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GEOPHOTO MINERALS REPORT 1970/41
DUNDAS PERMITS - EXPLORATION TARGETS FOR THE
PERIOD JUNE 1970 - MARCH 1971.

R.G. PATERSON

TEXINS DEVELOPMENT PTY. LTD.

- Maps:
- 1/239 Overlay of geological & geophysical profiles
 - 1/241 Geophysical, geochemical & topographic profiles

A. WEST KOSMINSKY

1. KHW DDH1A A hole to be drilled from KHW 1 site with same azimuth but different depression in order to determine dip of lodes intersected in KHW DDH1.
- Either a 350-400 ft. hole depressed 40°
or a 700 ft. hole depressed 70° .

The former would be most conclusive as it could not fail to intersect lode horizons for dips east or west.

2. Following results of 1. and detailed geochemical traverses 400 ft. north and 400 ft. south of KHW1, holes should be drilled as follows:
- (1) KHW DDH 2 to intersect gossan lines and possible geochemical anomalies at 400 ft. south of KHW DDH1;
 - (2) KHW DDH 3 to intersect gossan lines and possible geochemical anomalies at 400 ft. north of KHW DDH 1.

Should dip of lodes prove to be east (from KHW DDH 1A) then the above holes could be located on previously placed drill sites and access, i.e. KH 2 and 2A site and access to KH 4 and 6. If dip of lodes is westerly the access would involve dozing a track around the contour from the ridge just north of the headwaters of Stichtite Creek. Rock is soft so no great expense would be involved and access to a second more westerly line of gossan would also be gained by this route.

A. WEST KOSMINSKY (cont.)

3. Following results of KHW 1A, 2 and 3, a hole KHW DDH 4 should be drilled to intersect gossan outcropping on line 32S, 14.5-15.5W with which is associated a positive magnetic anomaly. Gossan cap contains anomalous Pb - Zn values with Zn up to 1%, i.e. similar to KHW 1 geochemistry. Further anomalous Pb-Zn samples were taken in small creek (Kosminsky Creek West) running south from 30S + 17.5W to South Comet Creek and this zone could possibly be tested by KHW DDH 5 at the same time.

GEOPHYSICAL ANOMALIESGeophysics

From results of drilling on the Kosminsky-South Comet line it is obvious that there is some good correlation between intersections and self potential minima.

These minima are not easily picked out on the contour plan and are best exhibited in profile. The significant minima are often only second order anomalies especially in the Crimson Creek capping on Kosminsky Hill. This is possibly because the Crimson Creek rocks are much less conducive than the abundantly pyritic and graphitic Precambrian.

Proposed KHW 1A There would appear to be some correlation of S.P. minima with intersections made in KHW 1 as shown on the accompanying section. The steep negative gradient toward the serpentine is, however, unexplained since from West Comet evidence this would be expected to be positive.

A. WEST KOSMINSKY (cont.)

Proposed In both instances, i.e. 400 ft. N. and 400 ft. S.
KHW DDH 2 and there are negative minima associated with gossan
KHW DDH 3 lines, i.e. about the western end of the Comet
 22S line and at the western ends of Comet 28 and
 30S lines.

A line of gossan also exists running from about
 33S + 15.0W to 30S + 15.5W (where it was pene-
 trated near surface in KH 8) and linking up
 with wide gossan zone on the western part of
 the 26 and 28S lines. Negative self potential
 minima exist at 32S + 15.0W, 30S + 14.5W,
 28S + 17W, 26S + 17.5W and appear to correlate
 with this gossan.

An I.P. anomaly exists on 26S at about 16.5W
 but extending at depth to 17.0 and 17.5W.
 Frequency effect is high at the western limit
 of this survey which appears not to have been
 carried far enough west. It should be noted
 that there is no marked frequency effect
 associated with Austral's interpreted anomaly
 near the surface. This I.P. anomaly seems,
 however, to be on a strike line with the first
 intersection in KHW 1.

Increasing frequency effects west may be re-
 lated to the second intersection. If this is
 so, the first intersection would appear to dip
 west (which does not fit the geochemical results?)

A. WEST KOSMINSKY (cont.)

A line of poorly defined REM anomalies exists on lines 28S, 30S and 32S with crossovers at 32S, 14.5 - 15.5W?, 30S + 15.2W, 28S + 18.2W.

It has been found however, that even taking the utmost care in orientation, curves are not duplicable. Dip angles read are almost always less than 5° and noise level probably prevents duplication of such low readings. Another possibility is that the instrument is faulty and attempts at duplication should be made in other lease areas.

