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PROJECT NAME: COMSTAFF PTY. LTD.
EL 5/63

TITLE: RENISON EAST BLOCK
INTERIM REPORT
1973/74 SUMMER FIELD SEASON

MICROFILMED

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APPENDICES:

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DATE: June, 1974

AUSTRALIAN ANGLO AMERICAN LIMITED

Melbourne

Incorporated in the State of Victoria

CONSTAFF PROPRIETARY LIMITEDINTERIM REPORT ON THE RENISON EAST BLOCKSUMMER FIELD SEASON 1973/1974.1. SUMMARY

Prospecting to date indicates that insufficient work has been done in the Renison East Block. Although diamond drilling of a well defined tin anomaly on grid 5 did not intersect any tin mineralization, stream sediment anomalies show the area to be highly prospective. There are still many anomalies in both soils and streams which have not been fully explained.

The presence of anomalous zinc and lead anomalies associated with serpentinite must be investigated in greater detail.

Structurally the area is interesting since the southern extension of the Huskisson Syncline meets the eastern extension of the Renison Bell Anticline in the vicinity of grid 4.

2. DEFINITION OF AREA Fig.1 (Location Map)

The Renison East Block forms that part of Exploration Licence 5/63 which lies south of the Pieman River. The boundary of the block is defined as follows:

"Starting at the Pieman River where co-ordinate 353 900 yds East cuts the southern bank of the river, thence southerly along the western boundary of E.L. 1/62 to 854 360 yds N; 353 800 yds E, thence westerly to 854 380 yds N; 353 620 yds E, again southerly to 849 550 yds N; 352 980 yds E, again westerly to 849 880 yds N; 350 520 yds E thence along the eastern boundary of Consolidated Lease 18M/72 held by Renison Ltd. to the Pieman River thence along the southern bank of the Pieman River to the starting point."

3. GEOGRAPHY

The Renison East Block is situated between Renison Bell and Rosebery in Western Tasmania. The Emu Bay Railway and the Murchison Highway cross the northern part of the block from east to west and the Pieman River forms the northern boundary. An annual rainfall of approximately 100 inches can be expected.

4. GEOLOGY (Geological map of West Coast, Structural Geology)

The Renison East Block is underlain by sediments of the Crimson Creek Formation with intruded serpentinites of Lower Cambrian age. It forms part of the Dundas Trough between the Tyennan and Rocky Cape Geanticlines. The Read Volcanics in which the Rosebery and Mt. Lyell deposits occur, forms an arcuate outcrop to the east and Proterozoic sediments outcrop in the core of the Renison Bell anticline to the west.

Structurally the Renison East Block is located in an interesting position at the intersection of the Renison Bell Anticline with the Huskisson Syncline. The Huskisson Syncline is the dominant structure and can be traced to the southern limit of the block. A small granophyre dome may represent extensions to the Renison Bell Anticline.

5. GEOCHEMISTRY

5.1. Stream Sediment Sampling (plans of Pb, Zn, Sn, and Cu).

Stream sediment samples were collected every 500 feet along the major creeks in the block. All samples were analysed for copper, zinc, tin, nickel and silver, while some were assayed for lead, antimony, arsenic and bismuth in addition to the above elements.

5.1.1. Tin

Values varied from below the level of detection (less than 2 ppm) to 3900 ppm. A broad zone of anomalous samples is outlined covering more than 60 percent of the block. The most interesting feature is the relative absence of anomalous values along the western side of the area adjacent to the Renison Bell tin mining lease.

5.1.2. Copper

The copper content of stream sediment samples varies between 4 ppm and 1600 ppm. However, nearly all samples in excess of 500 ppm can be discounted. These occur in either the Pieman or Ring Rivers which drain the workings of West Coast Mines at Rosebery. Discounting these samples, well defined anomalies occur along the Exe River.

5.1.3. Zinc

As with copper there is considerable contamination in the Pieman and Ring Rivers with values generally in excess of 1% zinc. If these values are ignored a broad arcuate anomalous area is defined along the eastern and southern boundaries of the block. Values vary between 18 ppm and 1000 ppm zinc.

5.1.4. Nickel

The nickel content of the stream sediment samples shows definite lithological control. Values drop from 1000 ppm close to serpentinite outcrops to 6 ppm in streams which contain no serpentinite.

5.1.5. Silver

Silver values are generally below the level of

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detection apart from samples collected from the Ring and Pieman Rivers. Discounting samples in these rivers two main areas with detectable silver occur. The first of these occurs in two tributaries of the Exe River in the north eastern part of the area and the second in tributaries of the Ring River.

5.1.6. Arsenic

The north east part of the block has anomalous values for arsenic with values up to 7000 ppm. In addition the Colebrook River has anomalous values which coincide partly with anomalous tin values.

5.1.7. Antimony

Antimony values are very low and generally below the level of detection. However, minor values occur coincident with higher arsenic values.

5.1.8. Bismuth

The bismuth content of samples shows close affinities to both arsenic and antimony.

5.1.9. Lead

There are insufficient lead values to give a meaningful interpretation.

5.2. Soil Sampling

Six soil sampling grids have been cut and sampled to investigate some of the above stream sediment anomalies. Of these only Grid 0, Grid 5 and Grid 4 are of interest.

5.2.1. Grid 0 - Fenton's Grid

This grid which is 2000 feet long and approximately 1500 feet wide is located at the junction of the Exe and Pieman Rivers. The north eastern boundary of the grid is the Pieman River. The Emu Bay Railway crosses the grid and runs parallel with the Pieman River.

Topographically the area covered by the grid is steep and access is by foot along the railway line.

Lines were cut every 200 feet and sampled every 100 feet. Soil samples were sieved to -80 mesh and analysed for copper, lead, zinc, nickel, tin, antimony, silver and bismuth.

5.2.1.1. Copper

Values vary from less than 5 ppm to an isolated 480 ppm. The 100 ppm isograd is 1000 feet long by 150 feet wide extending from the base line on 2E to 6S on line 8E.

5.2.1.2. Nickel

Two small anomalous zones occur, the one between 2E and 4E on the base line is coincident with the copper anomaly but has a strike length of only 300 feet. The second anomaly on lines 8W and 10W is open to the north west and may indicate a serpentinite. However, high coincident lead and zinc values are found which is not usual for a serpentinite.

5.2.1.3. Zinc

The zinc content of the soils shows two distinct anomalies. The one between 0 and 6E is coincident with the copper but it trends to the east and may be due to contamination from the Emu Bay Railway. The second anomaly is in the north east quadrant. It is partly coincident with the nickel anomaly and may be due to contamination of metals in the sediments by the serpentinite.

5.2.1.4. Lead

A broad lead anomaly 1600 feet long by 600 feet wide covers the southern copper, zinc and nickel anomaly. Values are generally above 100 ppm with isolated highs in excess of 1 $\frac{1}{2}$ lead which are probably due to contamination from the railway. A second lead anomaly is coincident with the zinc and nickel anomaly in the north west of the grid.

5.2.1.5. Tin

A 250 feet wide tin anomaly extends 1500 feet from 4W to 10E and is open to the south at 4E. It is coincident with the southern lead, zinc, copper anomaly.

5.2.1.6. Antimony

Scattered antimony values occur.

5.2.1.7. Silver

Two anomalies which coincide with the higher lead values may be due to contamination from the railway.

5.2.1.8. Bismuth

Scattered values of bismuth occur within the broad lead anomaly but do not coincide with the main multi-element anomaly.

One diamond drill hole was drilled by M.E.P.L. in 1966-1967. It was depressed at 10° on a bearing of 213° and was completed at 608'6". Sporadic mineralization was encountered from 364' to 504' mainly in quartz veins. The following minerals were identified:-

Tourmaline, cassiterite, pyrite, pyrrhotite, sphalerite, galena, and chalcopyrite.

The exact locality of the borehole is not known but it is assumed to be close to where the Emu Bay Railway crosses the Exe River.

5.2.2. Grid 5

This grid is 4500 feet long and 3500 feet wide. Soil samples were collected every 50 feet on lines 500 feet apart. Samples were sieved to -80 mesh and assayed for copper, lead, zinc and tin. This grid connects with Grid 0 in the north and Grid 2 to the east.

5.2.2.1. Tin

Values range from less than 5 ppm to 3350 ppm. A cumulative frequency plot gives a threshold at 44 ppm. Using this value a 1000 feet wide anomaly (A) has been defined.

The 220 ppm tin isograd outlines two parallel anomalies close to 2000 feet long, each 300 feet wide and about 100 feet apart.

The overall anomaly thins to the north where it joins with the Grid 0 anomaly but is still open ended to the south. With the extension into Grid 0 the anomaly has been proved over a strike length of 6000 feet.

5.2.2.2. Copper

Values in soils vary from less than 2 ppm to 420 ppm. 50 percent of the values exceed 40 ppm copper, threshold is taken as 75 ppm. The overall pattern revealed by the 40 ppm copper isograd indicates an easterly anomaly which is coincident with the tin anomaly (A) and a westerly anomaly (B) which merges with it on line 15S. The 75 ppm copper isograd generally gives a very spotty pattern although the two tin anomalies in excess of 220 ppm tin each have a copper anomaly immediately to their west.

The western anomaly has a 150 feet wide, 1500 feet long threshold anomaly stretching from 20S to 5S and centred at 3E.

5.2.2.3. Zinc

Overall values for zinc are similar to copper with a mean of 40 ppm. The cumulative frequency plot is however different with a marked change in slope at 104 ppm zinc due to a range in values up to 2100 ppm. Zinc highs are generally coincident with the copper highs with an additional highly anomalous zone on line 5S (anomaly C) from 5W to the end of the line at 10W. Values in this zone vary between 160 ppm and 2100 ppm zinc.

5.2.2.4. Lead

Values for lead vary from less than 5 ppm to 1050 ppm. 58 percent of values are less than 15 ppm lead. Three distinct anomalous zones are outlined. The eastern one is coincident with tin anomaly A, and is discontinuous with high values increasing towards the north. The second anomaly coincides with anomaly B but is displaced towards the south and the third anomaly coincides with the zinc anomaly C.

6. GEOPHYSICS6.1. E.M.

The whole of Grid 5 was surveyed by Crone E.M. vertical shootback method. Only one distinct anomaly was outlined on line 20S centred at 2050E. This anomaly indicates a near vertical conductor.

6.2. I.P.

Lines 15S, 20S and 25S were surveyed from the base line

to the eastern end of Grid 2. The dipole-dipole technique was used with an electrode spacing of 200 feet with readings at 400 feet, 600 feet, 800 feet and 1000 feet respectively. A broad I.P. effect was determined over 1500 feet of each line and coincident with and east of the tin anomaly A. A more restricted resistivity low 200 feet wide coincides with high tin values and the E.N. centred at 20E on line 20S.

7. DRILLING

A diamond drill hole was drilled on line 20S at station 2370E. It was inclined -50° to the west and was drilled to investigate the coincident tin and geophysical anomaly.

Disseminated pyrrhotite was intersected but all tin values were less than 500 ppm. See appendix for drill log and summary.

8. CONCLUSIONS

The stream sediment tin and zinc anomalies require follow-up work by soil sampling. The high tin and zinc content of the streams indicates a broad tin anomaly within the centre of the area with a zinc anomaly east of and overlapping the tin anomaly. The very high arsenic values indicate the presence of sulphides and although the one borehole drilled at Penton's Prospect in 1967 did not intersect payable tin mineralization, sufficient sulphides were encountered to warrant additional work.

The tin anomaly on Grid 5 is most attractive although diamond drilling into the anomaly did not intersect tin mineralization and the anomaly is therefore still not explained.

The highly anomalous lead, zinc values in anomaly C is an area covered by laterite and the full significance is not known.

The present follow-up soil grids are inadequate in size with such a large area of anomalous stream sediment samples.

8. RECOMMENDATIONS

An access track will need to be constructed from the Murchison Highway to Ringville to allow access for grid cutting and soil sampling of the entire Renison East Block. These lines should be cut east west.

A costean is needed to clear the laterite covering anomaly C to determine whether the underlying rocks still contain anomalous values.

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Approved: D.B.Orr
Senior Geologist (Tasmania)

GEOLOGY OF DIAMOND DRILL HOLE RBE1**1. GENERAL**

Diamond hole RBE1 was drilled in the Renison Bell East, Exploration Licence 5/63 at station 2370E on line 20.0S of grid 5.

Soil sampling has shown the presence of a large tin geochemical anomaly to the immediate west of the Exe River on line 20S. Subsequent geophysical exploration showed corresponding E.M. and I.P. anomalies.

The drill hole was collared to drill -50° inclination and bearing 270° m into the core of the geophysical anomalies under the geochemical tin anomaly. The hole reached the planned depth to 184.90m.

2. REGIONAL GEOLOGY

The hole was drilled into Cambrian age rocks of the Crimson Creek Formation of the Dundas Group. The rocks are predominantly miogeosynclinal sediments consisting of conglomerates, greywackes, grey siltstone/sandstones, argillites, grey/black shales, and volcanic breccias and feldspathic tuffs. The drilled anomaly was located within the grey siltstones.

