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BILLITON AUSTRALIA
 THE METALS DIVISION OF
 THE SHELL COMPANY OF AUSTRALIA LIMITED

E.L. 103/87 - LAKE SELINA
 VOLUME 2

Progress Report on Exploration for the Period Ending
 21st April, 1990

INDEXED

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 2. Billiton Aust., Melb.
 3. Billiton Aust., Tas.

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1.0 INTRODUCTION

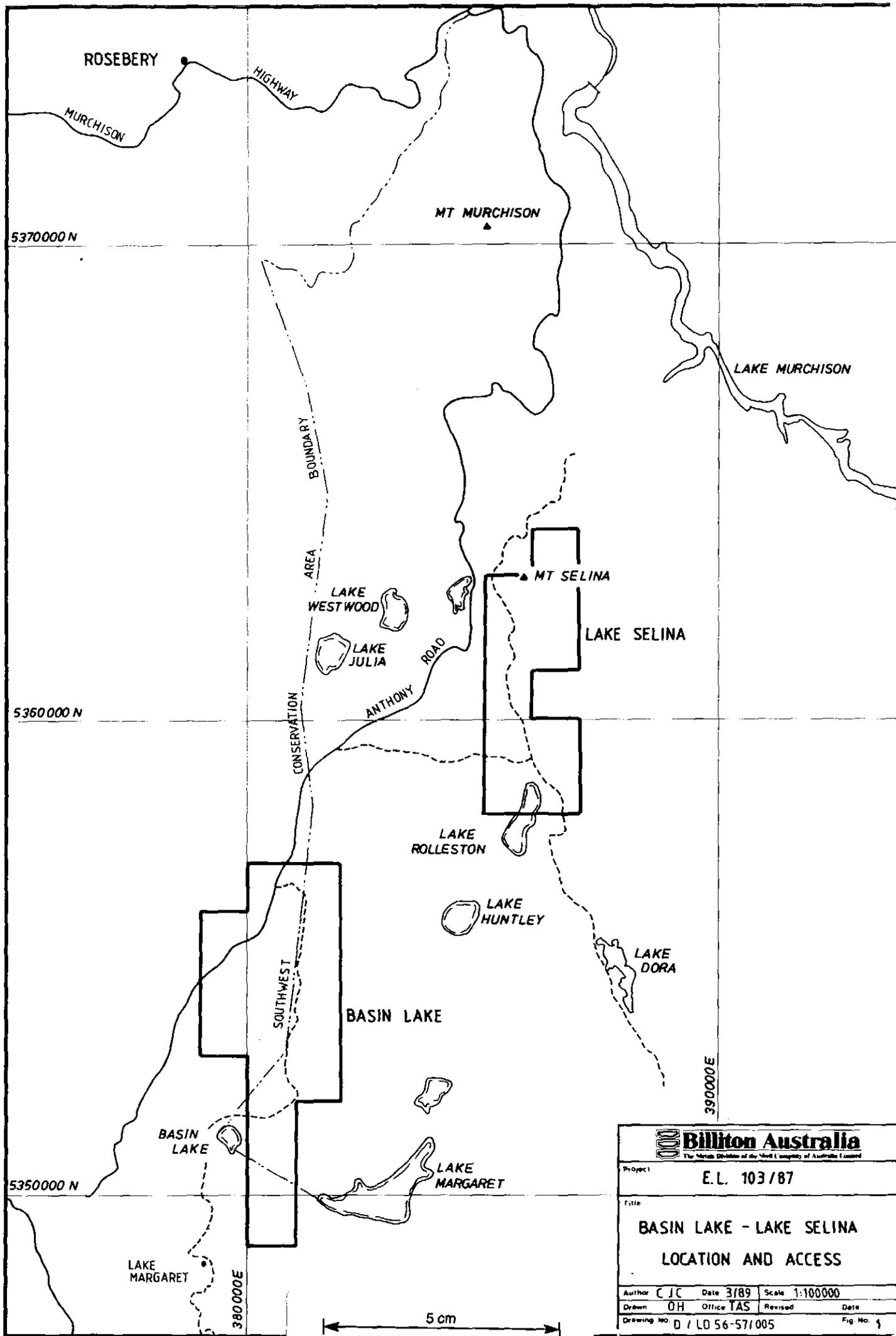
This report details exploration completed and results achieved by Billiton Australia within the Lake Selina portion of E.L. 103/87 during the 12 month period to 21st April, 1990.

Exploration philosophy for the Lake Selina area has been to locate massive base metal sulphide mineralization at depths probably greater than 200m.

2.0 LAND TENURE

E.L. 103/87 was granted to the Shell Company of Australia until the 21st April 1990. The licence consists of 26km², which is divided into two separate areas known as Lake Selina (10km²), and Basin Lake (16km²) (Fig. 1). This report deals with the Lake Selina area only; the Basin Lake report is in Volume 1.

The Lake Selina area is totally within the Southwest Conservation Area. Part of the licence is due to be flooded in 1994 as a result of dam construction by the HEC.



 Billiton Australia <small>The Merck Division of the Merck Company of Australia Limited</small>		
Project	E.L. 103/87	
Title	BASIN LAKE - LAKE SELINA LOCATION AND ACCESS	
Author	CJC	Date 3/89
Scale	1:100000	
Drawn	OH	Office TAS
Revised	Date	
Drawing No.	D / LD 56-571005	
Fig. No.	1	

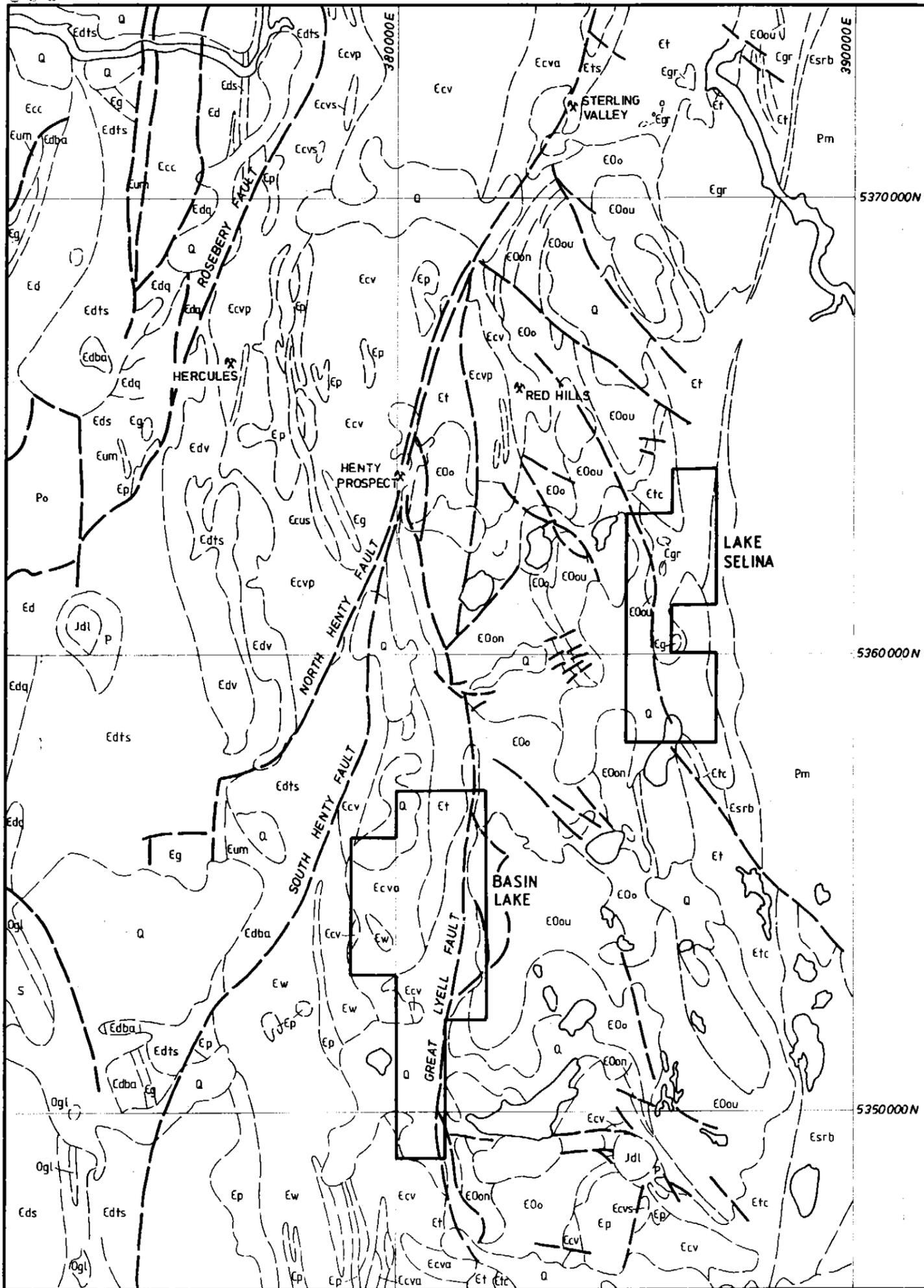
3.0 LOCATION & ACCESS

The Lake Selina EL is located on the west coast of Tasmania approximately 13km southeast of Rosebery (Fig 1). Access to the licence is via the Anthony Road, which passes along the western boundary. Access within the licence is via 4WD tracks which join the Anthony Road at the HEC Newton Camp, and at the northern end of the licence area.

A significant topographical feature within the licence is Mt. Selina (780m), which occupies the northern portion of the licence. Steep rugged terrain persists throughout this area. Vegetation over Mt. Selina consists of thick rainforest and ti-tree scrub whereas the remainder of the licence is flat to gently undulating hills covered in buttongrass and light ti-tree scrub.

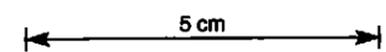
4.0 GEOLOGICAL SETTING

The Lake Selina licence area is located along the eastern margin of the Cambrian Mt. Read Volcanics, a northerly trending predominantly felsic volcanic arc on the west coast of Tasmania (Fig 2).



LEGEND

- Q Quaternary
- Jdl Jurassic
- P Permian
- S Silurian
- Ogl Ordovician
- E0ou } Cambrian Denison Group
- E0on }
- E0o }
- Et } Cambrian Tyndall Group
- Ets }
- Etc }
- Esrb }
- Cd } Cambrian Dundas Group
- Eds }
- Edts }
- Edq }
- Cdv }
- Cdba }
- Ecv } Cambrian Central Volcanic Complex
- Ccvp }
- Ecvs }
- Ecva }
- Cw } Cambrian Western Sequence
- Ecc } Cambrian Crimson Creek Formation
- Po } Pre Cambrian
- Pm }
- Egr } Cambrian Intrusives
- Cp }
- Eg }
- Eum }



90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project	E.L. 103/87		
Title	BASIN LAKE - LAKE SELINA GEOLOGICAL SETTING		
Compiled from Corbett & McNeill 1988			
Author	CJC	Date	3/89
Scale	1:100 000		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No	D/LD 56-57/006		Fig. No. 2

The EL contains lithologies from the youngest sequence of the Mt. Read Volcanics, the Tyndall Group. The Tyndall Group consists of mainly quartz-feldspar phyric volcanics and sediments. The eastern boundary of the Tyndall Group is marked by a disconformable contact with the PreCambrian Tyennan Nucleus quartzites and metasediments. To the west the Tyndall Group is fault bound by a down thrown block of Ordovician Owen Conglomerate.

5.0 PREVIOUS EXPLORATION

Exploration carried out within the Lake Selina licence area prior to April 1988 is reported in the Progress Report for Exploration for the Period Ending 21st April 1989 (08.4227). Exploration by Billiton Australia from April 1988 to April 1989 consisted of the construction of 24 line kms of grid at a 400m grid line spacing, with a ground magnetic survey being conducted over the new grid. Additional work included a partial CSAMT survey and field mapping within the northern portion of the licence, details of which are available in the Annual Report 1988/1989.

6.0 EXPLORATION COMPLETED

Exploration carried out during the current reporting period has been a continuation of the work commenced during the initial 12 months of the licence, in keeping with the

original exploration philosophy of searching for massive sulphide targets at depth.

An EM 37 survey was carried out over approximately 12 line kms. Grid lines within the centre of the licence area were extended and a ground magnetic survey carried out over the extensions. In the northern portion of the licence 2km of infill grid lines were constructed. A detailed mapping and rock chip sampling programme followed grid construction. Mapping of the grid at a 400m line spacing was completed. Diamond drill holes LS 10 and LS 13 were relogged. An exploration status is outlined in Figure 3.

7.0 EXPLORATION RESULTS

7.1 Geology

Mapping of the BAUS grid at 400m line spacing, was completed. South of line 361600N very little outcrop occurs, particularly in the southern half of the licence where Quaternary glacial sediments and alluvials provide an almost complete cover of the underlying bedrock. As a result very little information was gained from the work in the southern half of the licence. An outcrop of strongly foliated Tyndall Group volcanics, which occurs within a creek on line 359600N at 386180E, contains strong chloritic alteration similar to that observed in the Western Pyrite Zone in the northwest of the licence, and may be a southerly extension of this zone.

The geology within the northern portion of the licence is interpreted to be a sequence of steeply dipping, north - south striking, Middle-Late Cambrian Tyndall Group quartz - feldspar phyric volcanoclastics, epiclastics and minor lavas, overlying the PreCambrian Tyennan Nucleus and fault bound to the west by the Ordovician Owen Conglomerate. Overlying the Tyndall Group volcanics in the northwest of the licence is the Dora Conglomerate, possibly forming a syncline or small fault bounded basin structure. The eastern margin of the Tyndall Group volcanics is overlain by the Cambrian Sticht Range Beds, which consists of a lower sequence of laminated quartz-mica sandstones overlain by a coarse quartzite pebble conglomerate. The Sticht Range Beds closely resembles the lower Ordovician Owen Conglomerate. The sequence is intruded by a Cambrian fine-medium grained granodioritic intrusion. Outcrop of this intrusion is rare but its strongly magnetic signature suggests it underlies a significant portion of the northern half of the licence. (Fig 17).

Two extensive linear zones of pyrite-chlorite + weak base metals alteration, the Eastern Pyrite Zone and Western Pyrite Zone, occur within the Tyndall Group volcanics (Fig 3). Both zones occur parallel to the east and west boundaries of the overlying Dora Conglomerate.

An infill grid, totalling 2km, was constructed at 200m spacing over the Eastern Pyrite Zone (EPZ) in the northern portion of the licence. The grid was constructed as part of followup work resulting from the detection of weak linear EM 37 conductors within the EPZ. Mapping of the new grid revealed significant features of the geology not previously recognised (Fig 8). The EPZ occurs parallel to the contact between the Dora Conglomerate and underlying Tyndall Group volcanics, oriented approximately NNW-SSE. Limited observations from outcrop and drill core suggests the stratigraphy dips steeply to the east to vertical with no obvious facing criteria observed. Previous workers in the area have stated an east facing. Stratigraphy from west to east across the EPZ consists of the Dora Conglomerate, a matrix supported pebbly conglomerate containing clasts predominantly derived from the PreCambrian with lesser Cambrian felsic volcanic clasts within a matrix varying from a significant felsic volcanic source to a PreCambrian source. The Dora Conglomerate becomes finer grained towards the eastern erosional contact with the underlying Tyndall Group volcanics. Immediately east of the Dora Conglomerate is a sequence of fine grained rhyolitic lavas which display significant haematitic alteration towards the base of the Dora Conglomerate. Immediately east is a narrow horizon (20m) of siliceous black shales which can be traced for 600m along strike and at depth within DDH LS 10. The shale horizon is interbedded with a 100-150m thick sequence of

strongly altered fine grained felsic volcanoclastics. The shales and volcanoclastics contain strong chloritic and pyritic alteration. To the east of the shale horizon a significant sequence of fine grained strongly siliceous-sericitic and pyritic cherts have been observed in outcrop and at depth in DDH LS 10. This chert horizon does not appear to be continuous along strike, however this may be due to the poor outcrop in the area. An observation made from examination of the drill core from LS 10 showed strong brecciation along the margins of the chert horizons, where the siliceous-sericitic alteration is weaker, suggesting the chert horizons may be a result of significant epigenetic structurally controlled alteration of the fine grained felsic volcanoclastics, and not a primary feature associated with the formation of VMS style mineralization. East of the EPZ are thick sequences of fine to coarse grained felsic volcanoclastics, epiclastics and minor lavas.

Studies of hand specimens and thin sections from the EPZ and WPZ suggest that three separate phases of mineralization/alteration may have occurred. The first represented by fine grained disseminated pyrite forming a lineation not readily recognisable in hand specimen. The second phase appears to have occurred syntectonic to the Middle Devonian Tabberabberan Orogeny with base metal sulphides deposited within pressure shadows of deformed pyrite grains. A third phase of mineralization consists of narrow quartz-carbonate veins containing pyrite, chalcopyrite, galena and sphalerite,

cross cutting the regional foliation developed during the Tabberabberan. A lead isotope investigation has suggested that the sulphides have a Cambrian source, indicating re-mobilization and deposition in their present location during and after the Devonian Tabberabberan orogenic event.

Structure within the Tyndall Group volcanics is difficult to interpret due to the paucity of outcrop. The most significant feature is the strong cleavage developed throughout the volcanics and overlying Dora Conglomerate, which has a north-south orientation and vertical dip. The cleavage is developed strongest along the western margin of the Dora Conglomerate where clasts have been flattened forming a distinct lineation. Associated with this zone of intense foliation is an increased abundance of quartz-chlorite-hematite-feldspar veining suggesting possible faulting along the western margin of the Dora Conglomerate. Observations of contact relationships are scarce with the majority of recordings indicating a north-south strike with moderate to steep easterly dips with the possible formation of a synclinal structure within the Tyndall Group Volcanics outlined by the present location of the Dora Conglomerate.

7.2 Geophysics

EM 37 Survey

An EM 37 Transient Electromagnetic survey was carried out in March 1989 by Geoterrex Pty Ltd. The survey was primarily intended to detail CSAMT anomalies (as discussed in the 1988 /89 Annual Report). Large fixed transmitter loops were used and the vertical component of the secondary EM field was measured using a mobile coil. Approximately 13.7kms were surveyed as indicated on the location plan (Fig 12). The profiles are contained in Appendix 3.

The CSAMT survey indicated a line of conductors extending most of the length of the western side of the EL under glacial cover. The EM 37 survey confirmed the existence of this line which is plotted on Fig 13 together with the ground magnetic profiles. It is apparent that these conductors:

- 1) are fairly weak, occurring only on the early TEM channels
- 2) are shallow,
- 3) have no magnetic correlation; and
- 4) have a long strike length in excess of 4kms.

The strongest response occurs on line 5360800N. The EM 37 magnetic and gravity profiles are shown on Fig 14, together with a composite geophysical model. Computer modelling of

the EM 37 conductor indicates a top depth of about 20 metres with a low conductor of 3 Siemen (the time constant is only 0.17 msec) (Fig 15). Modelling of the gravity profile assuming a density contrast between glacials and bedrock of 0.7gm/cc indicates a glacial thickness of about 75 metres. There is thus a clear discrepancy between the EM and gravity depths. The latter could only be decreased by using an unreasonably high density contrast. It must therefore be concluded that the EM source is in some way related to the glacials, possibly as a deep clay-filled paleo-channel (which cannot be easily modelled for EM response). There appears to be no clear associated gravity anomaly to clarify the source of the EM anomaly. On present geological evidence it is not related to the Anthony Fault which occurs 350 metres to the east. It also does not have a similar signature to the Western Pyrite Zone (WPZ) which, although also a weak conductor (occurring at 85670E), has an associated magnetic response due to disseminated magnetite. The EM anomalies could be due to an obscured fault, possibly weakly mineralised, although this fault is not evident on the gravity perhaps because of little vertical displacement.

Weak EM 37 conductors are coincident with both Western and Eastern Pyrite Zones (and with IP responses defined previously by RGC). The EPZ has been tested by only one drill hole LS 10 (approximately on line 363200N) which was targeted on a coincident IP (gradient array) anomaly, which is also weakly conductive.

On this line an EM 37 conductor occurs at 386330E (Fig 16 and Appendix 3). If the hole LS 10 is located correctly with respect to the Billiton grid, it would appear that the hole has not intersected the EM source, stopping just short of it. In 1985 RGC carried out a UTEM survey (on a different grid) after LS 10 had been drilled. The UTEM response is also weak (channels 9-7) and appears to occur just beyond the end of the hole (Fig 16). In 1986 RGC carried out TEM (Sirotem) surveys down holes LS 10 and LS 13 (950m SSW). Although the data are very noisy, it is possible to postulate a conductor off the end of LS 10, since the last station or two is anomalous. This could of course be caused by metal junk at the bottom of the hole. However there is no obvious conductor elsewhere down the hole, indicating the (weak) surface EM source may not have been intersected. The altered pyritic volcanoclastics at 220m down-hole which were correlated with the surface expression of the EPZ, have no EM response.

It is therefore highly likely that more (pyritic?) mineralization occurs beyond the end of LS 10. The weak EM response does however suggest that the source is unlikely to be massive sulphides over an economic width.

The EM 37/UTEM conductors associated with the EPZ extend south to about 362800N. There is no anomaly where LS 13 was drilled (on geological/geochemical rationale). However further south on lines 362000N, 361600N and 361200N there is

a suggestion of a strong conductor off the ends of these lines (possibly in the adjacent EL). This would occur in or under the mapped Sticht Range conglomerates, or may be due to a major fault separating the western central volcanic sequence from the PreCambrian Tyennan block. This N-S fault is very clear on the Mines Department aeromagnetic data (Fig 17), which also indicates E-W cross-faulting over the northern part of the EL. Further geophysical work (magnetics and TEM) would be required to define this off-line conductor and provide sufficient information to draw further conclusions as to its source.

7.3 Geochemistry

A detailed rock chip geochemical sampling programme was carried out over the EPZ. The purpose of this survey was to test the surface geochemistry associated with anomalies resulting from an EM 37 survey. A total of 67 samples were collected from outcrop occurring on or near the grid lines. Erratic distribution of outcrop is reflected in sample location sites as depicted in Figure 18. Results from this survey are listed in Appendix 4 and displayed as contour diagrams in Figs 19 -27. Significantly anomalous results from this survey occur as spot highs with the exception of results from line 363600N. A distinct zonation occurs (maximum values in ppm in brackets), with Au (.19), Ag (10), Cu (1080), Pb (1520), Zn (770), As (170), Mn (1140) and Fe (9.75%). This zone corresponds with the up-dip projection

of a weak EM 37 conductor on line 363600N at 386340E. A zone of strong chloritic, sericitic, siliceous, pyritic alteration (EPZ) occurs associated with the above geochemical anomalism. Weak geochemical anomalism is associated with a stronger EM 37 anomaly on line 363200N. Results from this survey concur with those achieved from diamond drill hole LS 10 which drill tested parts of the Eastern Pyrite Zone in 1984, with a 23 metre intersection averaging 0.26% Zn, 0.13% Cu and maximum values of .21ppm Au and 5ppm Ag (non-coincident).

Significant spot highs occur on line 362600N. This zone corresponds to the Gold Fields Exploration Pty Ltd's Mt. Selina Anomalous Zone (MSAZ, Fig 3). All of the anomalous samples collected from line 362600N contained significant quartz-chlorite-haematite +feldspar veining, with minor disseminated pyrite as a halo around the veins, within the host rock. This style of veining is common within the Lake Selina licence area and is believed to have been developed during the Devonian, with most vein systems displaying syntectonic growth textures, possibly during the Tabberabberan tectonic stage.

The increase in Fe content from east to west, with the highest values occurring at or near the contact between the Tyndall Group volcanics and the Dora Conglomerate, is evident in hand specimen by an increase in haematitic alteration within the volcanoclastics and lavas of the volcanics.

This is more easily identified in core from DDH LS 10 than from outcrop. Pervasive haematite also occurs throughout the Dora Conglomerate. This increase in haematite indicates an oxidising environment, shallow marine to sub-aerial, existing during the deposition of the Upper Tyndall Group volcanics and Dora Conglomerate.

8.0 CONCLUSIONS

Infill gridding, mapping, geochemistry and drill hole re-logging has better defined the Eastern Pyrite Zone. The mineralization within the EPZ appears to be a structurally controlled remobilised Cambrian sulphide system, being remobilised during or after the Tabberabberan Orogeny. Structural knowledge of the licence area is poor. The alteration/mineralization is confined to zones of intense north-south shearing. The stratigraphy dips vertically to steeply east with a possible east facing. The alteration zoning of the EPZ can be directly compared to the alteration zone associated with the feeder system to the Hellyer Ore body. The Hellyer alteration pipe has a central siliceous core giving way to zones of chlorite, chlorite-carbonate, sericite-chlorite, and sericite-quartz with ubiquitous pyrite throughout. The siliceous black shale horizon within the EPZ may be of similar origin as the siliceous black cap rock seen at the Hellyer ore body. The intense deformation at Lake Selina may have resulted in an elongate north-south smearing out of an ancient VMS system. The lack of structural control over the EPZ doesn't preclude the possibility of the

stratigraphy being overturned and a sulphide ore body buried at depth.

The rock chip geochemistry indicates increased base metal contents on line 363600N, over a broader zone to the north of that drill tested by Gold Fields Exploration Pty Ltd (LS 10).

An EM 37 survey over selected portions of the licence was successful in locating a strong linear sequence of conductors along the western margin of the licence. Modelling of the data suggests the source is possibly related in some way to the glacial sediments, which cover this region to depths of at least 75m. Weak conductors were located within the EPZ. Diamond drill hole LS 10 has not intersected a weak conductor on line 363200N, stopping just short. Another weak conductor occurs on line 363600N, interpreted as being a down dip projection of the anomalous rock chip geochemistry outlined earlier.

9.0 RECOMMENDATIONS

The Eastern Pyrite Zone has not been sufficiently drill tested. A drill hole is recommended to test the coincident geochemical and EM 37 anomaly located on line 363600N. The completion of this hole would require helicopter support, as minimal damage to the environment would be necessary as the location lies within the Southwest Conservation Area.

A second drill hole should be targetted to test the unexplained strong linear EM 37 conductors along the western margin of the licence area.

APPENDIX 1
DRILL LOG LS 10

SKLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT LAKE SELINA HOLE NAME LS 10
LOGGED BY C. CREAUGH TOTAL DEPTH 302.5m

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIA	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM							
17.23	17.23							fine grained, very minor disseminated pyrite throughout.
								<u>58.0 - 98.0m RHYOLITE LAVA</u>
								Medium grained quartz-feldspar phytic chyalitic lava. Purple colour to 66.8m due to intense haematitic alteration. From 66.8m siliceous and sericitic alteration is prominent imparting a pink to pale green colour. Neck foliation at 70.6m. Strongly crystallized from 58.0-61.9m. Total replacement by very fine grained quartz-sericite-haematite-chlorite & pyrite from 65.6-66.2m and 72.9-74.5m. Irregularly orientated quartz-chlorite-haematite & feldspar veins, up to 10m, occur randomly throughout. Quartz phytic content decreases downwards.
								<u>98.0 - 127.2m RHYOLITE VOLCANOCLASTIC</u>
								Fine grained pale green-pink-grey quartz & feldspar phytic rhyolitic volcano-clastic. Coarse layering may represent bedding at 25-30°SEA. Bedding parallel to foliation. Original texture largely replaced by weak to strong silicification and sericitization. Weak to moderate haematite alteration occurs along bedding and cleavage surfaces. Minor specular haematite. Minor narrow lenses (<20um) of medium grained quartz phytic volcano-clastic with diffuse contacts. Strong silicification from 121.9m with veins of quartz-chlorite-haematite & feldspar up to 10m occurring randomly. Minor wispy chlorite fragments, elongate and parallel to foliation. Very minor, very fine grained disseminated pyrite (<0.5%) throughout.
								<u>127.2 - 154.4m RHYOLITE LAVA</u>
								Fine-coarse grained quartz & feldspar phytic pale green chyalitic lava. Quartz phenocrysts various size from 1-6mm, well rounded. Medium grained chlorite laths parallel to foliation at 30°SEA. Chlorite possibly after feldspar. Wispy chlorite parallel to foliation in parts. Groundmass very fine grained, pale green, sericitic with minor chlorite and haematite alteration. Very minor disseminated pyrite throughout. Increased pyrite (1%) accompanied by silicification from 153-154.4m. Base marked by quartz rich zone, probably

ASSAY INFORMATION

508024

SHLMEY SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT <u>LAKE SELINA</u>	HOLE NAME <u>LS 10</u>
LOGGED BY <u>C. CREAGH</u>	TOTAL DEPTH <u>302.5m</u>

DISTANCE FROM COLLAR	TO TOP		TO BOTTOM		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	1	2	3	4							
											an erosional contact.
											<u>159.4 — 169.6m Rhyolitic Volcanoclastic</u>
											Medium to coarse grained quartz rich pale green - dark green chyalitic volcanoclastic. Quartz grains predominantly angular. Very minor chyalitic lithic fragments, up to 3cm, within a fine grained groundmass. Prominent chloritic and sericitic alteration. Weak haematite alteration. Weak foliation at 30° LCA. 10cm wide quartz-chlorite-haematite ± feldspar vein at 159.4m. 30cm quartz-chlorite-haematite ± feldspar vein at base of unit.
											<u>169.6 — 174.7m Rhyolitic Volcanoclastic</u>
											Fine grained quartz phytic pink - pale green chyalitic volcanoclastic. Quartz grains sparse. Strong silicic and haematitic alteration. Very minor disseminated pyrite. Weak chloritic alteration. Abundant narrow (6cm) quartz-chlorite-haematite veins randomly oriented. Crudely bedded base parallel to foliation at 30° LCA.
											<u>174.7 — 193.5m Rhyolitic Volcanoclastic</u>
											Fine to coarse grained quartz rich pale grey - dark green chyalitic volcanoclastic. Quartz grains angular to rounded, from 1-6mm. Feldspar fragments 1-2mm within a fine grained groundmass. Moderate chloritic alteration accompanied by weak silicic, sericitic and haematitic alteration. Narrow zones of intense sericitic and silicic alteration occur. Very minor disseminated pyrite commonly associated with silicification. Foliation 30° LCA. Possible small fragments of chyalitic lava incorporated.
											<u>193.5 — 194.6m Rhyolitic Volcanoclastic</u>
											Fine grained quartz phytic pale grey - green chyalitic volcanoclastic. Occasional narrow lenses of medium grained quartz rich chyalitic volcanoclastics. Predominantly weak to moderate sericitic alteration with wispy chlorite alteration parallel to foliation at 30° LCA. Very minor pyrite associated with silicification and wispy very fine grained pyrite on cleavage surfaces.

