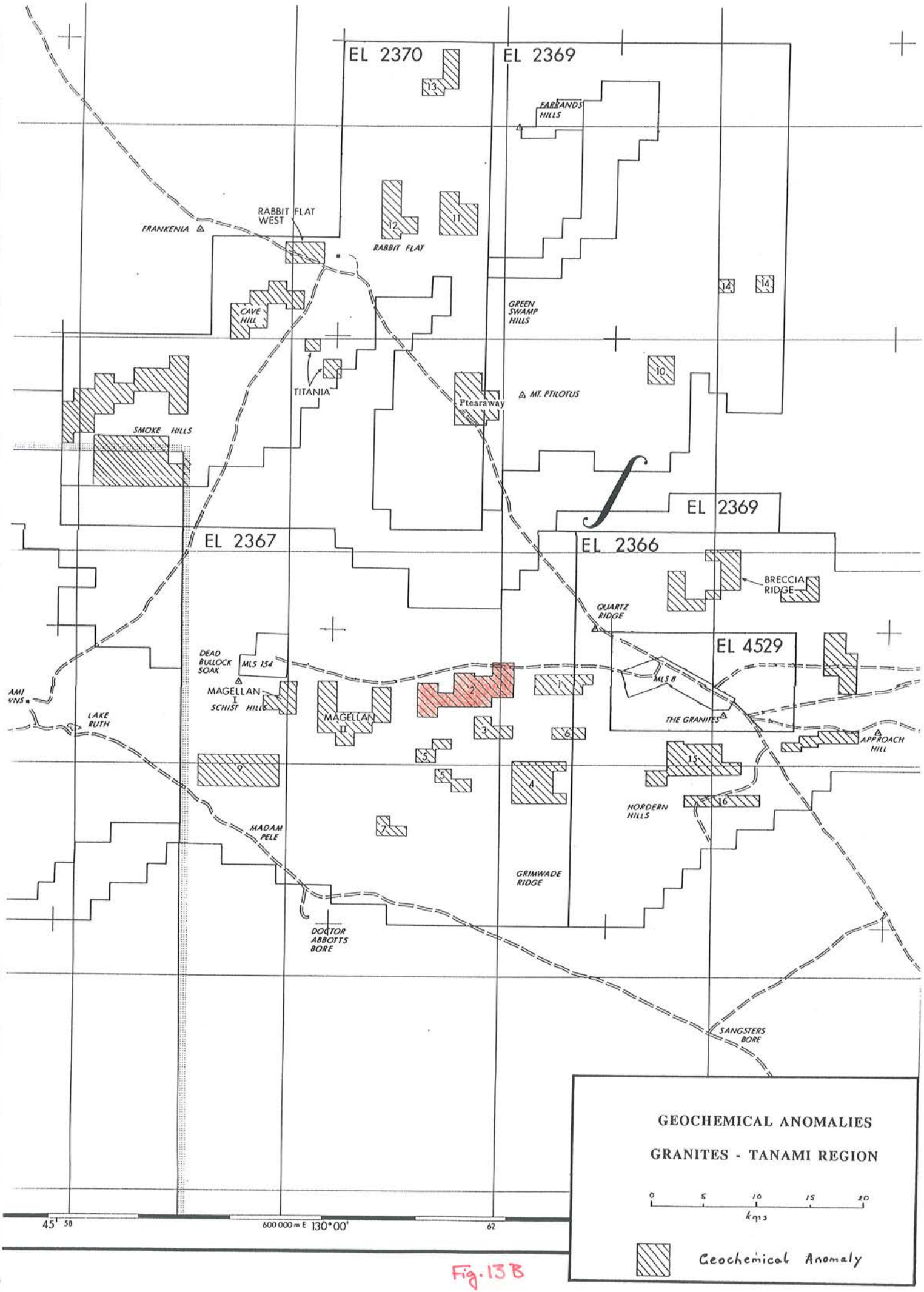
NORTH FLINDERS MINES LIMITED

Tanami Reconnaissance : Northern Territory

EL LAYOUT

Fig. 13A

Drg. No. 20-1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EL 2369
FARRANDS HILLS
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FRANKENIA
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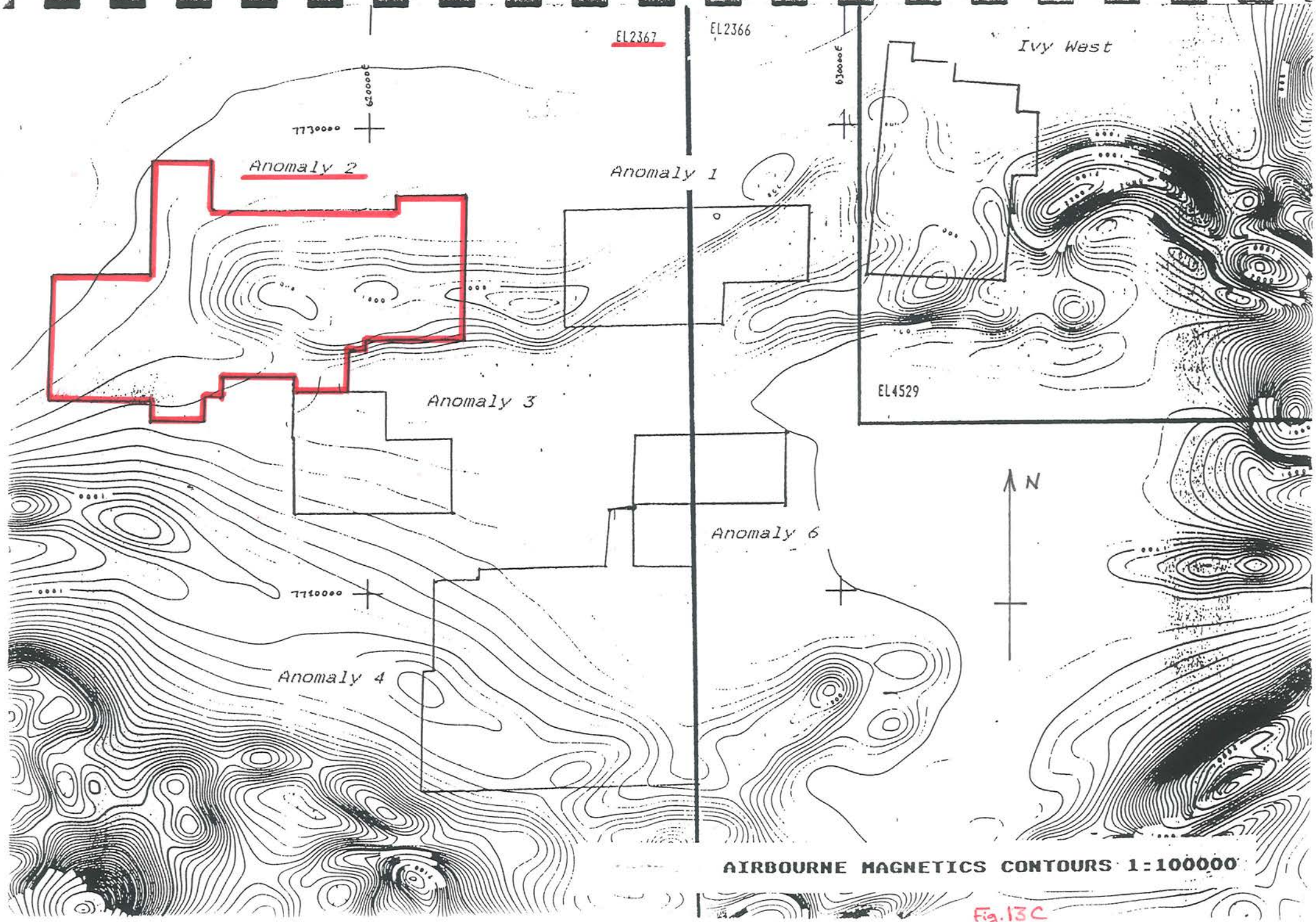
CAVE HILL
GREEN SWAMP HILLS
TITANIA
Ptearaway
MT. PTILOTUS
SMOKE HILLS
EL 2369
EL 2367
EL 2366
BRECCIA RIDGE
QUARTZ RIDGE
EL 4529
DEAD BULLOCK SOAK
MLS 154
MAGELLAN I SCHIST HILLS
MAGELLAN II
MLS B
THE GRANITES
APPROACH HILL
AMI VNS
LAKE RUTH
HORDERN HILLS
MADAM PELE
GRIMWADE RIDGE
DOCTOR ABBOTTS BORE
SANGSTERS BORE
45' 58
600 000 m E
130°00'
62
GEOCHEMICAL ANOMALIES
GRANITES - TANAMI REGION
0 5 10 15 20
kms
Geochemical Anomaly

