GEOPEKO

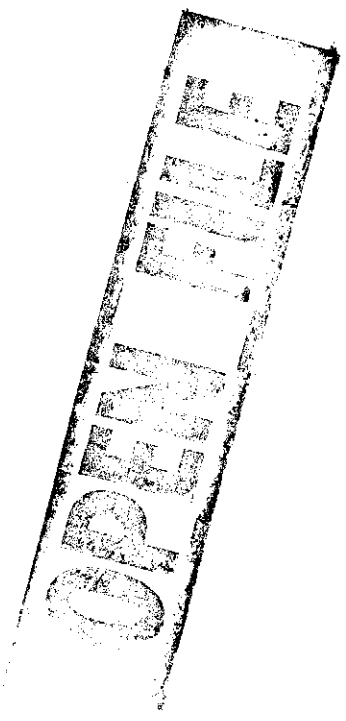
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

PROGRESS REPORT ON LONGBACK

E.L. 37/82

TASMANIA

J. PEMBERTON,
DEVONPORT.
MARCH, 1984.



CONTENTS

LIST OF FIGURES

LIST OF PLANS

1. INTRODUCTION

On May 9th, 1983 Geopeko signed an option agreement with COMINEX to aquire up to 94% interest in Exploration Licence 37/82. The E.L. covers an area of 65sq km between the Donaldson and Savage Rivers approximately 8km south west of Savage River township. Access to the northern part of the E.L. is restricted to helicopter while logging tracks off the Corinna road allow restricted access by 4W.D. vehicles to the south of the E.L. The topography is steep and covered by rainforest, eucalyptus forest and button grass plains.

Initial reconnaissance by Geopeko was completed over a five day period in May, 1983 and fulfilled Stage 1 of the option agreement with Cominex (see appendix A). Stage 2 was iniated in December 1983 with the establishment of a camp at the Longback 1 prospect. Gridding contractors cut 7.85 line km in December and January with the baseline having a magnetic bearing of 052^{o}.

Field work was completed over a three week period in January. This entailed geological mapping, ground magnetics and hand held power auger geochemical sampling.

A drill hole was targetted late in February based on the modelling of the ground magnetics.

2. GEOLOGY

The Longback 1 prospect falls into the Proterozoic Phi Group of Professor Carey (quartzite, dolomite + shale). A major north east trending linear is adjacent to the magnetic anomaly and referred to as the Savage Fault. To the west of this fault is the Sigma Group (shales, lavas and dolomite).

Mapping on the Longback 1 grid is generally confined to stream section, auger chips and float in up turned tree roots (see Outcrop Map Plan No 1 and Interpretation Map Plan No 2). The lithologies from west to east are:-

1. Stromatolitic dolomite
2. Black pyrite shale and grey dolomitic shale with interbedded green siltstone in the north ($\pm$200m)
3. Pebbly tremolitic mudstone and shale with a trace of pyrrhotite ($\pm$300m).
4. Silicified carbonate.

The sequence strikes north south across the grid and swings to the east on the northern part of the grid. Dip is usually to the west at $\pm 60^{\circ}$ while cleavage appears to fan from 340° to 020° and dip near to vertical. Kink banding of this cleavage indicates a Taberabberan deformation of the earlier Tyennean orogeny.

Petrological reports on rock specimens KR 12735 (Pebbly mudstone), KR 11158 (Silicified carbonate), KR 11159 (Weathered shale) and KR 11161 (Dolomite) are included in Appendix B. Rock chip geochemistry for 13 samples are included in Appendix C and locations on Outcrop Map Plan No1.

3. GEOCHEMISTRY

A total of 150 C horizon hand held power auger samples were taken over the ground magnetic anomaly. The results for Cu, Pb, Zn, Ag, Fe, Ba, Sn, W and As are presented on plans 3 to 13. REsults are tabulated in Appendix D. A liberal interpretation of contour intervals was applied to detect any geochemical trends that might have been present.

The geochemistry did not reveal any base metal anomalies except for a spot high in the carbonate on the northern part of the grid. This sample contained 185ppm Cu, 220ppm Pb and 480ppm Zn, Ba was anomalous over the magnetic anomaly (upto 1.48%) and had an antipathetic relationship with iron.

Spot W anomalies were obtained over the quartz gravels and indicate the auger bit as a source of contamination.

4. GEOPHYSICS

The grid was read using a Geometrics G-816 with a G-856 as a base station. Readings were taken at 10m intervals. The results from this survey are discussed in Appendix E. Contours of the results are presented in Plan 14.

5. CONCLUSIONS

The results of this work indicated a favourable environment and target for tin bearing pyrrhotite mineralization. A drill hole was planned with a collar position of 10150E 9290N at an inclination of -50° drilling in a north westerly direction (322° magnetic) to intersect three modelled dyke like bodies.

The drill hole was completed at 302m while this report was being compiled. A sequence of Black Shales and Dolomitic Grey Shales with pyrrhotite was intersected. Logging and splitting of this core will proceed on the completion of this report.

APPENDIX A

LONGBACK PROSPECT - R.R. LARGE

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

INTER-OFFICE MEMO

TO: B.T. WILLIAMS DATE: 30-6-83

FROM: R.R. LARGE COPIES TO: G.H. Sherrington

SUBJECT: LONGBACK PROSPECT

An option agreement was signed with a Tasmanian Syndicate "COMINEX" on May 9, 1983 to aquire up to 94% interest in Exploration Licence 37/82, 10 km south west of Savage River, Western Tasmania. This memo outlines the exploration results to date and recommends that we should proceed to Stage 2 of the option.

Option Agreement: The agreement is a staged option as follows:

Stage	Option	Equity	Duration	Programme
Stage 1	$5,000	None	3 months	Reconnaissance grid, magnetics, geology
Stage 2	$10,000	None	12 months	Detail ground surveys and one drill hole
Stage 3	$20,000	94%	Indefinite	Prospect evaluation

Stage 1 has been completed and it is recommended that Geopeko complete Stage 2 in the 1983/84 season.

Access: The E.L. is in a remote area between the Donaldson and and Savage Rivers. The only present access is by helicopter - a 10 minute flight from Savage River Mine. In the summer it may be possible to push a Bombardier track 5km north from Mt Donaldson to gain access to the Longback Prospect and reduce helicopter costs.

Previous Work: No significant exploration has been carried out in the E.L. The 1982 Mines Department aeromagnetic survey covers the E.L. and defined a number of anomalies (see fig 3). The Longback anomaly is an isolated and intense bulls-eye shape and was selected by Cominex as a possible Kimberlite pipe. Six traverses were cut across the anomaly by Cominex in early 1983 which partly defined its shape. I visited the area in February 1983, and concluded that the anomaly represents a favourable target for pyrrhotite-tin mineralization.

Work by Geopeko:

In May 1983 Geopeko undertook a crash programme to allow further evaluation of the Longback anomaly.
This work included -
- reconnaissance gridding
- magnetics
- geological mapping
- drainage sampling

Geology:

Professor Carey placed the anomaly in the Proterozoic Phi Group (quartzite, dolomite and shale) near the contact with Sigma Group and adjacent to the Savage Fault a major north east trending feature extending from Pieman Heads to Savage River Mine. (see figure 3) Mapping by John Pemberton (see figure 4) has defined a north-south striking sedimentary sequence dipping west at around 50°. Passing west to east the lithologies are
- massive dolomite
- grey shale with minor pyritic black shale and lenses of dolomite (~ 200m thick)
- pebbly mudstone (~ 300m thick)
- Quartzite

North of the Savage Fault outcrops of massive quartzite occur on the Longback ridge.

Magnetics:

On the ground the magnetic anomaly has a complex shape. (see figure 5, Plans 1 and 2). It is composed of two parts-

a) A roughly circular anomaly of about 1000nT maximum with diameter of 400m

b) A group of smaller spiky anomalies of 300-700nT lying directly east of the main anomaly.

The circular anomaly lies over the contact of the black shale and pebbly mudstone sequence. Outcrops of dolomite occur on the contact about 150m north of the anomaly. The centre of this anomaly is on a topographic high.

Insufficient data is available to model the magnetic anomaly, however its general features suggest a pipe-like body centred below 10100E, 9450N plunging grid east.

Calceraous pebbly mudstone carrying 2-5% pyrrhotite was located at 9500N, 10350E beneath one of the spikey anomalies to the east of the main anomaly. Walley Fander reported minor chalcopyrite with the pyrrhotite in a sample of the rock (see attachment).

Geochemistry:

Twelve drainage -80 mesh samples were analysed from the grid area and are listed in Table 1. No significantly anomalous values for Cu, Pb, Zn, Sn, W or Au are obvious, however the data set is very small and background values are unknown for this environment.

Geochemical values for eleven rock chip samples from the grid are given in Table 2. The pyrrhotite bearing pebbly mudstone from 9500N, 10350E returned 230ppm Cu, 180ppm Zn and 1500ppm Ba. All the shale and pebbly mudstone samples south of the Savage Fault have elevated levels of barium from 570 to 3200ppm Ba. Two samples of the western dolomite horizon contain above-average gold (430ppb and 530ppb).

DISCUSSION

The Longback Prospect has many positive criteria indicative of a pyrrhotite-tin body.

1. Isolated magnetic anomaly indicative of a pipe like body cross cutting the stratigraphy.

2. Host rocks consist of black shales, dolomites and calcareous pebbly mudstones. The dolomites are favourable reactive hosts for replacement.

3. The anomaly lies adjacent to a major fault which represents a potential feeder zone.

4. The anomaly lies midway between the Meredith granite and the Interview Granite both of which have associated Sn-W mineralization.

The lack of anomalous Sn or W stream geochemistry is the only negative feature.

FUTURE PROGRAMME

In order to assess the potential of the Longback Prospect the following Stage 2 programme is required.

a) Accurately survey and infill the grid to allow for detailed magnetic interpretation of the anomaly.

b) Bedrock geochemistry over the central part of the anomaly.

c) Selected traverses of dipole-dipole IP.

d) One diamond drill hole to test the main anomaly.

A budget sheet for this programme is enclosed. Total base cost is $80,000.

RECOMMENDATION

That Geopeko proceed to Stage 2 of the Longback Option agreement, and undertake the programme outlined above in the 1982/83 summer season.

FIGURES

1.	Regional Geology	1:500,000
2.	Aeromagnetics	1:100,000
3.	Photo-interpretation Geology	1:100,000
4.	Prospect Geology	1:5,000
5.	Magnetic Contours	1:5,000

Plan 1:	Magnetic Profiles	1:2,500
Plan 2:	Magnetic Contours	1:2,500

443013 015

GEOPEKO

BUDGET 1983/84

PROJECT DIRECT COSTS

BASE: DEVONPORT

PROJECT LONG BACK.

DATE: 30/6/83.

COST CATEGORY	ESTIMATED ACTUAL 1982/83	QUARTER TO 30/9/83	QUARTER TO 31/12/83	$'000 QUARTER TO 31/3/84	QUARTER TO 30/6/84	FULL YEAR TO JUNE 1984	USE OF GORDON SERVICES $'000	PROJECT STATISTICS
Salaries -Geologists						11		160 11.0 geologist days @ $..
(on costed) -Geochemists						—		....geochem. days @ $...
-Geophysics						4		160 25 ....geophy. days @ $...p
-Drafting						—		....draftsmen days @ $..
-Other						1		100 10 .... days @ $..
Total Salaries						—		....Total days @ $...per
Wage. Field Assist.						9		70 120 ....Field Asst days @ $.
(on costed) -Drafting						2		100 20 .Draftsmen days @ $..
-Other						—		.... days @ $..
Total Wages						—		....Total days @ $...per
Tenement Expenses						1		
Vehicles						2		....Vehicle days @ $...p
Travel and Accomm.						1		
Freight						—		
Supplies						2		
Sustenance						2		
Premises -Housing								
Communications								
Other Expenses								
Geol. ult. & Maps								
Mineralogy & Petrology								
General Contractors						14		Helicopters
Survey & Gridding						—		
Geochemistry						4		....Samples @ $...per sar
Assaying						3		20 ....Samples @ $15.per sar
Geophysics -Airborne						—		....Km @ $...per line km
-Ground						2		
Drilling -Soil Probe								....metres @ $...per met
-Reverse Circ.								....metres @ $...per met
-Percussion								....metres @ $...per met
-Diamond						14		200 ....metres @ $.70.per met
~~Sundry Income~~ Indirects						8		Indirects.
Total Project Costs excluding Indirect Costs and Management Charges	$	$	$	$	$	$ 80.	$	

For

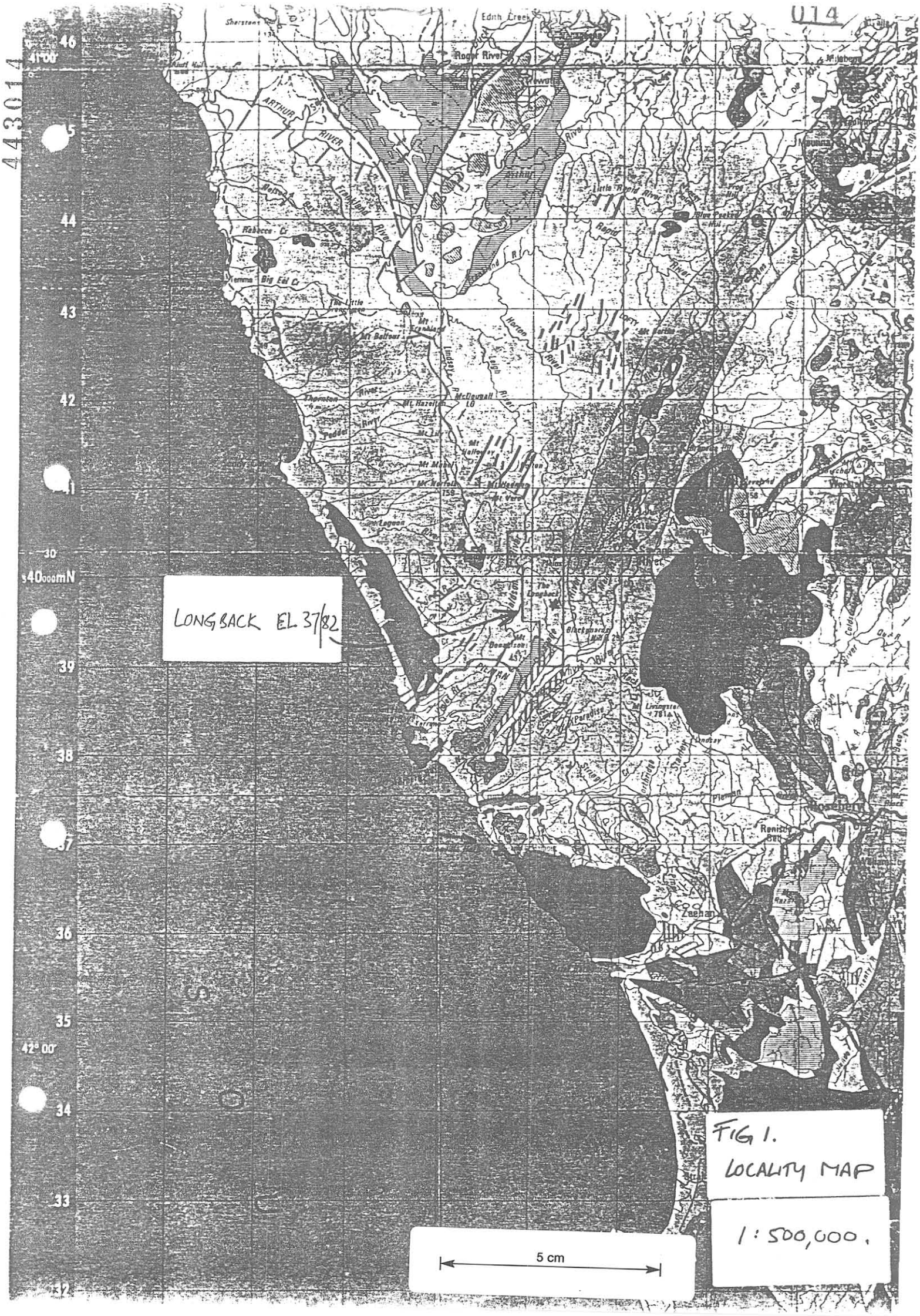


FIG 1.
LOCALITY MAP

1:500,000.