The V.L.F. method is very definitely duplicable since the B.M.R. tested this out when last they were here. Considering conductor strike etc. this would seem to be the ideal electromagnetic method in this area and with experience in the area coupled with some of the latest methods of interpretation, would provide most information.

Effects rather than actual readings were found to recur in some of the traverses duplicated with the R.E.M. unit, i.e. areas of poor null; irregularly fluctuating dip angles.

B. SOUTH COMET WESTGeochemistry
and
Geology

A line of quartz-goethite gossan exists on the western half of the South Comet sheet extending south-east from the South Comet tram to Adelaide Mine Creek, where it would appear to be displaced 500 to 600 ft. south-west by a fault in the creek. This coarsely crystalline quartz, goethite and siderite gossan contains anomalous Pb values as high as 1.91% with Zn anything to 1% but more generally less than 0.5%. It has been trenched extensively on the north and appears to be over 200 ft. in surface width at this point. From its map trace over South Comet Hill it gives the impression of dipping west. This line of gossan appears to run north-west on to the Bonanza map sheet where a deep trench has uncovered a quartz galena lode just north of South Comet Creek. The trench cuts across the tramway.

North of here the "line of lode" runs into the Judith Formation and the Red Lead Conglomerate and disappears. It may be faulted transversely in this vicinity. It has an apparently undisturbed strike length of 2,500 feet over South Comet Spur and appears worthy of testing.

Geophysics

It should be noted that the BHS 64S I.P. line crosses this zone somewhere between their 36E and 39E stations. Only a slight anomaly appears to have been observed. However, due to the

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B. SOUTH COMET WEST (contd.)

Geophysics
(contd.)

probable high percentage of quartz suggested from the gossan, this zone would not be expected to be highly conductive. Never the less, all three parameters are in anomalous contrast to the immediate background and the anomaly shape agrees with what has been suggested geologically, i.e. westerly dip.

Drilling

- (1) SCW 1 (00 on proposed mine grid):
A preliminary hole could be sited at about 45S + 18.5W on the South Comet sheet.
- (2) Following the results of (1), holes could be drilled at 400 ft. intervals along strike; the next north, SCW 2 being situated on the South Comet tram (4N) followed by SCW 3 (8N) to penetrate beneath the trench located on or about the tramway in the Bonanza sheet.
- (3) Holes every 400 ft. along strike south of (1).

Access

Access to SCW 1 would involve about 1/4 mile of road along the South Comet tram through easily-dozed rock (Hodge Slate), i.e. \$500 approximate cost. Culverts would be necessary features of this roadway.

Access to proposed SCW 2 and SCW 3 would also be along old tramway and would not involve much expense.

B. SOUTH COMET WEST (contd.)Access
(contd.)

Access to SCW 4 and later holes should be considered in conjunction with a major road over or around South Comet Hill should this prospect prove worth following up. These southern sites would involve considerable access expense. However, decisions as to the route of access to follow-up mineralisation in Adelaide Mine Creek and the following up of the southern part of South Comet Shear are involved here.

C. WEST COMET LODEGeology

This is a large "gossan body" sub-parallel to and on the eastern contact of an intrusion of serpentine into the Oonah Quartzite and Slate. Some volcanics are also apparent in and around the contact and these are more abundant to the north (i.e. north of Dundas - Maestries road). These volcanics are intensely silicified and chloritised basic lavas and tuffs and often contain fuchsite.

The "gossan" body is over 100 ft. wide and parts of it have been secondarily enriched, with crocoite, cerrussite and Ag. Cl. It is approximately 1,000 ft. long, pinching out on serpentine to the north and apparently fading to the south. Some weak galena-sphalerite mineralisation has been observed in dolomitic Oonah beds as far south as Comet Creek, where a small adit has been driven (i.e. just west of 8E line - Platt-West Comet Grid).

Some grab samples were taken from lode material at the first level in the West Comet main shaft, i.e. oxidised material, and these yielded up to 6% Pb and 30 ozs. of Ag. per ton.

It is apparent from mullock dumps that the lower mine levels were in primary ore so that the depth of oxidation would appear to be approximately 200 ft.

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C. WEST COMET LODE (contd.)