ASSAY INFORMATION

0321

508025

SHLNET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT LAKE SELWYN HOLE NAME LS 10
LOGGED BY G. J. CREIGHT TOTAL DEPTH 302.5m

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM							
11.23	14.17							194.6 - 202.5m <u>RYHOLITIC VOLCANOCLASTIC</u> Medium grained quartz rich grey-green chyalitic volcanoclastic. Rounded to angular quartz grains, decreasing in size towards the base within a fine grained groundmass. Weak to moderate sericite-chlorite alteration. Chlorite alteration prominent on cleavage surfaces. Increased siliceous lithic fragments towards base. Very minor fine grained disseminated pyrite. Strong silicification and brecciation from 201.4m with associated weak bromatic alteration, replacing original texture.
								202.5 - 224.4m <u>VOLCANOCLASTIC SANDSTONE</u> Fine to very fine grained green volcanoclastic sandstone. Conformable and diffusely bedded layers of quartz rich sandstone of probable chyalitic source. Quartz fragments generally 1-2mm within coarser units, commonly rounded. Very minor lithic fragments. Weak to moderate sericite, chlorite and siliceous alteration throughout. Chlorite laths, after? Foldgar, parallel to foliation at 30° LCA. Very minor disseminated pyrite throughout, increasing to 2-3% in strongly silicified zones.
								224.4 - 244.9m <u>SHALES</u> Very fine grained siliceous shales. From 224.4 - 231.0m, dark grey colour. From 231.0 - 244.9 shales are gray to light gray with moderate siliceous and sericitic alteration. Upper contact sharp. Lower contact brecciated. 1-2% fine to medium grained disseminated pyrite throughout, predominantly along cleavage planes accompanied by increased silicification. Very minor disseminated chalcocite. Not conductive.
								244.9 - 257.1m <u>CHEST</u> Fine to very fine grained cream to pale green siliceous-sericitic chest. Chest probably derived by intense siliceous and sericitic alteration of a fine grained volcanoclastic sandstone. Zones of more intense alteration are parallel to cleavage at 30° LCA, with accompanying 20% disseminated pyrite. Pyrite occurs on cleavage planes and within irregularly

ASSAY INFORMATION

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SMLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

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CONTINUATION SHEET

PROJECT LAKE SELINA HOLE NAME LS 10
LOGGED BY C. CREAUGH TOTAL DEPTH 302.5m

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM							
1	1.3							oriented fractures. Post deposition deformation structures evident with pyrite grains and masses. Upper contact brecciated over 20cm. Intense brecciation and silicification from 254.3 to 257.1m. Possible fault zones.
								<u>257.1 — 259.35m</u> <u>SHALES</u>
								Fine to very fine grained green siliceous shales. Very minor quartz grains (<3mm). Upper and lower contacts sharp. Moderate to strong sericitic and siliceous alteration with associated wispy and disseminated pyrite (~10%) throughout. Weak chloritic alteration.
								<u>259.35 — 264.3m</u> <u>CHERT</u>
								Fine to very fine grained cream to pale green siliceous chert. Strong siliceous-sericitic-pyritic alteration of a fine grained volcanoclastic sandstone. up to 25% disseminated pyrite, commonly forming a lamination parallel to foliation at 30° LCA. Lower contact brecciated.
								<u>264.3 — 267.1m</u> <u>RYHOLITIC VOLCANOCLASTIC</u>
								Fine to medium grained quartz phytic pale green rhyolitic volcanoclastic. Strong sericitic alteration accompanied by weak to moderate siliceous-chloritic-pyritic alteration. 5% disseminated pyrite throughout.
								<u>267.1 — 279.8m</u> <u>CHERT</u>
								Fine to very fine grained cream siliceous chert. Strong siliceous-sericitic-pyritic alteration of a volcanoclastic sandstone. 5% very fine grained disseminated and coarse blocky pyrite. Foliation at 40° LCA. Fine anastomosing fractures infilled by chlorite & pyrite.
								<u>279.8 — 298.8m</u> <u>RYHOLITIC VOLCANOCLASTIC</u>
								Fine grained quartz phytic green rhyolitic volcanoclastic. Moderate sericitic-siliceous-chloritic-pyritic alteration. Chlorite occurs as discrete laths, possibly after feldspar or lithic. Foliation 30-40° LCA. 2-5% disseminated.

ASSAY INFORMATION

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SHIMMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	LARK SELINA	HOLE NAME	LS 10
LOGGED BY	C. CREGAN	TOTAL DEPTH	302.5

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM							
1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9
7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9
8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9
9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9
10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9
11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9
12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9
13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9
14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9
15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9
16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9
17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9
18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9
19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9
20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9
21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9
22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9
23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9
24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9
25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9
26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9
27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9
28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9
29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9
30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9
31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9
32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9
33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9
34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9
35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9
36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9
37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9
38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9
39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9
40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9
41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9
42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9
43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9
44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9
45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9
46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9
47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9
48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9
49.1	49.2	49.3	49.4	49.5	49.6	49.7	49.8	49.9
50.1	50.2	50.3	50.4	50.5	50.6	50.7	50.8	50.9
51.1	51.2	51.3	51.4	51.5	51.6	51.7	51.8	51.9
52.1	52.2	52.3	52.4	52.5	52.6	52.7	52.8	52.9
53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	53.9
54.1	54.2	54.3	54.4	54.5	54.6	54.7	54.8	54.9
55.1	55.2	55.3	55.4	55.5	55.6	55.7	55.8	55.9
56.1	56.2	56.3	56.4	56.5	56.6	56.7	56.8	56.9
57.1	57.2	57.3	57.4	57.5	57.6	57.7	57.8	57.9
58.1	58.2	58.3	58.4	58.5	58.6	58.7	58.8	58.9
59.1	59.2	59.3	59.4	59.5	59.6	59.7	59.8	59.9
60.1	60.2	60.3	60.4	60.5	60.6	60.7	60.8	60.9
61.1	61.2	61.3	61.4	61.5	61.6	61.7	61.8	61.9
62.1	62.2	62.3	62.4	62.5	62.6	62.7	62.8	62.9
63.1	63.2	63.3	63.4	63.5	63.6	63.7	63.8	63.9
64.1	64.2	64.3	64.4	64.5	64.6	64.7	64.8	64.9
65.1	65.2	65.3	65.4	65.5	65.6	65.7	65.8	65.9
66.1	66.2	66.3	66.4	66.5	66.6	66.7	66.8	66.9
67.1	67.2	67.3	67.4	67.5	67.6	67.7	67.8	67.9
68.1	68.2	68.3	68.4	68.5	68.6	68.7	68.8	68.9
69.1	69.2	69.3	69.4	69.5	69.6	69.7	69.8	69.9
70.1	70.2	70.3	70.4	70.5	70.6	70.7	70.8	70.9
71.1	71.2	71.3	71.4	71.5	71.6	71.7	71.8	71.9
72.1	72.2	72.3	72.4	72.5	72.6	72.7	72.8	72.9
73.1	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9
74.1	74.2	74.3	74.4	74.5	74.6	74.7	74.8	74.9
75.1	75.2	75.3	75.4	75.5	75.6	75.7	75.8	75.9
76.1	76.2	76.3	76.4	76.5	76.6	76.7	76.8	76.9
77.1	77.2	77.3	77.4	77.5	77.6	77.7	77.8	77.9
78.1	78.2	78.3	78.4	78.5	78.6	78.7	78.8	78.9
79.1	79.2	79.3	79.4	79.5	79.6	79.7	79.8	79.9
80.1	80.2	80.3	80.4	80.5	80.6	80.7	80.8	80.9
81.1	81.2	81.3	81.4	81.5	81.6	81.7	81.8	81.9
82.1	82.2	82.3	82.4	82.5	82.6	82.7	82.8	82.9
83.1	83.2	83.3	83.4	83.5	83.6	83.7	83.8	83.9
84.1	84.2	84.3	84.4	84.5	84.6	84.7	84.8	84.9
85.1	85.2	85.3	85.4	85.5	85.6	85.7	85.8	85.9
86.1	86.2	86.3	86.4	86.5	86.6	86.7	86.8	86.9
87.1	87.2	87.3	87.4	87.5	87.6	87.7	87.8	87.9
88.1	88.2	88.3	88.4	88.5	88.6	88.7	88.8	88.9
89.1	89.2	89.3	89.4	89.5	89.6	89.7	89.8	89.9
90.1	90.2	90.3	90.4	90.5	90.6	90.7	90.8	90.9
91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9
92.1	92.2	92.3	92.4	92.5	92.6	92.7	92.8	92.9
93.1	93.2	93.3	93.4	93.5	93.6	93.7	93.8	93.9
94.1	94.2	94.3	94.4	94.5	94.6	94.7	94.8	94.9
95.1	95.2	95.3	95.4	95.5	95.6	95.7	95.8	95.9
96.1	96.2	96.3	96.4	96.5	96.6	96.7	96.8	96.9
97.1	97.2	97.3	97.4	97.5	97.6	97.7	97.8	97.9
98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.8	98.9
99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9
100.1	100.2	100.3	100.4	100.5	100.6	100.7	100.8	100.9

pyrite throughout. 15cm wide zone of intense
brecciation infilled by quartz at 296.9m.

298.8 - 302.5m CHERT

Fine to very fine grained siliceous-sericitic
pale green-pink chert. Strong siliceous-sericitic
- pyrite alteration of a fine grained volcanic-
clastic sandstone. 2-5% disseminated and
clabby pyrite throughout. Wavy chlorite parallel
to foliation at 30-40° SCA.

E.O.H.

ASSAY INFORMATION

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APPENDIX 2
DRILL LOG LS 13

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

HEADING SHEET

COLLAR INFORMATION	DATA TYPE	COLLAR CO-ORDINATES						COLLAR SURVEY			HOLE NAME	TOTAL DEPTH	HOLE TYPE	DESC CODE	REMARKS
		EASTING	NORTHING	ELEVATION	AZIMUTH	DIP									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		386	498	1.7	53	62	3	82			LS	13	502.6		

PROJECT	LAKE SELINA	HOLE NAME	LS 13		
LOGGED BY	C. CREAGH	TOTAL DEPTH	502.6m		
CONTRACTOR		RIG			
CREW		DATE STARTED	FINISHED		
CORE STORAGE		SAMPLE STORAGE			
NO OF TRAYS	LOCATION				
M&P LAB	ASSAY LAB				
DESC.	SIZE	FROM	TO	TOTAL	REMARKS
NON CORE					
CORE	NO	0	6		
	NO	6	45		
	NO	45	502.6		
CASING					
CASING LEFT					(S) steel (P) plastic

SURVEY INFORMATION	DISTANCE FROM COLLAR		AZIMUTH	DIP	REMARKS
	TO TOP	TO BOTTOM			
1	2	3	4	5	6
			283	50	

PLOTTING KEY							
SYMBOL		INTERVAL		SYMBOL		INTERVAL	
DEL CODE	D/LOG	FROM	TO	DEL CODE	D/LOG	FROM	TO

ASSAY INFORMATION	DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG
	TO TOP	TO BOTTOM						
1	2	3	4	5	6	7	8	9

0-19.2m BASALTIC - ANHYDRAITIC EPICLASTICS

Fine to medium grained quartz - Feldspar physisic pale green rhyolitic to rhyodacitic epiclastic. Minor clasts of very fine grained shales (sericitic), feldspar rich dacitic fragments and very fine grained chloritic siltstone fragments. Numerous lenses of feldspar rich dacitic volcanoclastics occur sporadically. Bedding at 35° LCA, parallel to moderate foliation. Quartz phenocrysts deformed. Weak to moderate sericitic - chloritic alteration and very minor very fine grained disseminated pyrite throughout.

19.2 - 37.2m ANHYDRAITIC - ANHYDRAITIC VOLCANOCLASTICS

Medium grained quartz - Feldspar physisic green rhyolitic - rhyodacitic volcanoclastics. Deformed angular shaped quartz phenocrysts aligned parallel to moderate foliation at 35° LCA. Moderate sericitic-chloritic alteration throughout. Weak siliceous alteration in patches. Very minor very fine grained disseminated pyrite.

37.2 - 115.4m ANHYDRAITIC - ANHYDRAITIC VOLCANOCLASTICS

DRILLING OBJECTIVES / SUMMARY Originally drilled and logged by Gold Fields Exploration Pty Ltd.

REPORT REFERENCE : _____

SHEET 1 OF 4

508030

SHLNET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT LAKE SELINA
LOGGED BY C. CREAFF

HOLE NAME LS 13
TOTAL DEPTH 502.6m

DISTANCE FROM COLLAR	TO TOP		TO BOTTOM		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
											<p>Fine to medium grained quartz - feldspar phyric grey/green chyalitic - chydacitic volcanic- clastics. Very minor fragments of angular chert throughout. Weakly foliated at 35-40° CCA. Predominantly weak to moderate chloritic alteration with minor patches of sericitic and siliceous alteration. Strongly weathered haematite/limonite zone occurs from 81.3 - 91.4m. Strong quartz- chlorite-haematite alteration and veining (<10µm) from 89.3 - 90.3m. Upper region of altered zone wuggy.</p> <p>115.4 - 232.9m RHYOLITE - ANHYDRAITIC EPICLASTICS</p> <p>Crystal rich medium to coarse grained quartz- feldspar phyric pale green - grey chyalitic - chydacitic epiclastics. Narrow lenses (1-2cm) of fine grained siltstones interbedded at 30-35° CCA. Numerous clasts of angular siltstone, shales and siliceous chert increas- ing in content in part to 8cm lenses of conglomerate. Foliation weak and parallel to bedding. Waxy chlorite parallel to foliation throughout (possible pumice fragments) mostly replaced by sericite. Weak to moderate chloritic - sericitic alteration throughout.</p> <p>232.9 - 237.65m PEBBLY EPICLASTICS</p> <p>Grey-green pebbly epiclastic. Angular to sub- rounded fragments of very fine grained chert, siltstone, shale and felsic volcanics within a predominantly felsic volcanic matrix. Matrix supported. Occasional narrow sandstone lenses at 35° CCA. Matrix quartz - feldspar crystal rich. Weak sericite - chlorite alteration throughout. Upper and lower contacts diffuse.</p> <p>237.65 - 266.9m RHYOLITE - ANHYDRAITIC EPICLASTICS</p> <p>Medium to coarse grained quartz - feldspar rich pale green to grey chyalitic - chydacitic epiclastics. Numerous small angular clasts of siltstones, shales and siliceous chert. Weak foliation weak sericite - chlorite alteration throughout.</p> <p>266.9 - 324.8m RHYOLITE - ANHYDRAITIC VOLCANOCLASTIC</p> <p>Pale green - grey fine to medium grained quartz - feldspar phyric chyalitic - chydacitic</p>

ASSAY INFORMATION

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SHLNET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT LAKE SELINA	HOLE NAME LS 13
LOGGED BY C. CREAGH	TOTAL DEPTH 302.6m

DISTANCE FROM COLLAR	TO TOP		TO BOTTOM		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIA	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	1	2	3	4							
11	12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33	34
35	36	37	38	39	40	41	42	43	44	45	46
47	48	49	50	51	52	53	54	55	56	57	58
59	60	61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80	81	82
83	84	85	86	87	88	89	90	91	92	93	94
95	96	97	98	99	100	101	102	103	104	105	106
107	108	109	110	111	112	113	114	115	116	117	118
119	120	121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140	141	142
143	144	145	146	147	148	149	150	151	152	153	154
155	156	157	158	159	160	161	162	163	164	165	166
167	168	169	170	171	172	173	174	175	176	177	178
179	180	181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200	201	202
203	204	205	206	207	208	209	210	211	212	213	214
215	216	217	218	219	220	221	222	223	224	225	226
227	228	229	230	231	232	233	234	235	236	237	238
239	240	241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260	261	262
263	264	265	266	267	268	269	270	271	272	273	274
275	276	277	278	279	280	281	282	283	284	285	286
287	288	289	290	291	292	293	294	295	296	297	298
299	300	301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320	321	322
323	324	325	326	327	328	329	330	331	332	333	334
335	336	337	338	339	340	341	342	343	344	345	346
347	348	349	350	351	352	353	354	355	356	357	358
359	360	361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380	381	382
383	384	385	386	387	388	389	390	391	392	393	394
395	396	397	398	399	400	401	402	403	404	405	406
407	408	409	410	411	412	413	414	415	416	417	418
419	420	421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440	441	442
443	444	445	446	447	448	449	450	451	452	453	454
455	456	457	458	459	460	461	462	463	464	465	466
467	468	469	470	471	472	473	474	475	476	477	478
479	480	481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500	501	502
503	504	505	506	507	508	509	510	511	512	513	514
515	516	517	518	519	520	521	522	523	524	525	526
527	528	529	530	531	532	533	534	535	536	537	538
539	540	541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560	561	562
563	564	565	566	567	568	569	570	571	572	573	574
575	576	577	578	579	580	581	582	583	584	585	586
587	588	589	590	591	592	593	594	595	596	597	598
599	600	601	602	603	604	605	606	607	608	609	610
611	612	613	614	615	616	617	618	619	620	621	622
623	624	625	626	627	628	629	630	631	632	633	634
635	636	637	638	639	640	641	642	643	644	645	646
647	648	649	650	651	652	653	654	655	656	657	658
659	660	661	662	663	664	665	666	667	668	669	670
671	672	673	674	675	676	677	678	679	680	681	682
683	684	685	686	687	688	689	690	691	692	693	694
695	696	697	698	699	700	701	702	703	704	705	706
707	708	709	710	711	712	713	714	715	716	717	718
719	720	721	722	723	724	725	726	727	728	729	730
731	732	733	734	735	736	737	738	739	740	741	742
743	744	745	746	747	748	749	750	751	752	753	754
755	756	757	758	759	760	761	762	763	764	765	766
767	768	769	770	771	772	773	774	775	776	777	778
779	780	781	782	783	784	785	786	787	788	789	790
791	792	793	794	795	796	797	798	799	800	801	802
803	804	805	806	807	808	809	810	811	812	813	814
815	816	817	818	819	820	821	822	823	824	825	826
827	828	829	830	831	832	833	834	835	836	837	838
839	840	841	842	843	844	845	846	847	848	849	850
851	852	853	854	855	856	857	858	859	860	861	862
863	864	865	866	867	868	869	870	871	872	873	874
875	876	877	878	879	880	881	882	883	884	885	886
887	888	889	890	891	892	893	894	895	896	897	898
899	900	901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920	921	922
923	924	925	926	927	928	929	930	931	932	933	934
935	936	937	938	939	940	941	942	943	944	945	946
947	948	949	950	951	952	953	954	955	956	957	958
959	960	961	962	963	964	965	966	967	968	969	970
971	972	973	974	975	976	977	978	979	980	981	982
983	984	985	986	987	988	989	990	991	992	993	994
995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006
1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018
1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030
1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042
1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054
1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066
1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078
1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090
1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102
1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114
1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126
1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138
1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150
1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162
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1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186
1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198
1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210
1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222
1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234
1235	1236	1237	1238	1239	124						

APPENDIX 3
EM 37 SURVEY PROFILES

VERTICAL COMPONENT. B (Z)

EM-37

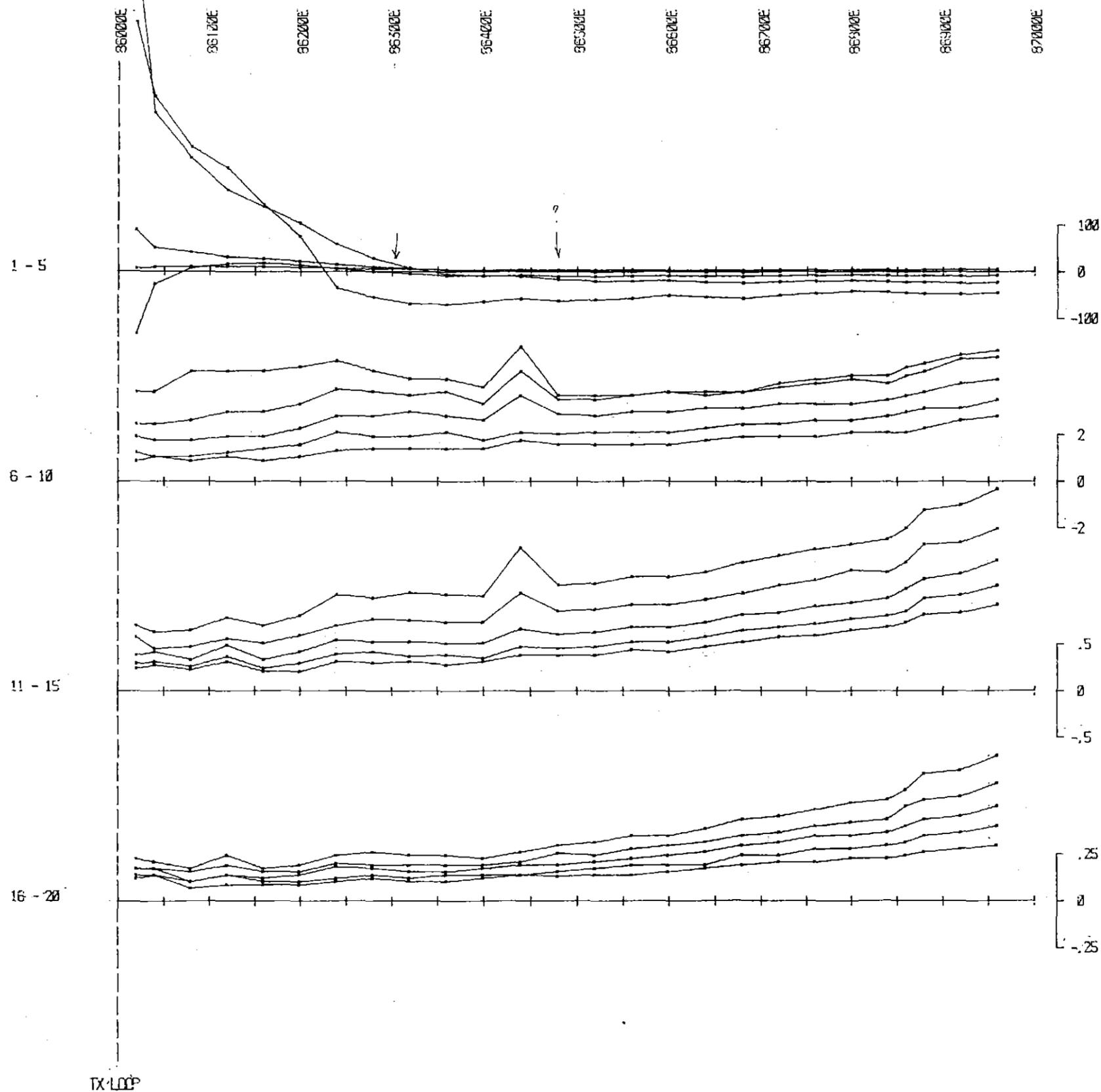
FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

nanovolts per amp metre squared

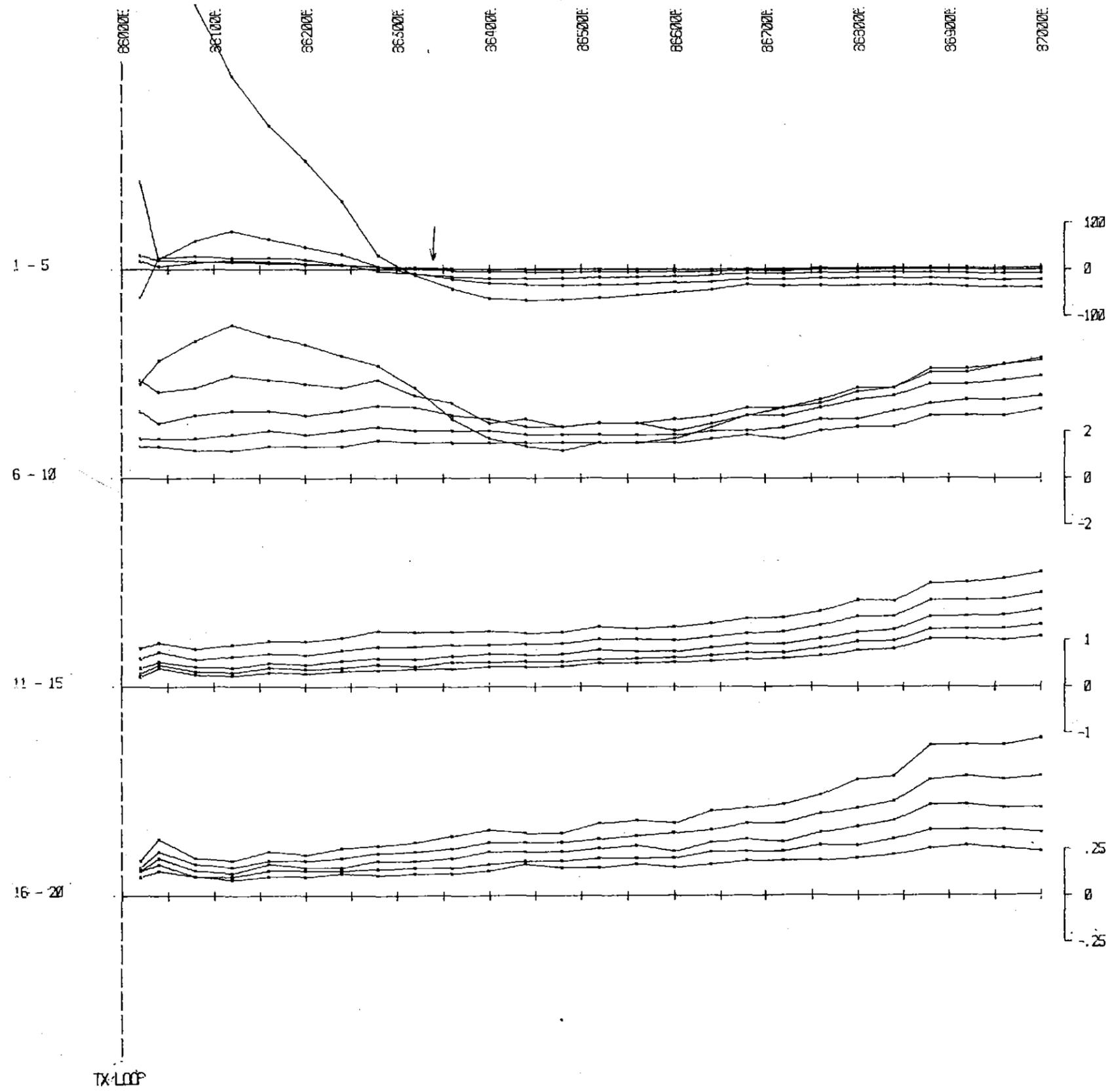


TX LOOP SIDES : 62800N 85200E
 : 64000N 86000E
 TX LOOP SIZE : 1200m X 800m
 TX TURN OFF TIME : 300 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 3.60 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMPF
 DATE : 02/03/1989

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-108

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : 64000N Z
 TX LOOP : 2

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

nanoVolts per amp metre squared

TX LOOP SIDES : 82800N 85200E
 : 84000N 86000E
 TX LOOP SIZE : 1200m X 800 m
 TX TURN OFF TIME : 310 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 8.90 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMPF
 DATE : 01/03/1989

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-109

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : ~~63200N~~ 63600N Z
 TX LOOP : 2

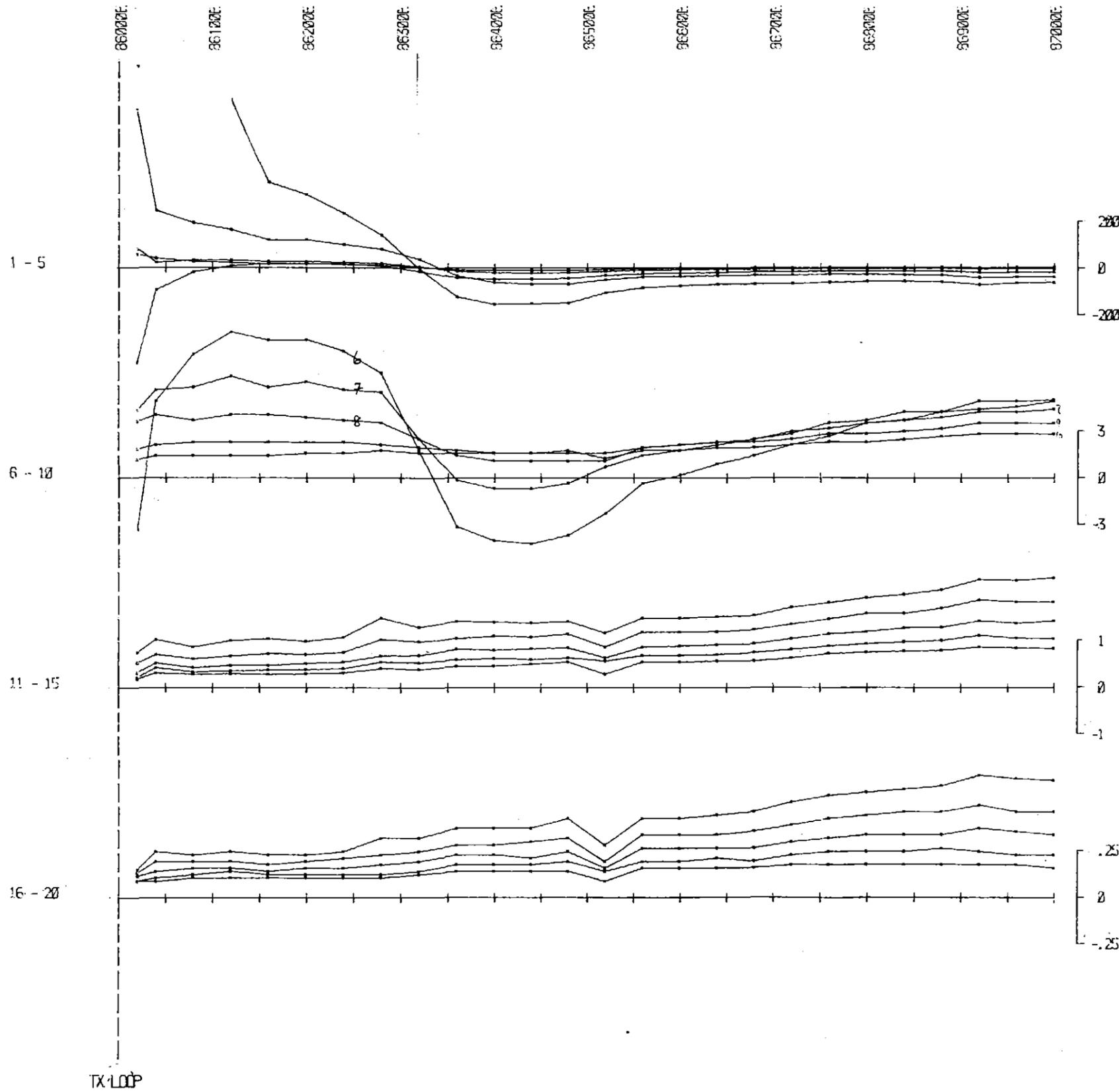
VERTICAL COMPONENT B (Z)

