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EL 1117

SHEOAK HILL

PROGRESS REPORTS FOR THE PERIOD 15/3/83 TO 14/3/88

Submitted by
Shell Co. of Australia Ltd, Billiton Australia and Western Mining Corp. Ltd
1988

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 5545

TENEMENT: E.L. 1117 - Sheoak Hill.

TENEMENT HOLDER: The Shell Company Of Australia Ltd.

2"C"

ENVELOPE NO. 5545. ~~5075~~

CONTENTS - TRANSPARENCY CYLINDER NO. 5545/1 ~~5075~~

E.L. 1117

TITLE	SCALE	PLAN NO.
BARNA-S.A. BMR Regional Geophysical Survey Residual Magnetic Intensity Contours. (Reprocessed by Pitt Research Pty. Ltd.)	1:100 000	A/FK23/010.

THE SHELL COMPANY OF AUSTRALIA LIMITED

METALS DIVISION

SHEOAK HILL E.L. 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 15TH JUNE, 1984

AUTHOR: K.J. HELLSTEN

REPORT NO: 08.2310

DATE: JUNE, 1984

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1.0 INTRODUCTION

Sheoak Hill E.L. 1117 (Figure 1) was granted to The Shell Company of Australia Limited on 15th March, 1983 for an initial term of 1 year. An extension of this tenure to 24 months was granted on 13th February, 1984 with the expenditure commitment remaining at $40,000 p.a.

This report summarises the exploration activities within Exploration Licence 1117 during the period 16th March, 1984 to 15th June, 1984. During this time a joint venture agreement has been entered into with Poseidon who will fund the exploration programme whilst Shell remains as manager and operator. Reporting on E.L.s 1116 and 1117 will therefore be done separately in future.

2.0 SUMMARY OF EXPLORATION ACTIVITIES 16-3-84 TO 15-6-84

During the report period exploration has concentrated on the outline and definition of significant aeromagnetic trends for future bedrock testing. Nine regional ground magnetic profiles (35N, 36N, 37N, 38N, 39N, 40N, 44N, 45N and 46N) totalling 24 line kilometres were completed. The locations of these lines are shown in Figures 2-6 while the magnetic profiles are given as Figures 7-15.

The lines were run along tracks or fencelines where possible, however, on some magnetic features no such access was available. Here the line was photolocated and surveyed using a compass bearing and pacing. All lines were pegged every 200 metres and covered with detailed ground magnetics using Geometrics G856 digital proton procession magnetometers. Readings were taken every 10 metres with a roving magnetometer while diurnal variations were monitored by a base station taking readings every 4 minutes.

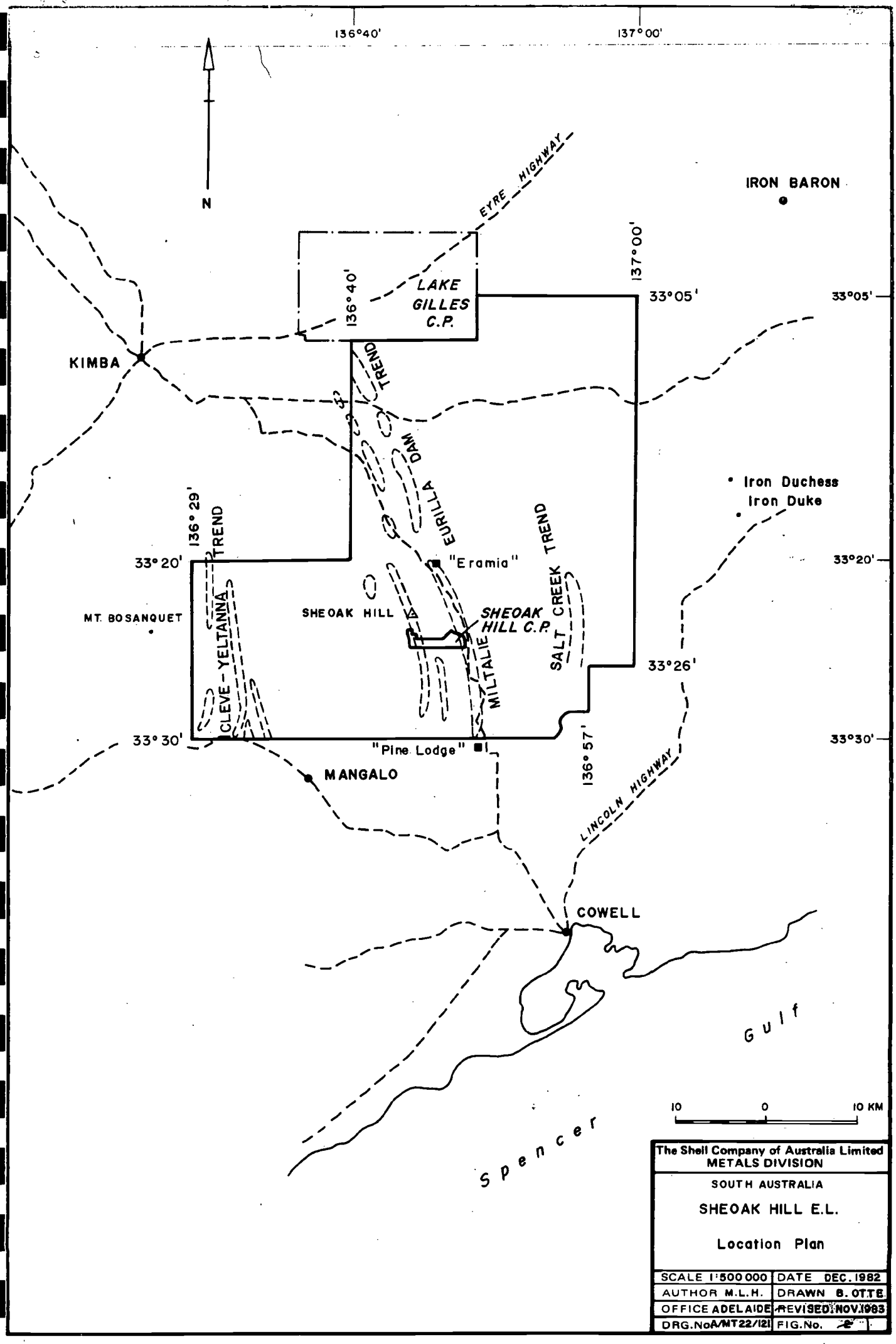
Each evening the data was transferred to tape using a H.P. 85 portable computer which also facilitated printout and plotting of the roving, base and corrected roving magnetometer readings. Later the information was transferred to the Adelaide office HP 9845 for storage, presentation plotting and modelling.

Ranking, modelling and assessment of the magnetic profiles is planned for the following quarter prior to drill testing of bedrock sources.

3.0 EXPENDITURE STATEMENT

Expenditure for the quarter ending 31/3/84.

	$	Project to Date $
Staffing/Support	7 692	24 723
Concession Payments	2 769	5 282
Site preparation/Payments to Landholders & Consultants	141	885
Geology, Geophysics, Drawing Research & Computer	344	1 933
Overheads	184	2 520
TOTAL	11 130	35 343



The Shell Company of Australia Limited
METALS DIVISION

SOUTH AUSTRALIA

SHEOAK HILL E.L.

Location Plan

SCALE 1:500 000	DATE DEC. 1982
AUTHOR M.L.H.	DRAWN B. OTTE
OFFICE ADELAIDE	REVISED NOV. 1983
DRG. No A/MT 22/121	FIG. No. 8

136°30' 645 35' 650 655 40' 660 136°45'
33°00'

6345 6340 6335 6330 6325 6320

05' 10'

6 320 000mN 640 000mE

33°15'

LAKE GILLES

LAKE

GILLES

CONSERVATION

PARK

"Lyndhurst"
"Hills View"
"Bindawalla"
"Moseley Park"
"Pine Park"
"Bindaregah"
"Merv Lee"
"Velmol"
"Curtinye"
"Broad Acres"
"Kellarna"
"Nukunu"
"Netherby"
"Mira-Mira"
"Yarlana"

EYRE HIGHWAY

Barna Reservoir
Wild Dog Dam
Kelly Dam

WILD DOG HILL
CURTINYE HILL (KATINGA HILL)
BARNA HILL

PROFILE 44
E.L. 1117
PROFILE 45
PROFILE 46
PROFILE 29

3000E
2500E
2000 NE

TN MN
7°46'

Magnetic value was taken from Barna 1:50 000 sheet and is correct for 1983. Annual change is 03' easterly.

PROFILE 29 3600E 3100E

Magnetic profile with end co-ordinates

1:50 000 SHEET INDEX

BARNA 6231-IV (1)	NILGINEE 6231-I (2)	MIDDLEBACK 6331-IV (3)	RANDELL 6331-I (4)
CARAPPEE 6131-II (5)	HEGGATON 6231-III (6)	GLYNN 6231-II (7)	CHARLESTON 6331-III (8)
			COWELL 6230-I (9)
			GIBBON 6230-II (10)

METRES 1000 0 1 2 KM

The Shell Company of Australia Limited
METALS DIVISION
SOUTH AUSTRALIA

SHEOAK HILL

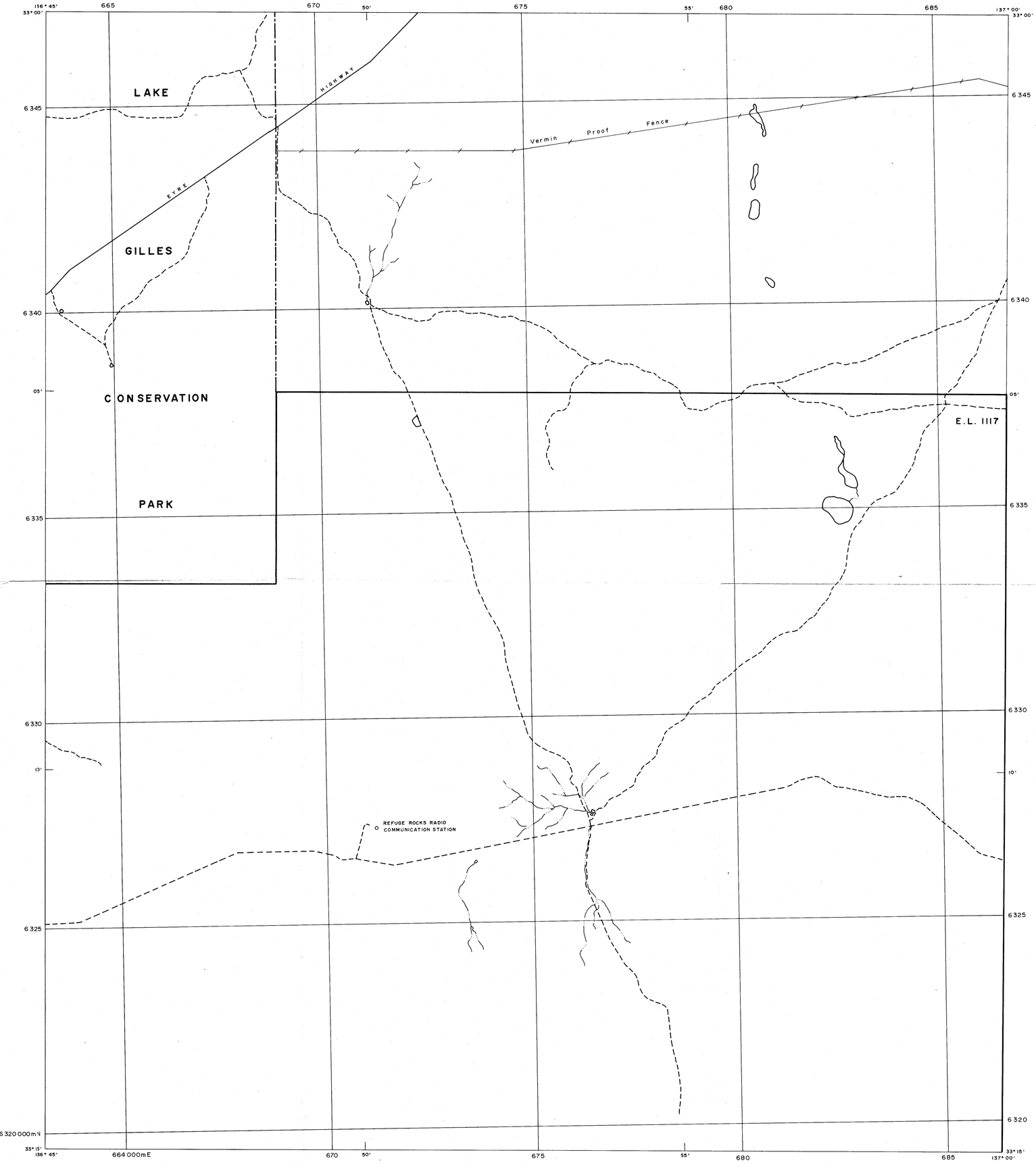
(Sheet 1)

Regional Ground Magnetic Profiles

Scale 1 : 50 000

REVISED MAR. 1984	REPORT No
FIG. No. 2	DRG. No. A/FD 05/006
DATE MAY 1983	AUTHOR K.J.H.
DRAWN B.J.O.	OFFICE ADELAIDE

5545-1



TN MN

7° 52'

Magnetic value was taken from Nilginee 1:50000 sheet and is correct for 1983 Annual change is 03' easterly.

1:50000 SHEET INDEX

	EARNA 6131-IV 1	NILGINEE 6231-I 2	MIDDLEBACK 6331-IV 3	RANDELL 6331-I 4
CARAPPEE 6131-II 5	HEGGATON 6231-III 6	GLYNN 6231-II 7	CHARLESTON 6331-III 8	McGREGOR 6331-II 9
RUDALL 6130-II 10	MINGALO 6230-IV 11	COWELL 6230-I 12		
		GIBBON 6230-II 13		

METRES 000 0 1 2 KM

The Shell Company of Australia Limited METALS DIVISION	
SOUTH AUSTRALIA	
SHEOAK HILL	
(Sheet 2)	
Regional Ground Magnetic Profiles	
Scale 1 50 000	
REVISED:	REPORT No.
FIG. No. 3	DRG. No. A/FD 05/007
DATE MAY 1983	AUTHOR K.J.H.
DRAWN B.J.O.	OFFICE ADELAIDE

5545-2

136°15' 33°15' 620 20' 625 630 25' 635 136°30' 33°15'

"Willana"

Lacroma Reservoir

Bunora

"Windzel"

6315

Waddikee

20'

6310

E.L. 1117

"Broad View"

Vermin Proof Fence

"Irkanda"

6305

MOUNT BOSANQUET

Bosanquet Reservoir

"Pindari"

25'

CARAPPEE HILL

Carappee Hill Reservoir

6300

"Carappee"

"Carappie View"

STANLEY MINE

ARGENT MINE

6295 000mN

"Caringa"

33°30' 136°15' 620 000mE 20' 625 630 25' 635 33°30' 136°30'

TN MN

7°39'

Magnetic value was taken from Carappee 1:50 000 topo sheet and is correct for 1983. Annual change is 03' easterly.

1:50 000 SHEET INDEX

BARNA 6231-IV 1	NILGINEE 6231-I 2	MIDDLEBACK 6331-IV 3	RANDELL 6331-I 4
CARAPPEE 6131-II 5	HIGGATON 1231-III 6	GLYNN 6231-II 7	CHARLESTON 6331-III 8
		COWELL 6230-I 9	
		GIBBON 6230-II 10	

METRES 000 0 1 2 KM

The Shell Company of Australia Limited
METALS DIVISION

SOUTH AUSTRALIA

SHEOAK HILL
MIDDLEBACK RANGE
(Sheet 5)

Regional Ground Magnetic Profiles

Scale 1:50 000

REVISED:	DATE
AUTHOR K.J.H.	DRAWN
OFFICE ADELAIDE	REP. No.
FIG. No. 4	DRG No. A/FD 05/008

5545-3

640
136° 30'
33° 15'
645
35'
650
655 40'
660
136° 45'
33° 15'

E.L. 1117

"Hillridge"

"Kellimba"

"Ronnoc"

"Pine Hill"

Vermin Proof Fence

CARPIE PUNTHA HILL

Carpie Puntha Dam

YALANDA HILL

"Yalanda Park"

"Pine Crest"

"Marlu"

"Winter Springs"

"Heggaton"

"Scrubara"

Carroo Curtie Reservoir

Coompana Reservoir

M.T. MESSENGER

SHEOAK HILL CONSERVATION PARK

Power Line

Salt Creek

PROFILE 39 — 2500E

PROFILE 29

PROFILE 21 — 2000 SE

PROFILE 22 — 3500E

PROFILE 26 — 2000 E

PROFILE 24 — 4000 NE

PROFILE 25 — 2000 E

PROFILE 16

PROFILE 23 — 4000 E

PROFILE 40

6315
6310
6305
6300
6295
6295 000mN
20'
25'
00
15
30
45

640 000mE

TN MN

7° 45'

Majnetic value was taken from Heggaton 1:50 000 sheet and is correct for 1983. Annual change is 03' easterly.

PROFILE 23 — 3000E

Magnetic profile with end co-ordinates

1:50 000 SHEET INDEX

	BARNA 6231-IV 1	NILGINEE 6231-I 2	MIDDLEBACK 6331-IV 3	RANDELL 6331-I 4
CARAPPEE 6131-II 5	HEGGATON 6231-III 6	GLYNN 6231-II 7	CHARLESTON 6331-III 8	
		COWELL 6230-I 9		
		GIBBON 6230-II 10		

METRES 1000 0 1 2 KM

The Shell Company of Australia Limited METALS DIVISION	
SOUTH AUSTRALIA	
SHEOAK HILL	
(Sheet 6)	
Regional Ground Magnetic Profiles	
Scale 1 : 50 000	
REVISED: MAR. 1984	REPORT No.
FIG. No. 5	DRG. No. A/FD 05/009
DATE MAY 1983	AUTHOR K.J.H.
DRAWN B.J.O.	OFFICE ADELAIDE

5545-4

136° 45'
33° 15'
665
670
50'
675
55'
680
685
137° 00'
33° 15'
6315
6310
20'
6305
25'
6300
6295
6 295 000mN
32° 30'
665 000mE
33° 30'

PROFILE 38 0 2000E

PROFILE 20 0 2000E

PROFILE 37 0 3000E

PROFILE 40 3000E

PROFILE 10 2000 E 0

PROFILE 35 0 2000E

2000N PROFILE 11 0

PROFILE 19 0 2000 NE

PROFILE 16 0 3500 SE

PROFILE 17 0 1500E

PROFILE 13 0 2500 E

PROFILE 9 0

PROFILE 6 0 00 NE

6000 SE 4000 N E

PROFILE 8 0 00 NE

PROFILE 15 0 3000 SE

PROFILE 36 0 3000E

PROFILE 14A 0 00 SE

PROFILE 7 0 3500 E

Vermin Proof Fence

Power Line

Creek

Salt

Minbinnie Creek

Millbrook Ck.

"Erainia"

"Mt. Ghearthy"

GEHARTY

SHEOAK HILL
CONSERVATION PARK

E.L. 1117

E.L. 1116

TN MN

7° 52'

Magnetic value was taken from Glynn 1:50000 sheet and is correct for 1983. Annual change is 03' easterly.

100E 1000E PROFILE 17

Magnetic profile with end co-ordinates

1:50000 SHEET INDEX

BARNA 6231-IV 1	NILGINEE 6231-I 2	MIDDLEBACK 6331-IV 3	RANDELL 6331-I 4
CARAPPEE 6131-II 5	HEGGATON 6231-III 6	GLYNN 6231-II 7	CHARLESTON 6331-III 8
		COWELL 6230-I 9	
		GIBBON 6230-II 10	

METRES 1000 0 1 2 KM

The Shell Company of Australia Limited
METALS DIVISION

SOUTH AUSTRALIA

SHEOAK HILL

(Sheet 7)

Regional Ground Magnetic Profiles

Scale 1:50000

REVISED: MAR. 1984	REPORT No.
FIG. No. 6	DRG. No. A/FD 05/010
DATE MAY 1983	AUTHOR K.J.H.
DRAWN B.J.O.	OFFICE ADELAIDE

5545-5

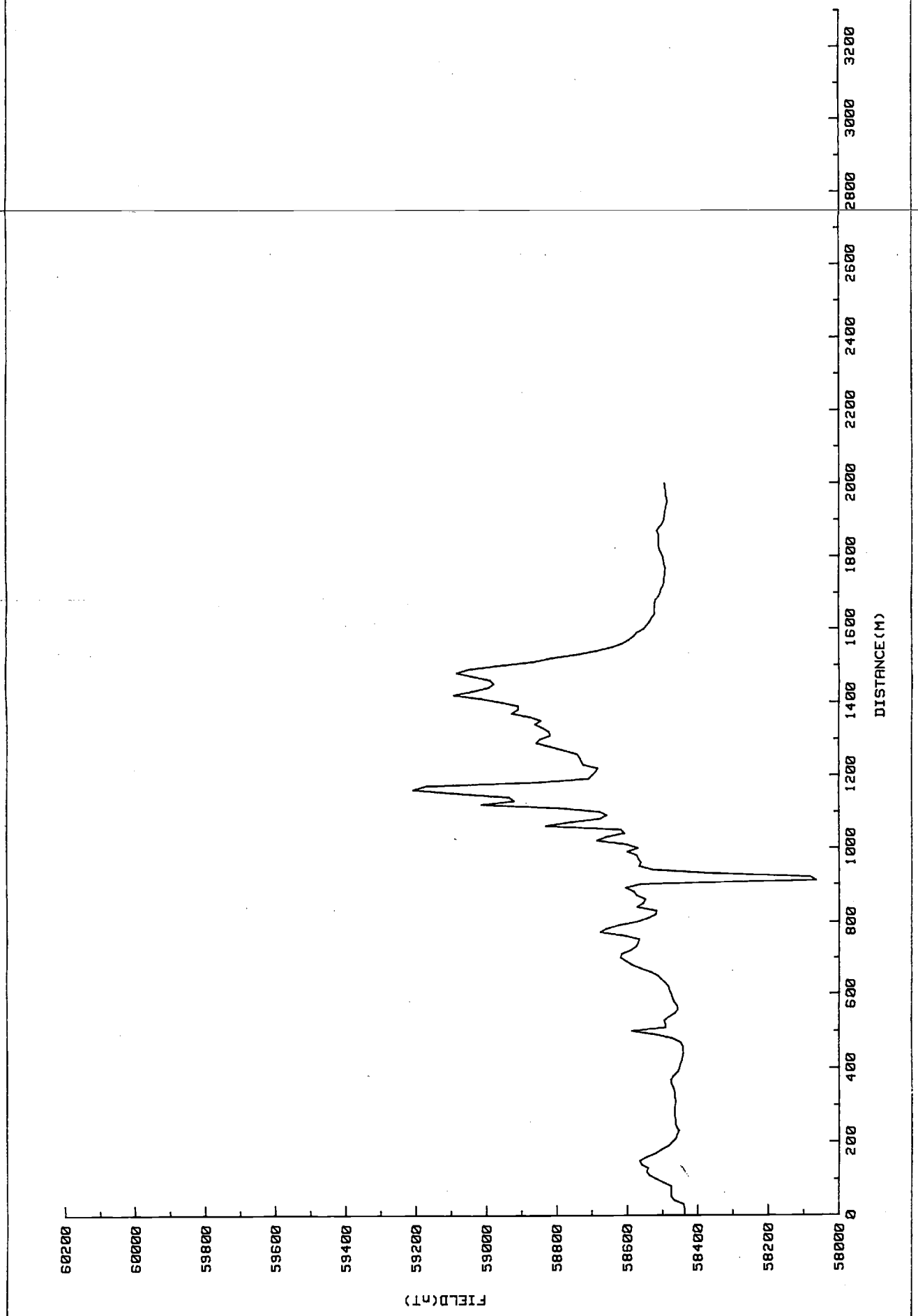
SHELL COMPANY OF AUSTRALIA

METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 35N
DETAIL No 1 TO 201
FIG. 7



SHELL COMPANY OF AUSTRALIA

METALS DIVISION

TOTAL MAG. FIELD - PROFILE

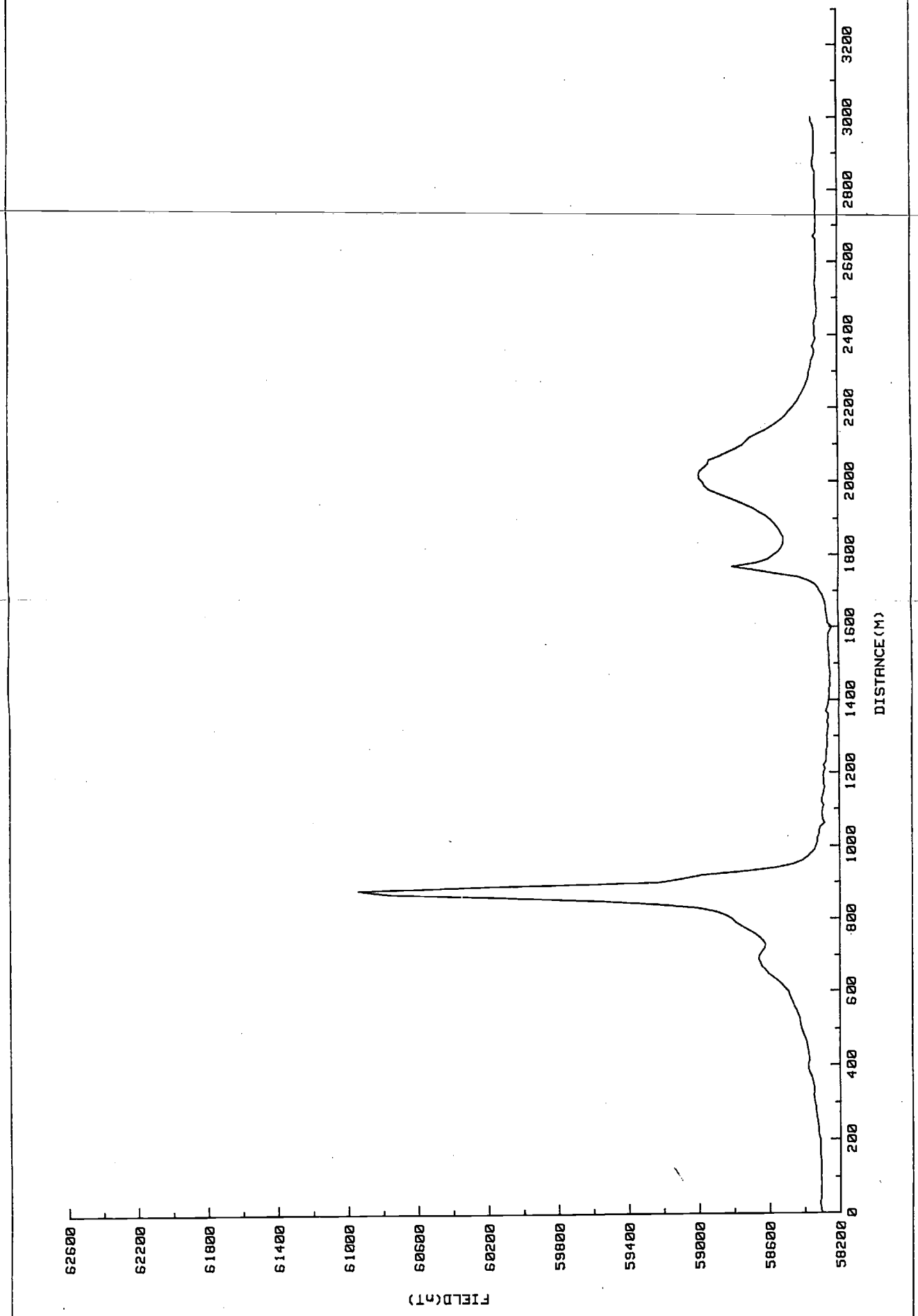
SHEOAK HILL REGIONAL PROFILE

1:10000

LINE NAME : 36N

DETAIL No 1 TO 301

FIG. 8



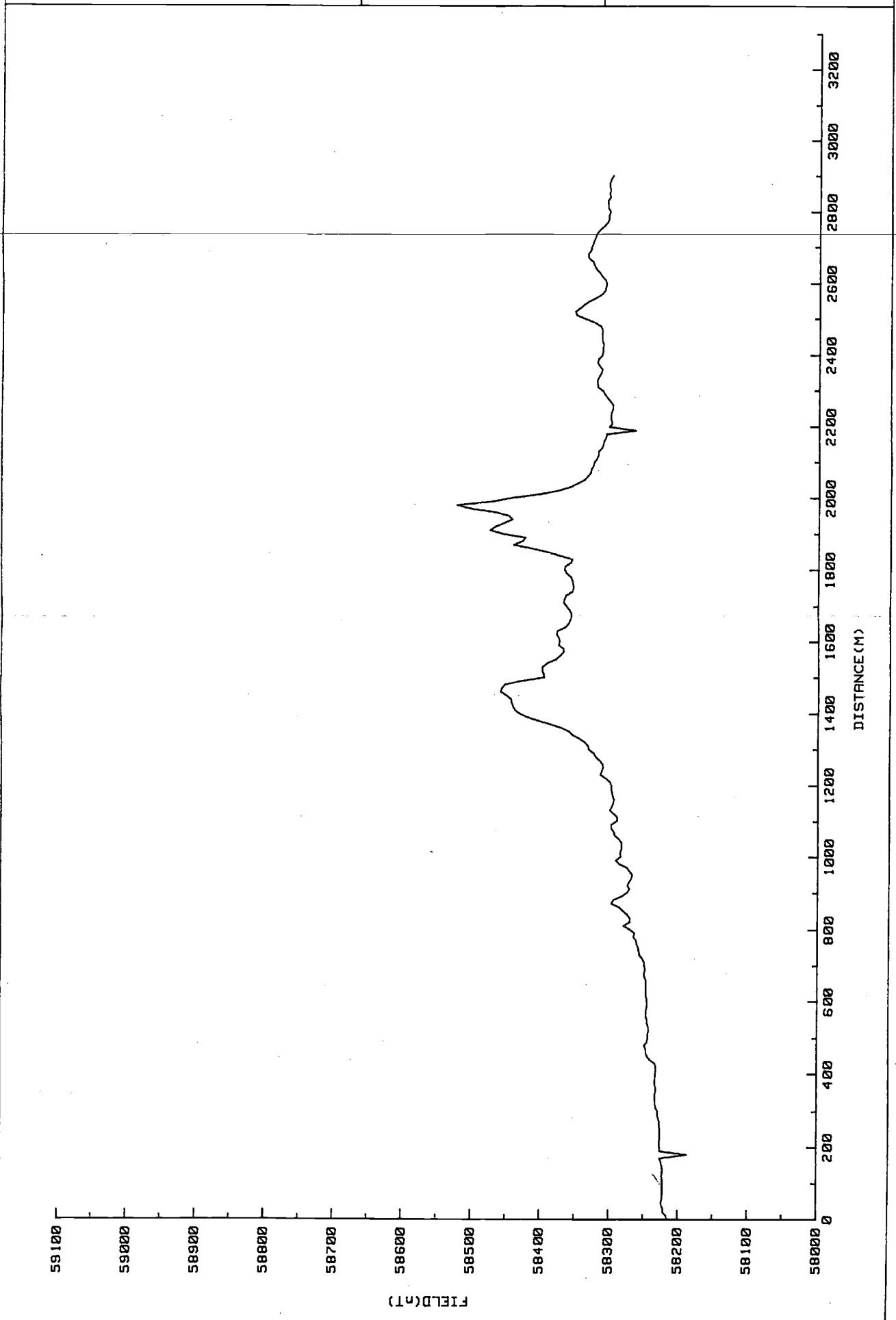
SHELL COMPANY OF AUSTRALIA

METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 37N
DETAIL No 1 TO 291
FIG. 9



SHELL COMPANY OF AUSTRALIA

METALS DIVISION

TOTAL MAG. FIELD - PROFILE

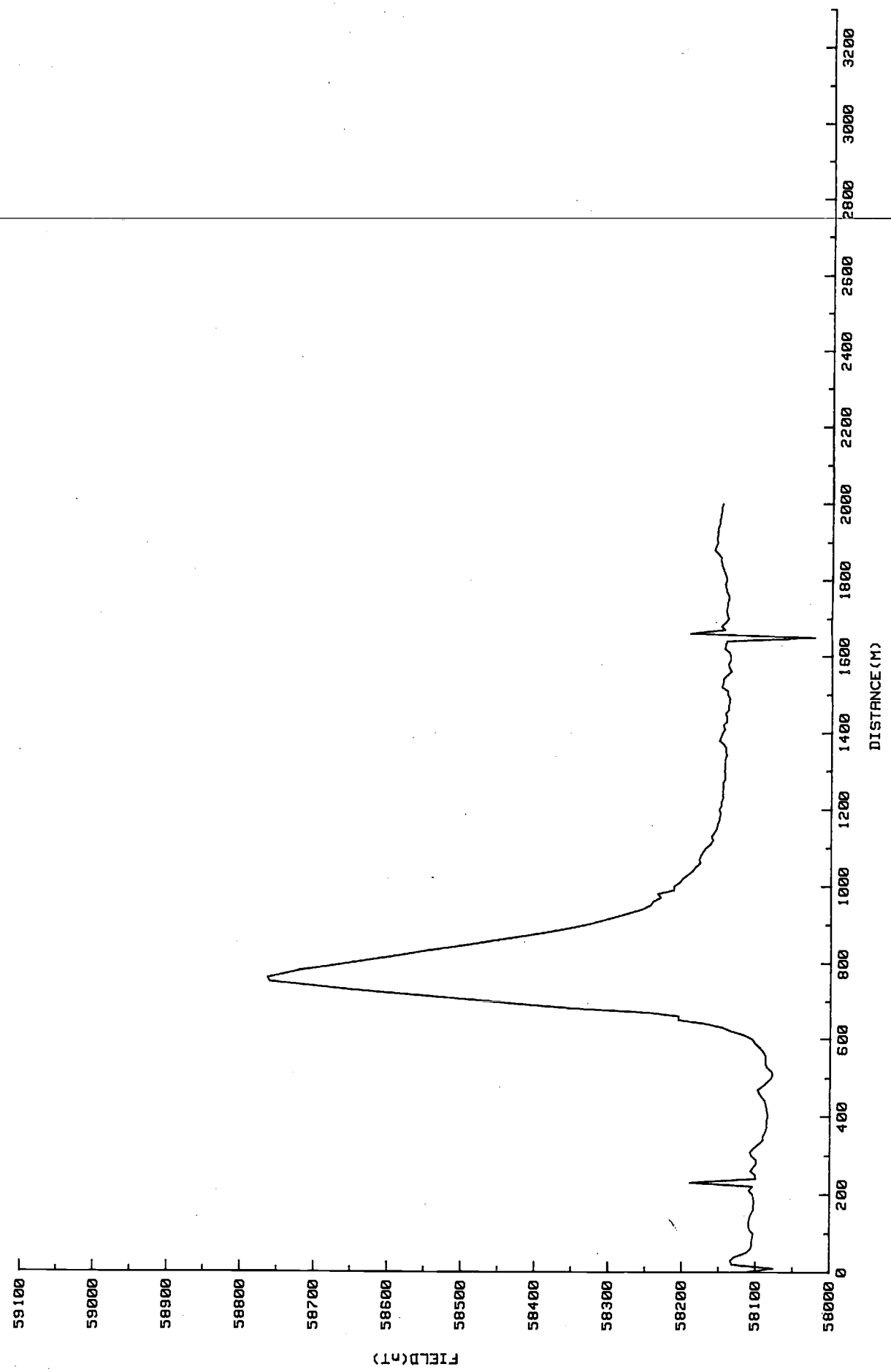
SHEOAK HILL REGIONAL PROFILE

1:10000

LINE NAME : 38N

DETAIL No 1 TO 201

FIG. 10



SHELL COMPANY OF AUSTRALIA

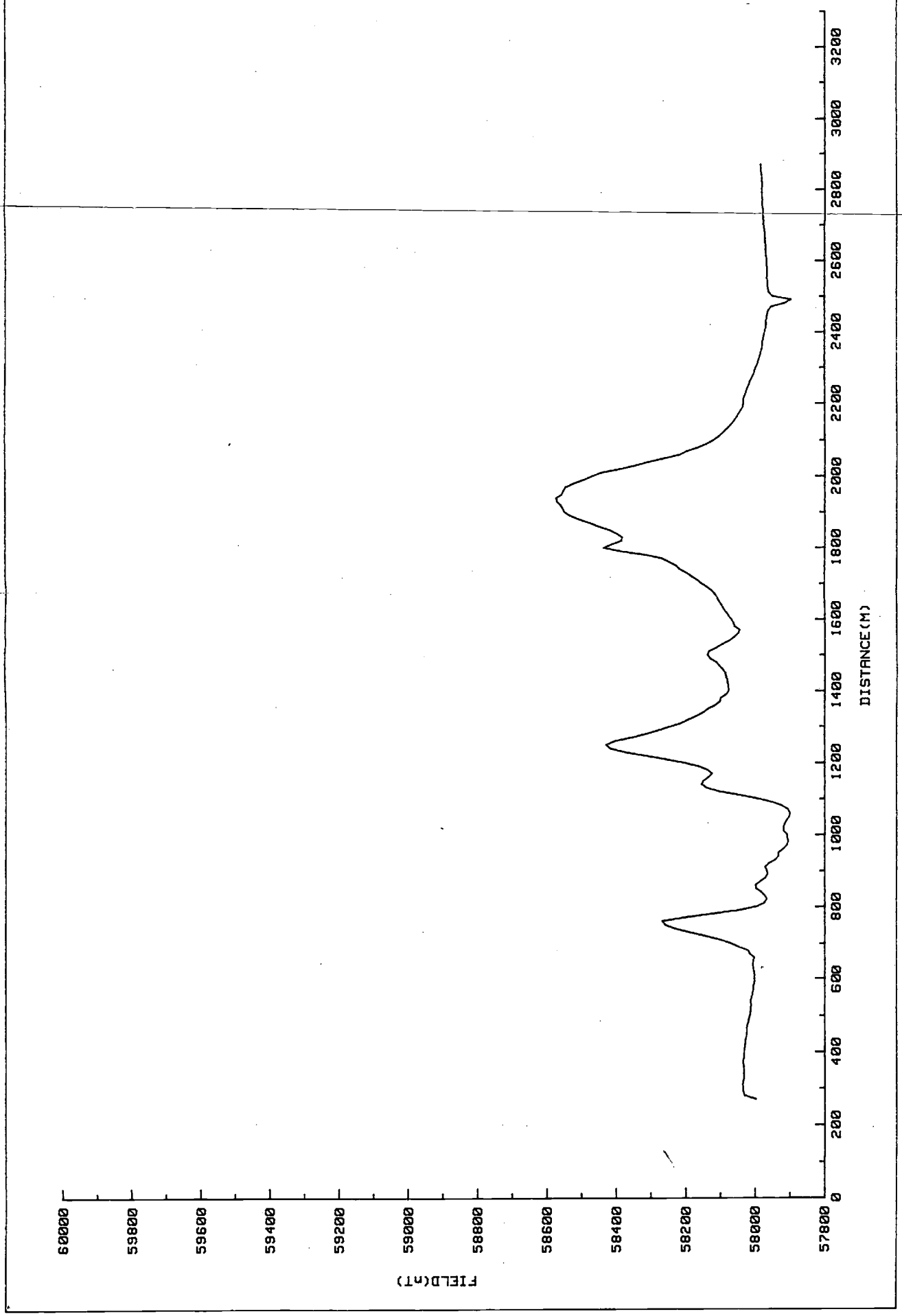
METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 39N
DETAIL No 1 TO 261