At Renison Bell, 4 km to the west, similar lithologies occur. Cassiterite is mined and extracted from pyrrhotite and pyrite mineralization in concordant replacement lenses of dolomite. These deposits result from pneumatolytic phase alteration and mineral deposition from localised Devonian granite intrusives. One kilometre to the east there crops out a NNW striking large serpentinite intrusion into the sediments.

3. DETAILED GEOLOGY

The grey banded siltstones strike north to north west, and dip to the east at 70° . Outcrop exposure is poor, the major outcrop in the area being seen in the adjacent Exe River on which the drill hole is collared.

Grade of regional metamorphism is considered to be low - very isolated patches of mica were seen along faint suspected cleavage planes, parallel to joints within the sandstone lenses. However, the granite intrusion is believed to have resulted in high grade contact metamorphism - silicification of the siltstone, and recrystallisation of sandstone to metaquartzite.

4. DRILL CORE GEOLOGY**4.1. Sediments**

The drill core consists predominantly of grey banded alternating fine grained sandstone lenses and siliceous siltstone bands. The sandstone show prominent graded bedding upwards into the siltstone, but a sharp basal

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cut off above the lower siltstone band. This type of alteration of sediments suggests a turbidity current origin(?).

Sandstone lenses range from 0.5cm to 2cm on average thickness, with an unusual 33cm thick sandstone bed occurring at 109m. Siltstone bands range from 3cm to 6cm in thickness. Variations in thickness and frequency of sandstone lenses are evident throughout the core and may be used for subsurface correlation.

A peculiar type of coarse grained "quartzite" bed is seen in various positions in the core. The bed, ranging in thickness 1cm - 15cm, is conformable with the sediments and appears to have both upper and lower chilled margins. Pyrite and pyrrhotite mineralization is disseminated as coarse grains throughout the bed. It could represent an original carbonate or dolomite bed within the sedimentary pile that has been altered and mineralized from the pneumatolytic phase of mineralization along feeder joints from the underlying or adjacent granite intrusive. Specimens have been sent for petrological description to the Australian Mineral Development Laboratories in Adelaide.

4.2. Structure, Jointing, etc.

The angle between the bedding and the core axis varies inconsistently between 30° and 80° throughout the hole. Borehole data shows variation in drill hole direction and inclination but variation in bedding angle may also be due to folding of the beds at depth. Graded bedding in the sand-lenses shows no overturning of sediments has taken place. Three prominent sets of joints are noted throughout the core. Two sets (32° to 38°) and (48° to 52°) appear to pre-date the third set (42°). Offset is noted on the first two sets when cut through by the third.

The 42° set of joints is important - the joints are in nearly all cases mineralized. The regularity of the 42° set of joints suggests formation after folding and earlier jointing. Consistency of mineralization suggests these joints are all attributable to one particular phenomenon.

4.3. Mineralization

Three distinct types of sulphide mineralization are seen:

- 4.3.1. Disseminated sulphides - within the siltstone beds disseminated sulphides (pyrite and pyrrhotite(?)) represent less than 2% by volume, and in the sandstone (metaquartzite) beds sulphides account for less than 5% of volume.

4.3.2. Coarse Grained "Quartzite" - these beds are interpreted as being altered carbonate or dolomite beds, resulting from the Devonian granite intrusive. They contain the following coarse grained disseminated sulphides, with average percentage concentrations:

pyrite	5 - 10%
pyrrhotite	15 - 25%
chalcopyrite	tr.- 1%

4.3.3. Mineralized "42°" Joints - these quartz and sulphide filled veins are interpreted as being deposited from the pneumatolytic phase of Devonian granite intrusion. The two characteristic features of this mineralization are the presence of green tourmaline and arsenopyrite.

<u>Sulphides:</u>	pyrrhotite	15 - 20%
	pyrite	5%
	arsenopyrite	tr.- 2%
	chalcopyrite	tr.- 2%

also tourmaline to 20%.

4.4. Discussion re Mineralization and Economic Potential

The disseminated sulphides within the siltstone and sandstone are believed to be sedimentary in origin. Their low concentration makes them unworthy of further investigation. The sulphides within the coarse grained "quartzite" could result from two origins:

- (a) originally sedimentary, within the suspected carbonate or dolomite before alteration to a quartzite - they may have been of finer grade, the remobilization during alteration resulting in formation of their coarse grained disseminated nature, and/or
- (b) partially or entirely from sulphide introduction by the alteration phase - possibly by an earlier Devonian granite intrusion to the one resulting in the "42°" mineralization.

These "quartzites" are considered as possible tin bearing horizons from within the pyrrhotite. However, their lack of appreciable thickness precludes the horizons to be potential mining targets.

The mineralization within the "42°" joints may well contain cassiterite along with the sulphides. However,

the irregularity of occurrence and thinness of these joints would not make them favourable mining targets. This phase of mineralization is believed to post date the "quartzite" phase and may be directly attributable to Devonian granite intrusion pneumatolysis.

5. CONCLUSIONS

The hole was drilled to test geophysical and geochemical anomalies. Pyrrhotite in the drill core explains the E.M. and I.P. anomalies. No visible tin mineralization was seen in the core to explain the geochemical tin anomaly.

No single horizon or bed is considered worthy at this stage of being a mining target, this is confirmed by assays.

6. ROCKS FOR PETROLOGY

<u>Class-ification</u>	<u>Depth (m)</u>	<u>Description</u>
TB 248	23.40	"Quartzite" with siltstone - chilled margin. Contains pyrrhotite, pyrite - want description and interpretation.
TB 249	34.54	Coarse grained "quartzite" contact with siltstone - what is nature of contact.
TB 250	37.70	Contact character, I.D. of rock types, sulphides and mineralization.
TB 251	40.00	Polished section, description of rich sulphide mineralization in quartz vein (from granite pneumatolysis).
TB 254	125.90	Thin section of quartz vein (from granite) - to determine character of intrusive.
TB 255	177.40	Contorted lens with chilled margin within sulphide. Thin section and comments re mode of origin required.

Author: Geoff Cammell
Geologist.

Approved: D.B.Orr
Senior Geologist (Tasmania)

AUSTRALIAN ANGLO AMERICAN LIMITED

PROJECT: RENISON HILL EAST E.L. 5/63

SOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES Grids
Line 205

INCLINATION -50°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY LONGYEAR

FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
NQ	3.66	0.0 to 3.6 = 3.6	0.46			Rocks: Grey siliceous siltstone. Minerals: Predominantly quartz, limonite. Core: very jointed and broken. Mineralization: 8-10% pyrite on joint faces. Disseminated pyrite less than 1%. Isolated chalcopyrite "paint" on joints. Thin bands (0.5 cm) fine sandstone alternating with bands (3-6cm) siliceous siltstone.	72°	32°, 38°	Solid core of grey siliceous siltstone.				
	4.87	3.6 to 4.87 = 1.21	0.48			= Same comments as interval 0.0 - 3.66							
	7.92	4.87 to 7.92 = 3.05	0.48			Rocks: Very weathered soft brown siltstone - suspect fault fracture zone. Minerals: Quartz limonite - no visible sulphides. Core: Very crumbled and broken.		52°	Crumbled, very weathered, brown siltstone.				
	10.47	7.92 to 10.47 = 3.05	0.97			= same comments as above interval 4.87 to 7.92.							
	12.49	10.47 to 12.49 = 1.52	0.60			= same comments as above interval 7.92 to 12.49							
	17.06	12.49 to 17.06 = 4.57	0.60			Rocks: Grey siliceous banded siltstone. Minerals: quartz, limonite, minor muscovite (metamorphism?) Core: crumbled to 16.5m then broken, jointed to 17.06m. Mineralization: Disseminated pyrite less than 1%. Broken core obscures bedded nature.	32°	42°	16.5 solid grey siliceous siltstone.				
	18.28	17.06 to 18.28 = 1.22	0.70			Rocks: Grey siliceous banded siltstone. Minerals: Quartz, limonite. Core: broken, jointed. Mineralization: Minor (1-5%) pyrite on joint faces. Banded nature of rock obscures bedded nature.	45°	32°	17.15 Crumbled brown, grey siliceous siltstone.				
	20.72	18.28 to 20.72 = 2.44	1.40			Rocks: Grey siliceous banded siltstone - thin (0.5cm) sandstone bands, containing 10% pyrite, alternate with 2cm thick siliceous siltstone bands. Graded bedding seen. Minerals: Quartz, limonite, sulphides; disseminated pyrite - 10% pyrite "paint" 5% surface joint area. Approx. 19.5m vertical axis down core, very sheared - contains 5-8% pyrite as surface joint area. Core: crumbled to broken.	64°	36°	18.28 Broken core - siliceous siltstone.				
	21.94	20.72 to 21.94 = 1.22	1.10			Rocks: Grey siliceous siltstone containing inter-bedded lenses of coarse siltstone/fine sandstone (0.2-1cm thick). The coarse grained beds contain 5-15% pyrite mineralization more or less by volume estimate. Core: Broken along joint planes. Mineralization: Pyrite disseminated in coarse bands. Pyrite 1-5% on surface joint area. No other sulphides seen.	35°	64°, 50°, 90°	21.04 Lenticled sandstone beds alternate with siltstone				

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AUSTRALIAN ANGLO AMERICAN LIMITED

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 5.0°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

589014

CORE SIZE	DEPTH metres	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
NQ	22.40	0.46	0.42	TB 031	22 - 23m	Rock: Gray siliceous siltstone. Cores: Good slightly broken. Nature of rocks: Banded with coarse gray siltstone beds (0.5cm - 2cm) showing graded bedding, alternating with 1 - 2cm thick beds siliceous fine grained siltstone. Coarse gray bands lensoid in nature with non consistent thickness. Minerals: quartz, limonite, calcite (joint faces). Sulphides: pyrite seen as very rare disseminations in bedding, more common to 1% on surface joint faces.	58°	42°, 48°	Gray banded alternating sandstone/siliceous siltstone	6	65	8	80
	23.16	0.76	0.66	TB 032	23 - 24m	Rock: Fine/coarse grained siltstone, banding prominent. Cores: Good unbroken. Nature of rock: still alternating beds of coarse grained siltstone/fine grained sandstone showing graded bedding (beds 0.5 - 2 cm) with fine siltstone beds. Lensoid nature of beds still prominent. Sulphides: Much pyrite point seen in jointing faces along with amphibole mineralization indicating shear movement. Pyrite moreover less 15-20% surface joint face. Also calcite on faces. Pyrite 1-2% only as disseminated in siltstone bands. No pyrite seen in coarse grained beds.	59°	47°	As above	20	70	<4	70
	24.38	1.22	1.12	TB 033	24 - 25m	Rock: Gray fine-coarse grained siltstone with alternating bands coarse grained siltstone. Good solid core. Lensoid beds less prominent. 23.40 - 24.80m TB 248 type lensa - coarse grained bed conformable with siltstone bedding but with drilled margin. Texture very like gabbro - sent for thin section. Joints filled with weathered tourmaline and pyrite (20%) with minor pyrrhotite. Sulphides: Disseminated pyrite in siltstone and fine grained sandstone remains low (1 - 2%).	64°	32°, 44°, 23°, 38°	coarse grained quartzite TB 248	20	55	6	85
									As above.				