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)



nanovolts per amp metre squared

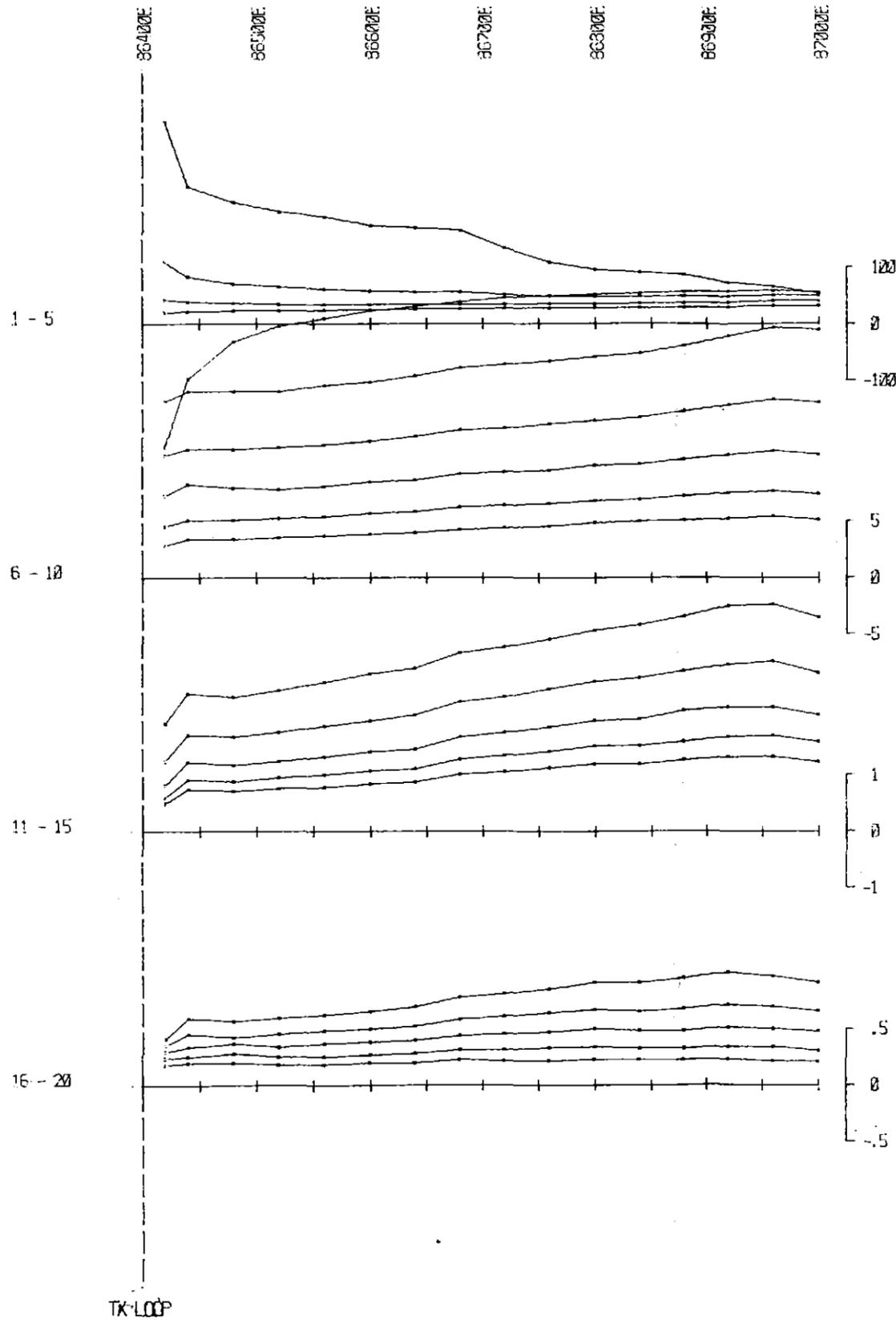
5 cm

TX LOOP SIDES : 62800N 85200E
 : 64000N 86000E
 TX LOOP SIZE : 1200m X 800 m
 TX TURN OFF TIME : 290 microseconds
 FIRST GATE TIME : 88.5 microseconds
 CURRENT : 8.50 amps
 FREQUENCY : 25 Hz
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMPF
 DATE : 03/03/1999

 SURVEYED AND COMPILED BY : GEOTREX PTY. LTD. PROJECT NO. : 4-109

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : 63200N Z
 TX LOOP : 2

VERTICAL COMPONENT. \dot{B}_z (Z)

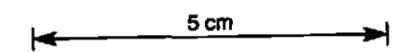


EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)



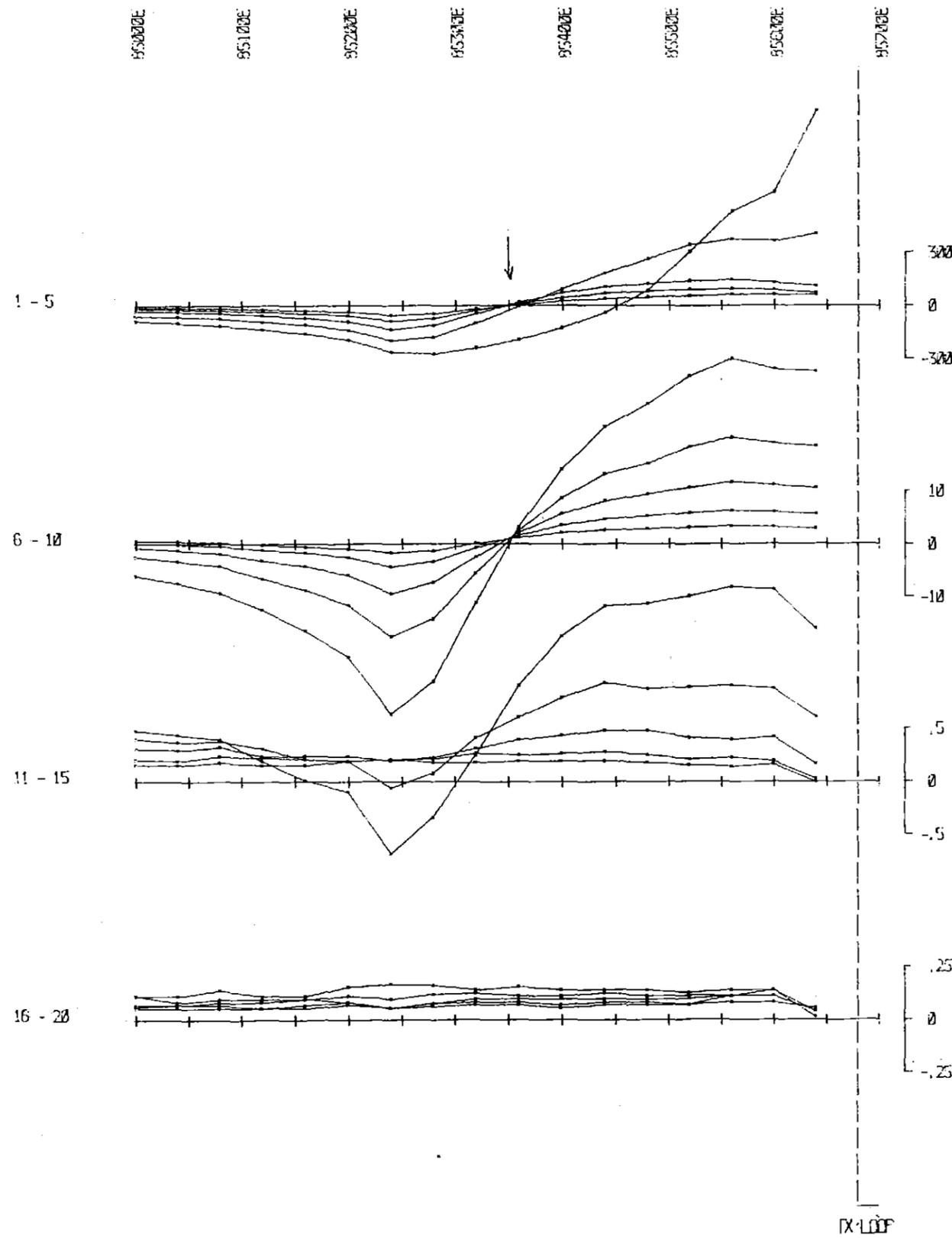
nanovolts per amp metre squared

TX LOOP SIDES : 61200N 85600E
 : 62000N 86400E
 TX LOOP SIZE : 800 m X 800 m
 TX TURN OFF TIME : 300 microseconds.
 FIRST GATE TIME : 99.5 microseconds.
 CURRENT : 10.6 amp
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMPF
 DATE : 05/03/1993

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-109

CLIENT : BILLITON AUSTRALIA.
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : 62000N Z
 TX LOOP : 3

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

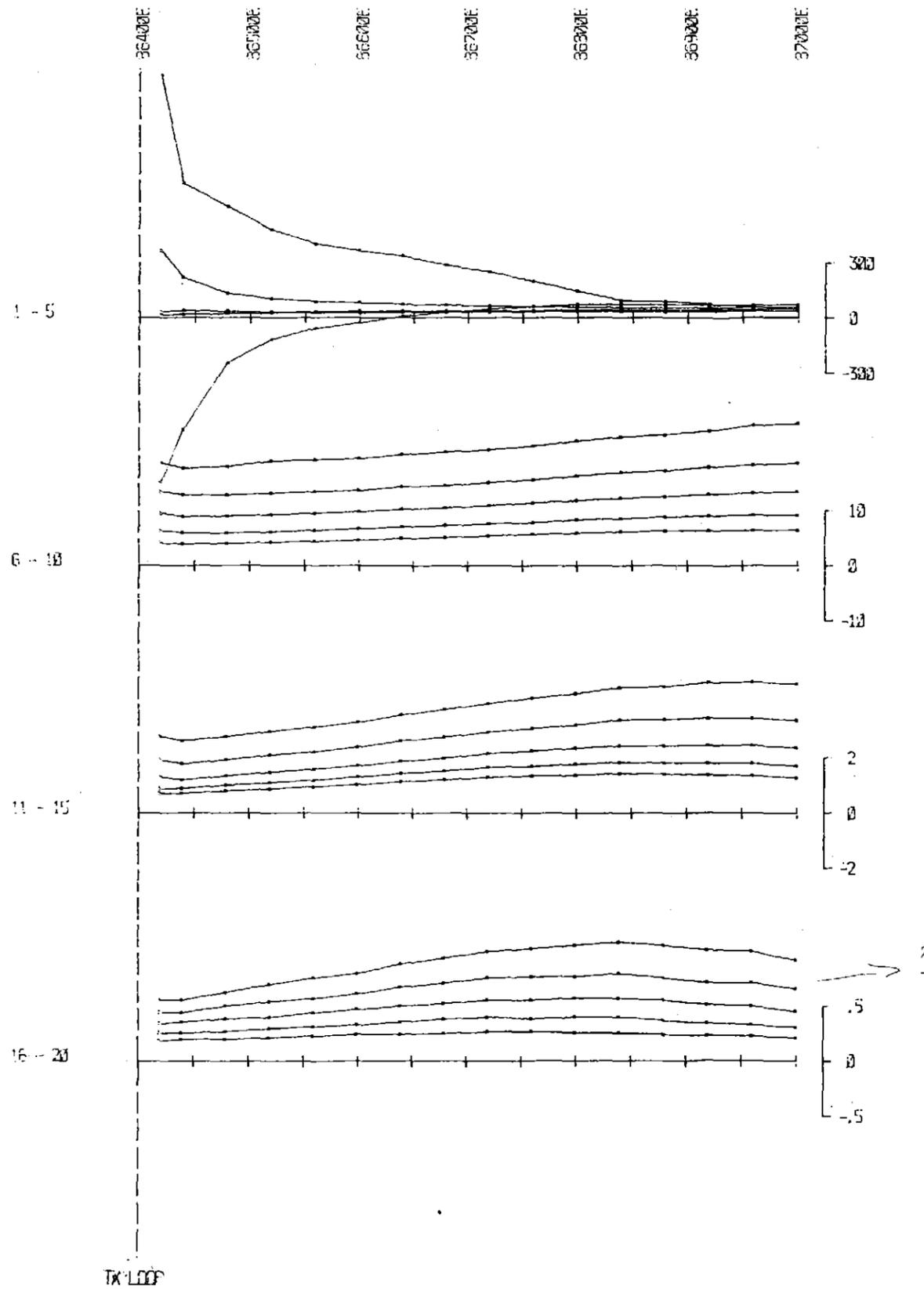
5 cm

TX LOOP SIDES : 61200N 95600E
: 62000N 96400E
TX LOOP SIZE : 800 m X 800 m
TX TURN OFF TIME : 296 microseconds.
FIRST GATE TIME : 93.5 microseconds.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMPF
DATE : 06/03/1999

	SURVEYED AND COMPILED BY :	PROJECT NO. :
	GEOTREX PTY. LTD.	4-103

CLIENT : BILLITON AUSTRALIA.
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 62000N Z
TX LOOP : 3

VERTICAL COMPONENT. B (Z)



EM-37

FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

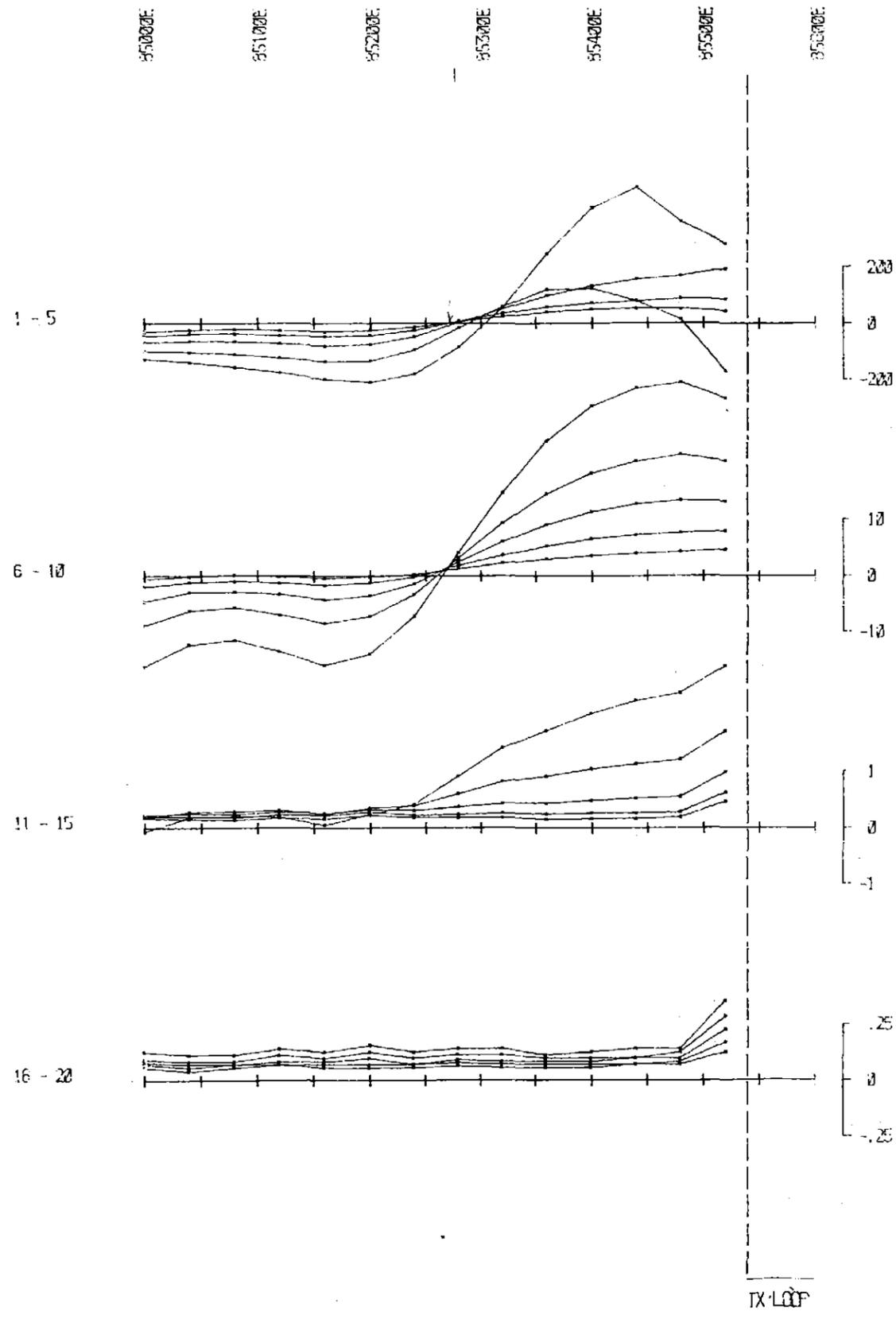
nanovolts per amp meter measured

TX LOOP SIDES : 61200N 95800E
 : 62000N 96400E
TX LOOP SIZE : 900 m X 900 m
TX TURN OFF TIME : 300 microseconds.
FIRST GATE TIME : 99.5 microseconds.
CURRENT : 10.6 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMPF
DATE : 05/03/1999

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-109

CLIENT : BILLITON AUSTRALIA.
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 61600N 2
TX LOOP : 3

VERTICAL COMPONENT \dot{B} (Z)



EM-37

FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

nanovolts per amp metre squared

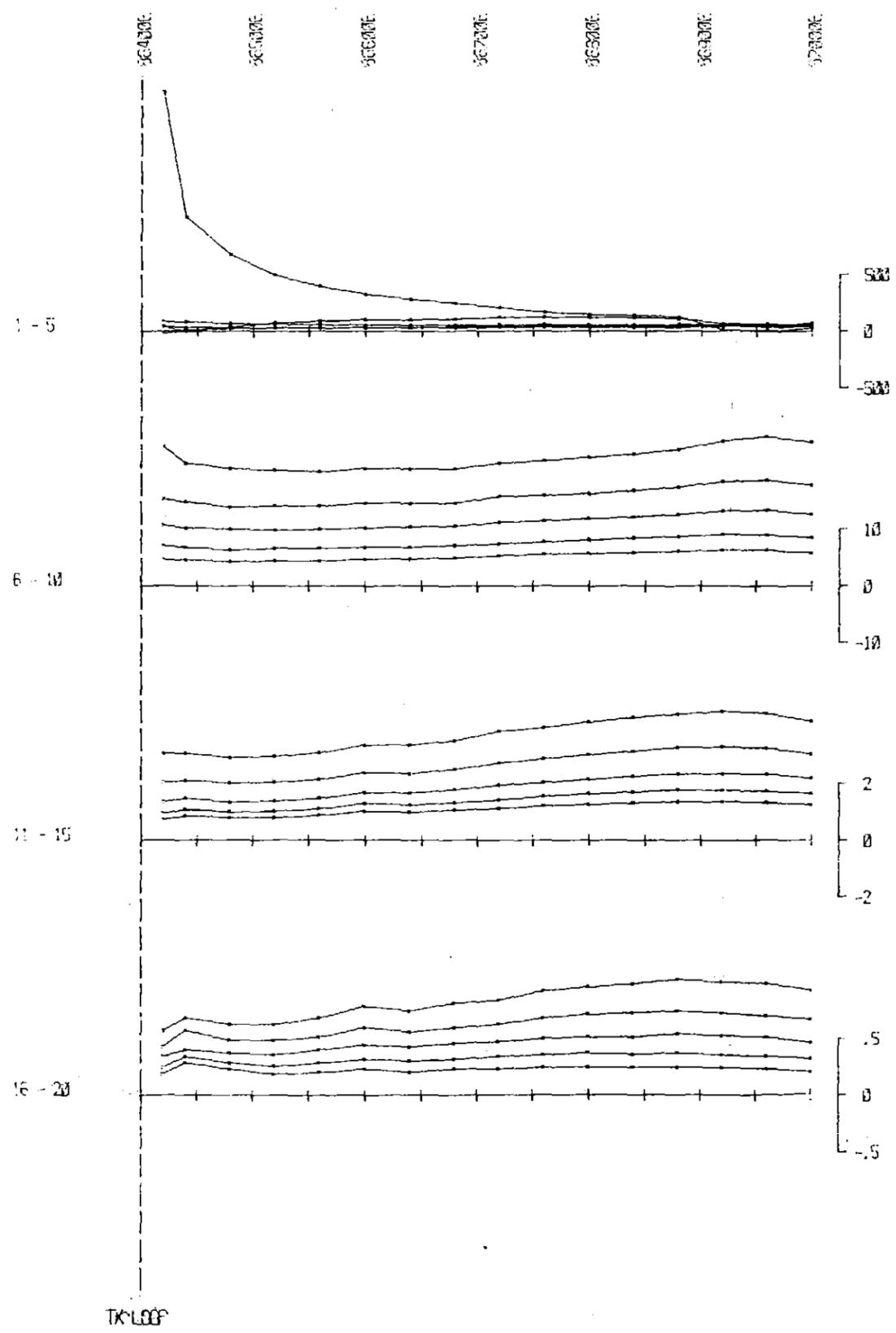
5 cm

TX LOOP SIDES : 61200N 95540E
 : 62800N 96400E
 TX LOOP SIZE : 900 m X 900 m
 TX TURN OFF TIME : 296 microseconds
 FIRST GATE TIME : 93.5 microseconds
 CURRENT : 10.6 amps
 FREQUENCY : 25 Hz
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMPF
 DATE : 06/03/1999

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-109

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : 61600N Z
 TX LOOP : 3

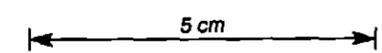
VERTICAL COMPONENT \dot{B}_z



nanovolts per amp metre squared

EM-37
FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

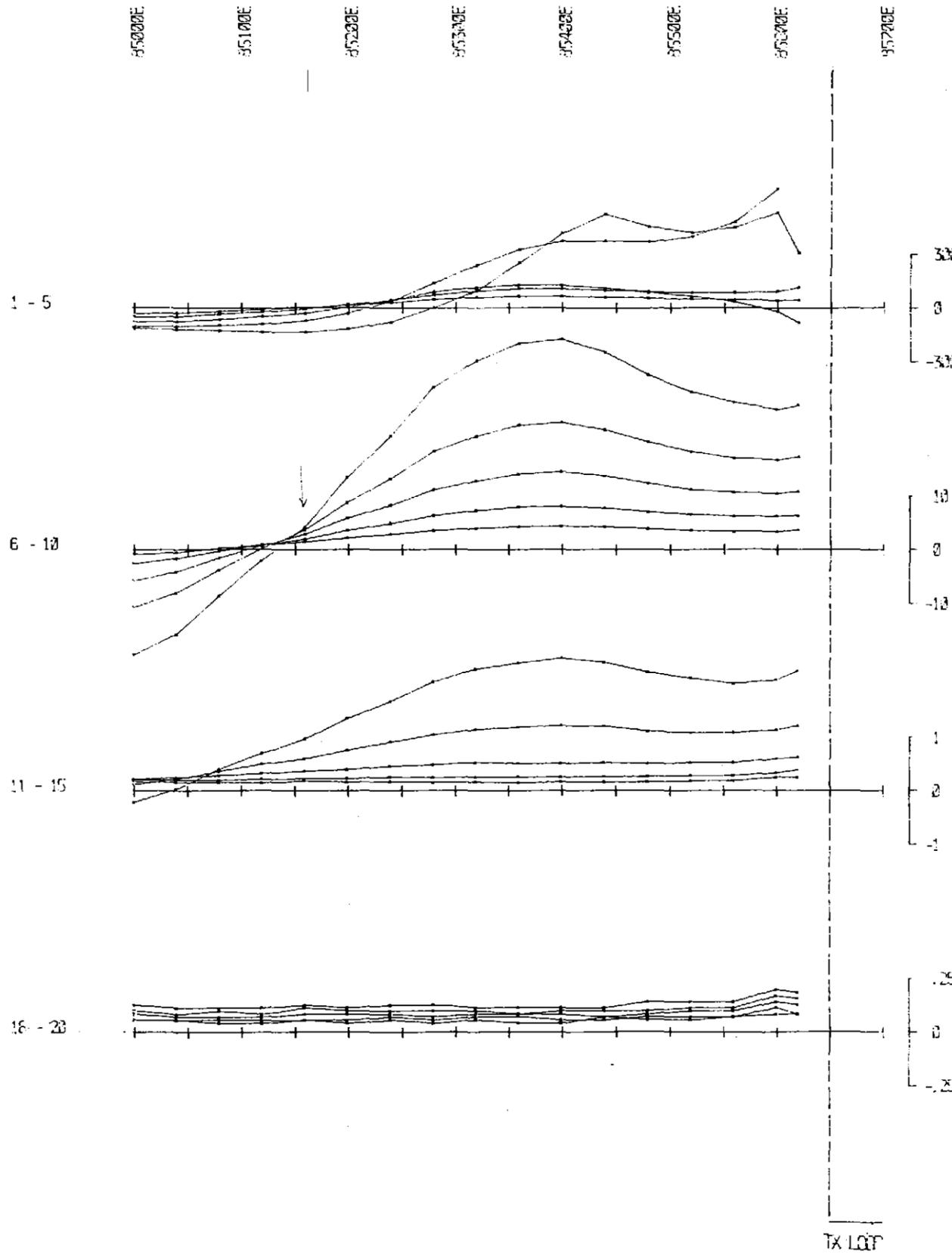


TX LOOP SIDES : 61200N 85600E
 : 62000N 86400E
TX LOOP SIZE : 900 m X 900 m
TX TURN OFF TIME : 300 microseconds.
FIRST GATE TIME : 98.5 microseconds.
CURRENT : 10.6 amp.
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : GMPF
DATE : 05/03/1999

G E S	SURVEYED AND COMPILED BY	PROJECT NO.
	GESTERREX PTY. LTD.	4-109

CLIENT : MELLITON AUSTRALIA.
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 61200N Z
TX LOOP : 3

VERTICAL COMPONENT \dot{B} (Z)



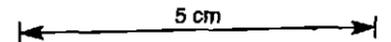
MICROVOLTS PER AMPERE SQUARED

508043

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

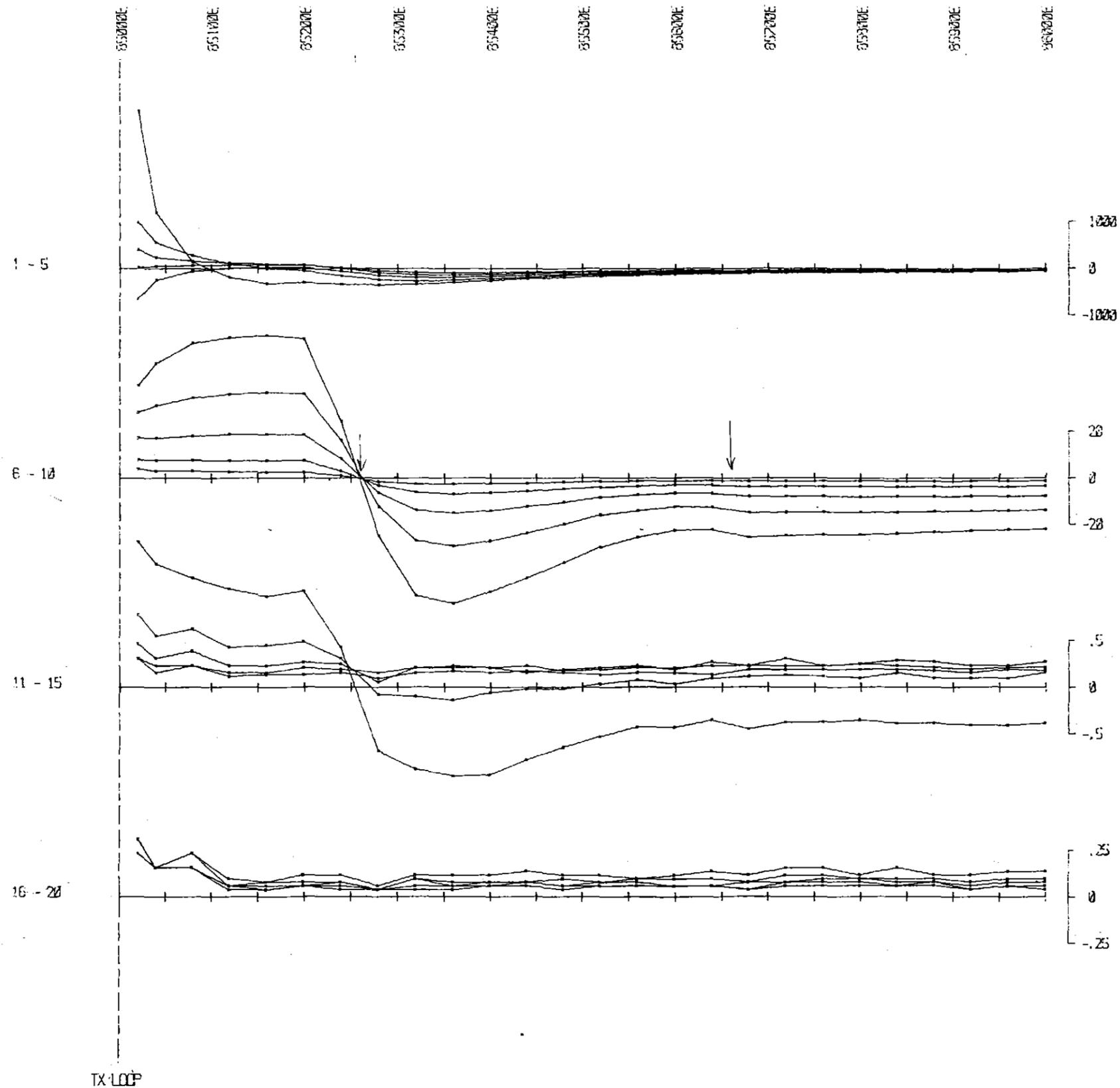


TX LOOP SIDES : 61200N 95800E
 : 62000N 96400E
TX LOOP SIZE : 900 m X 900 m
TX TURN OFF TIME : 200 microseconds
FIRST GATE TIME : 93.5 microseconds
CURRENT : 10.6 amps
FREQUENCY : 25 Hz
INTEGRATION TIME : 1024 cycles
SYNCH MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMPF
DATE : 06/03/1990

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	A-105

CLIENT : BILLITON AUSTRALIA
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 61200N 2
TX LOOP : 3

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

5 cm

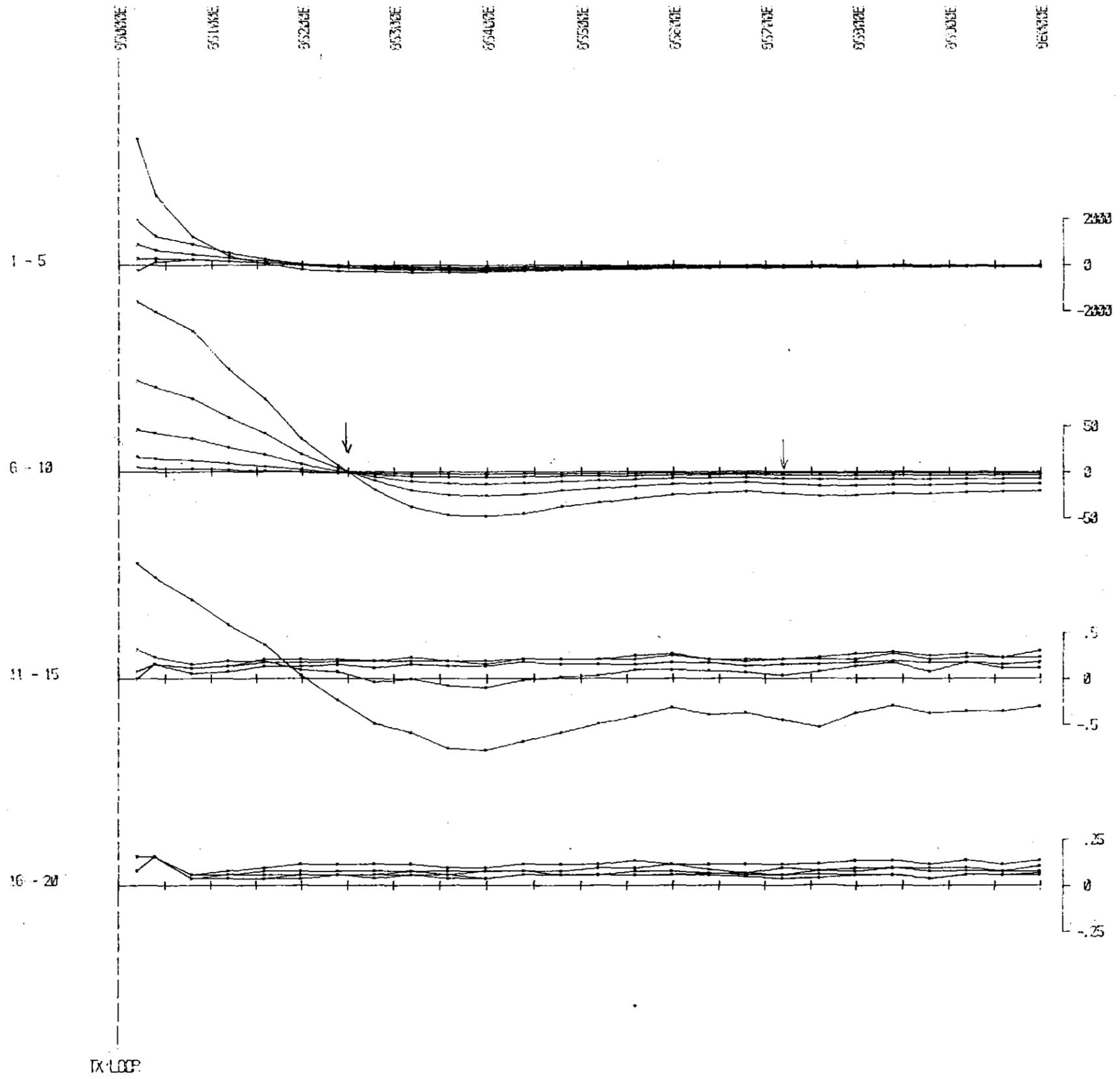
TX LOOP SIDES : 59200N 84400E
 : 60800N 85000E
 TX LOOP SIZE : 1600m X 600m
 TX TURN OFF TIME : 320 microseconds.
 FIRST GATE TIME : 88.5 microseconds.
 CURRENT : 2.70 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMGG
 DATE : 11/03/1999