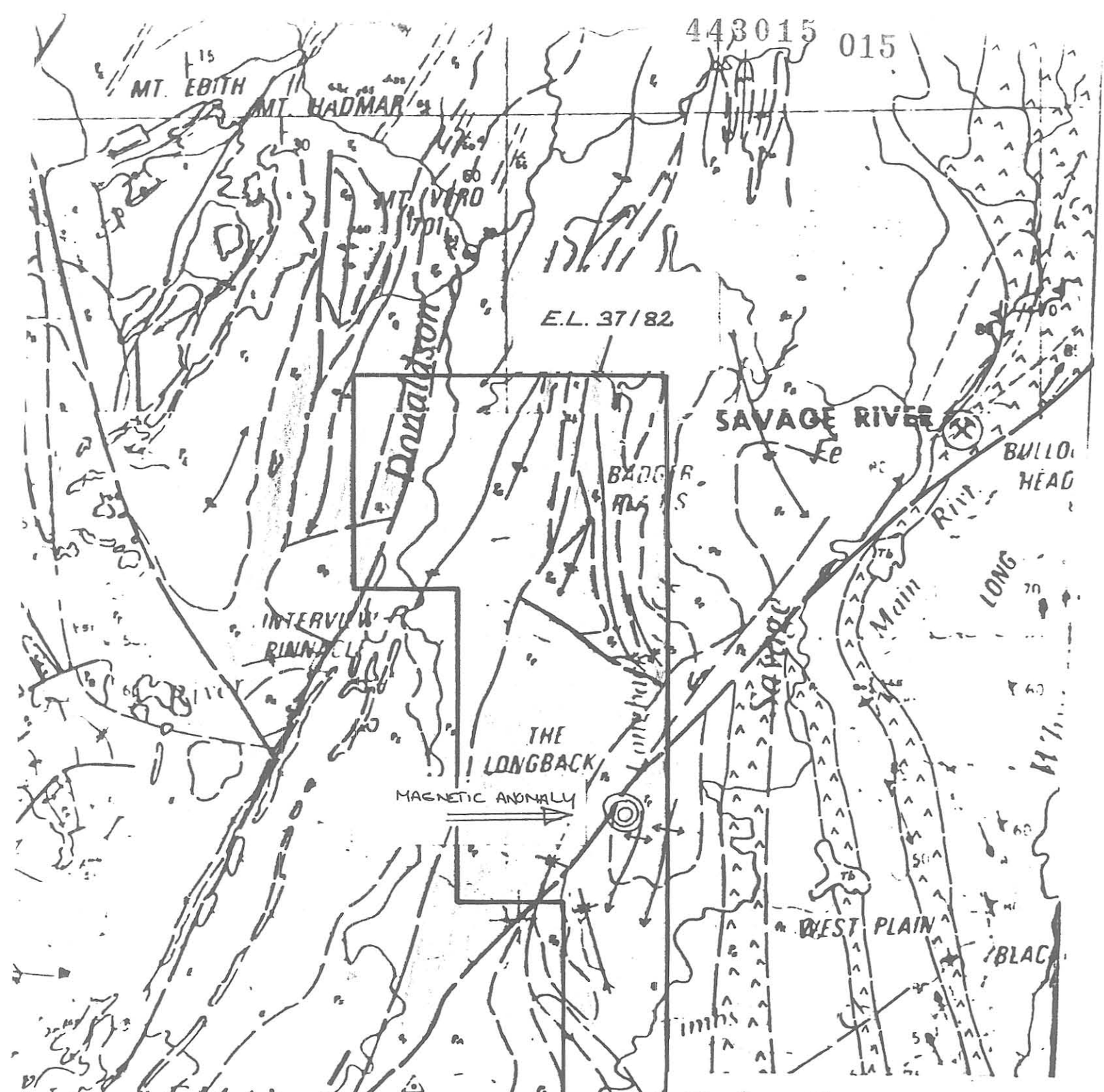


FIG 2: GEOLOGY INTERP. (Prof Carey, 1981)

Scale 1 : 100,000

- P_S Sigma Gp – shales, lavas & dolomite
- P_P Phi Gp – Quartzite, dolomite & shale
- P_A Alpha Gp – Quartzite
- P_R Arthur Lineament ^^^ – amphibolites.

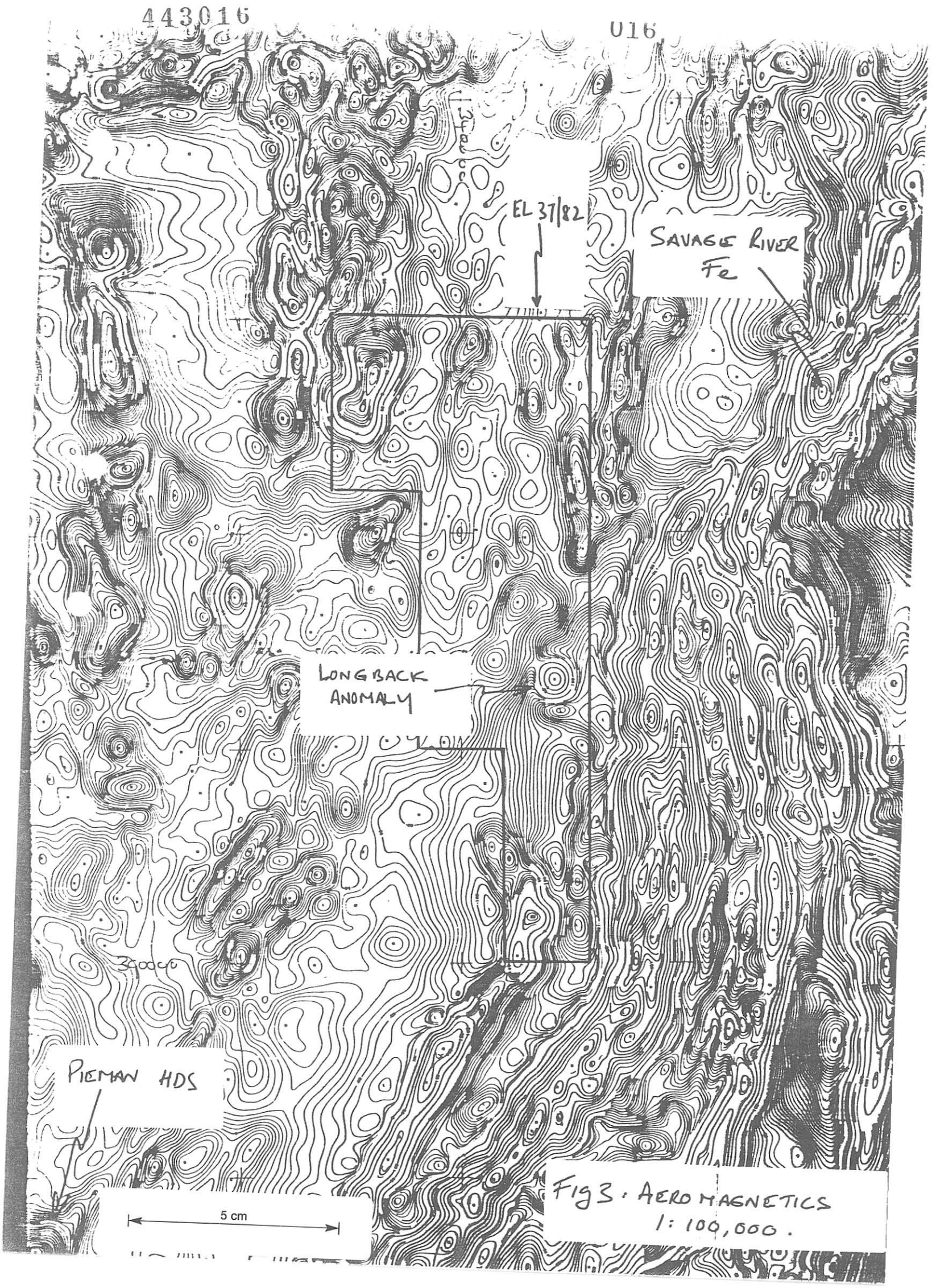


Fig 3. AEROMAGNETICS 1:100,000.

GEOPEKO

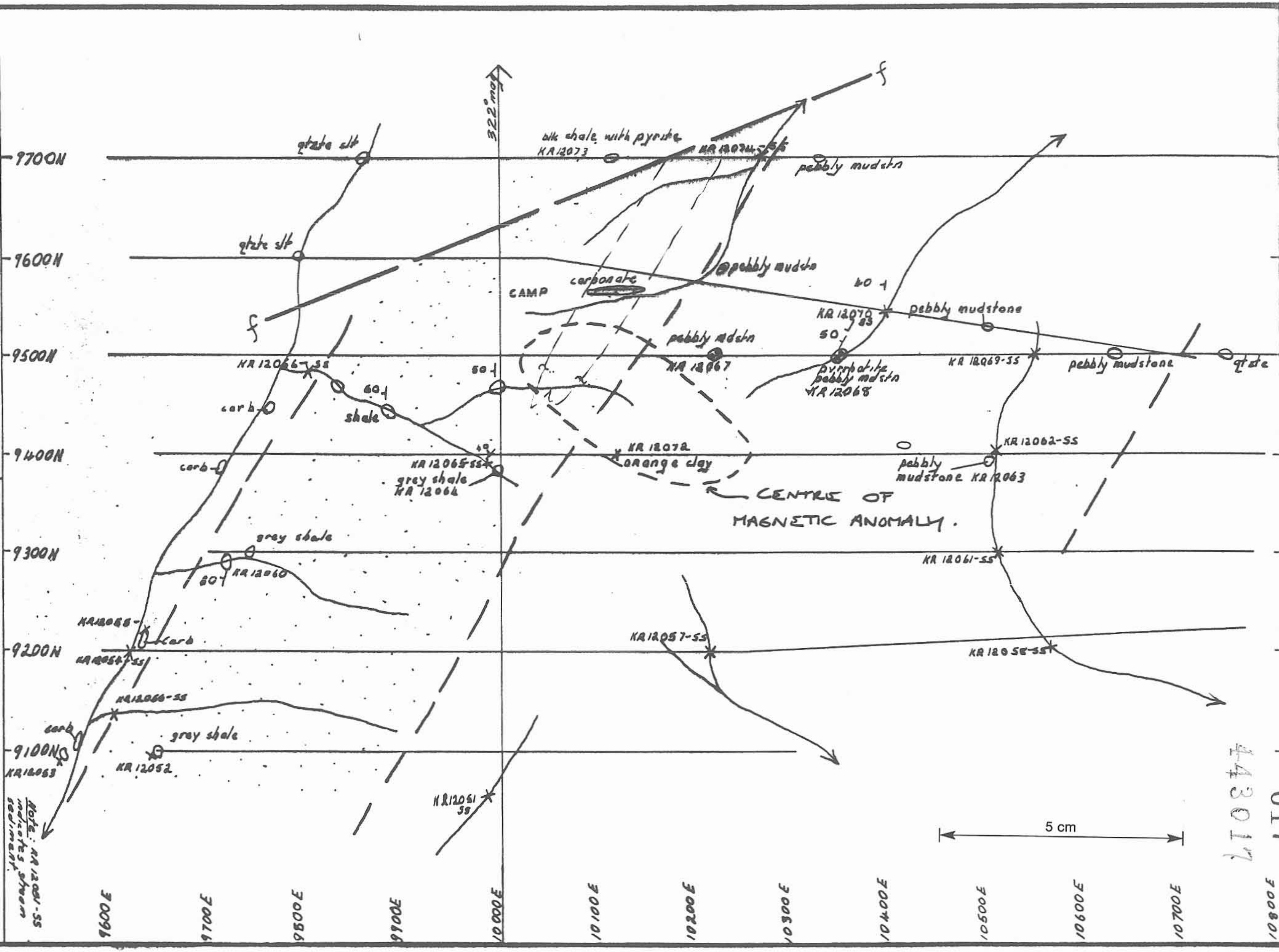
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

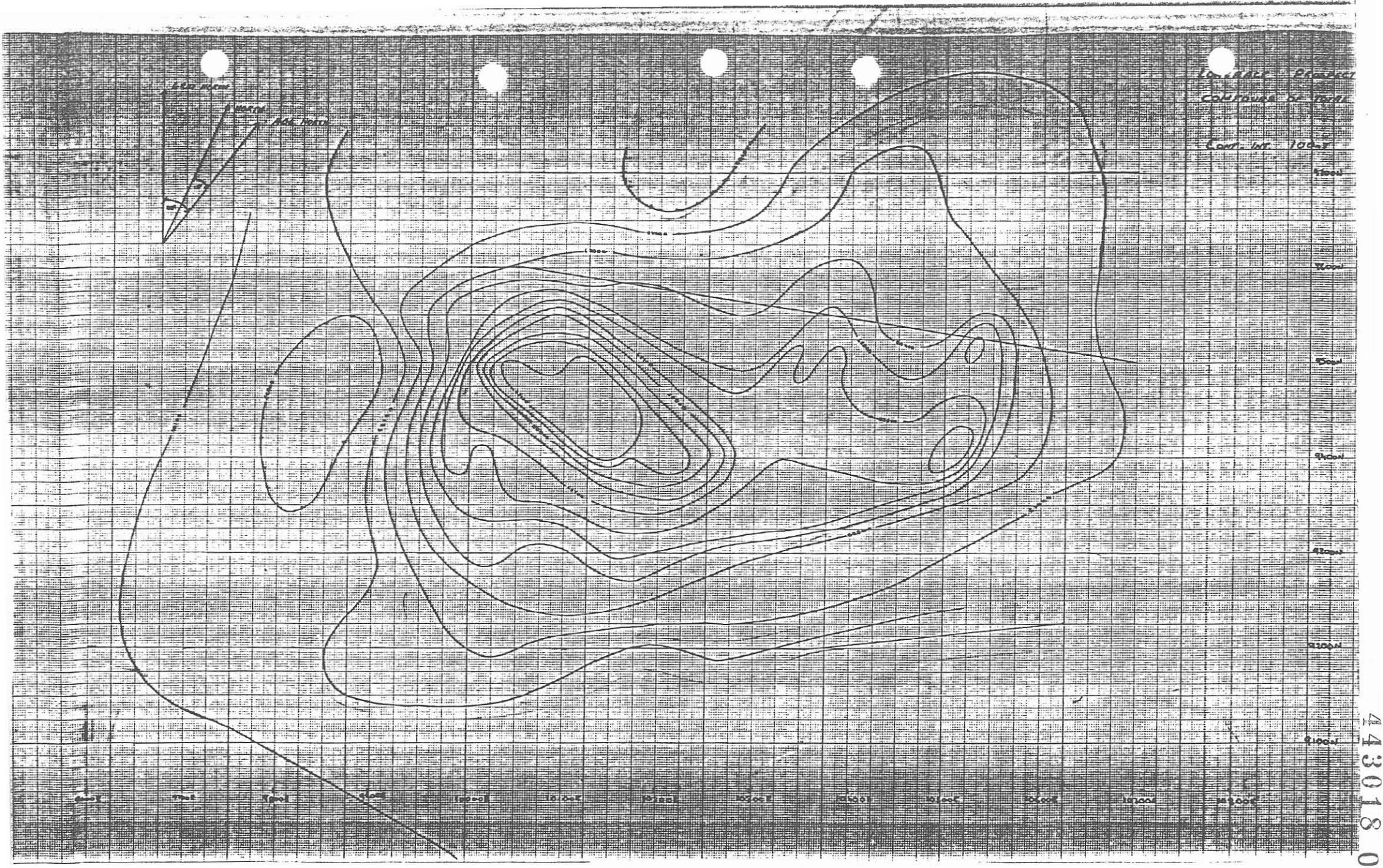
DATE | GEOL | DWN | CHKD

1:5000

LONGBACK PROSPECT

FIG. 4





5 cm

FIG 5 : MAGNETIC CONTOURS 1:5,000.

TABLE 1 : LONGBACK PROSPECT DRAINAGE SAMPLES.

A U S T R A L I A N L A B O R A T O R Y S E R V I C E S PTY. LTD.

CONSULTING CHEMISTS && ANALYSTS

OFFICE & LABORATORY
P.O. BOX 66
EVERTON PARK QLD 4053

Ph 07 3525577
TELEX ALSEV 42344

L A B O R A T O R Y R E P O R T

Batch No.: E109 Client: GEOPEKO LIMITED, Area Contact: DR. ROSS LARGE.
Address: P.O. BOX 217, Address: P.O. BOX 598,
Date Received 23/05/83 GORDON. DEVONPORT. TAS. 7310
Date Completed 31/05/83 N.S.W. 2072

Order No.: K 546, KP 3107 Sample Type: SOIL No. of Samples: 12

SAMPLE NO.	Cu	Pb	Zn	Ag	Fe	Bi	As	Au	Sn	W	ELEMENTS
	m	m	m	m	%	m	m	b	m	m	UNITS
	G001	G001	G001	G001	G001	G001	G004	PM205	XRF 1A	XRF 1A	METHODS
KR 12051	10	10	15	1	0.40	5	1	20	<5	10	
KR 12054	20	20	25	1	1.33	<5	1	5	<5	30	
KR 12056	35	20	30	1	2.42	<5	7	5	<5	40	
KR 12057	35	15	35	1	1.88	<5	1	5	<5	30	
KR 12058	20	15	25	1	1.53	<5	1	<3	<5	40	
KR 12061	25	10	30	1	2.00	<5	1	15	<5	30	
KR 12062	20	10	45	1	1.62	10	1	5	20	20	
KR 12065	25	20	35	1	2.07	<5	1	15	<5	30	
KR 12066	30	20	45	1	3.24	<5	3	10	<5	30	
KR 12069	30	15	40	1	2.16	<5	1	10	<5	30	
KR 12070	40	25	85	1	4.38	<5	1	20	<5	10	
KR 12074	45	30	70	1	4.54	<5	2	10	<5	10	

TABLE 1: STREAM SEDIMENTS

UNITS LEGEND m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: G J Kilminster

443019

A U S T R A L I A N L A B O R A T O R Y S E R V I C E S PTY. LTD.