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PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270 mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED FEET	RECOVERED FEET	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
NQ	25.60	1.22	1.18	TB 034	25 - 26m	Rock: Gray siliceous siltstone - fine banding of sandstone (graded bedding) and siltstone. Core: Very good. Mineralizations: Sulphides, quartz, limonite, weathered amphibole. Sulphides: Pyrite, disseminations in siltstone less than 1%. Pyrite (plus minor pyrrhotite in joint faces up to 15%).	62°	48°	Gray banded alternating sandstone/siliceous siltstone.	6	65	10	85
	27.3	1.7	1.48	TB 035	26 - 27m	26.50m Coarse grained gabbro type lens (TB 248) Rock: As above in interval 23.16 - 24.38m. Sulphides: In joint faces up to 15%, pyrite 10%, pyrrhotite 5%. Disseminated pyrite in sandstone lenses 5%, in siltstone 1-2%.	70°	50°, 38°	As above	4	75	16	90
	28.3	1.0	1.0	TB 036	27 - 28m	Rock: As above - banded gray siltstone, bands sandstone (0.5 - 2cm) thick, lensoid in nature, alternating with 5cm thick siltstone bands. Sulphides: Pyrite disseminations less than 1% pyrite in joints with calcite filling, no pyrrhotite. Cleavage noted // jointing 50°. Core: Very good, unbroken. No shearing seen. Slight graded bedding in sandstone lenses. Approximately 5 sandstone lenses/20m core length.	64°	35°, 50° 32°	As above	4	55	6	75
	29.3	1.0	1.0	TB 037	28 - 29m	Same comments as above re Rock, Sulphides, Core. 28.3, 28.6, 28.7 2cm thick bands TB 248 coarse grained rock - ultrabasic? or sandstone. At 28.70m pyrite to 30% of volume, pyrrhotite 5%. Very lensoid sandstone beds. 29.50m Very prominent shearing seen in joint - foliation 31°. 29.0m trace arsenopyrite with pyrrhotite and pyrite plus weathered tourmaline in joint face - suspect from granite "pneumatolytic" feeders.	61°	30°	As above	50	110	6	80

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AUSTRALIAN ANGLO AMERICAN LIMITED

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270° mag

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

589016

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
	29.80	0.5	0.52	TB 038	29 - 30m	Same comments as interval 27.1 - 29.3 Sulphides: pyrite more common (to 5%) in coarse grained sandstone beds than in fine grained siliceous siltstone (1-2%). Bedding now nearly to core axis. Sandstone lenses thicker (to 3cm) and now 5 lenses/20cm of core length.	80°	42°	Grey banded alternating siliceous siltstone/sandstone lenses	35	50	4	80
	31.09	1.29	1.12	TB 039	30 - 31m	Same comments as above. Sandstone lenses now less frequent (3 per 20cm core length) but thicker (2-3cm). Show graded bedding. Sulphides: disseminated pyrite 4.6% in sandstone lenses by volume and remains very sparse (more or less 1%) in siltstone. Minor patches pyrite on joint faces. 31.09 3cm thick TB 248 band.	82°	52°, 18°	As above	80	75	6	90
	32.15	1.06	0.95	TB 040	31 - 32m	Rock: Gray banded siltstone with sandstone lenses (5 lenses averaging 1cm per 20 cm core length) Graded bedding. Slickensiding seen over 42° set of joint faces (shearing). Pyrite concentrations as in above interval (1-2% siltstone, 5% sandstone, 5% joint faces).	85°	42°, 36°	As above	20	70	4	70
	32.78	0.63	0.45			Rock: Same as above - alternating sandstone/siltstone layers (still approx. 5 sandstone bands/20cm core length) Slight cleavage developed // 42° jointing. No visible pyrite in joints. Core crumbled, broken.	78°	42°	Grey banded alternating sandstone/siltstone beds.				
	33.53	0.75	0.75	TB 041	32 - 33m	Rock: Coarse grained sandstone lenses (3 per 20m core length, averaging 1.5cm thick) alternating with fine grained siliceous siltstone. Sulphides: pyrite as "paint" on joints. Up to 2% as disseminations in siltstone. Up to 5% as disseminations in sandstone layers. Beds remain lensoid in nature and show graded bedding. Good solid core.	72°	42°, 46°	As above	8	60	4	65

510

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

510685

CORE SIZE	DEPTH	DRILLED FEET metres	RECOVERED FEET metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
NQ	34.24	0.71	0.70	TB 042	33 - 34m	Same comments as above (32.15 - 33.53) Pyrrhotite (trace) occurs with pyrite and tourmaline(?). Calcite in joint faces.	75°	52°	Grey banded alternating sandstone/siltstone beds.	25	120	6	75
	35.36	1.12	1.10	TB 043	34 - 35m	Rocks: Alternating sandstone/siltstone bands (sandstone 7 bands each approx. 0.5cm per 20cm core length) TB 249 at 34.54m coarse grained rock, 2.5cm thick with drilled margin. Contact with siliceous siltstone - thin section - contains 20% pyrite. Sulphides: 1% pyrite in siltstone as disseminations, up to 5% in sandstone lenses. Very little seen as "paint" on joint faces. Shearing seen on 42° joint face.	74°	52°, 42°	34.54/TB249 Coarse grained quartzite.	< 4	70	6	70
	36.58	1.22	1.06	TB 044	35 - 36m	Rocks: as above. Lenses of coarse grained sandstone appear metamorphosed to calcite silicate (greenschist) assemblage containing coarse disseminations pyrite, e.g., 35.55m 35.70m coarse grained band (2cm) of TB 249 type, contains as disseminations 30% pyrrhotite, 10% pyrite, trace chalcopyrite. Shearing seen on 42° joints.	80°	32°, 42°	Grey banded alternating sandstone/siliceous siltstone.	50	75	4	75
	38.10	1.52	1.47	TB 046	37 - 38m	Same as interval 34.24 - 36.58 but sandstone bands increase in frequency to 8 (each 1cm) every 20cm core length. Solid unbroken core.	84°	42°, 48°	As above	12	60	< 4	75
	38.3	0.20	0.20	TB 047	38 - 39m	Rocks: as above. Solid unbroken core.			37.70/TB 250 coarse grained quartzite	8	60	6	80
	40.34	2.04	2.1	TB 048	39 - 40m	Rocks: Grey banded siltstone with 1cm thick sandstone lenses (showing graded bedding) alternating with 3cm thick siltstone beds. 40.0 TB 251 3cm thick quartz vein containing 15-20% pyrrhotite, 5% arsenopyrite, 10% pyrite.	80°	42°, 32°	As above.	< 4	55	8	90
									As above.	380	160	115	390

910

PROJECT: RENISON BELL EAST E.L. 5/63

SOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

810689

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
NQ	41.14	0.8	0.75	TB 049	049	Rocks as above (alternating sandstone/silt-	79°	42°, 32°	Grey banded	100	90	8	75
					40 - 41m	stone layers) 40.50m Coarse grained sandstone bed (quartzite?) Contains 20% pyrite/pyrrhotite disseminated mineralization.			alternating sandstone/siliceous				
	43.11	1.98	1.64	TB 050	050	Rocks As above. (42.13-42.23) and (42.80-42.85)	85°	42°	siltstone	100	130	6	90
					41 - 42m	coarse grained quartzite bands containing 15-20%			41.7 Coarse grained quartzite.	40	140	8	70
					TB 051	sulphides (of which 80% is pyrrhotite, 20% is pyrite). Disseminated pyrite in siltstone			42.2 Siltstone	10	80	16	79
					42 - 43m	bands remains very low (more or less 1%)			coarse grain- ed quartzite	6	45	4	65
					TB 052	(Frequency of sandstone layers (0.5-1.5cm thick) remains at 7 per 20cm core length).							
	45.88	2.77	2.70	TB 053	053	Rocks As above. Core very good unbroken.	82°	42°, 36°	Grey banded	35	50	6	70
					44 - 45m	43.7 a 1cm thick lens quartzite contains sulphide mineralization (as above) otherwise core appears barren. 45.40 a 3cm thick quartzite band (chilled margin?).			alternating sandstone/siliceous	35	28	6	80
					TB 054								
BQ	48.98	3.10	2.70	TB 055	055	Rocks As above. One joint (22°) contains chlorite(?) and weathered tourmaline plus pyrrhotite and pyrite - suspect a granite	22°, 42°		siltstone.	55	100	4	90
					47 - 48m	Pneumatolytic feeder? 47.6 3cm thick quartzite				14	60	8	75
					TB 056	(?) TB 249 band contains sulphides as above				14	60	12	65
					48 - 49m	(at 42.20) 46.36 throw of 45cm noted fault plane.							
	52.12	3.14	3.0	TB 057	057	Rocks Remains alternatively banded sandstone/ siltstone. Sandstone beds now much thinner (0.5-1cm average) and average 8 per 20cm core length. Sulphides: As less than 1% disseminated in siltstones with 1-2% in sandstone bands.	85°	66°, 65°, 48°	As above	16	70	6	75
					50 - 51m	Very few sulphides seen on joint faces.				8	65	8	60
					TB 058								
	55.18	3.06	3.02	TB 059	059	Rocks As above. TB 252 at 53.55m very coarse grained 3cm thick band in siliceous siltstone.	85°	50°, 30°	53.55 TB 252 Coarse grain- ed quartzite.				
					52 - 53	Much tourmaline & sericite in joint faces, with pyrite up to 5% of surface area.							
	58.40	3.22	2.97	TB 060	060	Rocks as above. Sudden steepening of bedding to 68° then gradational to 75°. Very little evidence of sulphides except in the coarse grained quartzite band 4cm thick, 57.6m.	68° -75°	48°, 35°, 32°	As above.				
					54 - 55								
					TB 061								
					56 - 57								

210

PROJECT: REMISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION -50°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS				
										Sn	Ca	Pb	Zn	
BQ	61.86	3.46	3.11	TB 066	066	Rocks: Continues as alternating sandstone	76°	48°, 54°	Grey banded					
				57 - 58m		(0.5-3cm thick) and siltstone (1-5cm)			alternating					
				TB 067		lensoid beds with gradational bedding promi-			sandstone/					
				58 - 59m		nant (with a corresponding gradational bedding			siltstone					
				TB 068		in the disseminated pyrite). Core: very good								
				59 - 60m		unbroken. 58.64-58.74 Coarse grained quartzite					58.7 Coarse			
				TB 069		(?) cut by mineralized joint at 42° (granite					grained			
				60 - 61m		feeder?) Sulphides in this joint are arseno-					quartzite			
				TB 070		pyrite, pyrrhotite and pyrite in serocite.								
				61 - 62m		Sulphides in siltstone very sparse (less than								
TB 071		1%) and sandstone (1.2%) of pyrite. 60.12-						Grey banded						
62 - 63m		60.21 60.9-60.95 Coarse grained quartzite beds						alternating						
TB 072		- sulphides are pyrrhotite 15% plus pyrite 5%.						sandstone/						
64.72	3.06	3.00	TB 073	63 - 64m	63	Same comments as above. Alternating sandstone	75°	70°, 38°	siltstone					
TB 074		64 - 65m	64	64	grained quartzites, e.g. 63.0-63.20 sandstone									
TB 074		65 - 66m	65	65	lenses increase in thickness to 4/5cm. Silt-			63.0 coarse	35	85	4	60		
TB 075		66 - 67m	66	66	stone lenses 5-8cm thick. 64.90 offset on			grained						
TB 075		67 - 68m	67	67	mineralized fault loca (sulphides are pyrite,			quartzite	30	30	10	65		
TB 076		68 - 69m	68	68	pyrrhotite and traces arsenopyrite)			As above.						
67.36	2.44	2.30	TB 076	67	67	Rocks: Alternating bands sandstone/siltstone	80°	45°, 58°	Thickening	25	90	6	70	
TB 077		68 - 69m	68	68	with each band equal in length at average 3cm			of sandstone						
TB 077		69 - 70m	69	69	thick. Graded bedding prominent. Isolated 2cm			lenses.	16	55	14	75		
TB 078		70 - 71m	70	70	thick beds of coarse grained quartzite, with									
TB 078		71 - 72m	71	71	sulphide mineralization of pyrite, pyrrhotite.									
TB 079		72 - 73m	72	72	67.08 Mineralised quartz vein 24° - contains			Sandstone						
TB 079		73 - 74m	73	73	pyrite 5%, pyrrhotite 15%, quartz 50%,			lenses become						
TB 080		74 - 75m	74	74	arsenopyrite tr. to 2% - also chlorite(?) and			thinner.						
TB 080		75 - 76m	75	75	tourmaline 20%, therefore suspect a "feeder"									
TB 081		76 - 77m	76	76	vein from granite. Disseminated pyrite									
TB 081		77 - 78m	77	77	mineralization in sandstone, siltstone beds									
TB 082		78 - 79m	78	78	remain low (less than 5%).									

670682

810

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RB01

TYPE Diamond

CO-ORDINATES

INCLINATION -50°

DIRECTION 270° mag

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

589020

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	Sn	ASSAY RESULTS		
											Cu	Pb	Zn
BQ	68.88	1.52	1.48	TB 078	69 - 70m	Rock: Comments as above. Sandstone lenses become thinner. Sulphides disseminated pyrite in sandstone and siltstone approx. 1' - very low. Sandstone lenses 0.5-1.5cm thick.	78°	54°, 46°		70	220	140	120
				TB 079	70 - 71	Graded bedding seen.			Grey banded	35	120	< 4	75
	71.93	3.05	2.90	TB 080	71 - 72	Rock: Comments as above. 70-72 coarse grained quartzite with 40% sulphides and quartz. Also mineralized joints - granite feeders(?) show a chilled margin with siltstone. One is 70° conformable to bedding therefore subject replacement? of pre-existing bed in sediment pile.			alternating sandstone/siltstone.	25	95	80	150
	74.98	3.05	2.94	TB 081	72 - 73m	Rock: Comments as above. Steepening of bedding from more or less 70° to core axis to 58° to core axis. Banding continued. Approx. 7 sandstone lenses per 20cm core length. Sandstone lenses average 0.5-2cm thickness. Numerous coarse grained quartzite beds (average 2cm thick) e.g. at 73.40 and 74.0 both with disseminated sulphides of pyrrhotite and pyrite. 74.1 at 42° mineralized quartz vein containing arsenopyrite 5%, chalcopyrite 5%, pyrrhotite 15%, and pyrite 10%. Banding of sulphides within this mineralized joint implies different phases of "feeder" mineralization. Suspect because of 42° and presence of arsenopyrite is therefore a feeder from granites. 74.3-74.45 and 75.4, 75.6 (similar joints at 42°) heavily mineralized sulphide enriched joint at 42° - same comments as 74.1 above	58°	42°, 34°	70-82m higher proportion of granite type feeders.	40	75	10	70
				TB 082	73 - 74m					35	150	18	100
				TB 083	74 - 75m		42°			430	590	80	140
				TB 084	75-76m	with pyrrhotite 40%, pyrite 10%, trace arsenopyrite, chalcopyrite 2-3%.			Grey banded alternating siliceous siltstone	50	150	10	65