FIG. II



SHELL COMPANY OF AUSTRALIA

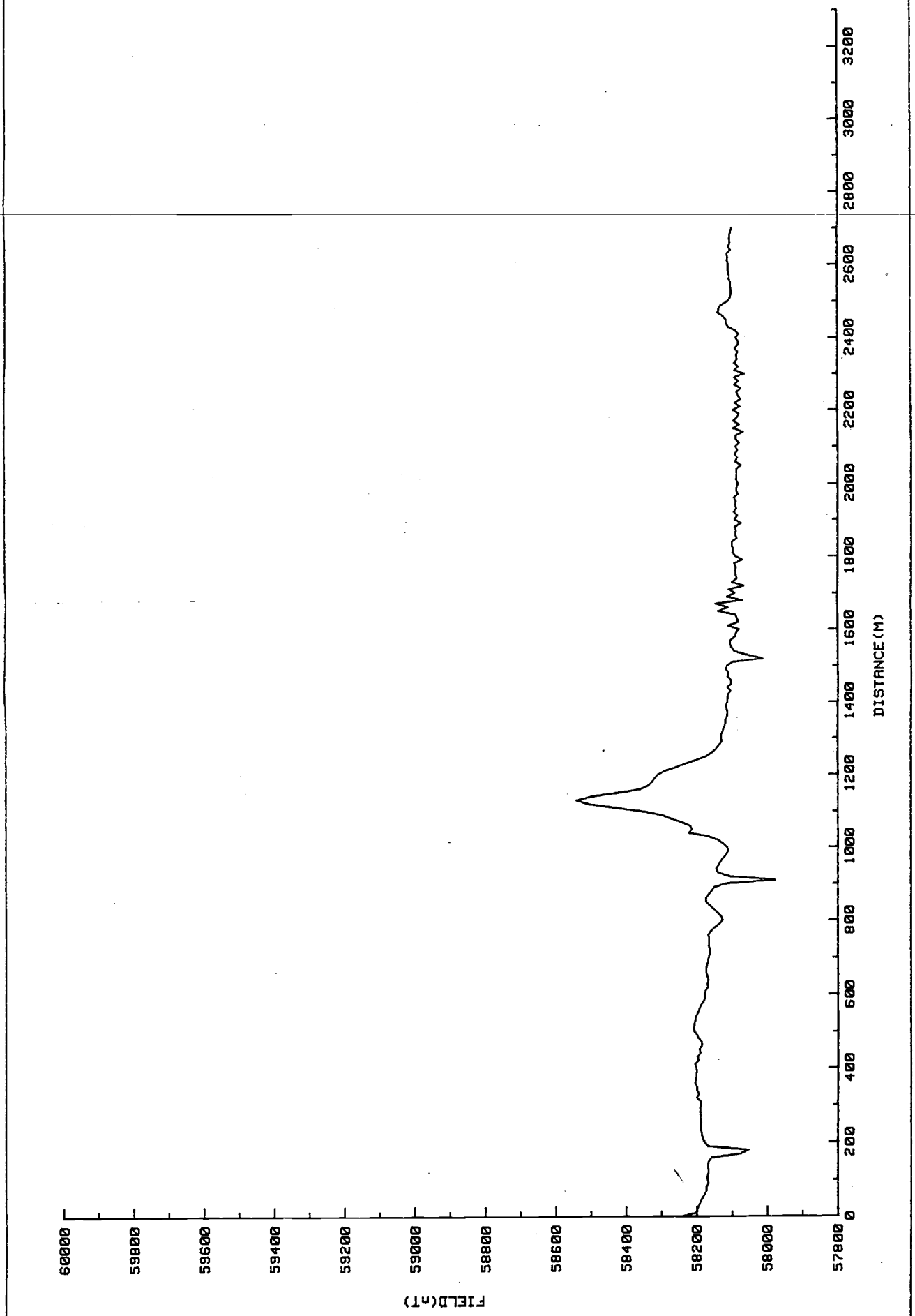
METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 40N
DETAIL No 1 TO 271

FIG. 12



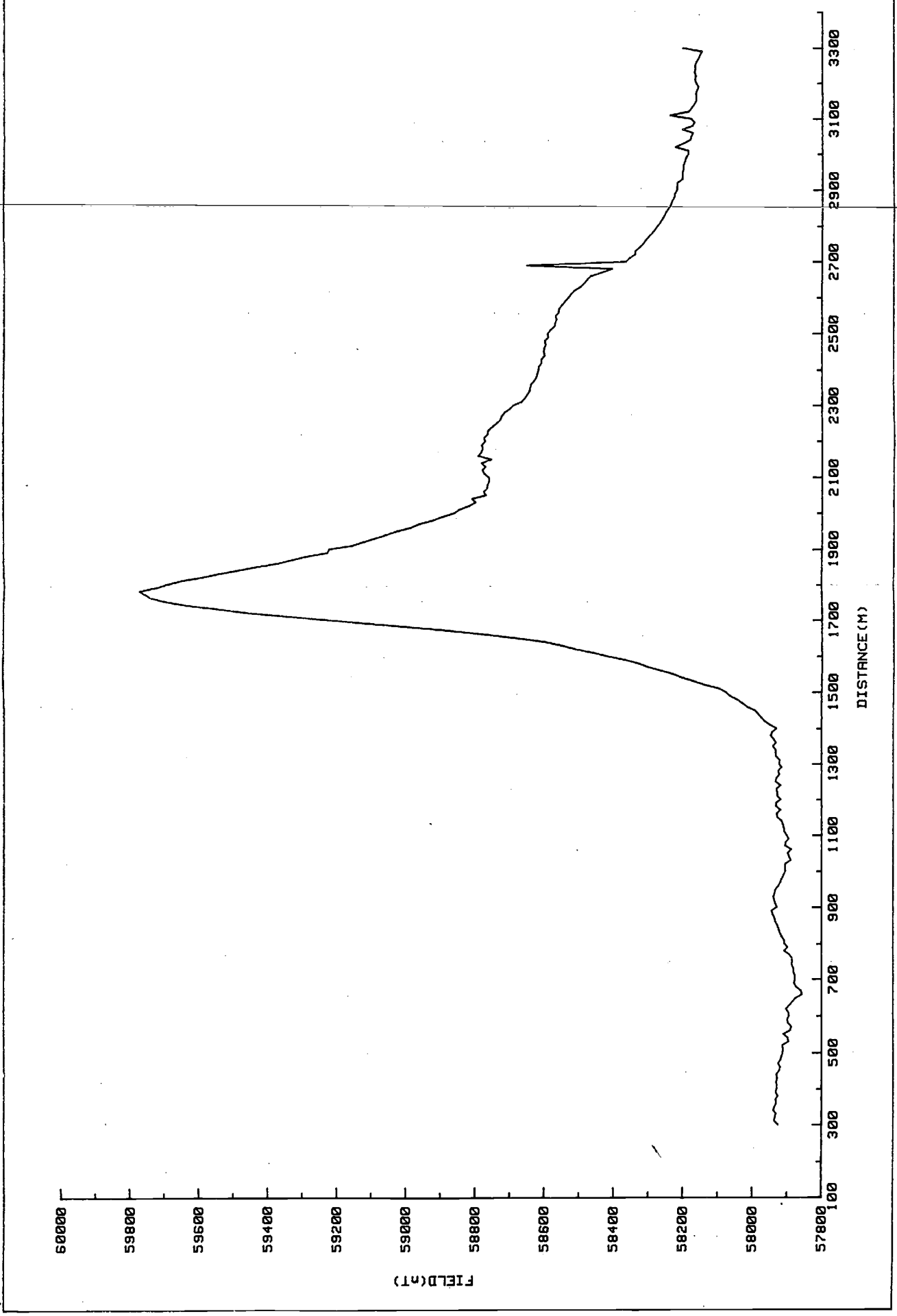
SHELL COMPANY OF AUSTRALIA

METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 44N
DETAIL No 1 TO 301
FIG. 13



SHELL COMPANY OF AUSTRALIA

METALS DIVISION

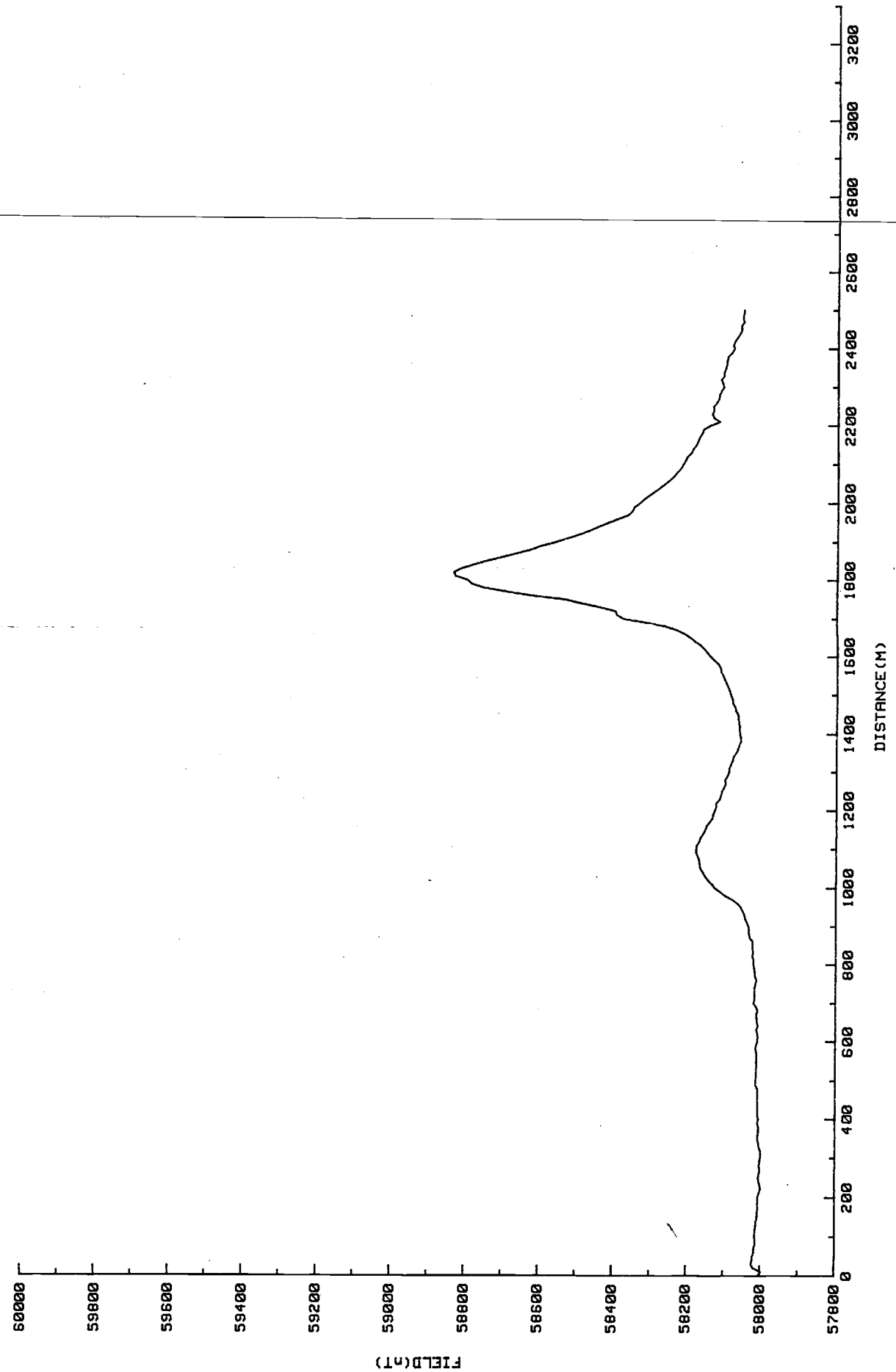
TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 45N

DETAIL No 1 TO 251

FIG. 14



SHELL COMPANY OF AUSTRALIA

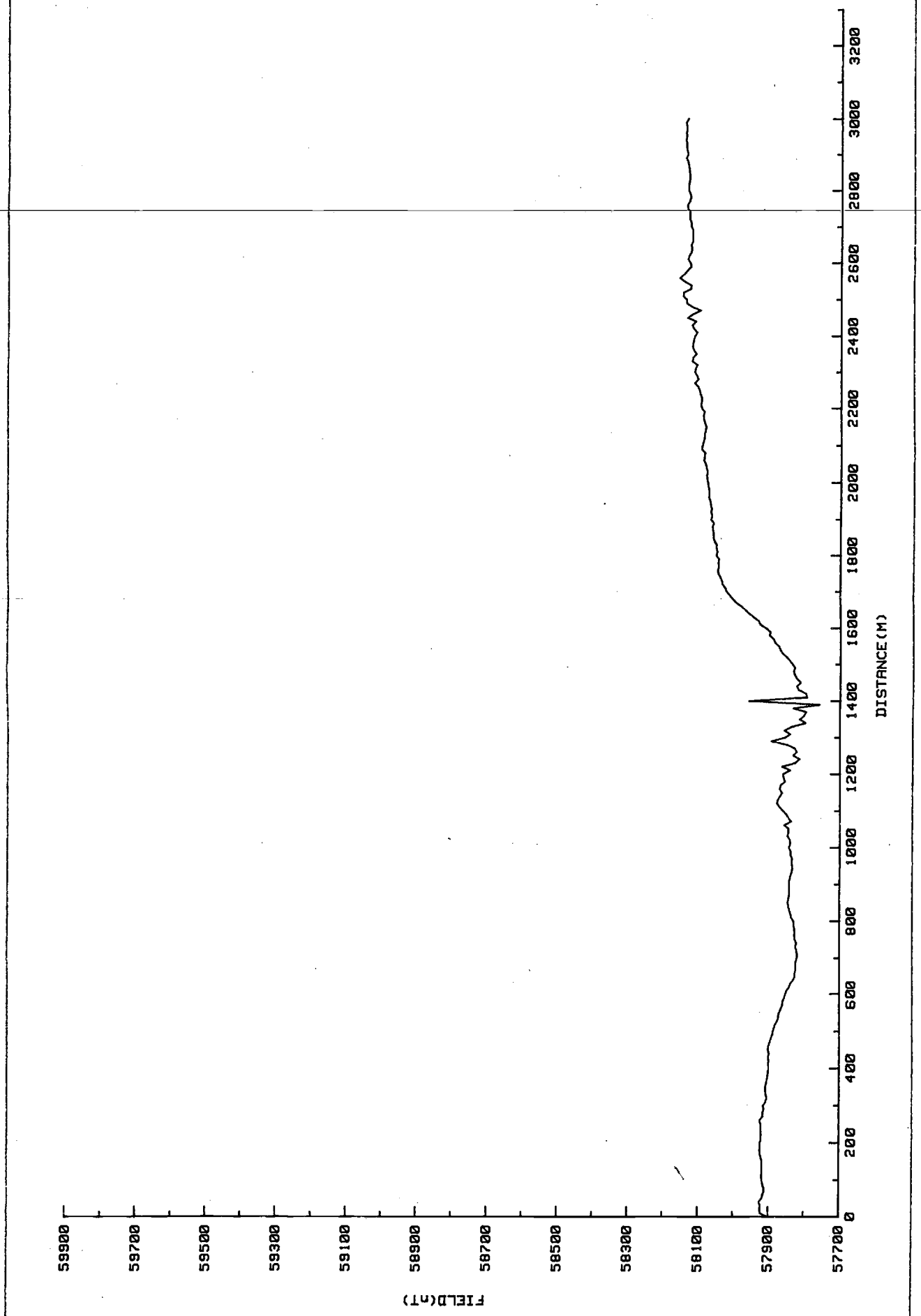
METALS DIVISION

TOTAL MAG. FIELD - PROFILE

SHEOAK HILL
REGIONAL PROFILE
1:10000

LINE NAME : 46N
DETAIL No 1 TO 301

FIG. 15



BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR THE QUARTER ENDING 15TH SEPTEMBER 1984

AUTHOR: G.J. DAVIDSON
REPORT NO: 08.2554
DATE: OCTOBER 1984

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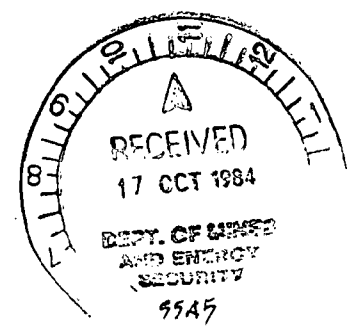

08.2502.gjd

CONTENTS

FIGURE

Drawing No.	Title	Scale
A/MT22/121	Sheoak Hill EL, Location Plan	1:500 000

1.0 INTRODUCTION

Sheoak Hill EL 1117 (Figure 1) was granted to The Shell Company of Australia Limited on 15th March, 1983 for an initial term of 1 year. An extension of this tenure to 24 months was granted on 13th February, 1984 with the expenditure commitment remaining at $40 000 p.a.

A joint venture agreement has been entered into with Poseidon who will fund the exploration programme whilst Shell remains as manager and operator.

During the quarterly period (15/6/84 - 15/9/84) work on the licence was inactive. However a programme of reconnaissance rock chipping is planned for the final quarter of the year along known iron formation trends.

2.0 EXPENDITURE STATEMENT

Expenditure for the quarter ending 30th June 1984.

		Project to Date
Staffing/Support	4 275	28 998
Concession Payments		5 282
Site preparation/ Payments to Landholders & Consultants		885
Geology, Geopysics, Drawing		
Research & Computer	931	2 864
Overheads	1 428	3 948
	6 634	41 977

0022

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 15TH DECEMBER 1984

AUTHOR: G.J. DAVIDSON REPORT NO: 08.2674

DATE: DECEMBER 1984

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Copy 2: POSEIDON/ADELAIDE
Copy 3: BILLITON/MELBOURNE
Copy 4: BILLITON/ADELAIDE

CONTENTS

APPENDICES

Figure No	Title	Scale	Drawing No
1	Sheoak Hill E1, Location Plan	1:500 000	A/MT22/121
2	Summary of Ground Reconnaissance and Sample Locations	1:500 000	A/FK23/001

1.0 INTRODUCTION

Sheoak Hill EL 1117 (Figure 1) was granted to The Shell Company of Australia limited on 15th March, 1983 for an initial term of 1 year. An extension of this tenure to 24 months was granted on 13th February, 1984 with the expenditure commitment remaining at $40 000 p.a.

A joint venture agreement has been entered into with Poseidon with Shell remaining as manager and operator.

The joint venture partners seek base metal targets of the stratiform Broken Hill-Aggeneys style in the Lower Proterozoic Hutchison Group of the Gawler Craton. The basic exploration tools are magnetic horizons associated with BIF horizons such as the Middleback Jaspilite. It is therefore important to establish at an early stage that the magnetic horizons in the licence area are related to chemical sedimentation. During the quarterly period (15/9/84 - 15/12/84) work on the licence consisted of reconnaissance mapping and sampling

3.0 EXPENDITURE STATEMENT

Expenditure for the quarter ending 30th September 1984.

		Project to Date
Staffing/Support	2 024	2 467
Geology, Geophysics, Drawing, Research & Computer	(482)	307
Overheads	(1 132)	259
	410	3 033

We are in the process of changing our method of calculating our indirect costs and proportioning regional office costs. We will base the calculation on a dollar spent basis instead of a time writing basis. The figures for this quarter include adjustments to correct the year to date total.

APPENDIX I

Rock Chip Geochemistry

The Shell Company of Australia Limited
METALS DIVISION (S.A.)

0028

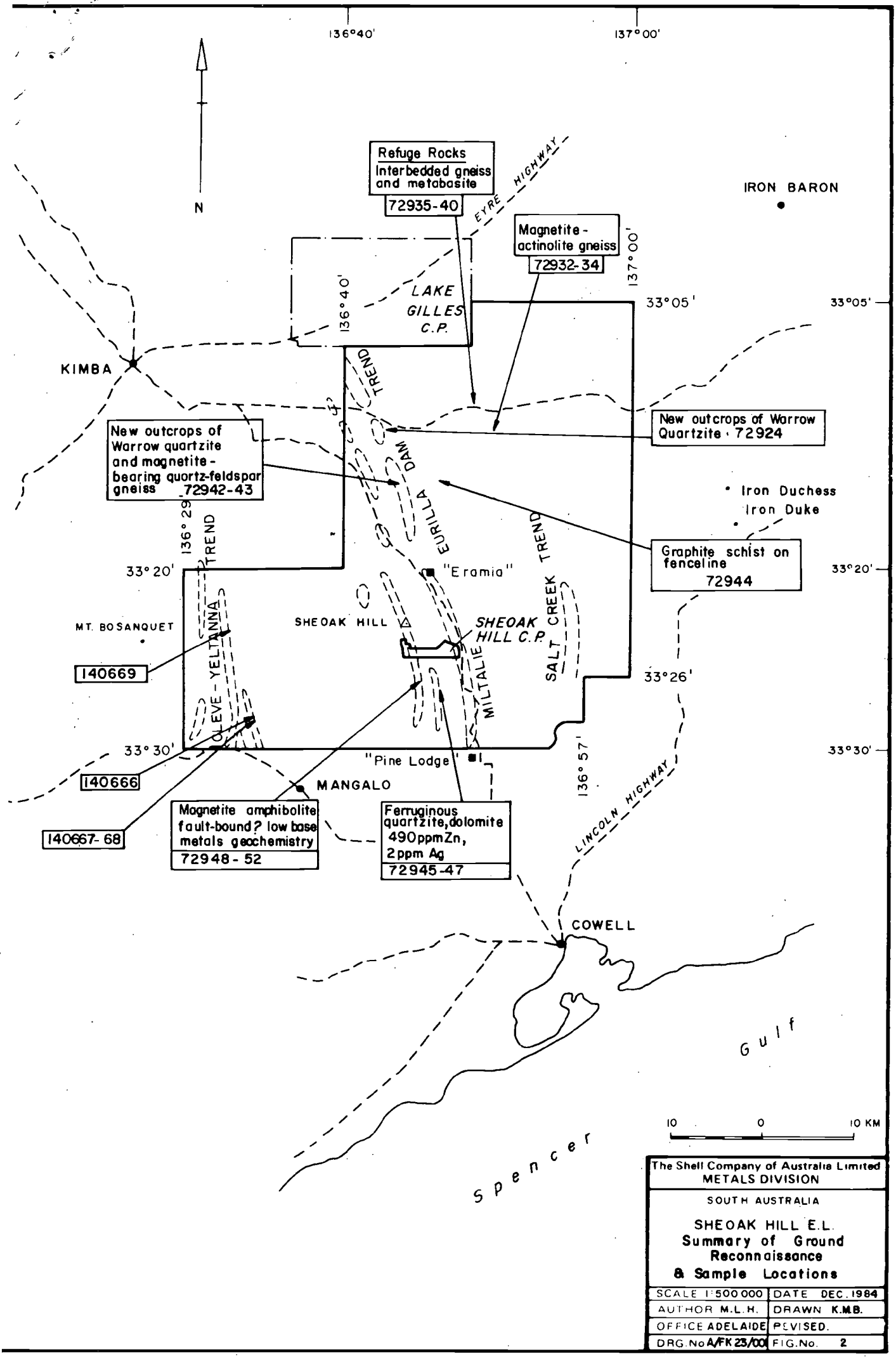
GEOLOGICAL SAMPLE SHEET

PROJECT: SHEOAK HILL SHEET 1 OF 1

SAMPLE TYPE: RECONNAISSANCE ROCK-CHIPS HOLE N°: S.D.O. N°:

SAMPLED BY: LABORATORY:

SAMPLE N°	INTERVAL/ LOCATION		ANALYSES (in ppm unless otherwise stated) AND TECHNIQUES												COMMENTS
			Cu (2)	Pb (5)	Zn (2)	Mn (5)	Fe (5)	Ag (1)	As (2)	Ba (10)	Au (0·02)	Ni (5)	Co (5)	Sn (4)	W < 10ppm unless listed.
140666			3	30	32	220	1·53%	<1	<2	660	<0·05				Thinly laminated iron formation
67			3	15	5	385	4980	<1	6	110	<0·05				Siliceous crudely banded chemical sediment
69			<2	15	3	86	3640	<1	3	15	<0·05				As above
140669			5	2	8	96	1·79%	<1	7	70	<0·05				Silicified limestone?
72932			13	6	42	380	3·56%	<1	3	790	<0·02	20	10	<4	Biotite-quartz-feldspar gneiss
33			21	20	38	245	1·37%	<1	<2	670	<0·02	<5	<5	<4	Quartz-feldspar-gneiss granite.
34			76	14	42	295	3·45%	<1	<2	330	<0·02	36	18	10	Magnetite-garnet-actinolite skarn?
72935			4	12	33	200	1·91%	<1	<2	530	<0·02	6	6	12	Gneissic granite
36			3	10	35	350	3·07%	<1	<2	1020	<0·02	24	10	12	Quartz-feldspar-biotite augen gneiss
37			62	<5	30	620	3·11%	<1	<2	280	<0·02	46	20	4	Metabasite [N=10]
38			74	<5	30	410	3·19%	<1	2	270	<0·02	22	16	12	"
39			3	8	28	310	7850	1	3	210	<0·02	6	<5	10	Bedded calc-silicate
72940			12	10	50	230	2·92%	<1	<2	790	<0·02	24	14	4	Quartz-biotite-gneiss
41			<2	<5	8	52	2960	<1	3	280	<0·02	<5	<5	10	Quartzite
42			<2	36	4	56	1900	<1	<2	250	<0·02	<5	<5	4	"
43			<2	10	27	135	9000	<1	<2	470	<0·02	6	<5	8	Granite
44			3	135	6	24	4880	<1	2	210	<0·02	<5	<5	18	Graphite schist [W=10]
72945			2	10	3	125	3080	1	<2	75	<0·02	<5	<5	4	Calcite marble
46			135	6	16	140	7·30%	<1	<2	280	<0·02	6	<5	<4	Ferruginous quartzite
47			120	26	490	680	51·3%	2	20	120	<0·02	52	76	4	Ironstone
48			5	30	5	72	4600	<1	<2	330	<0·02	<5	<5	<4	Calcareous quartzite
49			68	<5	17	415	2·53%	<1	<2	430	<0·02	68	24	<4	Actinolite-tremolite rock
72950			10	94	58	44	8800	<1	<2	840	<0·02	14	<5	4	Banded quartzite
51			29	<5	25	140	2·88%	<1	<2	45	<0·02	18	10	<4	Biotite-amphibolite
72952			<2	<5	2	50	8050	<1	2	50	<0·02	<5	<5	6	Magnetite quartzite


136°40'
137°00'
N
Refuge Rocks
Interbedded gneiss and metabasite
72935-40
EYRE HIGHWAY
IRON BARON
Magnetite - actinolite gneiss
72932-34
137°00'
LAKE GILLES C.P.
136°40'
33°05'
33°05'
KIMBA
TREND
New outcrops of Warrow Quartzite 72924
New outcrops of Warrow quartzite and magnetite-bearing quartz-feldspar gneiss 72942-43
DAM
EURILLA
Iron Duchess
Iron Duke
136° 29'
TREND
Graphite schist on fenceline
72944
33°20'
"Eramia"
33°20'
SALT CREEK TREND
MT. BOSANQUET
SHEOAK HILL
SHEOAK HILL C.P.
MILTALIE
140669
CLEVE - YELTANNA
33°26'
33°30'
33°30'
"Pine Lodge"
136° 57'
140666
MANGALO
LINCOLN HIGHWAY
Magnetite amphibolite fault-bound? low base metals geochemistry
72948 - 52
Ferruginous quartzite, dolomite 490ppm Zn, 2ppm Ag
72945-47
140667-68
COWELL
Gulf
Spencer
10 0 10 KM
The Shell Company of Australia Limited
METALS DIVISION
SOUTH AUSTRALIA
SHEOAK HILL E.L.
Summary of Ground Reconnaissance
& Sample Locations
SCALE 1:500 000
DATE DEC. 1984
AUTHOR M.L.H.
DRAWN K.M.B.
OFFICE ADELAIDE
REVISED.
DRG. No A/FK 23/00
FIG. No. 2

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 15TH MARCH 1985

AUTHOR: G.J. DAVIDSON REPORT NO: 08.2851

DATE: APRIL 1985

DISTRIBUTION

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Figure No	Title	Scale	Drawing No
1	Sheoak Hill EL, Location Plan	1:500 000	A/MT22/121

1.0 INTRODUCTION AND WORK UNDERTAKEN IN THE QUARTER

Sheoak Hill EL 1117 (Figure 1) was granted to The Shell Company of Australia limited on 15th March, 1983 for an initial term of 1 year. An extension of this tenure to 24 months was granted on 13th February, 1984 with the expenditure commitment remaining at $40 000 p.a.

A joint venture agreement has been entered into with Poseidon with Shell remaining as manager and operator.

The joint venture partners seek base metal targets of the stratiform Broken Hill-Aggeneys style in the Lower Proterozoic Hutchison Group of the Gawler Craton.

In the last quarter, no active field-work occurred. Substantial progress has been made, however, in reprocessing and contouring the existing BMR aeromagnetics over the area using a Sydney-based contractor. The results of this work are expected shortly and will form the basis of subsequent exploration planning.

2.0 EXPENDITURE STATEMENT - SHEOAK HILL (FK23)

	Expenditure for the Quarter Ending 31/12/84	Project to Date
Staffing/Support	3 408	34 413
Concession Payments		5 282
Analysis/Assays	373	373
Site preparation/ Payment to Landholders & Consultants		885
Geology, Geophysics, Drawing, Research & Computer	251	2 633
Overheads	388	3 204
	4 420	46 790

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 15TH JUNE 1985

AUTHOR: G.J. DAVIDSON, P.J. ELLIOTT

DATE: JUNE 1985 REPORT NO: 08.2856

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082856.GJD:PJE

CONTENTS

Figure No	Title	Scale	Drawing No
1	Sheoak Hill EL, Location Plan	1:500 000	A/MT22/121
2	Residual Magnetic Contours Barna Sheet	1:100 000	A/FK23/010
3	Magnetic Variation Contours Barna Sheet	1:100 000	A/FK23/009

1.0 INTRODUCTION AND WORK UNDERTAKEN IN THE QUARTER

Sheoak Hill EL 1117 (Figure 1) was granted to The Shell Company of Australia limited on 15th March, 1983 for an initial term of 1 year. An extension of this tenure to 24 months was granted on 13th February, 1984 with the expenditure commitment remaining at $40 000 p.a.

A joint venture agreement has been entered into with Poseidon with Shell remaining as manager and operator.

The joint venture partners seek base metal targets of the stratiform Broken Hill-Aggeneys style in the Lower Proterozoic Hutchison Group of the Gawler Craton.

In the last quarter, no active field-work occurred. Reprocessing and contouring the existing BMR aeromagnetics over the area occurred, using a Sydney-based contractor. The work has cheaply supplied a much improved picture of the aeromagnetics on which to base a planned second-half program.

At present, approximately 20 aeromagnetic trends will be followed up in the second-half program with rock chipping, ground magnetics and RAB drilling.

2.0 AEROMAGNETIC DATA REPROCESSING

The BMR data for the Barna 1:100 000 sheet was obtained in digital form and sent to Pitt Research Pty Ltd. The data was corrected for levelling errors and flight lines left out of the original contour plots were included. Two sheets were produced:-

a) Levelled Residual Magnetic Contours (Figure 2)
b) Magnetic Variation Contours (Figure 3)

A more detailed description of what these sets of contours represent is included as Appendix A.

3.0 EXPENDITURE STATEMENT - SHEOAK HILL (FK23)

	Expenditure for the Quarter Ending 31/3/85	Project to Date
Staffing/Support	2 497	36 910
Concession Payments	3 009	8 291
Analysis/Assays	110	483
Site preparation/ Payment to Landholders & Consultants		885
Geology, Geophysics, Drawing, Research & Computer	1 345	3 978
Overheads	399	3 603
	7 360	54 150

082856.GJD:PJE

APPENDIX A

Pitt Research Pty. Limited

Suite 4, 1st floor,
250 Pacific Highway,
Crows Nest, NSW 2065,
Australia

Telex: AA24458 Telephone: (02) 438-3700, (02) 438-3916

0041

17th May 1985

Mr. Peter J. Elliott,
Billiton Australia,
66 Glen Osmond Road,
Parkside,
S.A. 5001

Dear Peter,

Please find enclosed the following contour maps for the Barna 1:100,000 map sheet:

(a) Levelled Residual Magnetic Field contours
(b) Magnetic variation contours

Comments on the above maps are:

Residual Magnetic Contours:

Data was interpolated to a square grid mesh of 200m x 200m. With this limitation, the contours are accurately positioned along the traverse flight paths. In the case of regional surveys, the interpolation of contours between flight lines is not as one would desire, due to the large traverse spacing. Manual contours based on the computer map would in this case considerably revise the structural trends, and could be very useful. Doug Morrison (Southlands Geophysical Services) would be prepared to prepare such contours in pencil from our computer drawn contours for a price of per kilometre. Ball point was used to obtain a resolution normally requiring a scale of 1:50,000.

Magnetic Variation Contours:

The magnetic variation map is an attempt to define and map areas in which changes in the magnetic field are arising from near-surface geology and to attempt to quantify the degree of magnetisation of such regions. I feel this to be important because mineralisation appears to frequently occur in such regions, and they are also amenable to field inspection.

The raw observation data is first filtered by a one-dimensional high pass filter to extract the high frequency component of this data. The cut-off period is say 300 metres per half

cycle. This is done in an attempt to locate near surface magnetic sources. I have assumed that 'peaks' of narrow anomalies and 'steps' in the level of the magnetic field are due to changes in magnetic susceptibility of near-surface rocks. Profiles of this resulting data would be generally appear as bursts of 'noise'. Contour mapping of this high frequency information is not possible. This information is usually completely lost when contour maps are produced, particularly if these maps use a large grid cell size, or are 'filtered'. The ideal data for the above treatment is that derived from high-resolution caesium vapour magnetometers operated with high frequency sampling.

To produce a contourable map of the above information, the data derived from above is next demodulated by means of a special r.m.s. low pass filter of the same frequency as the above high pass filter. This filter is really a weighted square root of mean square filter in the same sense as is applied in electrical engineering when dealing with the power of an alternating electrical signal. For the data for each traverse, this process produces a profile which is always positive and which indicates the position and degree of magnetic variation due to near surface bodies.

To extract information in areas of low magnetic contrast, the logarithm of the above data is next computed.

After all the above operations are completed, the resulting information is gridded and contoured.

Anaglyph Contours of Residual Magnetics:

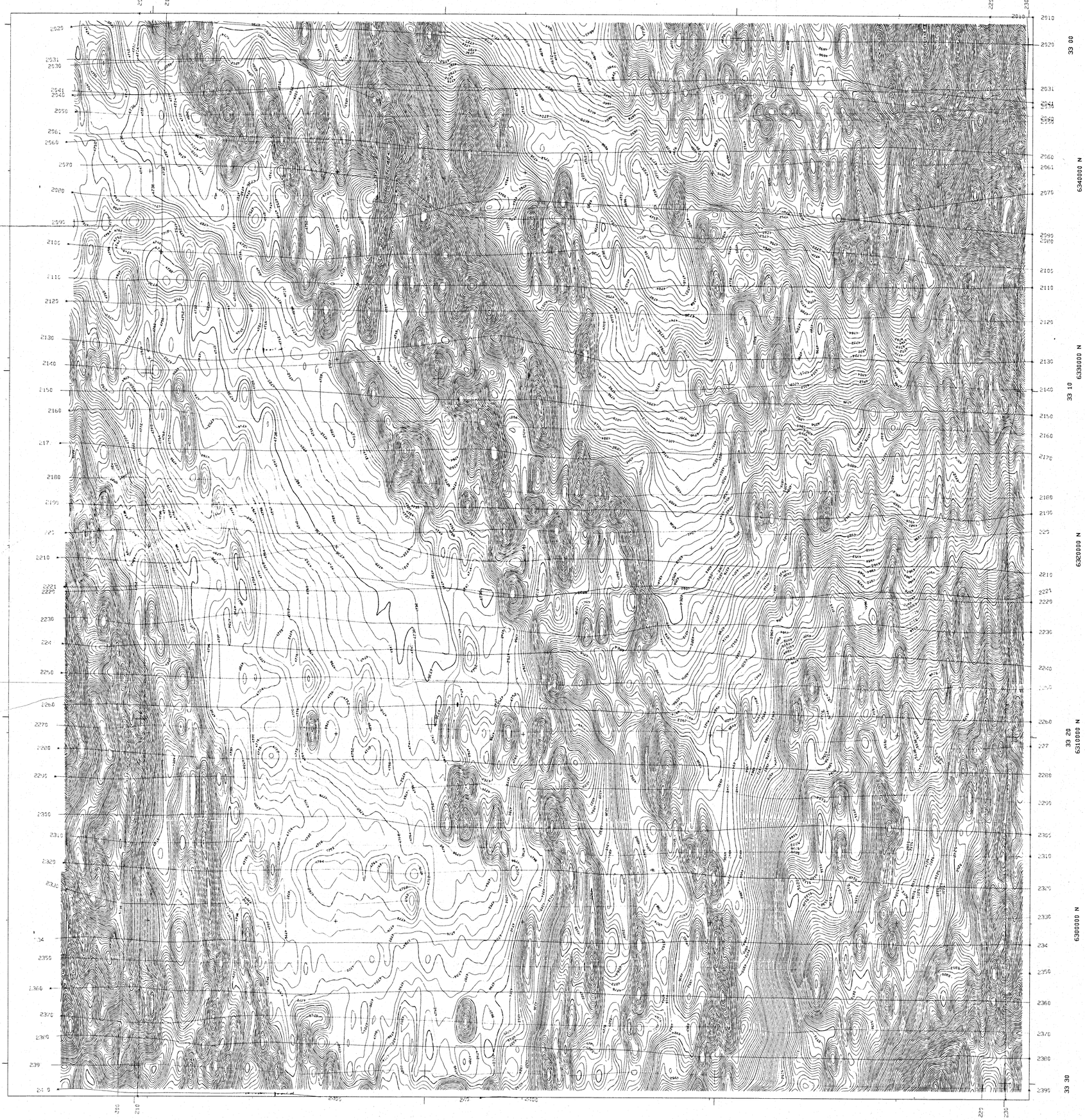
I suggest that consideration be given to plotting of an anaglyph of the residual magnetics. The ' set aside could perhaps be used for this purpose.

Please let me know if there is any query on work to date and if we can be of any further service on this or subsequent projects. An invoice for $3,400 is included to cover work to date.

Yours sincerely,
PITT RESEARCH PTY LIMITED

John C. Pitt
Managing Director

640000 E
136 30
650000 E
136 40
660000 E
670000 E
136 50
680000 E
137 00
33 00
33 10
33 20
33 30
6340000 N
6330000 N
6320000 N
6310000 N
6300000 N



DATA PROCESSING AND MAPPING

The airborne geophysical data for this map was acquired by the BMR for the S.A. Department of Mines. The nominal flight altitude was 150 metres and the nominal traverse spacing was 1.600 metres.

Initial data processing was performed by the BMR, this including initial levelling, diurnal correction an subtraction of IGRF.

Final data processing, editing, levelling and mapping was performed by Pitt Research Pty Limited assisted by Southlands Geophysical Services.

Contours were generated from data interpolated to a grid resolution of 200 metres by 200 metres.

Contours are shown at intervals of 4.0 nano-Teslas.

The low sides of bold contour lines are indicated by dashes.

2000 0 2000 4000 6000 8000 10000 Metres

BILLITON AUSTRALIA

BARNA - S.A.
BMR - REGIONAL GEOPHYSICAL SURVEY
RESIDUAL MAGNETIC INTENSITY - CONTOURS

SCALE:	1 : 100 000	
DRN:	J.C.P.	
CKD:		
APPD:		
ISSUED:		FIG No. 2
DATE:	9th May 1985	SHEET: A/FK 23/010

High precision geophysical mapping by
PITT RESEARCH PTY LIMITED

5545-6

640000 E
136 30

650000 E

660000 E
136 40

670000 E

680000 E
136 50

137 00

33 00
6340000 N
33 10
6330000 N
33 20
6320000 N
33 30
6310000 N
6300000 N

200 210 220 230

2010 2020 2030 2031 2040 2041 2050 2060 2061 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160 2170 2180 2190 2200 2210 2220 2221 2230 2240 2250 2260 2270 2280 2290 2300 2310 2320 2330 2340 2350 2360 2370 2380 2390 2400

DATA PROCESSING AND MAPPING

The airborne geophysical data for this map was acquired by the BMR for the S.A. Department of Mines. The nominal flight altitude was 150 metres and the nominal traverse spacing was 1,600 metres.

Initial data processing was performed by the BMR, this including initial levelling, diurnal correction an subtraction of IGRF.

Final data processing, editing, levelling and mapping was performed by Pitt Research Pty Limited assisted by Southlands Geophysical Services.

Contours were generated from data interpolated to a grid resolution of 200 metres by 200 metres.

The magnetic variation shown indicates regions with magnetic anomalies having a width of less than 300 metres only. Such anomalies can necessarily arise only from near surface structures.

Contours are shown at intervals of 0.2 units. The colour sequence for increasing magnetic variation is green, blue, black and red.

The low sides of bold contour lines are indicated by dashes.

2000 0 2000 4000 6000 8000 10000 Metres

BILLITON AUSTRALIA

BARNA - S.A.
BMR - REGIONAL GEOPHYSICAL SURVEY
MAGNETIC VARIATION - CONTOURS

SCALE: 1 : 100 000	
DRN: J.C.P.	
CKD:	
APPD:	
ISSUED:	FIG. No. 3
DATE: 9th May 1985	SHEET: A/FK 23/009

High precision geophysical mapping by
PITT RESEARCH PTY LIMITED

5545-7

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL, EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH SEPTEMBER 1985

AUTHOR: K. J. HELLSTEN REPORT NO: 08.2875

DATE: SEPTEMBER 1985

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082875:KJH

CONTENTS

Figure No	Title	Scale	Drawing No
1	Sheoak Hill EL, Location Plan	1:500 000	A/MT22/121

1.0 SUMMARY

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia Limited on 15 March 1983, and is current until 14 March 1986. The licence area is subject to a joint venture agreement between Billiton Australia and Poseidon Limited, with the former being manager and operator of exploration.

No field work has been conducted during the report period, however, considerable time has been spent in preparation for a major rock chip and RAB sampling programme due to commence early in following quarter. This includes compilation of the existing geological plans, rock ship sample analytical results and reprocessed BMR aeromagnetic data for the Barna 1:100 000 sheet (see Report No. 08.2856). An interpretation of the aeromagnetics, in conjunction with the outcrop maps and regional ground magnetic profiles, is presently underway.

On completion of this work, comprehensive check geological mapping, rock chip sampling and ground magnetic programme will be commenced. RAB drilling is proposed in areas of poor or nil outcrop to gain valuable geological and geochemical data.