CONSULTING CHEMISTS & ANALYSTS

OFFICE & LABORATORY
P.O. BOX 66
EVERTON PARK QLD 4053

Ph 07 3525577
TELEX ALSEV 42344

L A B O R A T O R Y R E P O R T

Batch No.: E109-1 Client: GEOPEKO LIMITED, Area Contact: DR. ROSS LARGE,
Address: P.O. BOX 217, Address: P.O. BOX 598,
Date Received: 23/05/83 GORDON, DEVONPORT TAS. 7310
Date Completed: 31/05/83 N.S.W. 2072

Order No.: K 546, KP 3107 Sample Type: SOIL No. of Samples: 12

SAMPLE NO.	Ba		ELEMENTS
	m		UNITS
	XRE 1A		METHODS
KR 12051	470		
KR 12054	310		
KR 12056	490		
KR 12057	530		
KR 12058	260		
KR 12061	320		
KR 12062	270		
KR 12065	490		
KR 12066	0.11	%	
KR 12069	360		
KR 12070	700		
KR 12074	360		

UNITS LEGEND m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: G. T. [signature]

443020

020

TABLE 2 : LONGBACK PROSPECT ROCK SAMPLE RESULTS

AUSTRALIAN LABORATORY SERVICES PTY. LTD.

CONSULTING CHEMISTS & ANALYSTS

OFFICE & LABORATORY
P.O. BOX 66
EVERTON PARK QLD 4053

Ph 07 3525577
TELEX ALSEV 42344

LABORATORY REPORT

Batch No.: E123 Client: GEOPEKO LIMITED,
Address: P.O. BOX 217,
GORDON,
N.S.W. 2072

Area Contact: DR. ROSS LARGE.
Address: P.O. BOX 593,
DEVONPORT TAS. 7310

Date Received 24/05/83
Date Completed 30/05/83

Order No.: K 547, KP 3108 Sample Type: ROCK No. of Samples: 11

SAMPLE NO.	Cu	Pb	Zn	Ag	Fe	Bi	Sn	W	Ba	Mo	ELEMENTS
	m	m	m	m	%	m	m	m	m	m	UNITS
	G001	G001	G001	G001	G001	G001	XRF 1A	XRF 1A	XRF 1A	XRF 1B	METHODS
KP 12052	25	30	95	1	6.30	5	<5	<10	0.30 %	<4	GREY SHALE
KP 12053	10	35	30	1	0.30	<5	<5	<10	30	<4	DOLOMITE
KP 12055	15	35	35	2	0.14	15	<5	<10	40	<4	"
KP 12060	55	30	55	2	6.52	<5	5	<10	0.13 %	<4	GREYSHALE
KP 12063	110	35	120	2	9.08	5	<5	<10	0.15 %	<4	PEBBLY MUDSTONE
KP 12064	30	35	110	2	7.64	5	<5	<10	0.32 %	<4	GREY SHALE
KP 12067	140	25	90	2	7.20	10	<5	<10	570	<4	PEBBLY MUDSTONE
KP 12068	230	30	180	2	7.08	10	<5	<10	0.15 %	<4	" " WITH PYRRHOTITE
KP 12071	15	15	20	1	0.39	5	5	<10	300	<4	SILTSTONE
KP 12072	40	40	60	2	8.00	<5	<5	<10	220	<4	CLAY
KP 12073	30	30	35	1	2.32	5	<5	<10	260	<4	BLACK SHALE WITH PYRITE

TABLE 2 : ROCK SAMPLES

UNITS LEGEND m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: G J Kilminster

443021 021

AUSTRALIAN LABORATORY SERVICES PTY. LTD.

CONSULTING CHEMISTS & ANALYSTS

OFFICE & LABORATORY
P.O. BOX 66
EVERTON PARK QLD 4053

Ph 07 3525577
TELEX ALSEV 42344

LABORATORY REPORT

Batch No.: E123-1
Client: GEOPEKO LIMITED,
Address: P.O. BOX 217, GORDON. N.S.W. 2072

Area Contact: DR. ROSS LARGE.
Address: P.O. BOX 598, DEVONPORT TAS. 7310

Date Received 24/05/83
Date Completed 30/05/83

Order No.: K 547, KP 3108 Sample Type: ROCK No. of Samples: 11

SAMPLE NO.	As	Au	ELEMENTS
	a	b	UNITS
	G004	PM205	METHODS
KP 12052	<1	5	
KP 12053	<1	430	
KP 12055	<1	550	
KP 12060	10	15	
KP 12063	<1	90	
KP 12064	8	5	
KP 12067	<1	10	
KP 12068	<1	3	
KP 12071	2	3	
KP 12072	16	5	
KP 12073	6	5	

UNITS LEGEND ----- a - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: G. T. [signature]

440022

APPENDIX B

PETROLOGICAL REPORTS - H.W. FANDER

443024 Langford 024

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Dr. R.R. Large
Supervising Geologist
Geopeko Ltd.
P.O. Box 598
DEVONPORT / TAS. 7310

26th April, 1983

REPORT CMS 83/4/17

YOUR REFERENCE:	Purchase Order No. KP 2987
DATE RECEIVED:	21st April, 1983
SAMPLE NOS.:	KR 12735
SUBMITTED BY:	Dr. R.R. Large
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 26th April, 1983

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
KR 12735
Tremolite Schist

Job No. CMS 83/4/17 Date Received: 21.4.1983

Reference Order No. KP 2987

Sample No. KR 12735

Nature of Sample: Hand Specimen

DESCRIPTION **SECTION No.** 45692

a. Hand Specimen:
Grey, fine-grained schist with fine sulphide streaks.

b. Microscopic:
This is a fine-grained tremolite schist, with thin parallel streaks of pyrrhotite.

Lineation is excellent, due to the parallel alignment of very thin acicular to fibrous matted tremolite crystals. Fine interstitial quartz occurs, and there are occasional patches of colourless isotropic chlorite. There are parallel lenses in which the tremolite forms random (rather than lineated) matted aggregates; these are generally of a lighter grey colour, due to ultrafine white leucoxene, whereas the darker greys are due to ultrafine ?carbonaceous material. Occasional coarser grains of leucoxenic sphene have formed.

The sulphides occur as thin streaks generally strictly conformable with the lineation, but there are rare crosscutting bodies. The sulphides are dominantly pyrrhotite, as granular crystals, accompanied by very minor chalcopyrite. The sulphides are premetamorphic, quite possibly syngenetic.

The rock is thought to have been a carbonaceous, sulphidic, calcareous siltstone or shale, subjected to amphibolite facies metamorphism; there is no evidence of cassiterite, though ultrafine or cloudy, leucoxene-like or sphene-like Sn oxide could be present; its origin would then most likely be sedimentary or detrital. More detailed investigation would be justifiable if Sn values were anomalous.

H.W. Fander, M. Sc.

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. J. Pemberton
Geologist
Geopeko
P.O. Box 598
DEVONPORT / TAS. 7310

7th February, 1984

REPORT CMS 84/1/23

YOUR REFERENCE:	Purchase Order No. KP 3342
DATE RECEIVED:	18th January, 1984
SAMPLE NOS.:	KR - 11158, 11159, 11161
SUBMITTED BY:	J. Pemberton
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

REPORT CMS 84/1/23

Savage River Rocks

Three rock samples were received for petrological study; thin-sections were prepared and examined together with the offcuts, and are described below.

KR 11158 (T.S. 48708)
This is believed to be a silicified carbonate rock, though the microscopic evidence is by no means obvious. It is believed to have been fine-grained, carbonaceous and possibly pyritic.

The present rock consists mainly of microcrystalline quartz with intergranular films of carbonaceous matter; there are irregular patches of coarser, clear mosaic quartz, often with quartz crystal-lined cavities. These probably represent partly filled solution cavities, and the fabric in some places suggests brecciation. However, the strongest evidence for a carbonate origin is the presence, throughout the carbonaceous portions of the rock, of minute carbonate grains (1-5 μ in size), which are interpreted as relict material encapsulated in quartz before complete solution took place; this feature is very characteristic of silicified carbonates.

KR 11159 (T.S. 48709)
This is a sericite-chlorite schist with fine magnetite throughout; the rock is folded and may have undergone two episodes of metamorphism - regional and tectonic.

The dominant constituents are fine interleaved sericite and pale green chlorite with well-developed preferred orientation. Fine magnetite is embedded throughout the micas, as irregularly shaped grains from 1 μ to 50 μ in size, rarely with crystal outlines, forming denser streaks in places; it does not appear to be detrital but is believed to have formed in situ. It may in fact be maghemite rather than magnetite, perhaps resulting from (primary) lepidocrocite by dehydration during greenschist facies metamorphism.

There are bodies of mosaic quartz with coarser pale chlorite, representing folded and disrupted veins which were probably emplaced after metamorphism and affected by later tectonism, but this is speculative. The veins contain small, irregular goethite-lined cavities which may have been sulphides. There are scattered small rhomb-shaped cavities in the body of the rock, of unknown derivation (?carbonate).

KR 11161 (T.S. 48710)
This is a dolostone breccia; judging from the textures, brecciation probably occurred at a late diagenetic stage when the rock was substantially lithified. However, the brecciation could be younger, depending on whether the associated rocks are also affected; it is suspected that the brecciation is intraformational.

The rock consists of microcrystalline dolomite, mostly fairly uniform, but with subparallel streaks of finer dolomite and also of coarser, diagenetically recrystallized material, along bedding planes. Parts of the rock are relatively undisturbed except for occasional cross-fractures with small-scale faulting. Other portions are more severely affected, consisting of small angular fragments of dolostone, closely-packed and cemented by sparse interstitial fine ankerite. These characteristics are typical of intraformational brecciation.

H.W. Fander, M. Sc.

APPENDIX C

ROCK CHIP GEOCHEMISTRY RESULTS

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: [illegible] LIMITED
Address: [illegible] BOX [illegible]
[illegible] TAS. 7310

Page [illegible] of [illegible]

Batch Number: [illegible]

Contact: MR. J. [illegible]BERTON

No. of Samples: [illegible]
Date Received: [illegible]
Date Completed: [illegible]

Order No. KR [illegible]341 [illegible] 858   Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Fe [illegible] G001
KR 11151		50	20	90	1	6.70
KR 11152		25	30	70	1	[illegible]
KR 11153		<2	20	20	2	0.12
KR 11154		100	15	95	[illegible]	[illegible]
KR 11155		85	15	120	2	6.52
KR 11156		45	10	20	1	3.92
KR 11157		10	10	30	1	3.16
KR 11158		<2	<5	5	<1	0.14
KR 11159		2	20	80	1	4.15
KR 11160		65	20	85	1	7.39
KR 11161		<2	20	20	2	0.24
KR 11162		<2	20	25	[illegible]	0.50
KR 11163		160	10	150	2	6.87
Detection Limit		2	5	2	1	[illegible]

Comments:

Signatory: G J Kilmister

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: GEOPEKO LIMITED.
Address: P.O. BOX 998
DEVONPORT, TAS. 7310

Page of

Contact: MR. J. PEMBERTON

Order No. KP 3341 K 858

Sample Type: ROCK

Batch Number: 6090

No. of Samples: 13
Date Received: 19/01/84
Date Completed: 26/01/84

SAMPLE NUMBER	Element Unit Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Au ppb PM204	
KR 11151		<1	<5	<10	5	
KR 11152		7	<5	<10	3	
KR 11153		<1	<5	<10	3	
KR 11154		<1	<5	<10	3	
KR 11155		13	<5	<10	5	
KR 11156		<1	<5	<10	7	
KR 11157		8	<5	<10	5	
KR 11158		<1	<5	<10	<3	
KR 11159		<1	<5	<10	<3	
KR 11160		14	<5	<10	3	
KR 11161		<1	<5	<10	<3	
KR 11162		<1	<5	<10	5	
KR 11163		<1	<5	<10	<3	
Detection Limit		1	5	10	3	

Comments:

Signatory: G J Kilminster

APPENDIX D

AUGER GEOCHEMISTRY RESULTS

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: [illegible]

Address: [illegible]

[illegible] Tel: 7310

Page [illegible] of [illegible]

Batch Number: [illegible]

Contact: [illegible]

No. of Samples: [illegible]

Date Received: [illegible]

Order No. [illegible] Sample Type: SOIL

Date Completed: [illegible]

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Fe % .001
TS 24001		2	5	15	1	0.17
TS 24002		10	10	20	[illegible]	[illegible]
TS 24003		5	10	10	1	0.19
TS 24004		<2	10	10	[illegible]	[illegible]
TS 24005		5	5	80	2	0.46
TS 24006		2	5	15	[illegible]	[illegible]
TS 24007		130	30	65	2	3.49
TS 24008		30	40	80	[illegible]	[illegible]
TS 24009		65	35	100	2	9.06
TS 24010		50	25	115	[illegible]	[illegible]
TS 24011		160	15	145	2	3.59
TS 24012		75	25	20	[illegible]	[illegible]
TS 24013		30	20	75	2	5.17
TS 24014		20	25	100	[illegible]	[illegible]
TS 24015		20	25	85	2	4.84
TS 24016		10	40	100	[illegible]	[illegible]
TS 24017		10	30	100	2	5.49
TS 24018		25	55	100	[illegible]	[illegible]
TS 24019		25	25	60	2	4.26
TS 24020		100	30	40	[illegible]	[illegible]
TS 24021		90	15	30	2	5.11
TS 24022		25	20	70	[illegible]	[illegible]
TS 24023		25	20	110	2	7.65
TS 24024		20	10	20	[illegible]	[illegible]
TS 24025		95	15	140	1	6.02
TS 24026		30	15	20	[illegible]	[illegible]
TS 24027		70	20	25	1	2.73
TS 24028		70	20	20	[illegible]	[illegible]
TS 24029		5	5	90	1	0.43
TS 24030		45	30	85	[illegible]	[illegible]
Detection Limit		2	5	[illegible]	1	[illegible]

Comments:

Signatory: [illegible]

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: GEOPEKO LIMITED.
Address: P.O. BOX [illegible]
DEVONPORT TAS. 7310

Batch Number: [illegible]

Contact: MR. J. PEMBERTON

No. of Samples: [illegible]
Date Received: [illegible]
Date Completed: [illegible]

Order No: [illegible]

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	
TS 24001		<1	<5	<10	830	
TS 24002		<1	5	90	340	
TS 24003		<1	<5	20	250	
TS 24004		<1	<5	10	340	
TS 24005		<1	<5	100	80	
TS 24906		<1	<5	110	70	
TS 24907		7	<5	<10	2100	
TS 24008		1	<5	<10	2300	
TS 24009		2	<5	<10	410	
TS 24010		29	<5	<10	560	
TS 24011		5	<5	<10	3300	
TS 24012		14	<5	<10	4000	
TS 24013		18	<5	<10	1250	
TS 24014		<1	<5	<10	2800	
TS 24015		<1	5	<10	2850	
TS 24016		<1	<5	<10	2600	
TS 24017		<1	<5	<10	1250	
TS 24018		9	<5	<10	2500	
TS 24019		18	<5	<10	1700	
TS 24020		16	<5	<10	1300	
TS 24021		32	<5	<10	2400	
TS 24022		4	<5	<10	1450	
TS 24023		5	5	<10	2700	
TS 24024		4	<5	<10	7450	
TS 24925		65	<5	<10	2100	
TS 24026		24	<5	10	1500	
TS 24027		15	<5	<10	1900	
TS 24028		17	<5	60	310	
TS 24029		1	<5	<10	1750	
TS 24030		29	<5	10	1550	
Detection Limit		1	5	10	[illegible]	

Comments:

Signatory: A. J. Finlayson.