610

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. **RBE1**
DATE START **10/3/74**

TYPE **Diamond**
DATE FINISH **18/3/74**

CO-ORDINATES
DRILLER

INCLINATION **-50°**
COMPANY **Longyear**

DIRECTION **270° mag**
FINAL DEPTH **184.90m**

120685

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	77.97	3.00	2.90	TB 085	085	Rock: alternating bands sandstone (1-3cm thick 45° beds) with siltstone (3-5cm), cross cut by mineralised joints (from granite feeders?) with isolated 2cm thick beds mineralised quartzite beds(?). Steepening of beds to 45°. <u>76.4</u> Mineralised joint - 25% pyrrhotite, 10% chalcocopyrite, 10% pyrite, 50% quartz, at angle 30° to core (suggest that hole deviation would cause the angle to be 30° rather than 42°).		30°	Grey banded alternating sandstone/siliceous siltstone.	45	240	14	70
					76-77m								
					TB 086					55	210	6	65
					77-78m								
					TB 087					55	130	8	70
	81.02	3.05	2.97		78-79m	Rock: (note steepening of bedding) still as above but greater proportion of mineralised lenses containing sulphides of pyrrhotite, pyrite, chalcocopyrite, arsenopyrite, e.g., 79.5 and 79.90-81.02 there are suspected "feeders" from granite. Approx. 7 sandstone bands to 20cm core length. Disseminated mineralization in sediments remains low (more or less 1%).	30°	54°, 30°		100	255	22	75
					TB 088					20	90	4	55
					79-80m								
					TB 089								
					80-81m			42°					
					TB 090	Rock: Continuous as alternating sandstone and siltstone. The sandstone beds now average 1cm thickness and siltstone 2-4cm. Steepening of bedding to 30°. 81.52 Mineralised granite "feeder" contains sulphides and quartz mineralization at 42° joint.	30°	54°	Thinner sandstone bands (from 67.5)	95	550	12	90
					81-82m					14	75	8	65
					TB 091					14	75	15	85
					82-83m								
					TB 092			42°		14	75	15	85
					83-84m								
	87.17	3.05	2.88		TB 093	Rock: As above. Core very good, unbroken. Numerous thin crosscutting veinlets of sulphide plus quartz mineralization - shallow to 64°.	64°	25°	Grey banded alternating sandstone/siltstone	40	65	5	60
					84-85m					115	70	30	90
					TB 094			40°					
					85-86m								
	90.22	2.44	2.30		TB 095	Rock: As before, still with very low disseminated sulphide content. Sulphide mineralisation confined to 2 sources (a) granite "feeder" joints and (b) quartzite beds (replacement?). Two minor quartzite beds within sediment pile, e.g. 89.70m and 88.10m Sandstone beds irregular thickness (0.5-2cm).	60°	55°	siliceous	6	48	65	120
					86-87m			42°		24	60	80	190
					TB 096								
					87-88m					4	55	8	75
					TB 097								
					88-89m								
					TB 098					18	180	20	80
					89-90m								

020

PROJECT: MINERON HILL EAST E.L.5/63

BOREHOLE No. RBE1
DATE START 10/3/74

TYPE Diamond
DATE FINISH 18/3/74

CO-ORDINATES
DRILLER

INCLINATION -50°
COMPANY Longyear

DIRECTION 270° mag.
FINAL DEPTH 104.90m

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	92.66	2.52	2.46	TB 099	099	Rocks: Comments as above interval. Sandstone beds remain irregular in thickness showing prominent graded bedding on these thicker than 1.5cm. Minor pyrite "paint" scattered on 70° joint faces at 90.9m. 91.80 Brecciated siltstone bed, contains 0.3cm long chips of chert in siltstone matrix, suggest diagenetic contorsion.	60°	42°, 70°	Gray banded alternating sandstone/siliceous siltstone	8	80	8	95
				TB 100	90-91m					10	110	10	100
				F 6355	91-92m								
	94.18	1.93	1.90	F 6355	92-93m	Rocks as above. Core very good, unbroken. Pyrite "paint" mineralization on 66° joint faces. 93.25m brecciation of mineralized joints suggestive of movement after deposition of sulphide and quartz mineralization from granite "feeders". 95.30m TB 253 - unusual lensoid shape into siltstone.	60°	66°	(very thin sandstone beds)	30	45	5	75
				F 6356	93-94m					55	150	5	70
				F 6357	94-95m					8	48	10	70
				F 6358	95-96m					38	140	10	65
	96.01	2.44	2.32	F 6359	95-96m	Comments as above. Sandstone bed thicknesses very irregular. Beds shallow to 78°. Mineralization confined to (a) quartzite beds and (b) granite "feeders" - very minor.	78°	45°		4	80	5	70
				F 6360	96-97m					4	90	5	80
	98.45	2.83	2.60	F 6361	97-98m	Rocks: Alternating sandstone bands (0.5-1.5cm) with siltstone bands (2-4cm). Shows graded bedding (sharp contact sandstones over siltstone). Approx. 4 sandstone beds per 20cm core length. Disseminated pyrite (plus other sulphide) content in sandstone and siltstones remains very low (less than 1%).	85°	40°, 25°	Grey banded alternating sandstone/siliceous siltstone.	6	75	5	90
				F 6362	98-99m					4	95	5	70
				F 6363	99-100m					12	120	12	65
	101.28	3.12	2.95	F 6364	100-101m	Rocks: As above. Sulphide mineralization confined to joint faces (and then only very rarely).	75°	42°, 18° 45°	as above	12	70	8	75
				F 6365	101-102m					12	70	8	75
	104.40	3.12	2.95	F 6366	102-103m	Rocks: as above. 102.45 very coarse grained pyritic "rosettes" on shear zone in siltstone. Sandstone beds thicken to 2cm, and are approx. 5 per 20cm length.	64°	50°	thickening of sandstone lenses	8	80	10	90
				F 6367	103-104m					10	110	8	85
				F 6367	104-105m					10	100	5	75

220689

021

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270° MAG

DATE START 10/3/74

DATE FINISH 13/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED m'f'f's	RECOVERED m'f'f's	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding Jointing		Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	105.76	1.36	1.30		F 6368	Rocks As above. Sandstone lenses 1.5-3cm thick, now only 2 or 3 per 20cm length.	74°	55°		8	60	< 5	85
					105-106m								
					F 6369	105m pyrrhotite mineralization from small 2mm lenses (along minor joint fractures).				36	42	5	60
					106-107m								
	106.68	0.92	0.82			Rocks as above. Alternating bands sandstone (1-3cm thick) and siltstone. 105.6m Granitic "feeder" joint with chalcopyrite 2%, pyrrhotite 5%, arsenopyrite 1%, pyrite 5% in quartz. The sediments now start to be crosscut by many quartz and sulphide filled joints (presumably from granitic feeders?) Mineralization remains confined to these	82°	42°, 60°	Gray banded alternating sandstone/siliceous siltstone				
					F 6370	feeders and to pyrite "paint" on joints.			Brecciated	46	70	< 5	85
	107.90	1.22	1.08		107-108m	At 106.68-107.90m core becomes very brecciated and jointed. Many calcite, sericite and quartz filled veinlets crosscut the sediments. Very little sulphide mineralization apart from occasional pyrite "paint" amid calcite on joint faces. Two phases of jointing, the first at 40° the second containing quartz mineralization at 15°.	75°	40°	core, Non-mineralized granite feeder zones.				
								15°					
	110.94	3.04	2.98		F 6371	Rocks Very interbedded sandstones, siltstone beds, each being 0.5 approx.cm thick to 109m.	75°		Gray banded alternating	6	75	< 5	70
					108-109m				sandstone/siliceous				
					F 6372	109-109.20m alternating sandstone/siltstone beds. 109.14-109.47m sandstone bed contains disseminated 1% pyrite only. 0.30m thick-			siltstone	8	65	20	90
					109-110m					24	80	12	110
					F 6373	marker?. 109.47-110.94 alternating beds sandstone (1-2cm thick, graded bedding) and siltstone (2-5cm thick) out by thin 2mm calcite veinlets at 52° to core axis.		52°	0.33m thick sandstone bed - marker horizon?				
					110-111					6	65	< 5	80
					F 6374								
					111-112								

320685

022

AUSTRALIAN ANGLO AMERICAN LIMITED

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBE1

TYPE Diamond

CO-ORDINATES

INCLINATION -50°

DIRECTION 270° mag.

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	111.38	3.44	3.12	F 6375	112-113m	Rock: Alternating bands sandstone (1-2cm) and siltstone - approx. 5 sandstone lenses per 20cm core length. Show graded bedding.	85°		Grey banded alternating sandstone/siliceous siltstone.	65	80	< 5	75
						112.60 Mineralised quartz vein - granitic "feeder?" arsenopyrite 15%, pyrite 5%, pyrrhotite 5%, quartz 50%. Disseminated pyrrhotite in siliceous siltstone host rock - 5% but only localised at joint zone.		42°					
				F 6376		(10-15%) in coarse grained quartzite bed.				14	55	5	70
	117.04	3.66	2.86	F 6377	113-114m	Rock: Alternating bands sandstone (1-2cm thick) and siltstone (5cm thick) beds.	68°			8	50	10	70
				F 6378	114-115m	114.80 Many small lenses of pyrrhotite and quartz mineralization. 115-115.50m			Many quartz veinlets	30	110	5	70
				F 6379	115-116m	Many quartz veinlets cutting sediments.							
				F 6379	116-117m	At 115.40 a 3cm thick mineralized band at 28° cuts the sediments - contains		28°		14	50	10	75
				F 6380	117-118m	tourmaline, arsenopyrite 2-5%, pyrrhotite 15%, pyrite 10%, chalcocite 1%, quartz 50% - feeder zone from granite?			115.40 2cm mineralized quartz vein	< 4	60	< 5	85
	119.78	2.74	2.68	F 6381	118-119m	Rock: As above. Alternating bands sandstone and siltstone) approx. 6 bands sandstone to 20cm core length. No sulphide mineralization seen.	85°	12°, 61° 31°	Grey banded alternating sandstone/siliceous siltstone.	18	55	< 5	90
				F 6382	119-120m					10	60	5	85
	122.83	3.05	3.00	F 6383	120-121m	Rock: Still alternating sandstone/siltstone bands. 120.3m Quartzite band contains disseminated pyrrhotite (10%). Minor pyrite and calcite in joint faces.	65°	31°, 45°		18	100	< 5	80
				F 6384	121-122m					4	35	< 5	70
	123.57	2.74	2.70	F 6385	122-123m	Rock: As above. Only two minor thin quartz veinlets in otherwise regularly alternating monotonous core. Sandstone lenses (0.5-2cm)	58°	55°	As above.	36	32	< 5	70
				F 6386	123-124m	123.85 coarse grained quartzite - contains 15% sulphides of pyrite and pyrrhotite.				6	80	< 5	85
				F 6387	124-125m	124.60 an 8cm thick sandstone bed.				< 4	60	< 5	85
				F 6388	125-126m					30	80	5	85

589024

020

AUSTRALIAN ANGLO AMERICAN LIMITED

PROJECT: RENISON BELL EAST E.L.5/63

BOREHOLE No. RBEL

TYPE Diamond

CO-ORDINATES

INCLINATION 50°

DIRECTION 270° mag

DATE START 10/3/74

DATE FINISH 18/3/74

DRILLER

COMPANY Longyear

FINAL DEPTH 184.90m

520685

CORE SIZE	DEPTH	DRILLED FEET metres	RECOVERED FEET metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	128.93	3.35	3.25	F6389	126-127	Rocks: Same as above. Thickness and regularity	65°	40°	Grey banded	8	50	< 5	75
				F6390	127-128	of sandstone beds irregular. No distinguishing			alternating	10	65	< 5	80
				F6391	128-129	feature for this depth of drill core to distinguish from other sections - small irregular quartz veins.			sandstone/siliceous siltstone.	26	40	5	75
	132.28	3.35	3.20	F6392	129-130	Rocks: As above. 129.85 cm thick mineralised quartz vein with pyrite, pyrrhotite, tr.	60°	42°	Monotonous sedimentary	34	140	8	80
				F6393	130-131	arsenopyrite, tr. chalcopryite at 42° joint		32°	sequence.	24	75	80	210
				F6394	131-132	(therefore suspect from granite intrusive body underlying sediments.) 13.28 Pyrite cluster in calcite on joint face.		50°	Sandstone lenses have irregular	8	45	5	80
				F6395	132-133					40	60	25	170
	138.38	6.10	5.95	F6396	133-134	Bedding near perpendicular to drill core axis.	85°	50°	thickness	16	50	55	170
				F6397	134-135	137.25 pyrrhotite plus pyrite plus tr. chalc.		37°	and regularity of	26	60	8	75
				F6398	135-136	pyrite in shear joint zone in siltstone.				24	90	5	75
				F6399	136-137	137.50 bedding back to 60° siltstone lenses	60°		occurrence.	24	100	< 5	80
				F6400	137-138	approx. 5 per 20cm core length, 137.95 coarse grained quartzite with pyrrhotite and pyrite.				6	100	< 5	75
				F6255	138-139					< 4	80	8	90
	141.42	3.04	3.00	F6256	139-140	Rocks: as above, still monotonous sequence of		32°		55	100	12	100
				F6257	140-141	alternating siltstone/sandstone lenses. Sandstone (show contortion and complex folding in parts - intraformational folding!) lenses are		48°		18	70	5	75
				F6258	141-142					36	80	10	70
				F6259	142-143					10	60	5	70
				F6260	143-144	1-3cm thick, show graded bedding.				16	70	10	85
	144.17	2.75	2.30	F6261	144-145	Same comments as above.	62°	62°		26	80	8	90
				F6262	145-146			50°		26	70	12	80
				F6263	146-147					20	80	10	90
				F6264	147-148					4	60	15	90
				F6265	148-149					32	50	10	80
	147.17	3.00	3.02	F6266	149-150	Rocks: as above. Still alternating sequence of				18	65	8	75
				F6267	150-151	sandstone lenses and siltstone bands. Minor disseminated pyrite in sandstone lenses (up to 1%) no visible disseminated pyrite in	55°	62°		12	70	10	90
				F6268	151-152					38	120	10	85
				F6269	152-153					8	75	10	95
				F6270	153-154	siltstone.		42°		14	110	10	80