Geophysics

There is a prominent negative self potential anomaly associated with this line of gossan and it extends well south of any known lode outcrop. However, further mineralisation and large gossan outcrops occur just south of the perimeter of the West Comet S.P. survey and are on line with this anomaly, so that the anomaly may represent a continuous shear or fault zone which is only weakly mineralised in the centre. The southern body appears to pinch out to the south on the Stichtite Hill Serpentine intrusion.

Magnetics has defined the serpentine perimeter but not too accurately since lines run almost parallel to the contact in places.

Previous
Drilling

In 1930 the Tasmanian Department of Mines drilled 3 holes to intersect lode beneath the main workings. Holes were sited on the western flank and were each 300 ft. to 400 ft. deep. They all appeared to intersect gossanous horizons but very little core was recovered and no assay results are now available.

The Mines Department sections show dip of lode as being about 60-70° west. The most northerly hole intersected a lode horizon between two blocks of serpentine.

C. WEST COMET LODE (contd.)Previous
Drilling
(contd.)

Reid's map also shows a westerly dip on the lodes in contrast to the steep easterly dip suggested by Blisset's summary (1962).

Hence it would seem that holes WC 1 and WC 1A (influenced by Blisset's statement) were drilled down dip and may not have exhausted possible targets.

WC 2 did not proceed far enough to intersect the lode material being worked in the No. 3 or Main Level. It, however, intersected other oxidised Fe-rich lode horizons but not enough core was recovered here for the results to be conclusive.

WC 3 was sited just a little to the east of No. 3 level and should have intersected the up-dip projection of the lode. However, the lode may be stronger further west or else has deteriorated in grade at this point and further south (there being no further strong gossan formation thereabouts). The weakly mineralised material intersected in WC 3 is very similar to that exposed at the small adit in Comet Creek (i.e. just west of 8E line).

Proposed
Drilling

It is recommended that at least two, possibly three of the holes tabulated below proceed to intersect at depth beneath the old workings.

C. WEST COMET LODE (contd.)Proposed
Drilling
(contd.)

There are numerous similar gossan bodies around the margins of the serpentine intrusions elsewhere within the lease and these holes would help decide the merits of these other targets which are strongly anomalous geochemically.

West Comet Grid All holes depressed 55°.
WC 4 4.8E + 7.8S Azimuth 90° True
WC 5 3.8E + 9.5S Azimuth 90° True
WC 6 2.8SE + 12.6S Azimuth 90° True
Holes are spaced at 300 ft. intervals.

012

D. WEST COMET N/E. LODE

Geology

An old, partially open cut line of gossan occurs to the east of the West Comet mine and runs northeast from Comet Creek almost as far as the Dundas-Maestries Mill road. Surface grab samples from various points along strike show high Pb, Zn and Ag values (e.g. B16 Pl. 1, 2, 4, 5, 6, 7). Cu values are as high as 0.1% which is higher than normally observed in the gossans of the general area. Further north, however, values are weak, although some interesting Cu Ni ratios appear to indicate a sulphide origin for the gossan. A high Co. value 0.2% occurs in sample B17 S11.

Geochemistry

Three detailed geochemical traverses have been carried out over the northern part of this gossan.

(1) Along the old Adelaide-West Comet baseline 8E to 18E. A large Pb anomaly with values as high as 1.99% was obtained being present at intervals over a width of 320 feet. Two weak Ni anomalies (one with accompanying Co) also occur. The most easterly of these is at the edge of a prominent magnetic high which also correlates with a negative self potential effect. A Cr³⁺ anomaly with values around 1% was obtained over the first 90 ft. of the traverse. Samples were taken with a 3" diameter post hole digger as near as possible to the rotten rock horizon (top bedrock) and below root level. Outcrop samples were taken when this was possible. Samples were taken every 10 ft. (Results Table I).

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D. WEST COMET N/E. LODE (contd.)

Geochemistry
(contd.)

(2) Parallel and 400 ft. North of (1) from 8E to 19E. (Results Table II).

(3) Parallel and 400 ft. north of (2) from 12E to 18E. (Results Table III).

Geophysics

A section has been plotted of traverse (1) with geochemistry, magnetic and self-potential profiles superimposed. As before the most easterly Ni peak (associated Cobalt high) appears to correlate with a self-potential minimum and a magnetic high. The latter could be attributed to a magnetite concentration near the serpentine contact and Ni could be associated. Reference on this can be made to B.M.R. Record No. 1962/45 entitled Dundas Metalliferous Geophysical Surveys (i.e. Razorback-Grand Prize).

(Quote: "trenching of some of the magnetic anomalies was done by Rio Tinto Australian Exploration Pty. Ltd. and samples taken from the trenches showed relatively high Ni values (0.4%) associated with magnetite").