2.0 EXPENDITURE STATEMENT - SHEOAK HILL (FK23)

	Expenditure for the Quarter Ending 14/9/85	Project to Date
Staffing/Support	1 983	38 893
Concession Payments		8 291
Analysis/Assays		483
Site preparation/ Data Processing	4 000	5 385
Geology, Geophysics, Drawing, Research & Computer	984	4 462
Overheads	465	4 068
	7 432	61 582

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH DECEMBER 1985

AUTHOR: K.J. HELLSTEN
REPORT NO: 08.3094
DATE: DECEMBER 1985

DISTRIBUTION

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Copy 3: Billiton/Melbourne
Copy 4: Billiton/Adelaide

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Figure No.	Title	Scale	Drawing No.
1	Sheoak Hill Interpreted Geology	1:125 000	A/FK23/020
2	Sheoak Hill Magnetic Profiles and Trends	1:125 000	A/FK23/012

1.0 SUMMARY

During the report period an extensive programme of geological mapping and rock chip sampling, supplemented by RAB drilling, was completed.

Geological mapping was concentrated in a north-south package of chemical sediments and complementary zone of several en echelon magnetic ridges extending from the Yarlana area to Miltalie North in the south (Figures 1 and 2). Limited work was also conducted on the Coompana Reservoir Trend. In conjunction with the mapping, 483 composite, channel rock chip samples were collected across outcropping chemical sediments, calc- silicate horizons and several quartzites.

The results of the geological and geochemical samples have recently been compiled, however, drafted copies are not yet available, Discussion of the results will therefore be left until the following quarterly report.

A RAB drilling programme totalling some 1414 metres and 65 holes was completed in early December in areas of poor or nil exposure. Relatively intense magnetic anomalies were tested on profiles 13, 36, 44, 45, 67 and 68 (Figure 2). Drafting of the drill sections is underway, however, the analytical results have been delayed due to heavy demands at the laboratory. Drill sections, plans and interpretations will be included in the following quarterly report when all data are received and drafted.

0052

2.0 EXPENDITURE STATEMENT: SHEOAK HILL

	Expenditure for the Quarter Ending 30/9/85	Project to Date
Staffing/support	7 038	45 931
Concession payments		8 291
Analysis/assays		483
Site preparation/ payments to landholders & consultants	(600)	4 785
Geology, geophysics, drawing research & computer	261	4 723
Overheads	8	4 475
	$ 6 707	$ 68 688

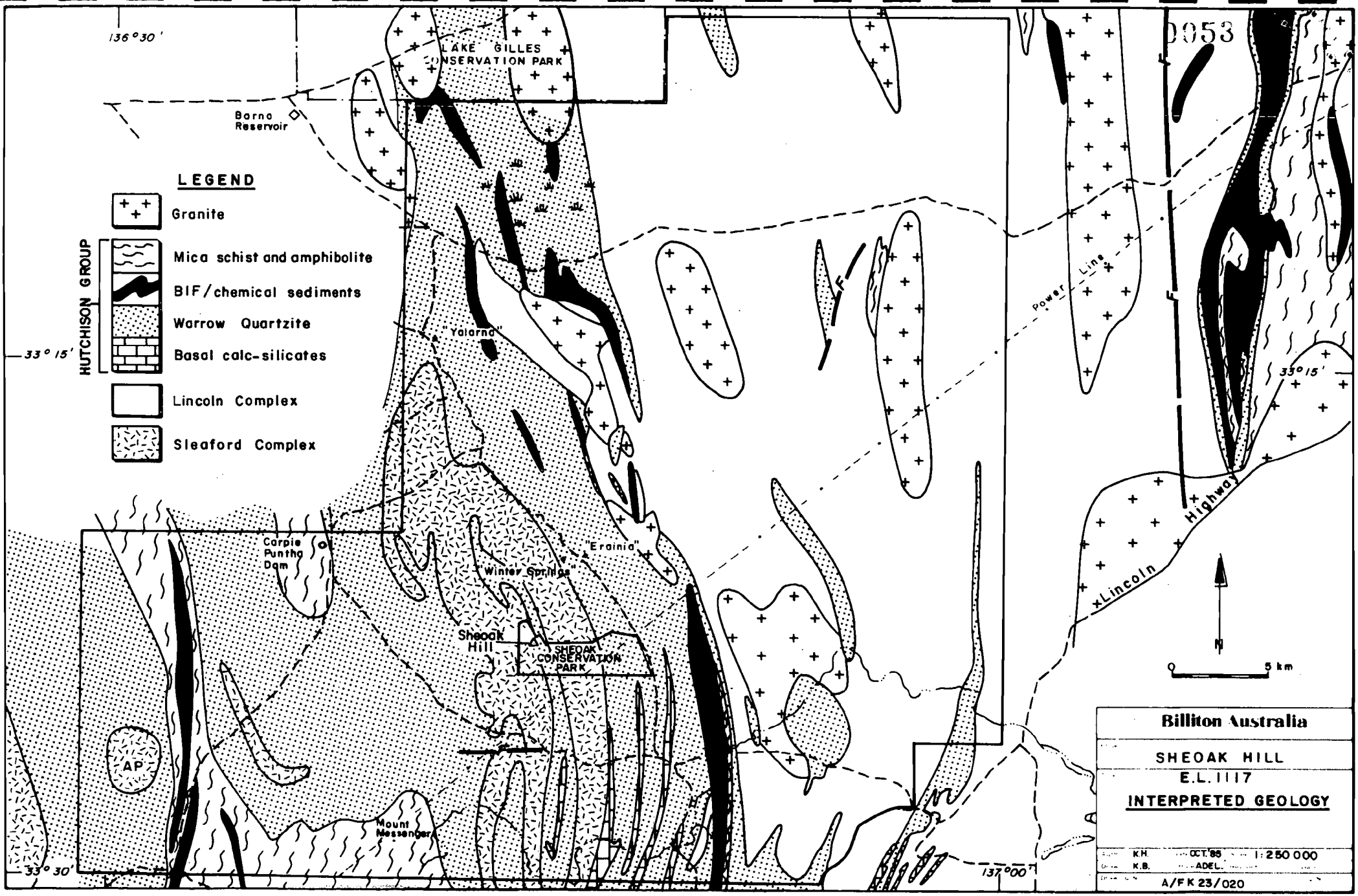
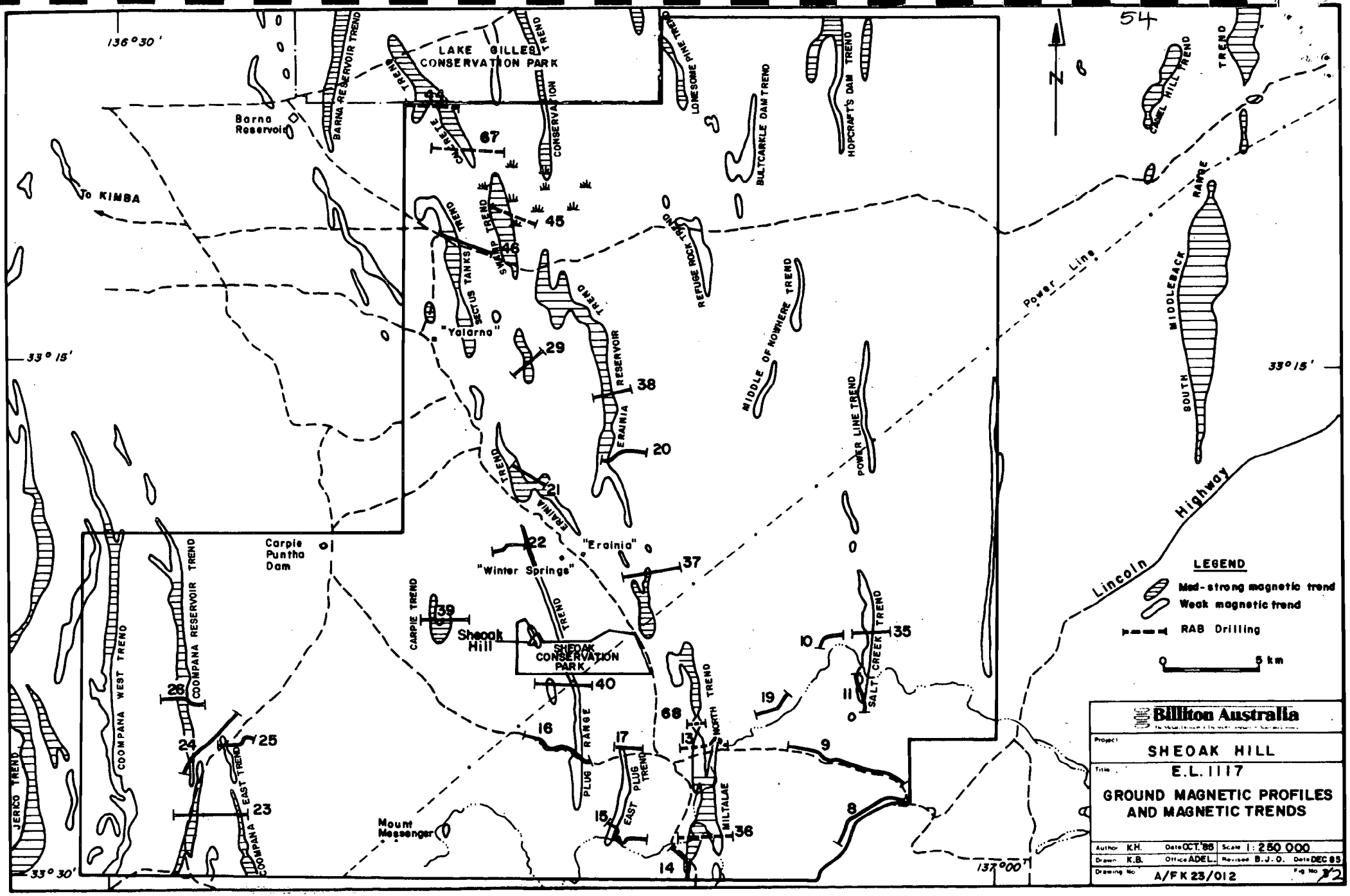

136°30'
LAKE GILLES CONSERVATION PARK
Barna Reservoir
LEGEND
Granite
HUTCHISON GROUP
Mica schist and amphibolite
BIF/chemical sediments
Warrow Quartzite
Basal calc-silicates
Lincoln Complex
Sleaford Complex
33°15'
Yalarna
Power Line
Corpie Puntha Dam
"Erainia"
"Winter Springs"
Sheoak Hill
SHEOAK CONSERVATION PARK
AP
Mount Messenger
33°30'
137°00'
Lincoln Highway
Lincoln
N
0
5 km
Billiton Australia
SHEOAK HILL
E.L. 1117
INTERPRETED GEOLOGY
K.H. OCT. 85 1:250 000
K.B. ADEL.
A/F K 23/020

Fig. 1.



Billiton Australia

Project: SHEOAK HILL

Title: E.L. 1117

GROUND MAGNETIC PROFILES AND MAGNETIC TRENDS

Author K.H.	Date OCT. '85	Scale 1 : 250 000	
Drawn K.B.	Office ADEL.	Revised B.J.O.	Date DEC 85
Drawing No. A/FK 23/012		Fig No. 12	

0055

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH MARCH 1986

AUTHOR: R. C. BERG
REPORT NO: 08.3260
DATE: MARCH 1986

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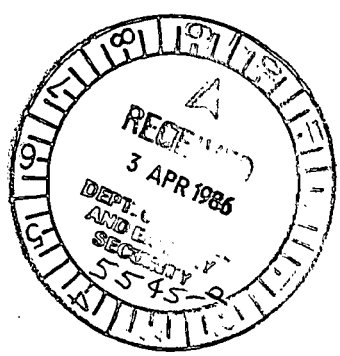

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2	Sheoak Hill Aeromagnetic Contours	1:250 000	A/FK20/013
3	Sheoak Hill Magnetic Profiles and Trends	1:250 000	A/FK23/012
4	Outcrop Geology - Sheet 3	1:25 000	A/FK23/027
5	Outcrop Geology - Sheet 4	1:25 000	A/FK23/028
6	Outcrop Geology - Sheet 8	1:25 000	A/FK23/029
7	Outcrop Geology - Sheet 9	1:25 000	A/FK23/030
8	Outcrop Geology - Sheet 12	1:25 000	A/FK23/031
9	Outcrop Geology - Sheet 14	1:25 000	A/FK23/032
10	Miltalie North Geology with Geochemical Overlays for Zn and Mn	1:100 000	A/FK23/043
11	Location Map and Anomalous Geochemistry - Sheet 3	1:25 000	A/FK23/033
12	Location Map and Anomalous Geochemistry - Sheet 4	1:25 000	A/FK23/034
13	Location Map and Anomalous Geochemistry - Sheet 8	1:25 000	A/FK23/035
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23	Profile 36N - Ground Magnetics and RAB Drilling	1:10 000	A/FK23/024
24	Profile 44N - Ground Magnetics and RAB Drilling	1:10 000	A/FK23/022
25	Profile 45N - Ground Magnetics and RAB Drilling	1:10 000	A/FK23/021
26	Profile 67N - Ground Magnetics and RAB Drilling	1:10 000	A/FK23/025
27	Profile 68N - Ground Magnetics and RAB Drilling	1:10 000	A/FK23/026

1.0 INTRODUCTION

Exploration Licence EL 1117, Sheoak Hill, was granted in 1983 and is current until 15/3/87.

This quarterly report describes the results of the work carried out in the previous reporting period, since the geochemical analyses and compilation have only recently been completed.

2.0 WORK COMPLETED

The work described in this report consisted of:

- Geological mapping on 1:25 000 scale.
- Channel rock chip sampling (483) accompanying the mapping.
- RAB drilling over six magnetic profiles (P 13, 36, 44, 45, 67, 68).

3.0 GEOLOGICAL SETTING

The eastern part of the licence covers the granitic gneisses of the Lincoln Complex, overlain in the west by the Lower Proterozoic chemical-metasedimentary sequence of the Hutchison Group (Figure 1).

Two prospective aeromagnetic trends, associated with BIFs, cherts, calc-silicates, are apparent from the aeromagnetic map (Figure 2), called the Miltalie-Eurilla Dam trend and the Campoona trend.

4.0 GEOLOGICAL MAPPING

Geological mapping on 1:25 000 scale has been carried out over the main magnetic trends, concentrating on the Miltalie-Eurilla Dam trend (Figure 3).

Two areas have been highlighted as prospective by the geological mapping:

i) A stacked sequence of chemical sediments has been outlined on the Miltalie North trend (Figure 3), stratigraphically above the Warrow Quartzite.

Calc-silicates and banded carbonates)		Upper
Banded chert ± Mn)	=	Middleback
Massive Mn-rich ironstone)		Jaspilite
Biotite schist	=	Cook Gap Schist
± Banded dolomite/opalite	=	Katunga Dolomite
Massive quartzite	=	Warrow Quartzite
Quartzo-feldspathic gneiss	=	Lincoln Complex

A sub-basin is proposed in this area with the margins defined by the chemical sedimentary sequence laterally, and the magnetic units along strike. This basin is at least 12 km long (N-S), is closed to the north, but remains open to the south - towards Miltalie.

In the central portion of the sub-basin, the chemical sedimentary package has an apparent thickness in excess of 1 km. Subvertical dips occur throughout, however, some structural thickening is probable. The basin is bounded by Warrow Quartzite to the east and west, and hence appears to represent a regional syncline. This is difficult to prove, as neither the magnetic horizon nor the cherts or manganese-rich units crop out on the western side of the inferred fold axis.

The main magnetic anomaly lies within the calc-silicates, but does not crop out. Some drilling was therefore carried out in this area during the RAB programme.

ii) Several en echelon, relatively intense magnetic anomalies (the Calcrete, Swamp and northern section of the Erainia Reservoir trends) occur in the north central portion of the EL. No surface expression is present, however, they lie adjacent to Warrow Quartzite outcrops, and hence are probably due to Hutchison Group sediments. RAB drilling has been completed on profiles 44, 45 and 67 (Figure 3), to determine the magnetic source and host sequence.

On the northern section of the Erainia Reservoir trend, graphitic cherts and graphitic schists crop out immediately east of the magnetic horizon, upgrading the area. Further south, the magnetic unit is seen as magnetic diorites within granites and the Lincoln Complex, and hence is not an attractive exploration target.

Other geologically interesting areas not previously noted by the SADME mapping, are a package of calc-silicates in the Lincoln Complex, 4 km north of "Erainia", and 'pyjama' rocks near the Erainia trend.

A brief visit to the Coompana Reservoir trend confirmed the presence of chemical units. Only banded cherts were noted near the major magnetic anomaly, however, some previously unrecognised 'pyjama' rock was noted west of the trend.

The results of the geological mapping are presented as outcrop geology sheets (Figures 4 to 9), together with the petrography.

Details of the petrographic descriptions are given in Appendix I.

5.0 ROCK CHIP SAMPLING

Channel rock chip sampling has been carried out in conjunction with the geological mapping.

A total of 483 samples have been collected. Generally, 25 m composite samples were taken and analysed for Cu, Pb, Zn, Mn, Fe and Ag by AAS. Selected samples on the Miltalie North trend have been analysed for Au.

All analytical results are given in Appendix II.

The rock chip sampling located a base metal anomalous sub-basin with Pb/Zn/Mn ranging from 40-850 / 40-530 / 200->10% respectively, in the Miltalie North area. RAB drilling confirmed these anomalous areas.

A summary geological plan, with geochemical overlays for Zn and Mn, is presented in Figure 10.

Rock chip locations with anomalous geochemistry, are shown on Figures 11 to 16.

Analytical results of the Miltalie North area have been plotted and contoured (Figures 17 to 21).

6.0 RAB DRILLING

Six RAB lines have been completed over regional magnetic profiles and in areas of anomalous rock chip geochemistry (Figure 3).

In total, 1414 m were drilled in 65 holes, 13 holes and 835 m (av. 64 m) using Underdale's Gryphon rig, and 579 m in 52 holes (av. 11 m) with the Investigator. Obviously there is extremely deep weathering in the north of the licence area, especially in the uncleared areas.

In general, anomalous geochemistry and prospective rock types have only been identified in the Miltalie North area (P 68). Details of each profile are described hereafter.

Profile 13: (Figure 22)

Background base metal values were recorded on the entire line, which consists of a sequence of interbedded quartz-mica schists, chlorite-amphibole schists and quartz-diopside calc-silicates. The peak result was 115 ppm Cu over the bottom 3 m in RSH 20, with lead values less than 20 ppm Pb and zinc below 50 ppm Zn in all samples. Manganese values increase steadily towards the east, however, the most geochemically anomalous horizons from the rock chip sampling (the cherts and Mn ironstones) were not tested by the RAB drilling, due to impenetrable alluvials associated with Salt Creek.

Profile 36: (Figure 23)

Geochemical results for RSH 42-52 were not anomalous. The best results were 90 ppm Cu over the bottom 3 m in RSH 42, and 1 m @ 140 ppm Cu for RSH 44, 10-11 m. The low levels of base metals and the unfavourable stratigraphy over the western magnetic ridge on lines 13N and 36N indicate all future exploration on the prospect should be concentrated north of Profile 13N.

Profile 44: (Figure 24)

Non-magnetic leucocratic granite was intersected in all six holes on profile 44, without significant geochemistry.

Profile 45: (Figure 25)

The eight holes on profile 45 intersected mainly dolerite/amphibolite (max. susc. 350 x 10^{-5}). Depth of weathered bedrock was generally 50-60 m and drilling progress was slow. No significant base metal anomalies emerged.

Profile 67: (Figure 26)

All holes bottomed in granite ?gneisses with generally background geochemistry. Weakly elevated lead (av. 110 ppm Pb) was present in RSH 11, 14-24 m, and RSH 12 with 2 m @ 440 ppm Pb (18-20 m). In both holes, however, the best results are in weathered bedrock and kaolin, with lead values dropping to background (20-50 ppm) in the fresher bottom samples. Weakly elevated zinc (125 ppm) is also present in RSH 14, 34-42 m. No further work is warranted.

Profile 68: (Figure 27)

The RAB drilling on this line confirms the geological and geochemical results of the rock chip sampling programme. Lead values are universally low, being less than 20 ppm Pb. Cu and Zn are of the same order of magnitude as those from the rock chips with peak results being:

RSH 33: 6-12 m (6 m) @ 165 ppm Zn
RSH 34: 6- 9 m (3 m) @ 140 ppm Cu, 200 ppm Zn
RSH 38: 4- 6 m (2 m) @ 175 ppm Zn
RSH 40: 6- 8 m (2 m) @ 320 ppm Cu, 300 ppm Zn, 9.45% Mn

All petrographic descriptions are given in Appendix I, and drill logs with geochemical analyses in Appendix III.

7.0 CONCLUSION

Evaluation of the main magnetic trends by regional ground magnetics, mapping and RAB drilling, located one prospective area, the Miltalie North area.

The similar levels of base metals in RAB and surface samples indicate the existing large, low order, geochemical anomaly at Miltalie North is probably not the surface expression of a relatively shallow base metal deposit. Target generation will therefore need to concentrate on hidden targets.

A sirotem grid of 5 x 1.5 km is hence proposed as the best exploration tool to cover the base metal anomalous sub-basin.

8.0 EXPENDITURE STATEMENT: SHEOAK HILL

	Expenditure for the Quarter Ending 31/12/85	Project to Date
Staffing/Support	27 675	73 606
Concession Payments	75	8 366
Analyses/Assays	5 665	6 148
Site Preparation/Payments to Landholders & Consultants	2 906	7 691
Geology, geophysics, drawing research & computer	2 718	7 441
Overheads	2 954	7 429
	$ 52 690	$ 121 378

APPENDIX I: PETROGRAPHY

Pontifex & Associates Pty. Ltd.

0070

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KJH

FILE FK23/802
REC'D 3/12/85

MINERALOGICAL REPORT NO. 4668

by A.C. Purvis PhD. & I.R. Pontifex MSc.

28th November, 198.

TO: Mr. Ken Hellsten
Shell Metals
66 Glen Osmond Road,
PARKSIDE S.A. 5063

YOUR REFERENCE: 3945/FK23/KJH/02

MATERIAL: Rock samples (45)

IDENTIFICATION: 33967 - 34000
34101 - 34110

WORK REQUESTED: Brief description with comments on comparisons with rocks previously examined from Menninnie Dam Binocular Microscope examination initially, but thin sections as required.

SAMPLES & SECTIONS: Returned to you with this report.

PONTIFEX & ASSOCIATES PTY. LTD.

SUMMARY COMMENTS

This report covers a batch of 45 samples for brief description under binocular microscope, but with thin sections prepared from 23 selected samples as directed in your order No. 2945/FK23/KJH/02.

These rocks were sectioned to enable information to be provided for you which was not resolvable in hand specimen, mainly on the basis that they were:

(1) possible or probable calc-silicates and potassic calc-silicates or igneous amphibolites,

(2) quartzites which could be of either detrital origin (meta-quartz sandstones), or of chemical origin (meta-cherts), or

(3) gneisses of igneous or sedimentary origin.

Potassic calc-silicates are represented by samples 33972(A), 74, 34103, and the sample labelled 'Plug Range'. Apatite is abundant in 33974 and in the Plug Range sample. These rocks relate closely to potassic, and phosphatic-potassic calc-silicates in the Menninnie Dam Sequence. No 33992 is a coarse actinolite rock and probably derived from an impure dolomite.

Some of the quartzites contain detrital heavy minerals and thus appear to be meta-quartz sandstones, and considered to represent Warrow Quartzite. This correlation is supported by the local preservation of fresh alkali felspar, which is a common constituent of the Warrow Quartzite. These samples include 33977, 80 and 96. No. 33988 is a calcareous meta-arkose and possibly also a facies of the Warrow Quartzite. No. 33997 is a sericite-bearing quartzite possibly a metasandstone.

Other quartzites have laeyrs of graphite $\pm$ apatite (33979, 33995) or silicified and/or limonitised ?silicate $\pm$ oxide layers (33999, 34102), and may be graphitic or ferruginous metacherts.

Summary Comments continued:

The quartz fabric seen in the thin sections of most of the quartzites, indicates a period of exaggerated grain growth followed by recrystallisation. The original (exaggerated grain growth) fabric is preserved in 33997 and 34110, with the quartz C-axes lying in the foliation, but most of the others have the quartz C-axes at about 90° to the foliation (33972, 77, 80, 88, 95, 96). Some samples (33979, 33999, 34101) have their quartz C-axes at 45-90° to the foliation. The lower angles of (C-axes to foliation) occur in the possible metacherts and the higher angles in the metasandstones. No. 33995 has alternating domains of different fabrics but may be a metachert.

Samples 339712(B), 33987, 34101 appear to be metabasalts or metadolerites although WO34101 has tourmaline-decorated quartz veins and a metamorphosed quartz-chlorite-altered area now rich in quartz and garnet. No. 33971 appears to be a metamorphosed brecciated quartz-diorite but No. 34110 appears to be metamorphosed arkosic sandstone. No. 34994 is an allanite-rich quartz-monzonite and is probably rich in rare-earth elements. Sample 34104 (not sectioned) is a muscovite-tourmaline-bearing pegmatite.

In the interests of economy only a limited number of sections were cut, as requested in your order. However many of the unsectioned rocks include quartzites which really need also to be examined in thin section to determine whether they are of detrital (Warrow Quartzite?), or chemical origin. Some weathered, layered, quartzo-felspathic rocks (33984, 85, 91, 93) were also not sectioned but are not likely to have been chemical sediments. Following receipt of this report it is suggested that any remaining samples, where the binocular microscope assessment does not provide sufficient information should be selected for follow-up petrography.

Several ferruginous/manganiferous lithologies, 33998, 34000, 34101(part), and 34107(part) were not sectioned, and very little could be ascertained in hand specimen. Therefore a representative polished section is being made of each of these four samples and will be checked for possible gossanous (or other genetic) characteristics. These will be reported on within the week.

DESCRIPTIONS OF THIN SECTIONS

33971 : biotite-quartz-plagioclase gneiss with zircon, apatite and allanite : quartz diorite gneiss.

This rock is dominated by large clots of coarse plagioclase to 10mm in diameter in a biotite-rich matrix. Lenses of recrystallised quartz are rare and about 1mm in size.

Parts of the matrix contain interstitial quartz, but most of it consists of fragments of felspar grains in fine biotite. The quartz occurs in a vein-like layer 3-5mm thick containing a similar abundance of felspar fragments to the adjacent biotite-rich rock.

Accessories include opaque oxides, apatite, zircon and allanite.

This appears to be a quartz-diorite, which was brecciated and quartz-veined before being metamorphosed.

33972A : layered potassic calc-silicate with concordant quartz veins.

Layers in this rock are 2-5mm thick and are alternately rich in microcline and partly sericitised plagioclase. Quartz-rich lenses up to 2mm wide appear to be partly disrupted concordant veins. They have a strong fabric (C-axes at 90° to the veins).

Clinopyroxene is common (20 - 30%) in the various layers as grains 0.2 to 2mm in size, and is accompanied by minor (5%) green hornblende. Accessories include sphene, apatite and allanite.

The felspars are granular with grains 0.2 to 1mm in size. The sericitisation of the plagioclase is quite variable in intensity and is much stronger in some layers than in others. Where the plagioclase is strongly altered the clinopyroxene is commonly altered to limonite stained clays.

One of the quartz ?veins contains limonite after intergranular suphides (?).

33972 : amphibolite with concordant quartz veins.

This is a basic amphibolite with brown hornblende in most parts of the rock. Actinolite pseudomorphs of clinopyroxene grains are abundant to dominant in some layers. Plagioclase is abundant (40-45%), it is commonly weakly sericitised, and uniformly distributed as grains 0.2-0.5mm in size. There are scattered opaque oxide grains, other accessories include apatite and zircon and scattered small grains of epidote in the more highly sericitised felspar grains.

Concordant quartz veins to 2mm swide; and thin late stage veins of clay and limonite are present.

33974 : potassic calc-silicate, with layers containing clinopyroxene, microcline and apatite; retrogressed adjacent to an epidote vein.

This is a strongly layered rock with layers 2-10mm thick which in hand specimen are alternately greenish grey and pale pink and appear to consist of clinopyroxene and alkali felspar. The layering is locally disrupted and lenticular possibly reflecting some mobility of calcium during a pre-metamorphic veining episode.

The mineralogy is confirmed in thin section and it is seen that there are also layers of pure or nearly pure, apatite up to 1mm thick, indicating a close similarity with some of the potassic calc-silicates in the Menninnie Dam Sequence.

The dominant layering is of clinopyroxene layers with minor microcline alternating with microcline layers with minor clinopyroxe and apatite. The apatite layers occur within the microcline layers or adjacent to the clinopyroxene layers.

The texture is mostly granular with grains about 0.2mm some of the clinopyroxene is coarse (to 4mm grain size). Some of the more irregular, originally clinopyroxene rich layers are cut by veins of epidote and these layers are extensively retrogressed to coarse prismatic actinolite. A thinner quartz-epidote vein is also present with no associated retrogression.

Accessory sphene is common in the clinopyroxene rich layers and some of the apatite layers.

33977 : weathered quartzite with traces of tourmaline, leucoxenised sphene, apatite and zircon (?Warrow Quartzite).

This is a weathered quartzite with a layering defined by clay patches. In thin section it consists of small grains (<0.4mm) with a strong fabric (C-axes 90° to layering) and large grains 1-2mm) with little or no fabric. Patches of clay are scattered and by analogy with other quartzites in this suite, were probably derived from biotite and alkali felspar.

The most common accessory is leucoxene after sphene, but apatite, blue-green tourmaline and rare zircon are also present. Their presence suggests that this was a sandstone with traces of heavy minerals and ?felspars. The larger unoriented quartz grains may be remnants of detrital grains.

33979 : quartzite with accessory graphite and apatite
(meta impure chemical chert)

As in 33977 this rock has fine quartz grains with a strong fabric (C-axes at 45° to layering) and deformed coarser grains with no fabric. The coarser grains in this case are up to 4mm in size as residual cores within the fine quartz and the fabric is considered to represent recrystallisation subsequent to exaggerated grain growth.

A layering is indicated by thin laminae of schistose graphite with small leached out grains (?pyrite or alkali felspar) and traces of apatite. These laeyrs are locally stained by limonite. This may have been a chemical sediment, in the form of a weakly graphitic-phosphatic chert.

33980 : layered felspathic quartzite with accessory rutile and zircon (Warrow Quartzite).

This is a well-layered quartzite in hand specimen with elongate grains of white felspar and limonitic layers. In this section it is seen to consist of small quartz grains about 0.4mm in size with a strong fabric (C-axes at 90° to layering).

Scattered lenticular grains of alkali felspar are 0.2 to 2mm long and in some layers are limonitised and/or sericitised and locally leached out.

Accessory zircon and rutile are common and are 0.1 to 0.4mm long. They are probably detrital indicating that this rock was a sandstone with accessory heavy minerals.

33986 : mafic amphibolite with biotite and opaque oxides.

This is a schistose, apparently lineated amphibolite cut at right angles to the lineation, and showing abundant end sections of green hornblende and weakly zoned plaioclase is present in roughly equal amounts. Both minerals have a grainsize of 0.2-0.5mm. Accessory opaque oxides (rimmed by sphene), apatite and biotite are present.

Some of the felspar is sericitised close to minute fracture which locally expand into epidote lenses.

33987 : schistose, fine grained (ortho) amphibolite with very minor alkali felspar (metabasalt).

This rock has a protomylonitic texture with somewhat lenticular grains of plagioclase and very minor alkali felspar, to 0.2mm and of green hornblende, to 0.4mm; all set in a matrix of very finely recrystallised plagioclase and minor fine acicular hornblende. The plagioclase is locally altered to sericite, particularly in the vicinity of thin quartz veins.

Lenticular shear zones contain schistose fine amphibole and a very fine felspar mosaic and are similar to the thin discrete shear zone in No. 33972A.

Accessories include sphene and broken acicular apatite crystals, suggesting that this is a metabasalt.

33988 : actinolite-plagioclase-quartz-microcline schist (?metasandstone)

CALCAREOUS META-ARKOSE

Grains of microcline and minor sericitised plagioclase 0.5 to 1.5mm in diameter are scattered through this rock in a schistose matrix of actinolite, microcline and quartz, with a grainsize of 0.1-0.4mm. Accessories include apatite, sphene and rare allanite.

This appears to have been a felspathic quartz sandstone although in hand specimen it is different to distinguish from a potassic calc-silicate.

33989 : layered, felspar-rich amphibolite, partly retrogressed to sericite and epidote, with traces of scapolite and concordant quartz veins.

In hand specimen this is a strongly layered rock with prominent quartz layers or veins. In thin section it is seen to be plagioclase-rich, with layers of granular felspar, some of which are totally retrogressed to sericite ± epidote. Minor hornblende is present, and there are some hornblende-rich layers 1-2mm thick composed dominantly of schistose green hornblende. Rare radioactive grains occur in the hornblende, enclosed in pleochroic haloes. Traces of scapolite occur as poikiloblastic grains to 2mm.

Concordant quartz veins to 3mm wide are common and are 5-10mm apart.

Accessories include apatite and leucoxene after sphene.

It is likely that this rock is a mixed chemical-volcaniclastic sediment.

33992 : epidote-bearing actinolite rock.

Actinolite prisms to 10mm comprise most of this rock, together with about 1-2% epidote as interstitial grains to 4mm long and traces of alkali felspar.

It is likely that the original rock was an impure dolomite.

33994 : metamorphosed, allanite-rich, quartz-monzonite

This sample was sectioned because,

(1) it appeared to be potassium felspar rich, and

(2) it had scattered coarse grains of possible calc-silicate minerals.

These coarse grains are seen in thin section to be allanite and make up about 2% of the rock. There are also abundant accessory grains of sphene, apatite and zircon, suggesting that the rock is rare-earth-element-rich granitoid. The allanite grains are up to 2mm in diameter with dark and pale yellow-brown zones.

The grainsize is about 0.7mm with about 35-40% each of sericitised plagioclase and fresh microcline. Opaque oxides chlorite and quartz make up the remainder with 15-20% quartz. The quartz is recrystallised but occurs in patches 0.5-1mm in size. Some of the felspar is recrystallised also and occurs as grains less than 0.05mm in size.

33995 : layered weakly graphitic quartzite.

This is a quartzite with a diffuse layering on a scale of 5-20mm in hand specimen.

In thin section it consists of quartz grains 0.2 to 0.5mm in size, with a strong fabric probably reflecting recrystallisation following exaggerated grain growth. The darker areas contain traces of ?graphite and sericite with a layer-parallel orientation.

This may have been a weakly graphitic chert or less probably a graphitic sandstone.

The quartz fabric is not uniform, with domains to 10x30mm but with the C-axes mostly about 90° to the foliation.

33996 U sericite-bearing quartzite, with traces of tourmaline and leucoxene (?Warrow quartzite).

This is a massive weakly layered quartzite in hand specimen. In thin section it is seen to have minor muscovite defining two schistosities at about 30° to each other, and quartz grains 0.05 to 0.4mm in size with a strong fabric (C-axes at a high angle to the schistosity). Tourmaline grains to 0.4mm in size have greenish-brown rounded cores and pale-green rims, and appear to be essentially of detrital origin. Other probably detrital grains include leucoxene and rare zircons.

It is suggested that this rock is a metasandstone.

33997 : weathered muscovite-bearing quartzite (?Warrow Quartzite)

In hand specimen this is a quartzite with subparallel limonite veins. In thin section the quartz is seen as grains 0.5 to 2mm in length with rare grains to 5mm. These grains are elongate parallel to the sparse muscovite in the rock, and have undulose extinction and sutured grain boundaries. They thus appear to have escaped the recrystallisation which has affected the previously described quartzites, but have a moderately developed fabric. In this sample however the grains are elongate parallel to their C-axes which tend to be parallel to the schistosity.

Small leached or clay-altered grains were probably felspar. There are no detrital heavy minerals, but this rock was possibly part of the Warrow Quartzite.

33999 : quartzite with silicified and limonitised layers : metachert or BIF (?)

This is a layered quartzitic rock with weathered brown limonitic layers in hand specimen alternating with paler quartzitic layers.

The thin section shows lenticular layers from 0.1 to 2mm thick. Quartz layers consisting of granular quartz with a strong fabric (C-axes at 45° to the layering) alternate with silicified and/or limonitised layers. These weathered layers contain fine granular fabric-free quartz and/or fine limonite, locally after a granular mineral with grains about 0.2mm in size.

Similar layers occur in weathered banded-iron-formations, and correspond to amphibole $\pm$ clinopyroxene $\pm$ magnetite at depth. This rock is considered to be a weathered BIF.

34101 : iron-rich amphibolite, with tourmaline and a garnet-quartz-rich layer : (meta iron-rich basalt or dolerite).

This is mostly an amphibolite with schistose dark green (iron-rich) hornblende dominant over granular quartz and weakly sericitised plagioclase. Thin laminae of fine grained opaque oxides to 4mm long are scattered, and large felspar grains contain biotite and secondary sericite or carbonate.

Tourmaline is concentrated along one side of a concordant quartz vein and is strongly zoned. The core has patches of bluish green and orange-brown and the rim is a dark to very dark greenish brown, almost black. The tourmaline crystals are about 1-2mm in size and are subhedral.

Similar tourmaline crystals occur on one side of a layer, 8-10mm thick, of quartz-garnet. This layer has abundant grains of garnet about 1mm in size, locally intergrown with sericitised plagioclase, in a quartz-rich matrix with minor hornblende and tourmaline, accessory opaque oxides and apatite. This layer was probably chloritised and silicified before metamorphism.

This is considered to be a metamorphosed iron-rich basalt or dolerite, with zones of quartz-chlorite tourmaline alteration and tourmaline-decorated quartz veins.

34102 : quartzite with porous silicified layers;
(meta chemical sediment).

This is a layered quartzite, with soft white porcelaneous layers alternating with hard glassy quartzitic layers. The layers are 1-10mm thick, and are locally offset by microfaults.

The quartzitic layers have fine grained quartz with a strong fabric (C-axes at 45-90° to the layering). The silicified porcelaneous layers are porous with textures indicating former granular to prismatic minerals with a grain size of 0.2 to 2mm and these appear to have been amphibole $\pm$ pyroxene.

The rock was probably a chemical sediment.

34103 : layered, microcline-magnesiohornblende-clinopyroxene rock:
(potassic calc-silicate)

This is a strongly but irregularly layered rock with some lenticular veins. The layers are from 1 to 15mm thick and are mostly either pale green magnesiohornblende or fine granular clinopyroxene, with minor to very minor microcline. Some microcline-rich layers are also present but the thickest layer is predominantly clinopyroxene.

Veins cutting the clinopyroxene rich layer consist of :

(1) actinolite + quartz

(2) microcline, and

(3) quartz with limonite after sulphides and leached-out areas.

34107 : weathered, garnet-bearing, layered metasediment(?) including limonite boxwork after probable amphibole and colloform possible phosphatic minerals : (?phosphatic potassic, calc-silicate).

In hand specimen this is a layered rock with thick brown limonitic layers, alternating with thinner greenish to cream layers with scattered small dark crystals.

In thin section limonite-rich layers alternate with layers rich in kaolin, or in colloform unidentified clays ± chalcedony ± phosphates, with small interstitial patches of possible jarosite, and a dark-green mineral (?vivianite), and accessory residual quartz. Small grains of garnet about 0.5mm in size are scattered along the pale limonite-fine layers, and make up 5 to 20% of these layers.

The limonite-rich layers have 15-35% limonite in colloform clays ± chalcedony, with a few limonite-veined garnet grains. Some of these layers contain leucoxene possibly after sphene.

The limonite texture suggests the former pressure of amphibole and (or clinopyroxene) to suggest a calc-silicate. The colloform minerals include phosphates. This could establish clear link with the phosphatic-potassic calc-silicates such as No. 33974. Analyses for phosphorus, as well as Cu, Pb and Zn (to test the nature of the yellow and green secondary minerals), are suggested for this sample.

34110 : garnet-biotite-quartz-plagioclase gneiss (?metasediment)

This is a quartz-rich, biotite, quartz, felspar gneiss, with quartz (40%) showing a strong quartz fabric (C-axes parallel to layering), and a strong layer-parallel schistosity defined by fine schistose bitite (20%). Plagioclase (35-40%) occurs largely as anhedral grains 0.5-2mm in size with some smaller grains in biotite-plagioclase lenses. There is a trace of allanite.

Thick biotite-rich layers 2-4mm and 8-10mm thick respectively, have abundant (225%) garnet grains, less than 1mm in diameter, and some limonite after pyrite grains to 0.4mm in size.

About 10% of the biotite is oriented at a high angle to the schistosity.

The abundance of quartz and the presence of garnet suggest a metasedimentary gneiss rather than an igneous gneiss.

PLUG RANGE: garnetiferous, potassic, calc-silicate, with abundant epidote.

In hand specimen this is a heterogeneous rock with an irregular layering possibly defined by alkali felspar (pink) and clinopyroxene (green) with scattered garnet patches.

This is broadly confirmed in thin section, but the layering is irregular and lenticular, and there is much less clinopyroxene than would appear to be the case, in hand specimen. Much of the green area is composed of an aggregate of heterogeneous, zoned clinozoisite-epidote grains, 0.5-2mm in size, probably after calcic plagioclase. The clinopyroxene occurs as grains to 3mm, but is commonly altered, at least partly, to actinolite and/or carbonate $\pm$ quartz. The original clinopyroxene content was about 20%.

The alkali felspar (15-20%) is weakly perthitic-microcline, as irregular lenses of grains to 0.5mm in size.