022

PROJECT: RENISON BELL EAST E.L. 5/63

BOREHOLE No. RBE1
DATE START 10/3/74

TYPE Diamond
DATE FINISH 18/3/74

CO-ORDINATES
DRILLER

INCLINATION -50°
COMPANY Longyear

DIRECTION 270° mag.
FINAL DEPTH 184.90m

CORE SIZE	DEPTH	DRILLED metres	RECOVERED metres	CORE ANGLE	SAMPLE NO.	DESCRIPTION	Bedding	Jointing	Summary of rock type	ASSAY RESULTS			
										Sn	Cu	Pb	Zn
BQ	150.27	3.10	2.74	F6271	154-155	Rock: As above. Core very good to 148.70 then	64°	50°, 62°	Banded sand-	12	75	< 5	80
				F6272	155-156	very shattered and broken - much jointing.		90°	stone/silt	8	70	5	80
				F6273	156-157	Pyrite "paint" on many joint faces. 148.7-149.5			stone.	110	90	12	95
				F6274	157-158	very shattered core.			148.7-149.5	150	110	130	260
	153.30	3.03	3.04	F6275	158-159	Rock: as above. Very monotonous sequence of	65°	60°, 32°	very shattered	< 4	80	12	95
				F6276	159-160	sandstone lenses (graded bedding prominent,			ed core.	10	95	15	75
				F6277	160-161	2-3cm thick) bedded and alternating with			Grey banded	22	90	20	80
				F6278	161-162	siliceous siltstones.			alternating	24	65	12	90
	156.36	3.06	3.10	F6279	162-163	Rock: as above. No special features of note.	65°	65°	sandstone/	< 4	75	8	80
				F6280	163-164	Jointing axis 180° rotation from bedding axis.			siliceous	6	90	5	100
	159.40	3.14	3.06	F6281	164-165	Rock: as above. Sandstone lenses still approx.	63°	8°, 60°	siltstone	< 4	85	8	100
				F6282	165-166	5 per 20cm length of core. Pyrite and calcite			monotonous	< 4	95	15	90
				F6283	166-167	on joint at 8° to core axis very isolated beds			sequence.	4	90	10	100
				F6284	167-168	of coarse grained quartzite in sedimentary				12	70	10	80
				F6285	168-169	sequence with disseminated pyrite.				80	95	8	120
	162.45	3.05	2.97	F6286	169-170	As above. 162.39 1.5cm thick band thermally	74°	45°		< 4	80	12	100
				F6287	170-171	altered quartz. No real distinguishing				18	70	10	85
				F6288	171-172	feature. No sulphides seen. Monotonous				12	90	15	130
	165.70	3.25	3.10	F6289	172-173	sequence sandstone/siltstone continues.	75°			8	85	12	90
				F6290	173-174	166.0 thin pyrrhotite band (0.5cm).				6	85	8	65
	171.90	6.20	6.20	F6291	174-175	Bedded alternating sequence continues, very	74°	42°		4	160	8	80
				F6292	175-176	minor disseminated pyrite in coarse grained		68°		8	70	< 5	65
				F6293	176-177	quartzite. 173.0 bedding 43°. 176.0 Bedding	48°	25°		14	60	< 5	30
	178.98	7.08	6.40	F6294	177-179	perpendicular to core axis. 177.4 TD255	90°	45°		4	65	8	90
				F6295	179-180	contorted lens with chilled margin within	48°	50°		12	70	5	80
				F6296	180-181	siliceous siltstone. Core appears barren	65°	75°		6	65	10	80
				F6297	181-182	of all but minor disseminated sulphides in		60°		< 4	80	5	90
				F6298	182-183	sandstone and siltstone. Very few minor				26	60	8	90
				F6299	183-184	quartz veins, seemingly mineralized.				10	75	5	95
				F6300	184-184.9					8	60	5	90

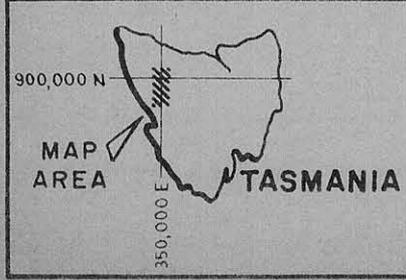
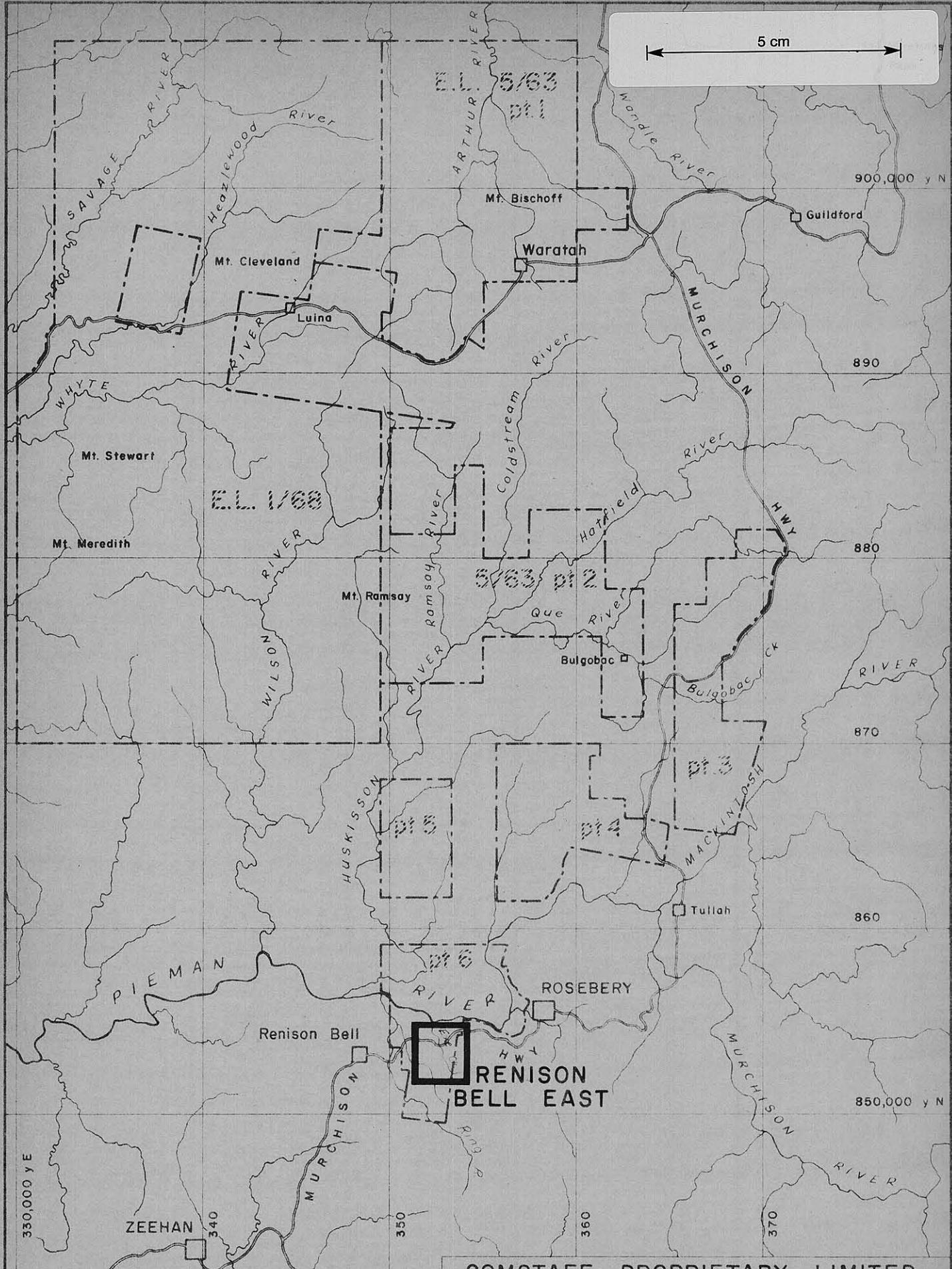
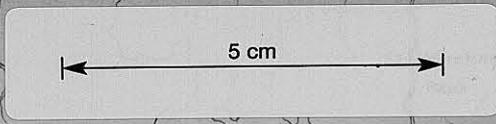
HOLE COMPLETED 184.90m

28085

025

026

589027



COMSTAFF PROPRIETARY LIMITED

RENISON BELL EAST

1973/74 SUMMER SEASON REPORT

LOCATION MAP

DRAWN MAY, 73 R. Bottomley	COMPILED	SCALE 1:250,000	DWG TAS-2-694
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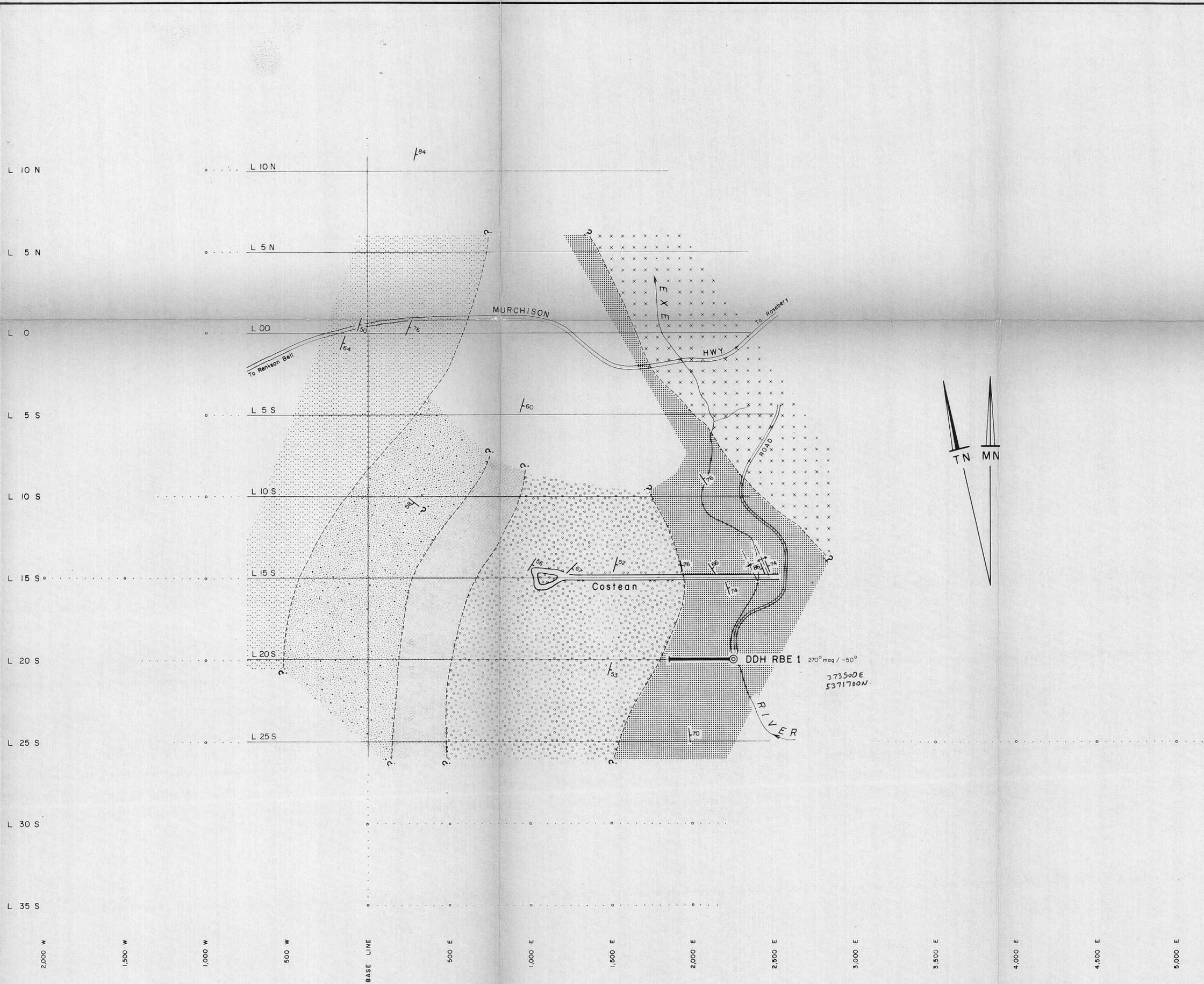
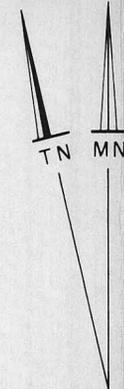
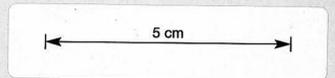
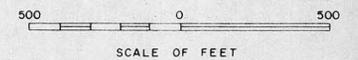
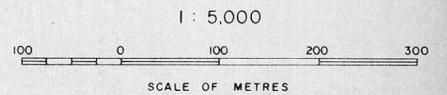
LEGEND

-  Coarse grained ultrabasic
-  Tuffaceous breccia, agglomerate and siltstone
-  Tuffaceous siltstone
-  Sheared metasediments
-  Finely laminated siltstone / sandstone
-  Siliceous siltstones + interbedded sandstone lenses

-  Geological boundary inferred
-  Strike and dip of bedding
-  Syncline
-  Anticline

-  50 feet grid — see note below
-  Drainage
-  Road

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.