The magnetic anomaly is thought to have too great a maximum to be attributed to nickeliferous pyrrhotite; however, it could easily be tested in conjunction with the Pb anomaly by diamond drilling.

014

D. WEST COMET N/E. LODE (contd.)

Geophysics
(contd.)

The Pb anomaly appears to have a positive self-potential anomaly associate. This is not understood unless the anomalous geochemistry is due to a transported gossan rather than an in situ one. From the anomaly size this does not seem likely. A prominent negative S.P. gradient is associated with the gossan contact with the Oonah Quartzite and Slate. The negative minimum is in a depression filled with a quartz rich soil or downwash. This may have masked the true bedrock profile geochemistry or a seepage here may have caused the negative minimum. Also it seems likely that this depression which extends north may represent a line of structural weakness which may be relevant in exploration.

Drilling

WCN/E. 1.

A hole should be drilled on an east or west azimuth to test both the Pb anomaly and also the possibility of a nickel body in proximity to the serpentine contact. The serpentine wall is of uncertain attitude, but it seems likely (on West Comet evidence and the magnetic gradients to the east and west of the serpentine intrusion as a whole), that the contact is either vertical or steeply dipping to the west. Hence, a hole from West to East is recommended at a depression of 50° or 55° from about 10E on the Adelaide-West Comet base line.

015

D. WEST COMET N/E. LODE (contd.)

Access

Access to this position WCN/E. 1 would be an easy matter involving about 200 ft. of clearing.

N.B. Access would also be simple to a position on the eastern side of the anomaly by way of the old Dundas-Comet Pack track or road.

Follow Up

Holes to intersect below old open cut etc. could be sited south of this point on the old access to WC 2. Holes to the north could be sited on the results of geochemical traverses (2) and (3).

Further Points

An I.P. anomaly exists on the BH 10S line in the vicinity of the serpentine contact. An Afmag anomaly needing follow up by ground Afmag traversing was located somewhere near BH 7.5S + 48E on McPhar's Helicopter Afmag survey for Mines Exploration Pty. Ltd. A magnetic anomaly was associated with the I.P. anomaly on the BH 10S line.

OTHER AREAS

Other possible exploratory drill targets are outlined briefly below and will be further dealt with shortly when fuller analysis is possible.

E. PLATT AREA

Hole or holes are proposed in gossan bodies penetrated by numerous adits along Platt corner road (i.e. Platt drill site) to Stichtite Hill. These are bodies subparallel to Serpentine contacts similar to West Comet. They strike northerly and some dip to the east; others are of uncertain attitude. These gossans are anomalous for Pb, Zn and Ag.

Sites should be carefully selected after careful mapping of the adits (most of which have been drained) and preparation of magnetic and self-potential results.

Serpentine bodies are not as extensive as originally mapped; some of the carbonated sediments and gossans have been misinterpreted. The Platt sheet is at present being amended accordingly.

Access

Access to the above gossans could be made by means of the existing road.

F.

Gossan body similar to above, just south of the southern extremity of the 4E line on the West Comet sheet. Two galena, sphalerite, carbonate lodes were mapped in a 400 ft. adit (West Comet sheet).

Access

Easy access from existing road.

- 017
- G. B.H. 28S line, I.P. anomaly \pm geochemical anomaly.

Plan in preparation.

Access

Difficult access. Could be accomplished for \$500 from Platt-Stichtite Hill access road.

- H. NORTH COMET

Line of gossan 1,000 ft. long open to north; 300 ft. wide; strong Pb geochemistry; 1% Ni hot spot; 2nd order S.P. anomaly; serpentine contact body; associated tuffs and volcanics. Proposed detailed geochemical traverses for Nickel.

Access

Access would be difficult but could perhaps be made via the Carbine track.

- I. COMET LINE

Under Northern open cuts. Detailed sampling results available; judging by Comet No. 2 (DDH) wide expanse of "gossan" appears to result from the oxidation of weakly mineralised ankerite-siderite and not sulphide. General gossan geochemistry is 2% Pb and 1 oz. Ag.

Similar line to the east.

Large shallow low grade body possible.

- J. RED LEAD MINE

Detailed mapping and geochemistry and magnetic survey to be evaluated.

Access

Expensive.

K. AMSLIE-BANNER CROSS

Further mapping and geophysics (i.e. S.P. and V.L.F.) need to be done. Most of old workings re-located. Lodes seem numerous but narrow in width.