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-108

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBURY
 LINE : 60800N Z
 TX LOOP : 1

5004

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

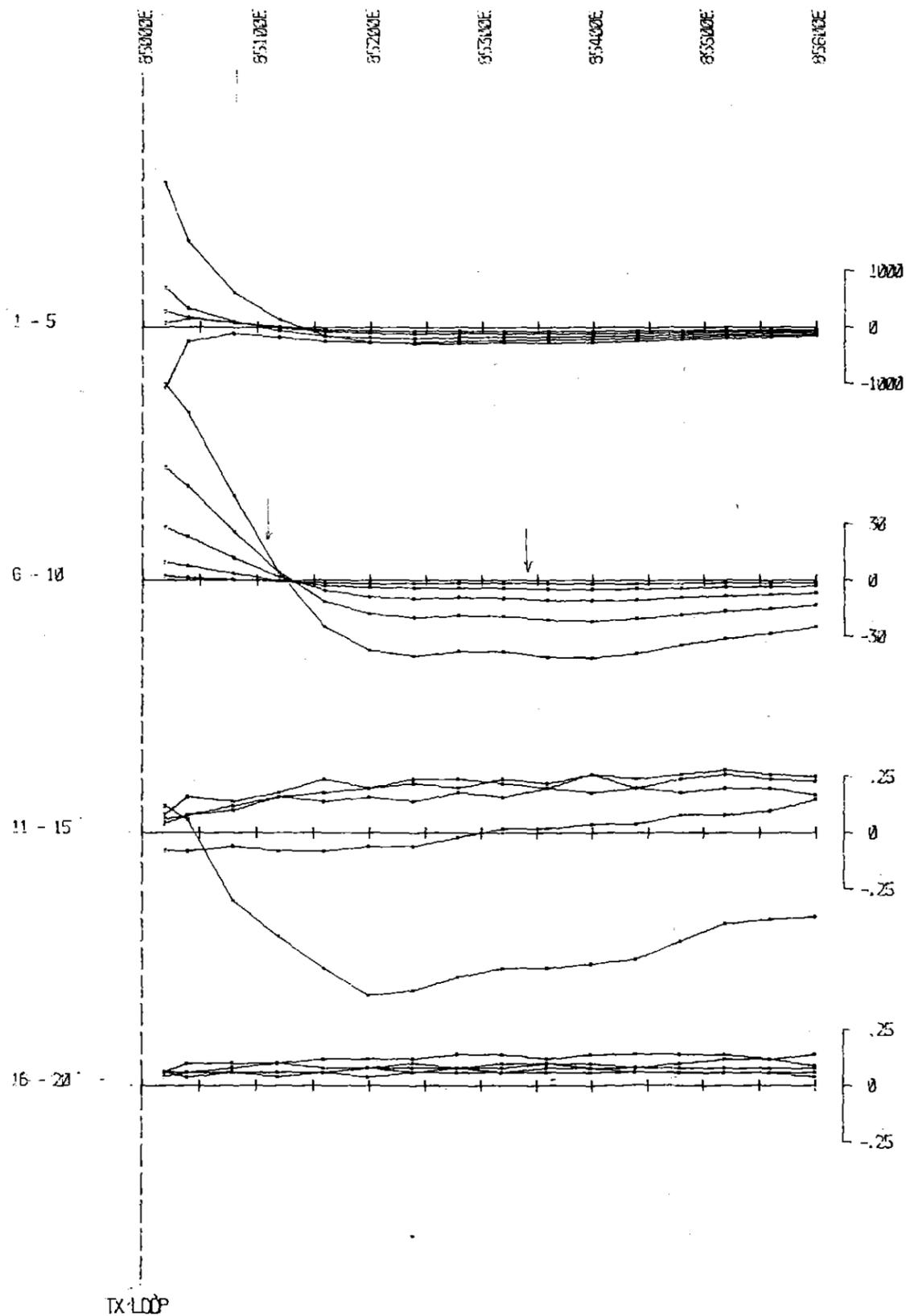
5 cm

TX LOOP SIDES : 95200N 94400E
 : 95900N 95000E
 TX LOOP SIZE : 1600m X 600 m
 TX TURN OFF TIME : 320 microseconds.
 FIRST GATE TIME : 93.5 microseconds.
 CURRENT : 7.70 amps
 FREQUENCY : 25 Hz.
 INTEGRATION TIME : 1024 cycles
 SYNC MODE : CRYSTAL
 HORIZONTAL SCALE : 1:5000
 SURVEYED BY : SMBS
 DATE : 11/03/1989

 SURVEYED AND COMPILED BY : GEOTREX PTY. LTD. PROJECT NO. : 2-109

CLIENT : BILLITON AUSTRALIA
 PROJECT : LAKE SELINA
 AREA : ROSEBERRY
 LINE : 94400N Z
 TX LOOP : 1

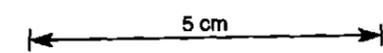
VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



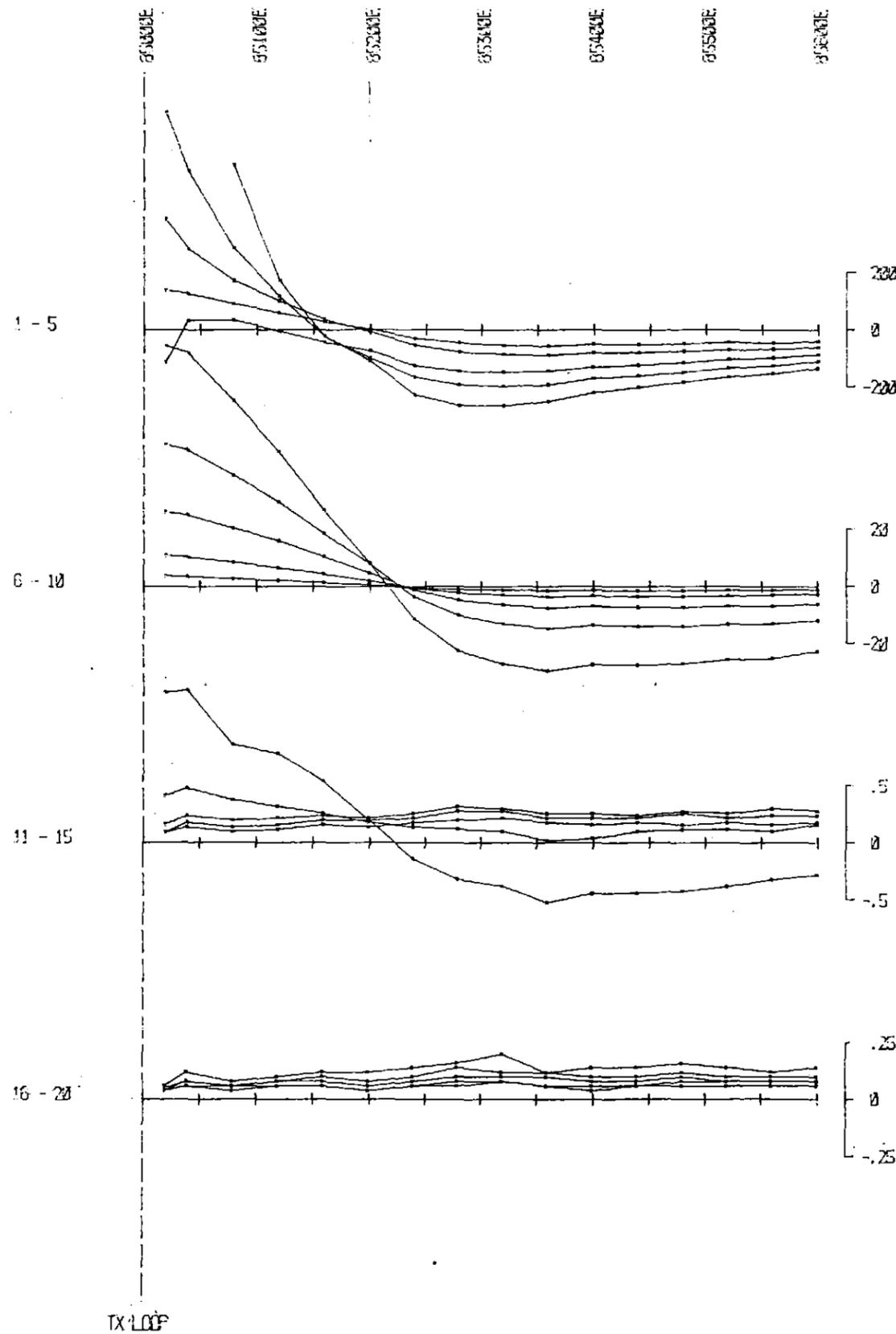
nanovolts per amp metre squared

TX LOOP SIDES : 59200N 84400E
 : 60800N 85000E
TX LOOP SIZE : 1600m X 600 m
TX TURN OFF TIME : 312 microseconds
FIRST GATE TIME : 88.5 microseconds
CURRENT : 7.50 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMBG
DATE : 09/03/1989

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-100

CLIENT : BILLITON AUSTRALIA
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 6000N Z
TX LOOP : 1

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

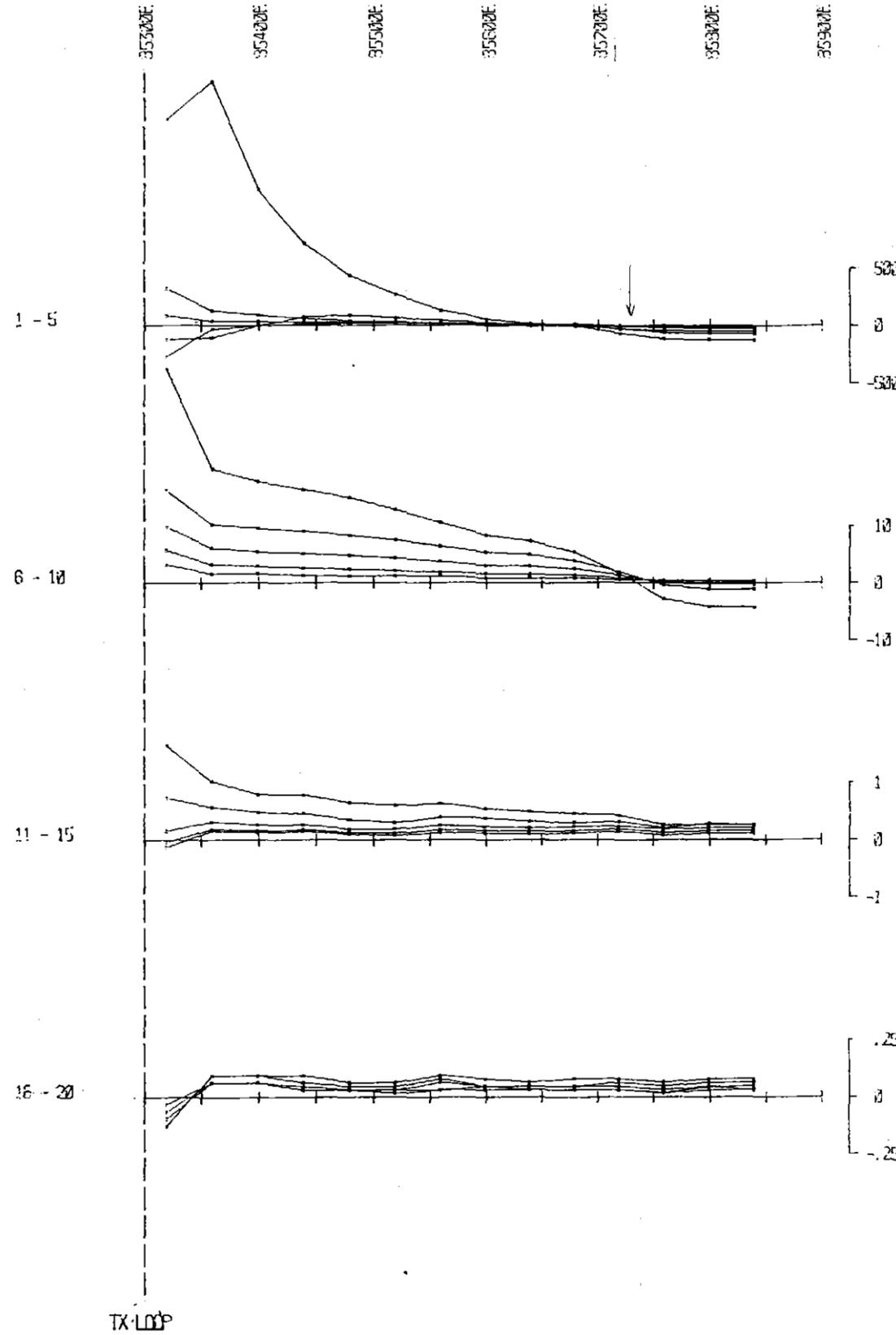
nanovolts per amp metre squared

TX LOOP SIDES : 59200N 84400E
 : 60800N 85000E
TX LOOP SIZE : 1000m X 600 m
TX TURN OFF TIME : 312 microseconds.
FIRST GATE TIME : 88.5 microseconds.
CURRENT : 7.50 amps
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMBC
DATE : 29/03/1989

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-108

CLIENT : BILLITON AUSTRALIA.
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 59800N Z
TX LOOP : 1

VERTICAL COMPONENT. B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

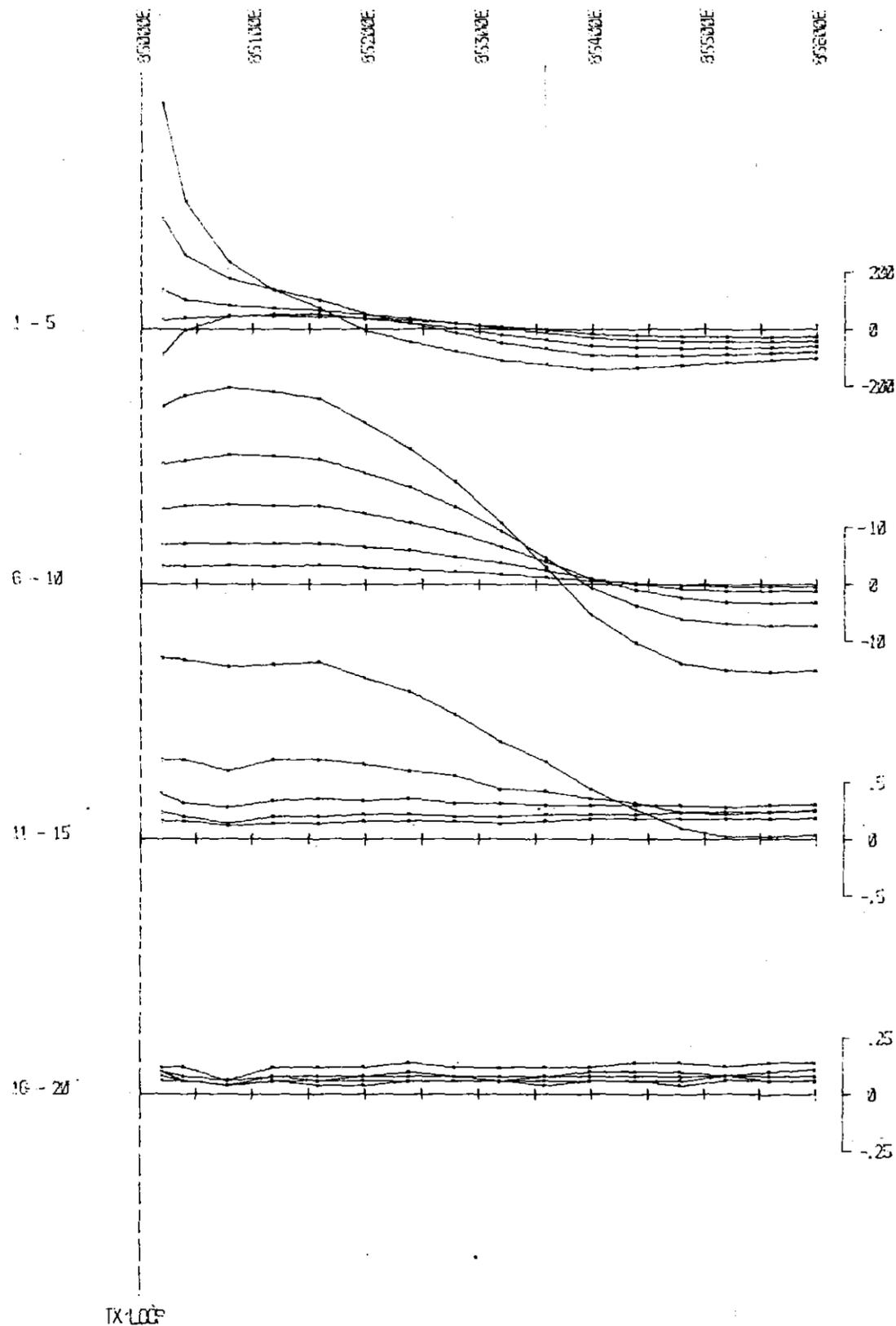
5 cm

TX LOOP SIDES : 57800N 85000E
: 59200N 85300E
TX LOOP SIZE : 1400m X 300 m
TX TURN OFF TIME : 293 microseconds
FIRST GATE TIME : 99.5 microseconds
CURRENT : 9.50 amps
FREQUENCY : 25 Hz
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMBG
DATE : 16/03/1990

SURVEYED AND COMPILED BY : GEOTERRIX PTY. LTD. PROJECT NO. 4-103

CLIENT : BILLITON AUSTRALIA
PROJECT : LAKE SELINA
AREA : ROSEBURY
LINE : 58400N Z
TX LOOP : 4

VERTICAL COMPONENT B (Z)



EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)

nanovolts per amp metre squared

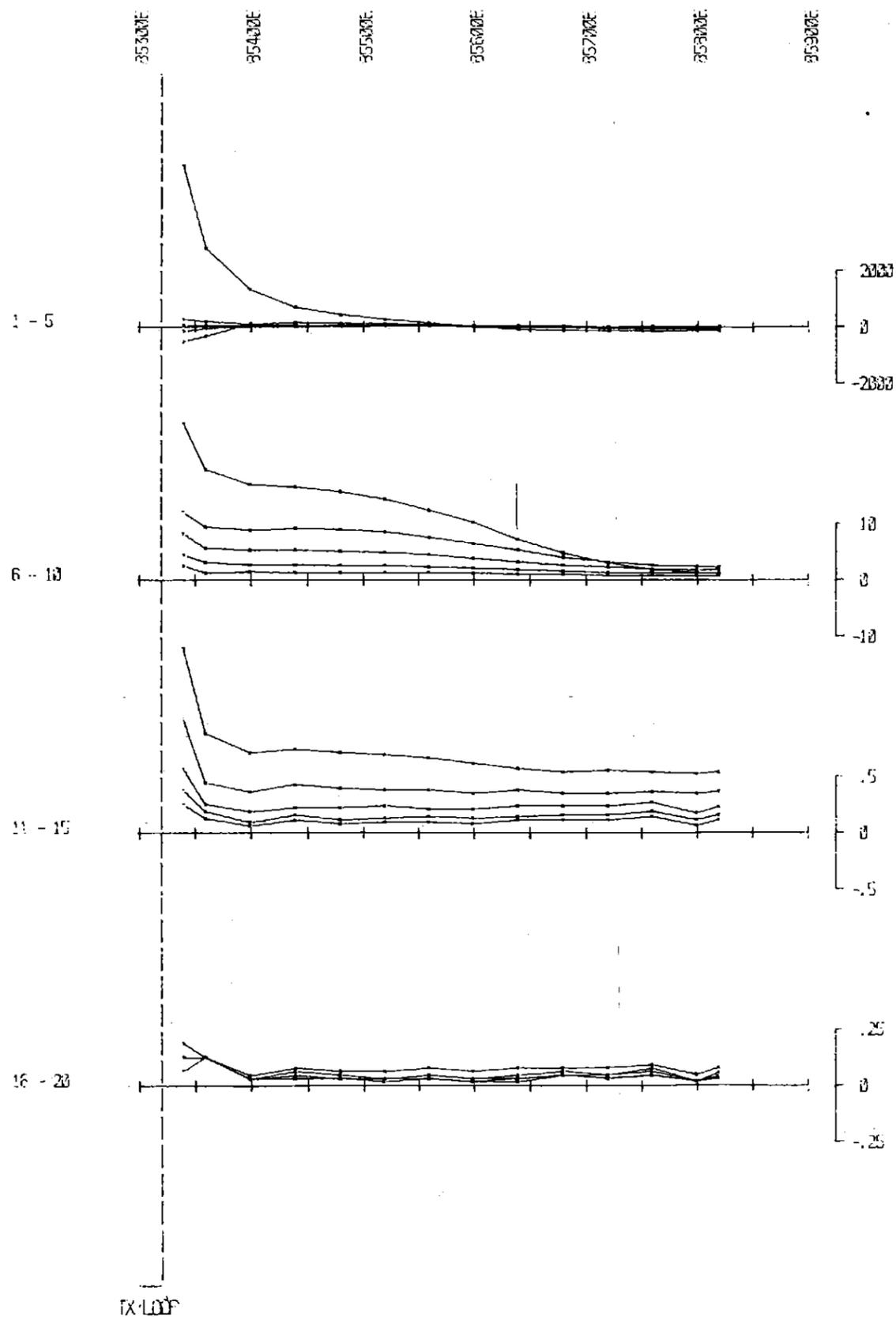
5 cm

TX LOOP SIDES : 59200N 59400E
 : 59300N 59500E
TX LOOP SIZE : 1000m X 600 m
TX TURN OFF TIME : 312 microseconds.
FIRST GATE TIME : 98.5 microseconds.
CURRENT : 7.50 amps.
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMGG
DATE : 09/03/1999

SURVEYED AND COMPILED BY GESTERREX PTY. LTD.	PROJECT NO. 4-109
---	----------------------

CLIENT : BILLITON AUSTRALIA.
PROJECT : LAKE SELINA
AREA : ROSEBERRY
LINE : 59200N Z
TX LOOP : 1

VERTICAL COMPONENT. \dot{B}_z (Z)



EM-37

FIXED
TRANSMITTER
SURVEY

ELECTROMOTIVE FORCE INDUCED BY
SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (\dot{B})

5 cm

nanovolts per amp metre squared

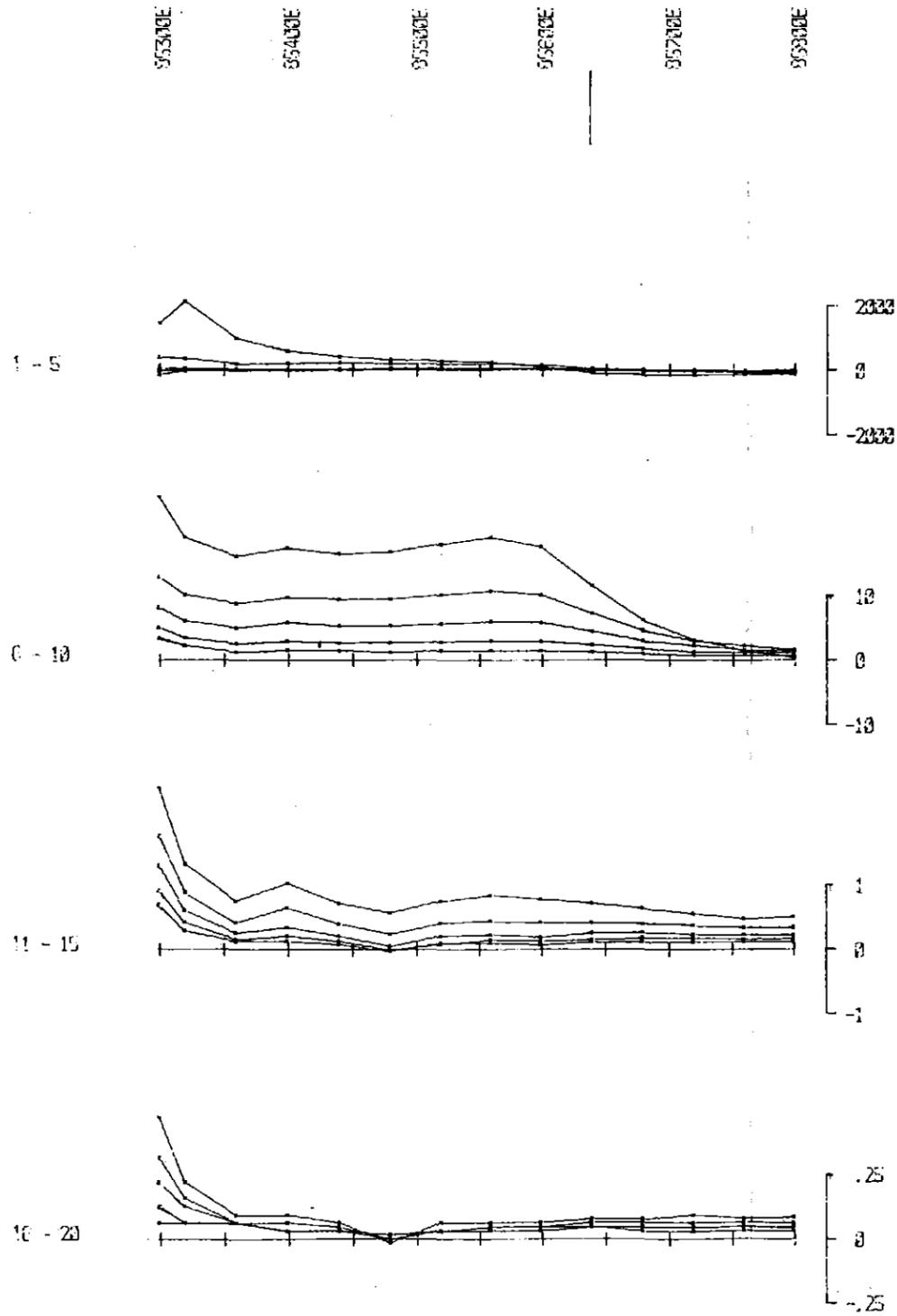
TX LOOP SIDES : 57800N 95800E
 : 59200N 95320E
TX LOOP SIZE : 1400m X 300 m
TX TURN OFF TIME : 293 microseconds.
FIRST GATE TIME : 98.5 microseconds.
CURRENT : 9.50 amps.
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMRG
DATE : 16/03/1999

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-103

CLIENT : BILLITON AUSTRALIA
PROJECT : LAKE SELINA
AREA : ROSEBURY
LINE : 58200N Z
TX LOOP : 4

036

VERTICAL COMPONENT B (Z)

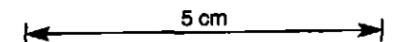


nanovolts per amp metre squared

EM-37

FIXED TRANSMITTER SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD
TIME DERIVATIVE OF FLUX DENSITY (B)



TX LOOP SIDES : 57800N 85000E
 : 59200N 85200E
TX LOOP SIZE : 1400m X 300 m
TX TURN OFF TIME : 293 microseconds.
FIRST GATE TIME : 89.5 microseconds.
CURRENT : 9.50 amps.
FREQUENCY : 25 Hz.
INTEGRATION TIME : 1024 cycles
SYNC MODE : CRYSTAL
HORIZONTAL SCALE : 1:5000
SURVEYED BY : SMRG
DATE : 10/03/1989

	SURVEYED AND COMPILED BY	PROJECT NO.
	GEOTREX PTY. LTD.	4-128

CLIENT : BILLITON AUSTRALIA
PROJECT : LAKE SELINA
AREA : ROSEBURY
LINE : 58000N 2
TX LOOP : 13

000

508052

APPENDIX 4
SAMPLE RECORD



SAMPLE RECORD

Sheet 1 of 2

010

METALS DIVISION

SAMPLE TYPE: ROCK CHIPLOCATION / PROJECT: LAKE SELINASAMPLER: CREAGHDATE: NOV 89

MAP / PHOTO REF: _____

ASSAY LAB: CLASSIC / ADGLAIOE

SAMPLE DESPATCH _____

ASSAY REPORT NOS: 9AD 3357ORDER NO: 08478

SAMPLE STORAGE: _____

BAUS GRID

SAMPLE No.	LOCATION		INTER'L (m)	ANALYSES										DESCRIPTION	
				Cu	Pb	Zn	Mn	Fe	As	Ba	Au	Ag			
17101	362600N	386000E		13	125	600	1120	4.35%	9	920	0.01	<1			Evrd of chl mg
17102	362600N	386040E		22	55	570	1200	5.75%	11	1500	<0.01	1			f-mg Evrd of chl
17103	362600N	386050E		22	500	1080	1220	6.30%	38	1860	0.01	2			fg Evrd chl ser py + mg Evrd of chl gun
17104	362600N	386080E		12	180	98	250	1.89%	11	1880	0.02	<1			mg Evrd of chl
17105	362600N	386120E		19	150	360	1920	4.00%	12	2250	0.01	2			f-mg Evrd of (g) chl
17106	362600N	386145E		22	540	260	420	2.30%	26	2000	0.18	2			mg Evrd of chl
17107	362600N	386260E		11	140	180	990	2.20%	270	750	0.01	<1			mg Evrd of chl
17108	362600N	386290E		2	540	390	630	2.70%	26	650	<0.01	<1			mg Evrd of chl ser
17109	362600N	386320E		7	1060	950	1340	3.65%	30	880	<0.01	1			mg Evrd of chl ser
17110	362600N	386360E		7	42	440	1250	4.20%	10	670	<0.01	<1			mg Evrd of chl ser
17111	362600N	386380E		16	1420	1420	500	1.87%	30	800	<0.01	<1			mg Evrd of chl ser gun hm
17112	362600N	386420E		7	155	620	1340	8.85%	11	350	0.01	3			fg Evrd chl
17113	362600N	386440E		40	260	230	380	3.85%	14	1820	<0.01	<1			f-mg Evrd (f) ser hm
17114	362600N	386510E		10	410	240	730	4.10%	13	1150	<0.01	<1			mg Evrd of ser chl
17115	362740N	386420E		11	110	70	280	5.10%	58	2550	0.02	<1			mg Evrd of chl py gun
17116	362800N	386400E		2	54	76	680	1.58%	8	960	<0.01	<1			f-mg Evrd of ser
17117	362800N	386370E		6	40	70	780	2.15%	<2	530	<0.01	<1			cg Evrd of ser chl
17118	362800N	386330E		16	130	210	980	1.67%	17	500	<0.01	<1			f-mg Evrd f(a) ser (gun)
17119	362800N	386160E		28	88	570	2950	3.70%	160	1060	<0.01	<1			? Dora Cong
17120	363000N	386250E		8	60	38	115	9.85%	57	290	0.01	2			vfg-fg Evrd of ser hm
17121	363000N	386270E		24	96	250	710	7.95%	60	430	0.02	1			fg Evrd (a) chl py
17122	363000N	386300E		26	35	270	1540	4.85%	6	1940	0.01	<1			f-mg Evrd of f + vfg Evrd chl
17123	363000N	386320E		20	150	250	1600	5.10%	9	1380	<0.01	<1			f-mg Evrd of chl hm
17124	363000N	386370E		22	125	155	2350	2.80%	8	530	<0.01	<1			f-mg Evrd of chl ser
17125	363080N	386510E		2	55	78	350	1.48%	3	1340	<0.01	<1			fg Evrd of (f) ser
17126	363100N	386570E		2	36	42	450	1.05%	2	740	<0.01	<1			f-mg Evrd of ser
17127	363200N	386570E		7	50	80	680	1.43%	4	860	<0.01	<1			fg Evrd of (f) ser (chl)
17128	363200N	386550E		6	55	76	690	1.35%	3	890	0.01	<1			fg Evrd of ser
17129	363200N	386510E		2	60	52	530	0.99%	2	960	0.01	<1			fg Evrd of ser
17130	363200N	386460E		4	82	125	510	1.82%	3	1000	<0.01	<1			fg Evrd of ser
17131	363200N	386340E		20	75	280	1200	6.65%	3	1520	0.01	<1			vfg-fg Evrd of chl py
17132	363200N	386300E		9	4	11	74	0.46%	6	300	0.01	<1			vfg sil Evrd py
17133	363200N	386280E		100	68	180	790	6.20%	35	580	0.04	<1			vfg Evrd of chl py + fg Evrd of chl py
17134	363200N	386260E		155	50	86	380	7.35%	30	430	0.02	1			vfg Evrd sil ser py + fg Evrd of chl py
17135	363200N	386240E		14	120	360	2150	11.7%	19	310	<0.01	1			vfg-fg Evrd (g) chl

