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EL 413 AND EL 744

WILKINSON LAKES

PROGRESS REPORTS FOR THE PERIOD 14/7/78 TO 5/10/81

Submitted by
BP Mining Development Australia Pty Ltd
1981

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE. 3339. TRANSPARENT CYLINDER 3339/1.

TENEMENT: E.L. 413.
TENEMENT HOLDER: B.P. MINING DEVELOPMENT AUST. PTY. LTD.

REPORT:
WEBER G.B. 1978.
Drilling programme no. 1 E.L. 413.
Wilkinson Lakes Area. S.A. pgs. (2-59)

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E.L. 413. Wilkinson Lakes Area, S.A.
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REPORT:
WEBER G.B. 1978.
E.L. 413. Wilkinson lakes Area, S.A.
Quarterly progress report.
(Period: December 31st, 1978) pgs. (60-116)

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LETTER:

WEBER G.R. 1979.
Core library sample receipt sheets.
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REPORT:

HILLS DR. J.H. 1979.
E.L. 413.Quarterly progress report.
(Period: ended March 31st, 1979)
No plans. pgs.(117-120)

REPORT:

HILLS DR. J.H. 1979.
E.L. 413. Quarterly progress report.
(Period: ended June 30th, 1979)
No plans. pgs.(121-123)

REPORT:

HILLS DR. J.H. 1979.
E.L. 413.Quarterly progress report.
(Period: ended September 30th 1979)
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REPORT:

WEBER G.B. 1979.
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study & a radiometric survey - Wilkinson Lakes area. pgs.(127-152)

PLANS:

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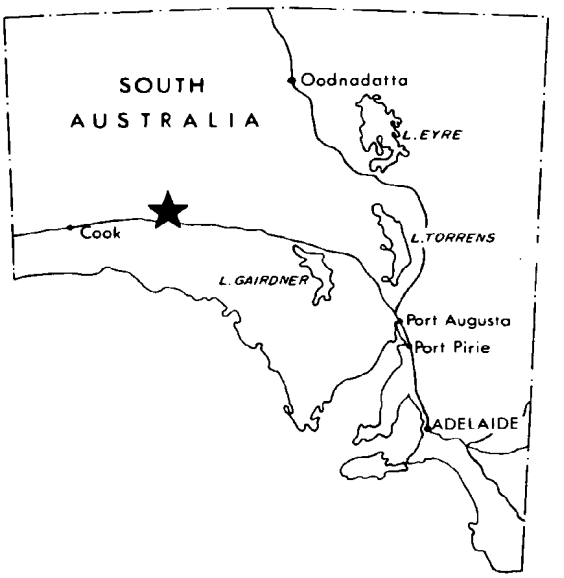
CONTENTS ENVELOPE. 3339 TRANSPARENT CYLINDER. 3339/1

BP MINING DEVELOPMENT AUSTRALIA PTY. LTD.



LOCATION MAP

1978

DRILLING PROGRAMME No1

EL 413

WILKINSON LAKES AREA

SOUTH AUSTRALIA

VOL. I OF II

G.B.WEBER
MELBOURNE-VICTORIA

JANUARY, 1979.

S U M M A R Y

Exploration Licence 413 covers an area of 2 460 square kilometres south of the Wilkinson Lakes in central-western South Australia. A reconnaissance drilling programme was undertaken to test the eastern edge of the Tallaringa Trough for the presence of stream deposited clastics that may host uranium mineralisation, and the palaeodrainage system that occur in the area for mineralisation associated with lignitic material.

A total of 48 rotary holes were drilled in the period August to October 1978 for an advance of 3 213 metres. Two holes W.L. 22 and W.L. 38 intersected significant radiometric anomalies within the palaeodrainage channels. Radiometric grades ($\underline{e}$ U_3O_8) of up to 0.33 lb per tonne were calculated from digital printouts.

Geochemical analyses showed values up to 85 parts per million which was due to the samples being contaminated by barren zones above or below the mineralised horizon. Previous work in the Frome Embayment showed cored sediments gave equitable values to the equivalent radiometric grades calculated from digital printouts. Mineralogical work on the sample with the highest assay value indicated that some of the radio-activity is due to heavy minerals which include monazite, xenotine and zircon.

However, from the initial drilling programme enough information was collected to warrent further exploration work.

KEYWORDS

Wilkinson Lakes
rotary drilling
uranium mineralisation
base metal mineralisation
Garford Formation
Pidinga Formation
Palaeochannels
Tallaringa Trough
Petrological descriptions
Mulgathing Trough.