L. ADELAIDE MINE

Dolomite replacement lode; large width; fresh unaltered sulphide bodies (massive sphalerite and minor galena) observed west of creek opened in trenches and adit.

Magnetic and self potential surveys to be evaluated.

Plan of old workings prepared from old reports.

Some plans and results of adit sampling available.

M. NORTH COMET-HASSETT SHEETS

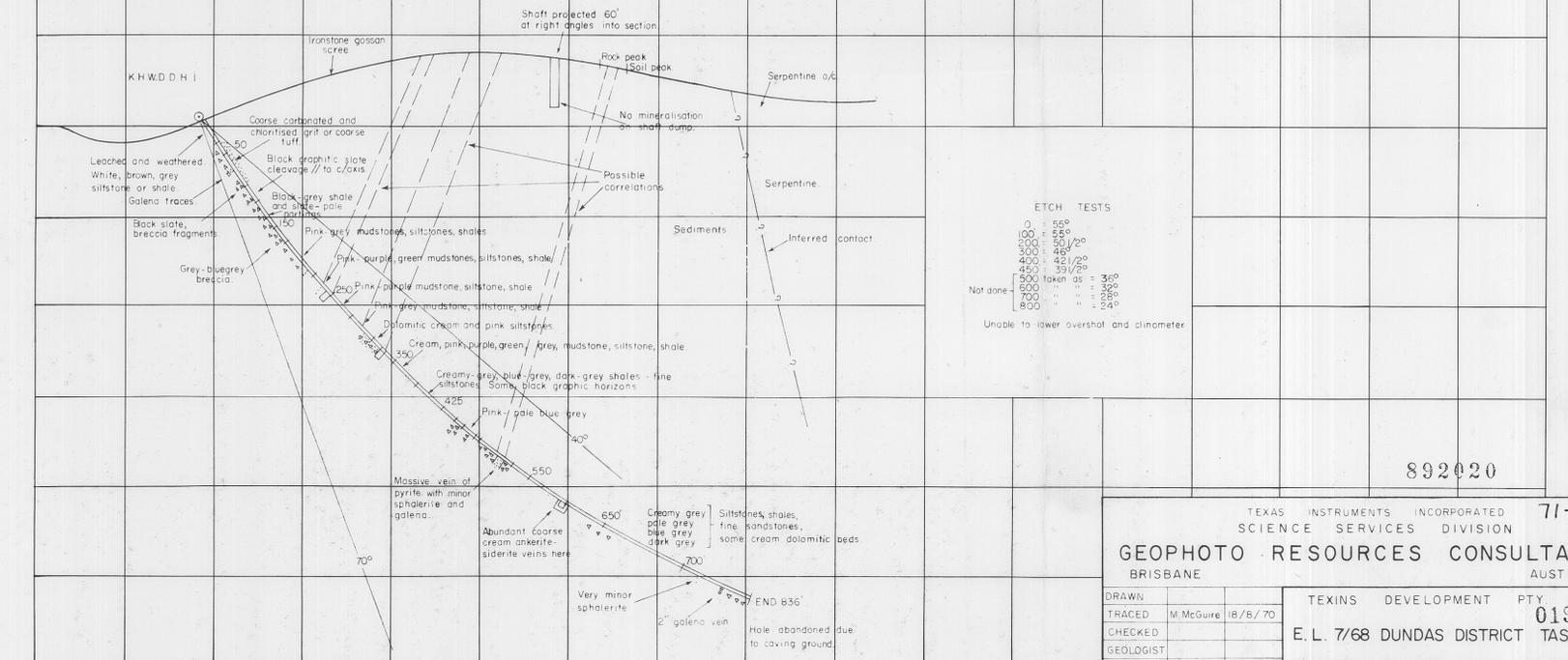
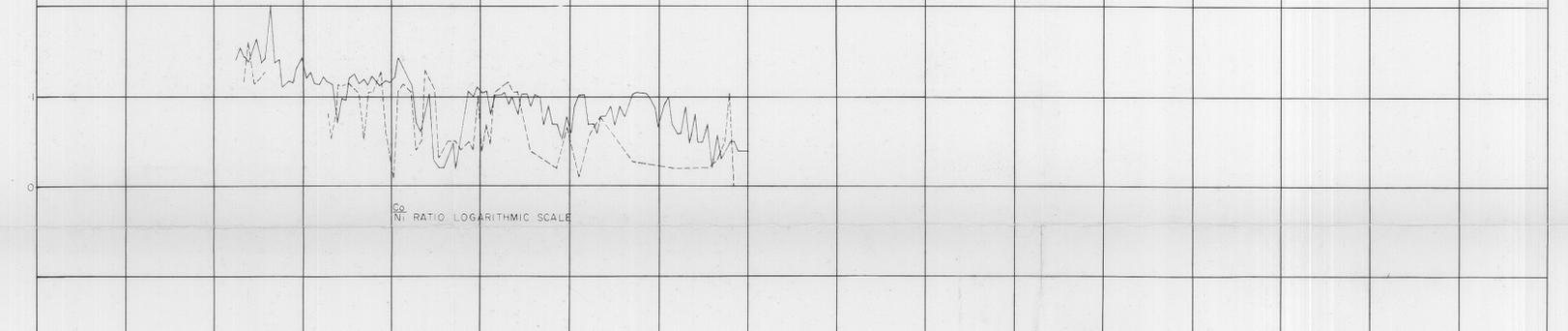