The garnet is an orange colour, and may be a grossular-almandine-spessartite solid solution. It occurs as amoeboid patches up to 15mm in diameter, together with coarse sphene and apatite as grains to 1mm long.

This is a moderately phosphatic potassic calc-silicate, less clearly layered than No. 33974.

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0096

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SUPPLEMENTARY MINERALOGICAL REPORT TO PREVIOUS REPORT 4668.

6th December, 1985

TO: Mr. Ken Hellsten
Shell Metals
66 Glen Osmond Road,
PARKSIDE S.A. 5063

YOUR REFERENCE: 4956/FK23/KJH/02

MATERIAL: Selected ironstones, and one rock sample from previous batch of 45, described in report 4668

IDENTIFICATION: 33998, 34000, 34104, 34107, 34109

WORK REQUESTED: Preparation and description of polished sections and one thin section.

SAMPLES & SECTIONS: Returned with whole batch of 45 samples.

PONTIFEX & ASSOCIATES PTY. LTD

SUMMARY COMMENTS

One lump of each of the ironstone samples 33998, 34000, 34104, 34107 were examined in polished section since there was negligible indication of their genesis in hand specimen.

This did allow certain pre-existing minerals to be interpreted from their boxwork/replica forms, and some suggestions of genesis. They are not true gossans, even though minor completely oxidised pyrite occurs in some of these ironstones.

As a group they appear to represent a gneissic schistose assemblage of amphiboles, mica, lesser oxidised garnets rare graphite; possible oxidised altered felspars; with oxidised magnetite and ilmenite in 34107. Tentative interpretations are:

33998 :	amphibolite or calc silicate
34000 :	graphitic cherty calc-silicate (?chemical sediment)
34104 :	metasediment cherty, micaceous, garnet-rich layers.
34107 :	"basic-gneiss"

The sample 34109 examined in an extra thin section is tough massive, unusually white, clinopyroxene rock, with cloudy diffuse "tremolitic" alteration, and quartz veinlets. It is not a quartzite as suggested in the hand specimen description, previous report.

33998 : massive yellowish limonite with fairly abundant relict textures after probable amphibole : tenatively interpreted as a completely ferruginised ?amphibolite rock or an ?actinolite-tremolite rock possibly related to the calc-silicates in this suite.

Macroscopically, this is an extremely fine mass of yellowish limonite, with minor, scattered, very small voids, rare small fibrous component, some veins of dark brown goethite, and local crusts of white calcrete.

The polished section is seen in reflected light to consist of massive, apparently microcrystalline limonite commonly with a weakly micaceous/schistose layered fabric, and highly irregular supergene/colloform layering.

In many areas however the limonite does form replicas and rare boxwork after random poorly-defined prisms, almost certainly of former amphibole. There is no indigenous quartz, although some of the amphibole appears to be silicified.

34000 : massive limonite rock, relict cherty domains ± minute pyrite grains; minor fine graphite, minor pseudomorphs afte rpyrite in a former aggregate largely of amphibole;
??graphitic, cherty calc-silicate facies; oxidised, meta ?chemical sediment.

Macroscopically, this massive limonite rock is slightly darker brown than 33998, it is inherently vaguely layered, and has some very fine cellular areas scattered on the sawn surface.

Relict textures, very poorly preserved in limonite indicate that at least 50% of the rock consisted of random to weakly schistose fibro-lamellar form crystals, almost certainly amphibole.

Minor irregular areas of cherty quartz contain sparse minute pyrite grains and/or extremely fine graphite. Minor, equally fine graphite occurs elsewhere in clusters. Minor boxwork after clusters of coarser (0.1mm) crystals of pyrite also occur locally.

This may have been a carbonaceous, pyritic, iron-silica-rich chemical sediment.

34104 : layered micaceous, amphibole, garnet 'gneiss' with a cherty layer;
completely oxidised to limonite and minor MnO, as boxwork and replica;
?? meta sediment, possibly with cherty and calc-silicate layers.

In hand specimen this is massive, microcrystalline limonite, incorporating a discontinuous, lenticular cherty layer, and one surface is strongly micaceous.

Microscopically, the micaceous surfaces are seen as part of layers of schistose ?biotite, completely altered to ?vermiculite, then oxidised to limonite with minor interstitial fillings and veinlets of manganese oxides. They layers grade into and incorporate irregular lenses of limonite boxwork-replica after amphibole and/or pyroxene.

A layer up to 10mm thick between the micaceous layers is dominated by limonite $\pm$ MnO replica, and some boxwork after a loose-packed aggregate of garnet crystals average size about 0.3mm, together with (partly as a matrix), finer oxidised amphibole.

The chert lense contains several oxidised garnet crystals.

34107 : massive limonite after an aggregate of possible altered felspars amphibole and/or micas; with scattered fine oxidised magnetite, grains of ilmenite, and boxwork after garnet; possibly an oxidised "basic-gneiss".

Macroscopically, this is massive, dark brown, cryptocrystalline limonite/goethite, possibly siliceous. No distinctive relict textures but some fine cellular areas and semi-planar voids apparently along shrinkage or dessication partings.

In polished section the most distinctive features are small (to 0.05mm) irregular grains of magnetite (5% of the whole rock), with a vaguely layered to random distribution and now completely oxidised and pseudomorphed by martite/limonite. Accessory small ilmenite laths and subrounded grains of ilmenite is locally scattered in the vicinity of the magnetite.

Boxwork after subrounded/dodecahedral crystals, about 0.4mm across are locally loosely clustered, (in a vague layer), and these seem almost certainly to be after garnet.

The major host to these minor components is massive and may be limonitised, altered felspars or amphiboles; and/or micas; apart from minor veins with sparry quartz, there is no "rock-forming" quartz. Trace minute graphite flakes occur locally.

34109 : massive clinopyroxene rock, meta 'pure' dolomite; veined by quartz (ex chert laminations?)

This tough massive white rock is not a felspathic quartzite? as previously reported.

Petrographically, it is seen to consist of a weakly layered, massive very fine granular aggregate of diopsidic clinopyroxene, clouded by extremely fine fibrous tremolitic alteration. The white colour indicates a very Mg-rich metamorphic calc-silicate, conceivably derived from a 'pure' dolomite.

Quartz veinlets occur mostly along the layering, more closely spaced in some bands than in others. They may be original chert laminae.

Pontifex & Associates Pty. Ltd.

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BRIEF BINOCULAR MICROSCOPE DESCRIPTIONS OF HAND SPECIMENS

(not cut in thin section)

WITH COMMENTS ON STRATIGRAPHIC REPRESENTATION

WHERE APPROPRIATE

28th November, 1985

33967 : A. thick, bedded, felspathic quartzite, meta-sandstone, possibly Warrow Quartzite.

B. mica quartzofelspathic gneiss, metasediment.

The very large rock with this number is a thick bedded quartzite on a 30mm to 50mm scale. One bed is a coarse crystalline mass of more or less fused quartz grains. This is interlayered with a bed 50mm thick, of fine layered quartz and subordinate felspar altered to clays (stained pale reddish brown by limonite). The rock is identified as a metafelspathic sandstone, which may represent Warrow Quartzite.

The smaller samples is a medium grained, mica quartzofelspathic gneiss, almost certainly a metasediment.

33968 : (micaceous), felspathic-quartzite; metafelspathic and weakly micaceous sandstone, Warrow Quartzite?

A vaguely layered to massive coarse quartzite with minor cream coloured, partly altered felspar grains, and lesser weathered muscovite flakes, all with a quite clearly defined laeyred distribution throughout the quartzite.

33969 : A. medium grained, micaceous quartz-felspar gneiss

B. finer slightly more massive micaceous quartzose-felspathic gneiss/quartzite.

quartzo-felspathic gneiss/quartzite

Several lumps of rock in this sample have a gneissic layering with abundant schistose muscovite ubiquitous through a generally subordinate, medium size, granuloblastic aggreate of quartz and felspar. Minor biotite accompanies muscovite.

One large different rock consists of layers with a finer grained more massive granuloblastic aggregate of quartz and felspar, with finer mica more or less intergranular. The mica is sparse and not particularly schistose in one reddish-coloured band; but more abundant, schistose biotite, in a dark grey band.

Both lithologies appear to be meta clastic sediments.

33970 : grey, laminated, very fine quartzite ? metachert.

Macroscopically, this is a fairly homogeneous, massive very fine metamorphically-microcrystalline quartzose rock. It is dark grey, possibly due to trace dispersed graphite. A vague thin layering is manifest as trains or variably continuous laminae of an indeterminate white phase, and a weak fissile planar parting.

33973 : massive coarse quartzite, genesis indeterminate.

This is a massive coarse quartzite, apparently recrystallised and with exaggerated quartz crystal growth. Genesis indeterminate in hand specimen.

33974 : A. petrographically identified as potassic-calc-silicate rock.
B. massive clinopyroxene rock (?metadolomite)
C. (quartz)-felspar with actinolite possible apatite, trace garnet.

One large rock (A) in this sample is identified in thin section as a potassic calc-silicate.

Two other, different, rocks occur in the sample however and are seen in hand specimen to be:

B : massive aggregate of pale green clinopyroxene; conceivably a metamorphosed impure dolomite.

C : a pale-coloured granoblastic aggregate of white felspar (apparently K-spar and plagioclase), quartz; possible apatite; also minor green actinolite in irregular layers, lenses and along shears. Trace extremely small garnet crystals are scattered. This is tentatively regarded as a calc-silicate-bearing felspathic rock, conceivably related to 33974A.

33975 : massive quartzite, (genesis indeterminate in hand specimen)

This is a massive fairly homogeneous pale grey quartzite, apparently fine to medium grained, with poorly defined patches of clear to pinkish subhedral crystalline quartz.

Individual quartz grains are fused into a siliceous mass, without any (relict), textures to allow an interpretation of the original rock type.

33976 : gneissic, probable biotite granitoid; accessory garnet and magnetite.

At least 60% of this rock consists of a fine to medium, metamorphic granulose aggregate of quartz and felspar, including pinkish probable K-spar. Fine biotite (20%) is uniformly disposed throughout, not particularly schistose, in fact probably with a relict igneous mode of occurrence. Accessory small (0.5mm) crystals of garnet and of magnetite are scattered. (The rock weakly attracts a swinging magnet.)

33978 : massive structureless quartzite, minor possible relicts of altered felspar.

Fine crystalline quartzite, with individual crystals indistinguishable in handspecimen, but fused into a structureless mass. Rare cream coloured 'grains' appear to be 'altered' felspar, possible K-spar.

Similar to many aspects of 3397; it lacks the commonly fissile characteristics of the preceding sample, 33977 which was identified petrographically a probable Warrow Quartzite.

33979 :

A. identified in thin sectionquartzitic meta-chemical chert.

B. macro identification suggests similar chert with colloform nodules of quartz and possible phosphate.

C. ?? silicified carbonate with some boxworks

One lump of rock in this **sample (A)** was identified in thin section as a quartzite with accessory apatite and graphite, probably a meta-impure chemical chert.

One other lump in the **sample (B)** not sectioned has a massive, cherty, siliceous composition, but includes irregular domains of adjacent colloform/spherulitic texture, also probably mostly siliceous but including fibrous, radiating crystals, with 'cauliflower' arrangement and yellowish. This may include phosphatic material, as alluded to in the description of the thin section 33979(A).

A third lump of rock in this **Sample (C)**, has a very fine rather heterogeneous siliceous matrix simlar to that in B, but is characterised by extensive areas of siliceous boxwork, partly gradational to replica, which appears to be after carbonate. Some of this boxwork includes vague, microspherulitic, yellowish secondary material, which is probably limonitic-siliceous, but should be checked chemically as a possible secondary metallic salt. This sample C may be a silicified limestone.

33981 : laminated fine quartzite (??meta quartz sandstone) accessory fine hematite grains.

This is a homogeneous, cream-coloured, extremely fine crystalline quartzite with a laminated structure with a coincidental fine foliation. Minor discrete small grains (to 1mm) are scattered along the layering. These are moderately highlighted on the weathered surface, also seen underbinocular on a freshly broken surface (where they appear as micro-augen). Accessory very small hematite grains are scattered through one of the three lumps of rock in this sample.

This appears to be a meta quartz sandstone (?Warrow Quartzite), but a thin section is needed to confirm this.

33982 : A. fine quartzite with parting planes (along the bedding?)

B. more heterogeneous quartzite with small quartz "augen" in matrix of very fine crystalline quartz.

One rock in this sample is a cream coloured, fine crystalline quartzite in which the crystals are essentially fused into a fairly homogeneous mass. This mass has numerous parallel parting planes, presumably along an original bedding. Minor small voids along the bedding, seen on the weathered surface, may be original felspars, altered and removed.

The other rock consists of a layered loosepacked aggregate of irregularly lenticular/ovoid grains of glassy deformed quartz grains ("augen"), incorporated within a matrix of microcrystalline quartz. It is uncertain in hand specimen if the "augen" are of entirely metamorphic, or possibly original sedimentary origin, these need to be determined in thin section. The rock does appear however to be a metasediment.

33983 : quartzite : of "fused" "glassy" quartz mass with a purplish colour.

The two lumps in this sample consist of a 'fused' mass of apparently coarse crystalline, "glassy" quartz with a distinctive purplish hue. A vague layering is manifest as clay-filled, sub-parallel but wavy microfractures. Genesis indeterminate from hand specimen study.

33984 : thin bedded felspathic quartzite (?Warrow), partly altered to clays by deep weathering.

About 60% of this rock consists of a laminated to thin bedded, rather loosely-packed aggregate of quartz grains, average size about 1mm, slightly elongated in the plane of the layering. The remaining 40% consists of voids partly filled by clays, and interpreted to mostly represent completely altered and partly leached out felspar grains. Some continuous laminae of white clays are interbedded however, to suggest some original pelitic layers, which would have been metamorphosed, but since broken down again by prolonged weathering.

33985 : essentially the same as 33984, but less clearly bedded, due to more abundant and widespread clays.

33990 : weathered, (micaceous) and felspathic quartzite, with a tectonically elongated fabric (?Warrow Quartzite).

Six lumps of rock constitute this sample, they are all basically quartzites, all more or less thin bedded, with parting along the bedding. Some are quite coarse and obviously granulose with a loose-packed aggregate of partly elongate to strongly elongate grains, with pore space and or clays representing former felspars intergranular. Other sub-samples are more "cherty" without the obvious granularity or former felspar content. Accessory muscovite is intergranular in some of the samples.

33991 : weathered, sheared quartzo-felspathic metasediment with weak protomylonite fabric, felspar retrograded to micas now largely altered to clays.

The four sub-samples forming this sample are basically "quartzitic" but rather than massive/granulose, the quartz has been tectonically elongated and attenuated, possibly in a shear zone to produce a fine virtual proto-mylonite structure. Original intergranular felspars have been similarly elongated and retrograded to schistose micas, altered to clays, between the quartz.

33993 : thin bedded, argillised-felspathic, quartzitic metasediment (?Warrow Quartzite).

This is a single, large sample of laminated to thin bedded quartzite. It is basically microcrystalline to massive, but the layering is produced by variably continuous laminae, and minor small grains scattered along the bedding of 'clays', almost certainly after felspar(s).

33994:

Five lumps of rock in this sample are the same, and were identified in one thin section as a meta, allanite-rich, quartz monzonite.

One lump is a weakly schistose amphibolite, with small crystals of dark green amphibole (hornblende), similarly oriented and aggregated with a subordinate amounts of white (?altered) plagioclase crystals.

33998 :

Massive, micro to cryptocrystalline (?siliceous) goethite, to be checked in polished section.

34000 :

As for 33998

34104 :

One lump in this sample is a muscovite-tourmaline ("granitic") pegmatite. Three other lumps consist of vaguely layered extremely fine/compact (?siliceous) limonite, and the genesis will attempt to be determined in polished section.

34105 : massive quartzite with vuggy clay patches.

This is a massive, white to off-white coarse crystalline quartzite, with minor randomly scattered partly vuggy patches of clays, which are possibly after felspar.

Probably a meta sandstone.

34106 : saccharoidal and moderately porous quartzite, variably iron-stained, rare fine limonite boxwork.

This is a yellowish to brownish coloured quartzite, breaking in hand specimen along at least two parallel planes which probably represent bedding. This quartzite is quite saccharoidal with fairly abundant, irregular, intergranular voids, partly filled by yellowish and brownish limonite. Also there are abundant, small drusy voids enclosed by microsparry quartz.

Rare limonite boxwork occurs in several of the voids.

34107 :

One subsample in this sample was identified in thin section as a weathered, garnet-bearing, laeyred metasediment. The other subsamples are massive to vaguely layered, botryoidal and fragmental, ferruginous/manganiferous material, to be examined in polished section.

34108 : lineated, biotite-quartz-felspar schist;
meta pelitic sediment.

This is a fine crystalline, grey lineated schist, composed essentially of abundant fine biotite and rarer muscovite, ubiquitous through a very fine granular aggregate of quartz and felspar.

34109 : tectonised felspathic-quartzite?
= Diopsidite

This is a mass of fine to irregularly medium grained 'white' quartz and/or deformed felspar, and 'glassy' quartz in patches and sets of parallel veinlets. Pale green veneers, partly along slip planes appear to consist of extremely fine fibrous actinolite.

This rock needs to be investigated in thin section for a satisfactory diagnosis, and will be further reported on together with the iron-stones.

07354/FK23/R

802

0113

RSH53
35136
L45/1800E : fine grained amphibolite;
accessory biotite, garnet, opaque oxides, rarer apatite: (meta dolerite)

These chips consist of a subequal abundance of randomly interlocking subhedral crystals of green actinolitic-hornblende and plagioclase, average size about 0.3mm. The plagioclase is commonly partly altered to sericite ± clouded saussurite.

Accessory quartz, biotite, opaque oxides, garnet and rarer apatite occurs in some chips.

RSH56

35243

L45/2100 : sillimanite-quartz gneiss (in which the sillimanite has been retrograded to fibrolite-sericite); incorporating decussate fine muscovite apparently of greisen, hydrothermal-type genesis.

Most of these chips are dominated by stressed, inequigranular granoblastic quartz aggregate, with a grain size of 0.03mm to 3mm, and generally with strongly sutured, intergranular itnergranular contacts.

The other components which may form up to 50% of the quartzose chips consist of:

1. decussate fine muscovite, i.e. non-schistose, and apparently a hydrothermal alteration phase, which may be after plagioclase, but partly together with quartz in a greisen-like relationship.

2. fibrolitic sillimanite, intimately mixed with extremely fine sericite (retrograde sillimanite), incorporating rarer sillimanite prisms. Together with the quartz, representing sillimanite-quartz gneiss.

Some separate chips consist entirely of the fibrolitic-sericitic component, (having broken out of the gneiss during percussion drilling).

RSH61/74
35456
L44/2150E : chips of (plagioclase), perthitic-microcline and abundant quartz; pegmatitic-granite or leuco-granite.

This chips forming this sample are much the same as for 35418 except that there is a higher proportion of quartz (80%) and lesser K-spar (15%) up to 6mm size. The K-spar is basically microcline, and commonly perthitic.

Minor sericitised plagioclase is composite with quartz, and several individual chips of clouded plagioclase are present.

Several contamination chips of laterite are present.

RSH60
35418
L44/1850E : chips of quartz and microcline, probably a granitic-pegmatite (or coarse leucogranite), moderately stressed; accessory biotite, monazite.

About half of these chips consist of weakly stressed, inequigranular but generally fine allotriomorphic quartz. The other approximate half consists of microcline and perthitic microcline, also weakly to moderately stressed, and these are highlighted on the stained offcut.

These minerals occur independently as chips up to 6mm, indicating a fairly coarse original grain size; also they form composite chips.

Minor flakes of biotite occur separately, these have been selectively crushed during drilling.

Two coarse (2mm) chips of monazite occur in the section examined.

The perthitic nature of some of the microcline, and the presence of monazite indicates a probable granitic-pegmatite, rather than simply a straight forward leuco-granite.

RSH63

35519

L44/1650E : leucogranite moderately tectonised with localised sericitic alteration and recrystallisation of quartz, also some quartz veining + sericite.

These chips are leuco, quartzo-felspathic as in 35243, 35456, but include chips of quartz micromosaic not seen in those chips. This micromosaic is however composite with several chips of stressed microcline, and rarely with partly sericitised plagioclaes, and indicates an original leucogranite (?pegmatitic) in which quartz has selectively recrystallised.

Some chips have been even more strongly tectonised however, manifest as sericitised micro-fractured, and evidence of invasion by generally fine vein quartz ± seicite. Several chips with quite coarse vein quartz are present.

Some chips are very fine quartzo-felspathic, and quite extensively sericitised, these may be considered as microgranite.

APPENDIX II: ANALYSES

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

0124

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Tel: (08) 43 5722
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NATA REGISTERED No. 1526

KJH

OUR REF.: COM851861

YOUR REF.: 3944/FK23/KJH/01

29/10/85
FK23/604

Mr. K. Hellsten
The Shell Co. of Aust. Ltd.
66 Glen Osmond Road
PARKSIDE

SA 5063

October 29, 1985

Dear Ken

RE: JOB COM851861

Enclosed are the assays for the samples delivered to our laboratory on October 10, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

c.c.: No. of copies : 0

Report Length 17 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

JOB COM851861

ANALYTICAL REPORT

O/N : 3944/FK23/KJH/101

0125

	SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
W	1	12	14	14	<1	1.00	48
Profile 1	2	6	14	<2	<1	0.52	55
	3	7	16	4	<1	0.64	42
E	4	8	18	2	<1	0.63	55
E	5	5	18	2	<1	0.71	40
Profile 2 W	6	7	8	<2	<1	0.54	55
W	7	6	20	<2	<1	0.57	50
3	8	7	18	<2	<1	0.69	75
E	9	7	22	<2	<1	0.59	34
W	10	7	8	<2	<1	0.52	60
	11	8	12	<2	<1	0.63	50
4	12	12	14	<2	<1	0.62	85
	13	6	22	<2	<1	0.50	32
E	14	5	24	3	<1	0.64	55
W	15	3	32	2	<1	0.56	38
	16	6	24	2	<1	0.63	55
5	17	4	14	<2	<1	0.51	48
E	18	4	14	<2	<1	0.55	70
W	19	6	20	7	<1	0.95	110
6	20	4	26	10	<1	1.03	100
E	21	4	16	4	<1	0.71	80
E	22	4	18	<2	<1	0.73	48
11	23	2	8	<2	<1	0.60	42
W	24	7	10	2	<1	0.84	85
12 E	25	4	12	<2	<1	1.46	42
	UNITS	ppm	ppm	ppm	ppm	%	ppm
	SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0126

	SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
12 W	26	3	36	<2	<1	0.49	75
	27	5	20	<2	<1	0.49	32
	28	4	14	<2	<1	1.42	44
13 W	29	4	24	2	<1	1.04	28
	30	3	26	2	<1	3.45	26
	31	6	24	<2	<1	1.37	28
E	32	4	4	<2	<1	0.81	28
E	33	2	16	6	<1	0.80	55
	34	3	8	4	<1	0.82	36
14	35	3	10	2	<1	0.93	75
	36	4	24	7	<1	0.86	65
W	37	4	28	9	<1	1.46	90
W	38	2	18	10	<1	1.05	70
15	39	3	24	12	<1	1.18	115
E	40	3	16	9	<1	1.25	125
W	41	6	12	3	<1	0.88	65
	42	6	10	<2	<1	0.68	70
	43	5	10	<2	<1	0.79	55
16	44	2	14	<2	<1	0.64	60
	45	3	6	<2	<1	0.65	55
	46	2	4	<2	<1	0.61	36
E	47	4	<4	<2	<1	0.62	60
W	48	3	8	<2	<1	0.53	36
	49	10	8	<2	<1	0.80	90
17	50	5	44	<2	<1	0.62	46
	UNITS	ppm	ppm	ppm	ppm	%	ppm
	SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0127

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
51	5	32	<2	<1	0.54	60
52	5	24	4	<1	0.58	36
53	5	14	<2	<1	0.51	50
54	4	22	<2	<1	0.51	34
55	6	12	<2	<1	0.43	24
56	5	6	<2	<1	0.43	36
57	2	4	<2	<1	0.31	14
58	3	4	<2	<1	0.41	26
59	<2	14	<2	<1	0.29	14
60	2	20	<2	<1	0.28	32
61	65	28	18	<1	6.15	48
62	4	18	<2	<1	0.78	26
63	4	14	<2	<1	0.50	18
64	5	26	<2	<1	0.39	32
65	3	24	<2	<1	0.32	22
66	4	16	<2	<1	0.41	60
67	4	6	<2	<1	0.44	32
68	3	22	<2	<1	0.48	46
69	7	50	<2	<1	0.42	34
70	6	34	<2	<1	0.81	55
71	4	60	<2	<1	0.52	60
72	14	22	4	<1	0.92	200
73	5	6	<2	<1	0.35	42
74	3	10	<2	<1	0.30	36
75	<2	16	<2	<1	0.29	16
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0128

	SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
W	76	2	10	<2	<1	0.33	36
23	77	<2	8	<2	<1	0.34	24
E	78	3	8	<2	<1	0.41	34
W	79	3	40	<2	<1	0.30	46
24	80	3	20	<2	<1	0.40	85
	81	<2	16	<2	<1	0.44	30
E	82	4	16	<2	<1	0.39	44
W	83	2	16	<2	<1	0.28	20
25	84	5	12	<2	<1	0.56	46
	85	<2	6	<2	<1	0.39	55
E	86	2	10	5	<1	0.43	42
W	87	18	10	14	<1	3.95	280
26	88	8	22	7	<1	0.92	75
E	89	3	6	<2	<1	0.54	28
E	90	4	24	2	<1	0.72	28
27	91	4	44	<2	<1	0.39	24
W	92	3	12	5	<1	0.66	55
E	93	10	20	10	<1	4.25	220
	94	6	24	3	<1	0.82	60
28	95	2	18	3	<1	0.67	60
	96	4	24	4	<1	0.50	95
W	97	12	16	3	<1	0.47	42
W	98	9	12	<2	<1	0.54	34
29	99	5	10	5	<1	0.74	75
E	100	3	10	<2	<1	0.40	75
	UNITS	ppm	ppm	ppm	ppm	%	ppm
	SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

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ANALYTICAL REPORT O/N : 3944/FK23/KJH/101

0129

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
101	5	<4	<2	<1	0.36	42
102	10	4	<2	<1	0.61	50
103	3	<4	<2	<1	0.27	28
104	4	20	<2	<1	0.34	44
105	4	12	<2	<1	0.48	30
106	7	8	<2	<1	0.47	42
107	5	4	<2	<1	0.25	28
108	3	6	<2	<1	0.25	32
109	4	14	<2	<1	0.26	26
110	3	8	<2	<1	0.25	36
111	3	12	<2	<1	0.25	34
112	5	85	<2	<1	0.27	34
113	4	18	<2	<1	0.38	60
114	5	4	<2	<1	0.36	50
115	4	10	<2	<1	0.27	18
116	3	10	<2	<1	0.22	24
117	3	18	<2	<1	0.25	36
118	4	6	<2	<1	0.34	50
119	3	<4	<2	<1	0.23	26
120	7	14	<2	<1	1.05	65
121	16	4	4	<1	1.95	42
122	12	4	3	<1	1.57	38
123	8	<4	5	<1	0.65	55
124	5	<4	3	<1	0.49	75
125	6	4	2	<1	0.52	44
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0130

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
126	7	8	5	<1	0.61	60
127	12	46	10	<1	2.05	60
128	5	8	2	<1	0.99	80
129	4	4	3	<1	0.97	50
130	8	6	3	<1	0.90	46
131	3	6	3	<1	0.29	44
132	3	14	2	<1	0.36	44
133	4	<4	2	<1	0.30	36
134	5	4	4	<1	0.42	48
135	2	<4	2	<1	0.31	24
136	5	<4	3	<1	0.30	65
137	3	<4	2	<1	0.32	48
138	4	<4	2	<1	0.34	60
139	3	4	4	<1	0.84	32
140	20	4	10	<1	1.75	750
141	7	<4	5	<1	7.70	180
142	5	8	8	<1	5.95	460
143	12	4	12	<1	3.80	630
144	7	4	8	<1	2.00	430
145	5	16	12	<1	3.60	155
146	9	16	9	<1	1.00	220
147	8	6	9	<1	1.11	165
148	7	<4	7	<1	1.02	120
149	60	<4	14	<1	1.30	230
150	36	20	18	<1	3.45	360
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0131

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
151	30	12	10	<1	1.19	130
152	7	12	10	<1	0.82	260
153	4	30	8	<1	0.49	125
154	3	16	<2	<1	0.58	60
155	4	20	2	<1	0.29	24
156	3	12	5	<1	0.34	42
157	3	20	2	<1	0.33	22
158	5	<4	3	<1	0.33	55
159	2	6	3	<1	0.32	26
160	5	4	4	<1	0.34	36
161	2	4	2	<1	0.27	26
162	3	12	2	<1	0.31	38
163	7	8	3	<1	0.48	44
164	6	26	2	<1	0.62	44
165	5	8	4	<1	0.37	42
166	6	14	<2	<1	0.44	55
167	5	10	<2	<1	0.27	65
168	5	6	2	<1	0.42	135
169	4	8	2	<1	0.43	38
170	9	6	3	<1	0.35	60
171	2	8	4	<1	0.27	50
172	5	8	2	<1	0.41	65
173	4	8	<2	<1	0.37	55
174	5	24	<2	<1	0.35	70
175	7	22	<2	<1	0.36	46
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0132

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
176	4	10	2	<1	0.40	42
177	4	8	2	<1	0.35	32
178	4	8	2	<1	0.24	38
179	5	16	2	<1	0.33	44
180	3	20	3	<1	0.42	40
181	8	26	2	<1	0.37	20
182	2	34	4	<1	0.52	75
183	5	14	7	<1	0.72	105
184	14	14	8	<1	1.10	195
185	6	8	2	<1	0.35	34
186	10	4	2	<1	0.61	80
187	5	8	2	<1	0.29	34
188	5	10	2	<1	0.25	34
189	4	6	2	<1	0.29	38
190	4	4	<2	<1	0.39	85
191	3	22	<2	<1	0.27	46
192	4	22	<2	<1	0.21	30
193	3	18	<2	<1	0.28	26
194	4	16	<2	<1	0.30	36
195	2	8	<2	<1	0.19	16
196	4	44	<2	<1	0.21	28
197	3	14	<2	<1	0.32	22
198	4	8	<2	<1	0.38	34
199	5	10	2	<1	0.24	6
200	8	10	3	<1	0.12	4
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0133

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
201	8	8	<2	<1	0.42	20
202	4	8	<2	<1	0.24	38
203	3	4	<2	<1	0.23	22
204	<2	8	<2	<1	0.36	40
205	5	16	2	<1	0.28	18
206	3	18	<2	<1	0.29	22
207	5	14	4	<1	0.39	42
208	5	30	4	<1	0.37	32
209	20	16	24	<1	2.90	150
210	12	14	10	<1	0.62	48
211	2	80	<2	<1	0.34	34
212	2	38	<2	<1	0.32	26
213	<2	10	2	<1	0.39	80
214	4	14	<2	<1	0.30	24
215	3	6	<2	<1	0.40	30
216	<2	<4	<2	<1	0.38	24
217	7	10	3	<1	0.31	60
218	6	8	2	<1	0.32	48
219	14	14	7	<1	0.54	65
220	14	8	4	<1	0.38	100
221	5	4	2	<1	0.36	34
222	4	8	18	<1	1.41	260
223	8	10	22	<1	2.35	400
224	10	<4	10	<1	0.44	65
225	6	4	2	<1	0.34	36
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0134

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
226	2	8	2	<1	0.32	20
227	3	16	<2	<1	0.31	22
228	4	4	<2	<1	0.34	55
229	3	12	2	<1	0.23	36
230	4	<4	<2	<1	0.35	42
231	3	8	2	<1	0.28	18
232	3	6	<2	<1	0.31	22
233	2	10	<2	<1	0.36	26
234	2	14	<2	<1	0.31	28
235	4	16	<2	<1	0.25	28
236	20	50	12	<1	1.77	42
237	3	4	<2	<1	0.37	20
238	3	6	<2	<1	0.33	26
239	10	6	<2	<1	0.37	22
240	3	<4	<2	<1	0.24	22
241	7	65	6	<1	0.62	30
242	3	44	3	<1	0.30	26
243	3	48	5	<1	0.40	26
244	9	30	18	<1	1.04	50
245	5	20	3	<1	0.73	38
246	5	18	9	<1	0.89	46
247	4	14	3	<1	0.52	22
248	26	8	28	<1	8.25	105
249	7	6	9	<1	2.75	40
250	4	6	3	<1	0.75	32
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0135

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
251	4	4	4	1	0.50	32
252	4	6	2	<1	0.52	40
253	10	4	4	<1	0.91	80
254	3	8	<2	<1	0.33	34
255	2	6	<2	<1	0.42	60
256	4	8	3	<1	0.62	46
257	6	<4	4	1	1.36	38
258	48	26	34	1	7.85	160
259	22	12	44	1	1.04	185
260	14	24	44	<1	0.95	160
261	20	12	50	<1	1.01	95
262	6	4	3	<1	0.59	38
263	2	12	<2	<1	0.26	18
264	3	10	<2	<1	0.36	18
265	3	12	2	<1	0.36	38
266	4	12	2	<1	0.36	30
267	6	<4	6	<1	0.39	120
268	12	<4	7	<1	0.47	90
269	10	4	24	<1	0.68	460
270	75	<4	110	<1	1.74	7.70%
271	195	4	210	<1	32.7	7.15%
272	26	<4	32	1	9.45	1.78%
273	7	<4	5	<1	0.64	440
274	50	<4	12	<1	2.35	220
275	50	<4	12	<1	2.10	185
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

JOB COM851861

ANALYTICAL REPORT O/N : 3944/FK23/KJH/101

0136

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
276	50	<4	12	<1	3.75	220
277	42	4	20	<1	3.70	310
278	55	<4	14	<1	3.95	290
279	95	<4	18	<1	2.55	350
280	46	<4	10	<1	2.65	160
281	44	<4	20	<1	3.95	200
282	48	<4	10	<1	3.90	170
283	55	<4	14	<1	3.60	220
284	30	<4	12	<1	3.30	175
285	90	6	530	1	0.74	14.1%
286	170	14	810	<1	0.97	18.6%
287	16	6	70	<1	1.07	5650
288	6	<4	22	<1	0.35	1100
289	40	<4	12	<1	1.38	440
290	42	<4	9	<1	1.29	250
291	20	14	22	<1	1.96	200
292	110	12	175	<1	34.0	1600
293	95	8	220	<1	37.5	1300
294	75	4	80	1	16.0	4500
295	12	4	5	<1	1.18	230
296	4	<4	2	<1	0.48	140
297	280	<4	120	<1	1.28	6.10%
298	750	4	280	<1	0.25	13.6%
299	9	<4	2	<1	0.27	690
300	6	6	16	<1	0.76	620
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0137

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
301	8	8	12	<1	0.51	100
302	9	24	18	<1	0.55	130
303	5	90	14	<1	0.44	80
304	6	120	12	<1	0.81	80
305	7	80	10	<1	0.60	170
306	5	12	6	<1	0.41	105
307	3	8	3	<1	0.33	70
308	16	80	22	<1	1.07	105
309	12	75	28	<1	0.89	120
310	8	70	6	<1	0.48	75
311	3	16	3	<1	0.34	44
312	3	22	3	<1	0.31	28
313	4	12	4	<1	0.30	75
314	6	8	4	<1	0.31	55
315	7	6	4	<1	0.41	48
316	3	4	4	<1	0.40	38
317	5	<4	3	<1	0.37	60
318	6	6	12	<1	0.95	110
319	9	6	24	<1	1.59	240
320	12	6	24	<1	2.10	290
321	12	<4	6	<1	0.52	820
322	22	<4	9	<1	0.30	6500
323	22	4	6	<1	0.33	1.55%
324	7	<4	4	<1	0.36	1350
325	55	<4	22	<1	2.55	450
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0138

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
326	150	12	110	<1	31.8	1.60%
327	100	34	85	<1	21.7	2700
328	7	16	3	<1	0.53	110
329	80	8	22	<1	2.75	440
330	44	6	24	<1	3.35	340
331	44	<4	12	<1	4.05	290
332	7	8	9	<1	0.79	120
333	6	6	5	<1	0.54	75
334	7	12	4	<1	0.87	85
335	8	10	22	<1	1.50	105
336	12	<4	2	<1	0.55	210
337	12	8	8	<1	0.41	165
338	30	36	400	<1	25.8	1900
339	32	14	270	<1	17.0	710
340	14	8	40	<1	2.30	400
341	14	12	175	<1	8.95	1000
342	4	8	20	<1	3.55	85
343	250	<4	350	<1	19.8	24.0%
344	145	8	180	<1	24.2	8.70%
345	160	8	105	<1	19.3	12.8%
346	18	4	26	<1	2.55	1200
347	16	4	34	<1	2.40	2150
348	9	<4	4	<1	0.44	550
349	220	8	195	1	7.75	13.7%
350	48	8	46	1	12.5	8850
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0139

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
351	60	6	28	1	4.60	1.39%
352	270	<4	360	<1	25.6	18.3%
353	370	6	320	<1	22.3	17.9%
354	270	26	175	<1	22.6	4.70%
355	300	95	220	<1	32.8	5.60%
356	115	95	250	<1	13.5	2.80%
357	380	850	230	2	2.85	6.60%
358	70	36	40	<1	0.75	1.15%
359	80	12	26	<1	0.57	8050
360	120	20	24	<1	0.80	1.56%
361	7	6	4	<1	0.57	270
362	10	10	14	1	0.98	175
363	16	8	16	<1	0.81	300
364	24	6	6	<1	0.69	135
365	30	6	14	<1	0.71	210
366	135	6	160	<1	13.1	12.0%
367	340	8	240	<1	18.6	23.0%
368	165	6	140	<1	19.7	17.5%
369	160	4	115	<1	0.94	7.80%
370	40	<4	12	<1	0.44	1.25%
371	48	12	24	<1	1.34	850
372	22	<4	7	<1	2.05	640
373	20	6	8	<1	2.30	350
374	12	4	9	1	1.75	260
375	85	4	12	1	4.15	1000
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0140

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
376	130	8	60	<1	12.7	2.65%
377	165	6	42	<1	7.70	3.55%
378	10	4	16	<1	1.24	135
379	18	8	44	<1	2.55	175
380	12	8	42	<1	3.75	115
381	22	<4	9	<1	1.50	260
382	24	<4	14	<1	1.68	185
383	6	<4	4	<1	0.45	230
384	380	24	140	<1	7.85	4.45%
385	36	4	8	<1	1.11	350
386	5	4	4	<1	0.49	170
387	7	<4	12	1	0.63	610
388	80	<4	105	<1	0.82	2.00%
389	14	<4	50	<1	2.80	1650
390	18	<4	10	<1	1.19	850
391	6	8	8	<1	0.58	75
392	12	8	16	<1	0.84	105
393	20	22	30	<1	1.35	135
394	20	20	22	<1	1.47	120
395	65	6	16	<1	1.25	1.10%
396	28	6	34	1	7.95	1200
397	55	6	42	1	0.89	2900
398	195	8	120	1	0.53	3.35%
399	10	4	2	<1	0.34	260
400	5	50	3	<1	0.41	105
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

ANALYTICAL REPORT

JOB COM851861
O/N : 3944/FK23/KJH/101

0141

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
401	20	6	6	<1	0.81	175
402	14	6	12	<1	0.81	100
403	185	6	170	1	0.45	6.40%
404	32	<4	36	1	4.95	790
405	40	<4	20	<1	3.10	5750
406	18	4	7	<1	0.59	1650
407	7	55	3	<1	0.31	290
408	24	6	10	<1	0.53	3050
409	200	10	150	<1	1.07	20.2%
410	18	8	9	<1	2.25	1.75%
411	6	4	14	<1	1.96	780
412	20	20	34	<1	2.65	620
413	4	6	18	<1	2.35	450
414	18	12	18	<1	1.56	290
415	7	14	18	<1	0.54	90
416	14	16	18	<1	0.75	130
417	7	10	8	1	0.42	60
418	6	22	2	<1	0.45	65
419	4	30	2	1	0.34	26
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2 AAS2A

COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

0142

Head Office and Central Laboratory
305 South Road,
Mile End South,
Sth. Aust. 5031.
Tel: (08) 43 5722
Telex: AA89323

NATA REGISTERED No. 1526

	INFO	ACT	COPY
KJM	JGH		
FILE	FK23/1604		
REC'D	6/11/85		

OUR REF.:

YOUR REF.:

COM851967

3946/FK23/KJH/03

Mr. K. Hellsten
The Shell Co. of Aust. Ltd.
66 Glen Osmond Road
PARKSIDE

SA 5063

November 5, 1985

Dear Ken

RE: JOB COM851967

Enclosed are the assays for the samples delivered to our laboratory on October 28, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

P R Harvey

c.c.: Adelaide - Shell No. of copies : 1

Report Length 4 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM851967
O/N : 3946/FK23/KJH/03

0143

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
419	12	8	12	<1	0.89	185
420	7	<4	5	<1	0.63	130
421	10	<4	12	<1	1.09	110
422	18	20	14	<1	1.13	80
423	12	<4	4	<1	0.77	230
424	10	<4	5	<1	0.78	310
425	6	4	4	<1	0.43	220
426	18	14	16	<1	1.23	165
427	14	<4	50	<1	2.75	390
428	30	<4	65	<1	3.80	500
429	6	<4	36	<1	1.82	310
430	8	<4	34	<1	1.71	320
431	14	<4	7	<1	0.95	75
432	16	<4	7	<1	1.07	44
433	6	<4	5	<1	0.59	65
434	12	<4	6	<1	1.03	230
435	16	24	24	<1	1.22	100
436	10	6	55	<1	2.65	290
437	22	<4	60	<1	3.15	280
438	40	<4	70	<1	3.45	380
439	26	6	75	<1	4.10	400
440	16	6	50	<1	2.45	300
441	14	<4	70	<1	3.60	530
442	18	4	70	<1	3.60	520
443	14	6	55	<1	2.80	430
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

JOB COM851967

O/N : 3946/FK23/KJH/03

ANALYTICAL REPORT

0144

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
444	22	<4	65	<1	3.50	360
445	20	4	75	<1	4.00	370
446	22	6	75	<1	3.65	440
447	18	10	65	<1	3.40	650
448	8	14	6	<1	1.09	20
449	10	26	8	<1	0.68	20
450	10	16	5	<1	0.71	28
451	14	26	10	<1	1.21	20
452	7	20	2	<1	0.43	70
453	6	10	3	<1	0.44	60
454	4	28	8	<1	0.73	90
455	3	16	3	<1	0.30	65
456	3	4	6	<1	0.51	65
457	3	10	4	<1	0.25	24
458	4	28	<2	<1	0.16	24
459	7	24	7	<1	0.56	44
460	5	6	4	<1	0.25	18
461	4	32	2	<1	0.21	22
462	8	22	9	<1	0.73	46
463	5	16	16	<1	0.74	115
464	3	16	8	<1	0.39	34
465	2	10	6	<1	0.47	48
466	2	10	5	<1	0.39	34
467	3	12	12	<1	0.87	42
468	3	20	12	<1	0.83	75
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

JOB COM851967

ANALYTICAL REPORT

O/N : 3946/FK23/KJH/03

0145

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
469	4	12	4	<1	0.47	55
470	3	14	5	<1	0.50	38
471	6	34	5	<1	0.50	32
472	8	20	40	<1	1.80	230
473	3	18	34	<1	1.45	185
474	3	10	9	<1	0.72	75
475	3	24	28	<1	1.28	145
476	2	22	18	<1	1.00	120
477	4	22	36	<1	1.69	270
478	6	20	32	<1	1.41	220
479	6	18	30	<1	1.43	230
480	4	20	40	<1	2.05	310
481	4	16	22	<1	1.08	150
482	3	26	12	<1	0.96	110
483	7	18	28	<1	1.53	210
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

ANALYTICAL REPORT

JOB COM851967
O/N : 3946/FK23/KJH/03

0146

SAMPLE	Cu	Pb	Zn	Ag	Fe	Mn
447B	12	26	10	<1	1.35	20
UNITS	ppm	ppm	ppm	ppm	%	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS2 AAS2A	AAS2

COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

0147

Head Office and Central Laboratory
305 South Road,
Mile End South,
Sth. Aust. 5031.
Tel: (08) 43 5722
Telex: AA89323

NATA REGISTERED No. 1526

Rick RB

Gold assays on rock chips from Mitakoodi NNW prospect.