443035

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: GEOPEKO LIMITED.
Address: P.O. BOX [illegible]
DEVONPORT TAS. 7310

Batch Number: [illegible]

Contact: MR. J PEMBERTON

No. of Samples: [illegible]
Date Received: 16/01/84
Date Completed: [illegible]/01/84

Order No: [illegible] 3336, [illegible] 671

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Fe % G001
TS 24031		130	15	20	1	3.88
TS 24032		105	20	50	2	5.66
TS 24033		180	30	75	2	7.90
TS 24034		35	35	70	2	3.32
TS 24035		30	25	55	2	4.02
TS 24036		15	35	110	2	3.67
TS 24037		50	30	70	2	6.50
TS 24038		60	20	60	1	[illegible]
TS 24039		55	25	115	2	5.04
TS 24040		280	50	145	[illegible]	[illegible]
TS 24041		20	15	85	1	4.95
TS 24042		60	30	90	2	[illegible]
TS 24043		35	40	155	2	9.67
TS 24044		30	30	95	2	5.08
TS 24045		30	30	90	2	6.59
TS 24046		5	10	25	1	[illegible]
TS 24047		10	130	35	1	0.45
TS 24048		5	10	15	1	0.22
TS 24049		5	10	20	1	0.49
TS 24050		<2	10	10	1	[illegible]
TS 24051		40	30	30	1	2.82
TS 24052		10	25	45	1	[illegible]
TS 24053		<2	10	30	1	0.39
TS 24054		20	25	70	1	1.63
TS 24055		105	45	90	2	5.82
TS 24056		40	30	55	2	[illegible]
TS 24057		40	15	30	1	3.43
TS 24058		25	15	20	1	[illegible]
TS 24059		20	15	30	1	4.62
TS 24060		35	35	70	1	[illegible]
Detection Limit		2	5	2	1	0.01

Comments:

Signatory: G. J. Finlayson

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: GEOPEKO LIMITED,
Address: P.O. BOX 838
DEVONPORT TAS, 7310

Page 1 of 10

Batch Number: A071

Contact: MR J. PEMBERTON

No. of Samples: 150
Date Received: 13/01/84
Date Completed: 20/01/84

Order No: MP 3336, P 671

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
TS 24031		8	<5	<10	1150
TS 24032		8	<5	<10	1750
TS 24033		2	<5	<10	2050
TS 24034		16	<5	10	1600
TS 24035		8	<5	<10	1300
TS 24036		10	<5	<10	3450
TS 24037		46	<5	<10	3450
TS 24038		17	<5	10	1500
TS 24039		1	<5	<10	2350
TS 24040		11	<5	10	6150
TS 24041		1	<5	<10	3400
TS 24042		9	<5	<10	2100
TS 24043		<1	<5	<10	1400
TS 24044		11	<5	<10	710
TS 24045		43	<5	<10	2250
TS 24046		3	<5	20	210
TS 24047		1	<5	<10	130
TS 24048		2	<5	60	110
TS 24049		3	<5	<10	450
TS 24050		1	<5	<10	340
TS 24051		9	<5	<10	340
TS 24052		<1	10	<10	450
TS 24053		1	<5	20	190
TS 24054		6	<5	<10	770
TS 24055		6	<5	<10	6800
TS 24056		5	<5	<10	2600
TS 24057		1	<5	<10	1.05 %
TS 24058		3	<5	<10	1400
TS 24059		1	<5	<10	3450
TS 24060		4	<5	<10	6450
Detection Limit		1	5	10	10

Comments:

Signatory: A. F. Dingayson

443037 037

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: GEOPEKO LIMITED,
Address: P.O. BOX 528
DEVONPORT TAS. 7310

Page 3 of 10

Batch Number: 0071

Contact: MR. J. PEMBERTON

No. of Samples: 150
Date Received: 15/01/94
Date Completed: 20/01/94

Order No.: EP 3336, & 671 Sample Type: SOIL

SAMPLE NUMBER	Element / Unit / Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Fe % G001
TS 24061		135	25	75	2	3.92
TS 24062		40	20	150	2	7.35
TS 24063		105	20	20	1	3.40
TS 24064		80	30	30	2	3.99
TS 24065		30	20	95	2	3.63
TS 24066		45	35	20	1	2.26
TS 24067		130	20	35	2	3.80
TS 24068		50	30	20	1	3.53
TS 24069		15	20	100	2	6.24
TS 24070		75	30	60	2	7.44
TS 24071		20	20	70	2	7.80
TS 24072		30	15	20	1	1.02
TS 24073		10	5	30	1	0.37
TS 24074		10	10	260	2	0.73
TS 24075		10	5	40	1	0.51
TS 24076		5	<5	20	1	0.30
TS 24077		5	5	25	1	0.27
TS 24078		10	10	270	1	0.72
TS 24079		35	15	30	1	2.93
TS 24080		25	20	50	1	1.61
TS 24081		30	30	80	2	7.52
TS 24082		130	35	115	3	3.96
TS 24083		35	30	80	2	5.29
TS 24084		40	20	40	1	4.59
TS 24085		85	55	105	2	8.61
TS 24086		75	60	120	2	9.33
TS 24087		100	50	40	2	7.08
TS 24088		140	50	85	2	5.65
TS 24089		60	20	240	1	3.12
TS 24090		130	25	65	2	7.73
Detection Limit		2	5	2	1	0.01

Comments:

Signatory: A. J. Finlayson.

443038

038

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: GEOPERO LIMITED,
Address: P.O. BOX 538
DEVONPORT TAS. 7310

Page 6 of 10

Batch Number: 4071

Contact: MR J. PEMBERTON

No. of Samples: 156
Date Received: 15/01/84
Order No. MP 3336, P 671 Sample Type: SOIL
Date Completed: 29/01/84

SAMPLE NUMBER	Element / Unit / Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	
TS 24061		13	<5	<10	630	
TS 24062		1	<5	<10	1.48 %	
TS 24063		1	<5	<10	6600	
TS 24064		28	5	<10	4450	
TS 24065		59	<5	<10	490	
TS 24066		7	<5	<10	2650	
TS 24067		18	5	10	1500	
TS 24068		16	<5	10	2150	
TS 24069		11	<5	<10	2600	
TS 24070		6	5	<10	1050	
TS 24071		7	<5	<10	70	
TS 24072		1	<5	<10	2700	
TS 24073		1	<5	50	90	
TS 24074		1	<5	150	50	
TS 24075		5	<5	60	20	
TS 24076		2	<5	30	30	
TS 24077		5	<5	70	20	
TS 24078		5	<5	50	20	
TS 24079		18	<5	10	2950	
TS 24080		2	<5	10	2000	
TS 24081		6	<5	<10	600	
TS 24082		5	<5	<10	190	
TS 24083		11	<5	<10	1300	
TS 24084		<1	5	<10	2450	
TS 24085		1	5	<10	6900	
TS 24086		24	5	<10	5550	
TS 24087		46	5	<10	7600	
TS 24088		24	<5	<10	500	
TS 24089		5	<5	<10	9900	
TS 24090		9	<5	<10	230	
Detection Limit:		1	5	10	10	

Comments:

This Laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration. This Document shall not be reproduced except in full.

Registered Laboratory

Signatory: A. J. Finlayson.

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Page of

Client: GEOPEKO LIMITED.
Address: P.O. BOX 598
DEVONPORT. TAS. 7310

Batch Number: A071

Contact: MR. J. PEMBERTON

No. of Samples: 150
Date Received: 16/01/84
Date Completed: 20/01/84

Order No: KP 3376. A 671

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Na G001
TS 24091		125	20	90	2	8,41
TS 24092		90	15	45	2	5,80
TS 24093		150	50	95	2	9,93
TS 24094		130	20	110	2	7,77
TS 24095		130	20	100	2	7,79
TS 24096		130	20	120	2	[illegible]
TS 24097		110	20	95	3	7,69
TS 24098		110	20	100	2	8,65
TS 24099		185	220	480	2	8,44
TS 24100		20	20	40	1	1,94
TS 24101		<2	10	20	1	0,76
TS 24102		95	25	95	3	8,16
TS 24103		70	20	95	2	6,51
TS 24104		90	20	85	2	6,97
TS 24105		95	20	70	2	5,45
TS 24106		140	20	90	2	8,66
TS 24107		95	20	80	2	7,68
TS 24108		145	20	95	2	8,19
TS 24109		185	20	110	3	9,12
TS 24110		145	20	115	2	6,37
TS 24111		170	20	110	2	12,2
TS 24112		150	30	115	2	[illegible]
TS 24113		50	25	70	2	9,37
TS 24114		30	30	50	1	4,03
TS 24115		20	30	85	2	9,16
TS 24116		65	40	65	2	7,44
TS 24117		50	50	40	2	3,73
TS 24118		115	50	110	3	6,97
TS 24119		40	20	75	3	7,14
TS 24120		75	15	95	2	[illegible]
Detection Limit:		2	5	2	1	0.01

Comments:

Signatory: A. J. Finlayson

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: GEOPEL P LIMITED,
Address: P. O. BOX 998
DEVONPORT TAS. 7310

Batch Number: 4071

Contact: MR J PEMBERTON

No. of Samples: 150
Date Received: 16.01.84
Date Completed: 20/01/84

Order No.: NP 3336, 4071 Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
TS 24091		9	<5	<10	320
TS 24092		7	<5	<10	150
TS 24093		5	<5	<10	200
TS 24094		6	<5	<10	150
TS 24095		6	<5	<10	130
TS 24096		7	<5	<10	540
TS 24097		8	<5	<10	350
TS 24098		10	<5	<10	160
TS 24099		80	5	10	360
TS 24100		11	<5	<10	380
TS 24101		<1	<5	<10	480
TS 24102		6	<5	<10	650
TS 24103		6	<5	<10	620
TS 24104		1	<5	<10	590
TS 24105		<1	<5	10	170
TS 24106		5	<5	<10	440
TS 24107		5	<5	<10	270
TS 24108		<1	<5	<10	830
TS 24109		<1	<5	<10	590
TS 24110		<1	<5	<10	930
TS 24111		6	<5	<10	360
TS 24112		1	<5	<10	180
TS 24113		18	<5	<10	90
TS 24114		<1	<5	<10	2450
TS 24115		<1	<5	10	3800
TS 24116		12	<5	<10	1650
TS 24117		11	<5	<10	3450
TS 24118		<1	<5	<10	1250
TS 24119		1	<5	<10	480
TS 24120		26	<5	<10	1400
Detection Limit		1	5	10	10

Comments:

Signatory: A. F. Finlayson.

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: GEOPEKO LIMITED,
Address: P.O. BOX 398
DEVONPORT TAS. 7310

Batch Number: A071

Contact: MR. J. PEMBERTON

No. of Samples: 150
Date Received: 16/01/84
Date Completed: 20/01/84

Order No. KP 3336, [illegible] 671 Sample Type: SOIL

SAMPLE NUMBER	Element / Unit / Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Ag ppm G001	Fe % G001
TS 24121		90	20	40	1	2.32
TS 24122		10	5	170	1	1.21
TS 24123		30	5	30	<1	0.96
TS 24124		2	10	20	1	0.30
TS 24125		10	5	300	1	0.93
TS 24126		15	50	310	1	1.37
TS 24127		30	10	35	1	0.33
TS 24128		40	15	65	2	4.33
TS 24129		60	15	105	2	5.45
TS 24130		125	15	25	1	5.62
TS 24131		100	20	50	8	3.59
TS 24132		20	40	25	1	1.77
TS 24133		80	30	45	2	6.20
TS 24134		80	30	100	2	13.[illegible]
TS 24135		115	25	70	2	9.74
TS 24136		80	35	40	2	9.07
TS 24137		70	40	50	2	11.4
TS 24138		85	30	40	2	11.4
TS 24139		120	30	60	2	16.0
TS 24140		100	25	45	2	15.9
TS 24141		170	40	65	3	13.1
TS 24142		75	20	55	2	7.34
TS 24143		60	20	45	2	6.36
TS 24144		80	30	85	2	6.69
TS 24145		90	20	55	2	9.17
TS 24146		80	20	70	2	6.66
TS 24147		100	25	110	2	6.99
TS 24148		105	30	100	2	8.49
TS 24149		95	30	95	3	8.71
TS 24150		70	30	100	2	7.72
Detection Limit		2	5	2	1	0.01

Comments:

Signatory: A. F. Finlayson.

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
32 Shand Street
Stafford, Q 4053
PO Box 66,
Everton Park, Q 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Client: SEQUEND LIMITED,
Address: P.O. BOX 998
DEVONPORT TAS. 7310

Batch Number: 3071

Contact: MR. J. PEMBERTON

No. of Samples: 150
Date Received: 15/01/84
Date Completed: 20/01/84

Order No: KP 3336, 3671 Sample Type: SOIL

SAMPLE NUMBER	Element / Unit / Method	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
TS 24121		2	<5	<10	2800
TS 24122		<1	<5	80	160
TS 24123		6	<5	40	60
TS 24124		<1	<5	20	1850
TS 24125		<1	<5	80	30
TS 24126		<1	<5	60	610
TS 24127		<1	<5	10	1150
TS 24128		9	<5	30	750
TS 24129		10	<5	<10	1950
TS 24130		13	<5	10	2300
TS 24131		3	<5	<10	2300
TS 24132		<1	<5	10	7200
TS 24133		<1	<5	<10	1500
TS 24134		17	<5	<10	140
TS 24135		8	<5	<10	100
TS 24136		2	<5	<10	950
TS 24137		3	<5	<10	600
TS 24138		3	<5	<10	520
TS 24139		1	<5	<10	350
TS 24140		12	<5	<10	1200
TS 24141		1	<5	<10	360
TS 24142		2	<5	<10	740
TS 24143		<1	<5	<10	350
TS 24144		1	<5	<10	800
TS 24145		15	<5	<10	850
TS 24146		1	<5	<10	520
TS 24147		<1	<5	<10	610
TS 24148		1	<5	<10	500
TS 24149		1	<5	<10	690
TS 24150		<1	<5	<10	500
Detection Limit		1	5	10	10

Comments

Signatory: A. J. Dickinson.

APPENDIX E

LONGBACK 1 MAGNETICS - J. SUMPTON

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

INTER-OFFICE MEMO

TO: R.R. LARGE DATE: 2-2-84

FROM: J.D.H. SUMPTON COPIES TO: J.Pemberton

SUBJECT: LONGBACK I MAGNETICS

During the early part of January the newly cut grid covering the Longback I magnetic anomaly was the subject of a magnetic intensity survey. The newly aquired data conforms well with the data from the reconnaissance grid, given the inexactitudes of the latter and the 90° change in the orientation of the traverse lines.

The change in traverse line direction was decided on in order to cross the apparent 'strike' of the anomaly at an angle close to 90°. This has been largely successful inasmuch as the anomaly appears to resolve itself into three subparallel bodies trending more or less grid east-west (see Fig 1). These bodies are interpreted as having fairly shallow depths to top towards the western end of the anomaly, and, especially in the case of the northern two bodies, to increase in depth to the east. The sharp truncation of the anomaly in the west may be the result of faulting. The relative positions and qualitatively interpreted geometries and depths from surface of these bodies is such that I have chosen to approximate them by three dyke like bodies of considerable (effectively infinite) strike extent. Using this basic model geometry I have generated numerically calculated curves which match reasonably well the observed profiles from lines 10050E, 10100E and 10150 E. These bodies and profiles are shown on Figs 2,3 and 4. In each case the calculated profile has been produced by three two dimensional dykes dipping at between 55° and 70° to the south.

Although this interpretation gives rise to model interpretations which are reasonably consistant from line to line, and which are consistant with my original qualitative interpretation of three sub parallel dyke like bodies, it rests on a number of assumptions and simplifications whose affects on the reliability of the interpretation should be noted. Though I have modelled three dykes of infinite depth and strike extent, all constrained to dip at the one angle and all magnetised by induction only, none of these assumptions may be entirely true. The bodies may be truncated or conjoined at depth, and with appropriate adjustments to dips and susceptibilities being made, the profile generated will change little. There is some evidence for shallow depth extent in the sharp low present on the northern flanks of the anomaly, particularly on line 10100E and the flanking lows seen in the airborne data. The assumption of infinite strike extent is likely to reasonably sound, except in the case of line 10050E which is close to the western edge of the anomaly. There is no good evidence that remnant magnetisation is significantly affecting the observed anomaly, but it should be noted that remmance is often significant, especially in cases where the major magnetic material is pyrrhotite, which we are hoping is the cause of this anomaly. In examining the attached models it should be noted that the interpreted widths (and inversely the magnetic susceptibilities) of the bodies are rather

arbitrary and generally the interpretation is insensitive to the actual figures shown, i.e. a widish body of low susceptibility and a narrow body of high susceptibility produce curves which are not significantly different and do not appreciably alter the shape of the composite curve.

In conclusion, given the qualifying remarks above and bearing in mind that there are always an infinite number of possible geometrics which can cause a potential field anomaly. (and in this case we have no geological 'filter' to aid us in the interpretation of quite a complex anomaly), the model of three subparrallel dyke like bodies dipping to south and becoming deeper to the east reasonably satisfies the observed magnetic patterns,

Regards,

John Sumpton

JOHN SUMPTON
Geophysicist.

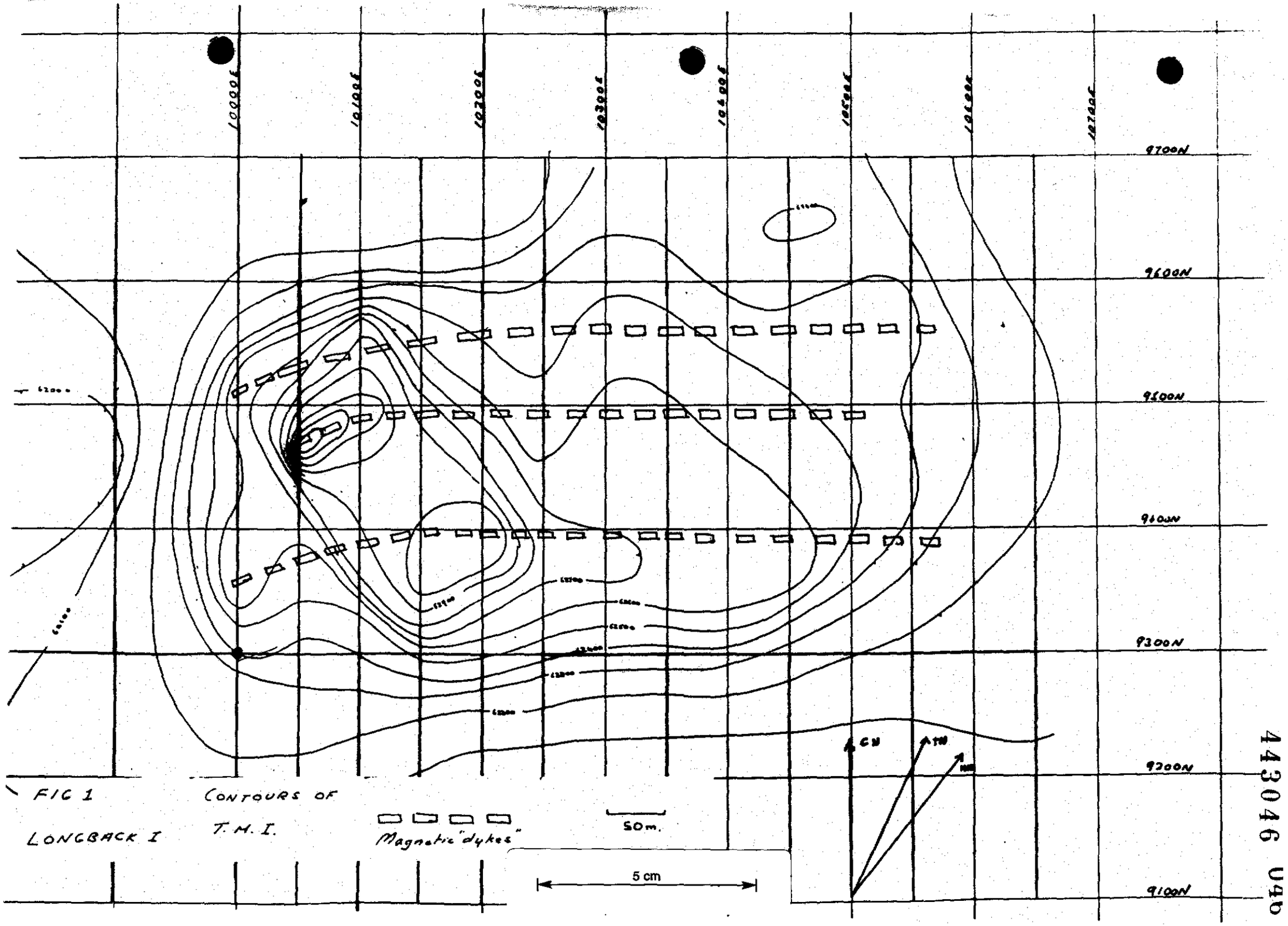


FIG 1 CONTOURS OF T.M.I.