5080053

REMARKS:

UNITS	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
DETN LIMITS	2	4	2	4	4ppm	2	10	0.01	1
SCHEMA	MSI	MSI	MSI	MSI	MSI	XRF	XRF	FAI	MS2



METALS DIVISION

SAMPLE RECORD

Sheet 2 of 2

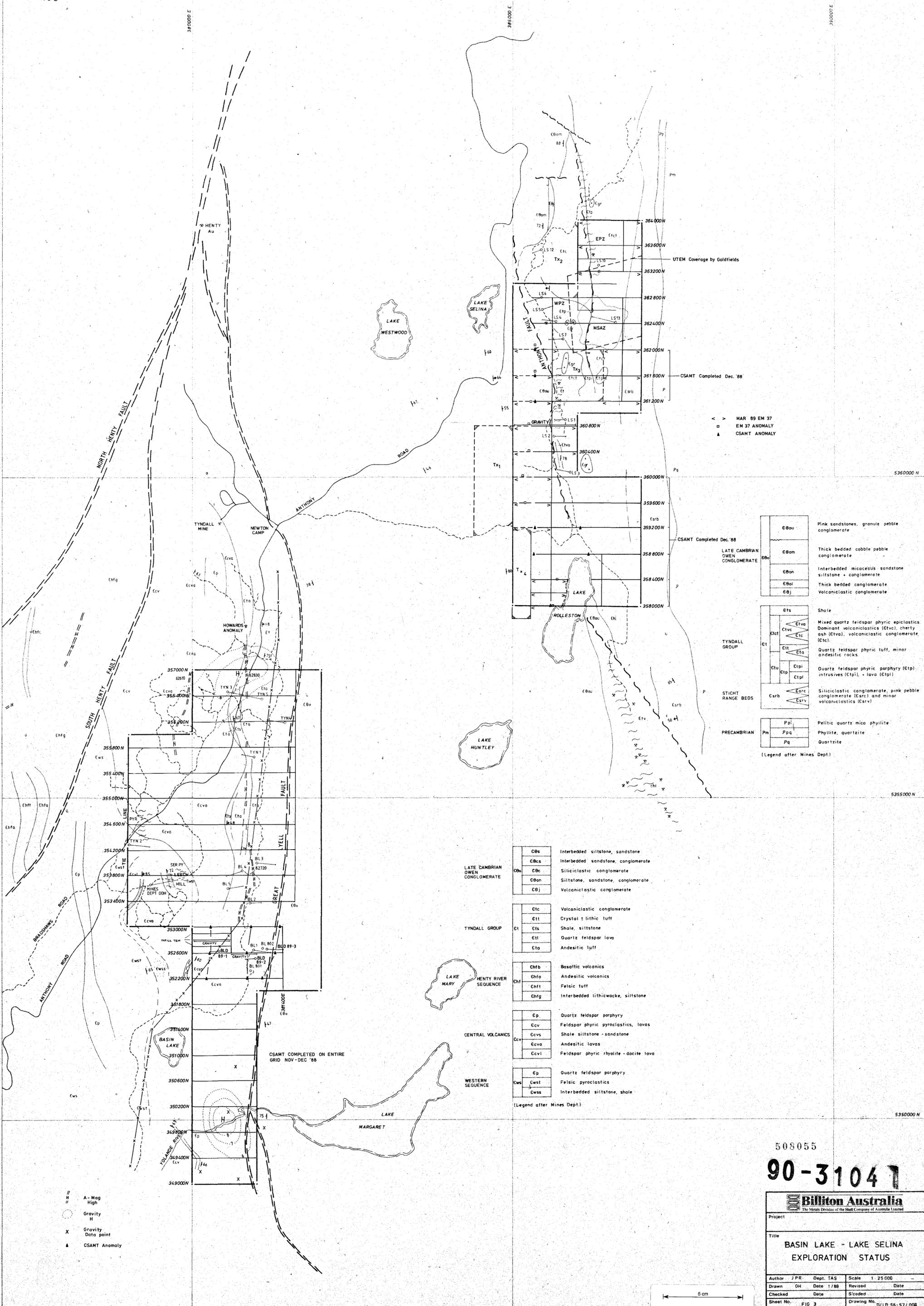
0
1
2
3
4
5
6
7
8
9SAMPLE TYPE: ROCK CHIP LOCATION / PROJECT: LAKE SELINA SAMPLER: CREAGH DATE: NOV 89 MAP / PHOTO REF: _____ASSAY LAB: CLASSIC/ADELAIDE SAMPLE DESPATCH _____ ASSAY REPORT NOS: 9A03357ORDER NO: 08478 SAMPLE STORAGE: _____

BAUS GRID

SAMPLE No.	LOCATION		INTER'L (m)	ANALYSES										DESCRIPTION
				Cu	Pb	Zn	Mn	Fe	As	Ba	Au	Ag		
17136	363400N	386220E		230	55	320	1120	12.0%	210	650	0.03	<1		fg Evv(g)chl py
17137	363400N	386240E		92	86	68	280	3.75%	88	340	0.06	<1		vfg Esh (py)
17138	363400N	386260E		120	82	115	450	5.50%	24	270	0.01	<1		vfg Evv sil ser
17139	363400N	386280E		30	28	15	44	4.75%	28	610	0.01	<1		vfg-fg Evv sil py
17140	363400N	386300E		155	98	115	470	6.50%	14	580	0.01	<1		vfg-fg Evv(f) ser sil (chl) py
17141	363400N	386400E		8	28	64	430	1.22%	2	1180	0.01	<1		fmg Evvrd q f chl ser
17142	363400N	386440E		4	78	80	390	1.31%	3	780	<0.01	<1		fg Evvrd q(f) ser (chl)
17143	363400N	386470E		5	145	56	250	1.20%	5	840	0.01	<1		fmg Evvrd q f ser
17144	363400N	386510E		5	140	92	450	1.38%	<2	750	<0.01	<1		fmg Evvrd q(f) ser (chl)
17145	363400N	386550E		7	34	72	360	1.44%	4	1160	<0.01	<1		fmg Evvrd q f ser
17146	363600N	386500E		3	105	140	850	2.57%	9	1320	<0.01	<1		fmg Evvrd q f ser (chl)
17147	363600N	386450E		22	110	125	400	1.40%	2	1250	<0.01	1		fmg Evvrd q f ser (chl)
17148	363600N	386420E		7	52	72	420	1.78%	<2	1420	<0.01	<1		mg Evvrd q f ser chl hm qchlvn
17149	363600N	386390E		6	28	48	220	1.26%	5	690	<0.01	<1		fmg Evvrd q f ser chl
17150	363600N	386360E		14	58	128	500	1.73%	6	920	<0.01	<1		fmg Evvrd q f ser hm
17151	363600N	386320E		11	115	78	260	3.26%	14	1060	0.01	<1		fmg Evvrd q f ser (chl)
17152	363600N	386290E		200	145	175	660	8.40%	92	840	0.14	2		fmg Evvrd chl
17153	363600N	386250E		60	200	270	830	7.15%	22	650	0.02	2		vfg-fg Evv (g) chl
17154	363600N	386230E		1080	310	770	1140	9.75%	55	240	0.05	5		vfg Evv chl py
17155	363600N	386200E		250	1520	180	650	6.60%	170	230	0.04	10		vfg Evv chl py + Esh
17156	363600N	386160E		42	35	66	160	1.11%	6	3250	<0.01	<1		fg Evv (g) chl
17157	364000N	386160E		420	870	500	1360	11.6%	45	350	0.01	18		fg Evvrd f(g) chl
17158	364000N	386170E		360	260	85	530	7.0%	44	530	0.15	2		fmg Evvrd q f chl (py)
17159	364000N	386180E		13	86	20	100	2.30%	16	760	<0.01	1		fmg Evvrd q f sil ser py
17160	364000N	386200E		12	28	72	480	4.40%	12	470	0.02	<1		fg Evvrd (g) sil chl py
17161	364000N	386240E		7	44	52	115	1.17%	3	1080	<0.01	<1		fmg Evvrd q f ser
17162	364000N	386320E		<2	32	26	38	0.76%	3	740	<0.01	<1		fmg Evvrd q ser
17163	364000N	386380E		10	24	145	560	3.10%	3	1400	<0.01	<1		fmg Evvrd q ser (chl)
17164	364000N	386330E		<2	44	155	350	1.60%	2	1200	<0.01	<1		fg Evv (f) ser (chl)
17165	364000N	386400E		8	28	120	570	3.50%	4	1800	0.01	<1		mg Evvrd q f chl (hm)
17166	364000N	386420E		5	30	150	570	2.05%	3	1540	0.01	<1		fg Evvrd (g) chl
17167	364000N	386480E		7	54	140	950	2.00%	<2	1160	<0.01	<1		fmg Evvrd q ser

REMARKS:	UNITS	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	DETN LIMIT	2	4	2	4	4ppm	2	10	0.01	1
	SCHEME	AAS1	AAS1	AAS1	AAS1	AAS1	XRF1	XRF1	FA1	AAS2

508054



< > MAR 89 EM 37
 □ EM 37 ANOMALY
 ▲ CSAMT ANOMALY

68au	Pink sandstones, granule pebble conglomerate
68om	Thick bedded cobble pebble conglomerate
68on	Interbedded micaceous sandstone siltstone + conglomerate
68ol	Thick bedded conglomerate
68j	Volcaniclastic conglomerate
LATE CAMBRIAN OWEN CONGLOMERATE	
6ts	Shale
6tva	Mixed quartz feldspar phryic epiclastics
6tvc	Dominant volcanoclastics (6tvc), cherty ash (6tva), volcanoclastic conglomerate (6tvc)
6t	Quartz feldspar phryic tuff, minor andesitic rocks
6tp	Quartz feldspar phryic porphyry (6tp), intrusives (6tp), - lava (6tp)
TYNDALL GROUP	
6sr	Siliciclastic conglomerate, pink pebble conglomerate (6sr) and minor volcanoclastics (6sr)
STICHT RANGE BEDS	
6p	Pelitic quartz mica phyllite
6q	Phyllite, quartzite
6qz	Quartzite

(Legend after Mines Dept.)

68a	Interbedded siltstone, sandstone
68b	Interbedded sandstone, conglomerate
68c	Siliciclastic conglomerate
68d	Siltstone, sandstone, conglomerate
68e	Volcaniclastic conglomerate
LATE CAMBRIAN OWEN CONGLOMERATE	
6t	Volcaniclastic conglomerate
6tt	Crystal ± lithic tuff
6ts	Shale, siltstone
6tl	Quartz feldspar lava
6ta	Andesitic tuff
TYNDALL GROUP	
6hb	Basaltic volcanics
6hfa	Andesitic volcanics
6hft	Felsic tuff
6hfg	Interbedded lithicwacke, siltstone
HENTY RIVER SEQUENCE	
6p	Quartz feldspar porphyry
6cv	Feldspar phryic pyroclastics, lavas
6cvs	Shale siltstone - sandstone
6cva	Andesitic lavas
6cvi	Feldspar phryic rhyolite - dacite lava
CENTRAL VOLCANICS	
6p	Quartz feldspar porphyry
6ws	Felsic pyroclastics
6wss	Interbedded siltstone, shale
WESTERN SEQUENCE	

(Legend after Mines Dept.)

// H H A - Mag High
 ○ Gravity H
 X Gravity Data point
 ▲ CSAMT Anomaly

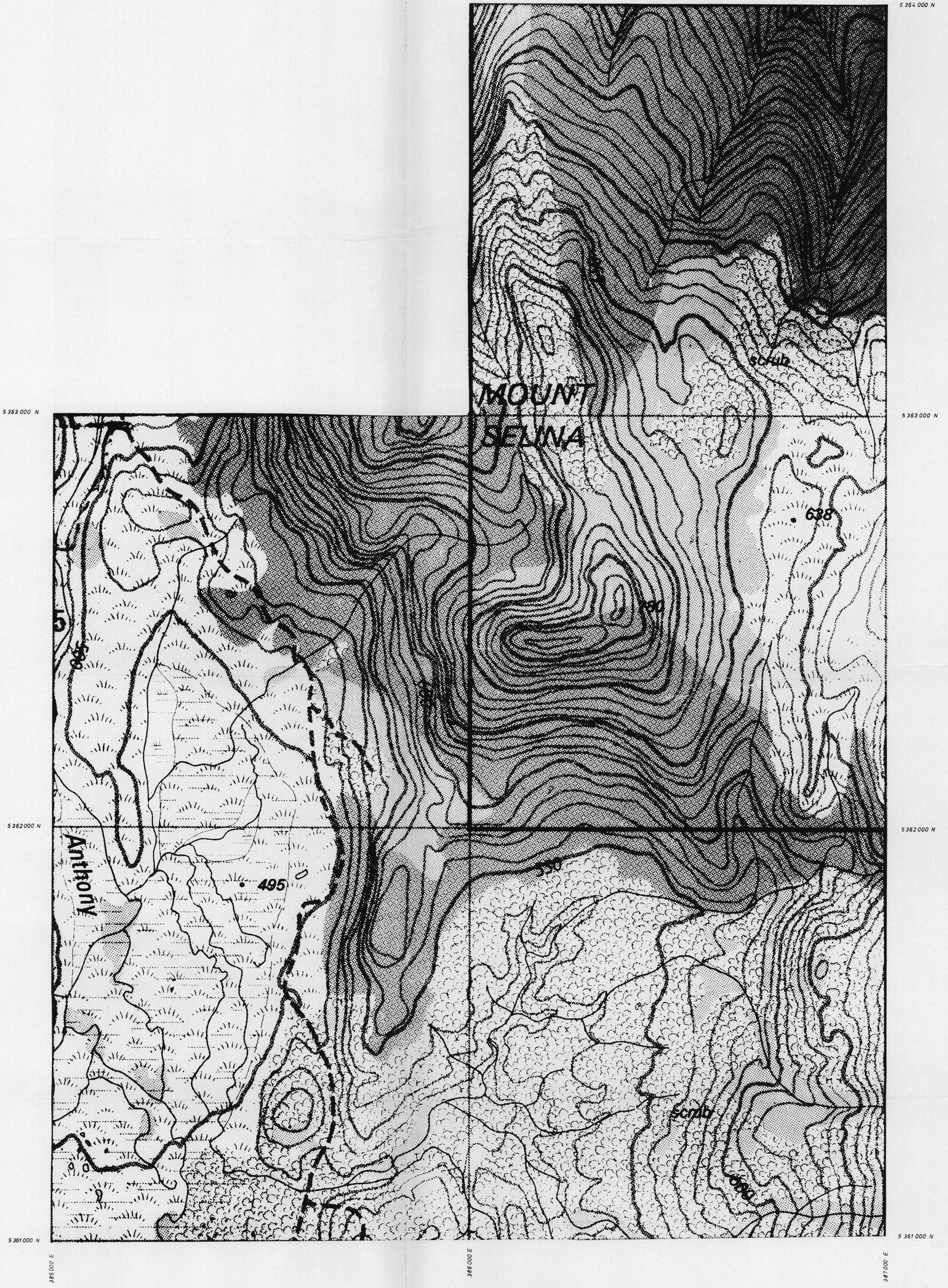
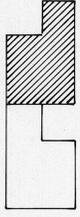
508055
90-31047

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project: **BASIN LAKE - LAKE SELINA EXPLORATION STATUS**

Author	JPR	Dept.	TAS	Scale	1:25 000
Drawn	OH	Date	1/89	Revised	Date
Checked	Date	S'ced	Date		
Sheet No.	FIG 3	Drawing No.	D/LD 58-57/008		





5 363 000 N

5 364 000 N

5 363 000 N

5 362 000 N

5 362 000 N

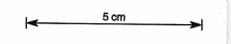
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5 361 000 N

385 000 E

386 000 E

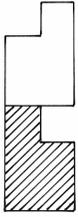
387 000 E



208056

The Metals Division of the Shell Company of Australia Limited			
Project		LAKE SELINA	
Title		BASE MAP	
SHEET 1			
Author	CJC	Dept. TAS	Scale 1:5000
Drawn	OH	Date 2/90	Revised Date
Checked		Date	S'ced Date
Sheet No.	FIG 4		Drawing No. D/LD 56/034

90-3104

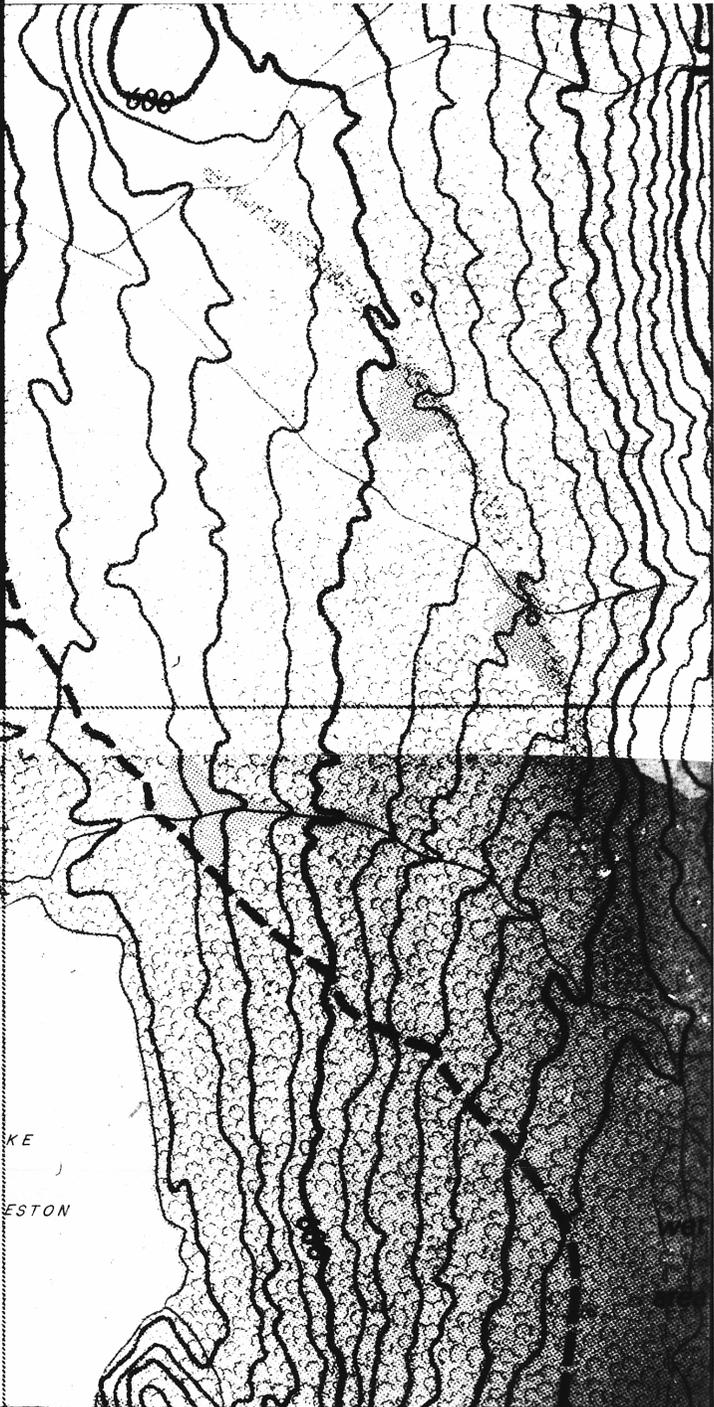
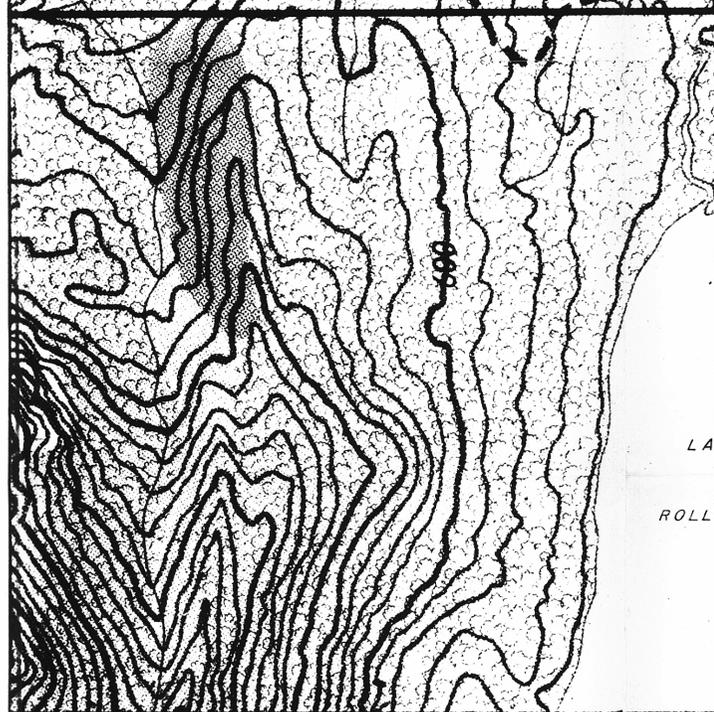
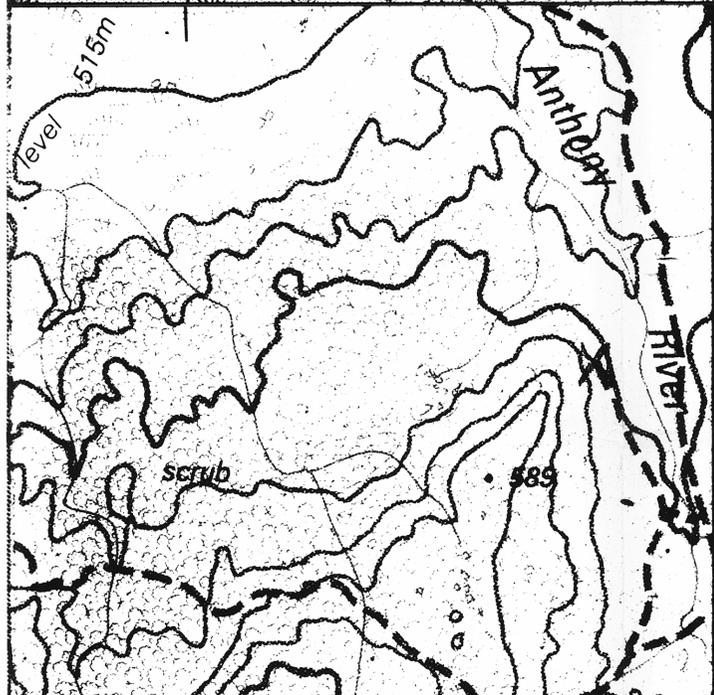
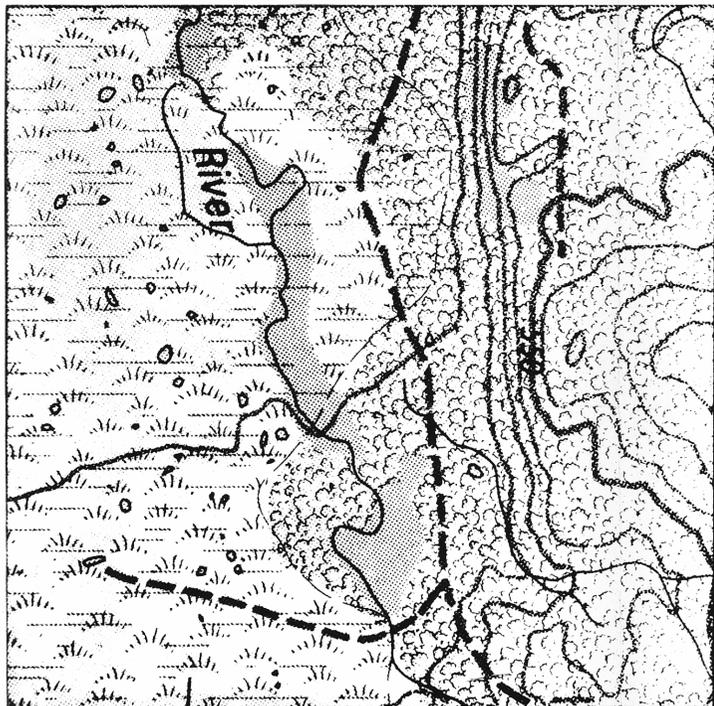


5 381 000 N

5 380 000 N

5 379 000 N

5 378 000 N



5 380 000 N

5 379 000 N

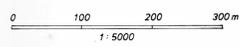
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3 85 000 E

3 86 000 E

3 87 000 E

508057



90-3104

Billiton Australia
The Metals Division of the Shell Companies of Australia Limited

Project LAKE SELINA

Title BASE MAP

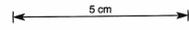
SHEET 2

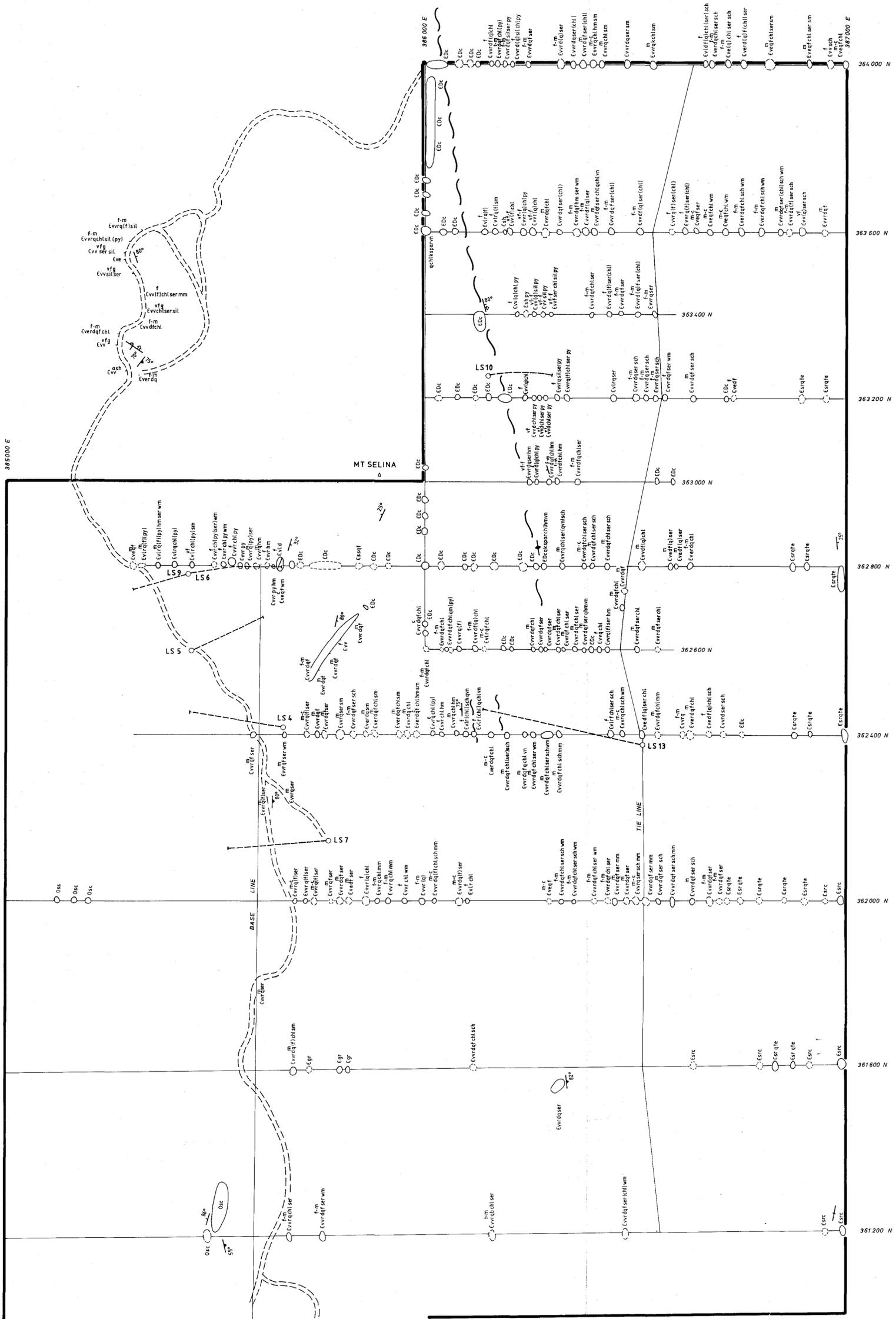
Author CJC Dept. TAS Scale 1:5000

Drawn OH Date 2/90 Revised Date

Checked Date S'ceded Date

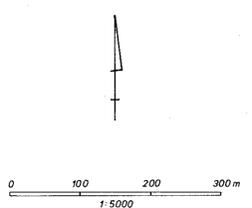
Sheet No FIG 5 Drawing No. D/LD 56/035





LEGEND

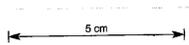
- Outcrop
- Subcrop
- Float
- Cambrian
- Ordovician
- Sticht Range Beds
- rhyolite
- rhyodacite
- dacite
- granite
- quartz phenocrysts
- biotite phenocrysts
- feldspar phenocrysts
- volcanic
- lava
- volcanoclastic
- epiclastic
- shale
- conglomerate
- sandstone
- quartzite
- minor
- very fine grained
- fine grained
- medium grained
- coarse grained
- kspars
- potassic alteration
- sericitic
- siliceous
- chloritic
- pyritic
- haematite
- weakly magnetic
- moderately magnetic
- strongly magnetic
- Facing
- Foliation
- Overturned bedding
- Bedding
- Shear zone
- Diamond drill hole
- Grid line
- Access track
- E.L. Boundary