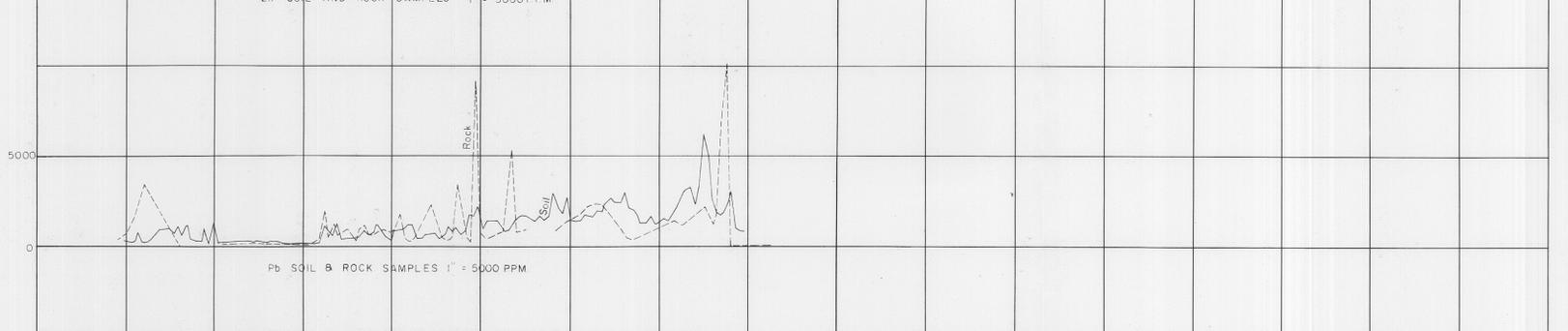
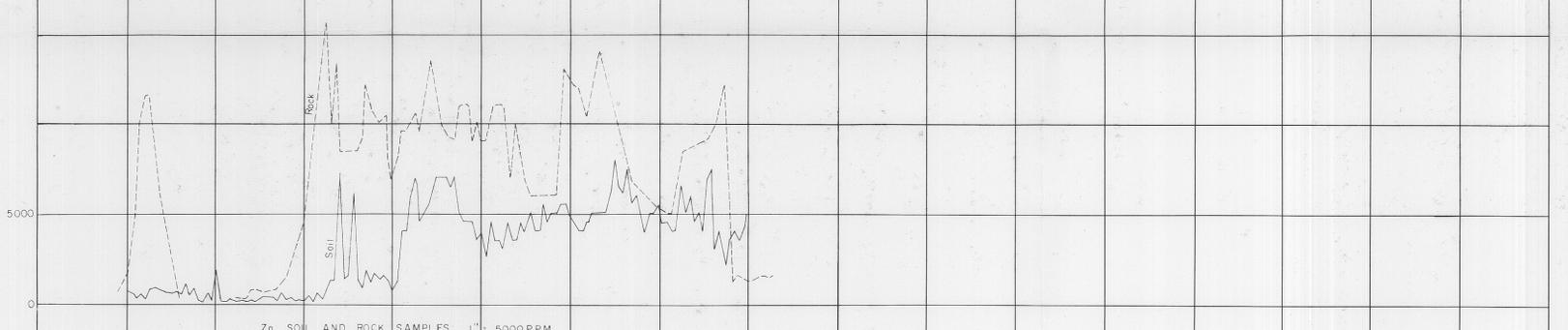
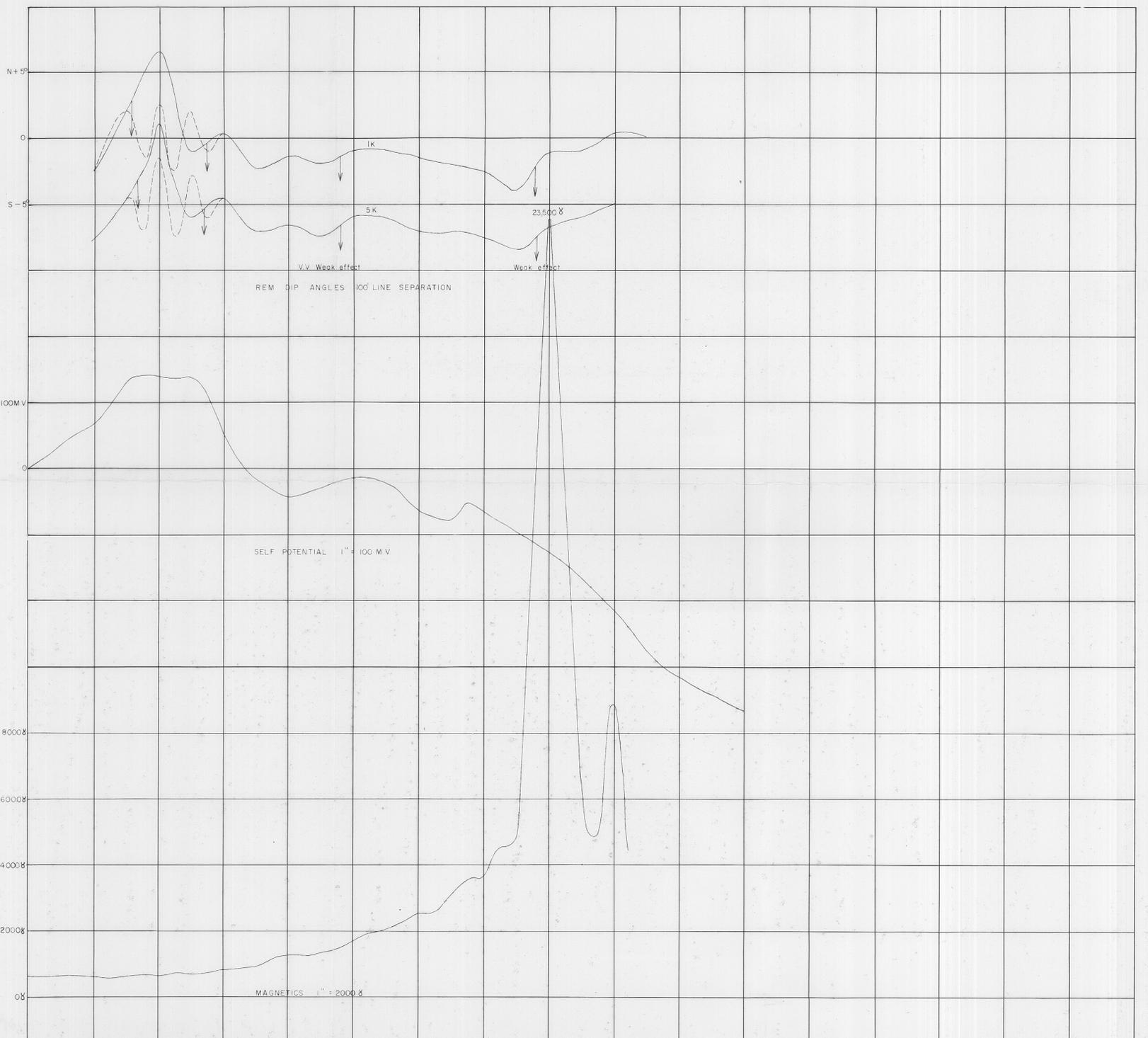
Numerous South Broken Hill I.P. anomalies often with associated self-potential minima.