LONGBACK I

Magnetic "dykes"

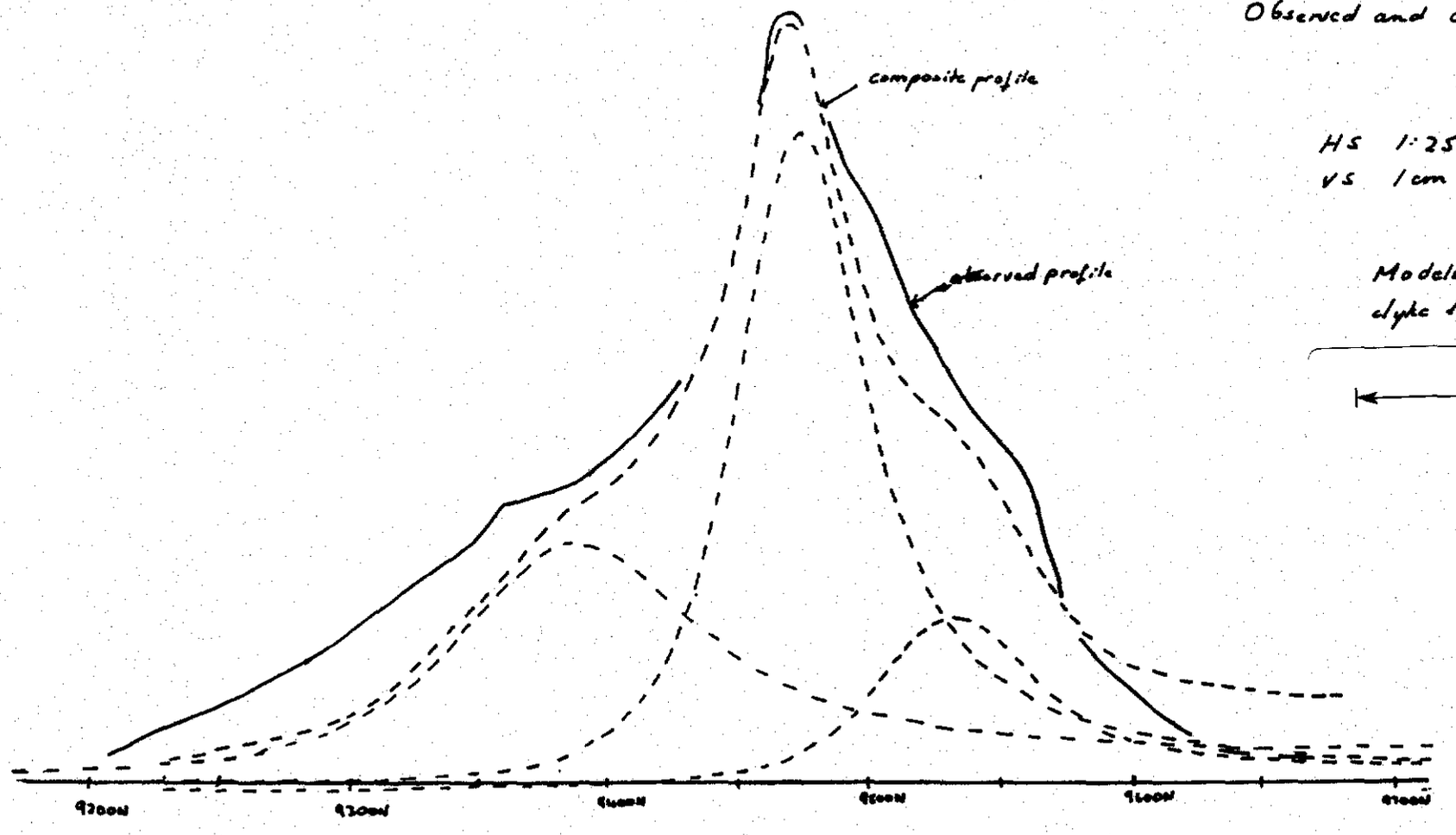
4430046 U49

FIG 2

LONG BACK I LINE 10050E

Total Magnetic Intensity

Observed and calculated profiles



HS 1:2500
VS 1 cm = 100nT

Models are two dimensional dyke like bodies

5 cm

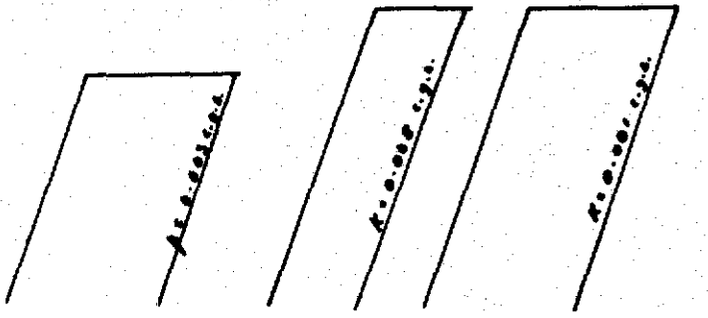
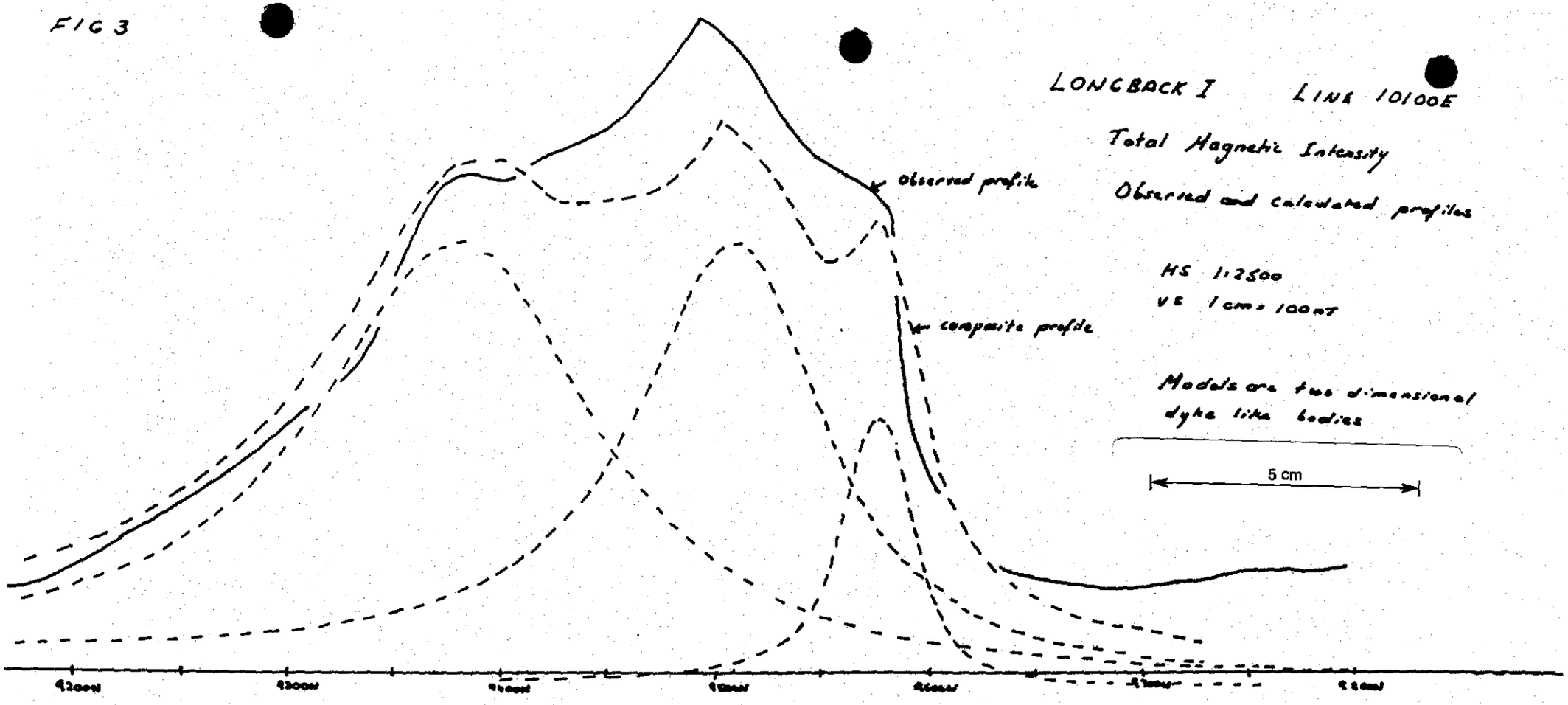


FIG 3



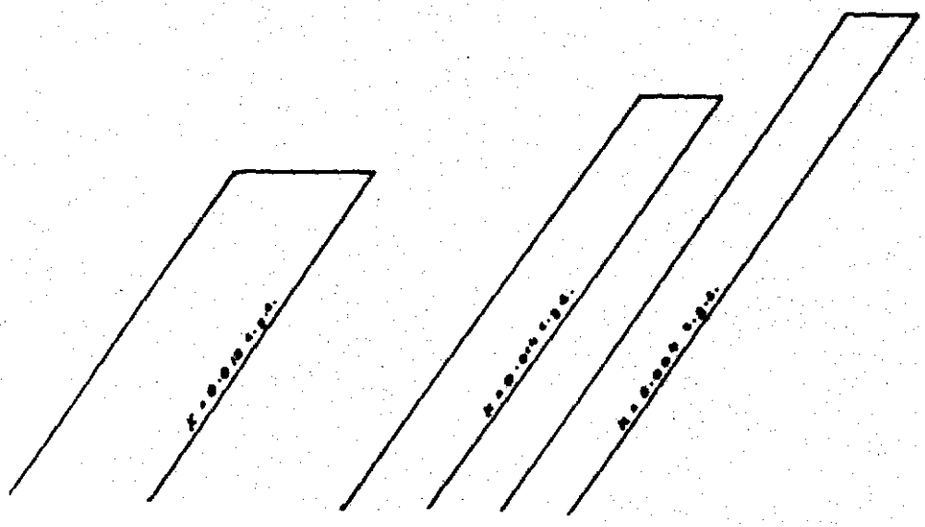


FIG 4

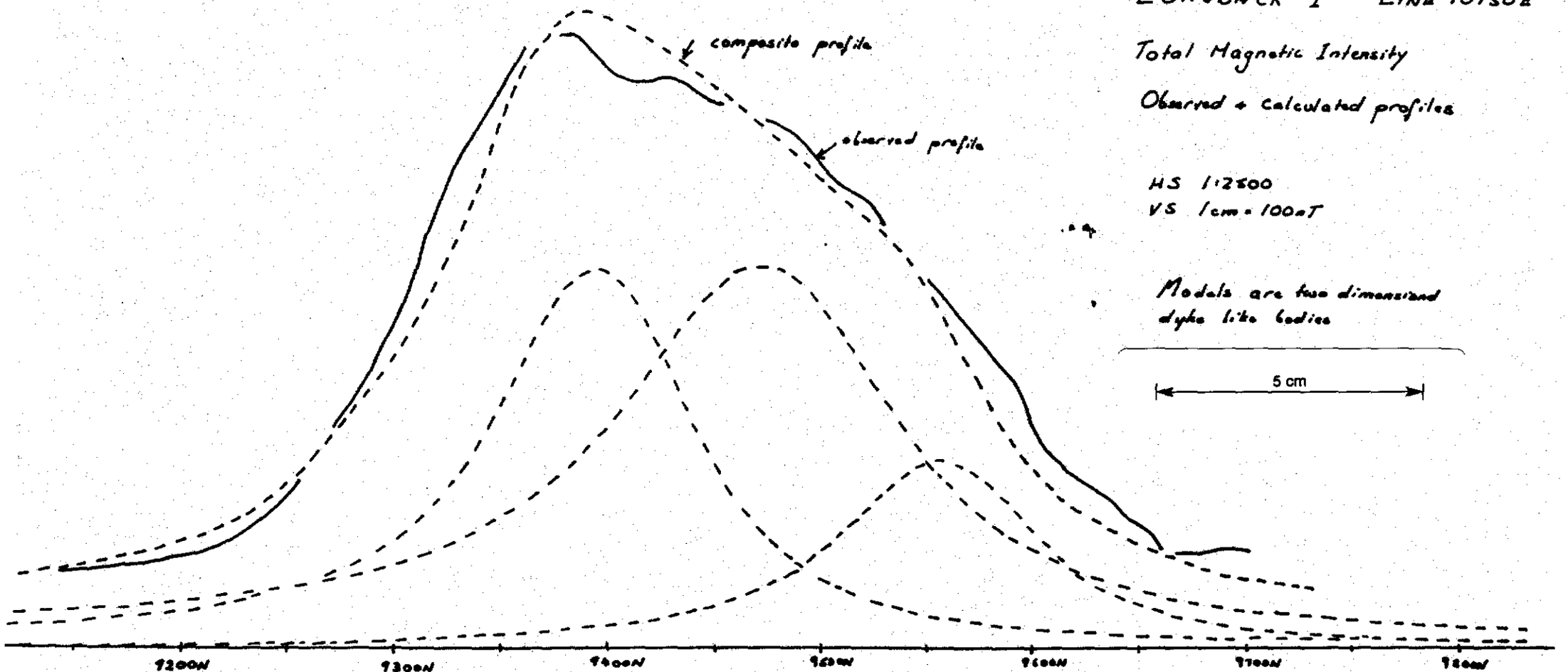
LONGBACK I LINE 10150E

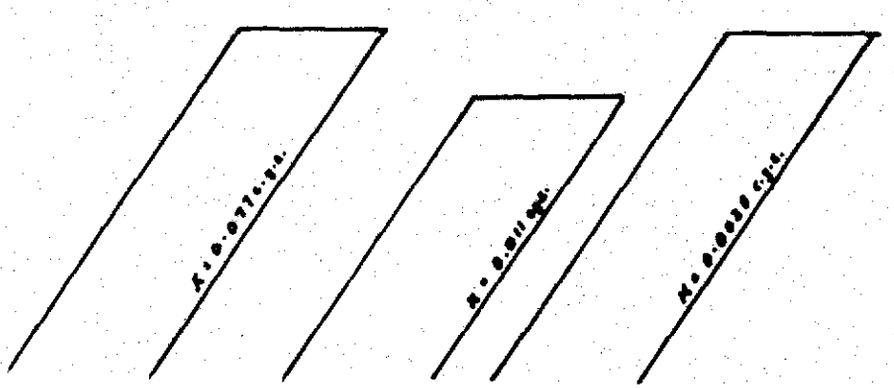
Total Magnetic Intensity

Observed + calculated profiles

HS 1:2500
VS 1cm = 100nT

Models are two dimensional dyke like bodies





PART OF: BURNIE SK55-3

341 250 E | 341 500 E | 341 750 E | 342 000 E | 342 250 E | 342 500 E

5 396 750 N | 5 396 500 N | 5 396 250 N | 5 396 000 N | 5 395 750 N | 5 395 500 N

gn silt / qtzt
gy brec sh
red spotted silt/sh
pebbly mudstone
old grid 9700N 10 500E
old grid 9600N 10 650E
old grid 9 500N
pebbly mudstone float
qtzt
pebbly mudstone scree
qtzt scree
carbonate
brec sh
pebbly mudstone gy sh/ silt
pebbly mudstone
qtzt KR111157
blk sh
blk sh py
carbonate
KR111153
pebbly mudstone
talc schist
carbonate
pebbly mudstone scree
wd sh
silt
20
pebbly mudstone
50
pebbly mudstone with po KR111163
old grid 9400N 10 650E
pebbly mudstone
wd sh
qv
wd sh
wd blk sh KR111152
qtzt scree
qtzt float
qtzt / silt scree
old grid 9300N, 10650E
KR111156
wd gy sh/slate diss blk specks & vugs
sil carbonate KR111158
wd gy & orange sh
recent conglomerate Mn, Fe cement
old grid 9200N
scree Fe stain pink bded gy sh
wd sh
pebbly mudstone
sil carbonate float
pebbly mudstone
60
qtzt
blk sh
blk & gy slate py
50
wd gy sh
KR111155
well cleaved sh/slate flattened pebbles diss py
60
blk sh
blk sh
KR111154
carbonate
gy sh
40
gy sh
blk sh & pebble mudstone KR111161
KR111159
sh diss py/magt
carbonate KR111162
old grid
qtz gravel
KR111161 carbonate
vuggy silt indurated KR111160
gy sh
80
blk & gy sh
blk sh
gy sh

OUTCROP GEOLOGY

outcrop

float

KR11160 rock chip sample

ABREVIATIONS :

act	actinolite	intb	interbedded
bas	basalt	lam	laminated
bd	band	lst	limestone
bdd	bedded	magt	magnetite
biot	biotite	mal	malchite
blk	black	mass	massive
bl	blue	mtx	matrix
brec	breccia	mg	medium grained
brn	brown	mic	micaceous
calc	calcareous	mot	mottled
cpy	chalcopyrite	pbly	pebbly
cht	chert	plag	plagioclase
cl	clay	py	pyrite
cg	coarse grained	po	pyrrhotite
com	common	qtz	quartz
cong	conglomerate	qv	quartz vein
cren	crenulated	qtzt	quartzite
diss	disseminated	sd	sand
dk	dark	sstn	sandstone
dol	dolomite	seq	sequence
fs	feldspar, feldspathic	sh	shale
fer	ferruginous	sid	siderite
fib	fibrous	sil	siliceous
fg	fine grained	silt	siltstone
gl	galena	sph	sphalerite
gran	granite	tour	tourmaline
gy	grey	trem	tremolite, tremolitic
gn	green	v	very
hb	hornblende	var	variable
hem	hematite, hematitic	wd	weathered
horn	hornfels	wh	white
ind	indurated	y	yellow

TOPOGRAPHIC FEATURES

water course defined

water course undefined

track

MAP AREA : 1·56 km²

443050

5 cm

A1

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

84-3111

Scale 1:2 500
50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK, TASMANIA.