C O N T E N T S

007

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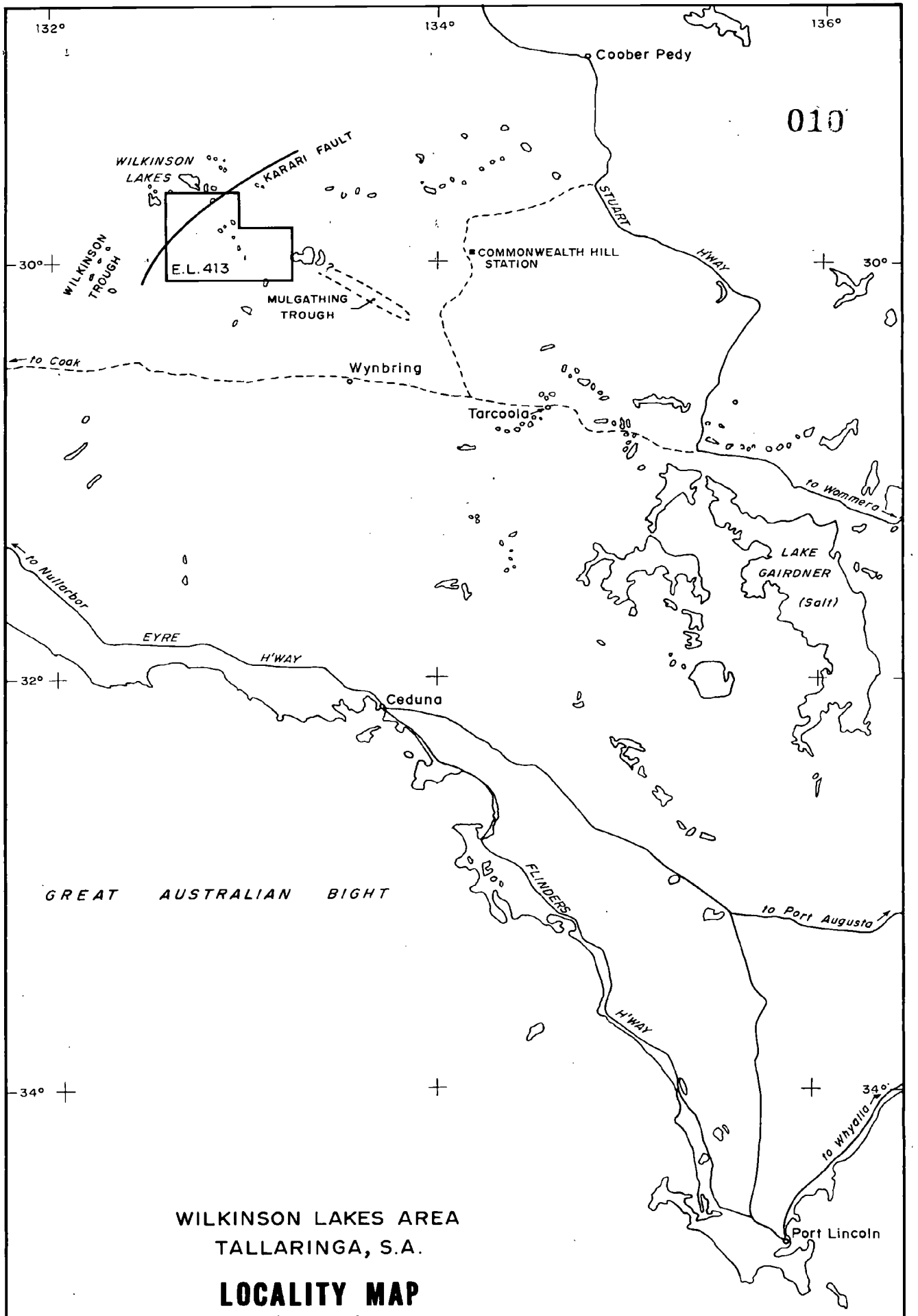


WILKINSON LAKES AREA
TALLARINGA, S.A.

LOCALITY MAP

(E.L. 413)

SCALE 1:2,500,000

kms 50 0 50 100 kms

FIGURE 1

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-4	
JANUARY 1979	G. WEBER

T 1998

132°30' 133°00' 133°30' 29°30' 30°00' 30°10'

EL 413

WILKINSON LAKES

ZONE ?