Ken

OUR REF.:

YOUR REF.: COM852030

3947

KJH KJH

FIC23/604
14/11/85

Mr. K. Hellsten
The Shell Co. of Aust. Ltd.
66 Glen Osmond Road
PARKSIDE

SA 5063

November 13, 1985

Dear Ken

RE: JOB COM852030

Enclosed are the assays for the samples delivered to our laboratory on November 11, 1985

Yours Sincerely,
COMLABS PTY LTD

per :

c.c.: Shell - Parkside No. of copies : 1

Report Length 8 pages

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
241	<0.01
242	<0.01
243	<0.01
244	<0.01
245	0.03
246	0.03
247	<0.01
248	<0.01
249	<0.01
250	<0.01
251	<0.01
252	<0.01
253	<0.01
254	<0.01
255	<0.01
256	<0.01
257	<0.01
258	<0.01
259	<0.01
260	<0.01
261	<0.01
262	<0.01
263	<0.01
264	<0.01
265	<0.01
UNITS	ppm
SCHEME	FAS1

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COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
266	<0.01
267	<0.01
268	<0.01
269	<0.01
270	<0.01
271	<0.01
272	<0.01
273	<0.01
274	<0.01
275	<0.01
276	<0.01
277	<0.01
278	<0.01
279	<0.01
280	<0.01
281	<0.01
282	<0.01
283	<0.01
284	<0.01
285	<0.01
286	<0.01
287	<0.01
288	<0.01
289	<0.01
290	<0.01
UNITS	ppm
SCHEME	FAS1

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
291	<0.01
292	<0.01
293	<0.01
294	<0.01
295	<0.01
296	<0.01
297	<0.01
298	<0.01
299	<0.01
300	<0.01
301	<0.01
302	<0.01
303	<0.01
304	<0.01
305	<0.01
306	<0.01
307	<0.01
308	<0.01
309	<0.01
310	<0.01
311	<0.01
312	<0.01
313	<0.01
314	<0.01
315	<0.01
UNITS	ppm
SCHEME	FAS1

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
316	<0.01
317	<0.01
318	<0.01
319	<0.01
320	<0.01
321	<0.01
322	<0.01
323	<0.01
324	<0.01
325	<0.01
326	<0.01
327	<0.01
328	<0.01
329	<0.01
330	0.05
331	<0.01
332	<0.01
333	<0.01
334	<0.01
335	<0.01
336	<0.01
337	<0.01
338	<0.01
339	<0.01
340	<0.01
UNITS	ppm
SCHEME	FAS1

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COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
341	<0.01
342	<0.01
343	<0.01
344	<0.01
345	<0.01
346	<0.01
347	<0.01
348	<0.01
349	0.03
350	<0.01
351	<0.01
352	<0.01
353	<0.01
354	<0.01
355	<0.01
356	<0.01
357	<0.01
358	<0.01
359	<0.01
360	<0.01
361	<0.01
362	<0.01
363	<0.01
364	<0.01
365	<0.01
UNITS	ppm
SCHEME	FAS1

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COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
366	<0.01
367	<0.01
368	<0.01
369	0.01
370	0.03
371	<0.01
372	<0.01
373	<0.01
374	<0.01
375	<0.01
376	<0.01
377	0.02
378	<0.01
379	0.02
380	<0.01
381	<0.01
382	<0.01
383	<0.01
384	<0.01
385	<0.01
386	<0.01
387	<0.01
388	<0.01
389	<0.01
390	<0.01
UNITS	ppm
SCHEME	FAS1

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COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM852030
O/N : 3947

SAMPLE	Au
391	<0.01
392	<0.01
393	<0.01
394	<0.01
395	<0.01
396	<0.01
397	<0.01
398	<0.01
399	<0.01
400	<0.01
401	<0.01
402	<0.01
403	0.04
404	<0.01
405	<0.01
406	<0.01
407	<0.01
408	<0.01
409	<0.01
410	<0.01
411	<0.01
412	<0.01
413	<0.01
414	<0.01
415	<0.01
UNITS	ppm
SCHEME	FAS1

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COMPUTERISED ANALYTICAL LABORATORIES

JOB COM852030
O/N : 3947

ANALYTICAL REPORT

SAMPLE	Au
416	<0.01
417	<0.01
UNITS	ppm
SCHEME	FAS1

APPENDIX III: RAB LOGS WITH ANALYTICAL RESULTS

SUMMARY DRILL LOGS

0157

PROJECT ..SHEOAK HILL.....

Hole	Co-ordinates	Depth Total	Depth To bedrock	Mag. Susc.	Bedrock description
RSH 1	44/1720E	6	–	–	Nodular calcrete - hole collapsing
2	44/1760E	2	–	–	" "
3	44/1800E	2	–	–	" "
4	45/900E	33	–	–	Fine running sands, hole abandoned.
5	45/1100E	12	–	–	" "
6	45/1780E	40	32	40	Pale green clays, ? dolerite or amphibolite
7	45/1850E	42	32		Pale - Dk green fine - med grained qtz dolerite
8	67/500E	8.5	6		Pw Granite ? gneiss
9	67/600E	21	8		Pw - red fresh, qtz, feldsp biot granitoid.
10	67/650E	28	7 8, (27)		Hard, coarse grained mica poor granitoid
11	67/700E	30	16	40	Even med-fine grained biot, qtz, fels granite
12	67/750E	27	710	15	" " "
13	67/800E	36	24	10	" " "
14	67/900E	42	35	15	" " "
15	13/700E	13	10	40	Qtz mica schist.
16	13/800E	14	10	12	" " "
17	13/860E	12	6	15	Laminated chlstr + ser epid schist
18	13/890E	12	6	40	Qtz mica schist
19	13/950E	12	8	200	Fine grained massive felspathic amphibolite
20	13/1100E	9	4	25	Pale green ser. ? c/s + mica schist.
21	13/1300E	2	1	60	Dk green grey mica sch + amphib
22	13/1450E	8	5.5	40	Dk grey green chloritic mica schist
23	13/1500E	6	5	150	" " "
24	13/1570E	8	4	30	Dk grey green amphibole bearing ? chert.
25	13/1650E	6	–	–	River sands
26	13/1850E	6	–	–	" "
27	13/1000E	12	6	35	W. ferruginous qtz mica schist.
28	68/50E	6	3	15	Dk green fine gr. chl. ampth. schist
29	68/80E	4	1		" " "
30	65/110E	4	1		Dk green, red massive chl schist
31	68/170E	4	1		Dk green chl sch + pale qtz ser sch
32	68/250E	6	2		Qtz mica schist + ser qtz schist
33	68/300E	12	7		Yellow green ser, chl. tremolite sch

SUMMARY DRILL LOGS

PROJECT SHEOAK HILL

Hole	Co-ordinates	Depth Total	Depth To bedrock	Mag. Susc.	Bedrock description
RSH 34	68/350E	9	6		Dk green chl, biot sch + epidote
35	68/400E	1	0.5		Massive Mn rich ironstone
36	68/450E	2	1		Biotite schist + vein qtz
37	68/500E	2	1		Qtz biotite schist.
38	68/600E	6	2		Ferruginous qtz mica ± felspar schist
39	68/650E	8	3		Chlorite amphibole schist and Fe stone
40	68/700E	8	3		Massive siliceous Mn rich ironstone
41	68/725E	3	2		Qtz mica schist.
42	36/00W	7	4	850	Dk grey green chl amphib schist ± mag.
43	36/75W.	5	4	200	Yellow brown ferrug mica schist + w o/s.
44	36/150W	12	8	250	Pw - rd. fresh qtz mica schist, minor chl.
45	36/250W	7	–	–	Tacky clay + sand
46	36/1000W	7	6		Massive rd. clean qtzite
47	36/1100W.	4	2		Rd fresh qtz mica schist
48	36/1170W	2	1		Massive fine gr. felsp amphibolite
49	36/1250W	2	1		Qtz mica schist + granite gneiss
50	36/1330W	2	1		Qtz mica schist + aplitic granitoid
51	36/1400W.	3	1		Pw, med grained biot. granite
52	36/1500W	5	2		Massive quartzite

FK 25/500

1 → [illegible] magn. scaling
2 → outcrops/interp. geol. [illegible]
1:50000 } all lines

TABLE: RAB DRILLING SUMMARY

SHEOAK HILL; LINE 44 and LINE 45.

DATE	HOLE NO	LOCATION	DEPTH OF BEDROCK/END HOLE	LITHOLOGY	SAMPLE NO'S (2 m
12/11	RSH 4*	L45/900E	–/33 m	sand, abandoned.	126506 → 522.
12/11	5*	1100E	–/12 m	sand, abandoned.	126523 → 528
12/11	6*	1780E	32/40 m	amphibolite	126529 → 548
13/11	7*	1850E	32/42 m	Amphibolite	126549 → 569
27/11	53	1800E	64/71 m	amphibolite	35101 → 136
27/11	54	1900E	50/62 m	contam. amphibolite	35137 → 167
28/11	55	2000E	52/82 m	contam. quartzite	35168 → 208
28/11	56	2100E	60/70 m	Quartzite	35209 → 243
29/11	57	2200E	–/56 m	sand, abandoned.	35244 → 271
29/11	58	1700E	62/72 m	amphibolite	35272 → 307
30/11	59	1500E	48/50	contam. amphibolite	35308 → 332
13/11	RSH 1*	L44/1720E	–/6 m	sand, abandoned	126501 → 503.
30/11	RSH 1A	1720E	26/42 m	weathered granite	35333 → 353
12/11	RSH 2*	1760E	–/2 m	sand, abandoned	126504.
30/11	RSH 2A	1760E	40/58 m	weathered granite	35371 → 399
12/11	RSH 3*	1800E	–/2 m	sand, abandoned.	126505.
1/12	60	1850E	58/73 m	weathered granite	35354 → 35370 35400 → 35419
2/12	61	2150E	66/76 m	" leuco granite	35420 → 457
3/12	62	2725E	54/63 m	musc granite	35458 → 489
3/12	63	1650E	50/60 m	pink granite	35490 → 519

NOTE: Magnetic susceptibilities are all very low (K: 20×10⁻⁵), except the amphibolite of RSH 53 (K: 350×10⁻⁵)

- UNDERDALE DRILLING – TOTAL METREAGE: 835 m

* SOUTHERN DRILLING – TOTAL METREAGE: 137 m

0160

Sheet.....of.....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEDAR HILL . CONTRACTOR: SOUTHERN..... COLLAR CO ORDS: 44/1720E.....
LOCALITY: PROJECT 44... RIG TYPE: INVESTIGATOR..... AZIMUTH: .....S.D.O.No: .....
HOLE No. RSH..1.... LOGGED BY: K. J. HOLLISTER. DECLINATION: .....LABORATORY: .....
DATE: ....12.-11.-85.....

(10

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Pink brown - brown fine sandy soil + calcrete nodules.	126501
	4	" " grading to fine red brown silty clays.	02
	6	Tight red - brown clays with fine sand sized qtz grains	03
		Hole abandoned due to collapsing ground in calcrete band	
		and fine running sands down hole.	
RSH 2	11/1760E		
0	2	Hard, nodular calcrete + fine sandy soil,	126504
	"	Hole continually collapsing - abandoned	"
RSH 3	11/1800E		
0	2	Pink brown fine sand + nodular calcrete,	126505
		Hole collapsing - abandoned.	
RSH 4	15/1930E		
0	2	Fine grey, brown clays and clay rich soils	126506
	4	Brown - yellow brown fine sandy clay + semi cemented silcrete	07
	6	Orange - brown fine sandy clays	08
	8	Yellow - brown - dark brown v. tight clays	09
	10	Red - brown - maroon tight clays + fine sand	126510
	12	Cream fine rounded sands with minor clays, sub rounded qtz - SILCRETE.	11
	14	Red coarse sub-angular qtz grains with less fine ferricrete + qtz - SILCRETE.	12
	16	A A	13
	18	Fine yr. grey - cream clay rich silcrete with lesser ferricrete	14
	20	A A	15
	22	" " " " Red coarse angular gravels	16

RESULTS IN PPM

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RSH1 - 46
JOB COM 852126
O/N: 3948/FE23/KJH/RAB

160A

Sheet .....of .....

RAB / PERCUSSION DRILL LOG

PROJECT: Shipyard Hill ... CONTRACTOR: ..... COLLAR CO ORDS: .....
LOCALITY: Reserve 45 ... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....
HOLE No. RSH 4 (cont). LOGGED BY: K.J. Heggstad ... DECLINATION: ..... LABORATORY: .....
DATE ... 12-11-85 .....

(55)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
22	24	Red. fine gr grey brown-cream semi-consolidated silcrete, variable coarse qtz grains.	126517
24	26	A A rounded fine qtz grains - running sands.	18
	28	A A Unconsolidated running sands.	19
	30	A A	126520
	32	A A	21
32	37	A A	22
		Ran compressor for 5 minutes to clear hole but continued collapsing of fine running sands - abandoned	
RSH 5	45/1100E		
0	2	Tight red brown clays grading to fine yellow-brown sand	126523
	4	Prima - red brown tight ball clays.	24
	6	A A	25
	8	A A	26
	10	Cream - maroon fine gr running sands.	27
	12	A A	28
RSH 6	45/1780E	Hole collared 30m south of line.	
0	2	Pink brown - brown sandy soil and nodular calcrete.	126529
	4	Pink brown light clays with fine, angular qtz grains.	30
	6	Red coarse angular qtz grains in fine light clays.	31
	8	A A	32
	10	Tight red brown - cream clays	33
	12	A A grading to fine orange brown sands.	34
	14	Cream porcellanous clays and red brown fine sands - ferricrete	35
	16	Cream kaolinitic clays with minor maroon Fe staining.	36
	18	A A	37

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

JOB COM 852126
ON/3948/FK23/KJH/RAB

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
8	20	8	<1	1.39	36
10	16	12	<1	2.05	22
9	32	12	<1	2.25	32
5	6	7	<1	1.68	20
3	<4	5	<1	0.61	22

0161

Sheet .....of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEOAK HILL... CONTRACTOR: ..... COLLAR CO ORDS: .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....
HOLE No. RSH. 6. (final) LOGGED BY: K. J. HELLSTEN. DECLINATION: ..... LABORATORY: .....
DATE: 12-11-85.....

(95)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
18	20	A A, 25% angular grey qtz grains + fine gr. Fe stone	126538
	22	A A sample becoming damp	39
	24	Grey-maroon, pallid clays, variably kaolinitic + recrystic,	40
	26	A A	41
	28	Red-brown-grey fine gr. ball clays.	42
	30	Grey-green pallid clays.	43
	32	Yellow brown-brown fine sand + clays	44
	34	Massive olive green fine gr. clays, minor dk green amphibolite	45
	36	A A, rare feldspar ? rel. gr dolerite	46
	38	A A dominantly clays	47
	40	A A, Bit blocked with damp, tacky clays water in hole. Hole stopped pending results in adjacent holes.	48

C COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

JOB com 852126
O/N: 3948/FK23/KJH/RAB

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Fe	Mn	
70	60	110	<1	4.75	5950	
70	20	210	<1	7.35	750	
120	115	270	<1	8.20	540	
105	36	195	<1	6.85	1050	
60	46	170	<1	4.90	2300	
80	60	220	<1	5.85	2350	

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEOAK HILL ... CONTRACTOR: ... COLLAR CO ORDS: 45/1850E
LOCALITY: PROFILE 45 ... RIG TYPE: ... AZIMUTH: ... S.D.O. No: ...
HOLE No. RSH 7 ... LOGGED BY: K.J.H. ... DECLINATION: ... LABORATORY: ...
DATE: 12-11-85

(11) (95) + 33 128m

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
		Hole collared approx 30m SW of Line	
0	2	Light brown sandy soil + calcrete grading to light clays	126549
	4	Tight red brown - brown clays.	50
	6	A A	51
	8	Cream - grey fine qtz sand cemented with pallid grey ser. clays	52
	10	A A	53
	12	Poorly sorted, immature gravel, subangular qtz, Fe stone with Fe clays	54
	14	A A	55
	16	Cream kaolinitic powder, chips of cream, hard claystone, qtz + Fe stone - silcrete.	56
	18	A A	57
	20	A A	58
	22	A A	59
	24	Cream - dk brown saprolytic ball clays	126560
	26	A A.	61
	28	Cream - yellow brown damp, pallid clays.	62
	30	A A	63
	32	A A, Using H_2O from 31m	64
13-11-85	34	W. Pk, dk green - olive green, fine ground qtz debrit or clc.	65
	36	A A, mafic intrusive - diorite, 10% contamination	66
	38	A A, 15% up-hole contamination	67
	40	A A	68
	42	A A, sample 42-50% up-hole contamination	69

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

JOB COM 85212G
O/N 3948 | PK23 | KJH | RAB

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
95	14	110	<1	10.0	85
110	200	125	<1	7.60	5750
95	90	125	<1	7.45	2000
100	36	135	<1	7.35	410
75	26	125	<1	7.35	300
90	16	145	<1	8.60	130
65	120	120	<1	5.50	260

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEOAK HILL ... CONTRACTOR : ... COLLAR CO ORDS : 67/500E
LOCALITY : PROSSER, N.S. ... RIG TYPE: ... AZIMUTH : ... S.D.O. Nº:
HOLE Nº RSH 8 ... LOGGED BY: K. J. HELLSTEN ... DECLINATION : ... LABORATORY :
DATE: 13-11-85

(41)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Red brown sandy soil + nodular calcrete	126570
	4	Cream - grey, clay rich silcrete - minor ferricrete	71
	6	A A	72
	8	Hard, pw - mod. fresh Koper, plag, qtz, mica poor granite -	73
8	8.5	granite gneiss	74
RSH 9	67/600E		
0	2	Orange brown fine sand + calcrete nodules.	126575
	4	Brown - yellow brown fine sand + clay, minor calcrete	76
	6	A A	77
	8	A A	78
	10	Orange brown, w qtz, felds, biot-ch schist - vein qtz	77
	12	Pw, mod, coarse gneissed qtz, felds, biot. granitoid ? gneiss	80
	14	A A	81
	16	A A	82
	18	A A	83
	20	A A	84
	21	A A	85

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COMPUTERISED ANALYTICAL LABORATORY

NATA

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ANALYTICAL REPORT

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Fe	Mn	
10	14	16	<1	1.22	95	
5	6	14	<1	2.45	44	
5	16	9	<1	0.87	50	
24	4	9	<1	1.75	40	
9	14	14	3	0.95	65	
44	16	42	<1	4.40	85	
30	34	60	<1	3.50	140	
28	20	30	<1	2.55	100	
30	26	60	<1	2.45	95	
30	22	75	<1	3.00	145	
28	12	44	<1	2.60	110	
42	30	42	<1	2.90	90	

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Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEDNIK HILL CONTRACTOR: ..... COLLAR CO ORDS: 67/650E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....

HOLE No. RSH 10 LOGGED BY: K.T.H. ..... DECLINATION: ..... LABORATORY: .....

DATE: 13-11-85

(69)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Orange brown fine sand + calcrete	126586
	4	A A.	87
	6	Cream - maroon fine sand + semi-consol silcrete	88
	8	A A	89
	10	Cream - maroon fine powder, chips of w. silcrete ? granite	90
	12	A A	91
	14	A A	92
	16	A A.	93
	18	Cream yellow brown fine, Kaolinitic powder, angular qtz + w ? granite	94
	20	A A	95
	22	A A	96
	24	A A	97
	26	A A	98
	28	A A, Hard, fresh, med-coarse grained, mica poor granitoid	99

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
4	40	6	<1	1.05	30
4	95	22	<1	1.09	20
8	70	16	<1	1.14	44
2	40	6	<1	0.41	14
3	40	12	<1	0.76	38
3	36	10	<1	0.64	20

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEPPARTON HILLS ... CONTRACTOR: ..... COLLAR CO ORDS: 67/700E .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O. No: .....
HOLE No. RSH. 11 ... LOGGED BY: KTH ..... DECLINATION: ..... LABORATORY: .....
DATE: 17-11-85 .....

(99)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Orange brown fine sand with minor colorado	126500
	4	A A	01
	6	Cream - maroon - brown tight ball clays	02
	8	A A, ferricrete chips + fragments	03
	10	A A, becoming more powder-like, = less clay	04
	12	A A	05
	14	Maroon - cream fine powder + clays with minor ferricrete chips	06
	16	A A, angular qtz grains + silicified ?granite	07
	18	Light brown - yellow brown powder, trace qtz + w ?granite	08
	20	A A fine mica flakes	09
	22	W. rd grained qtz bldsp. biotite granitoid	10
	24	A A fine granite sand.	11
	26	A A	12
	28	A A	13
	30	A W non magnetic, (40×10^{-5})	14

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Fe	Mn	
14	75	9	<1	5.35	22	
18	110	9	<1	3.85	14	
8	105	8	<1	1.15	20	
7	100	9	1	1.08	18	
14	105	30	<1	2.80	65	
32	115	50	<1	4.25	100	
22	28	30	<1	3.25	65	
22	40	44	<1	3.40	70	
22	50	50	<1	3.50	85	

RAB / PERCUSSION DRILL LOG

Sheet ....of ....

PROJECT: Sheoak Hill ... CONTRACTOR: .... COLLAR CO ORDS: 67/750E
LOCALITY: Profile 67 ... RIG TYPE: .... AZIMUTH: .... S.D.O. Nº: ....
HOLE Nº: RSH 12 ... LOGGED BY: K.J.H. ... DECLINATION: .... LABORATORY: ....
DATE: 13-11-85

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ANALYTICAL REPORT

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Fe (ppm)	Mn (ppm)
0	2	Fine, orange brown sandy soil + sand	126615						
	4	A A	16						
	6	Maroon-yellow brown ferruginous, med. grained silcrete	17						
	8	A A	18						
	10	A A	19						
	12	Maroon-yellow brown fine powder + clay, ?w bedrock	20						
	14	A A	21						
	16	A A	22						
	18	A A	23						
	20	A A	24	28	440	16	<1	4.10	32
	22	Mustard fine powder, coarse trans! angular, qtz, biotite + kaolinitic felspar	25	55	50	80	<1	4.25	195
	24	A A w. granite	26	55	38	115	<1	4.55	260
	26	A A	27	44	38	105	<1	4.20	210
	27	A A (15)	28	38	30	120	<1	4.85	250

RESULTS IN PPM

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: Sheppard Hills ..... CONTRACTOR : ..... COLLAR CO ORDS : 67/800E .....
LOCALITY : Profile 67 .. RIG TYPE : ..... AZIMUTH : ..... S.D.O. Nº : .....
HOLE Nº . RSH . 13 ... LOGGED BY : K. J. H ..... DECLINATION : ..... LABORATORY : .....
DATE : 17-11-85 .....

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Fine orange brown sand	126629
	4	A A with hard silcrete band @ 3 m	30
	6	Cream-brown clays grading to cream kaolinitic powder + qtz	31
	8	A A	32
	10	A A	33
	12	A A grading to mustard powder	34
	14	Mustard fine, kaolinitic (? ferruginous) powder, some silcreted ? granite.	35
	16	A A	36
	18	Red-brown fine kaolinitic powder + qtz	37
	20	A A	38
	22	A A	39
	24	A A	40
	26	Mustard, fine kaolinitic powder + chips of w. fine gr granite	41
	28	w. fine gr. qtz, Kspar, plag, biot. minor coarse granite.	42
	30	A A	43
	32	A A	44
	34	A A	45
	36	A A (10)	46

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NATA

ANALYTICAL REPORT

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Fe	Mn	
18	36	70	<1	4.30	145	
14	36	75	<1	3.60	145	
18	46	90	<1	3.35	195	
12	55	85	<1	3.00	170	
10	44	105	<1	3.35	200	
10	40	85	<1	3.10	190	

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEDAR HILL ... CONTRACTOR: ..... COLLAR CO ORDS: 67/900E .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.Nº: .....
HOLE Nº RSH 14 ... LOGGED BY: K.J. HEATHER ... DECLINATION: ..... LABORATORY: .....
DATE: 13-11-85 .....

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Fine orange brown sand, minor siliceous bands	126647
	4	Tight brown and brown ball clays	48
	6	Pal. hard, cream-yellow brown siliceous grit, hammer 6-8m	49
	8	A A	50
	10	A A grading to cream kaolinitic powder	51
	12	Cream kaolinitic fine powder with minor angular qtz grains	52
	14	A A	53
	16	A A	54
	18	A A	55
	20	A A	56
	22	A A	57
	24	A A	58
	26	A A	59
	28	A A	60
	30	A A	61
	32	A A	62
	34	A A, minor lt. granite	63
	36	W, even, mil. grained lt. pink, qtz, felsic granitoid	64
	38	A A, minor muscovite	65
	40	A A	66
	42	A A, non magnetic, (40×10^{-5})	67

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
6	26	10	<1	0.39	36
6	22	10	<1	0.36	26
6	50	14	<1	0.34	30
18	10	16	<1	2.05	26
70	14	120	<1	5.70	140
42	44	100	<1	3.50	140
55	22	130	<1	4.95	175
46	20	140	<1	4.90	190

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RAB / PERCUSSION DRILL LOG

PROJECT: SHEPAK HILL ... CONTRACTOR: ..... COLLAR CO ORDS: 12/7200E .....
LOCALITY: PROFILE 13 ... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....
HOLE No RSH 15 ... LOGGED BY: K.J. HEGARTY ... DECLINATION: ..... LABORATORY: .....
DATE: 17-11-85 .....

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Cream calcrete + red brown soil	126668
	4	silcrete, cream - pink brown with red coarse angular qtz frags	69
	6	Fine yellow brown - cream qtz sand with clay coat - Silcrete.	70
	8	Coarse silcrete.	71
	10	Maroon ferruginous clays + sands with frags of massive lim + ferruginous schist	72
	12	W. red brown ferruginous qtz mica schist.	73
	13	Rel. fresh dk green brown qtz, biotite micro + amphib schist (10)	74
RSH 16	12/8000E		
0	2	Pink brown - cream sandy soil + calcrete	126675
	4	Orange brown - cream clays + silcrete	76
	6	A A grading to kaolinitic clays	77
	8	Cream kaolinitic + porcellanous clay, coarse angular qtz + qtzite frags	78
	10	A A.	79
	12	W red brown, ferruginous qtz mica schist + minor vein qtz + clay	80
	14	Pw - rel. fresh qtz, biotite, mica schist with 7 % milky vein qtz (12)	81

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NATA

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ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
6	6	8	<1	0.49	75
4	8	6	<1	0.52	48
4	8	5	<1	0.72	28
4	10	5	<1	0.52	18
10	10	18	<1	4.80	90
16	4	24	<1	5.60	130
22	6	36	<1	4.90	550
5	16	8	<1	1.04	38
3	14	5	<1	0.73	44
6	24	10	<1	0.65	24
16	12	18	<1	1.33	50
22	6	24	<1	2.25	60
32	10	24	<1	2.30	55

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHENOK HILL ... CONTRACTOR: ... COLLAR CO ORDS: 13/860E

LOCALITY: ... RIG TYPE: ... AZIMUTH: ... S.D.O. Nº: ...

HOLE Nº RSH 17 ... LOGGED BY: K.J. Heuppy ... DECLINATION: ... LABORATORY: ...

DATE: 14.11.88

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Fine pink brown sandy soil + calcrete	126682
	4	Red brown - cream rd. pellid clays with silcrete bands	83
	6	A A. grading to less damp sand - clays	84
	8	W red brown ferrug. mica schist and massive f.g. pale green, ser. spid sch	85
	10	A A	86
	12	Laminated chert and rd massive pale green spiddy, sericite rock, ?calc-silicate (15)	87
RSH 18	13/890E		
0	2	Light brown - orange brown fine sandy soil + calcrete	126688
	4	Tight red brown - cream clays	89
	6	Fine green gtz sands grading to red-brown clays with coarse gtz	90
	8	Cream-green clays, w. cream ser schist and red brown mica schist.	91
	10	W. ferrug. gtz mica schist with 5% coarse angular vein gtz frags.	92
	12	Pw - rd. fresh gtz mica schist, variably ferruginous. (40)	93
RSH 19	13/950E		
0	2	Orange brown - brown fine sandy soil + calcrete	126694
	4	Tight red brown gritty clays with silcrete bands	95
	6	Rd tight, pellid cream clays with silcrete bands - coarse gtz frags	96
	8	A A.	97
	10	W - Pw red brown mica schist - ?amphib	98
	12	Pw - fresh dk green grey, fine grained massive felspathic amphibolite (200)	99

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
14	6	12	<1	1.23	125
10	8	9	<1	4.05	36
8	10	12	<1	3.65	65
38	6	44	<1	8.90	36
38	4	40	<1	6.15	32
44	<4	44	<1	4.85	44
16	10	22	<1	2.30	165
10	10	16	<1	3.00	85
7	4	8	<1	1.25	28
9	6	14	<1	1.73	46
34	<4	28	<1	5.30	105
48	<4	28	<1	4.95	80
12	6	16	<1	1.92	140
14	6	9	<1	2.15	28
55	10	24	<1	7.65	42
40	6	20	<1	5.20	38
50	4	42	<1	4.55	120

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RAB / PERCUSSION DRILL LOG

Sheet ..... of .....

PROJECT: SHERAK HILL ... CONTRACTOR: ..... COLLAR COORDS: 13/1100E .....
LOCALITY: PROFILE 13 ... RIG TYPE: ..... AZIMUTH: ..... S.D.O. No: .....
HOLE No RSH 20 ... LOGGED BY: K.T.H. ..... DECLINATION: ..... LABORATORY: .....
DATE: 14-11-85 .....

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Light brown - pinkish brown fine sandy soil + calcrete	126700.
	4	Tight brown, gritty clays with hard siliceous bands.	01
	6	Yellow brown fine sand + pale green grey ser schist + w mica schist	02
	8	Pale red, fresh dk green grey siliceous mica schist	03
	9	Pale green-grey sericite + epidote, rd marrion schist - ? calc-silicate (25)	04
RSH 21	13/1700E		
0	2	Fine sandy soil + calcrete with hard bands, dk green mica sch + amphib	126705
		from 1 m (60)	
RSH 22	13/1450E		
0	2	Fine orange brown sandy soil, minor calcrete	126706
	4	Tight red brown clays	07
	6	A A grading to dk mica schist @ 5.5m	08
	8	Dark green grey chloritic, mica schist, rd qtz pave, minor ser qtz.	09
RSH 23	13/1500E		
0	2	Fine orange brown sand, minor calcrete.	126710
	4	Tight, damp red brown clays v. slow drilling in tacky clays	11
	6	A A, grading to dk green chl schist @ 5m	12
RSH 24	15706		
0	2	Orange brown - brown fine sand, minor calcrete	126713
	4	Tight, damp, tacky red brown clays, minor siliceous bands	14
	6	Grey brown tacky clays grading to cream micaxkaolinic qtz ser schist	15
	8	Dark grey green fine grained amphibolite bearing qtz/ep schist.	16

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
12	<4	12	<1	1.22	155
36	4	18	<1	4.40	110
90	<4	28	<1	4.85	115
105	16	24	<1	4.65	135
140	4	34	<1	4.55	95
60	<4	14	1	1.89	155
14	6	12	<1	1.10	220
18	14	32	<1	2.80	250
60	8	46	<1	3.80	200
70	6	32	<1	3.60	100
14	6	16	<1	1.52	210
26	14	22	<1	3.65	150
55	12	80	<1	5.45	115
14	10	24	<1	1.97	200
20	8	24	1	1.21	300
90	<4	30	<1	3.00	370

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RAB / PERCUSSION DRILL LOG

PROJECT: SHEBAR HILL ... CONTRACTOR: ..... COLLAR CO ORDS: 13/1650E .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O. Nº: .....
HOLE Nº RSH 25 ... LOGGED BY: K.J.H ..... DECLINATION: ..... LABORATORY: .....
DATE: 14-11-85 .....

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Fine sticky orange brown sands, river sands	126717
	4	A A becoming damper	18
	6	A A river w. mica schist	19
		Hole abandoned in wet sticky rivers sands	
RSH 26	13/1850E		
0	2	Orange brown fine river sands + gravels	126720
	4	A A getting damper	21
	6	A A hole collapsed while changing	22
		rods - abandoned + rods blocked with sands.	
RSH 27	13/1000E		
0	2	Pink brown fine sandy soil + calcrete	126723
	4	A A grading to tight red brown clays + silcrete	24
	6	Pal. light, cream - brown gritty clays with silcrete bands	25
	8	A A with Fe stain + ferruy ? mica sch frags	26
	10	A A	27
	12	W ferruy qtz mica schist (35)	28

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NATA

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
16	18	20	1	1.67	175
14	8	16	1	1.75	105
48	12	16	<1	7.50	28
40	14	22	<1	6.60	32
55	26	18	<1	5.30	24
65	6	50	<1	5.75	40

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RAB / PERCUSSION DRILL LOG

PROJECT: SHEOAK HILL ... CONTRACTOR : ..... COLLAR CO ORDS : 68/SOE .....
LOCALITY : ..... RIG TYPE : ..... AZIMUTH : ..... S.D.O.Nº : .....
HOLE Nº RSH 28 ... LOGGED BY: K.J. HOUSTON .. DECLINATION : ..... LABORATORY : .....
DATE: 14-11-88 .....

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OEPTH FROM	OEPTH TO	OESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Fine brown - orange brown sandy soil, grading to light clays.	126729
	4	Grey brown sdy light clays with minor pale green w chl schist.	30
	6	Pale green epidote rich - dk green sdy fresh, fine gr. chl. amph. schist (15)	31
RSH 29	68/80E		
0	2	Light brown - orange brown soil + calcrete, w clys at 2m	126732
	4	Pw - fresh dk green, sdy massive chl schist	37
~~RSH 30~~			
RSH 30	68/110E		
0	2	Brown fine sandy soil, pw chl sch 1-2m	126734
	4	Rl fresh dk green chl schist	35
RSH 31	68/170E		
0	2	Brown - light brown soil + calcrete, w chl sch.	126736
	4	Pw - fresh dk green epdte green chl, sericite qtz schist	37
RSH 32	68/250E		
0	2	Grey brown - dk brown clay soil + calcrete	126738
	4	W, mica sch + chl schist	39
	6	Pale green ser qtz sch - dk brown qtz mica schist	40

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NATA 0173

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
26	8	24	<1	2.70	560
70	6	32	<1	4.95	165
70	6	32	<1	4.40	120
28	6	20	<1	2.15	410
60	4	20	<1	3.25	320
26	8	18	<1	2.00	710
55	8	20	<1	3.05	320
26	10	20	<1	1.35	420
44	14	28	<1	2.35	105
26	10	50	<1	2.50	950
28	6	95	<1	4.05	250
55	4	110	<1	4.40	220

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RAB / PERCUSSION DRILL LOG

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: 68/700E .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....
HOLE No RSH 37 LOGGED BY: ..... DECLINATION: ..... LABORATORY: .....
DATE: 14-11-85

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DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Brown - dk brown clay rich soil	126741
	4	Maroon - yellow brown clays, massive yellow br Fe stn chips	42
	6	A A	47
	8	A A, chips of pale green spidote rich, ser, chl rich	44
	10	Pw - rel fresh pale green - yellow, ser, chl, tremolite rich	45
	12	A A	46
RSH 34	68/350E		
0	2	Red brown - dk brown clay + soil, minor calcrete	126747
	4	Red brown - yellow brown v. light, ferruginous clays	48
	6	A A	49
	8	Pw - rel fresh dk green grey chl, biotite schist + massive pale green spidote	50
	9	A A	51
RSH 35	68/400E		
0	8	Dk brown clay + massive Mn ironstone	126752
RSH 36	68/450E		
0	2	Pw - rel fresh biotite, qtz schist + massive vein qtz	126753
RSH 37	68/500E		
0	2	Pw - rel fresh qtz biotite schist	126759

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NATA

ANALYTICAL REPORT

RESULTS IN PPM					
Cu	Pb	Zn	Ag	Fe	Mn
30	8	34	<1	2.85	2500
20	6	34	<1	10.8	410
22	<4	95	<1	5.95	130
30	6	150	<1	4.75	160
55	22	185	<1	5.40	250
70	10	160	<1	3.90	230
40	10	36	<1	3.20	9200
145	6	110	<1	6.45	1550
160	<4	95	<1	7.35	460
165	<4	220	<1	6.60	220
120	<4	185	<1	6.70	230
90	8	80	<1	7.95	2.85%
22	4	32	<1	2.85	1750
	6	20	<1	2.80	520

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHOAL HILL ..... CONTRACTOR: ..... COLLAR CO ORDS: 68/600E .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O. Nº: .....
HOLE Nº RSH 38 ..... LOGGED BY: K.TH ..... DECLINATION: ..... LABORATORY: .....
DATE: 14-11-85 .....

(145) + (170)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
0	2	Dk brown fine sandy soil + calcrete	126755
	4	Pw - sl fresh, v.f ferrug qtz mica schist + felspar	56
	6	" " "	57
RSH 39	68/650E		
0	2	Red brown fine sandy soil + calcrete	126758
	4	Dk brown clay + sand + massive Mn rich Fe stone	59
	6	Fine yellow brown sand + clay with massive Fe st + pale green soapy ser rock	60
	8	Yellow brown w - dk green, sl massive, chl, amphib schist	61
RSH 40	68/700E		
0	2	Brown - dk brown fine sand + calcrete	126762
	4	" " with massive Mn ironstone	63
	6	Dk brown powder + sand, w ? mica schist	64
	8	Hard fine grained massive Mn ironstone, siliceous	65
RSH 41	68/725E		
0	2	Orange brown fine sandy soil	126766
	3	Pw - sl fresh qtz mica schist - psammopelite	67

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Fe	Mn	
16	6	22	<1	2.05	1650	
42	14	105	<1	6.10	780	
40	16	175	<1	7.80	670	
18	<4	20	<1	1.89	1450	
28	8	50	<1	6.85	430	
38	8	50	<1	7.90	410	
28	4	26	<1	2.45	2400	
125	22	170	<1	9.10	2150	
320	<4	300	<1	13.7	9.45%	
14	<4	18	<1	1.39	610	
20	<4	28	<1	1.76	870	

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RAB / PERCUSSION DRILL LOG

Sheet ..... of .....