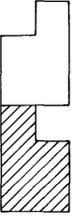
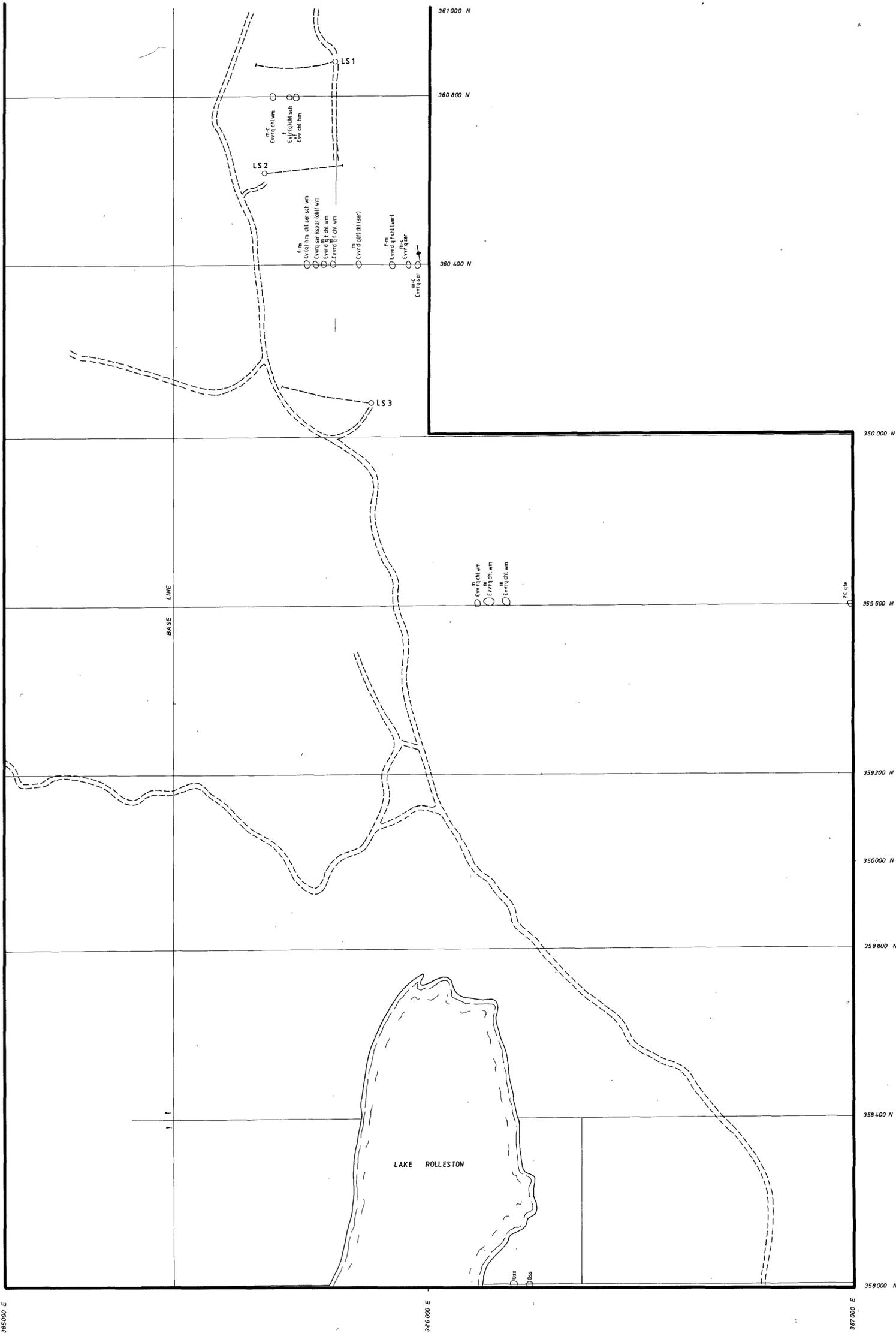


90-3104

Billiton Australia The Metals Division of the Shell Company of Australia Limited			
Project: LAKE SELINA			
Title: GEOLOGY GRID LINE FACT MAP			
SHEET 1			
Author	CJC	Dept.	TAS
Scale	1:5000		
Drawn	OH	Date	2/90
Revised	Date		
Checked	Date	S'ced	Date
Sheet No.	FIG 6	Drawing No.	D / LD 56/038

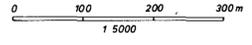
850805





LEGEND

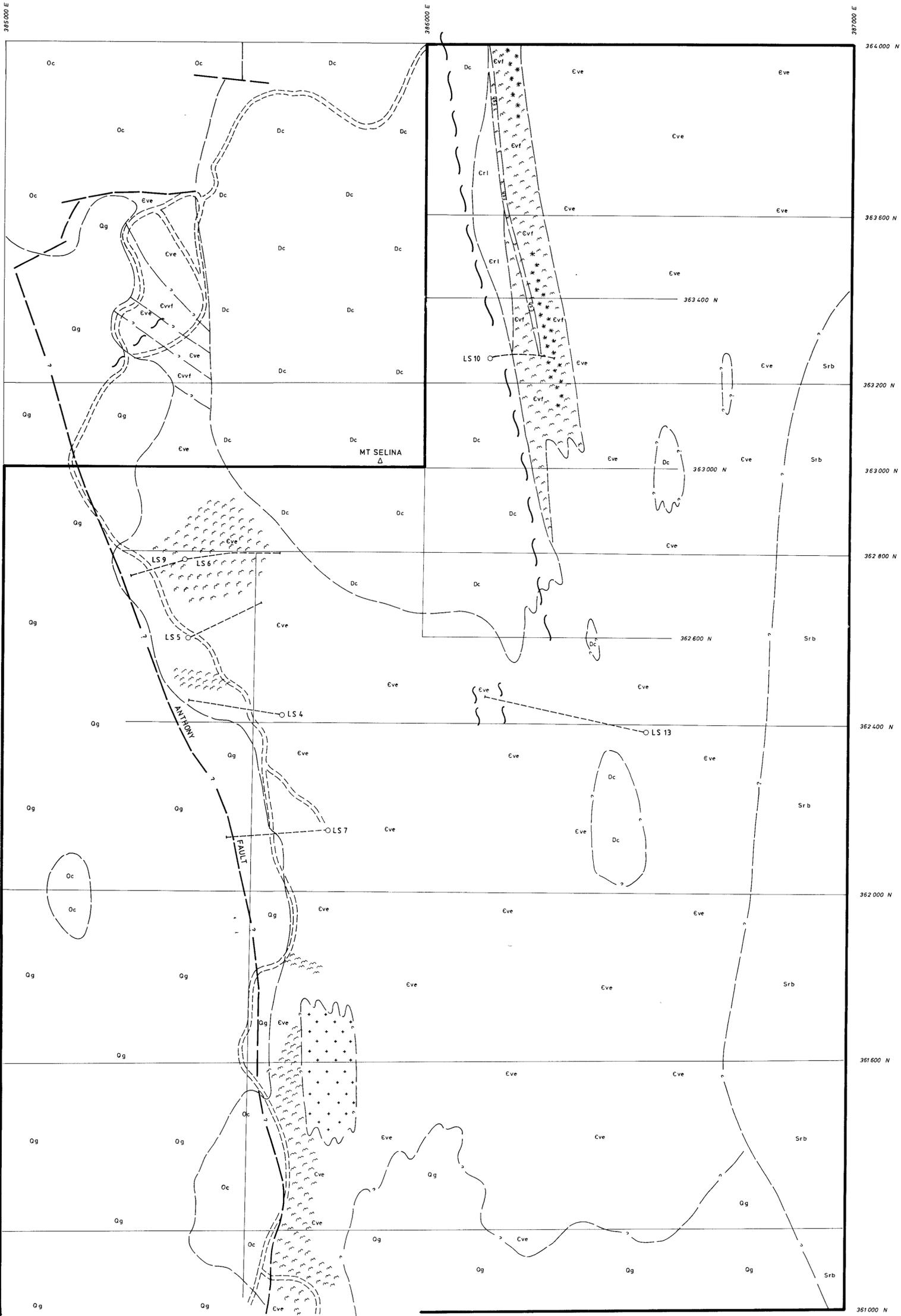
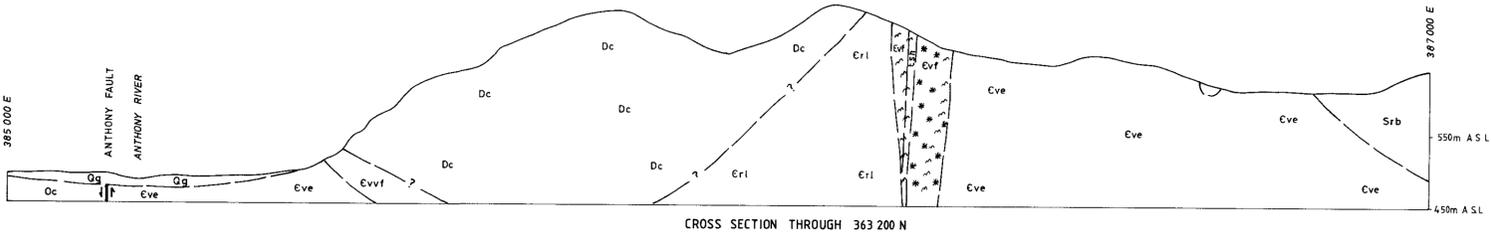
- Outcrop
- Subcrop
- Float
- Cambrian
- Ordovician
- Strick Range Beds
- r rhyolite
- rd rhyodacite
- d dacite
- gr granite
- q quartz phenocrysts
- b biotite phenocrysts
- f feldspar phenocrysts
- v volcanic
- l lava
- vv volcanoclastic
- e epiclastic
- sh shale
- c conglomerate
- ss sandstone
- qtz quartzite
- () minor
- Cvqf very fine grained
- Cvqf fine grained
- Cvqf medium grained
- Cvqf coarse grained
- kspar potassic alteration
- ser sericitic
- sil siliceous
- chl chloritic
- py pyritic
- hm haematite
- wm weakly magnetic
- mm moderately magnetic
- sm strongly magnetic
- ↑ Facing
- 50° Foliation
- 30° Overturned bedding
- 22° Bedding
- ~ ~ Shear zone
- → Diamond drill hole
- Grid line
- Access track
- ┌ E.L. Boundary



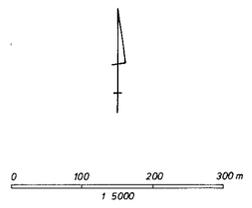
90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project LAKE SELINA			
Title GEOLOGY GRID LINE FACT MAP			
SHEET 2			
Author CJC	Dept. TAS	Scale 1:5000	
Drawn OH	Date 2/90	Revised	Date
Checked	Date	S'ced	Date
Sheet No.	FIG 7	Drawing No.	D / LD 56 / 039

5cm



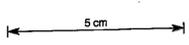
- Og Quaternary glacial sediments
- Oc Ordovician Owen Conglomerate
- Dc Cambrian Dora Conglomerate
- Eri Cambrian rhyolitic lava
- Evvf Cambrian very fine grained laminated volcanoclastics and sandstones
- Evg Cambrian fine grained volcanoclastics
- Evc Cambrian fine to coarse grained dacitic to rhyolitic volcanoclastics, epiclastics and minor lavas
- Esh Cambrian shales
- Srb Cambrian Sticht Range Beds
- * Cambrian granite
- / / / Chloritic - pyritic alteration
- * * * Sericite - silica - pyrite alteration
- Access track
- L E.L. Boundary
- Geological boundary
- Inferred fault
- ~ ~ ~ Shear zone

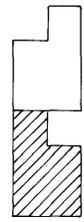
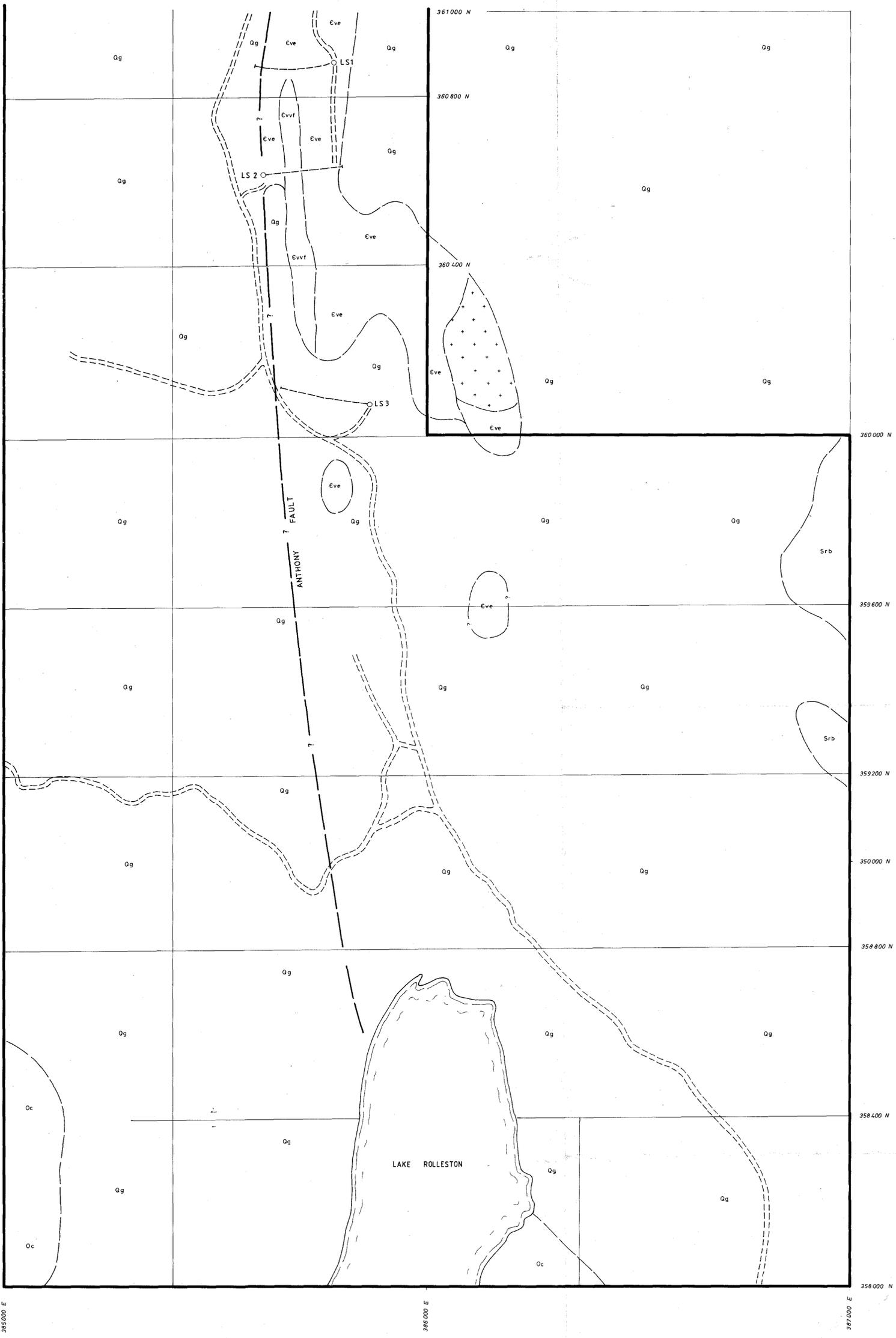


90-31047

Billiton Australia The Metals Division of the Shell Company of Australia Limited		
Project LAKE SELINA		
Title GEOLOGICAL INTERPRETATION		
SHEET 1		
Author C.J.C.	Dept. TAS	Scale 1:5000
Drawn OH	Date 2/90	Revised Date
Checked Date	Date	S'ceded Date
Sheet No. FIG 8	Drawing No. D/LD 55 / 036	

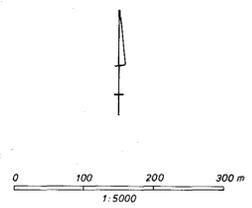
505060





LEGEND

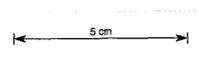
- Qg Quaternary glacial sediments and alluvials
- Oc Ordovician Owen Conglomerate
- Dc Cambrian Dora Conglomerate
- Ert Cambrian rhyolitic lava
- Cv Cambrian fine grained volcanics
- Cvvf Cambrian very fine grained laminated volcanics and sandstones
- Eve Cambrian fine to coarse grained dacitic to rhyolitic volcanics, epiclastics and minor lavas.
- Csh Cambrian shales
- Srb Cambrian Sticht Range Beds
- + Cambrian granite
- Access track
- E.L. Boundary
- Geological boundary
- Inferred fault
- Shear zone



90-3104

Billiton Australia <small>The Mesh Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title		GEOLOGICAL INTERPRETATION	
SHEET 2			
Author	C J C	Dept.	TAS
Scale	1:5000		
Drawn	OH	Date	2/90
Revised	Date		
Checked	Date	S'ced	Date
Sheet No.	FIG 9	Drawing No.	D/ LD 56 / 037

508061



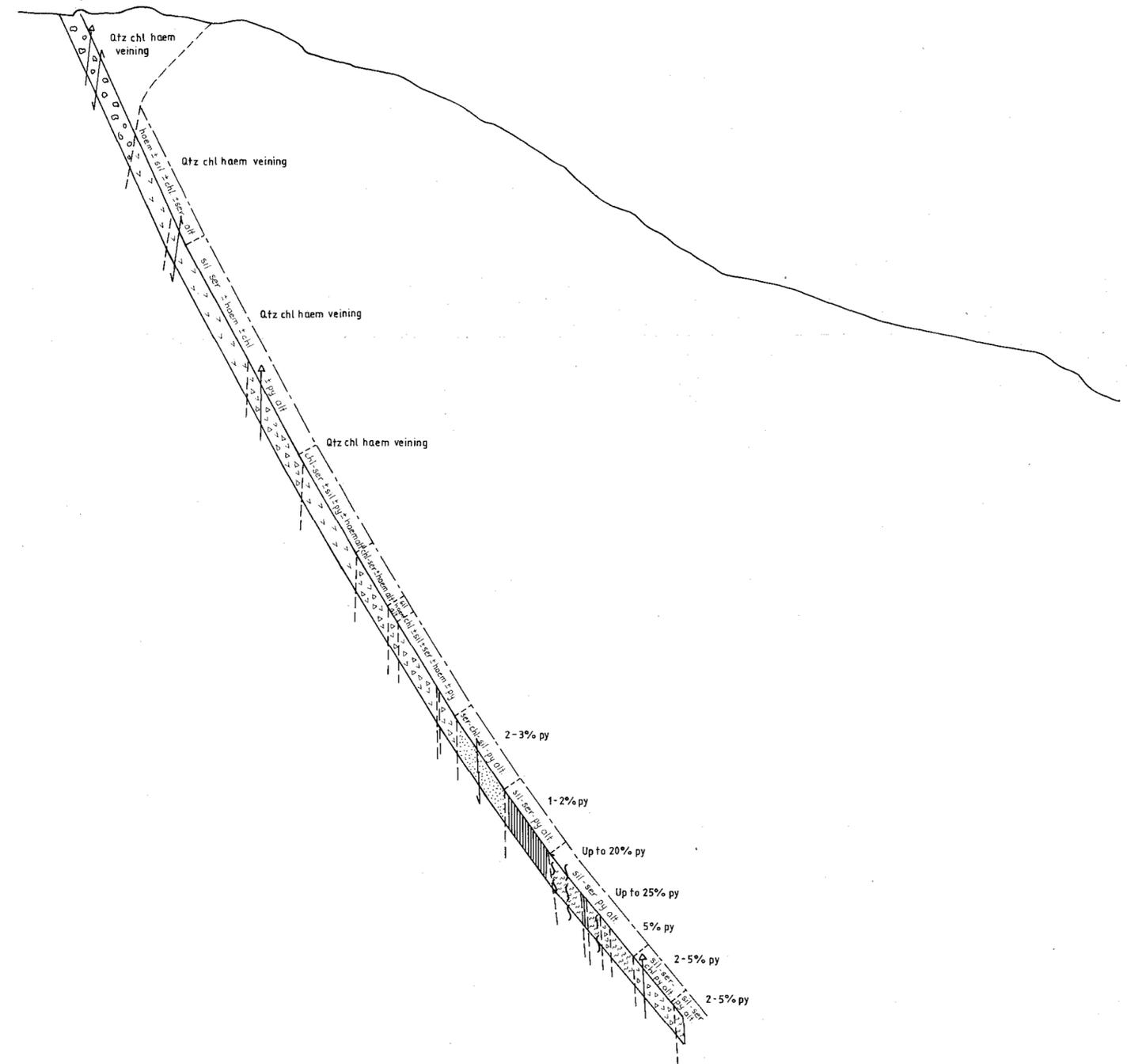
9305

LS 10
5363260 N
386152 E
-65°

700m ASL

600m ASL

500m ASL

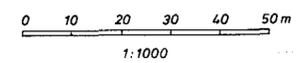


LEGEND

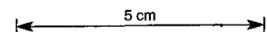
-  Dora Conglomerate
-  Rhyolitic qtz phyrlic lava
-  Rhyolitic volcaniclastic
-  Volcaniclastic sandstone
-  Shale
-  Chert
-  Bedding
-  Foliation
-  Shear zone
-  Lithological boundary

ALTERATION

- haem haematite
- chl chlorite
- sil silicic
- ser sericite
- py pyrite
- qtz quartz



508062



SECTION ALONG 077° AMG

LS 10

90-3104

 Billiton Australia The Metals Division of the Shell Company of Australia Limited			
Project		LAKE SELINA	
Title		DDH LS 10 PROFILE ON 077° AMG	
Author	C J C	Dept. T.A.S.	Scale 1:1000
Drawn	OH	Date 2/90	Revised Date
Checked		Date	S'ceded Date
Sheet No.	FIG 10	Drawing No.	D/LD 56/040

LS 13
 5362382 N
 386489 E
 -50°

700m ASL

650m ASL

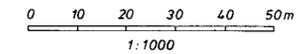
600m ASL

LEGEND

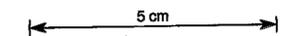
-  Rhyolitic - rhyodacitic epiclastics
-  Rhyolitic - rhyodacitic volcaniclastics
-  Rhyolitic - rhyodacitic lavas
-  Bedding
-  Foliation
-  Lithological boundary
-  Shear zone

ALTERATION

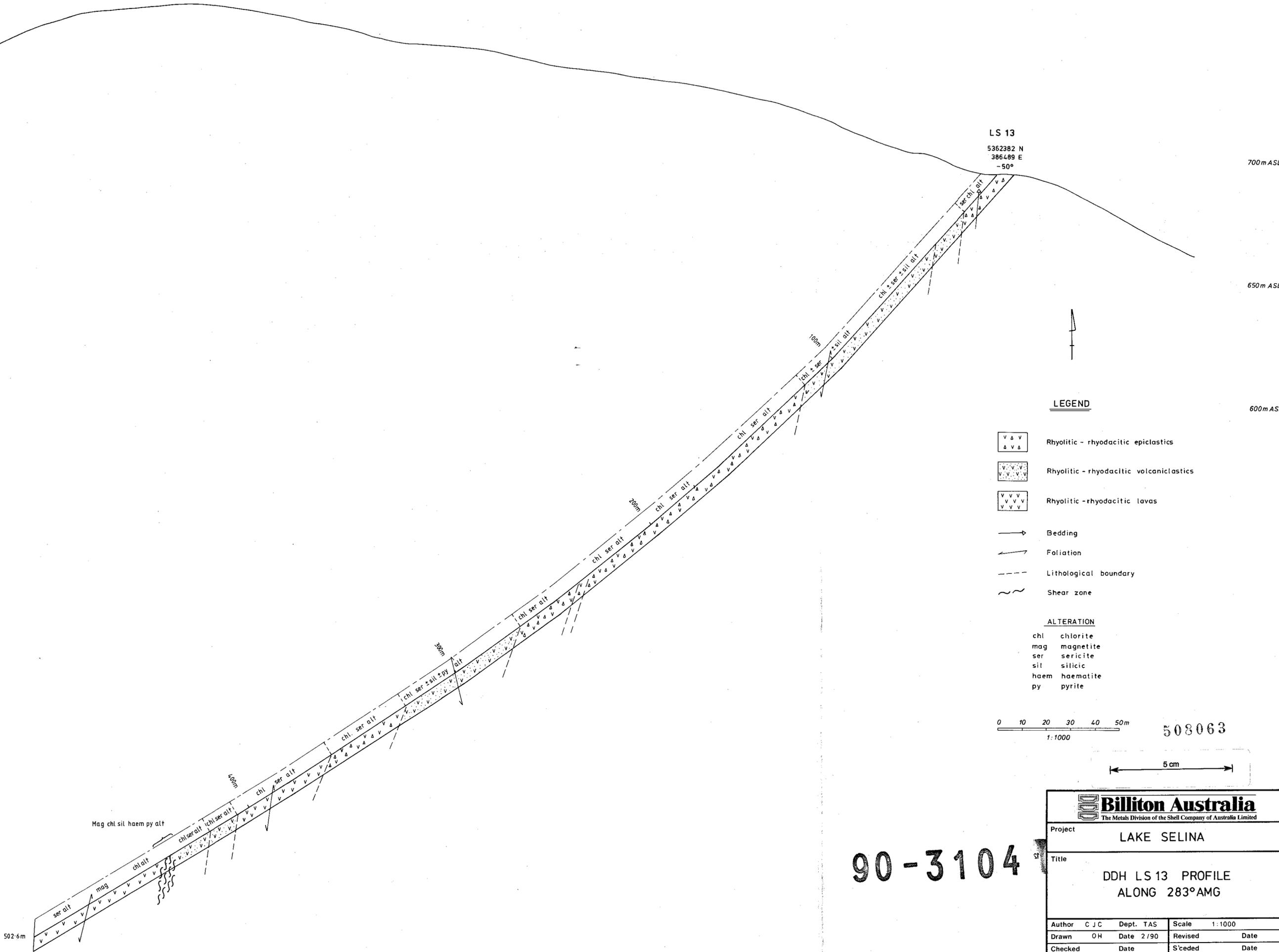
- chl chlorite
- mag magnetite
- ser sericite
- sil silicite
- haem haematite
- py pyrite



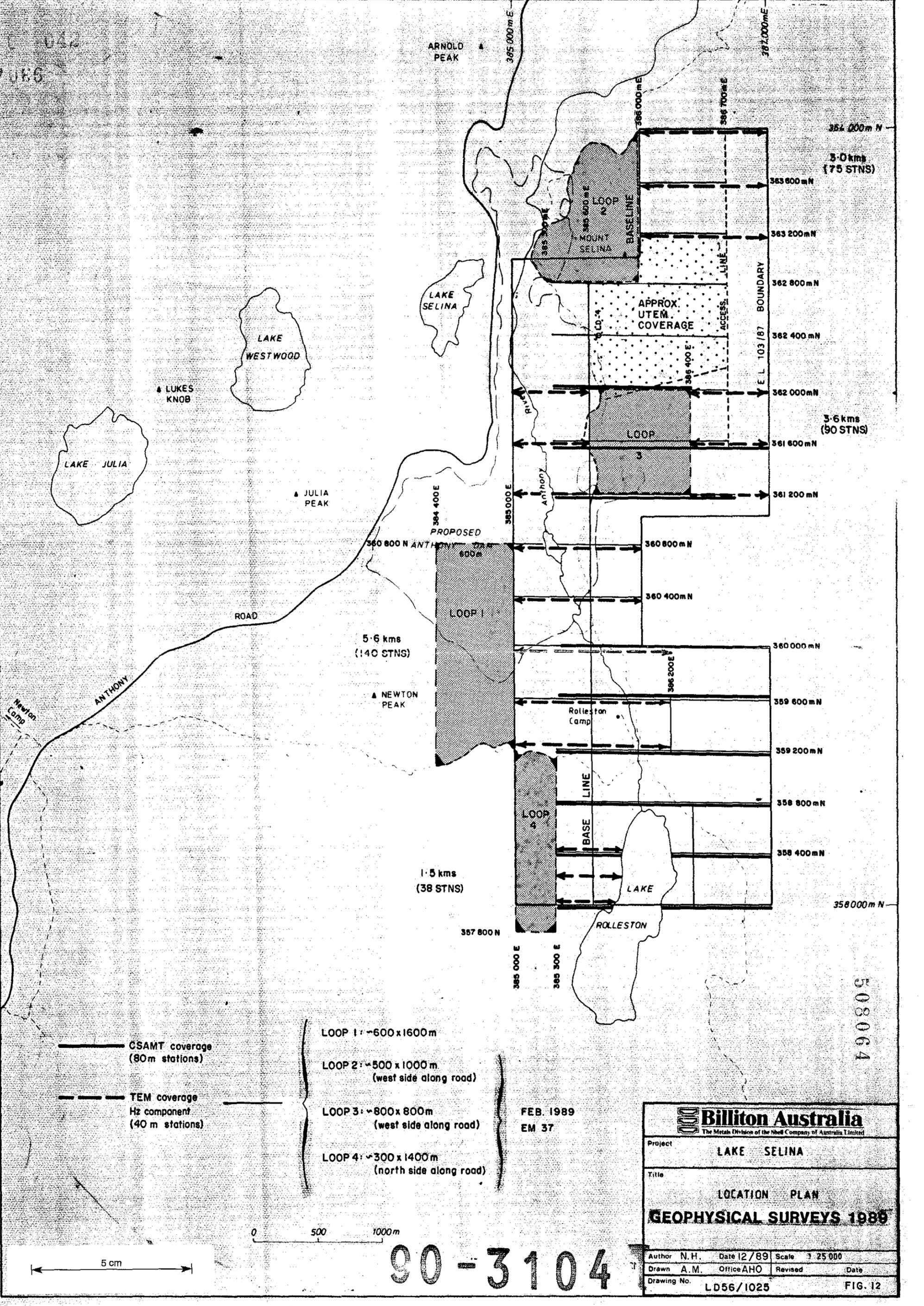
508063



90-3104



 Billiton Australia The Metals Division of the Shell Company of Australia Limited			
Project	LAKE SELINA		
Title	DDH LS 13 PROFILE ALONG 283° AMG		
Author	C J C	Dept. TAS	Scale 1:1000
Drawn	OH	Date 2/90	Revised Date
Checked		Date	S'ceded Date
Sheet No.	FIG 11	Drawing No.	D/LD 56/041



CSAMT coverage
(80m stations)

TEM coverage
Hz component
(40m stations)

- LOOP 1: ~600 x 1600m
- LOOP 2: ~500 x 1000m
(west side along road)
- LOOP 3: ~800 x 800m
(west side along road)
- LOOP 4: ~300 x 1400m
(north side along road)

FEB. 1989
EM 37

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>		
Project LAKE SELINA		
Title LOCATION PLAN GEOPHYSICAL SURVEYS 1989		
Author N.H.	Date 12/89	Scale 1:25,000
Drawn A.M.	Office AHO	Revised Date
Drawing No. LD56/1025		FIG. 12