Outcrop Geology

001

Geologist : | Date : | Drawn : | PLAN NO : 1.

PART OF; BURNIE SK55-3

341 250E | 341 500 E | 341 750 E | 342 000 E | 342 250 E | 342 500E

5 396 750 N | 5 396 500N | 5 396 250 N | 5 396 000N | 5 395 750 N | 5 395 500 N

Tertiary gravel

MAP AREA : 1·56 km²

INTERPRETATION GEOLOGY

ROCK TYPES :

- pebbly mudstone
- carbonates
- shales
- siltstones

GEOLOGICAL KEY :

- interpreted geological boundary
- inferred geological boundary
- fault
- inferred fault
- unconformity
- anticline
- syncline
- plunge of minor anticline
- plunge of minor syncline
- plunge of fold axis
- 60 — cleavage strike & dip
- 70 / 55 — crenulation cleavage
- 20 — bedding strike & dip
- 80 — jointing strike & dip
- 55 — lineation direction & punge

TOPOGRAPHIC FEATURES

- water course defined
- water course undefined
- track

443051

5 cm

A1

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

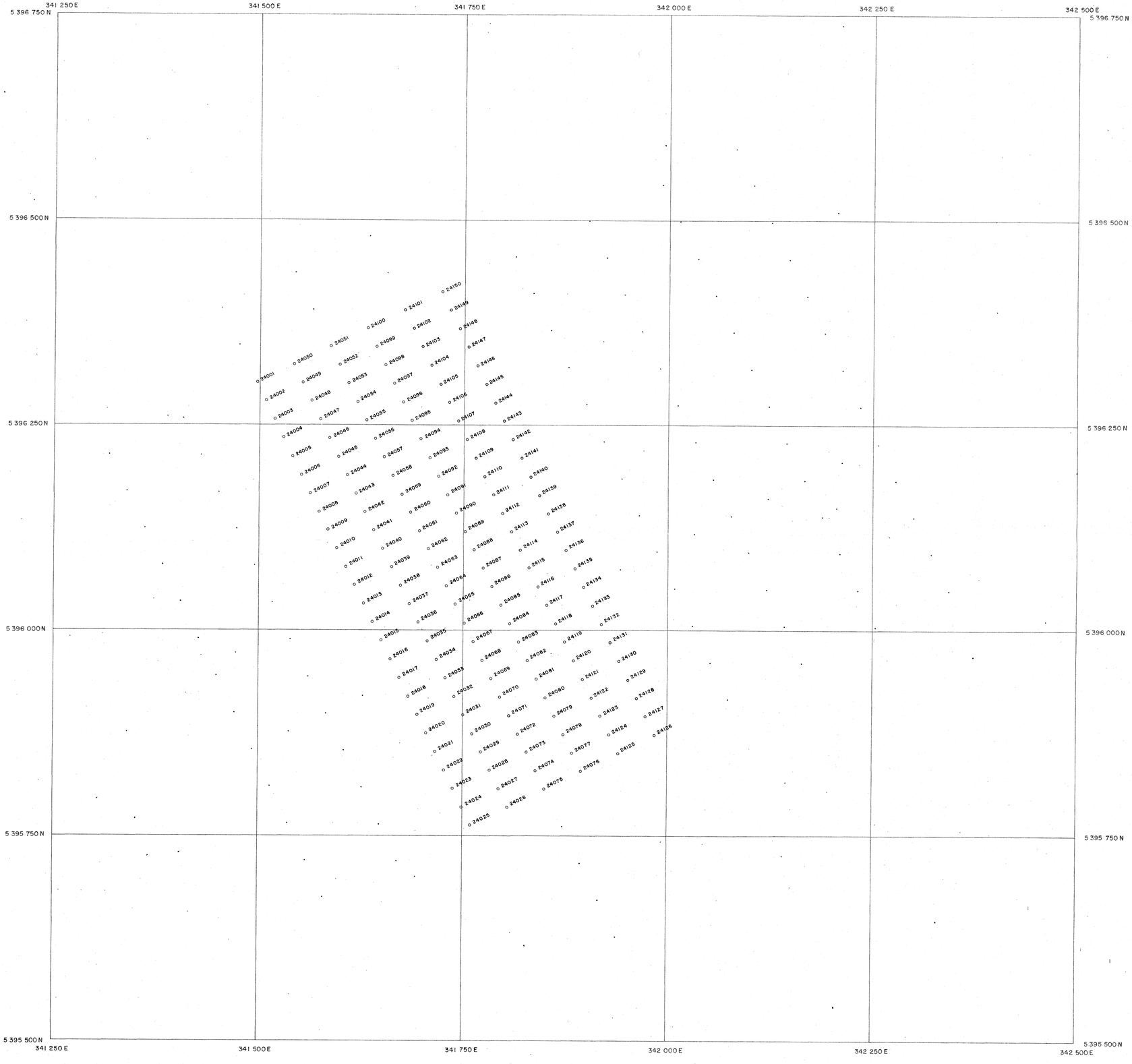
Scale 1:2500
50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK , TASMANIA.
Interpretation Geology 002

Geologist: | Date: | Drawn: | PLAN NO: 2.

PART OF; BURNIE SK55-3



MAP AREA : 1·56 km²

GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS :

443052

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

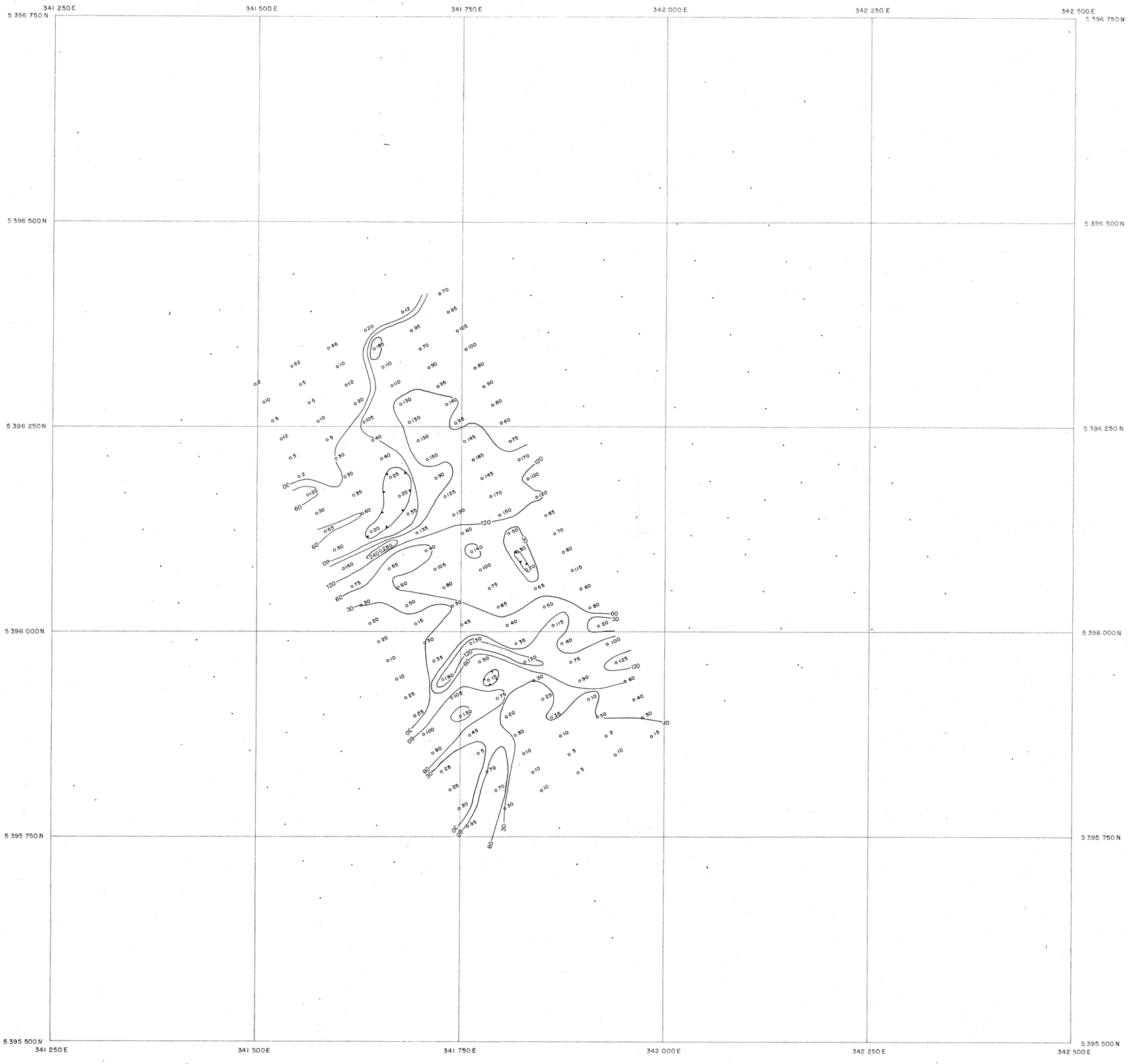
Map Reference : Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK , TASMANIA. 003

Geochemical Soil Sample Locations

Geologist:	Date:	Drawn:	PLAN NO: 3.

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

Cu 30 60 120 240 ppm

- hand power auger hole
- power auger hole
- grid peg position

ASSAY RESULTS : A.L.S

443053

5 cm

A1

MAP AREA : 1·56 km²

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

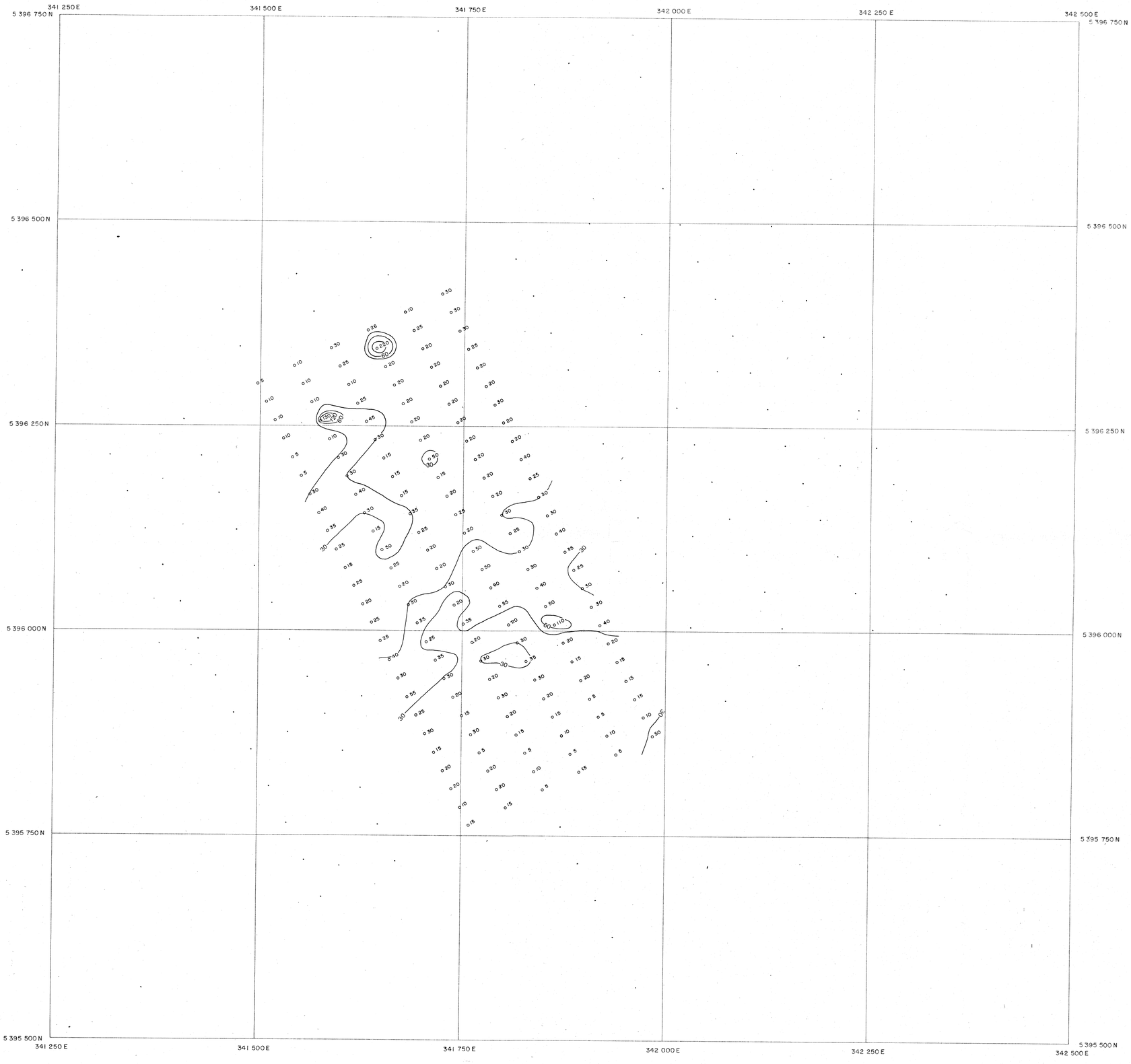
E.L.37/82 LONGBACK , TASMANIA.

Cu Geochemistry

004

Geologist :	Date :	Drawn :	PLAN NO : 4.