589028

001

74 1021

COMSTAFF PROPRIETARY LIMITED
RENISON BELL EAST — GRID 5
1973/74 SUMMER SEASON REPORT
INTERPRETATION GEOLOGY

DRAWN R.P.H. Q. COMPILED G.K.C. SCALE 1:5,000 TAS-2-635

LEGEND

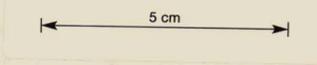
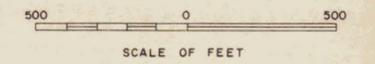
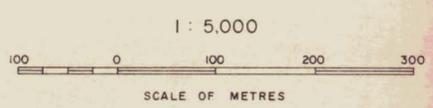
- qz Quartzite
- sa Sandstone
- ss Siltstone
- mt Mudstone
- ar Argillite
- gw Greywacke
- sh Shale
- tu Tuff
- ag Agglomerate
- vbr Volcanic breccia
- gb Gabbro

ABBREVIATIONS

- v Very
- int Interbedded
- sil Siliceous
- gra Grained
- wth Weathered

- Strike and dip of bedding
- Strike and dip of jointing
- Diamond drill hole
- Petrographic rock description available
- Rock exposure on grid line
- Eastern boundary of EL 5/63
- 50 foot grid - see note below
- Drainage
- Road
- Tramway

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.



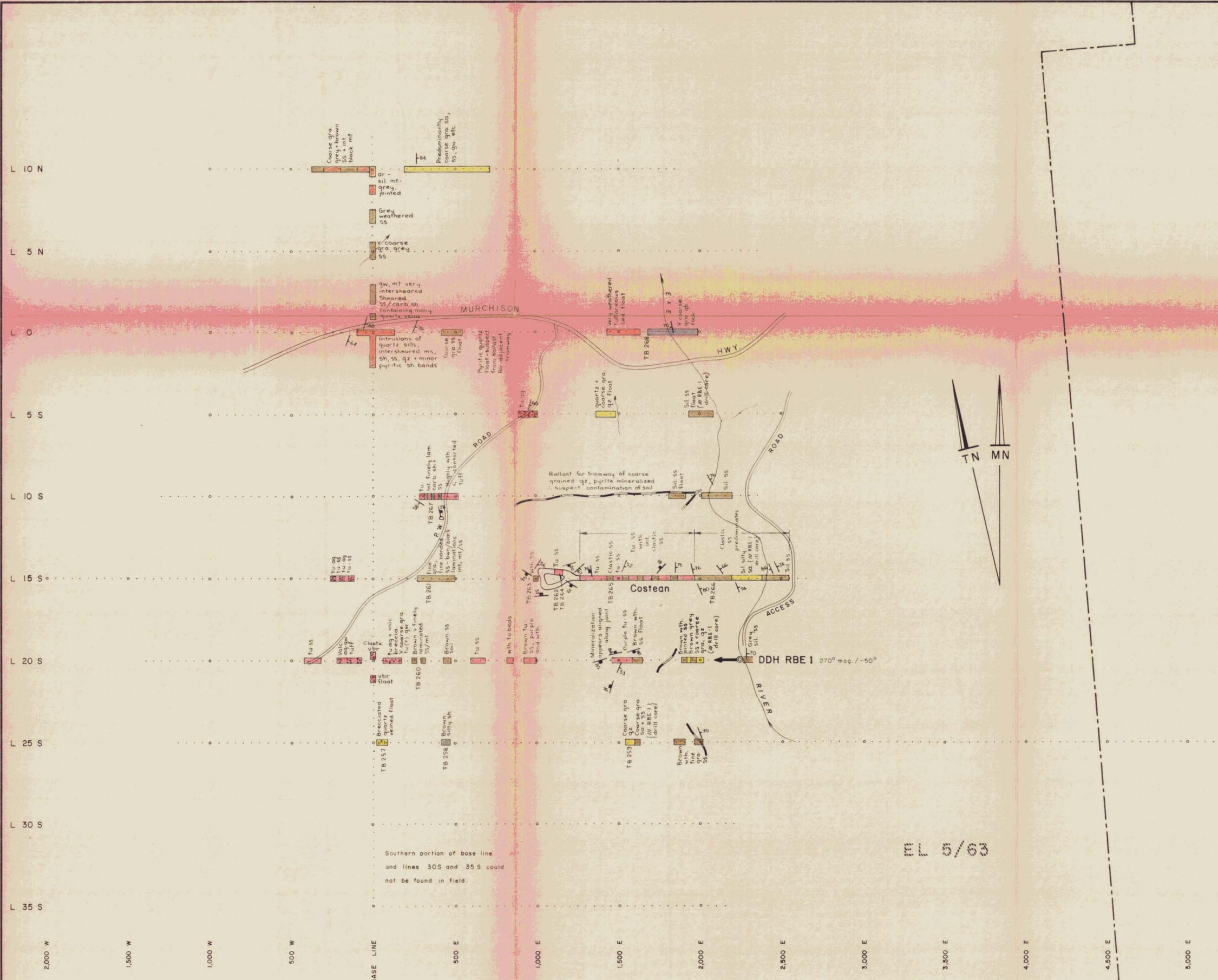
COMSTAFF PROPRIETARY LIMITED

589029

RENISON BELL EAST — GRID 5
1973/74 SUMMER SEASON REPORT
DETAIL GEOLOGY002

DRAWN July 74 R.P.H. COMPILED G.K.C. SCALE 1:5,000 TAS-2-640

74/1021

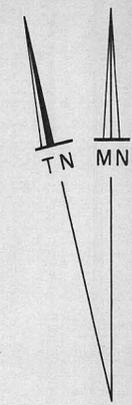
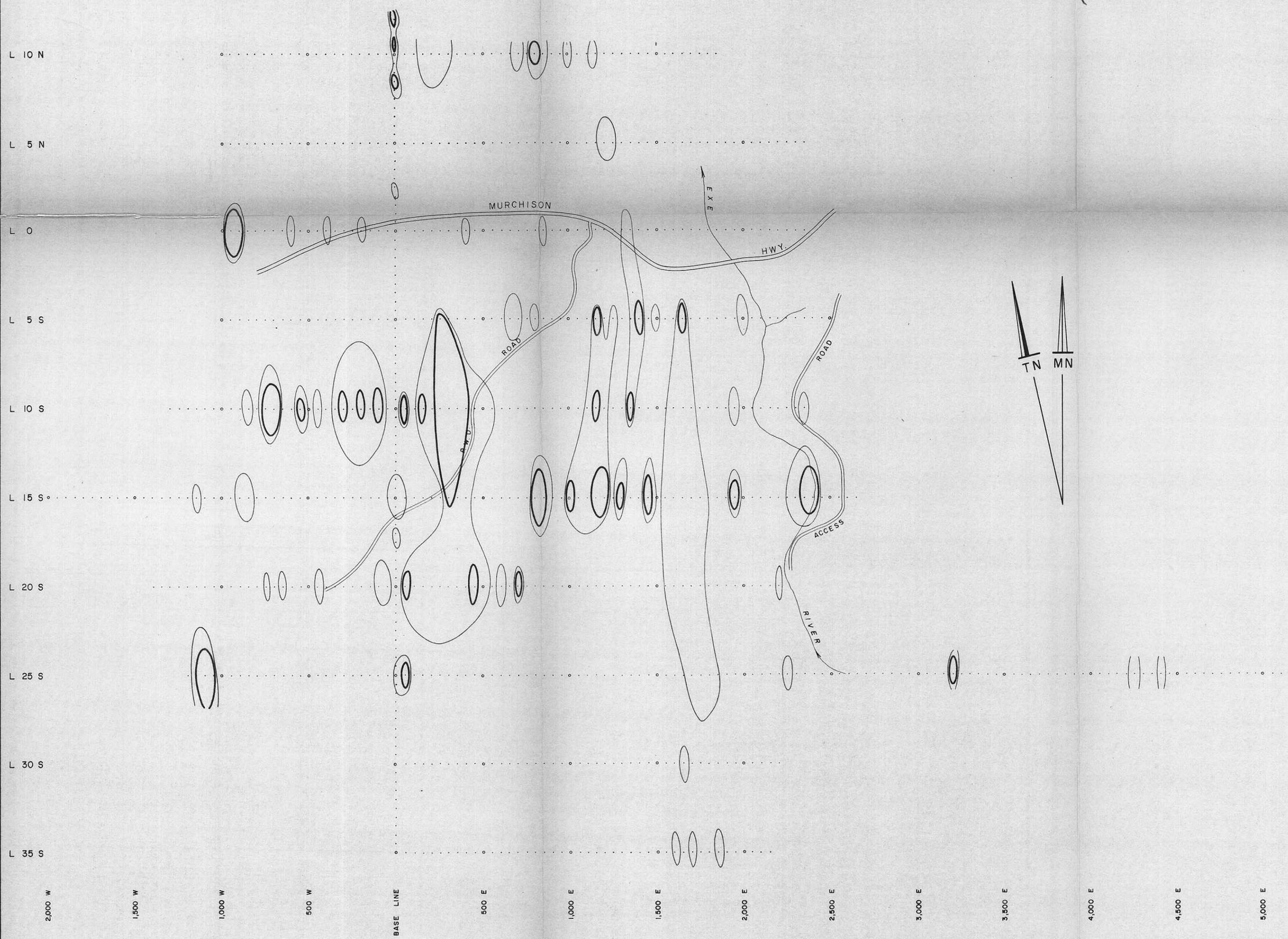


EL 5/63

Southern portion of base line and lines 30S and 35S could not be found in field.

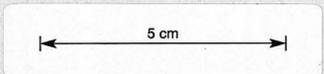
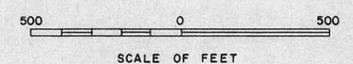
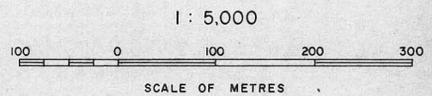
LEGEND

-  110 ppm geochemical contour
-  75 ppm " "



-  50 feet grid — see note below
-  Drainage
-  Road

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.