PROJECT: SHEOAK H'WAY CONTRACTOR: COLLAR, CO ORDS 36/000E

LOCALITY: PROFILE 36 RIG TYPE: AZIMUTH S.D.O.No.

HOLE No RSH 42 LOGGED BY: K.T. HELLYAR DECLINATION LABORATORY

DATE: 15-11-85

(30)

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM Cu	Pb	Zn	Ag	Fe	Mn
0	2	Fine orange brown sand + clay	126768	18	4	18	<1	2.00	580
	4	Red brown - dk brown tight clays	69	30	6	26	<1	4.00	460
	6	W - pw dk brown - red brown qtz mica schist - vein qtz	70	90	<4	44	<1	6.65	140
	7	Dk green grey chl, amphibole schist, rel. resistive, ? mags (850)	71	95	<4	42	<1	6.60	170
RSH 43	36/75W								
0	2	Fine orange brown sandy soil + calcrete	126772	14	<4	14	<1	1.76	370
	4	Orange brown - dk brown tight clays	73	20	6	20	<1	3.00	230
	5	Hard, red brown, ferrug qtz rich mica schist and w c/s (200)	74	16	<4	18	<1	3.00	80
RSH 44	36/150W								
0	2	Fine orange brown sand with minor calcrete	126775	14	6	16	<1	1.75	270
	4	Tight orange brown - dk brown clays	76	16	<4	18	<1	2.05	270
	6	A A	77	22	<4	22	<1	2.80	135
	8	Clay rich, red brown sands with angular qtz + lithic frags, v. slow drilling	78	22	4	22	<1	3.25	120
	10	Pw - rel. fresh qtz musc, sericite rich with, 5% chl amphib rich, 10% qtz	79	48	<4	32	<1	4.20	125
	11	A A rare chl. rich. (250)	80	140	4	50	<1	5.85	120
RSH 45	36/250W								
0	2	Fine orange brown sandy soil.	126781						
	4	Orange brown - dk brown tight clays	82						
	6	A A	83						
	7	A A extremely hacky clays, trailed + quit	84						
		return with back-up compressor after continual reaming.							
		Hole abandoned							

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

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RAB / PERCUSSION DRILL LOG

Sheet ..... of .....

PROJECT: SHEPPARTON ... CONTRACTOR: ... COLLAR CO ORDS: 36/1000W

LOCALITY: PRAIRIE 36 ... RIG TYPE: ... AZIMUTH: ... S.D.O. Nº: ...

HOLE Nº RSH 46 ... LOGGED BY: K. J. HOLLESTEN ... DECLINATION: ... LABORATORY: ...

DATE: 15-11-85 ...

(55)

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM Cu	Pb	Zn	Ag	Fe	Mn
0	2	Orange brown fine sands	126785	14	10	22	<1	1.58	120
	4	Tight red brown - dk brown clays	86	12	8	20	<1	2.40	90
	6	" "	87	12	6	18	<1	3.05	70
	7	V. hard, massive cream - grey qtzite, minor dk grey chert	88	6	4	9	<1	1.24	28
RSH 47	36/1100W								
0	2	Light brown fine sandy soil, minor calcrete	126789	12	<4	14	<1	1.34	95
	4	Pw - rel. fresh green grey qtz mica schist	90	20	4	34	<1	2.60	100
RSH 48	36/1170W								
0	2	Sandy soil - dk green, fine gr. massive, felsp amphibolite	126791	7	<4	10	<1	0.81	105
RSH 49	36/1250W								
0	2	Fine sandy soil, pw-rel fresh mica schist + granite gravel	126792	12	<4	18	<1	1.79	140
RSH 50	36/1330W								
0	2	Fine sandy soil + pw qtz mica schist + pink aplitic granitoid	126793	12	4	18	<1	1.19	160
RSH 51	36/1400W								
0	2	Fine sandy soil - calcrete, pw qtz, bit. felsp granite	126794	6	8	12	<1	1.28	95
2	3	Mod granular bitte rich qtz felsp granite	95	5	12	14	<1	1.85	115
RSH 52	36/1500W								
0	2	Fine orange brown sand	126796	4	<4	7	<1	0.54	48
	4	Pw - rel fresh hard massive cream qtzite, var. banding	97	7	4	10	<1	0.99	95
	5	" "	98	8	12	8	<1	1.43	32

Sheet ..... of .....

RAB / PERCUSSION DRILL LOG

PROJECT: SHEOAK HILL CONTRACTOR: UNDERDALE COLLAR CO ORDS: L45 / 1800E
LOCALITY: ..... RIG TYPE: GRIFFIN AZIMUTH: ..... S.D.O.No: .....
HOLE No RSH 53 LOGGED BY: R. CB DECLINATION: ..... LABORATORY: .....
DATE: 27/11/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS drilled 30 m south of line - 13.00 AR. Ks 595 x 10⁻⁵		SAMPLE NUMBER	RESULTS IN PPM
0	2	brown clay, minor calcrete	K=40	35101	
	4	orange brown, clay, minor calcrete	K=40	102	
	6	sandy brown clay		103	
	8	sandy white sand		104	
	10	red brown clay		105	
	12	orange brown clay		106	
	14	red brown clay, quartz		107	
	16	white kaolinitic clay		108	
	18	" " "		109	
	20	red brown clay		110	
	22	" " "		111	
	24	" " "		112	
	26	brown soapy clay	K=90	113	
	28	greenish brown soapy clay		114	
	30	olive green soapy clay		115	
	32	" "		116	
	34	" "		117	
	36	light green, clay soapy		118	
	38	" "		119	
	40	" "		120	
	42	sandy green clay		121	
	44	" "		122	
	46	" "		123	
	48	" "		124	
48	50	Sandy green and light brown clay.		125	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

JOB COM 852204
O/N 07353/FK23/RB
FOR RSH53 - RSH63

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RAB / PERCUSSION DRILL LOG

Sheet 2 of 2

PROJECT: Sheoak Hill CONTRACTOR: ..... COLLAR COORDS: L45/1800E

LOCALITY: ..... RIG TYPE: GRIFFIN AZIMUTH: ..... S.D.O.No: .....

HOLE No CML&RSH53 LOGGED BY: R.C.B DECLINATION: ..... LABORATORY .....

DATE: 27/11/85

DEPTH (m) FROM	TO	DESCRIPTION OF RETURNS		SAMPLE NUMBER
50	52	sandy green clay		35126
	54	light brown clay, rare Q, bio, mafic		127
	56	grey " " " "		128
	58	grey " " " "		129
	60	green " " " "		130
	62	green "		131
	64	green "	K=40	132
64	66	grey green, amphibole	K=350	133
66	68	dark green, black massive amphibole; dolerite	K=200	134
68	70	dark grey, massive amphibole; dolerite	K=250	135
70	71	dark grey " " ; dolerite; E.O.H	K=120	35136
		E.O.H at 14.45 HR. only BLADE DRILLING		
RSH54	L45/1900E, drilled 30 m south of line.			
0	2	brown and white, with calcrete, soil		35137
	4	brown clay, white calcrete		138
	6	brown clay		139
	8	red brown, fine grained, clay		140
	10	red brown clay, in layers		141
	12	red brown clay		142
	14	" " "		143
	16	light red brown clay		144
	18	orange brown clay		145
	20	light brown and white clay		146
	22	" " "		147

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au	
36	20	115	<1	185	8.10	1750		
80	24	100	<1	155	5.60	2450		
60	12	85	<1	120	6.70	1000		
50	12	70	<1	115	6.50	1600		
55	14	55	<1	110	5.55	1100	<0.05	TS - metadolerite

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RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: Skeoak Hill CONTRACTOR: ..... COLLAR COORDS: L 45/1900E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....

HOLE No: cat. RSH 54. LOGGED BY: ..... DECLINATION: ..... LABORATORY: .....

DATE: .....

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
22	24	light brown and minor white clay	35148
	26	" " "	149
	28	brown clay	150
	30	" "	151
	32	grey brown clay	152
	34	brown clay	153
	36	" "	154
	38	white and brown clay	155
	40	light green and brown clay	156
	42	light green clay with amphibolite	157
	44	" " "	158
	46	" " " " and quartz	159
	48	" " " with quartz	160
Hole	50	light green brown clay with quartz, rare amphibolite	161
	52	light brown clay with quartz, contaminated amphibolite	162
	54	" " " quartz, feldspar " amphibolite	163
	56	brown clay " contam amphibolite	164
	58	water! - quartz-feldspar (vein?), white; amphibolite	165
	60	contaminated feldspathic quartzite (vein?), amphibolite	166
60	62	" " " E.O.H. [cuttings only]	167

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
105	38	360	<1	130	6.90	1550	
65	38	220	<1	90	6.05	1850	
46	16	90	<1	46	3.65	690	
34	16	90	<1	46	3.10	570	
50	14	130	<1	50	3.50	400	
50	18	165	<1	70	5.75	520	
70	20	230	<1	95	6.85	480	<0.05

RAB / PERCUSSION DRILL LOG

Sheet 1 of

PROJECT:
CONTRACTOR
COLLAR CO ORDS:
LOCALITY
RIG TYPE:
AZIMUTH
S.D.O. Nº:
HOLE Nº RS4 54 cont
LOGGED BY
DECLINATION:
LABORATORY
DATE: 27/11/[illegible]

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

DEPTH m FROM	TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM
50	52	light brown clay [illegible] contaminated	35162	
	54	light brown clay [illegible] quartz, rare dolerite "	163	
	56	[illegible] clay rare dolerite "	164	
	58	Water! - Quartz + rare dolerite, K=	165	
58	60	contaminated Quartz, rare dolerite K=	166	
60	62	" " Quartz, rare dolerite E.O.H. K=	167	
		EOH [illegible] 17.00 HR [illegible]		
RSH	55 -	145/2000E 28/11 8.00 HR.		
0	2	orange sand and calcrete	35168	
2	4	orange cream clay, sand	169	
4	6	orange clay, silt sand	170	
6	8	cream clay, sand	171	
	10	red brown clay, sand	172	
	12	orange	173	
	14	brown	174	
	16	red clay, sand, and minor silcrete	175	
	18	white silcrete and brown clay, sand	176	
	20	cream clay, sand (quartz)	177	
	22	creamy brown clay, quartz sand	178	
	24	creamy white clay, quartz	179	
	26	reddish white clay, quartz sand	180	
	28	[illegible] white clay, sand	181	
	30	reddish white clay, sand	182	
	32	light grey clay	183	

RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: L 45/2000E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No .....

HOLE No RSH 55 cont LOGGED BY: LCB ..... DECLINATION: ..... LABORATORY: .....

DATE: 28/11/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS RSH 55 cont'd	SAMPLE NUMBER
32	34	light grey clay	35184
	36	dark brown clay	185
	38	brown clay and white clay	186
	40	light brown and white clay	187
40 -	42	yellow brown clay	188
	44	sandy brown "	189
	46	sandy brown "	190
	48	yellow green "	191
	50	light green "	192
	52	creamy brown "	193
52 -	54	water ! brown clay, Quartz, subangular, 90% carbonate	194
	56	" " " "	195
	58	" " some laminated quartz	196
	60	" "	197
	62	" " "	198
	64	" " "	199
	66	" " "	200
	68	" " "	201
	70	" " "	202
	72	bit blocked pull, brown clay, Quartz, 90% carbonate	203
	74	" " "	204
	76	" " "	205
	78	" " "	206
	80	" " "	207
80 -	82	" quartzite "	35208

End 330m

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COMPUTERISED ANALYTICAL LABORATORY

NATA 0182

ANALYTICAL REPORT

RESULTS IN PPM Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
26	34	30	<1	14	1.69	150	
24	36	34	<1	18	1.91	150	
28	40	42	<1	20	2.55	195	
28	40	44	<1	20	2.75	210	
28	42	50	<1	22	3.10	195	<0.05

Sheet / of

RAB / PERCUSSION DRILL LOG

PROJECT: CONTRACTOR: COLLAR CO ORDS: 445/2100E

LOCALITY: RIG TYPE: AZIMUTH: S.D.O.No:

HOLE No. RS456 LOGGED BY: RCB DECLINATION: LABORATORY:

DATE: 28/11/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS (Drilled 30 m with 5 1/4 in bit)	SAMPLE NUMBER	RESULTS IN PPM
0	2	light brown sandy soil white colorado	35209	
	4	orange brown clay, silt	210	
	6	" " " "	211	
	8	light orange " "	212	
	10	orange brown " "	213	
	12	light brown " "	214	
	14	light brown " "	215	
	16	purplish brown and white clay, silt	216	
	18	" " "	217	
	20	" " "	218	
	22	grey and white clay	219	
	24	" " "	220	
	26	white silt and limestone	221	
	28	grey white silt/sand	222	
	30	" " " "	223	
	32	" " " "	224	
	34	white kaolinitic clay, with fine quartz + mica	225	
	36	" "	226	
	38	" " "	227	
	40	" " "	228	
	42	" " "	229	
	44	" " "	230	
	46	" " "	231	
	48	" " "	232	
	50	" " "	233	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: ..... CONTRACTOR ..... COLLAR CO ORDS: L45/2100
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D O.No: .....
HOLE No CRA/RSH/S.6 LOGGED BY: ..... DECLINATION: ..... LABORATORY: .....
DATE: .....

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	white kaolinite clay, fine Quartz, iron stain	35234
	54	" "	235
	56	" "	236
	58	" "	237
	60	" "	238
60	62	water! quartzite small large chips K=10	239
	64	"	240
	66	"	241
	68	"	242
68	70	" E.OH 16.30 HR No problems	243
		(44 bags/jars water load from BP Kimba - $70/1.m)	
RSH	57	L45/2200E start 17.30 hrs 28/11/85	
0	2	brown soil, clay	35244
2	4	light brown silt, siltcrete	245
	6	light brown silt, clay	246
	8	" "	247
	10	" "	248
	12	orange brown silt, minor Quartz	249
	14	" " " "	250
	16	" " " "	251
	18	red brown silt " "	252
	20	white cream clay, silt	253
	22	mainly clay, silt, minor fine grained quartz (light purple tint)	254
22	24	" " " "	255

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM								
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Na	
8	42	5	<1	6	0.49	46		
6	100	6	<1	8	0.62	70		
5	60	5	<1	8	0.61	60		
10	55	5	<1	10	0.64	55		
6	44	6	<1	8	0.62	48	<0.05	TS sill-Q-gneiss

Sheet ... of ...

RAB / PERCUSSION DRILL LOG

PROJECT: ... CONTRACTOR ... COLLAR CO ORDS: 4951/22006
LOCALITY: ... RIG TYPE: ... AZIMUTH: ... S.D.O.No: ...
HOLE No: CONRAH 57 LOGGED BY: ... DECLINATION: ... LABORATORY ...
DATE: ...

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
24	26	coarse silt, clay, minor fine gravel, quartz	35256
	28	" " " "	257
	30	" " " "	258
	32	creamy white silt, clay	259
	34	white " "	260
	36	white kaolinitic clay	261
	38	"	262
	40	" "	263
	42	greyish white "	264
	44	greyish white " end 10.30	265
	46	start 29/11 8.00 hr. cream white clay	266
	48	cream white clay	267
	50	" " "	268
	52	" " " fine quartz grains	269
	54	water ! white clay, fine quartz grains, trace mica	270
	56	" clay, sand " " EOH	271
		6.0 m BOTTOM HOLE COLLAPSED. @ 30 HR.	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
5	65	5	<1	8	0.31	65	
4	105	<2	<1	6	0.35	65	
7	145	2	<1	6	0.31	50	<0.05

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Sheet 1 of

RAB / PERCUSSION DRILL LOG

PROJECT: ..... CONTRACTOR ..... COLLAR CO ORDS: 4451/17002

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....

HOLE No RSH.58 LOGGED BY: RGB ..... DECLINATION: ..... LABORATORY: .....

DATE: 29/11/85

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM
0	2	white calcrete	35272	
	4	brown and white sand	273	
	6	red brown clay, gravel	274	
	8	" " "	275	
	10	" " "	276	
	12	" " "	277	
	14	reddish white silt, clay	278	
	16	" " "	279	
	18	light brown " "	280	
	20	brown " "	281	
	22	"	282	
	24	"	283	
	26	grey brown "	284	
	28	cream	285	
	30	cream	286	
	32	light brown	287	
	34	"	288	
	36	"	289	
	38	brown	290	
	40	greenish brown clay, silt,	291	
40	42	light green with calc silicate/dolomite chips	292	
	44	light green silt, clay (no dolomite chips, only few quartz	293	
	46	" weathered amphibolite?	294	
	48	" "	295	
48	50	" "	296	

RAB / PERCUSSION DRILL LOG

Sheet 1 of

PROJECT: CONTRACTOR: COLLAR CO ORDS: L 45/1700E
LOCALITY: RIG TYPE: AZIMUTH: S.O.O. Nº
HOLE Nº R5H.58 cont. LOGGED BY: DECLINATION: LABORATORY:
DATE: 2[illegible]/11/85

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
50	52	green silt, no chips, weathered amphibolite?	35297								
	54	green silt "	298								
	56	" " "	299								
	58	brownish green " "	300								
	60	" " " "	301								
	62	brownish green "	302								
62	64	Hard, greenish brown silt, with amphibolite chips, strongly contaminated, fine Quartz	303	85	22	135	<1	75	7.05	390	
64	66	END BLADE, START HAMMER. (1m change) amphibolite, contaminated (40%)	304	LNR	LNR	LNR	LNR	LNR	LNR	LNR	
66	68	hard, amphibolite, green (petrography sample) K=20	305	LNR	LNR	LNR	LNR	LNR	LNR	LNR	
68	70	amphibolite, green, contaminated (60%) K=20	306	LNR	LNR	LNR	LNR	LNR	LNR	LNR	
70	72 m	amphibolite, green, contaminated (60%). EOH	35307	LNR	LNR	LNR	LNR	LNR	LNR	LNR	LNR
		24/11/85 17.00 HR (8 m hammer)									

RESULTS IN PPM

RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: ..... CONTRACTOR: Underdale COLLAR CO ORDS: L45/1500E

LOCALITY: ..... RIG TYPE: GRIFFIN AZIMUTH: ..... S.D.O.No: .....

HOLE No RSH59 LOGGED BY: ..... DECLINATION: ..... LABORATORY .....

DATE: .....

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
		Shot 18.00 29/11/85	
0	2	white calcrete soil	35308
	4	purple brown clay	309
	6	orange brown silt, sand	310
	8	cream sand	311
	10	red brown clay, ferricrete	312
	12	purple brown clay, ferricrete	313
	14	cream clay	314
	16	orange brown clay, ferricrete	315
	18	cream white clay fine quartz	316
	20	cream brown clay " "	317
	22	light brown clay, silt " "	318
	24	" " " " "	319
	26	" " " " "	320
	28	greyish brown silt " "	321
	30	light brown " "	322
	32	greyish brown "	323
	34	" " " 29/11 18.50hr	324
	36	30/11 8.10hr light green	325
	38	light brown	326
	40	light brown	327
	42	light brown	328
	44	light green	329
	46	light green brown silt	330
	48	green silt	331
48	50	contaminated 90% Amphibolite/calcrete (quartz)	35332
		EOH 1/12 9:	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
20	6	100	<1	42	4.70	195	
16	8	48	<1	22	2.75	145	
LNR	LNR	LNR	LNR	LNR	LNR	LNR	LNR

RAB / PERCUSSION DRILL LOG

Sheet 1 of ....

PROJECT: ..... CONTRACTOR: ..... COLLAR CO-ORDS: 44/1720

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.O.O.No: .....

HOLE No: RSH 1A LOGGED BY: RCB DECLINATION: ..... LABORATORY: .....

DATE: 30/11/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
		1045 hr	
RSH1a	44/1720E		
0	2	cream white calcrete	35333
2	4	" " red clay	334
	6	red brown clay	335
	8	orange brown sand	336
	10	cream brown clay	337
	12	red brown, grey clay	338
	14	red brown sand	339
	16	red white silcrete, quartz fragms	340
	18	white silcrete	341
	20	purple brown dark grey clay	342
	22	purple brown dark grey clay	343
	24	red brown sand	344
	26	light brown sand, clay	345
	28	Blade struck steel bit 2A: granitoid 1700 restart	346
	30	granitoid	347
	32	"	348
	34	"	349
	36	granitoid	350
	38	granitoid	351
	40	granitoid K=10	352
	42	granite Coarse biotite Quartz Feldspar mica EOH	353
		1815 EOH	

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COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
LNR	LNR	LNR	LNR	LNR	LNR	LNR	
LNR	LNR	LNR	LNR	LNR	LNR	LNR	
LNR	LNR	LNR	LNR	LNR	LNR	LNR	
16	14	9	<1	24	2.70	140	
24	16	12	<1	44	4.85	210	
16	10	9	<1	26	2.45	170	
14	18	7	<1	18	2.20	240	
10	12	7	<1	4	1.40	105	<005

0190

RAB / PERCUSSION DRILL LOG

Sheet 1 of 2

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: 44/1760E

LOCALITY: ..... RIG TYPE: GRIFFIN AZIMUTH: ..... S.D.O.No: .....

HOLE No RSH12A LOGGED BY: RCB DECLINATION: ..... LABORATORY: .....

DATE: 30/11/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS (15.30 Hr)	SAMPLE NUMBER
0	2	white calcrete soil	35371
2	4	" " "	372
	6	brown clay, silt	373
	8	cream sand	374
	10	light brown sand	375
	12	light brown sand	376
	14	light brown sand	377
	16	orange brown	378
	18	white silcrete, quartz sand	379
	20	red white silcrete, ferricrete	380
	22	grey green clay (with red dust)	381
	24	light brown quartz sand, silt	382
	26	cream sand (black stuck also is clay -2Ha)	383
	28	coal grains - quartz feldspar sand	384
	30	" " " "	385
30	32	milky white sugary quartz (silcrete?), feldspar	386
	34	" " " (silcrete?) "	387
	36	red ferricrete (ironstone) quartz with calcrete	388
	38	red ferricrete, Q, feldspar	389
	40	" "	390
	42	white Quartz feldspar granular, fine grained	391
	44	angular " " " " "	392
	46	"	393
	48	"	394
	50	"	395

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NATA

ANALYTICAL REPORT

RESULTS IN PPM						
Cu	Pb	Zn	Ag	Ni	Fe	Mn
10	22	4	<1	16	6.00	20
6	18	4	<1	14	3.85	12
LNR	LNR	LNR	LNR	LNR	LNR	LNR
4	8	3	<1	4	0.95	10
5	12	4	<1	4	0.79	12
6	18	5	<1	<4	0.78	12

0191

RAB / PERCUSSION DRILL LOG

Sheet 2 of 2

PROJECT: ..... CONTRACTOR ..... COLLAR CO ORDS: L44/1760E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.O.O.N°: .....

HOLE N° RS42A (cont) LOGGED BY: RCB DECLINATION: ..... LABORATORY .....

DATE: 1/12/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	white Quartz-feldspar granofels (felsic Q?)	396
	54	" "	397
	56	" " K=10	398
56	58	" " E.O.H 11.30 HR 1/12/85	399
		remark angular quartz, feldspar grains, very minor quartz-feldspar rock recognisable as granite	

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NATA

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Bu
6	16	6	<1	4	1.02	20	
6	18	6	<1	4	0.99	18	
5	24	8	<1	4	0.93	26	
5	22	7	<1	4	0.81	24	<0.05

Sheet 1 of

RAB / PERCUSSION DRILL LOG

PROJECT: CONTRACTOR COLLAR CO ORDS 144 / 1850E
LOCALITY: RIG TYPE: AZIMUTH: S.D.O. No:
HOLE No RSH 60. LOGGED BY: RCB DECLINATION: LABORATORY:
DATE:

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM
		START 13.00 HRS		
0	2	calcrete, white	35354	
	4	white calcrete, grey clay	355	
	6	calcrete, quartz sand, silt, orange brown	356	
	8	orange sand/silt	357	
	10	orange brown sand/silt	358	
	12	greenish white and brown clay	359	
	14	brown clay, silt	360	
	16	redbrown sand, silt	361	
	18	white silcrete, minor angular milky white	362	
	20	" "	363	
	22	red and greenish grey clay	364	
	24	" " " "	365	
	26	brown clay	366	
	28	hard white, stained with iron, cream clay, sand	367	
	30	sub angular fine quartz, ferricrete	368	
	32	" "	369	
	34	fine quartz, minor silcrete/calcrete (various colours), ferricrete	370	
	36	angular silcrete/calcrete, fine quartz, ferricrete	35400	
	38	" " , rounded quartz	401	
	40	" " "	402	
	42	" " "	403	
	44	red iron stone / ferricrete (pisolith), fine quartz, irregular white clay	404	
	46	white clay, milky white quartz, glassy fine quartz	405	
	48	" " " " "	406	
	50	" " " " "	407	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: ..... CONTRACTOR ..... COLLAR CO ORDS 644/18505

LOCALITY: ..... RIG TYPE: ..... AZIMUTH ..... S.D.O.No: .....

HOLE No RSH 60 cont LOGGED BY: ..... DECLINATION ..... LABORATORY .....

DATE: .....

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	greenish white clay, fine grained milky white, glassy quartz	35408
52	54	milky white fine quartz, glassy quartz (from weathering profile is excl.)	409
	56	greenish white clay, milky white, glassy fine grained quartz, stiff	410
	58	" milky white, and glassy fine quartz. boggy, stiff	411
	60	few large Q. fragments chips Leucocratic quartz (no topography)	412
	62	fine white glassy quartz, (feldspar)	413
	64	fine quartz, feldspar, clay, with minerals are mica	414
	66	" " " "	415
	68	" " " "	416
68	70	" " " "	417
	72	fine quartz, feldspar, clay " [PETRO]	418
72	73	fine Quartz, feldspar, clay Leucogranite SWL 17.15 hr	419
		4/3/85 Difficult hole, very stiff clayey all the way	
		hole likely to be Leucogranite - strongly weathered	
		(alternative: weathering profile)	

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NATA

ANALYTICAL REPORT

RESULTS IN PPM								
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au	
9	10	10	<1	8	1.33	46		
8	10	8	<1	4	1.11	28		
10	14	16	<1	8	1.35	44		
14	14	18	<1	12	1.57	50		
12	16	20	<1	10	1.49	50		
12	14	20	<1	10	1.39	55		
12	12	16	<1	10	1.31	60		TS Leucogranite
14	18	20	<1	12	1.60	65	<0.05	

RAB / PERCUSSION DRILL LOG

Sheet 1 of .....

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: L44/2150.E

LOCALITY: SILCRETE RIG TYPE: ..... AZIMUTH: ..... S.D.O. No: .....

HOLE No RSH 61 LOGGED BY: RCB DECLINATION: ..... LABORATORY: .....

DATE: 14.2.12.85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	RESULTS IN PPM
0	2	white calcrete	35420	
	4	brown clay and calcrete	421	
	6	orange sand, quartz	422	
	8	brown mud and sand	423	
	10	light brown sand, silt	424	
	12	greenish white clay, sand	425	
	14	red brown and greenish white clay	426	
	16	red brown dark and greenish white clay	427	
	18	cream white silt, clay	428	
	20	red white silt, clay	429	
	22	purple brown dark, greenish white clay	430	
	24	brown dark, " " "	431	
	26	hard clay grain " " "	432	
	28	" " " "	433	
	30	many H2O. light brown and greenish white clay, rare Quartz, ferricrete	434	
	32	" " " " " "	435	
	34	cream mud " " " " "	436	
	36	cream mud " " " (fine granule clay?) "	437	
	38	cream mud " " " " "	438	
	40	cream mud, fine quartz, magnetic 1941 fine silcrete	439	
	42	" " " "	440	
	44	" " " "	441	
	46	" " " "	442	
HIT H2O SALTY Fluorescence	48	HIT WATER orange brown mud/sludge, fine angular quartz, silcrete	443	
	50	" " " " mainly fine quartz (or fine granule clay?) minor silcrete.	444	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RAB / PERCUSSION DRILL LOG

Sheet 2 of 2

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: L44/2150E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.O.O.No: .....

HOLE No RSH.61 LOGGED BY: RCB DECLINATION: ..... LABORATORY: .....

DATE: 2/12

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	cream sludge, light grey hacky clay, s.brekk(qtz), fine quartz (Lone granite chips)	35445
	54	" " " " , fine quartz	446
	56	" " " "	447
	58	" , fine angular quartz, light grey clay	448
	60	" " fine angular quartz, one argillized gran(?), clay	449
60	62	" " fine subangular quartz, light grey clay	450
	64	" " , light pegmatoid clay (rare milky quartz)	451
	66	mustard; Lodge, " " , clay	452
+	68	" " ; coarse angular quartz, milky quartz, clay	453
+	70	" " ; " " " , clay	454
+	72	mustard cream " ; angular quartz, coarse white feldspar, clay	455
+	74	" " , coarse angular quartz feldspar, clay, granite	456
+	76	mustard grey, fine quartz, white feldspar, no argillic quartz	457
		E.O.H 13.30 HR, LEUCO GRANITE K= 10	
		EASIER cutting than previous hole, due to more water	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au	
6	8	3	<1	8	1.76	16		
8	8	7	<1	12	1.84	20		
7	14	6	<1	8	1.59	18		
7	10	6	<1	10	1.42	22		TS Leuco granite
7	6	7	<1	6	0.64	16	<0.05	

Sheet 1 of

RAB / PERCUSSION DRILL LOG

PROJECT:
LOCALITY:
HOLE No R.S.H.62.

CONTRACTOR:
RIG TYPE:
LOGGED BY:
DATE: we 2/12/85

COLLAR CO ORDS: L44/2725 E
AZIMUTH:
DECLINATION

S.D.O. No:
LABORATORY:

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
		morning 1½ hr (pumping, bit cutting) start 16.30hr	
0	2	white calcrete	35458
	4	" " and orange brown sand	459
	6	light brown sand	460
	8	orange brown sand	461
	10	" " "	462
	12	red brown sand, ferruginous quartz	463
	14	" "	464
	16	white sandy silt, red brown ferricrete, silcrete	465
	18	" " " " " "	466
	20	" " " " " "	467
	22	purple brown dust, grey white clay	468
	24	light brown sludge, greenish white clay	469
	26	cream sludge, " " " , fine quartz	470
	28	"	471
	30	"	472
	32	"	473
	34	"	474
	36	"	475
	38	"	476
	40	"	477
	42	"	478
	44	light cream sludge, soft greenish white silcrete, fine quartz	479
	46	"	480
	48	"	481
48	50	"	35482

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COMPUTERISED ANALYTICAL LABORATORY

0196

ANALYTICAL REPORT

RESULTS IN PPM

RAB / PERCUSSION DRILL LOG

Sheet 2 of 2

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: L44/2725E

LOCALITY: ..... RIG TYPE: RCB AZIMUTH: ..... S.D.O. Nº: .....

HOLE Nº RSH 62 cont. LOGGED BY: ..... DECLINATION ..... LABORATORY .....

DATE: 1/12/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	cream clay, fine quartz, pearly white clay	35483
	54	" " " "	484
+	56	white mica, quartz pearly white clay, cream clay	485
+	58	" "	486
+	60	" " white feldspar mix quartz, white clay	487
60	62	" " " "	488
62	63	" " " " K=10	35 489
		E.O.H 63.0m 10.00 a.m. 2/12/85	
		No problem drilled with water	"
	30	3 1 2 20°	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM							
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au
2	4	<2	<1	4	0.65	14	
4	10	3	<1	8	1.27	18	
3	6	3	<1	6	0.64	14	
2	4	2	<1	6	0.89	16	
2	4	2	<1	<4	0.49	6	<0.05

RAB / PERCUSSION DRILL LOG

Sheet 1 of ...

PROJECT: Sheoak Hill CONTRACTOR: Underdale COLLAR CO ORDS: L 44/1650
LOCALITY: .... RIG TYPE: Gemini AZIMUTH: .... S.D.O. Nº: ....
HOLE Nº RSH. 63 LOGGED BY: RCB DECLINATION: .... LABORATORY: ....
DATE: Thu 3/12/85

COMLABS Pty. Ltd. COMPUTERISED ANALYTICAL LABORATORY

ANALYTICAL REPORT

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER	Cu	Pb	Zn	Ag	Ni	Fe	Mn
0	2	white calcrete, sand	35490							
	4	" " , sand, red clay	491							
	6	" " , red clay	492							
	8	orange quartz sand	493							
	10	brown sand and clay	494							
	12	red brown clay and sand	495							
	14	white quartz sand, silcrete	496							
	16	" " " " "	497							
	18	purple white sand, ferricrete, greenish white clay	498							
	20	purple " " , " "	499							
	22	" " " "	500							
	24	greenish white clay, purplish white dust, minor quartz, ferricrete	501							
	26	greenish white silcrete, quartz, minor greenish white clay, ferricrete	502							
	28	red and cream dust, free quartz, silcrete	503							
	30	red dust, free coarse quartz, silcrete	504							
	32	orange brown dust, free angular quartz, greenish white sugary silcrete	505							
	34	" " " " " " "	506							
	36	mustard " " " " "	507							
	38	mustard " " " " "	508							
	40	orange dust, free ferruginous quartz, subangular	509							
40	42	cream " " "	35510							
	44	" " "	511							
	46	" " "	512							
	48	" " "	513							
	50	used water, ferruginous quartz, cream dust	514	8	30	7	<1	8	1.67	28

RESULTS IN PPM

0199

RAB / PERCUSSION DRILL LOG

Sheet 2 of 2

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: 144/1050E

LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.O.O.No: .....

HOLE No KS11.63 cont. LOGGED BY: R.C.B. DECLINATION: ..... LABORATORY: .....

DATE: Tx 3/12/85

DEPTH FROM	DEPTH TO	DESCRIPTION OF RETURNS	SAMPLE NUMBER
50	52	pink Quartz-feldspar, very fine grained, coarse dust	35515
	54	" "	516
	56	" "	517
	58	" " K=10	518
58	60	" " pink granite, microgranitic, aaph	35519
		E.O.H. 11.40 hr 3/12/85	

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COMPUTERISED ANALYTICAL LABORATORY

NATA

ANALYTICAL REPORT

RESULTS IN PPM								
Cu	Pb	Zn	Ag	Ni	Fe	Mn	Au	
3	10	5	<1	4	0.61	20		
4	12	7	<1	4	0.77	24		
4	8	5	<1	<4	0.51	18		
4	6	4	<1	<4	0.52	18		
6	14	5	<1	6	0.71	170	<0.05	TS: Leucogranite

136°40'

136°45'

E.L. 1117

33°10'

10'

6 330

6 325

6 320

33°15'

650

655 40'

660

136° 45'

"Velmol"

"Yarlana"

Tc

Tc + qtzite

Phw

Tc + Phw minor Pg

Tc + Phw minor Pg

Tc

Tc

Tc

Tc

Tc

Tc

Tc + ?Pg

Tc

Phw

Tc + bd. qtz amphib. fels ? sedim. ? Plm

Amphibolite

33985

Tc

Tc

Plm amphib.

vein qtz

qtz + qtzite

Pg + qtz

Tc

Plm

mafic Plm + ? chert

Orthoamphibolite

Plm

33986

33987

Pg

Pg

Plm

Tc + qtz

Tc + Plm

Tc

Pg

Calcareous Meta Arkose

33988

Tc

Tc + c/s bearing chert

Pg

Pg

SHEOAK HILL 1:25000

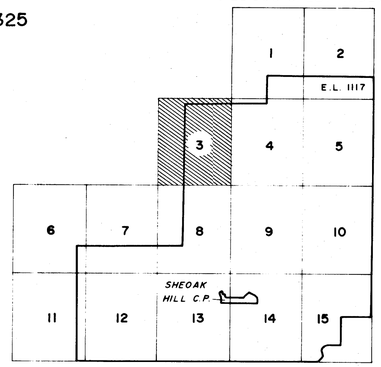
LEGEND

Tc	Calcrete
Pg	Granite
HUTCHISON GROUP: Phm	Undifferentiated Middleback Jaspilite
Phm$_{2A}$	Manganiferous chert
Phm$_{2B}$	Bedded chert
Phm$_{2C}$	Calc-silicate
Phs	Schist
Phw	Warrow Quartzite
Plm	Lincoln Complex Gneiss

Amphibolite — Petrographic Description

33986

1:25 000 SHEET INDEX



0 500m 1 2 KM

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Project	SHEOAK HILL
Title	(Sheet 3) Outcrop Geology
Author K.J.H. Dept.	Scale 1:25 000
Drawn B.J.O. Date OCT '85	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG No. 4	Drawing No. A/FK 23/027

5545-8

6330

33° 10'

33° 10'

REFUGE ROCKS RADIO
COMMUNICATION STATION

6325

Feldspathic Quartzite

33990

Phw

Bd. fol. qtzite Phw

33991

Phw

Phw

Tc, graph sch + bd. arkosic sediment in costean

Tc + bd qtzite ? Phw

Plm

Pg

Bd. qtzite

80°

graph. chert Phm_{2B}

Tc + qtzite Phw

33970

Grey Chert

Pg + Tc

Pg

Pg

Pg

Pg

Pg

Plm

mica sch. + Plm

qtzite Phw

33968

33969

6320000mN

Feldspathic Quartzite

rel. massive qtzite

Plm

Plm

Quartzo-Feldspathic Gneiss/Quartzite

33° 15'

136° 45'

664000mE

670

50'

675

SHEOAK HILL 1:25000
LEGEND

- Tc — Calcrete
- Pg — Granite

HUTCHISON GROUP

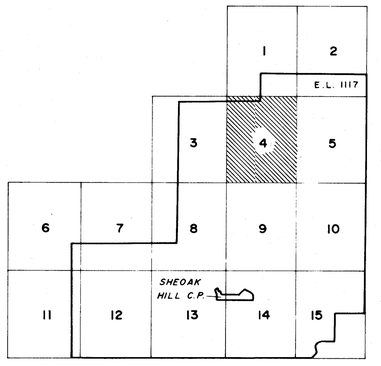
- Phm — Undifferentiated Middleback Jaspilite
- Phm_{2A} — Manganiferous chert
- Phm_{2B} — Bedded chert
- Phm_{2C} — Calc-silicate
- Phs — Schist
- Phw — Warrow Quartzite

Plm — Lincoln Complex Gneiss

Amphibolite — Petrographic Description

33986

1:25 000 SHEET INDEX



0 500m 1 2 KM

Billiton Australia

Project	SHEOAK HILL
Title	(Sheet 4) Outcrop Geology
Author K.J.H. Dept.	Scale 1:25 000
Drawn B.J.O. Date JAN '86	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG No 5	Drawing No. A/FK 23/028

5545-9

650
655 40'
660
136° 45'
33°15'
33°20'
6315
6310
20'

E.L. 1117

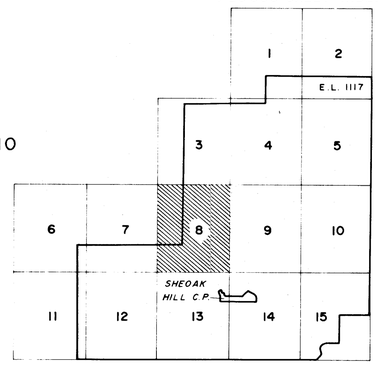
TN

Pg
Phw
Tc + qtzite
Bd qtzite
qtzite
33985
Feldspathic Quartzite
Tc + qtzite
silcreted, calcreted bd, ff arkosic qtz rich sediments
YALANDA HILL
"Yalanda"
Park
33984
qtzite Phw
Tc + Phw
"Pine Crest"
"Marlu"
Proof
Fence
Carpie Puntha Dam
"Winter Springs"
136° 40'

SHEOAK HILL 1:25000
LEGEND

- Tc — Calcrete
- Pg — Granite
- HUTCHISON GROUP
  - Phm — Undifferentiated Middleback Jospilite
  - Phm_{2A} — Manganiferous chert
  - Phm_{2B} — Bedded chert
  - Phm_{2C} — Calc-silicate
- Phs — Schist
- Phw — Warrow Quartzite
- Plm — Lincoln Complex Gneiss
- *Amphibolite* — Petrographic Description
  - 33986

1:25 000 SHEET INDEX



0 500m 1 2 KM

Billiton Australia

Project: SHEOAK HILL	
Title: (Sheet 8) Outcrop Geology	
Author K.J.H. Dept.	Scale 1:25 000
Drawn B.J.O. Date OCT. '85	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG No. 6	Drawing No. A/FK 23/029

5545-10

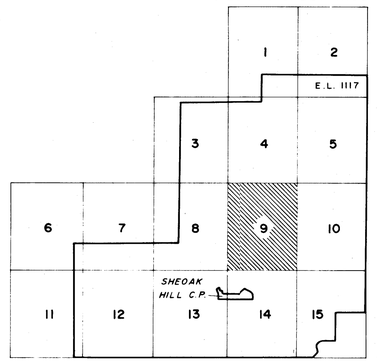
136° 45'
33° 15'
665
670
50'
675
33° 15'
6315
33° 20'
6310
136° 45'
136° 50'

rel. massive qtzite
Feldspathic Quartzite/Gneiss
33967
Phw
Plm
Tc
Tc Plm
vein qtz + Plm
Tc + Phw
Bd. qtzite
Pg Plm
Potassic calc silicate and Amphibolite
33972
Ser qtzite
33973
Coarse Quartzite
Bd. qtzite
33982
Glassy Quartzite
Pg
qtzite + Plm
33980
qtzite Phw
Feldspathic Quartzite
33981
qtz + Plm
Quartzite
Bd
Pg (700)
graph chert + silic. c/s
Graphitic Chert/Carbonate
33979
33975
silic carb + c/s ? Phm2c
Potassic Calc-silicate
silic ? c/s
? c/s
33976
diorite (7000)
Gneissic Granitoid
Massive Quartzite
33978
60°
Massive Quartzite
33992
Actinolitic Meta-dolomite
c.g. trem.
actin. rock ? c/s ? Phm2c
Bd. qtzite ? Phm
Warrow Quartzite
33977
Feldspathic Quartzite
33993
Bd. grey-greenish qtzite + Tc
Quartzite monzonite
33994
diorite (2500)
"Erainia"
diorite
Sericitic Quartzite
33996
Bd. chert Phm2B
Bd. grey qtzite
33995
Graphitic Chert
Power Line

SHEOAK HILL 1:25000
LEGEND

- Tc — Calcrete
- Pg — Granite
- HUTCHISON GROUP
  - Phm — Undifferentiated Middleback Jaspilite
  - Phm2A — Manganiferous chert
  - Phm2B — Bedded chert
  - Phm2C — Calc-silicate
- Phs — Schist
- Phw — Warrow Quartzite
- Plm — Lincoln Complex Gneiss
- Amphibolite — Petrographic Description
  - 33986

1:25 000 SHEET INDEX



0 500m 1 2 KM

Billiton Australia

Project	SHEOAK HILL
Title	(Sheet 9) Outcrop Geology
Author K.J.H. Dept.	Scale 1:25 000
Drawn B.J.O. Date JAN '86	Revised Date
Checked Date	S'ceded Date
FIG. No 7	Drawing No. A/FK 23/030

5545-11

136°30'

136°35'

6305

25'

33°25'

6300

"Heggaton"

Coompana Reservoir

Bd. graph chert + arkositic sediments – Pyjama rock

Phs

Phs

Phs + Pg

Phs

Phm

65°

6295 000mN

33°30'

136°30'

640 000mE

645

35'

650

33°30'

SHEOAK HILL 1:25000 LEGEND

- Tc — Calcrete
- Pg — Granite

HUTCHISON GROUP

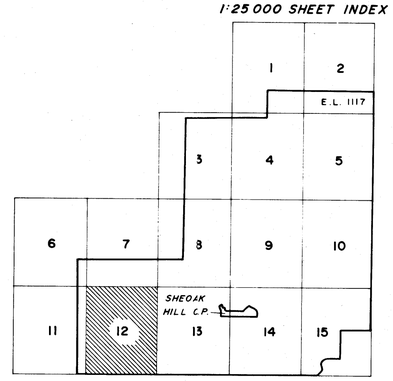
- Phm — Undifferentiated Middleback Jaspilite
- Phm_{2A} — Manganiferous chert
- Phm_{2B} — Bedded chert
- Phm_{2C} — Calc-silicate
- Phs — Schist
- Phw — Warrow Quartzite

Plm — Lincoln Complex Gneiss

Amphibolite — Petrographic Description

33986

1:25 000 SHEET INDEX



0 500m 1 2 KM

Billiton Australia

By Metals Division of The Shell Company of Australia Limited

Project: SHEOAK HILL	
Title: (Sheet 12) Outcrop Geology	
Author K.J.H. Dept.	Scale 1:25 000
Drawn B.J.O. Date OCT '85	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG No. 8	Drawing No. A/FK 23/031

5545-12

136°45'
136°50'
33°25'
33°30'
6 305
25'
6 300
6 295 000mN
665 000mE
670 50'
675
136° 45'
33° 30'

SHEOAK HILL
CONSERVATION PARK

Power Line

Creek
Salt
Milfalie Ck.