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

Pb 30 60 120 ppm

- hand power auger hole
- power auger hole
- grid peg position

ASSAY RESULTS : A.L.S

443054

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

84-211

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference :

Taken from 1:100 000 PIEMAN-7914

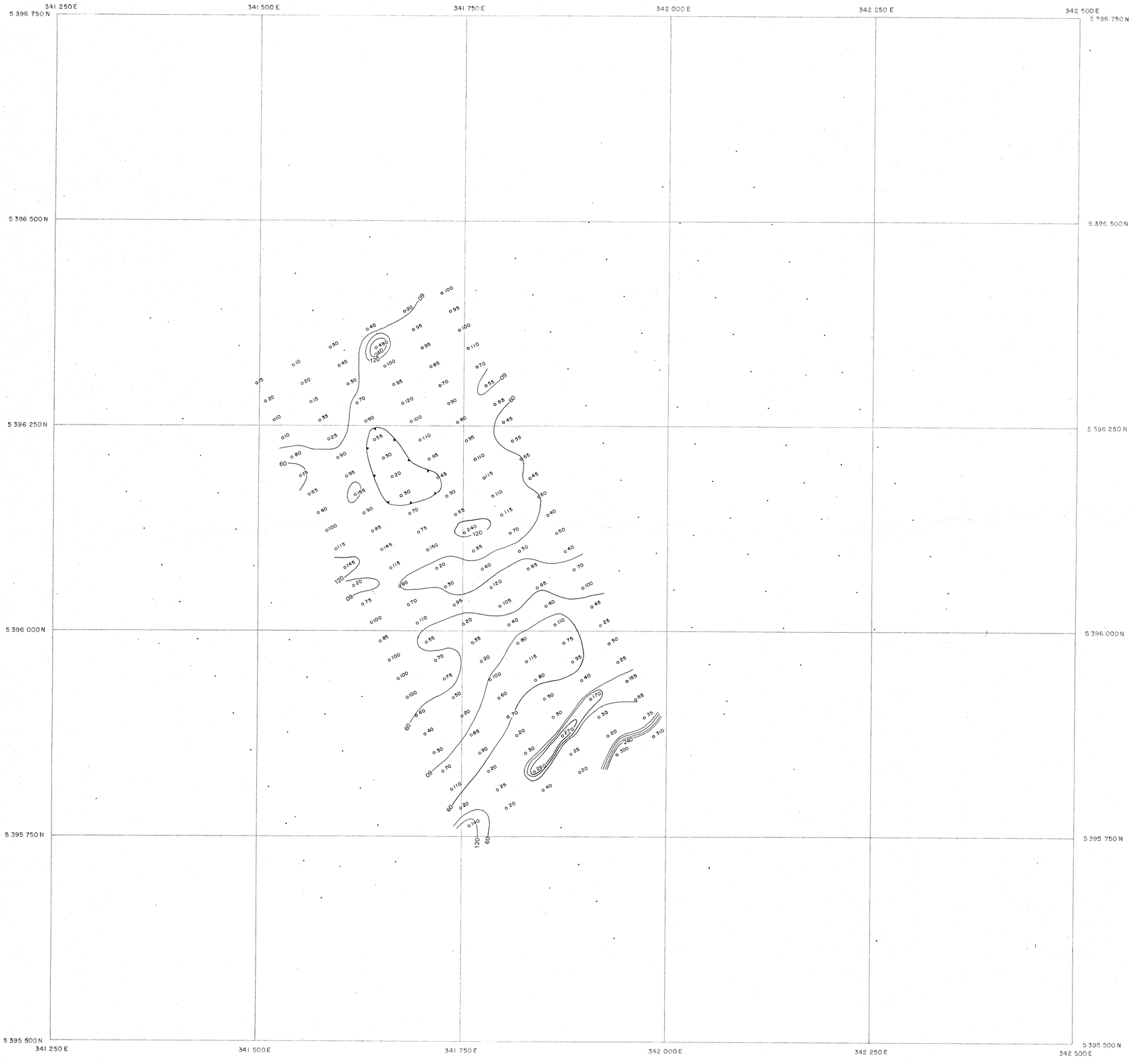
E.L.37/82 LONGBACK , TASMANIA.

Pb Geochemistry 005

Geologist : Date : Drawn : PLAN NO: 5.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

Zn: 60 120 240 480 ppm

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS :

443055

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

84-311

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference :

Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK , TASMANIA.

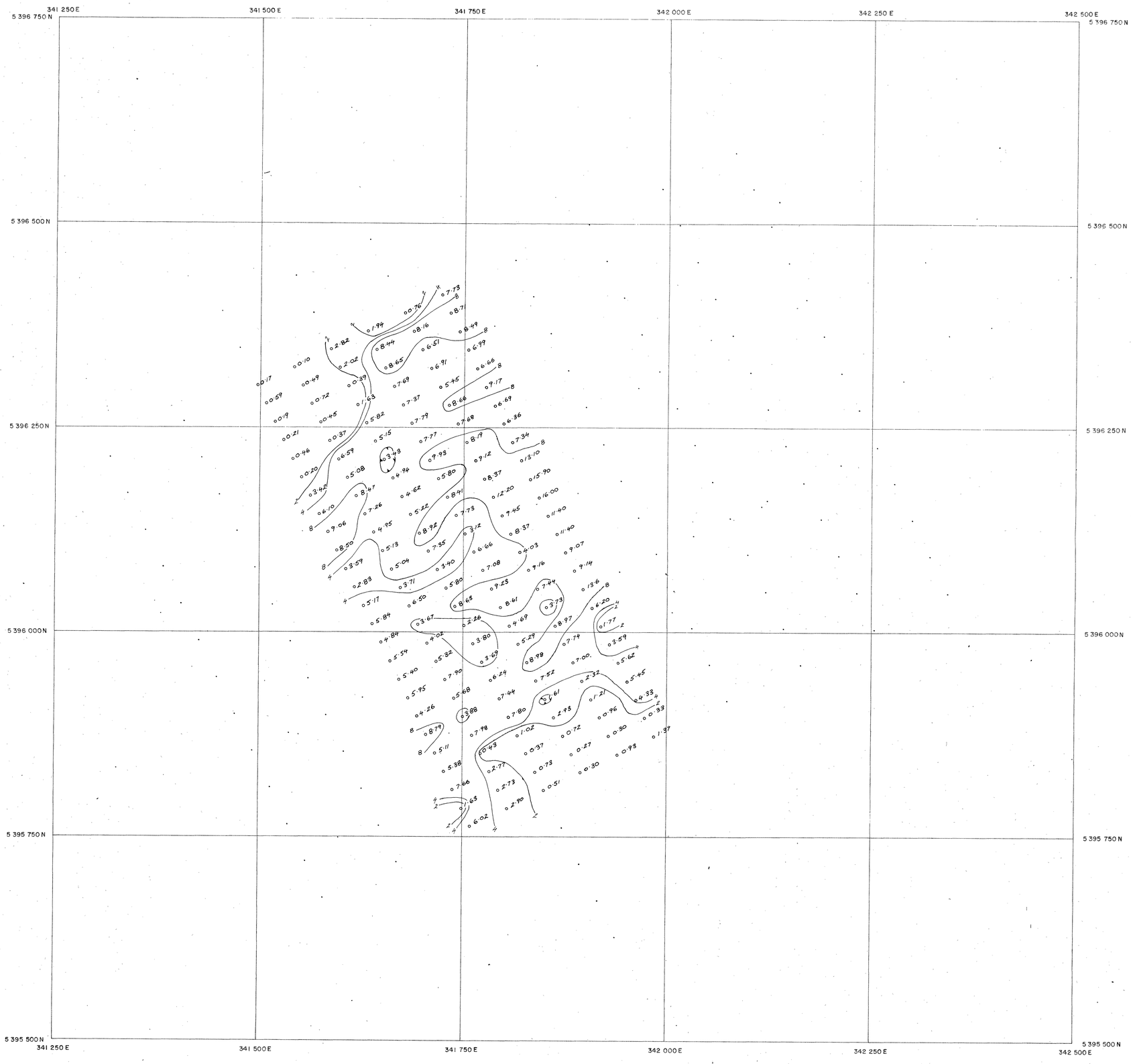
Zn Geochemistry

006

Geologist : Date : Drawn : PLAN NO: 6.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

Fe 2 4 8 16 ppm

- hand power auger hole
- power auger hole
- grid peg position

ASSAY RESULTS : A.L.S.

MAP AREA : 1·56 km²

443056

5 cm

A1

64-311

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference :

Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK , TASMANIA.

Fe Geochemistry

007

Geologist : Date : Drawn : PLAN NO : 7.

PART OF; BURNIE SK55-3

341 250 E | 341 500 E | 341 750 E | 342 000 E | 342 250 E | 342 500 E

5 396 750 N

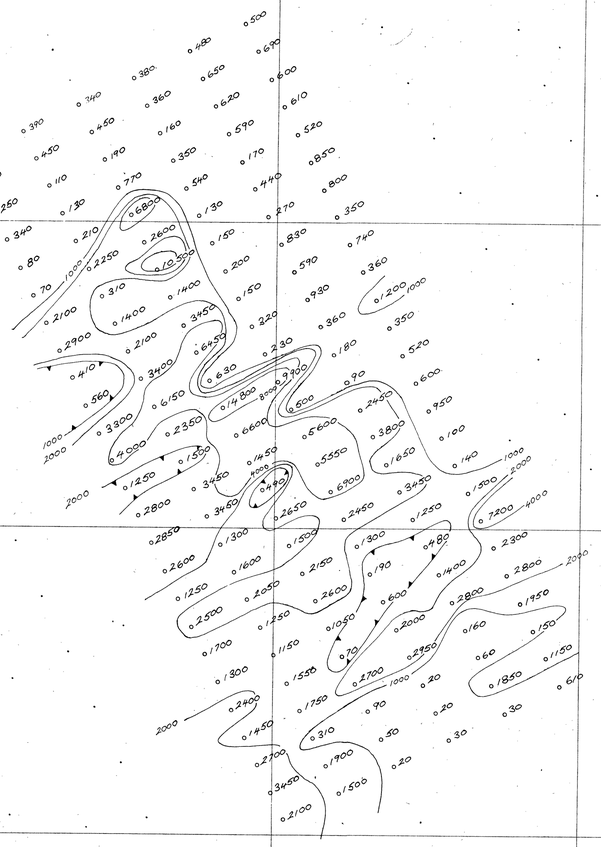
5 396 500 N

5 396 250 N

5 396 000 N

5 395 750 N

5 395 500 N



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

1000 2000 4000 8000

Ba ppm

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS : A.A.S

443057

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

84-211

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

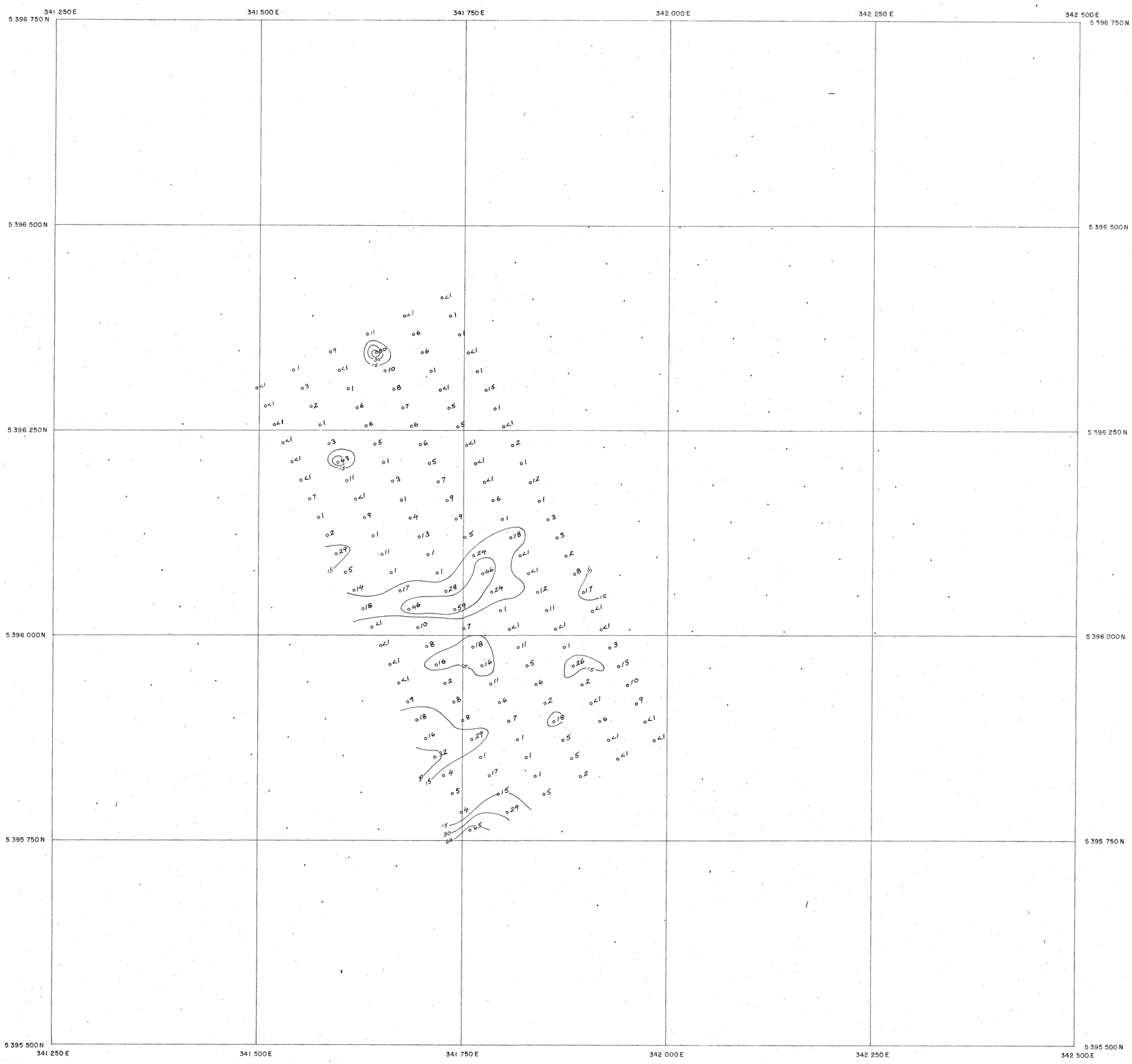
E.L.37/82 LONGBACK , TASMANIA.

Ba Geochemistry 008

Geologist : | Date : | Drawn : | PLAN NO: 8.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

As 15 30 60 ppm

- hand power auger hole
- power auger hole
- grid peg position

ASSAY RESULTS : As

443058

5 cm

A1

84-2111

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

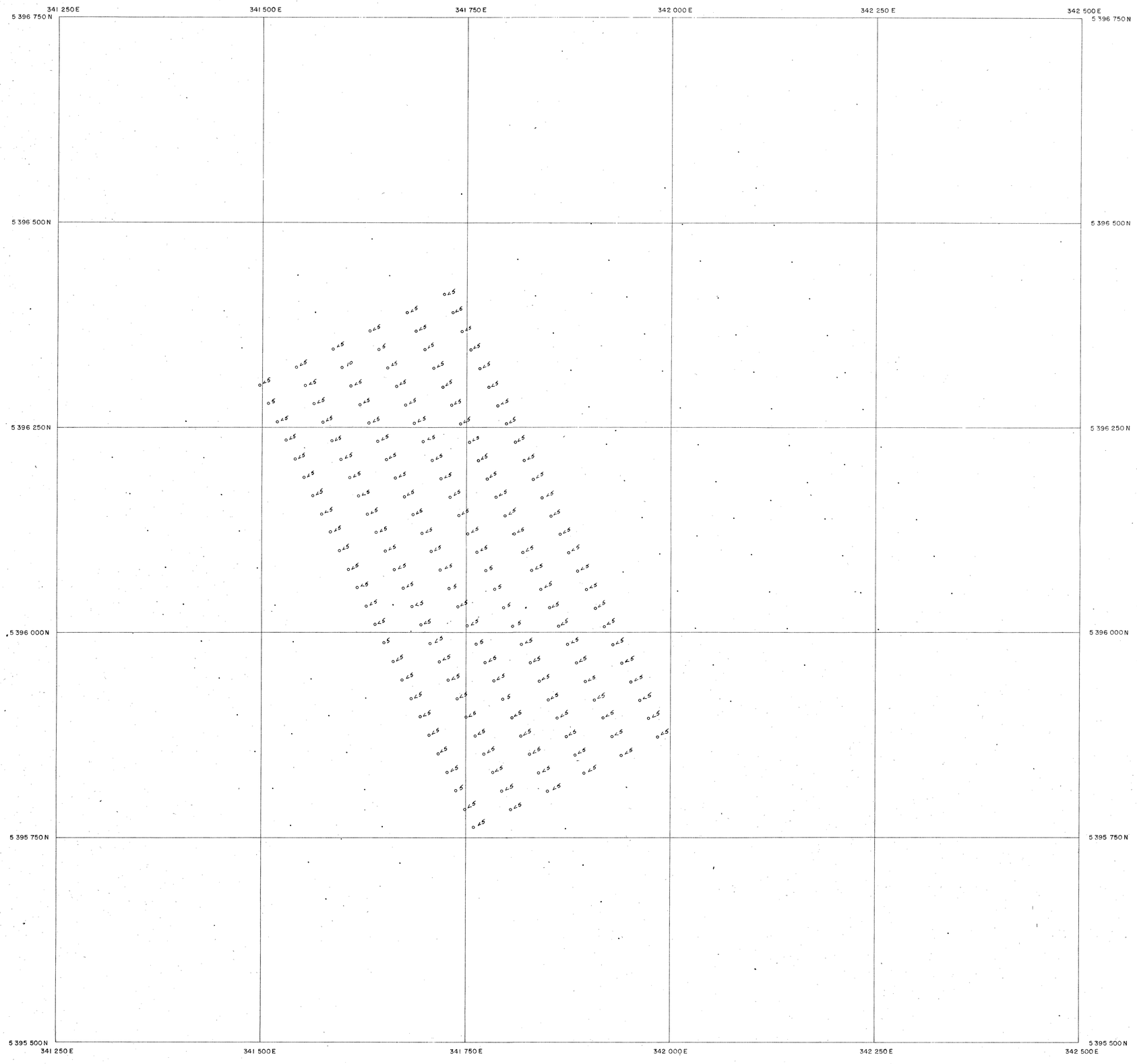
E.L.37/82 LONGBACK , TASMANIA. 009

As Geochemistry

Geologist : Date : Drawn : PLAN NO: 9.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



MAP AREA : 1·56 km²

GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS : A.Z.S

443059

5 cm

A1

GEOPEKO 84-211

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2 500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

