

**JUKES PROPRIETARY AREA  
MAGNETIC ANOMALY 3N/6**

**LYELL E.Z. EXPLORATIONS**

**57 – 143**

003

14th February,

8.

REPORT ON EXAMINATION OF JUKES PROPRIETARY AREAMAGNETIC ANOMALY 3N/6

Dates of Examination: January 30th - February 7th, 1958.

Party Leader: P. Rodda (Geologist).

Persomel Employed: G. Seymour (Bushman).

Man Days in Field: 22.

Location of Camp: On saddle between Mount Jukes and East Jukes.

Means of Transport and Supply: Camp established by Sycamore helicopter from Queenstown; fresh supplies brought up track from old smelters at Crotty.

GENERAL TOPOGRAPHY OF AREA

The Jukes Pty. mines are on the northern flank of Mount Jukes, south of the King River which cuts a gorge between Mounts Jukes and Huxley. The west bank of a small creek with an increasingly deep gully was used as starting point of the three adits of the mine.

INVESTIGATION AND FINDINGS

Geophysical. The anomaly appears to be centred around at least one large outcrop of magnetite. Three main traverse lines (A, B & C) were made bearing  $309^{\circ}$  for most of their length, then an additional length on  $280^{\circ}$ . A start was made on a fourth traverse (D) bearing  $300^{\circ}$ . "A" was then farthest uphill, "D" the lowest line. Though a weak anomaly was found on "A", the lines "B", "C" and "D" had very strong ones. On lines "B" and "C", large negative (and on "B", positive also) readings were

interpreted as a fault ("B" 1400' - 1450', "C" 1950'-2050'). Correlating the two, the direction of the fault is NW-SE, which is the strike of the main faults in the area. At the position of the fault on "B", there appeared to be extensive shearing in this direction, though rock types appeared the same on both sides (LEE 334) - fine ground mass with large segregations of chlorite. When weathered, the rock is white, spotted green. It appears in some places as if the iron staining along joints is greater along the shear direction than in other directions.

The anomaly along "C" was of much greater length than along "B"; line "C" being nearer the cause of the anomaly.

On line "D", there were only five stations; D 900' was on the bluff to the E of the junction of two creeks about 400 ft. south of No. 3 Adit; there is much hematite with some magnetite veining the rocks. On the creek bed and banks there are some large veins of pyrite, massive or slightly disseminated, up to 1-2" thick. The pyrite appears to fill fissures in some cases, there is perhaps some calcite present. LEE 341 has pyrite associated with magnetite; this specimen was picked from the creek bed as a specimen of pyrite.

At D 1200', there is a large outcrop of magnetite and hematite (LEE 342) along a resistant ridge. It is about 400' long, 20-25 ft. wide, with Dundas showing through it in places; it appears to lie on the Dundas. A trace of hematite in veins at C 1365' may be associated with this, being on its continuation, though it is not magnetic. The magnetite is massive and strongly polar, and from contouring the magnetic readings, appears to be the cause of the anomaly, though similar smaller outcrops exist to the east and contribute.

095

Geological. The mineralisation is in Dundas rocks along a NE-SW cross fault intersecting NW-SE faulting, forming a graben; the structure is similar to the Linda Disturbance. The cross fault is probably near or along the creek past the three mine adits; the Dundas to either side is sheared and stained red extensively; it has been called red felsite. The colour is due to oxidation of pyrite and perhaps also iron-bearing solutions; under the surface the rock is still limonitic yellow in some places. The original Dundas is a variable rock, some appearing to have chunks of rhyolite in a slightly basic groundmass (LEE 346) which may have been caused by nuées ardentes. In other places the rock is dark green with equidimensional crystals of quartz and augite (Lee ). The rock from the ore body may be seen in the mine dumps (LEE 338), the copper has mostly been leached to the outside, forming mammillary spherulites of malachite (LEE 339). The extent of the red "felsite" is as follows:

- Line A: A790' - A1300' with perhaps outcrops further on,
- Line B: B750' - B1200' with some from 1450' - 1600',
- Line C: C700' - C1400',
- Line D: D1200' to at least D900'.