Muscovite Quartzite
Metachert / BIF
Calc-silicate
Meta Basalt/dolerite
Silicified Calc-silicate
Potassic calc-silicate
Garnet potassic calc-silicate
Plug Range Sample
Biotite Schist
Diopsidic Meta-dolomite
Amphibolite

33997
33998
33999
34000
34101
34102
34103
34104
34105
34106
34107
34108
34109

Phw
Phs
Phm2A + Phm2B
Phm2B
Phm2A
Phm2C
Mn Phm2A
Mn + Bd. chert Phm2
Bd. chert Phm2B
Mn + Dol. Phm2A
Bd. qtzite ? BIF Phm2
Sch + amphib. Phs
Dol + opalite Phk
c/s
c/s + carb Phm2C
vein qtz
Tc
Plm
Plm Gt + diorite

SHEOAK HILL 1:25000 LEGEND

HUTCHISON GROUP
- Phm — Undifferentiated Middleback Jaspilite
- Phm_{2A} — Manganiferous chert
- Phm_{2B} — Bedded chert
- Phm_{2C} — Calc-silicate
- Phs — Schist
- Phw — Warrow Quartzite

Plm — Lincoln Complex Gneiss

Tc — Calcrete

Pg — Granite

Amphibolite — Petrographic Description
33986

1:25 000 SHEET INDEX

		1	2	
			E.L. 1117	
		3	4	5
6	7	8	9	10
		SHEOAK HILL C.P.		
11	12	13	14	15

0 500m 1 2 KM

Billiton Australia

Project	SHEOAK HILL		
Title	(Sheet 14) Outcrop Geology		
Author K.J.H.	Dept.	Scale 1:25 000	
Drawn B.J.O.	Date JAN '86	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG No 9		Drawing No. A/FK 23/032	

5545-13

136°40'

136°45'

PROFILE 44N

E.L. 1117

PROFILE 67N

PROFILE 45N

PROFILE 46N

PROFILE 29A

6 330

6 325

6 320

33°10'

33°15'

650

655 40'

660

136°45'

"Velmol"

"Yarlana"

Magnetic profile with end co-ordinates & RAB hole locations.

Channel rock chip sample no's and line no's

2.00% /430/ – Fe / Mn / Pb : >1% / >200 / >40 ppm

1:25 000 SHEET INDEX

		1	2	
		E L 1117		
		3	4	5
6	7	8	9	10
		SHEOAK HILL CP		
11	12	13	14	15

0 500 m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 3) Location Plan & GEOCHEMICAL ANOMALIES

Author R.C.B.	Dept	Scale 1:25 000	
Drawn K.M.B.	Date MAR.86	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG. No 11		Drawing No. A/FK 23/033	

5545-14

6 330

33° 10'

33° 10'

REFUGE ROCKS RADIO
COMMUNICATION STATION

6 325

37

130 127

36

122 120

123 126

38

PROFILE 65 N

00

2500E

10

119 117

9

113 111 115

8

112

6

19

7

418 459

7 19

3

00 PROFILE 66N

6 320 000 mN

33° 15'

136° 45'

664 000 mE

670

50'

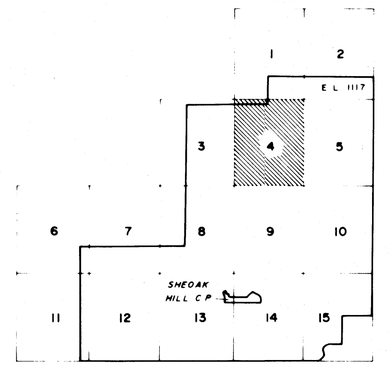
675

00 RSH 1 2 50E — Magnetic profile with end co-ordinates & RAB hole locations.

122 128 (36) — Channel rock chip sample no's and line no's.

205%/—/46 — Fe / Mn / Pb ± >1%/>200/> 40ppm

1:25 000 SHEET INDEX



0 500m 1 2 KM

Billiton Australia

Project: SHEOAK HILL	
Title: (Sheet 4) Location Plan & GEOCHEMICAL ANOMALIES	
Author R.C.B. Dept	Scale 1 : 25 000
Drawn K.M.B. Date MAR 86	Revised Date
Checked Date	S'ceded Date
Sheet No FIG No 12	Drawing No A/FK 23/034

5545-15

650
655 40'
660
136° 45'
33° 15'
33° 20'
136° 40'
20'
6315
6310

E.L. 1117

PROFILE 29N

PROFILE 21N

PROFILE 22N

YALANDA HILL

"Yalanda Park"

"Pine Crest"

"Marlu"

"Winter Springs"

Proof Fence

Carpie Puntha Dam

TN

Magnetic profile with end co-ordinates & RAB hole locations.

Channel rock chip sample no's and line no's.

1·42% /–/– = Fe /Mn / Pb = >1% /> 200 / > 40 ppm

1:25 000 SHEET INDEX

		1	2	
		E L 1117		
		3	4	5
6	7	8	9	10
		SHEOAK HILL C P		
11	12	13	14	15

0 500m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 8)

Location Plan & GEOCHEMICAL ANOMALIES

Author R.C.B.	Dept	Scale 1 25 000	
Drawn K.M.B.	Date MAR.86	Revised	Date
Checked	Date	Sceded	Date
Sheet No FIG No 13		Drawing No A/FK 23/035	

5545-16

136° 45'
33° 15'
665
670
50'
675
33° 15'
6315
33° 20'
6310
136° 45'
136° 50'

PROFILE 66N
1000 E
PROFILE 38N
2000E
PROFILE 38aN
2000E
PROFILE 20N
"Erainia"
PROFILE 37N
3000E
PROFILE 54N
3000E
Power Line

Magnetic profile with end co-ordinates & RAB hole locations.

Channel rock chip sample no's and line no's.

1·25%/—/— = Fe / Mn / Pb ≥ >1% / >200 / >40 ppm

1:25 000 SHEET INDEX

		1	2	
		3	4	5
6	7	8	9	10
11	12	13	14	15

E L 1117
SHEOAK HILL C P

500 m 0 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 9)
Location Plan
& GEOCHEMICAL ANOMALIES

Author R.C.B.	Dept	Scale 1 : 25 000	
Drawn K.M.B.	Date MAR.86	Revised	Date
Checked	Date	S'ceded	Date
FIG No 14		Drawing No A/FK 23/036	

5545-17

136°30'

136°35'

6305

25'

33°25'

6300

"Heggaton"

PROFILE 26N

PROFILE 24N

PROFILE 25N

PROFILE 23N

Coompana Reservoir

6295 000mN

33°30'

136°30'

640 000mE

645

35'

650

33°30'

Magnetic profile with end co-ordinates & RAB hole locations.

Channel rock chip sample no's and site no's

2·65%/290'— = Fe / Mn/Pb = >1%/>200 />40 ppm

1:25 000 SHEOAK SHEET INDEX

1 2 E L 1117 3 4 5 6 7 8 9 10 11 12 13 14 15 SHEOAK HILL C P

0 500m 1 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 12) Location Plan GEOCHEMICAL ANOMALIES

Author R.C.B.	Dept.	Scale 1:25 000	
Drawn K.M.B.	Date MAR 86	Revised	Date
Checked	Date	Sceded	Date
Sheet No. FIG No 15		Drawing No. A/FK 23/037	

5545-18

136°45'

136°50'

6 305

25'

6 300

33°25'

6 295 000mN

33°30'

136°45'

665 000mE

670 50'

675

33°30'

SHEOAK HILL
CONSERVATION PARK

Power Line

PROFILE 40N 3000E

PROFILE 68N 3000E

PROFILE 17N 3000E

PROFILE 16N 4000E

PROFILE 15N 3000E

PROFILE 14N 3000E

PROFILE 13N 2500E

PROFILE 36 3000E

PROFILE 36a

PROFILE 14E

Salt Creek

Millalilla Ck

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

Magnetic profile with end co-ordinates & RAB hole locations.

Channel rock chip sample no's and line no's.

1:25 000 SHEET INDEX

		1	2	
			EL 1117	
		3	4	5
6	7	8	9	10
11	12	13	14	15

SHEOAK HILL CP

0 300 m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14) Location Plan

Author R.C.B.	Dept	Scale 1 25 000	
Drawn B.J.O.	Date FEB'86	Revised	Date
Checked	Date	S'ceded	Date
Sheet No FIG No 16		Drawing No A/FK 23/019	

5545-19

136°45'

136°50'

6 305

25'

6 300

33°25'

SHEOAK HILL
CONSERVATION PARK

Power Line

Creek

Salt Creek

Millalie Ck

6 295 000mN

33°30'

136°45'

665 000mE

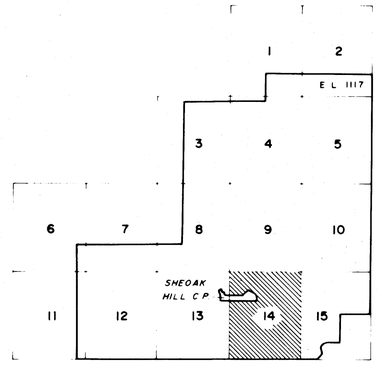
670 50'

675

33°30'

	Cu (ppm)
	>500
	200-500
	100 – 200
	50 – 100
	20 – 50
	< 20

1:25 000 SHEET INDEX



0 500 m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14)
CHANNEL ROCK CHIP
Cu GEOCHEMISTRY

Author K.J.H.	Dept	Scale 1 25 000	
Drawn K.M.B.	Date MAR'86	Revised	Date
Checked	Date	S ceded	Date
Sheet No. FIG No. 17		Drawing No. A/FK 23/038	

5545-20

136°45'

136°50'

6305

25'

6300

33°25'

6295 000mN

33°30'

136°45'

665 000mE

670 50'

675

33°30'

SHEOAK HILL
CONSERVATION PARK

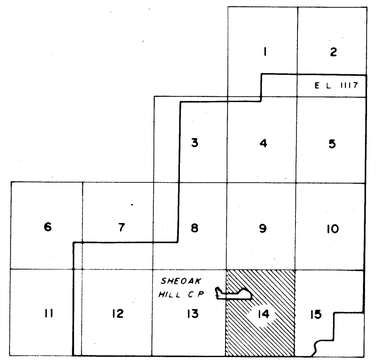
Power Line

Salt Creek

Millalie Ck

	Pb (ppm)
	>1000
	500-1000
	200- 500
	100 - 200
	40 - 100
	<40

1:25 000 SHEET INDEX



0 500 m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14)
CHANNEL ROCK CHIP
Pb GEOCHEMISTRY

Author K.J.H.	Dept	Scale 1 25 000	
Drawn K.M.B.	Date MAR 86	Revised	Date
Checked	Date	S'ceded	Date
Sheet No. FIG No 18		Drawing No.	A/FK 23/039

5545-21

136°45'

136°50'

6 305

25'

6 300

6 295 000mN

33°30'

33°25'

SHEOAK HILL
CONSERVATION PARK

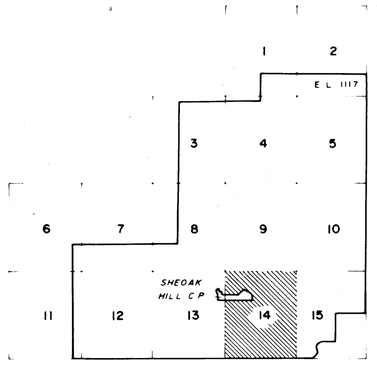
Power Line

Salt Creek

Millalie Ck

Zn (ppm)
>1000
500 – 1000
200 – 500
00 – 200
40 – 100
<40

1:25 000 SHEET INDEX



665 000mE

136°45'

670 50'

675

33°30'

0 500m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14)
CHANNEL ROCK CHIP
Zn GEOCHEMISTRY

Author K.J.H. Dept	Scale 1:25 000
Drawn K.M.B. Date MAR'86	Revised Date
Checked Date	Sicoded Date
Sheet No. FIG No 19	Drawing No. A/FK 23/040

5545-22

136°45'

136°50'

6305

25'

6300

SHEOAK HILL
CONSERVATION PARK

Power Line

Salt Creek

Millalla Ck

33°25'

33°30'

6295000mN

33°30'
136°45'

665000mE

670 50'

675

	Mn (ppm)
	>10%
	5% – 10%
	1% – 5%
	1000 – 1%
	200 – 1000
	<200

1:25000 SHEET INDEX

		1	2	
			E L 1117	
		3	4	5
6	7	8	9	10
11	12	13	14	15

SHEOAK HILL C P

0 500m 1 2 KM

Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14)
CHANNEL ROCK CHIP
Mn GEOCHEMISTRY

Author K J H Dept	Scale 1 25 000
Drawn K.M.B. Date MAR 86	Revised Date
Checked Date	S'ceded Date
Sheet No FIG No 20	Drawing No. A/FK 23/041

5545-23

136°45'

136°50'

6 305

25'

6 300

33°25'

SHEOAK HILL
CONSERVATION PARK

Power Line

Salt Creek

Millalie Ck

6 295 000mN

33° 30'

136° 45'

665 000mE

670 50'

675

33° 30'

	Fe %
	>20%
	10%–20%
	5%–10%
	2%–5%
	1%–2%
	<1%

1:25 000 SHEET INDEX

		1	2	
			EL 1117	
		3	4	5
6	7	8	9	10
		SHEOAK HILL C.P.		
11	12	13	14	15

0 500m 1 2 KM

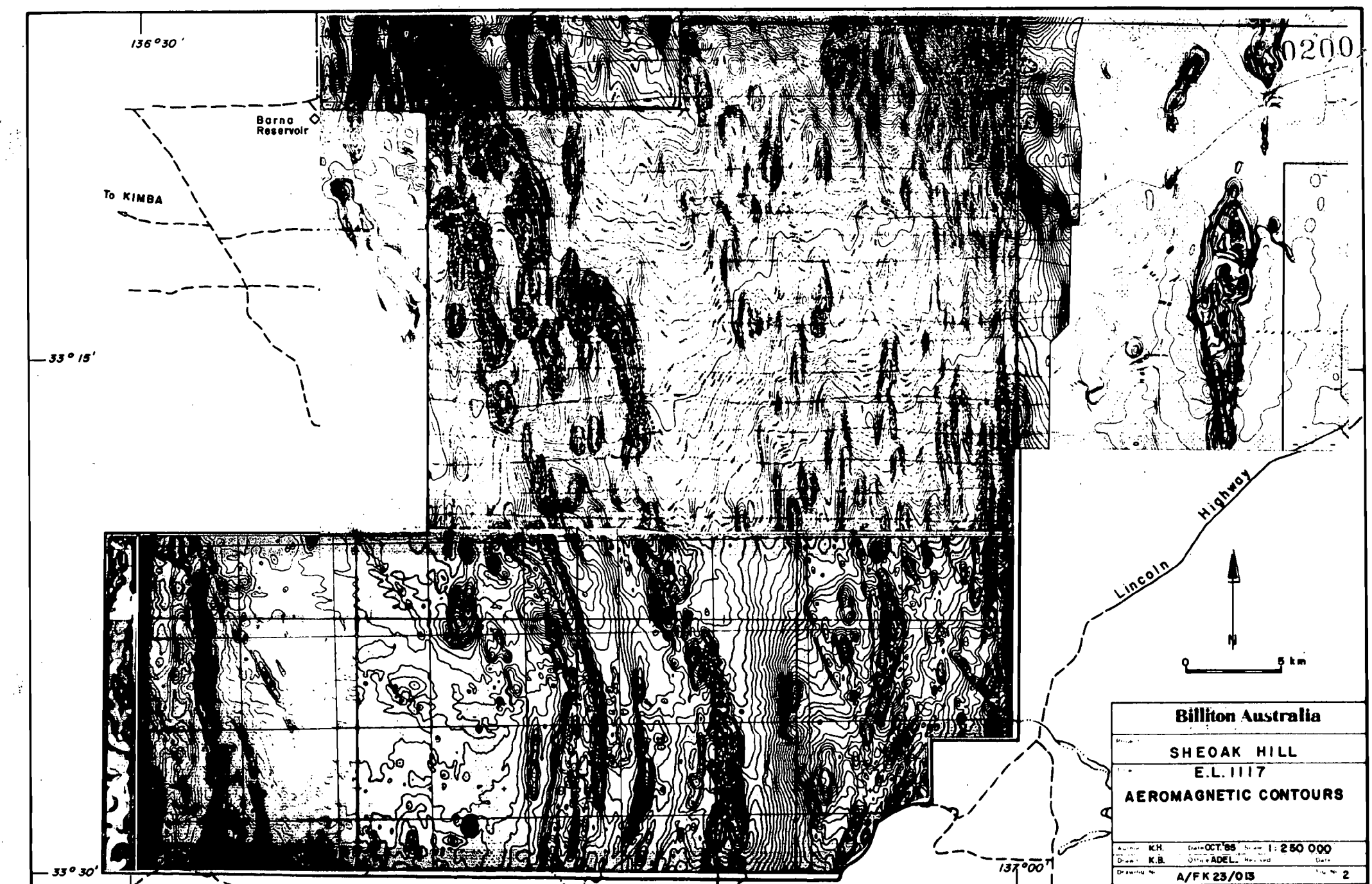
Billiton Australia

Project: SHEOAK HILL

Title: (Sheet 14)
CHANNEL ROCK CHIP
Fe GEOCHEMISTRY

Author K.J.H. Dept	Scale 1 25 000
Drawn K.M.B. Date MAR'86	Revised Date
Checked Date	S'ceded Date
Sheet No. FIG No. 21	Drawing No. A/FK 23/042

5545-24


136°30'
Barna Reservoir
To KIMBA
33°15'
33°30'
137°00'
Lincoln Highway
N
0
5 km
Billiton Australia
SHEOAK HILL
E.L. 1117
AEROMAGNETIC CONTOURS
K.H.
OCT. '88
1: 250 000
K.B.
ADEL.
A/FK 23/013
2

1,000 ppm = 10%

≥ 10%

(Overlay to DRG.No A/FK 23/043)

Billiton Australia

Project: SHEOAK HILL

Title: MILTALIE NORTH

Mn (ppm)

Author	Date	Scale	
Drawn	Office	Revised	Date
Drawing No.			Fig. No.

100-1000 ppm Zn

1000 ppm Zn

Billiton Australia

The Minerals Business of The Broken Hill Proprietary Company Limited

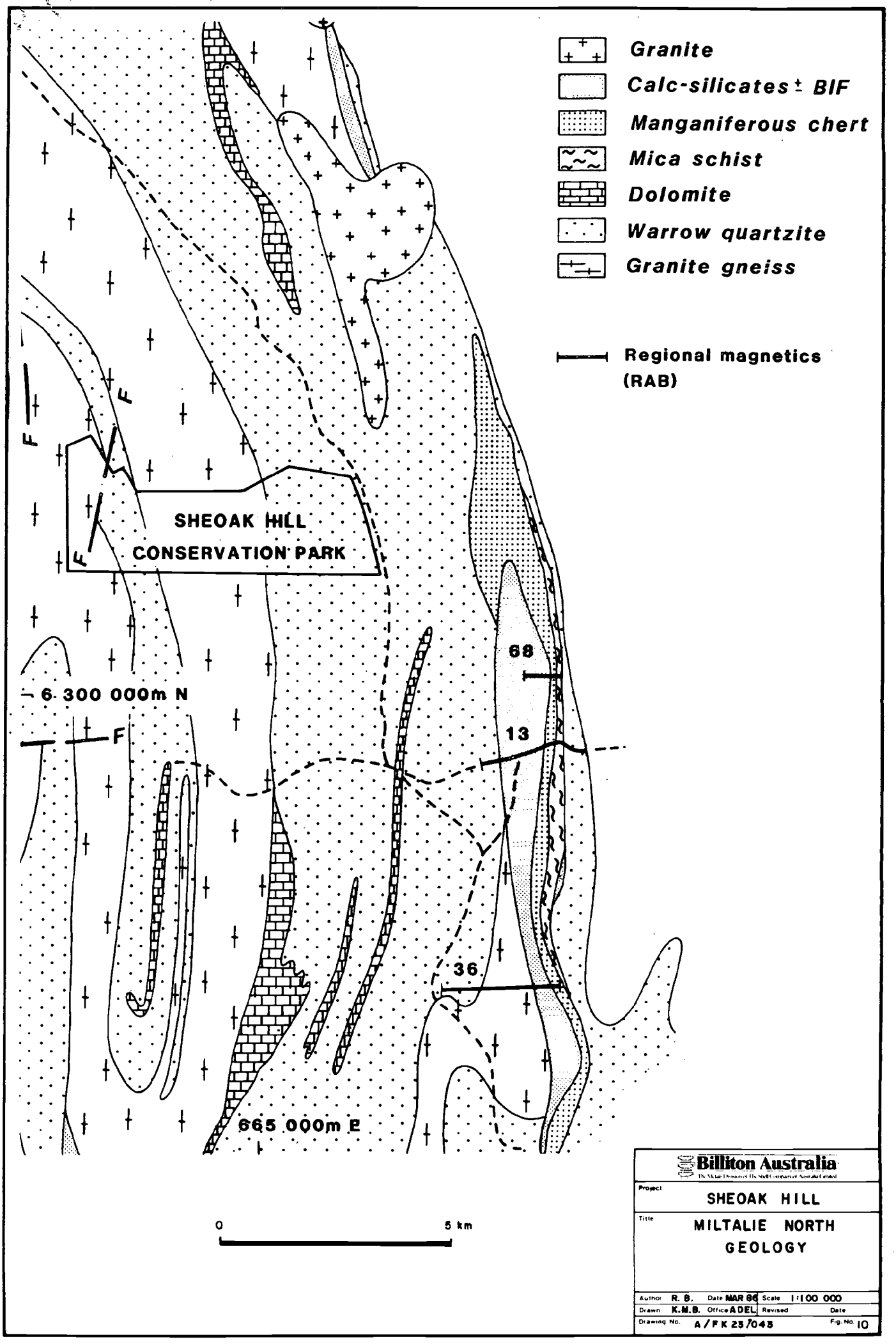
Project: SHEOAK HILL

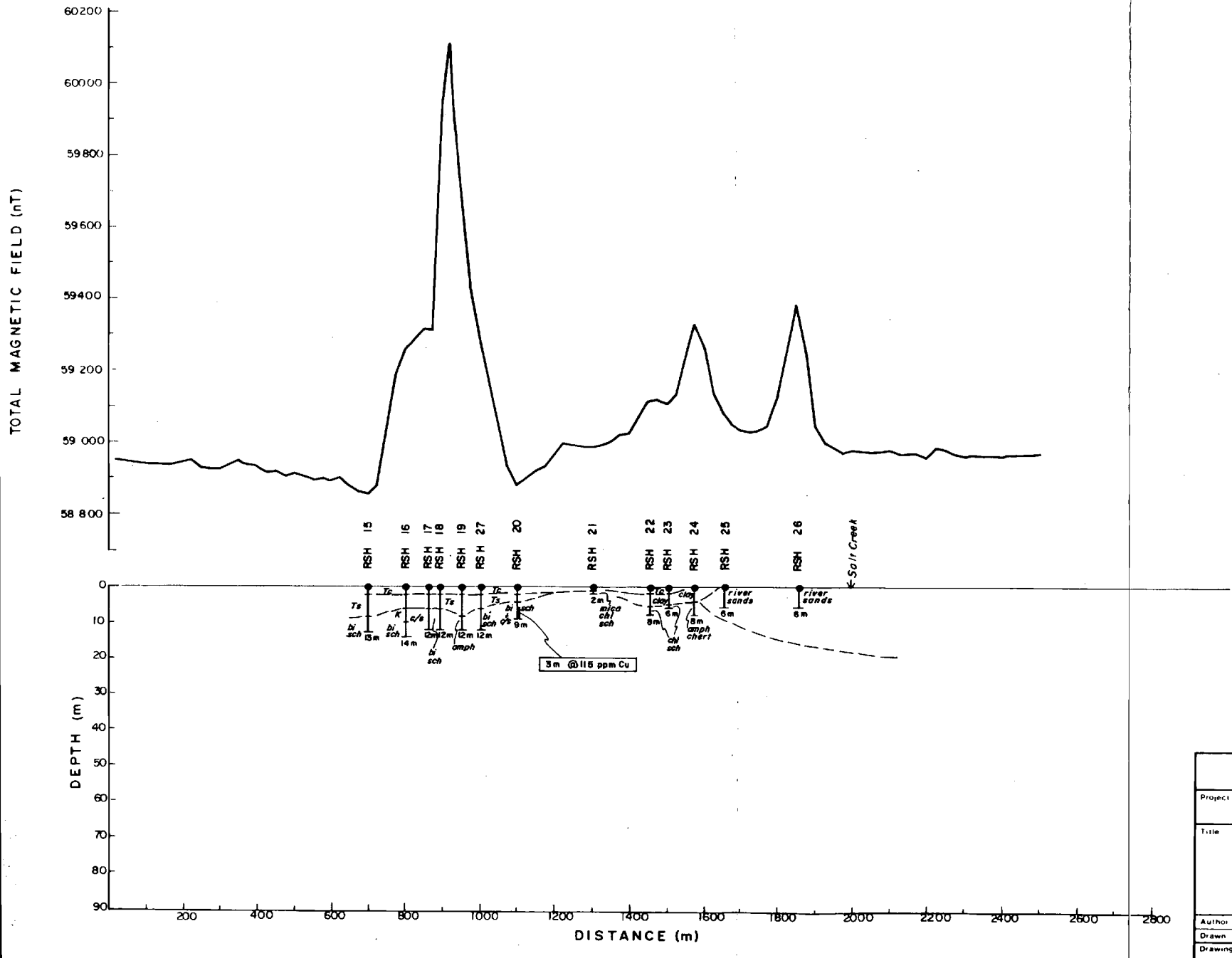
Title: MILTALIE NORTH

Zn (ppm)

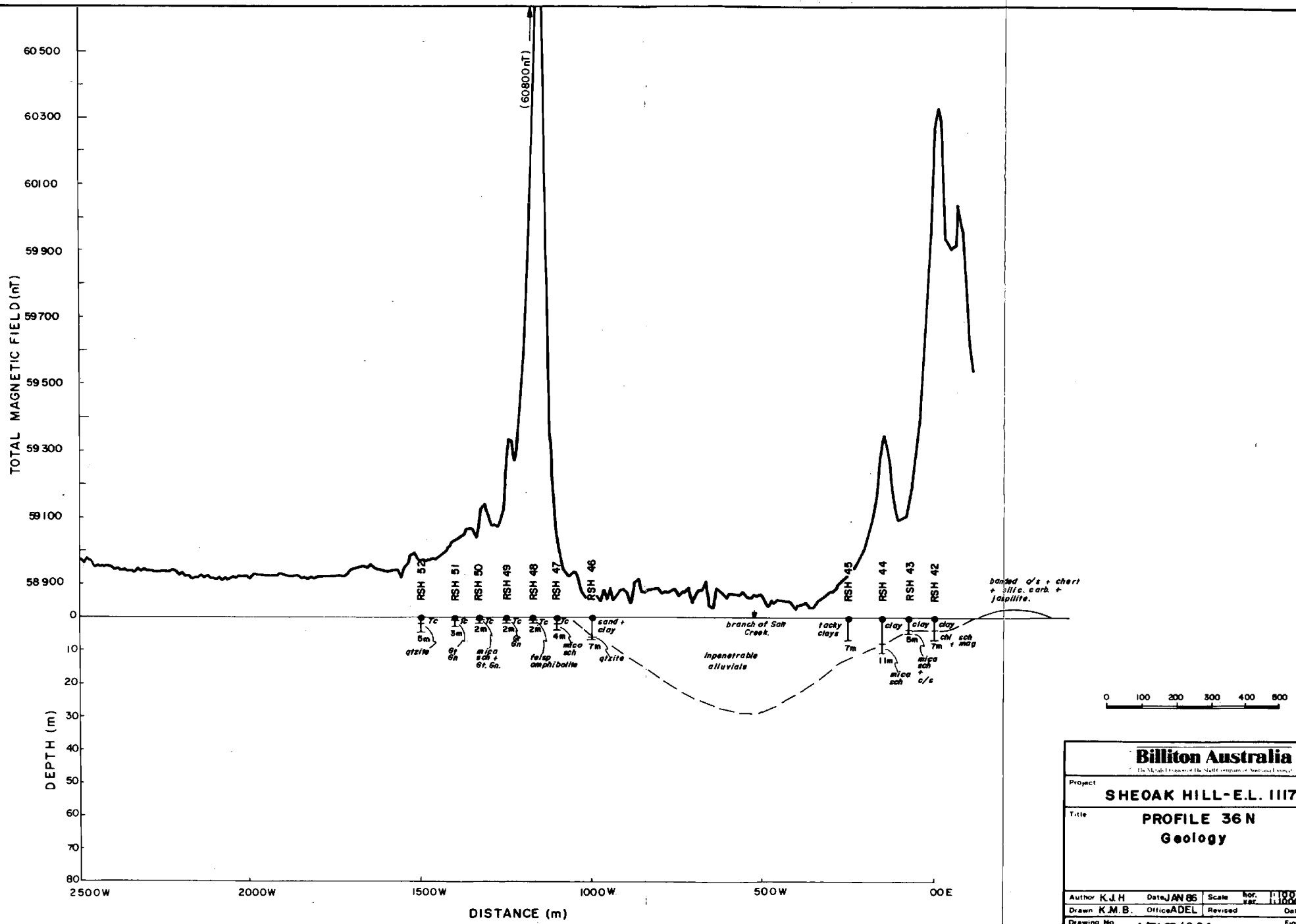
Author	Date	Scale	
Drawn	Office	Revised	Date
*Drawing No.			Fig. No.

(Overlay to DRG No A/FK 23/043)


Granite
Calc-silicates ± BIF
Manganiferous chert
Mica schist
Dolomite
Warrow quartzite
Granite gneiss
Regional magnetics (RAB)
F
F
F
SHEOAK HILL
CONSERVATION PARK
68
13
36
6 300 000m N
665 000m E
0
5 km
Billiton Australia
Project
SHEOAK HILL
Title
MILTALIE NORTH
GEOLOGY
Author R. B. Date MAR 86 Scale 1:100 000
Drawn K.M.B. Office ADEL Revised Date
Drawing No. A/FK 25/043 Fig. No. 10


TOTAL MAGNETIC FIELD (nT)
60200
60000
59800
59600
59400
59 200
59 000
58 800
RSH 15
RSH 16
RSH 17
RSH 18
RSH 19
RSH 27
RSH 20
RSH 21
RSH 22
RSH 23
RSH 24
RSH 25
RSH 26
Salt Creek
Ts
Tc
K
c/s
bi sch
amph
2m mica chl sch
clay
river sands
6m
18m amph chert
chl sch
3m @ 116 ppm Cu
DEPTH (m)
0
10
20
30
40
50
60
70
80
90
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
DISTANCE (m)
0 100 200 300 400 500 m
Billiton Australia
Project
SHEOAK HILL - E.L. 1117
Title
Regional Profile 13
Geology and Geochemistry
Author K.J.H. Date JAN '86 Scale 1:10000
Drawn K.M.B. Office ADEL Revised Date
Drawing No A/FK 23/023 Fig. No. 22

202



Billiton Australia

The Metals Division of The Shell Companies of Australia Limited

Project	SHEOAK HILL-E.L. 1117
Title	PROFILE 36 N Geology
Author K.J.H	Date JAN 86
Drawn K.M.B.	Office ADEL
Drawing No.	A/FK 23/024
Scale	hor. 1:10000 ver. 1:1000
Revised	Date
	Fig. No. 23

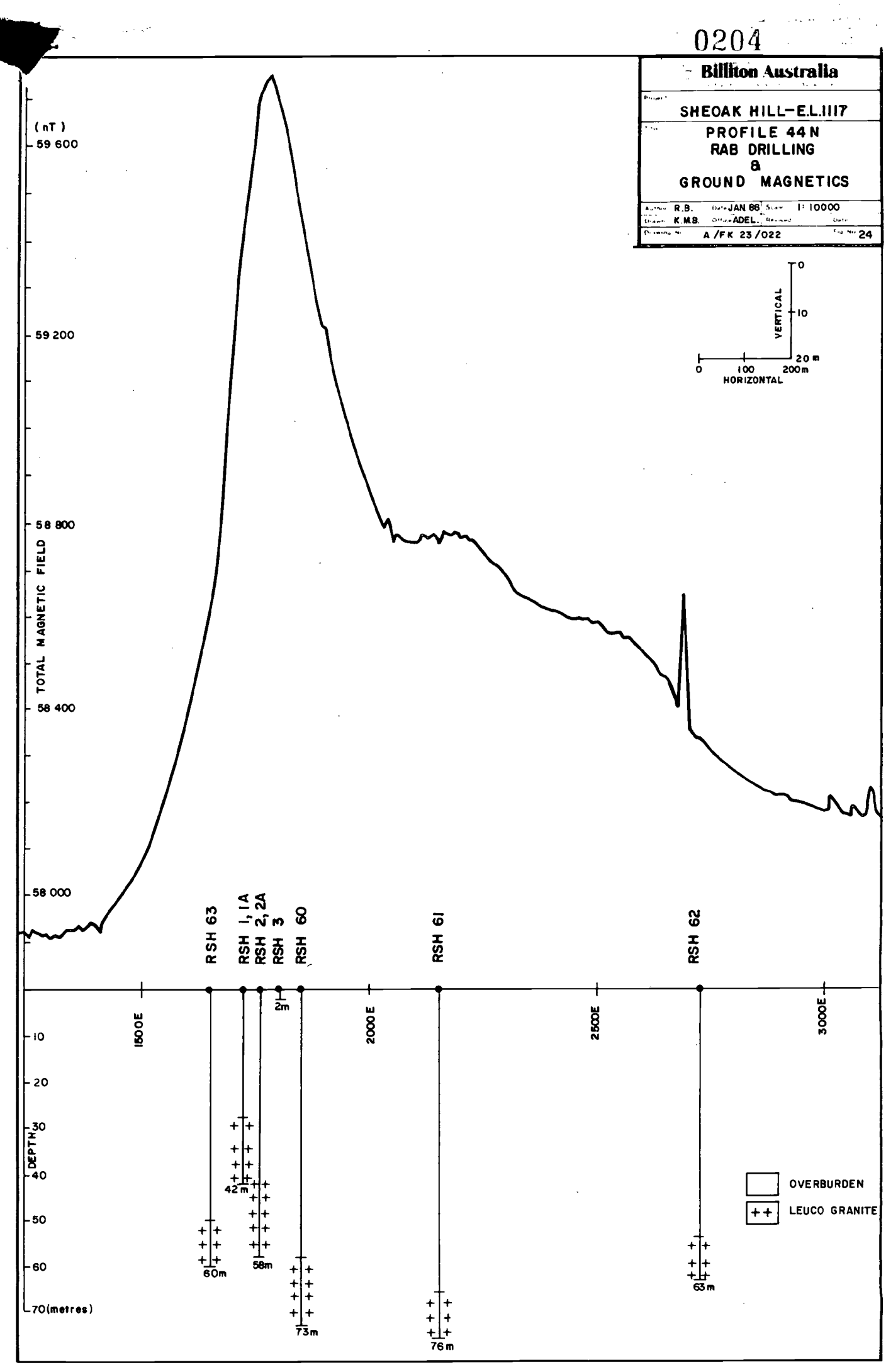
0203

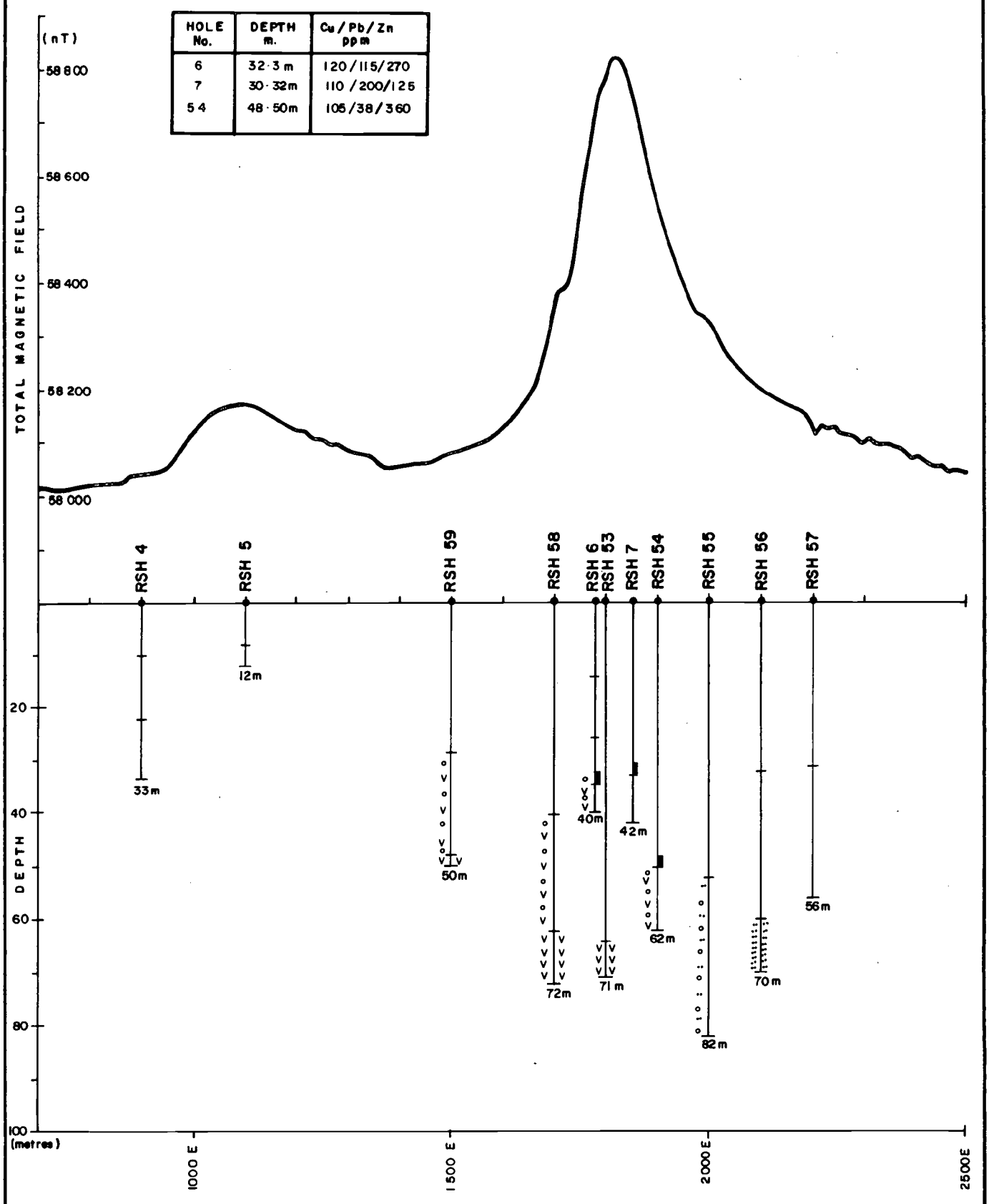
Billiton Australia

SHEOAK HILL–E.L.1117

PROFILE 44 N
RAB DRILLING
&
GROUND MAGNETICS

R.B. JAN 86 1:10000
K.M.B. ADEL.
A/FK 23/022 24





HOLE No.	DEPTH m.	Cu / Pb / Zn ppm
6	32·3 m	120 / 115 / 270
7	30·32m	110 / 200 / 125
54	48·50m	105 / 38 / 360