90-3104

508064

5 cm

0 500 1000m



SHELL COMPANY OF AUSTRALIA
METALS DIVISION
R.O.C.S. - PROTEM

LAKE SELINA
GROUND MAG
BASE LEV. 62200nT
500nT/cm
SCALE 1 : 10000

FIG No :
DATE : SEPT. 1988
AUTHOR : N. Hungerford
OFFICE : MELB.
Drwg. No : LD56/1020

LEGEND
2X G856

90-3104

- IP CHARGEABILITY TRENDS
- X - EM-37 CONDUCTORS (1989)
(ANOMALOUS CHANNELS INDICATED)
- + - UTEM CONDUCTORS (RGC 1985)
- O - CSAMT RESISTIVITY LOW (1989)

5 cm

508065

MAJOR AEROMAGNETIC ANOMALY (DEEP)

EASTERN PYRITE ZONE

MT. SELINA

py in tuff
LS-9
LS-6
LS-5
WESTERN PYRITE ZONE (IP ANOMALY)
py in qtz seric schist
LS-4
py in fault zone adjacent to θ, ϵ contact
LS-7
downhole posn

1985 UTEM SURVEY

EL BOUNDARY

MAJOR AEROMAGNETIC ANOMALY (DEEP)

Poss. deep EM-37 conductor under Sticht Range

EL BOUNDARY

py + magn in tuff
LS-1
 θ, ϵ
magn + py? in tuff
LS-2
 θ, ϵ
N.B. downhole position of contact
LS-3
 θ, ϵ

NORTHING (M)

EASTING (M)

9309

TRANSIENT EM PROFILE

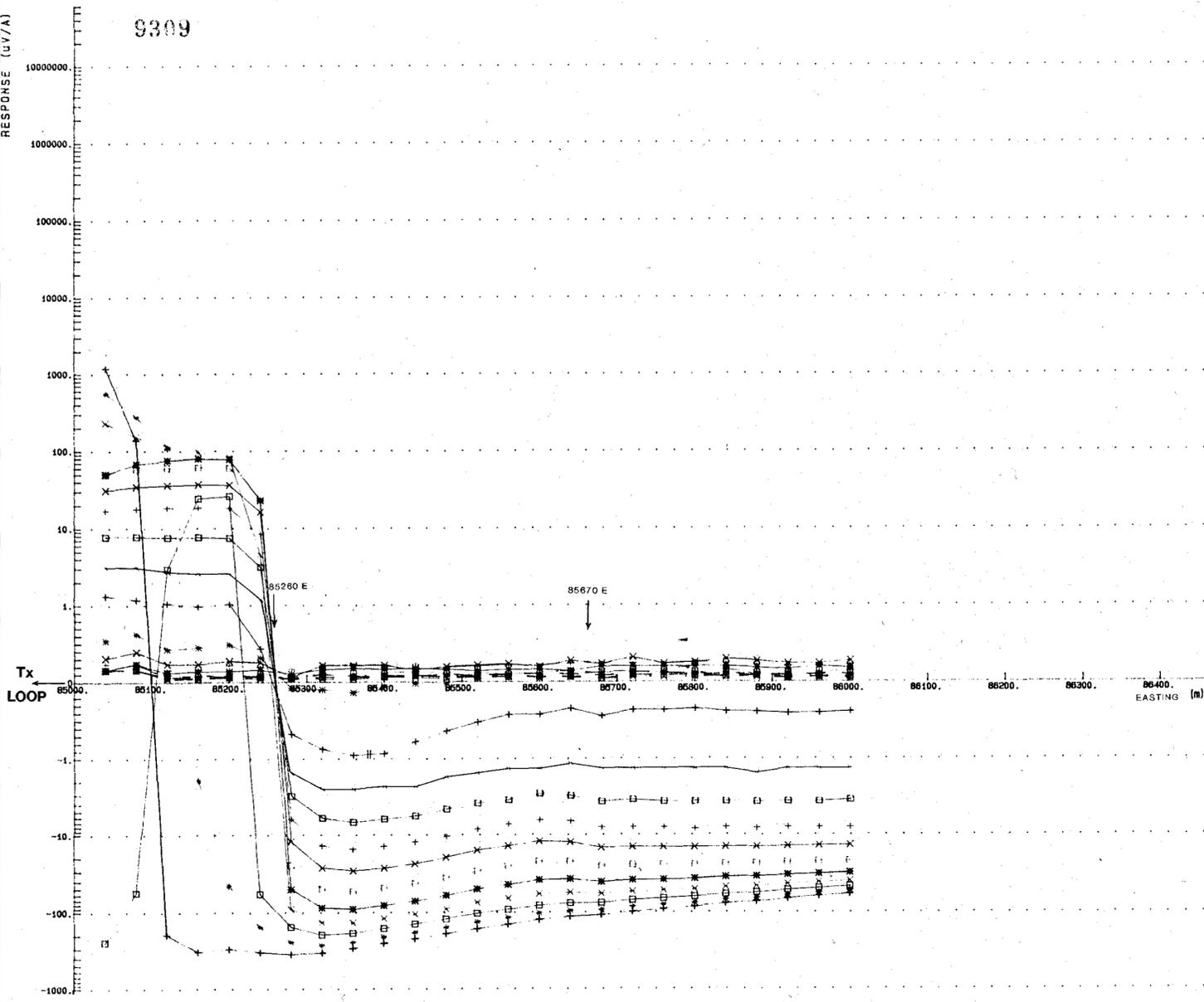
Line: 80800N

PEBLE TEM file details

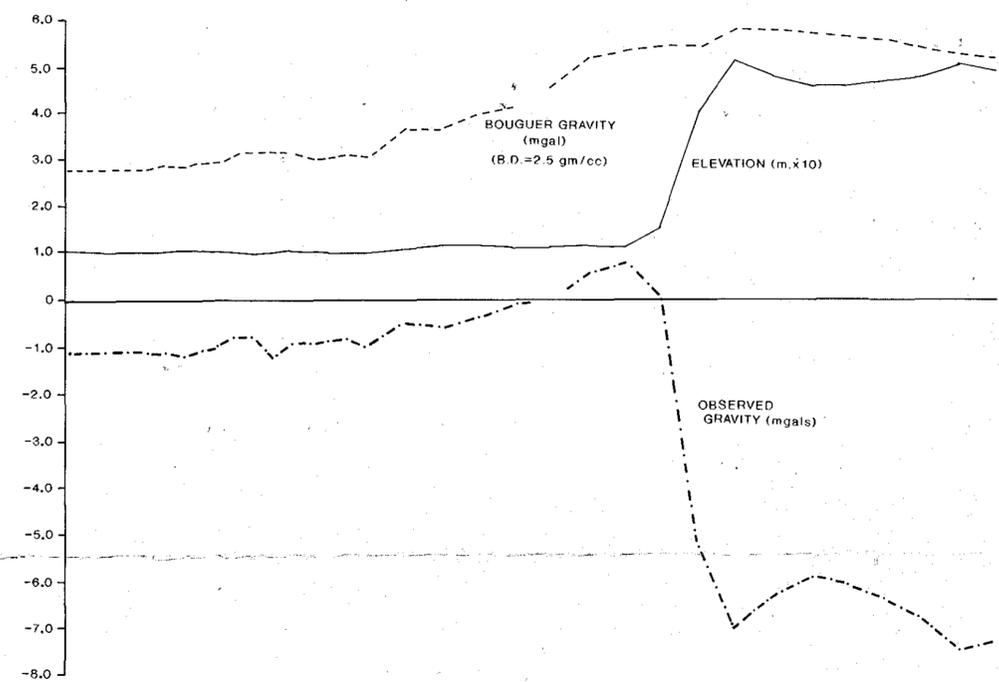
Loop config = TURAM
 Device type = EM-37
 Rx Component = Z
 Ramp turn-off = 0.32 ms
 Tx size = 500.0 m x 1000.0 m
 Tx loop rotn. = 0 deg
 Tx loop orig. = 84400.0 80800.0
 Eff. Rx area = 1000.00 m²

Legend

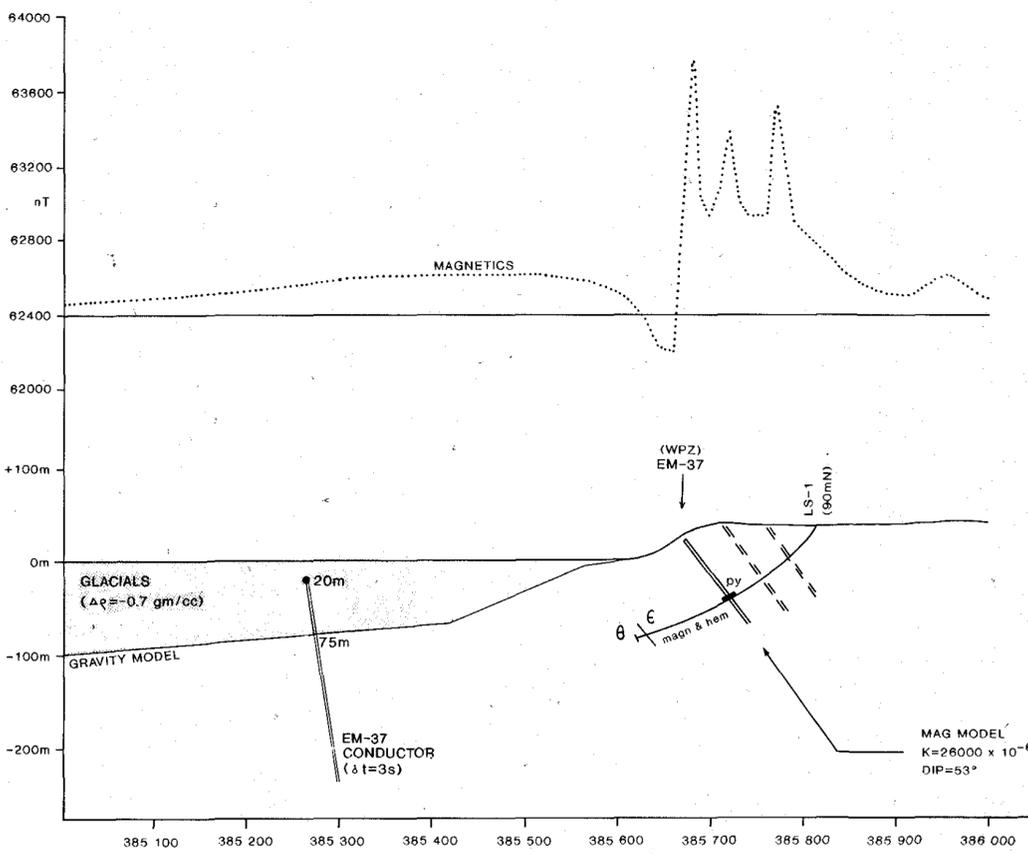
- Channel 1: 0.4080ms
- Channel 2: 0.4200ms
- Channel 3: 0.4600ms
- Channel 4: 0.4970ms
- Channel 5: 0.5400ms
- Channel 6: 0.5900ms
- Channel 7: 0.6750ms
- Channel 8: 0.7630ms
- Channel 9: 0.8630ms
- Channel 10: 1.0320ms
- Channel 11: 1.1960ms
- Channel 12: 1.4070ms
- Channel 13: 1.7200ms
- Channel 14: 2.0920ms
- Channel 15: 2.5300ms
- Channel 16: 3.1400ms
- Channel 17: 3.8900ms
- Channel 18: 4.7800ms
- Channel 19: 5.9870ms
- Channel 20: 7.4800ms



EM-37
GEOTERREX
25 Hz



GRAVITY



MAGNETICS

GEOPHYSICAL INTERPRETATION

90-3104

Billiton Australia The Metals Division of the Shell Company of Australia Limited			
Project: LAKE SELINA, TAS			
Title: LINE 5 360 800 N			
Author: N.H.	Date: 5/89	Scale: 1:5000	
Drawn: A.M.	Office: AHO	Revised:	Date:
Drawing No.: LD56/1024	Fig. No.:		14

5 cm

9310

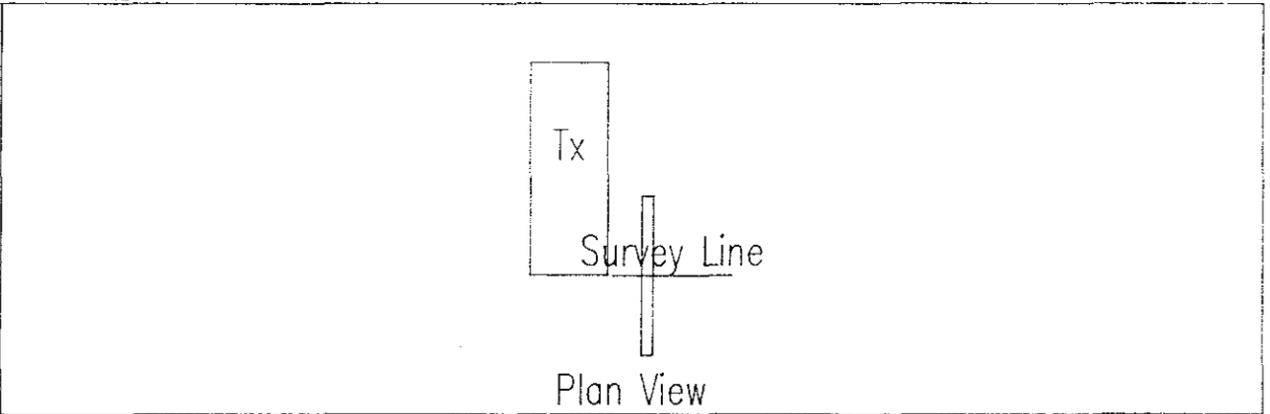
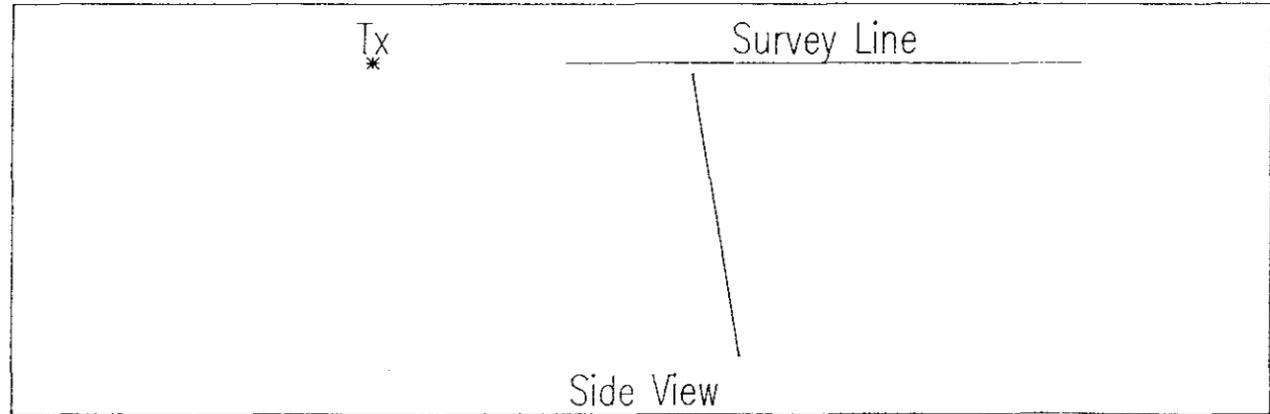
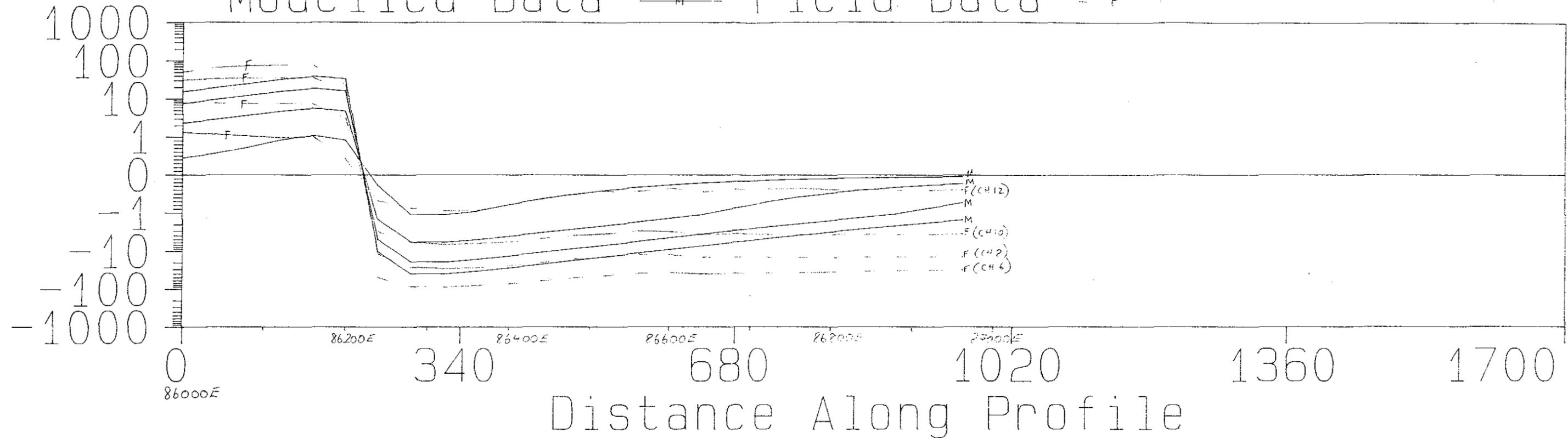
TEM Response Profile

LAKE SELINA, TAS, LINE 60800N, Z-COMP, EM-37, 11/03/89

Fixed Loop TX, Roving Surface RX - Z Component

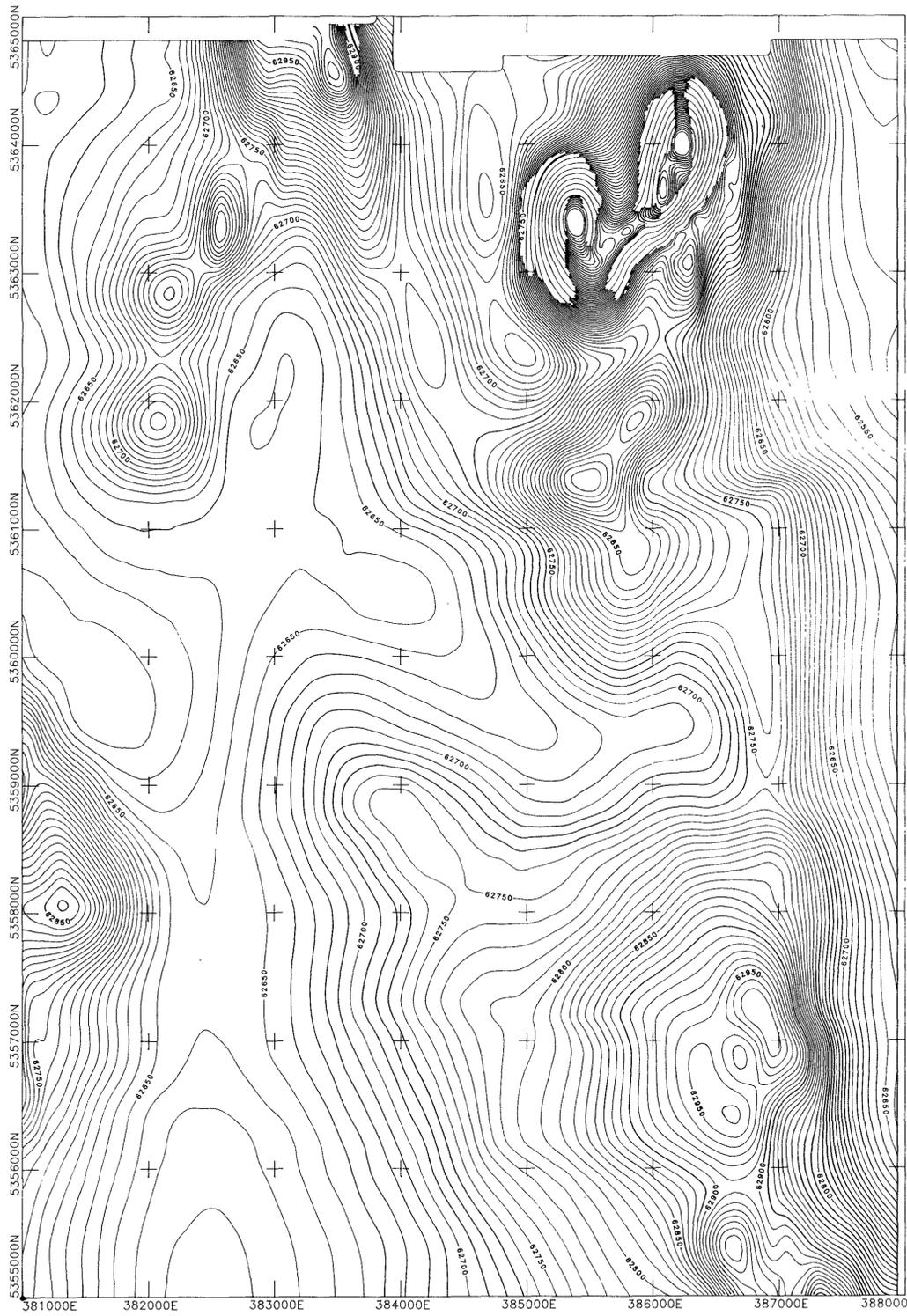
Modelled Data —*— Field Data - F

Response (uV/A)

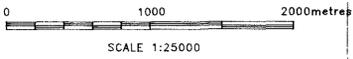


Survey : lake selina line 60800n,em37
 Loop Sides : 600, 1600 Thin Plate In Air
 Effective RX Area : 1000 Length : 1200
 Instrument : EM37 Width : 500
 Channels : Standard Times Sigma-T : 3.000
 Profile : 60800N Position : (5265, 60800, 20)
 Strike : -90
 Dip : 80
 Plunge : 0

508067
90-3104



Flown by Department of Mines, Tasmania, 1981
 Flight line spacing = 500m
 Mean sensor height = 135m
 Grid mesh = 200 x 200m



508069
90-3104

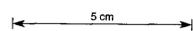
BILLITON AUSTRALIA
The Metals Division of the Shell Company of Aust

NW TASMANIA
 LAKE SELINA AEROMAG

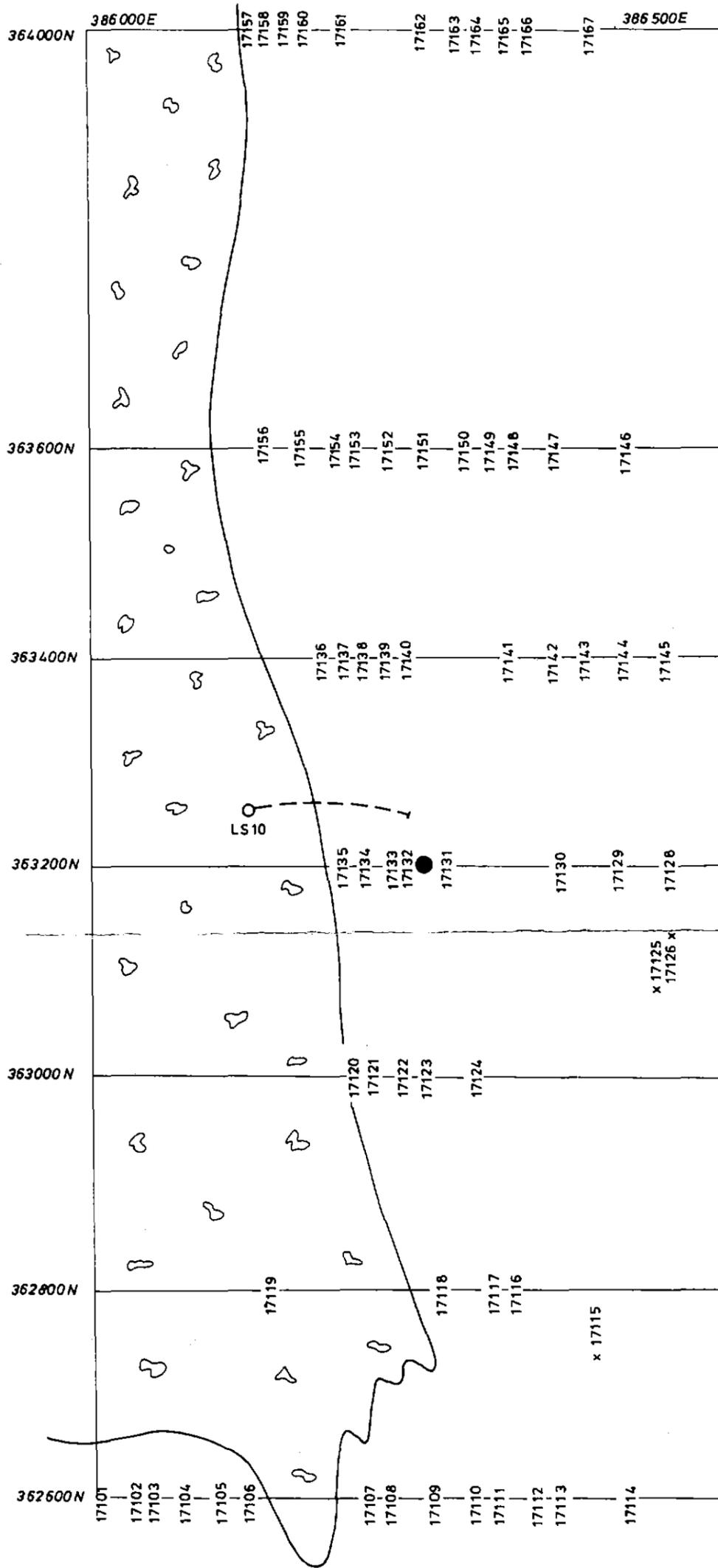
Contour Interval 10 nT

FIG 17
 LD56/
 1018

DATE 15-SEP-88 PLAN NO.

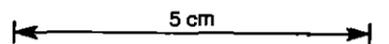
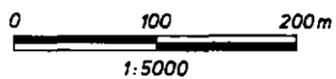


9313



508070

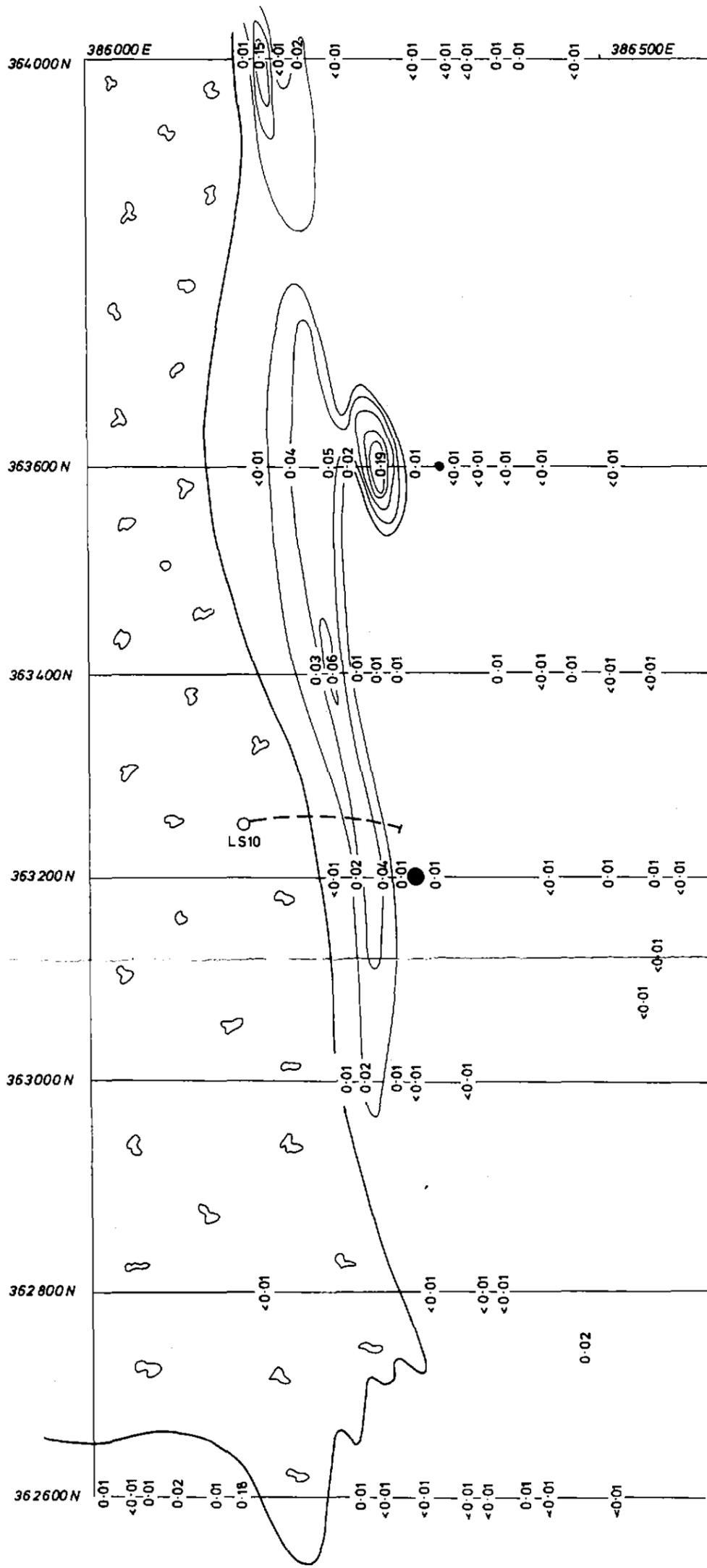
-  Dora Conglomerate
-  EM 37 Anomaly
-  Diamond Drill hole
- 171... Sample numbers



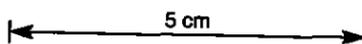
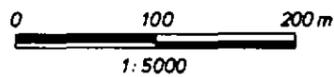
90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY SAMPLE SITES			
Author	C J C	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised	Date		
Drawing No.	D / LD 56 / 018		Fig. No. 18