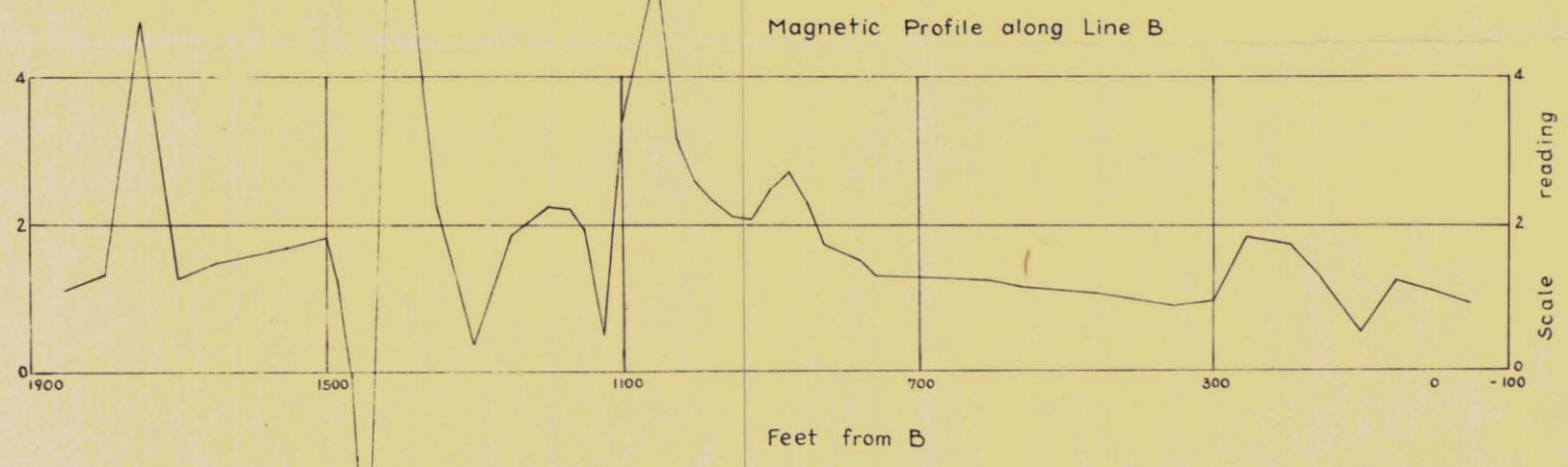
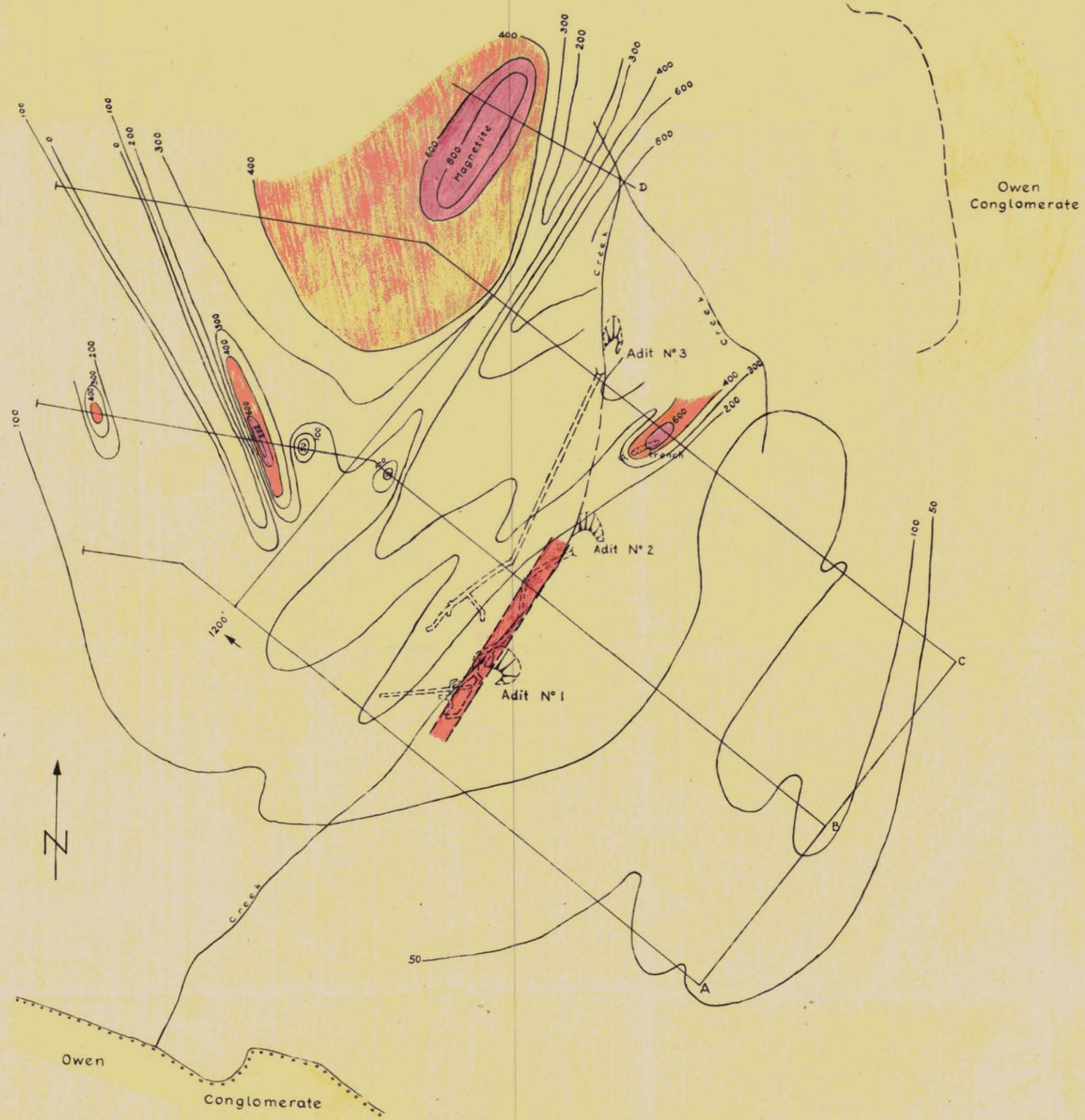
About 150 soil samples were taken, these will be assayed at Risdon.