OVERBURDEN
CLAY
QUARTZITE
AMPHIBOLITE

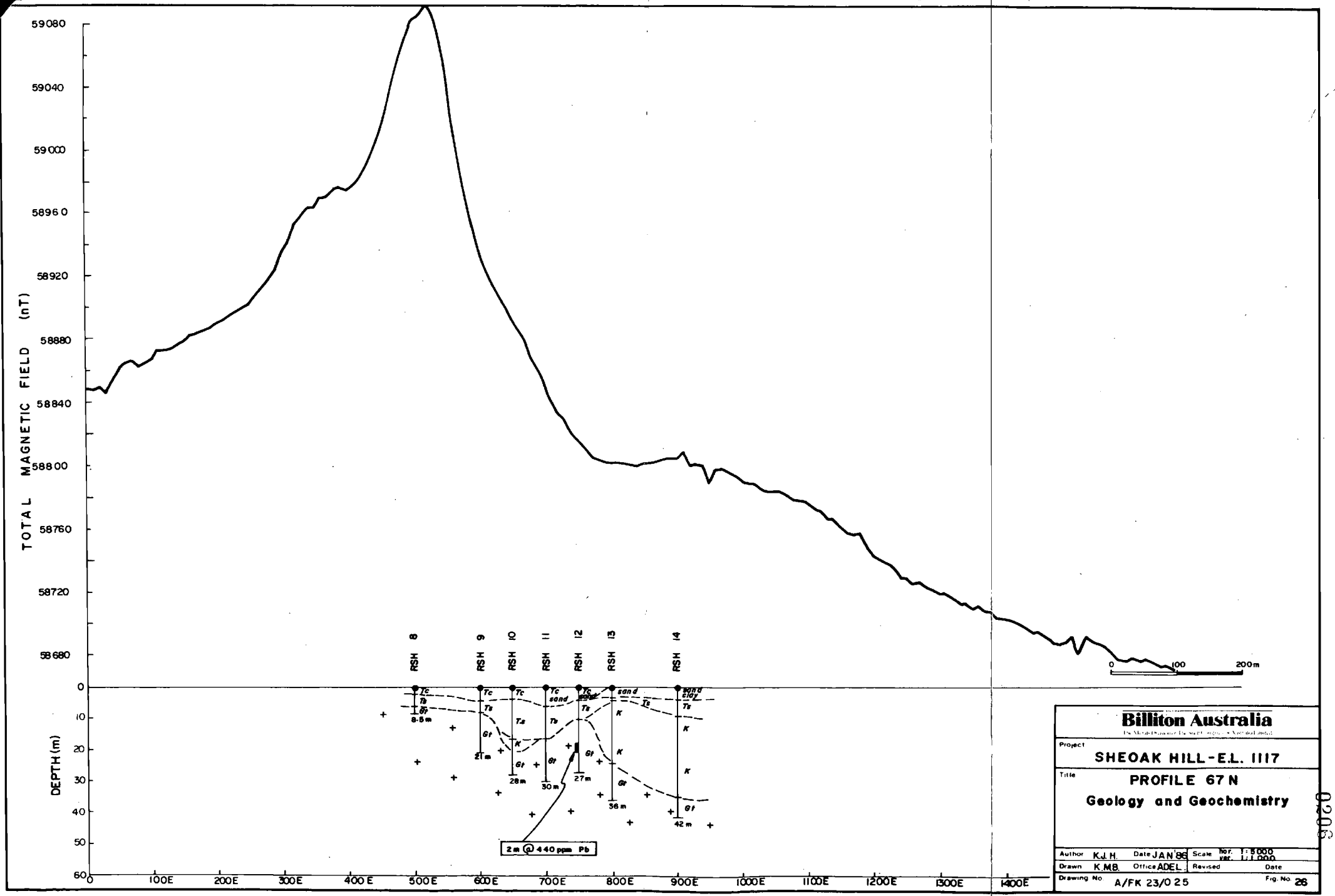
VERTICAL 0 10 20 m
0 100 200 m HORIZONTAL

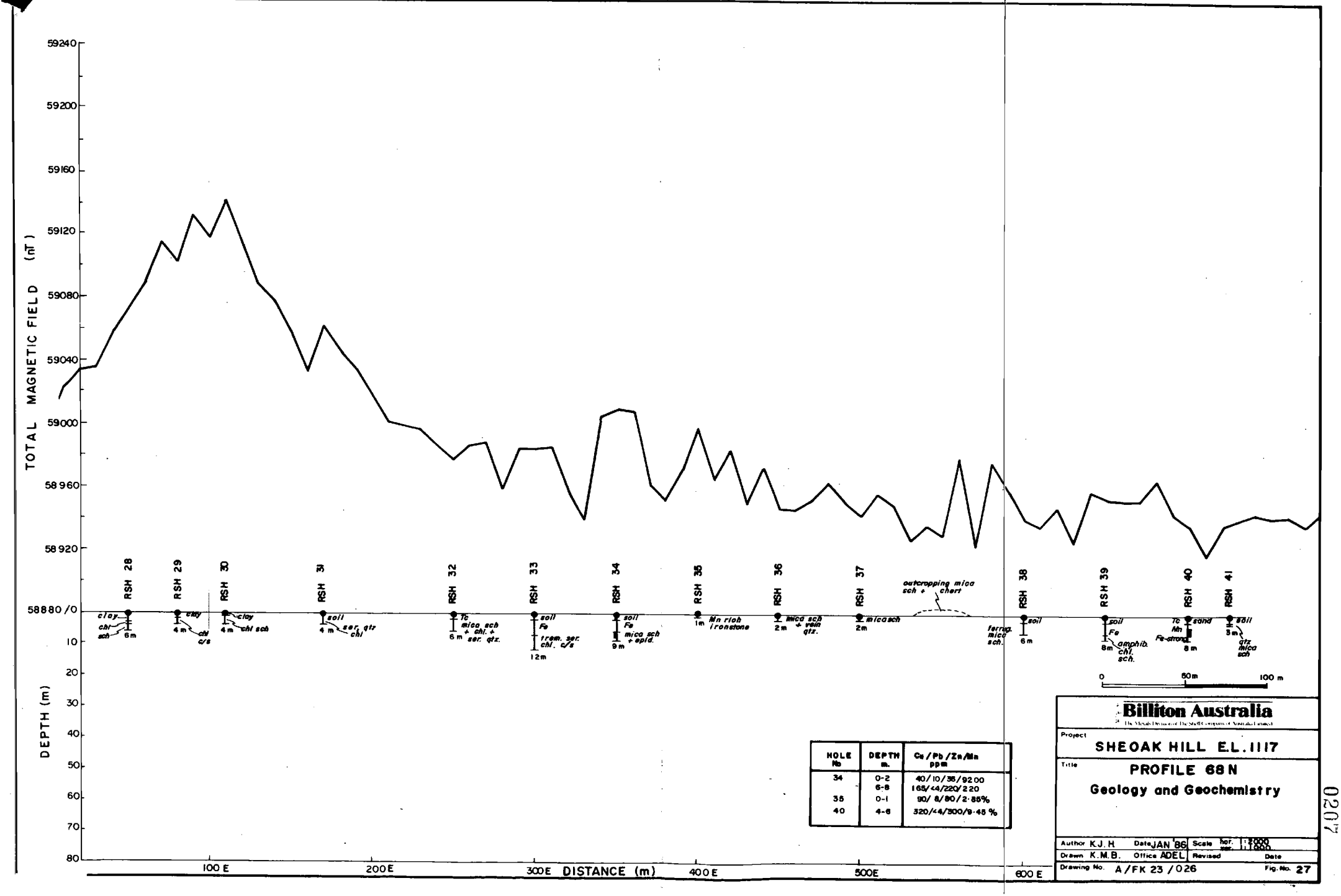
Billiton Australia

Project: SHEOAK HILL – E.L.1117

Title: PROFILE 45 N
RAB DRILLING
&
GROUND MAGNETICS

Author R.B Date JAN. 86 Scale 1 : 10000
Drawn K.M.B Office ADEL. Revised Date
Drawing No. A/FK 23/021 Fig. No. 25


TOTAL MAGNETIC FIELD (nT)
59080
59040
59000
58960
58920
58880
58840
58800
58760
58720
58680
DEPTH (m)
0
10
20
30
40
50
60
0
100E
200E
300E
400E
500E
600E
700E
800E
900E
1000E
1100E
1200E
1300E
1400E
RSH 8
RSH 9
RSH 10
RSH 11
RSH 12
RSH 13
RSH 14
Tc
Ts
Gf
K
sand
clay
8.5m
21m
28m
30m
27m
36m
42m
2m @ 440 ppm Pb
0
100
200m
Billiton Australia
Project
SHEOAK HILL - E.L. 1117
Title
PROFILE 67 N
Geology and Geochemistry
Author K.J.H. Date JAN '86
Scale hor. 1:5000 ver. 1:1000
Drawn K.M.B. Office ADEL.
Revised Date
Drawing No. A/FK 23/025
Fig. No. 28
9060



HOLE No	DEPTH m.	Cu / Pb / Zn / Mn ppm
34	0-2	40/10/38/9200
	6-8	165/44/220/220
38	0-1	90/8/80/2·85%
40	4-6	320/44/500/9·48%

Billiton Australia

The Metals Division of The Shell Company of Australia Limited

Project: SHEOAK HILL E.L.1117

Title: **PROFILE 68N**

Geology and Geochemistry

Author K.J.H.	Date JAN '86	Scale hor.	1:5000
Drawn K.M.B.	Office ADEL	ver.	1:1000
Drawing No. A/FK 23/026		Revised	Date
		Fig. No. 27	

0207

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LIMITED

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH JUNE 1986

AUTHOR: R. C. BERG
REPORT NO: 08.3332
DATE: JUNE 1986

DISTRIBUTION

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LIST OF FIGURES

1.0 INTRODUCTION

Exploration Licence EL 1117, Sheoak Hill, was granted in 1983 and is current until 15/3/87.

No fieldwork was undertaken during this period.

2.0 EXPENDITURE STATEMENT - SHEOAK HILL

	Expenditure for the Quarter Ending 31/3/86	Project to Date
Staffing/Support	2 497	76 103
Concession Payments	3 008	11 374
Analyses/Assays	(182)	5 966
Drilling		10 697
Site Preparation/Payments to Landholders & Consultants	773	8 464
Geology, geophysics, drawing research & computer	577	8 018
Overheads	400	7 829
	$ 7 073	$ 128 451

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LTD

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH SEPTEMBER 1986

AUTHOR: R. C. BERG
REPORT NO. 08.3344
DATE: SEPTEMBER 1986

Distribution:

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LIST OF FIGURES

1.0 INTRODUCTION

Exploration Licence EL 1117, Sheoak Hill, was granted in 1983 and is current until 15/3/87.

No fieldwork was undertaken during this period.

A brief review of all data is planned.

0215

2.0 EXPENDITURE STATEMENT - SHEOAK HILL

	Expenditure for Quarter Ending 30/6/86	Project to Date
Staffing/Support	1 088	48 635
Concession Payments		6 092
Analyses/Assays		5 966
Drilling		10 697
Site Preparation/Payments to Landholders & Consultants		7 579
Geology, Geophysics, Drawing, Research and Computer		5 943
Overheads		5 272
TOTALS	$ 1 088	$ 90 184

BILLITON AUSTRALIA

THE METALS DIVISION OF THE SHELL COMPANY OF AUSTRALIA LTD

SHEOAK HILL EL 1117, SOUTH AUSTRALIA

PROGRESS REPORT

FOR QUARTER ENDING 14TH DECEMBER 1986

AUTHOR: R. C. BERG
REPORT NO. 08.3476
DATE: DECEMBER 1986

Distribution:

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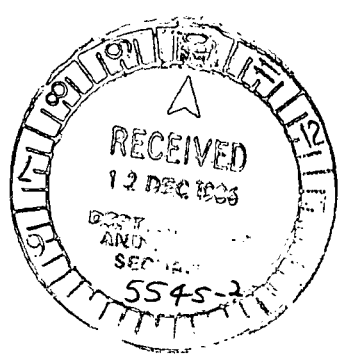

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LIST OF FIGURES

1.0 INTRODUCTION

Exploration Licence EL 1117, Sheoak Hill, was granted in 1983 and is current until 15/3/87.

Currently, negotiations are pending with prospective joint venture partners, and the future exploration programme will depend on the outcome of these negotiations.

A regional bulk leach Au stream sediment sampling programme has been completed in the current reporting period from 15 September to 14 December 1986.

Results are not yet available and will be presented in the next quarterly report.

2.0 EXPENDITURE STATEMENT - SHEOAK HILL

	Expenditure for Quarter Ending 30/9/86	Project to Date
Staffing/Support	687	77 879
Concession Payments		11 374
Analyses/Assays		5 966
Drilling		10 697
Site Preparation/ Consultants and Other Costs		8 464
Geology, Geophysics, Drawing, Research and Computer	447	8 465
Overheads	146	7 975
TOTALS	$ 1 280	$ 130 820

0220

WESTERN MINING CORPORATION LIMITED
EXPLORATION DIVISION

PROGRESS REPORT
FOR
EXPLORATION LICENCE 1117 - SHEOAK HILL
FOR QUARTER ENDING 14TH MARCH, 1987

MAY, 1987

H. L. PATERSON
OFFICER-IN-CHARGE - SOUTH AUSTRALIA

CONTENTS

ATTACHMENTS

Sample Records - Bulk Leach Au stream sediment survey

LIST OF PLANS

A/FB01/112	Sheet 6231 Barna Regional Stream Sediment Sampling - Bulk Leach Au	1:100,000

1. INTRODUCTION

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia on 15th March, 1983 and was current to 14th March, 1987. Ministerial consent for an extension of term to 14th March, 1988, was given on 11th February, 1987.

During the quarter, a joint venture was negotiated between Billiton Australia and Western Mining Corporation Limited to explore this and other Exploration Licences on the Eyre Peninsula, with W.M.C. assuming management of the project. The Joint Venture commenced on 1st February, 1987.

2. WORK COMPLETED

There has been no fieldwork during the quarter. Project activity has been limited to Joint Venture negotiations and to examination and assessment of the Billiton data by W.M.C.

Results are now available for bulk leach Au stream sediment sampling conducted during the previous quarter. Sample records and location plans are attached.

3. FUTURE PROGRAM

Work in the next quarter will include assessment of all existing results and selection of targets for further exploration where warranted.

4. EXPENDITURE REPORT

	Six Months ending 30th March, 1987	Project to Date
Staffing/Support	2,405	80,284
Concession Payments	3,258	14,632
Analysis	0	5,966
Drilling	0	10,697
Site Preparation/Consultants etc.	0	8,464
Geology/Geophysics/Drafting Research/Computing	122	8,587
Overheads	1,609	9,584
TOTALS	**$7,394**	**$138,214**

These figures represent the last significant expenditure by Billiton Australia on this Licence. Future reports will be based on W.M.C. expenditures.

Sheet ..... of .....

0223

SAMPLE RECORD

PROJECT: Regional CONTRACTOR: ..... COLLAR CO ORDS: .....

LOCALITY: Eyre Peninsula RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....

HOLE No ..... LOGGED BY: RCB DECLINATION: ..... LABORATORY: ALS

DATE: 5/2/87 SAMPLE TYPE: BULK LEACH FILE: EBQ1602

Au

INTERVAL		LOCATION sheet	DESCRIPTION	Au (ppb)
	77708	Middleback; Black Dam	silty gully in flood plain (Fe, volc, shale)	0.75
	709	" ; Uplands	end of creek in flood plain	0.65
Mt. Olinthus	710	Cowell; Mt Miller	E side creek, 1m ditch type gully	0.4
"	711	" ; Mt Miller	W side, 2m wide, shallow	0.2
Sheoak Hill	712	Barna; Carpoona Res	sand, salt creek 1m, flat plain	0.1
"	713	Barna, Carpoona Res	W main creek, sandy, salt plain	0.1
	714	BLANK BULK LEACH		0.05
	(068	Mt Eba area)		

FB01/606.

Sheet 1 of 7

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SAMPLE RECORD

PROJECT: Eyre Peninsula CONTRACTOR: COLLAR CO ORDS:
LOCALITY: RIG TYPE: AZIMUTH: S.D.O. No:
HOLE No: LOGGED BY: DECLINATION: LABORATORY: A.I.S. Brisbane
DATE: 12/86 SAMPLE TYPE: STREAM SED FILE: FB01
BULK LEACH Au

ANALYTICAL REPORT

0224

INTERVAL		LOCATION	DESCRIPTION	SAMPLE NUMBER	Au	S.Wt.	RESULTS IN PPM
Sample No.	Map Name		Bed Size		PPT PM 24	Kg	
77501	Roopena		10m Sand/clay		400	6·57	
502	Roopena		4m Sand - Silt		50	5·23	
503	Roopena		10m silt/clay (soil)		100	4·97	
504	Roopena		5m Flat - [illegible] sand/clay		100	5·92	
505	Roopena		5m - Fault movements silt/clay		150	6·10	
506	Roopena		3m Sand/silt		100	5·26	
507	Roopena		10m Sand/clay		350	5·96	
508	Roopena		Small channels (c) silt Sand		400	5·96	
509	Roopena		7m Sand/silt		450	5·42	
510	Roopena		Duplicate of 77509		50	5·55	
511	Roopena		2m Soil? silt/clay		300	6·31	
512	Roopena		1m Sand/silt		150	5·63	
513	Roopena		20m Sand/silt - Salt veg.		0050	5·81	
514	Roopena		15m Sand/silt		250	4·59	
515	Roopena		3m Sand/silt		200	4·67	
516	Roopena		2m Major Fault movement - Sand/clay		100	5·69	
517	Roopena		2m Sand/silt		<50	5·48	
518	Uno		Flat Drainage [illegible] silt/clay (soil)		50	6·15	
519	Uno		1 [illegible] silt/clay (soil)		<50	5·94	
520	Uno		2m Fault movement Sand/silt		300	5·60	
521	Uno		20m Sand/silt		150	5·89	
522	Uno		15m Sand/silt		<50	5·88	
523	Uno		5m Sand/silt		50	5·28	
524	Uno		½m Sand/		100	6·20	
525	Uno		Flat Drainage [illegible] silt/clay		100	6·00	
526	Uno		[illegible]		100	5·68	

Sheet 2 of 7

SAMPLE RECORD

PROJECT: ..... CONTRACTOR: ..... COLLAR CO ORDS: .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.N°: .....
HOLE N° ..... LOGGED BY: ..... DECLINATION: ..... LABORATORY: .....
DATE: ..... SAMPLE TYPE: ..... FILE: .....

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ANALYTICAL REPORT

0225

INTERVAL Sample No.	INTERVAL Map Name	LOCATION	DESCRIPTION	SAMPLE NUMBER	Au ppt PM 216	S.Wt. Kg	RESULTS IN PPM
77 527	Bucklebo		5m in WHEAT Field Sand/silt		50	5·78	Bucklebo EL
528	Bucklebo		1m Earth. movement -clay/silt		50	5·58	"
529	Bucklebo		Flat Basin With a Number of Small Channels		<50	4·92	"
530	Bucklebo		1m Silt/Sand		50	6·08	"
531	Bucklebo		10m Sandy/silt		50	6·01	"
532	Bucklebo		Duplicate of 77531		150	5·70	"
533	Uno		3m Silt/sand		400	5·68	
534	Uno		1m Silt/sand		150	5·35	
535	Bucklebo		2m Silt/clay run off from hills		200	5·54	Bucklebo EL
536	Bucklebo		1½m Sand/silt		150	6·23	"
537	Bucklebo		2m Sand/silt		300	4·85	Wilcherry Hill EL
538	Bucklebo		2m Silt/clay		<50	5·74	Bucklebo EL
539	Barna		5m - Earthmovement Silt/clay/sand		800	5·34	Regional (near Sheoak Hill EL)
540	Barna		- soil sample Wheat Field Black soil		100	5·80	Regional (near Sheoak Hill EL)
541	Kemba		Flat basin - Wheat Field Sandy/silt		50	6·20	
542	Kemba		1m Pegamatite rock - Granite		50	5·92	
543	Kemba		Earth movement Taken from dump		50	6·22	
544	Kemba		1m Sand/silt - Wheat Field		50	4·30	
545	Barna		1m WHEAT Field - soil sample		<50	5·49	Regional (near Sheoak Hill EL)
546	—	Blank.			<50	5·33	
547	—	STANDARD 15PPB			8750	4·89	
548	—	STANDARD 4PPB			7150	4·87	
549	Barna		Earth movement - Little soil - soil		100	5·47	Regional (near Sheoak Hill EL)
550	Barna		" " " "		100	5·83	Sheoak Hill
551	Barna		1m Silt/sand		3650	5·54	"
562	Barna		Duplicate of 77551		3400	5·16	"

Sheet 3 of 7

SAMPLE RECORD

PROJECT | CONTRACTOR | COLLAR COORDS
LOCALITY | RIG TYPE | AZIMUTH | S.D.O Nº.
HOLE Nº | LOGGED BY: | DECLINATION | LABORATORY
DATE | SAMPLE TYPE | FILE

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT 0226

INTERVAL Sample Nb	Map Area	LOCATION	DESCRIPTION	SAMPLE NUMBER	Au PPM 24	S.Wt. Kg	RESULTS IN PPM
77553	Barna		2m Sand/silt		1400 ✓	5.95	Sheoak Hill
554	Barna		2m Sandy/silt		50 ✓	5.74	"
555	Barna		4m Sandy cv/silt		<50 ✓	5.58	"
556	Barna		3m Small sand, cv		50 ✓	5.71	"
557	Barna		½ Sand/silt		<50 ✓	5.41	Regional (near Sheoak Hill EL)
558	Barna		5m Silt/sand		50 ✓	6.13	"
559	Barna		1m - Some Contamination - Wheat Field		50 ✓	5.75	Sheoak Hill
560	Barna		20cm Flat Drain, sand/silt		50 ✓	5.62	"
561	Barna		10m Sand/silt		50	6.72	"
562	Barna		10m WHEAT Field Sand/clay		150	5.75	"
563	Barna		Flat Wheat Field contamination Sandy		100	5.86	"
564	Barna		Flat Wheat Field Some Drainage		100	5.53	"
565	Barna		½m Silt/Sand		150 ✓	5.70	Regional (near Sheoak Hill EL)
566	Barna		Flat Wheat Field Drainage		150 ✓	4.94	"
567	Barna		2m Sand/si-		200	5.89	Sheoak Hill
568	Barna		5m Sand/si-		100	6.48	"
569	Barna		6m - Wet Sample Sand (Creek mouth)		5250	5.40	"
570	Barna		10m Sand/silt		50	8.97	"
571	Cowell		3m Cultivated - Wet Sand/si-		200	5.82	Mt Olinthus
572	Cowell		10m Subsoil - Wet Sand/si-		600	5.40	Mt Olinthus
573	Cowell		20m " " Sand/si-		650	5.25	Mt Olinthus
574	Cowell		Duplicate of F77573		150	5.70	Mt Olinthus
575	Cowell		15m Wet Sample Sand/si-		150	5.53	Mt Olinthus
576	Cowell		½m Wheat Field Sand/si-		750	4.86	Mt Olinthus
577	Barna		30m Sand cv - Wet Sand/silt		250	5.67	Sheoak Hill
578	Barna		[illegible]		200	4.56	"

Sheet 4 of 7

SAMPLE RECORD

PROJECT: ..... CONTRACTOR: ..... COLLAR COORDS: .....
LOCALITY: ..... RIG TYPE: ..... AZIMUTH: ..... S.D.O.No: .....
HOLE No ..... LOGGED BY: ..... DECLINATION: ..... LABORATORY: .....
DATE: ..... SAMPLE TYPE: ..... FILE: .....

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

0227

INTERVAL		LOCATION	DESCRIPTION	SAMPLE NUMBER	Au ppb PH216	S.Wt Kg	RESULTS IN PPM
Sample No	Map Name						
77579	Barna		30m Salt Cr - Wet sand/silt		150	5·72	Sheoak Hill
580	Barna		1m WHEAT Field sand/silt		250	5·04	"
581	Barna		10m Wet Sand/silt		100	6·16	"
582	Barna		4m Wet Sand/silt		200	5·11	"
583	Barna		5m Sand/silt - Wet.		200	5·21	"
584	Barna		10m Sand/silt		450	3·38	"
585	Cowell		10m Flat Plain - Wet saltcrust		150	6·10	Mt Olinthus
586	Cowell		5m Earth movement silt/sand		150	5·38	"
587	Barna		7m Wet - Sand/silt		50	6·79	Sheoak Hill
588	Barna		5m Wet Sand/silt salt		<50	6·86	"
589	Cowell		10m Sand/silt		50	4·39	Mt Olinthus
590	Cowell		Duplicate of 77589		<50	5·00	"
591	Cowell		15m Sand/silt		<50	4·55	Regional (near Mt Olinthus EL)
592	Cowell		2m Sand/silt		100	4·72	Mt Olinthus
593	Cowell		1m silt/sand [illegible]		50	4·53	"
594	Cowell		2m Earth movement silt/sand		50	4·68	"
595	Cowell		15m WHEAT [illegible]		50	5·05	"
596	Cowell		25m Wet [illegible]		<50	4·63	"
597	Cowell		100m [illegible] silt/sand		100	4·71	Regional (near Mt Olinthus EL)
598	Cowell		1m Fine sand/silt		50	4·70	"
599	Cowell		15m silt/sand		100	5·04	"
77600	Cowell		10m Sand/[illegible]		50	4·66	"
601	Middlebach		Earth moving [illegible]		350	5·71	
602	Middlebach		1m [illegible]		<50	5·38	
603	Middlebach		Earth [illegible] Sand/[illegible]		50	5·88	
604	Middlebach		[illegible]		<50	6·41	

Sheet 5 of 7

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

SAMPLE RECORD

PROJECT: CONTRACTOR: COLLAR COORDS:
LOCALITY: RIG TYPE: AZIMUTH: S.D.O Nº:
HOLE Nº: LOGGED BY: DECLINATION: LABORATORY:
DATE: SAMPLE TYPE: FILE:

ANALYTICAL REPORT

0228

INTERVAL		LOCATION	DESCRIPTION	SAMPLE NUMBER	Au ppt FA216	S.Wt. kg	RESULTS IN PPM
Sample Nº	Map Name						
77605	Huddleback		Sand/silt		<50	6·48	
606	Huddleback		2m Fault movement Coarse Brown Granite		4800	6·18	"
607	Huddleback		Flat Red Sand/silt		<50	6·25	
608	Huddleback		Flat Red - Soil - Sand/silt		<50	5·28	
609	Huddleback		2m Red Brown Sandy soil		350	6·16	
610	Huddleback		Rise along Track Sandy soil		100	5·19	
611	Huddleback		Granitic source		<50	6·54	
612	Barna		?		50	6·36	Regional (near Skoak Hill EL)
613	Barna		Drainage Fm Jade Hill Sandy		50	4·67	"
614	Barna		WAEAT Field (Regional)		150	5·21	"
615	Kemba		2m Soil Brown Sandy Soil		<50	5·54	
616	Kemba		Fault movement Brown Sandy Soil		100	4·09	
617	Cacuppa		15m - Multi-Ch. with Soil & Granite		<50	4·74	MT NOTT EL
618	Cacuppa		DUPlicate OF 77617		50	5·18	"
619	Cacuppa		Flat River Drainage Brown Soil		50	5·34	"
620	Cacuppa		½m Flat Wash Red Brown Soil		750	5·49	"
621	Cacuppa		Feature Channel Red-Brown Sandy		<50	5·90	"
622	Cacuppa		10m Drainage Red Soil		50	5·35	"
623	Cacuppa		15m Flat Brown Qtz Silt Rock		50	5·23	"
624	Cacuppa		Newmonth Qtz Felsite		<50	4·53	"
625	Veran		2m Quartz Felsite Float		150	5·34	
626	Veran		Drainage Line - Wet Clayey Brown Soil		50	5·64	
627	Veran		Creek Red Brown Soil		50	4·14	
628	Veran		Wet Flat Brown Fine Sandy Soil		50	4·54	
629	Veran		2m Brown Sandy Soil		<50	6·09	
630	Kemba				<50	5·42	

Sheet 6 of 7

SAMPLE RECORD

PROJECT: CONTRACTOR: COLLAR CO ORDS:
LOCALITY: RIG TYPE: AZIMUTH: S.D.O.No:
HOLE No: LOGGED BY: DECLINATION: LABORATORY:
DATE: SAMPLE TYPE: FILE:

INTERVAL		LOCATION	DESCRIPTION	SAMPLE NUMBER
Sample No	Top Above			
77631	Veran		10m Sand/silt	
632	Veran		6m Sand/silt	
633	Veran		Duplicate of 77632	
634	Veran		3m Earth moving - Sand/silt	
635	Veran		2m Silt/Sand ASH Present.	
636	Veran		Orange Brown Sod soil	
637	Veran		10m Sand/silt	
638	Veran		Sand/silt	
639	Veran		Silty - soil road contamination	
640	Veran		4m Sand/silt	
641	Veran		2m Sand/silt	
642	Veran		3m Pink sandy/silt (Granitic)	
643	Veran		2m Pink sandy/silt (Granitic)	
644	Veran		2m Pink - Grey Sand/silt	
645	Veran		2m Pink - Grey Fine Sand/silt	
646	Veran		1½m Pink sand/silt	
647	Veran		Flat Drainage Sand/silt ?	
648	Veran			
649	Kimba		Earth movement Grey Pinky sand/silt	
650	Cowell		½m Earth movement silt/clay	
651	Cowell		1m Earthmovement - Wet Sand/silt - silt	
652	Cowell		½ metamorphic silt/sand Gneiss	
653	Cowell		10m Pink Granite Sand/silt	
654	Cowell		2m Silt/sand Granite	
655	Cowell		2m Silt/sand/clay	
656	Cowell		Duplicate of 77655	

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

0229

Au ppt PM216	S.Wt. kg	RESULTS IN PPM
50	5·75	
<50	5·56	
50	5·55	
<50	7·18	
50	5·82	
300	6·36	
50	5·87	
200	6·19	
50	6·87	
50	6·93	
50	6·31	
100	6·32	
<50	6·72	
<50	7·96	
<50	6·99	
100	6·00	
100	6·82	
<50	7·25	
<50	6·43	
<50	5·86	Mt Olinthus
<50	5·55	"
<50	5·38	"
<50	5·60	"
50	5·87	"
<50	5·21	"
50	5·61	"

Sheet 7 of 7

SAMPLE RECORD

PROJECT: CONTRACTOR COLLAR CO ORDS

LOCALITY RIG TYPE AZIMUTH S.D.O.No:

HOLE No LOGGED BY: DECLINATION LABORATORY

DATE: SAMPLE TYPE: FILE:

COMLABS Pty. Ltd.
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

0230

INTERVAL		LOCATION	DESCRIPTION	SAMPLE NUMBER	Au PPM PPT216	S.Wt. Kg	RESULTS IN PPM
Sample No	Map Name						
77657	Cowell		3m Wheat Field Silt/clay		<50	5.72	Mt Olinthus
658	Cowell		3m Pink Sand/silt (Granitic origin)		<50	5.75	"
659	Cowell		Fal ch. Wheat on either Side Sand/silt		50	5.91	"
660	Cowell		5m Coalluvial (Little) Granitic Sand/silt		50	6.98	"
661	Cowell		2m Pink-Grey Sand/silt		<50	5.29	"
662	Cowell		1m Wheat Field + Cars, Aketc		300	6.52	"
663	Cowell		6m Earth movement Gravel - Soil		600	6.88	"
664	Cowell		3m Veg. on Cov. Silt/clay (soil)		1750	6.70	"
665	Cowell		4m Granitic Bedrock - Sand/silt		900	6.10	"
666	Cowell		5m Granitic Sand/silt		<50	6.96	"
667	Cowell		10m Cov. Cultivated small Drain silt/clay		100	7.70	"
668	Cowell		2m Pink Sand/silt		<50	6.61	"
669	Cowell		10m Granitic Bedrock Sand/silt		100	6.73	"
670	Cowell		10m Sand/silt		50	7.10	Regional (near Mt Olinthus EL)
671	Cowell		Rd Drainage Exposed - Soil		50	6.25	"
672	—	STANDARD 15 PPB			20.8ppb	4.94	
673	Bucklebee		Rd Exposed Sand/silt		500	7.79	Mt Nott EL
674	Bucklebee		Sand/silt		350	7.57	"
675	Bucklebee		Sand/silt		150	6.93	"
676	Uno		15m Porphyry Granitic		<50	8.05	
677	Uno		Sand/silt		<50	6.98	
678	Uno		6m Rd Cut/silt - Clay		100	6.16	
679	Uno		" "		50	6.71	
680	Uno		Rd Cut Sand/silt		50	7.27	

0231

WESTERN MINING CORPORATION LIMITED
EXPLORATION DIVISION

PROGRESS REPORT
FOR
EXPLORATION LICENCE 1117 - SHEOAK HILL
FOR QUARTER ENDING 14TH JUNE, 1987

AUGUST, 1987

H. L. PATERSON
OFFICER-IN-CHARGE - SOUTH AUSTRALIA

1. INTRODUCTION

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia on 15th March, 1983 and was current to 14th March, 1987. Ministerial consent for an extension of term to 14th March, 1988, was given on 11th February, 1987.

A joint venture was negotiated in February, 1987 between Billiton Australia and Western Mining Corporation Limited to explore this and other Exploration Licences on the Eyre Peninsula, with W.M.C. assuming management of the project. The Joint Venture commenced on 1st February, 1987.

2. WORK COMPLETED

There has been no fieldwork during the quarter. Project activity has been limited to examination and assessment of the Billiton data by W.M.C.

3. FUTURE PROGRAM

Work in the next quarter will include assessment of all existing results and selection of targets for further exploration where warranted.

4. EXPENDITURE REPORT

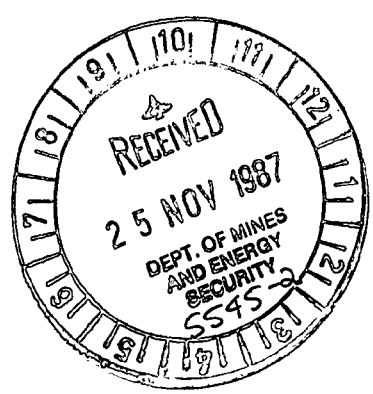
Expenditure by Shell on this licence area prior to WMC assuming management of the joint venture was $138,214.

	Quarter ending June 30, 1987	Cumulative to June 30, 1987 $	%
Geology	965	965	20.8
Geophysics	1,638	1,638	35.4
Geochemistry	73	73	1.6
Drafting	873	873	18.8
Leasing	67	67	1.5
Administration	1,016	1,016	21.9
TOTAL	**$4,632**	**$4,632**	**100.0%**

0233

WESTERN MINING CORPORATION LIMITED
EXPLORATION DIVISION

PROGRESS REPORT
FOR
EXPLORATION LICENCE 1117 - SHEOAK HILL
FOR QUARTER ENDING 14TH SEPTEMBER, 1987



NOVEMBER, 1987

H. L. PATERSON
OFFICER-IN-CHARGE - SOUTH AUSTRALIA

1. INTRODUCTION

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia on 15th March, 1983 and was current to 14th March, 1987. Ministerial consent for an extension of term to 14th March, 1988, was given on 11th February, 1987.

A joint venture was negotiated in February, 1987 between Billiton Australia and Western Mining Corporation Limited to explore this and other Exploration Licences on the Eyre Peninsula, with W.M.C. assuming management of the project. The Joint Venture commenced on 1st February, 1987.

2. WORK COMPLETED

There has been no fieldwork during the quarter. Project activity has been limited to examination and assessment of the Billiton data by W.M.C.

3. FUTURE PROGRAM

Work in the next quarter will include assessment of all existing results and selection of targets for further exploration where warranted.

4. EXPENDITURE REPORT

Expenditure by Shell on this licence area prior to WMC assuming management of the joint venture was $138,214.

	Quarter ending September 22, 1987	Cumulative to September 22, 1987 $	%
Geology	-	965	20.6
Geophysics	-	1,638	35.0
Geochemistry	-	73	1.6
Drafting	-	873	18.6
Leasing	-	67	1.4
Administration	51	1,067	22.8
TOTAL	**$51**	**$4,683**	**100.0%**

WESTERN MINING CORPORATION LIMITED
EXPLORATION DIVISION

PROGRESS REPORT
FOR
EXPLORATION LICENCE 1117 - SHEOAK HILL
FOR QUARTER ENDING 14TH DECEMBER, 1987

DECEMBER, 1987

H. L. PATERSON
OFFICER-IN-CHARGE - SOUTH AUSTRALIA

1. INTRODUCTION

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia on 15th March, 1983 and was current to 14th March, 1987. Ministerial consent for an extension of term to 14th March, 1988, was given on 11th February, 1987.

A joint venture was negotiated in February, 1987 between Billiton Australia and Western Mining Corporation Limited to explore this and other Exploration Licences on the Eyre Peninsula, with W.M.C. assuming management of the project. The Joint Venture commenced on 1st February, 1987.

2. WORK COMPLETED

There has been no fieldwork during the quarter. Project activity has been limited to examination and assessment of the Billiton data by W.M.C.

3. FUTURE PROGRAM

Work in the next quarter will include assessment of all existing results and selection of targets for further exploration where warranted.

4. EXPENDITURE REPORT

Expenditure by Shell on this licence area prior to WMC assuming management of the joint venture was $138,214.

	Quarter ending November 17, 1987	Cumulative to September 17, 1987 $	%
Geology	-	965	20.6
Geophysics	-	1,638	35.0
Geochemistry	-	73	1.6
Drafting	-	873	18.6
Leasing	-	67	1.4
Administration	-	1,067	22.8
TOTAL	**$ -**	**$4,683**	**100.0%**

0237

WESTERN MINING CORPORATION LIMITED
EXPLORATION DIVISION

PROGRESS REPORT
FOR
EXPLORATION LICENCE 1117 - SHEOAK HILL
FOR QUARTER ENDING 14TH MARCH, 1988

MARCH, 1988

H. L. PATERSON
SENIOR SUPERVISING GEOLOGIST - SOUTH AUSTRALIA

1. INTRODUCTION

Exploration Licence 1117, Sheoak Hill, was granted to The Shell Company of Australia on 15th March, 1983 and was current to 14th March, 1987. Ministerial consent for an extension of term to 14th March, 1988, was given on 11th February, 1987.

A joint venture was negotiated in February, 1987 between Billiton Australia and Western Mining Corporation Limited to explore this and other Exploration Licences on the Eyre Peninsula, with W.M.C. assuming management of the project. The Joint Venture commenced on 1st February, 1987. At the end of the first J.V. year, WMC advised Billiton that it would continue the J.V. only with respect to the Wilcherry Hill E.L., so that administration of the remaining E.L.'s would revert to Billiton as of that date. This report therefore finalises WMC's involvement with the licence, and future reports will be submitted by Billiton.

2. WORK COMPLETED

There has been no fieldwork during the quarter.

3. FUTURE PROGRAM

Work in the next quarter will be reported separately by Billiton.

4. EXPENDITURE REPORT

Expenditure by Shell on this licence area prior to WMC assuming management of the joint venture was $138,214.

	Quarter ending February 9, 1988	Cumulative to February 9, 1988 $	%
Geology	405	1,370	26.5
Geophysics	53	1,691	32.7
Geochemistry	1	74	1.4
Drafting	11	884	17.1
Leasing	7	74	1.4
Administration	17	1,084	20.9
TOTAL	**$494**	**$5,177**	**100.0%**