589030

003

COMSTAFF PROPRIETARY LIMITED

RENISON BELL EAST — GRID 5

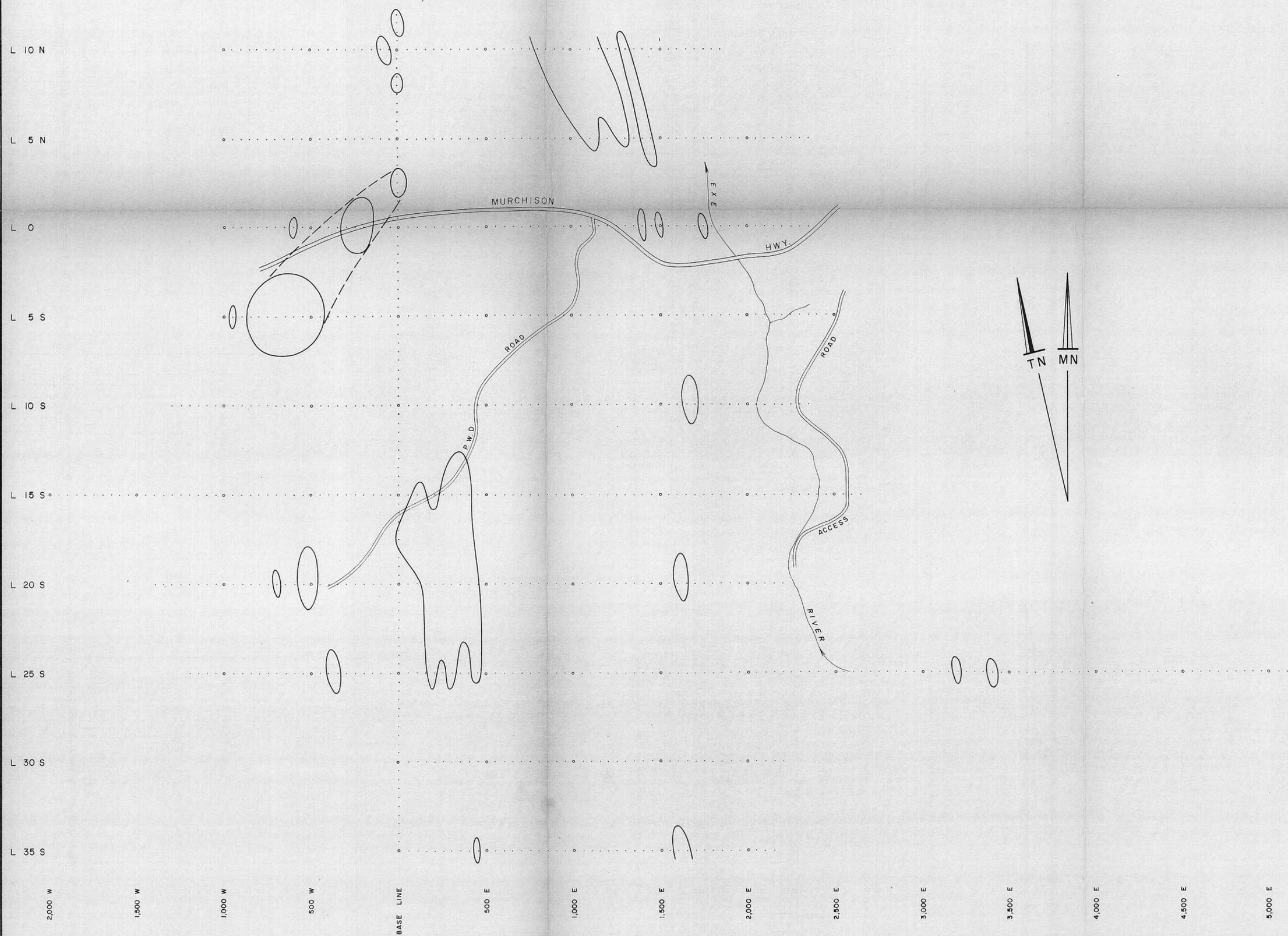
1973/74 SUMMER SEASON REPORT

COPPER - SOIL GEOCHEMISTRY

DRAWN July 74 R.P.H.	COMPILED G.K.C.	SCALE 1:5,000	TAS-2-636
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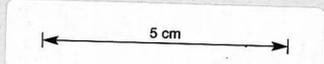
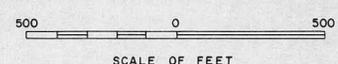
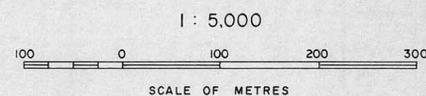
LEGEND

70 ppm geochemical contour



50 feet grid — see note below
 Drainage
 Road

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.



004

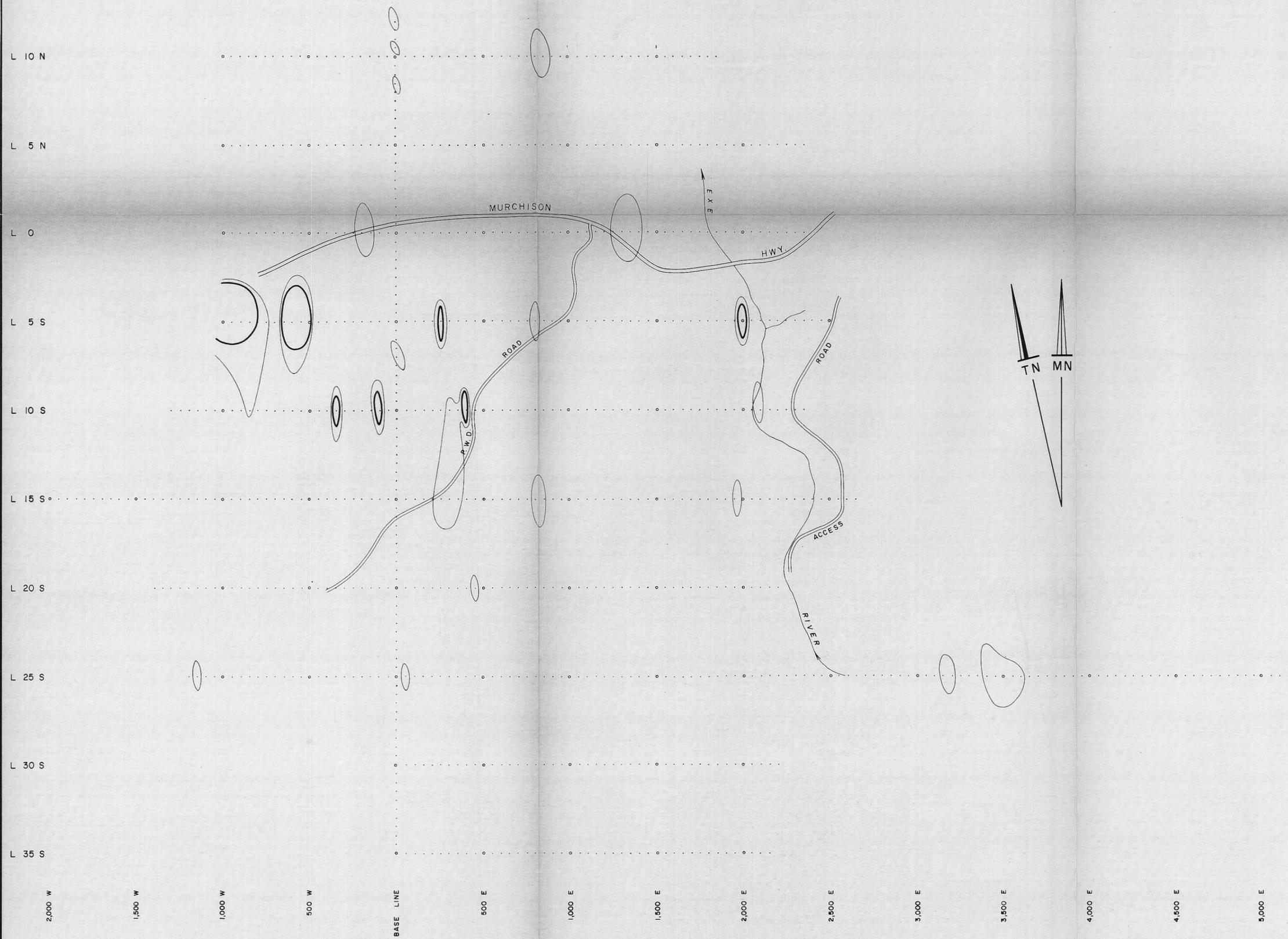
COMSTAFF PROPRIETARY LIMITED
 RENISON BELL EAST — GRID 5
 1973/74 SUMMER SEASON REPORT
LEAD - SOIL GEOCHEMISTRY

589031

DRAWN July 74 R.P.H. COMPILED G.K.C. SCALE 1:5,000 TAG-2-637

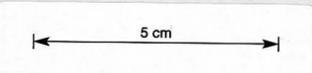
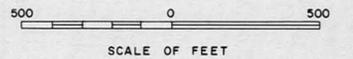
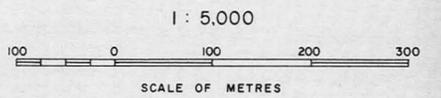
LEGEND

-  180 ppm geochemical contour
-  110 ppm " "



-  50 feet grid - see note below
-  Drainage
-  Road

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.



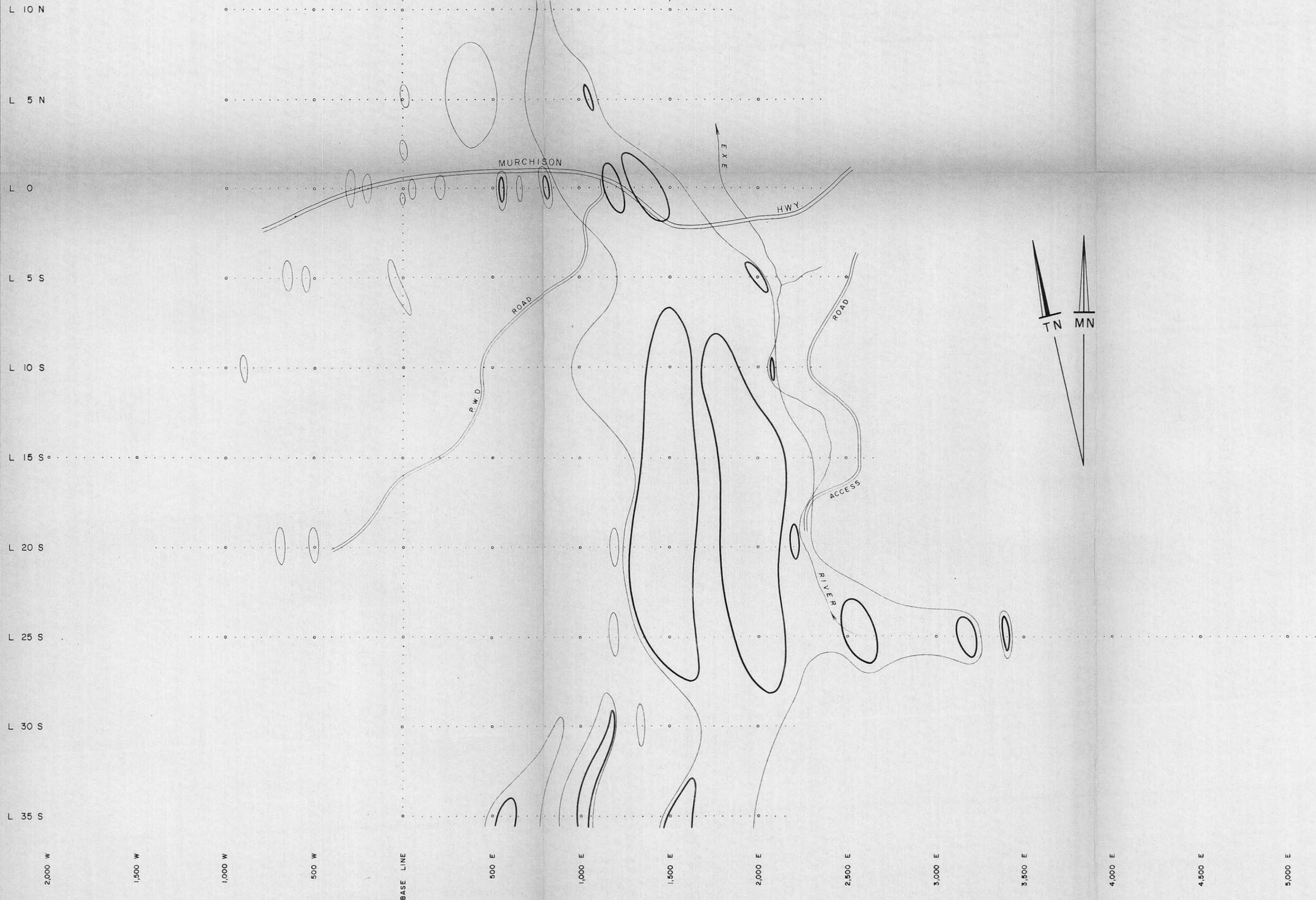
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589032

COMSTAFF PROPRIETARY LIMITED			
RENISON BELL EAST - GRID 5			
1973/74 SUMMER SEASON REPORT			
ZINC - SOIL GEOCHEMISTRY			
<small>DRAWN</small> July 74 R.P. Q.	<small>COMPILED</small> G.K.C.	<small>SCALE</small> 1:5,000	<small>TAS-2-638</small>

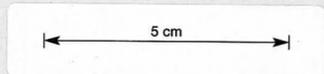
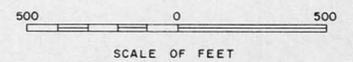
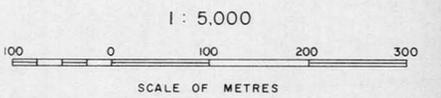
LEGEND

-  130 ppm geochemical contour
-  44 ppm " "



-  50 feet grid - see note below
-  Drainage
-  Road

NOTE: The grid is uncorrected for slope, and the lines have not been plotted using actual bearings.