Fig. 13B



AIRBOURNE MAGNETICS CONTOURS 1:100000

Fig. 13C

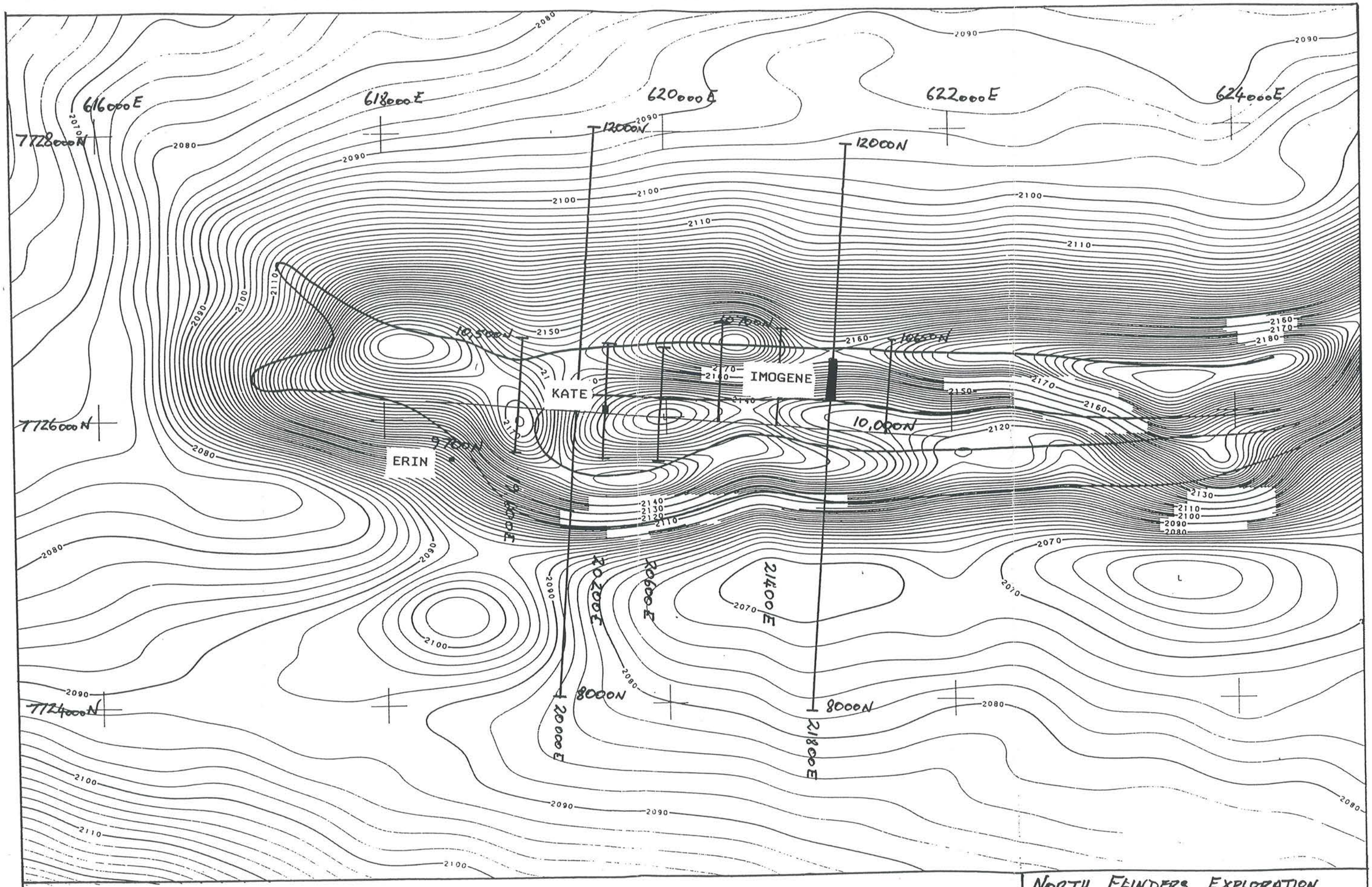


FIGURE 2

NORTH FLINDERS EXPLORATION

ANOMALY 2 (J16)

GROUND MAGNETIC TRAVERSES

1:25,000

Hugh Rutter : May 1992 Fig. 13.D