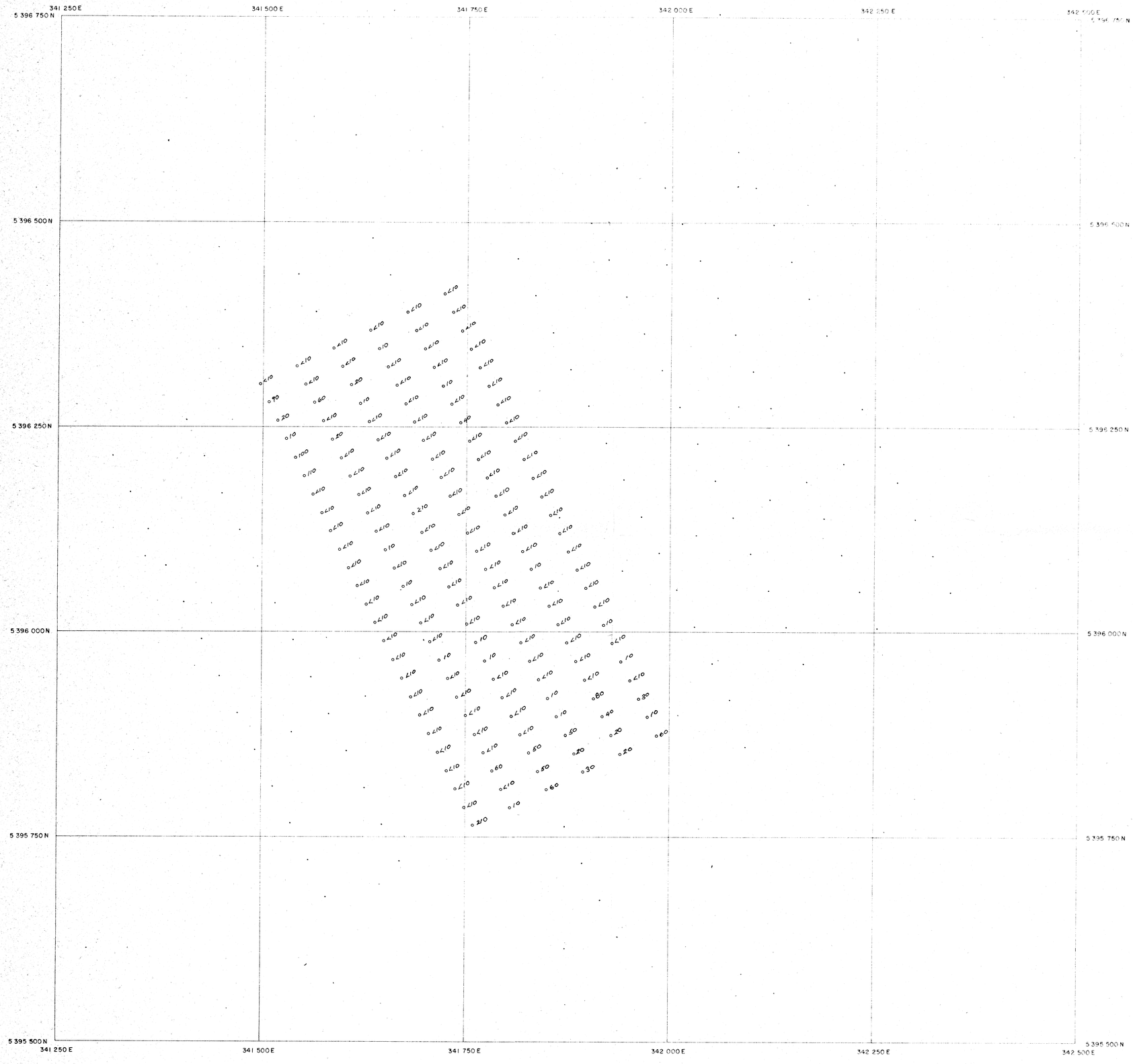
E.L.37/82 LONGBACK , TASMANIA.

Sn Geochemistry

010

Geologist :	Date :	Drawn :	PLAN NO : 10.

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

W [ ][ ][ ][ ][ ][ ] ppm

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS :

443060

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

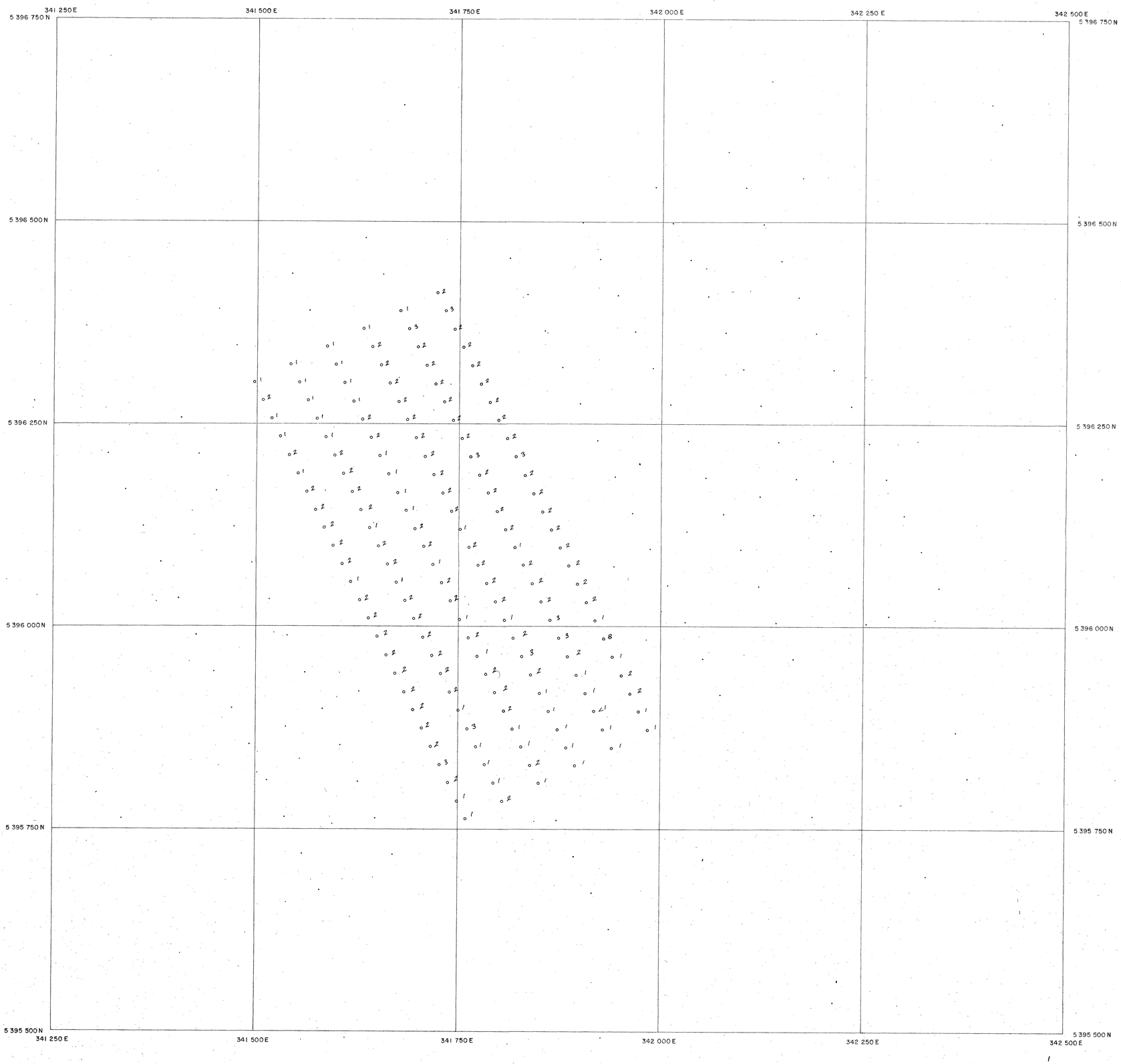
E.L.37/82 LONGBACK , TASMANIA. 011

W Geochemistry

Geologist : Date : Drawn : PLAN NO: 11.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS : A.L.S.

443061

5 cm

A1

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

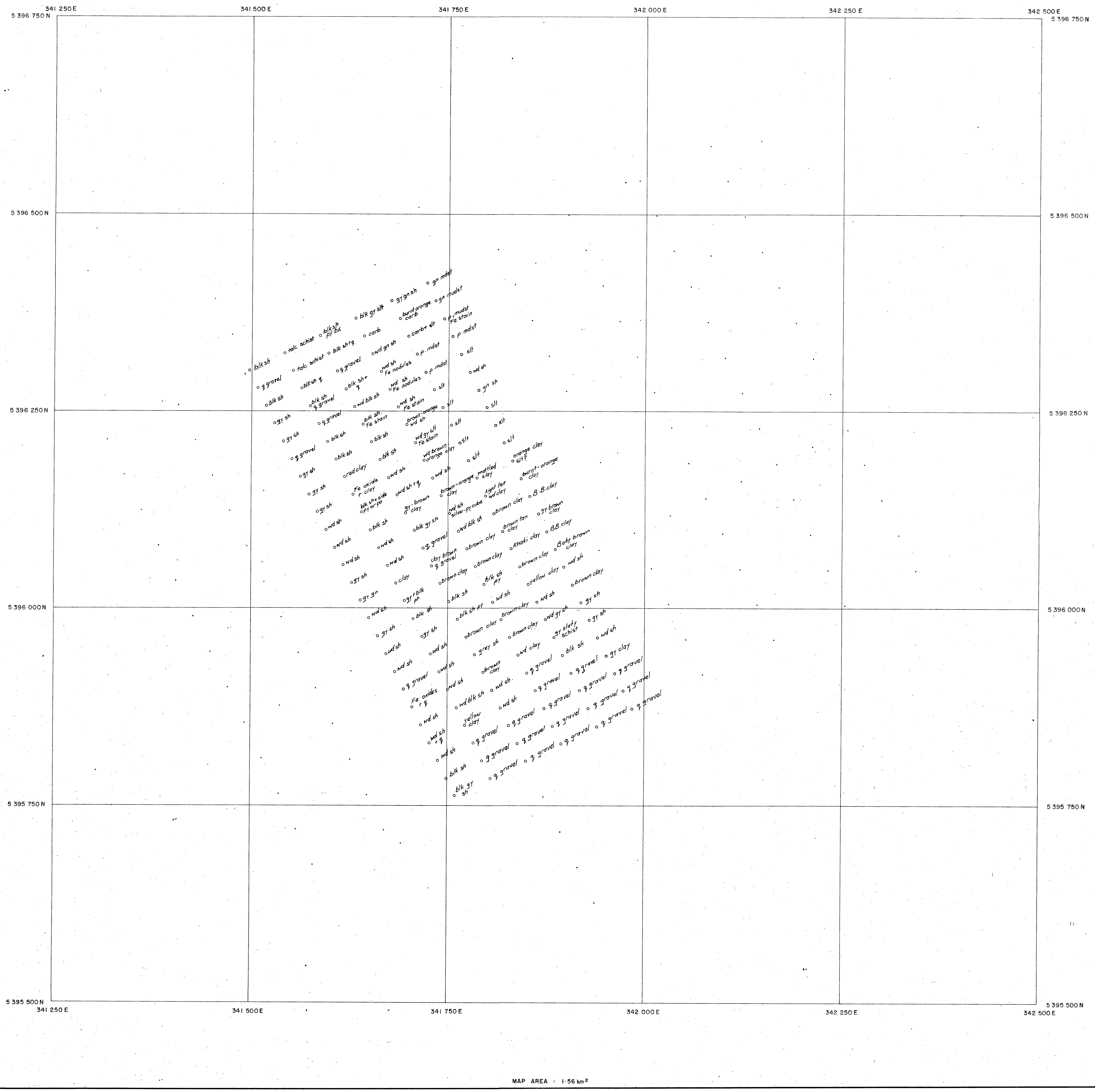
E.L.37/82 LONGBACK , TASMANIA. 012

Ag Geochemistry

Geologist : Date : Drawn : PLAN NO : 12.

MAP AREA : 1·56 km²

PART OF; BURNIE SK55-3



GEOCHEMISTRY

SOIL SAMPLE LOCATION :

Sample No. Prefix : TS

CONTOURS :

- o hand power auger hole
- • power auger hole
- · grid peg position

ASSAY RESULTS :

443062

5 cm

A1

GEOPEKO 84-2111

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

50 0 50 100 150 200 250 m

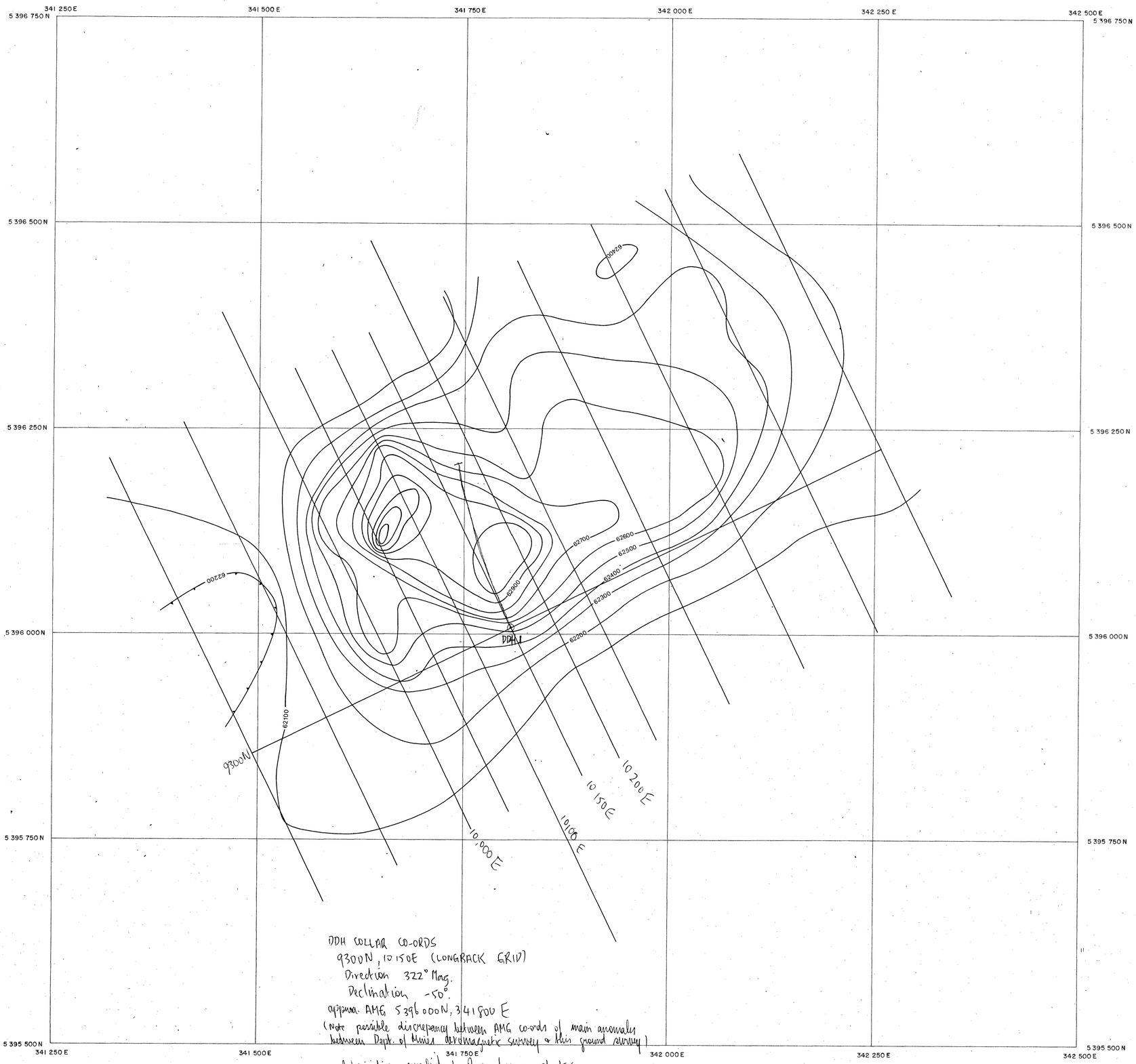
Map Reference : Taken from 1:100 000 PIEMAN-7914

E.L.37/82 LONGBACK, TASMANIA. 013

Rock Chip Geology

Geologist:	Date:	Drawn:	PLAN NO: 13.

PART OF; BURNIE SK55-3



DDH COLLAR CO-ORDS
9300N, 10150E (LONGBACK GRID)
Direction 322° Mag.
Declination -50°.
approx. AMG 5396000N, 341800 E
(note possible discrepancy between AMG co-ords of main anomaly between Dept. of Mines aeromagnetic survey & this ground survey)
-information supplied by Ross Large 3/12/84.

MAP AREA : 1·56 km²

MAGNETIC CONTOURS

62300 magnetic contour
Contour Interval : 100nT
Base Instrument : G856
Field Instrument : G816
Observer : J. Sumpton
Date : Jan '84

443063

5 cm

A1

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

84-2111.

Scale 1:2500
50 0 50 100 150 200 250 m

Map Reference : Taken from 1:100 000 PIEMAN-7914

014

E.L.37/82 LONGBACK, TASMANIA.

Contours of Total Magnetic Intensity

Geologist :	Date :	Drawn :	PLAN NO : 14.