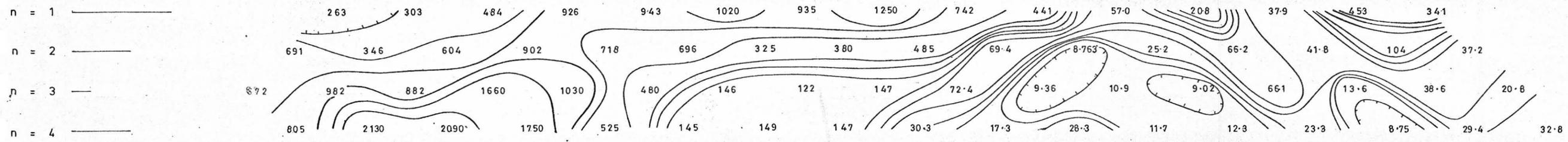


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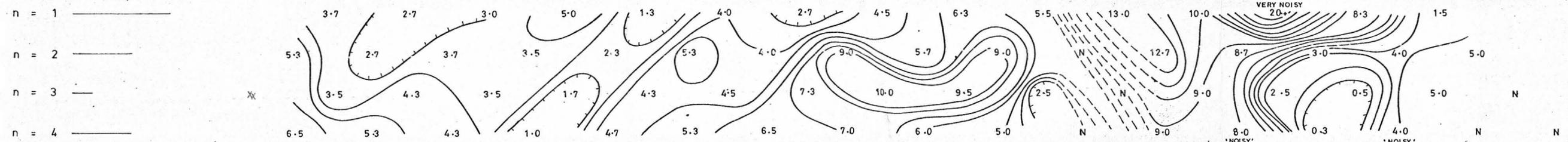
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COMSTAFF PROPRIETARY LIMITED			
RENISON BELL EAST — GRID 5			
1973/74 SUMMER SEASON REPORT			
TIN - SOIL GEOCHEMISTRY			
DRAWN July 74 R.P.H.	COMPILED G.K.C.	SCALE 1 : 5,000	TAS-2-639

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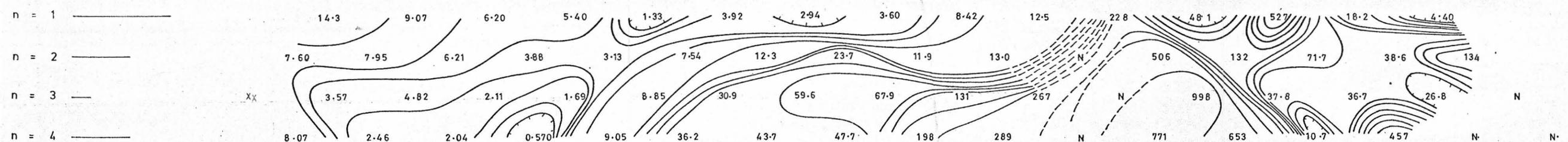
COMSTAFF PTY. LIMITED
TASMANIA



INDUCED POLARISATION SURVEY
RENISON

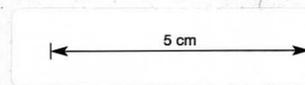
TRAVERSE 25 S

a = 200 FEET
FREQUENCIES 2.5-0.3 Hz
SURVEYED 27-28 / 01/74



by
GEOQUEST PTY. LIMITED

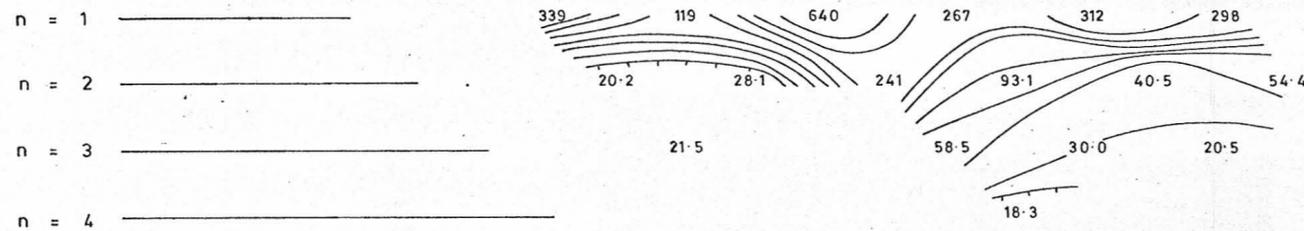
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007

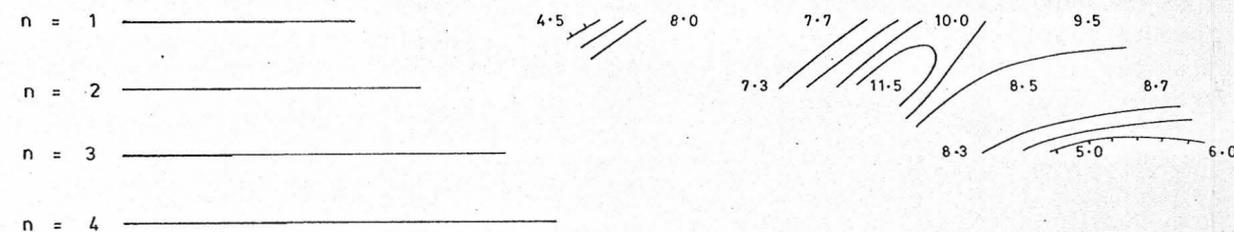
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16 E 18 E 20 E 22 E 24 E 26 E 28 E 30 E 32 E 34 E



APPARENT RESISTIVITY
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LOGARITHMIC CONTOURING

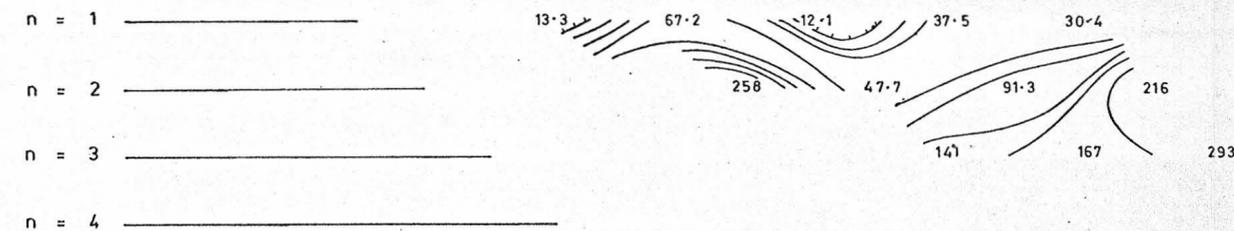
COMSTAFF PTY. LIMITED
TASMANIA



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURING

INDUCED POLARISATION SURVEY
RENISON

TRAVERSE 20 S
(FIRST RUN)
a = 200 FEET
FREQUENCIES 2.5-0.3 Hz
SURVEYED 21/12/73



METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURING

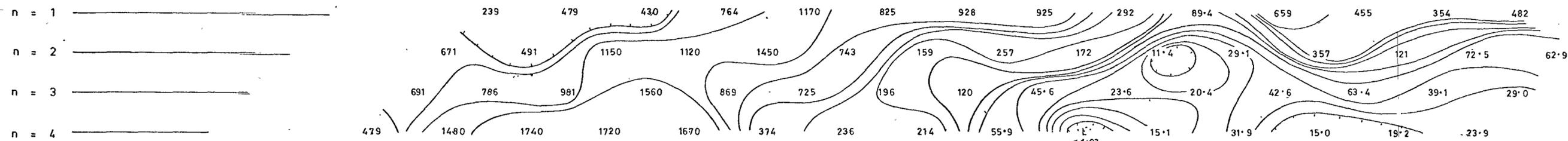
by
GEOQUEST PTY. LIMITED

589035

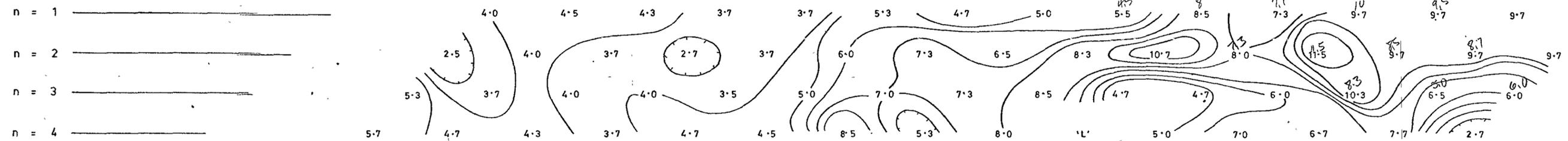
DWG. NO 7402-5

008

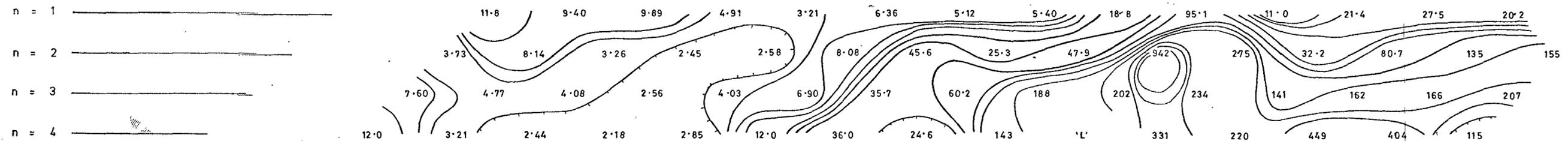
06 W 04 W 02 W 00 02 E 04 E 06 E 08 E 10 E 12 E 14 E 16 E 18 E 20 E 22 E 24 E 26 E 28 E 30 E 32 E 34 E



APPARENT RESISTIVITY
(OHM METRES)
LOGARITHMIC CONTOURING



PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURING



METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURING

COMSTAFF PTY. LIMITED.
TASMANIA

INDUCED POLARISATION SURVEY
RENISON

TRAVERSE 20 S
(SECOND RUN)

$a = 200$ FEET
FREQUENCIES 2.5-0.3 Hz
SURVEYED 26 / 01 / 74

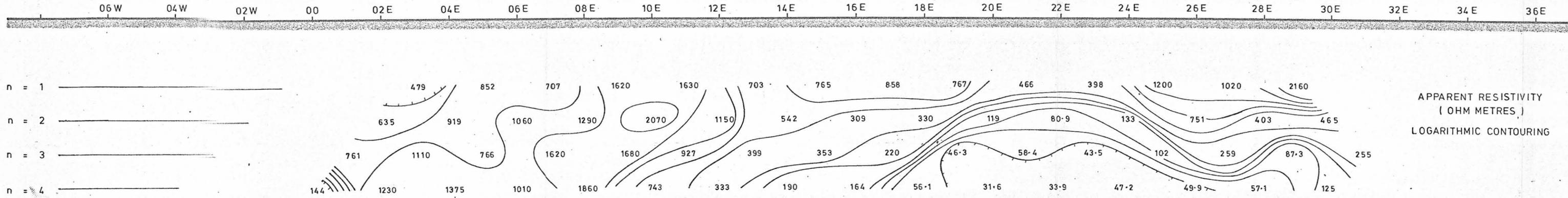
5 cm

by
GEOQUEST PTY LIMITED

589036

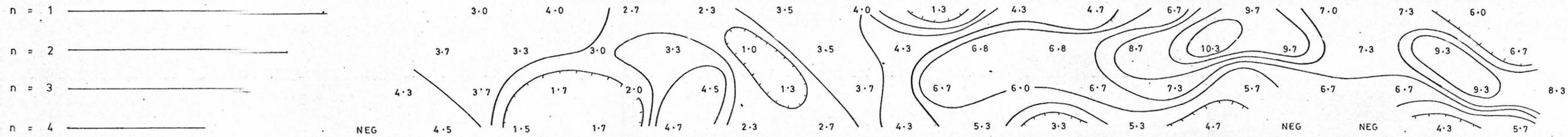
009

DWG No 7402-6



APPARENT RESISTIVITY
(OHM METRES)
LOGARITHMIC CONTOURING

COMSTAFF PTY. LIMITED
TASMANIA

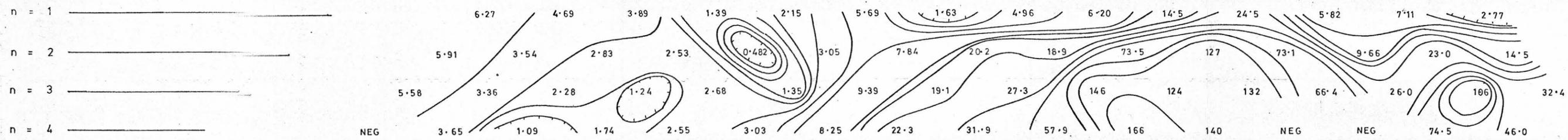


PERCENTAGE FREQUENCY EFFECT
LINEAR CONTOURING

INDUCED POLARISATION SURVEY
RENISON

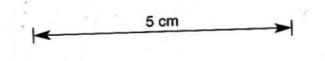
TRAVERSE 15 S

$a = 200$ FEET
FREQUENCIES 2.5-0.3 Hz
SURVEYED 28/01/74



METALLIC CONDUCTION FACTOR
LOGARITHMIC CONTOURING

by
GEOQUEST PTY. LIMITED



589037

010
DWG. No 7402- 7