9314



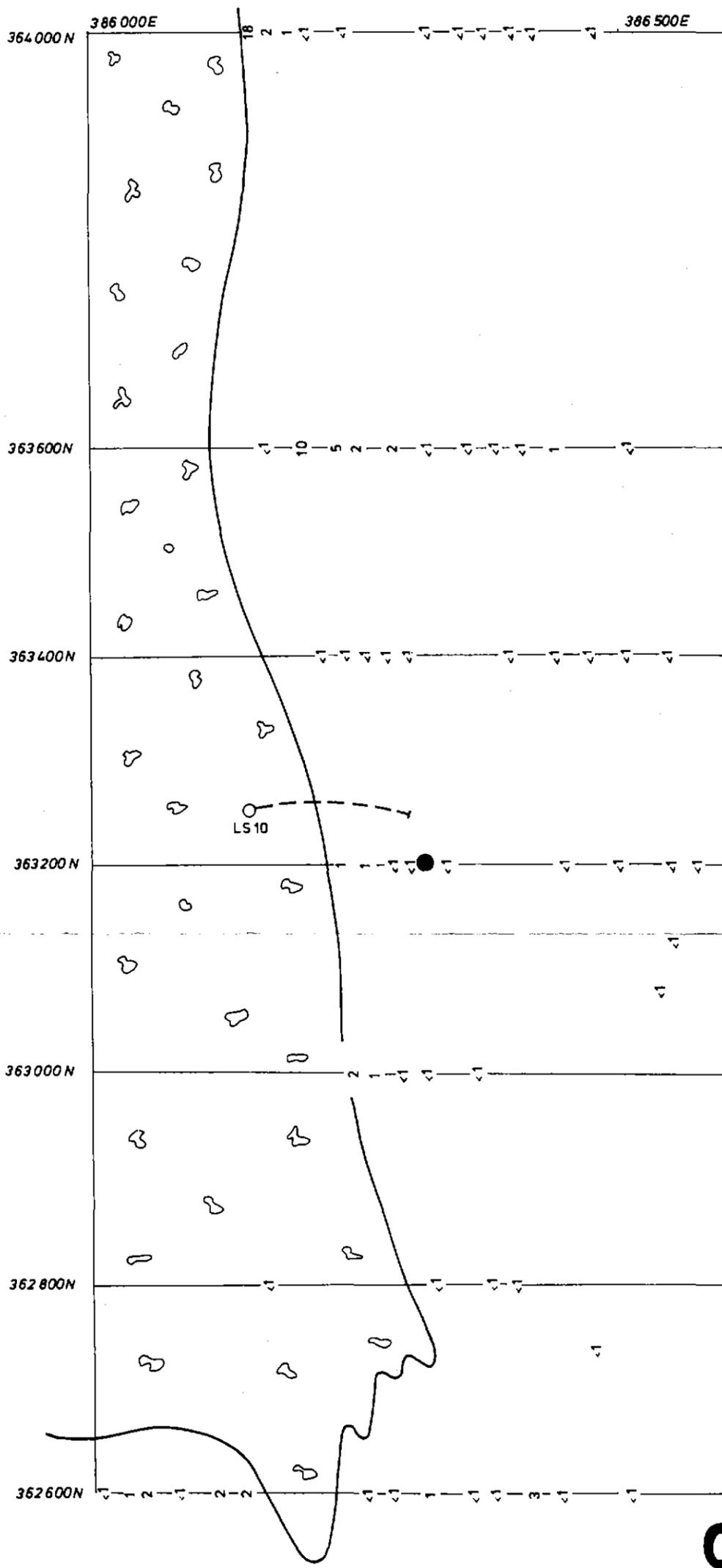
-  Dora Conglomerate
 -  EM 37 Anomaly
 -  Diamond Drill hole
 -  Spot low
- Contour interval 0.02ppm



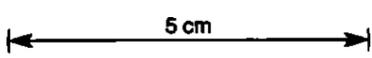
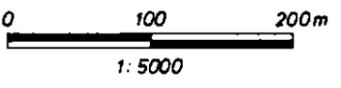
508071

90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Au ppm			
Author	C J C	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised	Date		
Drawing No.	D / LD 56 / 016		Fig. No. 19



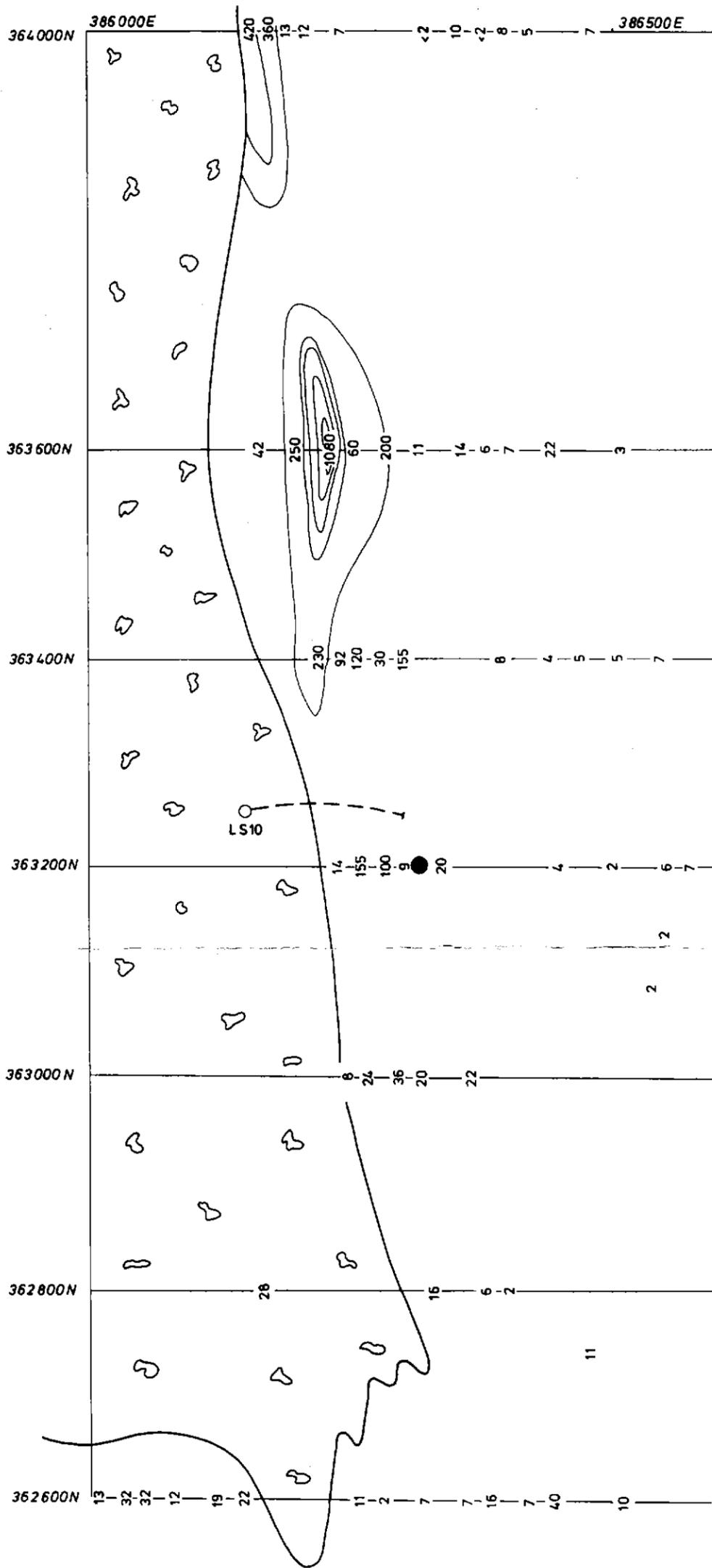
-  Dara Conglomerate
-  EM37 Anomaly
-  Diamond Drill hole



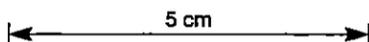
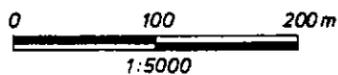
508072

90-3104

 Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Ag ppm			
Author	CJC	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised			Date
Drawing No.	D / LD 56 / 022		Fig. No. 20



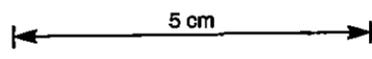
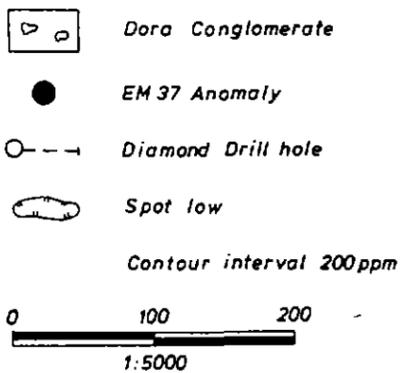
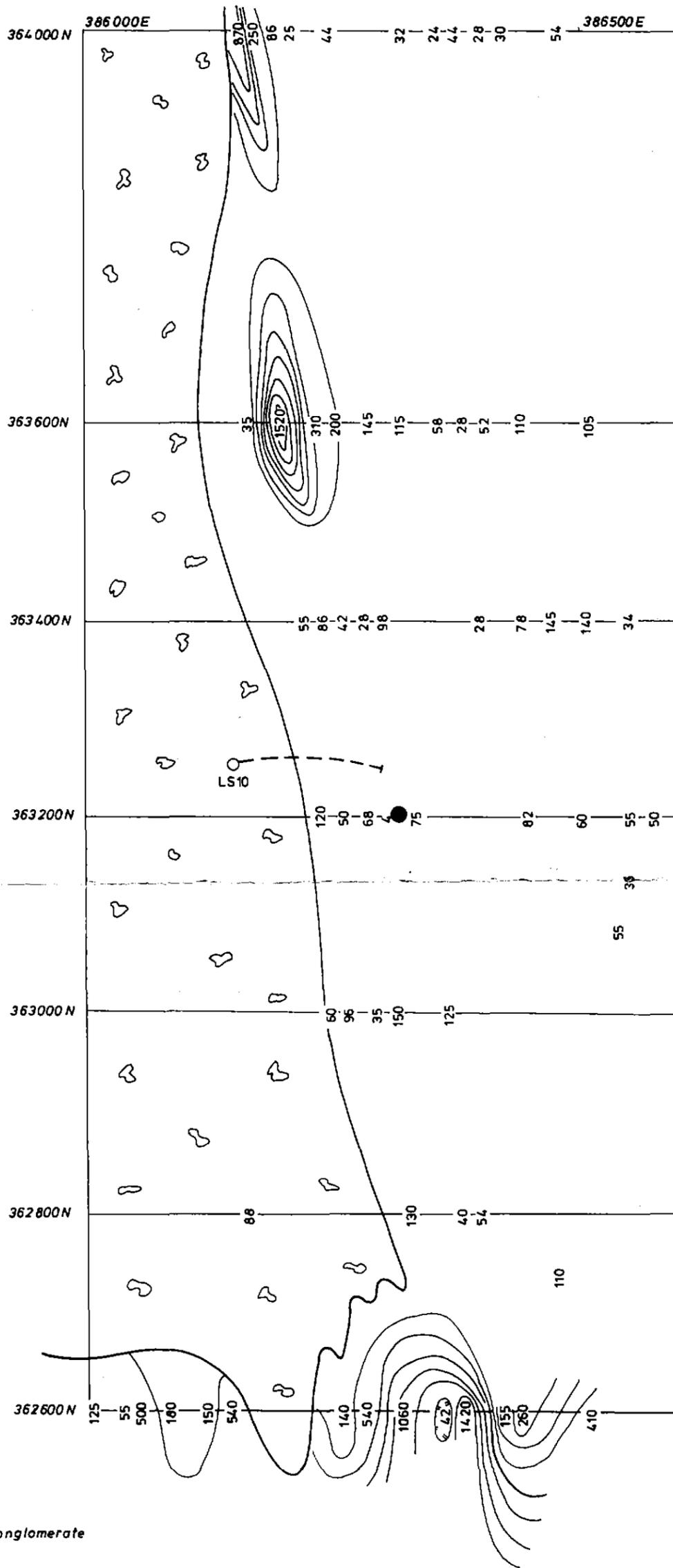
- Dora Conglomerate
 - EM 37 Anomaly
 - Diamond Drill hole
 - Spot low
- Contour interval 200 ppm



508073

90-3104

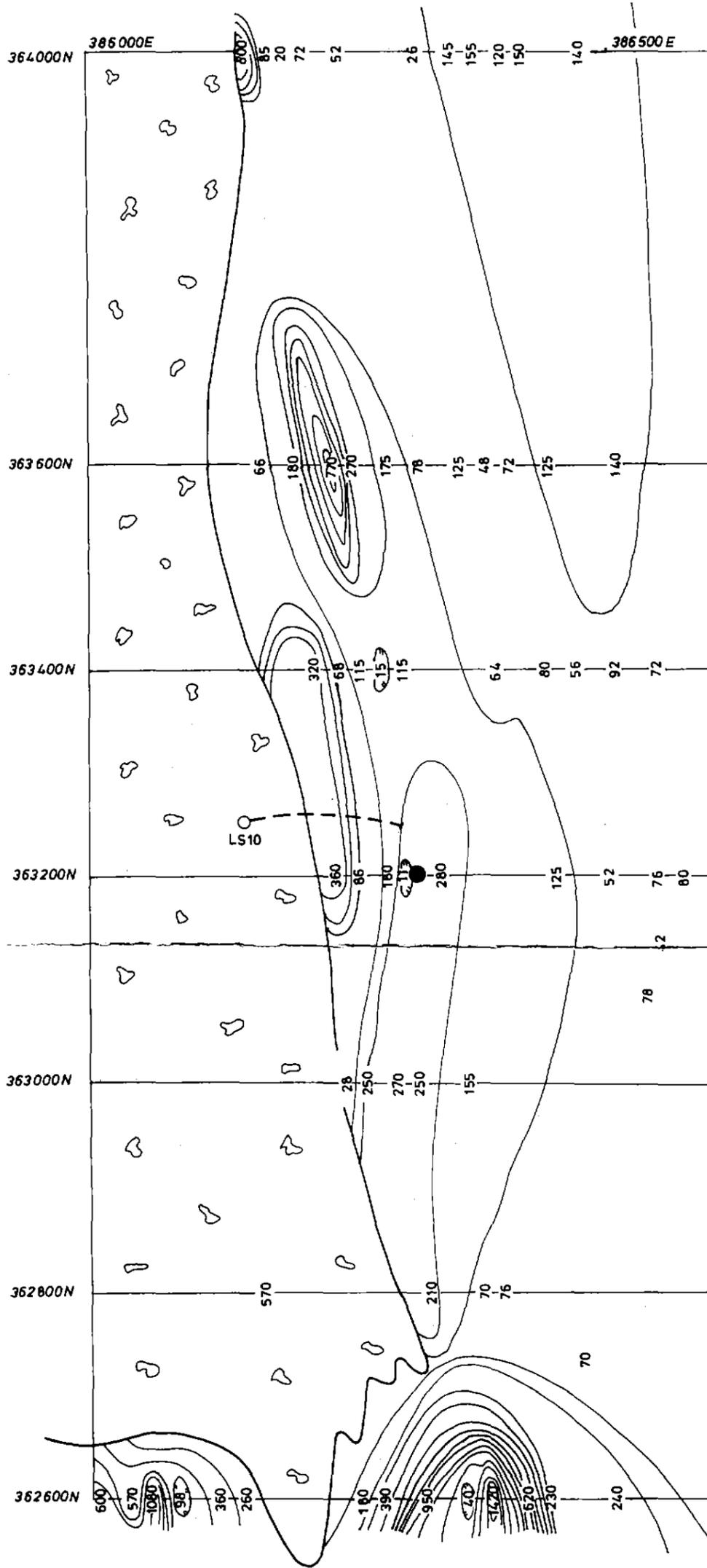
Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Cu ppm			
Author	C J C	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised	Date		
Drawing No.	D/LD 56/015		Fig No. 21



508074

90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Pb ppm			
Author	CJC	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No.	D / LD 56 / 014		Fig. No.
			22



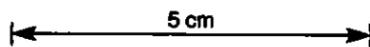
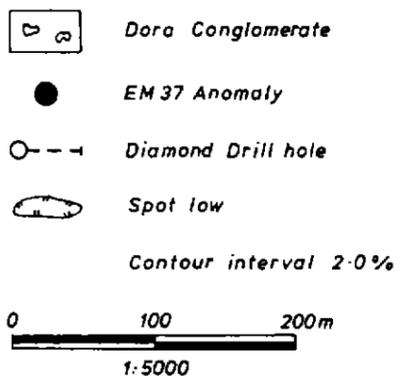
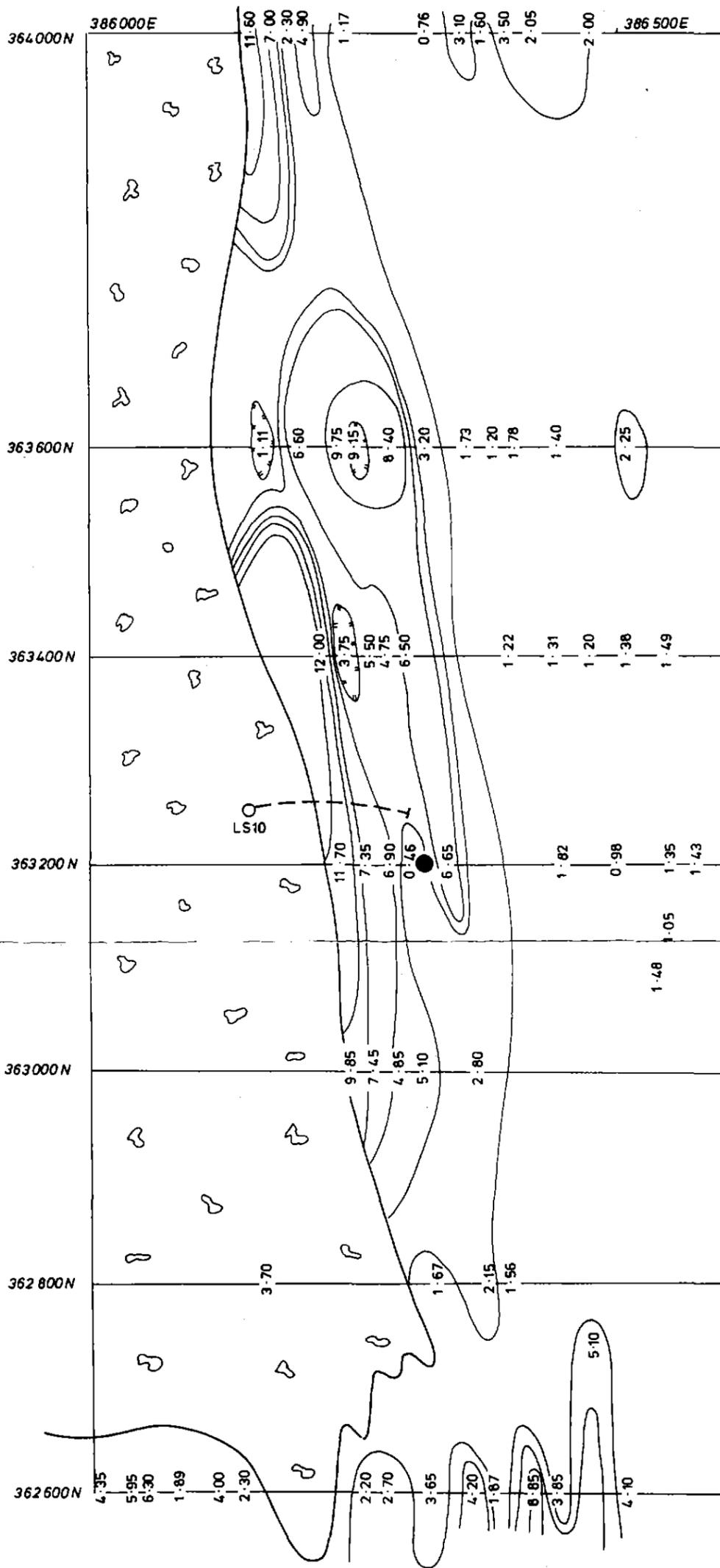
-  Dora Conglomerate
-  EM 37 Anomaly
-  Diamond Drill hole
-  Spot low

Contour interval 100 ppm

0 100 200m
1:5000

508075
90-3104

 The Metals Division of the Shell Company of Australia Limited			
Project LAKE SELINA			
Title EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Zn ppm			
Author C J C	Date 1/90	Scale 1:5000	
Drawn OH	Office TAS	Revised	Date
Drawing No. D/LD 56/020			Fig. No. 23

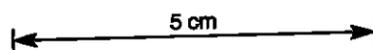
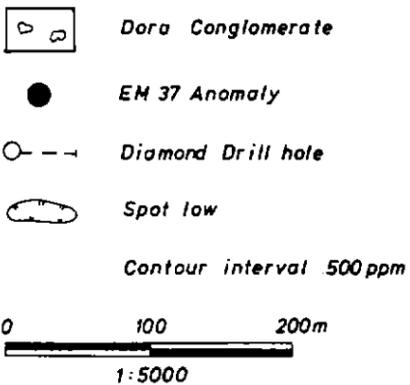
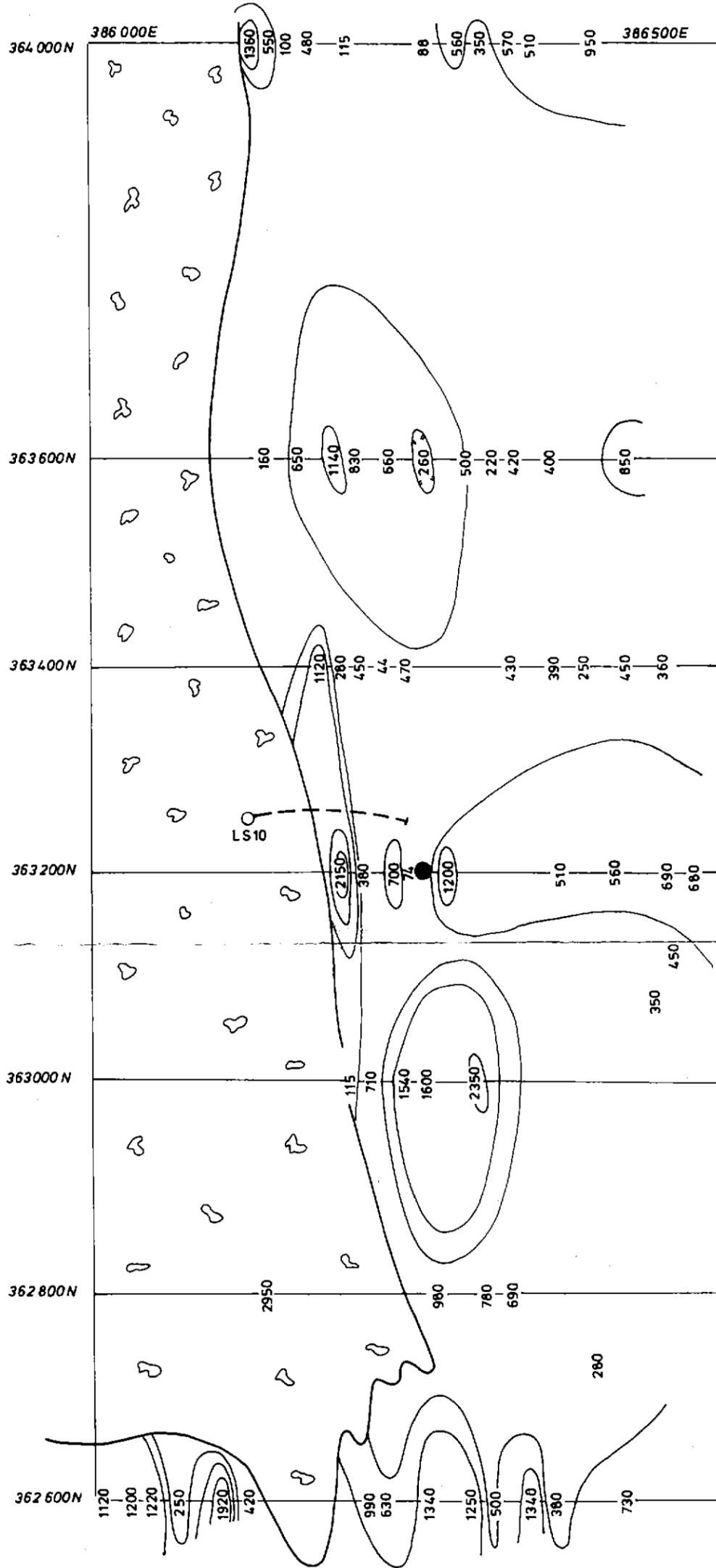


508076

90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Fe %			
Author	CJC	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No.	D/LD 56/013		Fig. No. 24

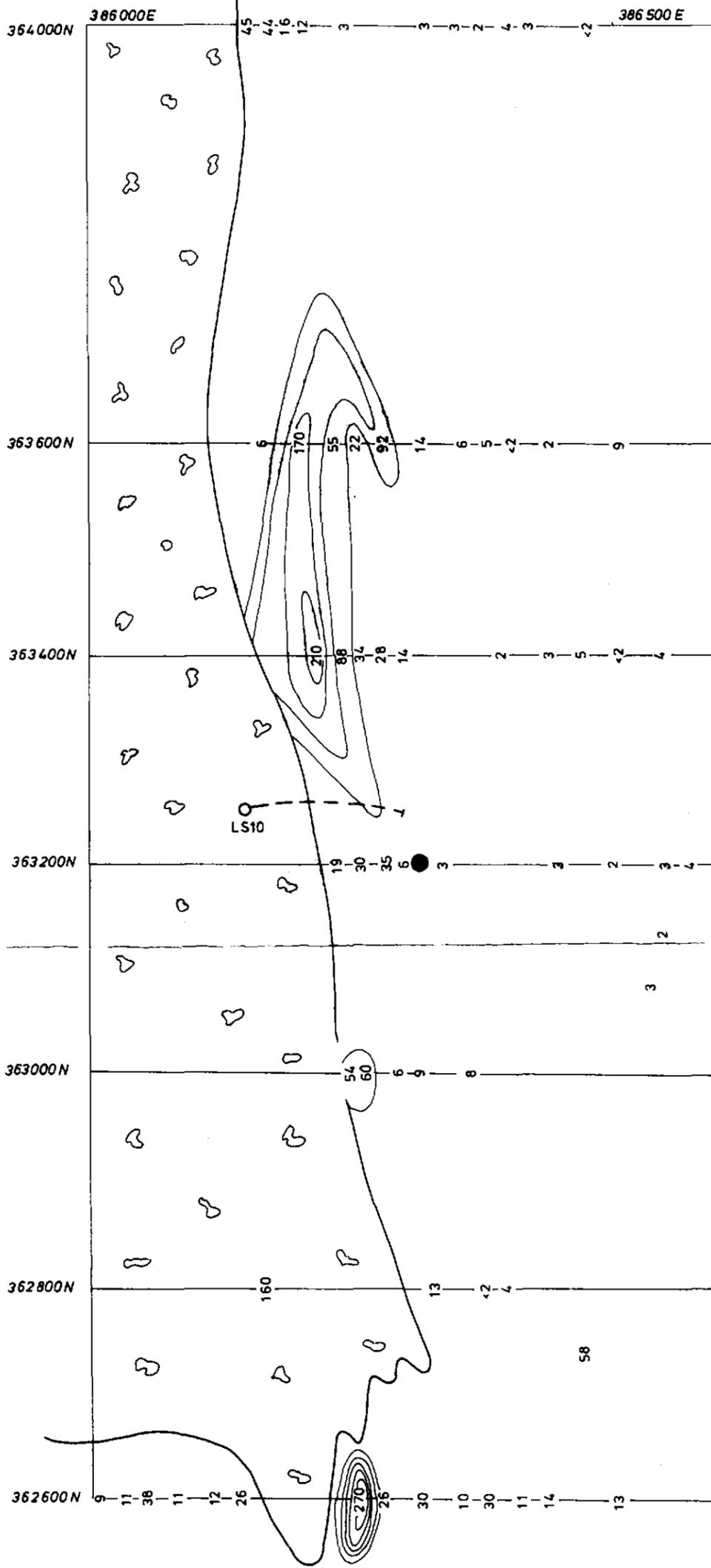
9320



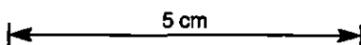
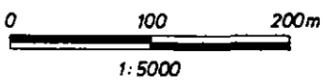
508077

90-3104

 The Metals Division of the Shell Company of Australia Limited			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Mn ppm			
Author	C J C	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised			
Drawing No.	D / LD 56 / 021		Fig. No. 25



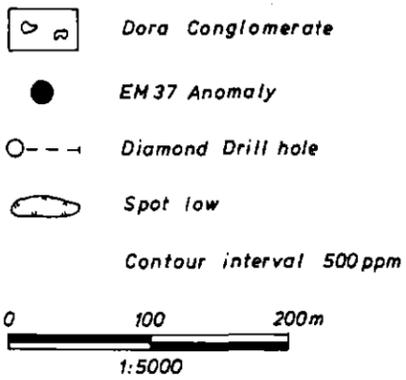
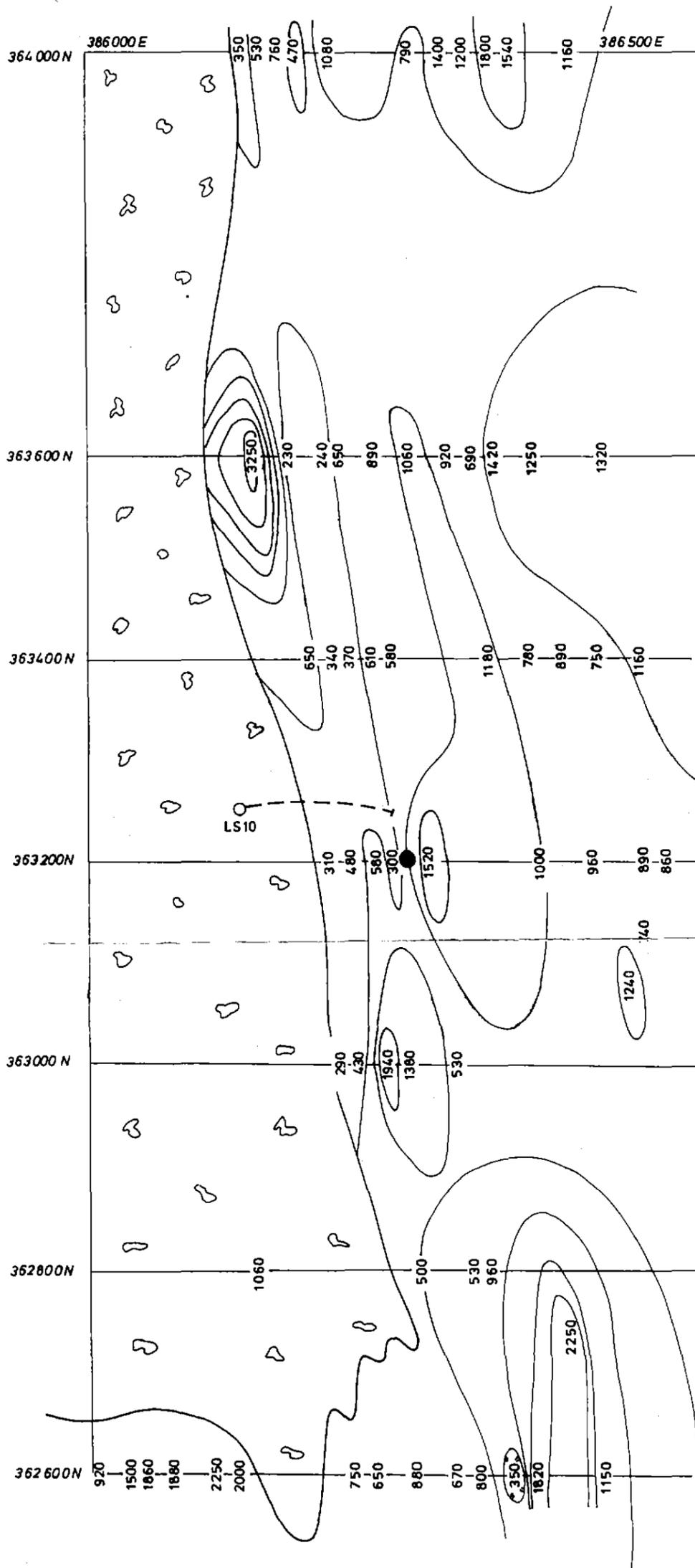
-  Dora Conglomerate
-  EM 37 Anomaly
-  Diamond Drill hole
- Contour interval 50ppm



508078

90-3104

Billiton Australia <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY As ppm			
Author	CJC	Date	1/90
Scale	1: 5000		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No.	D/ LD 56 / 019		Fig. No. 26



5 cm

508079

90-3104

 The Metals Division of the Shell Company of Australia Limited			
Project		LAKE SELINA	
Title			
EASTERN PYRITE ZONE ROCK CHIP GEOCHEMISTRY Ba ppm			
Author	CJC	Date	1/90
Scale	1:5000		
Drawn	OH	Office	TAS
Revised			
Drawing No.	D/LD 56/017		Fig. No. 27