GENERAL CONCLUSIONS

The main cause of the anomaly is a large outcrop of magnetite about 400' long, 20-25' wide. Smaller outcrops contribute also. Though specimens were found with pyrite and magnetite associated, in general they do not seem to occur together. There did not seem to be much magnetite in the ore dumps, with pyrite or the copper minerals. Also no trace of sulphides was seen on the large outcrop of magnetite.

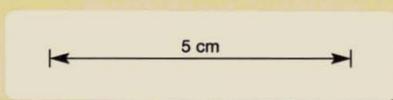
It thus appears that anomaly 3N/6 is not worth further investigation, but the final decision must await the results of the soil analysis from Risdon.

P. Rodda.



### MAGNETIC ANOMALY 3N/6 JUKES PTY. AREA

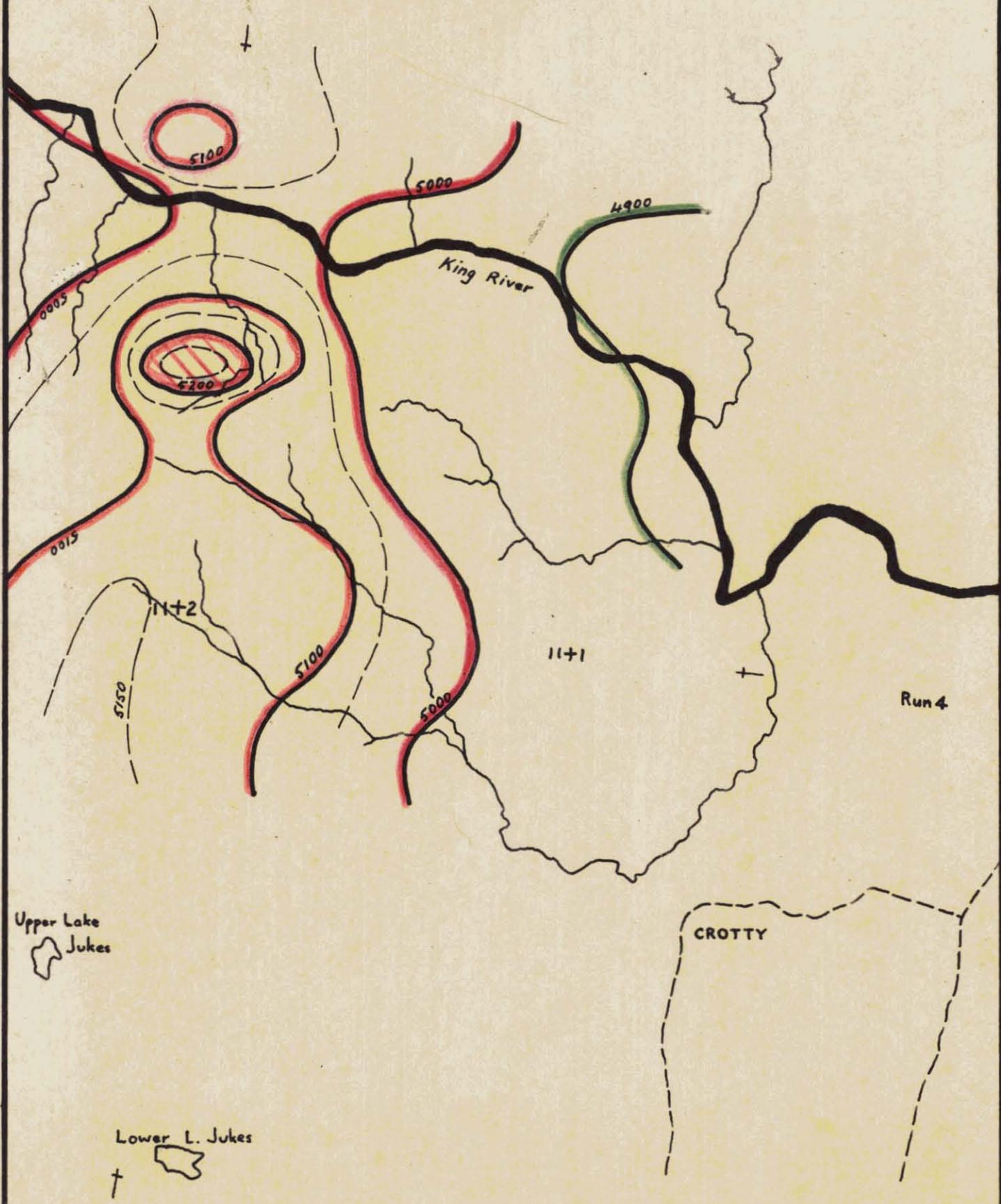
Plan and Section. Original Geology and Plan by Mt. Lyell M.&R. Co.



L.E.E.  
Q14a

# AIRBORNE MAGNETIC ANOMALY

3N/6



Readings in gammas  
† Fiducial marks on photo  
Topography taken mainly from  
photograph 4/887/112