Further detailed mapping required in the vicinity of these. Anomalies in some cases appear to be associated with phrititic and graphitic slate.

Access

Difficult due to swampy ground in some cases. Old track or road is available to the eastern part of the area and would not take much clearing.

R.G. Paterson.



ETCH TESTS

0	35°
100	55°
200	50/20°
300	48°
400	42/20°
450	35/20°
500	taken as 36°
600	" " 28°
700	" " 24°
800	" " 24°

Not done

Unable to lower overshoot and clinometer.

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OVERLAY OF GEOLOGICAL & GEOPHYSICAL PROFILES

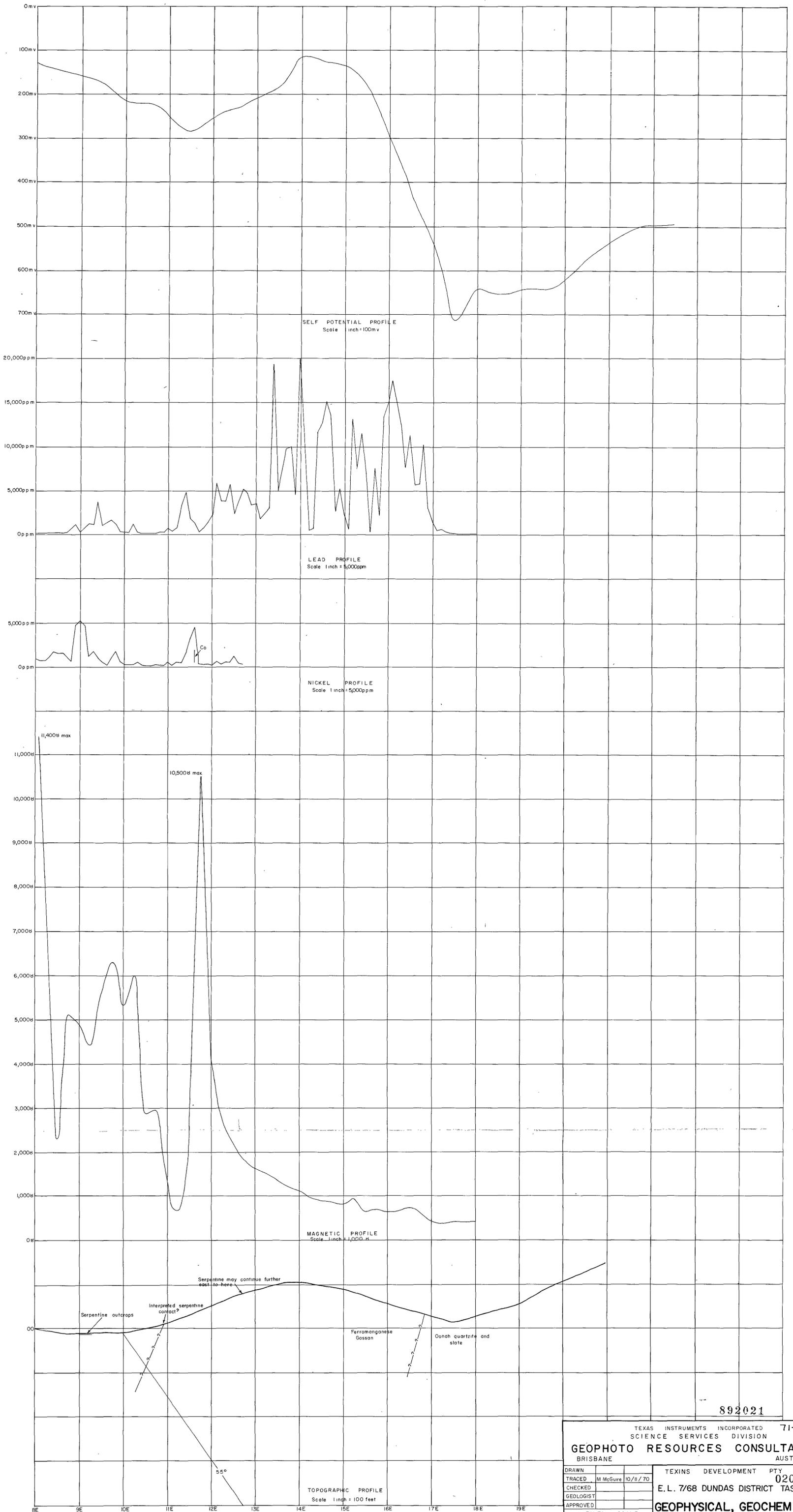
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TRACED	M. McGuire 18/8/70
CHECKED	
GEOLOGIST	
APPROVED	

SCALE

REVISIONS	
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PROJECT 7/68 DRAWING NO. 1/239





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GEOPHYSICAL, GEOCHEMICAL & TOPOGRAPHIC PROFILES

HORIZONTAL SCALE
 1 inch = 100 feet

PROJECT 7/68 DRAWING NO 1/241