FAULT

KARARI

LAKE ANTHONY

HALF MOON LAKE

WEST POINT HILL K666

BLOWOUT △203 K665

Carl Dour Tank

Dingo Flat Gate

Moonbi Bore

Bore

Indooroopilly Outstation

Crutching yards

Black Oak Crest

Gruline Bore

Two Stone Hore Tk

Shed & Yds

Tk Lamont Bore

K028

CAMP I

CAMP II

(STRAT. HOLE)

To Maralinga

WLR 1 WLR 2 WLR 3 WLR 4 WLR 5 WLR 6 WLR 7 WLR 8 WLR 9 WLR 10 WLR 11 WLR 12 WLR 13 WLR 14 WLR 15 WLR 16 WLR 17 WLR 18 WLR 19 WLR 20 WLR 21 WLR 22 WLR 23 WLR 24 WLR 25 WLR 26 WLR 27 WLR 28 WLR 29 WLR 30 WLR 31 WLR 32 WLR 33 WLR 34 WLR 35 WLR 36 WLR 37 WLR 38 WLR 39 WLR 40 WLR 41 WLR 42 WLR 43 WLR 44 WLR 45 WLR 46 WLR 47

WW1

A A' B B' C C' D D' E E' F F'

INDEX MAP

WILKINSON 5438	MOONBA 5538
LAKE BRING 5437	MOBELLA 5537

S. A. DEPT. OF MINES PRELIMINARY COPIES
(Based on Clarke's 1858 Fig.)

FAULT SYSTEM

FAULT SYSTEM INFERRED

SUBSIDIARY TROUGH DIMENSIONS INFERRED

WW1 WATER WELL DRILLED FOR COMMONWEALTH HILL STATION

WLR WILKINSON LAKES ROTARY DRILLHOLES (BPMDA,1978)

(B) OUTCROPPING GRANITIC BASEMENT

WILKINSON LAKES PROJECT
E.L. 413, S.A.
DRILL HOLE AND STRUCTURE PLAN

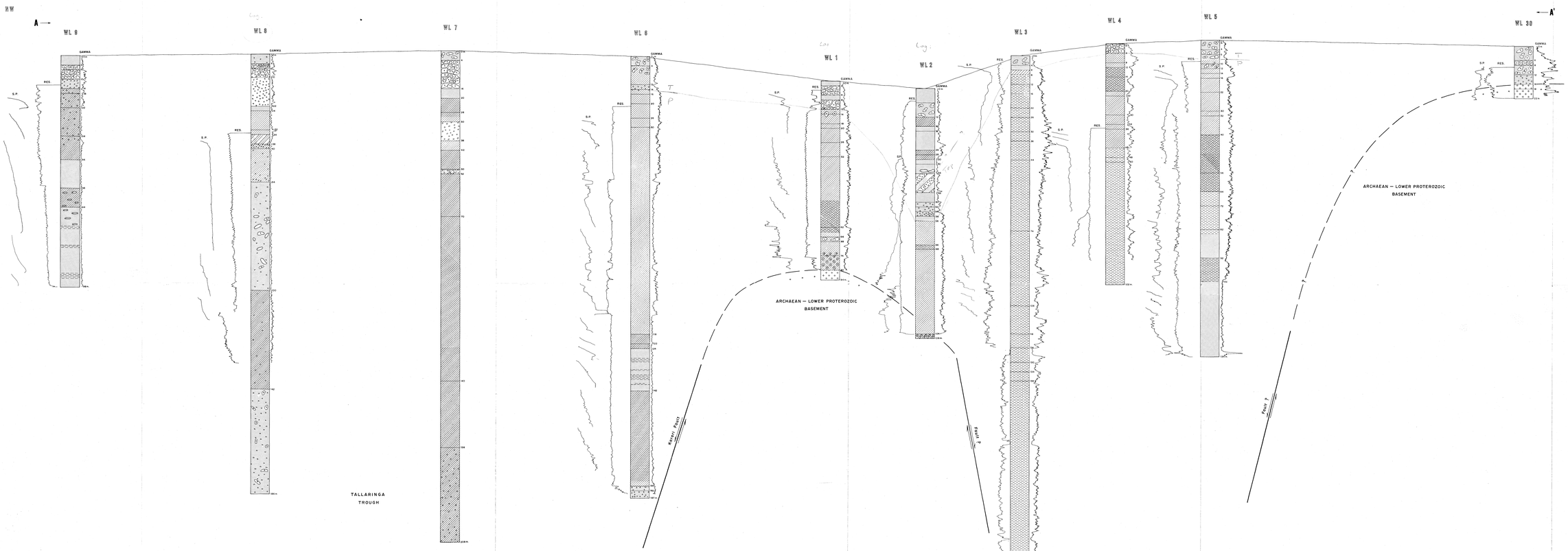
SCALE 1:100,000

Kilometres 2 0 2 4 6 8 10 Kilometres

FIGURE 2

BP MINING DEV. AUST. PTY. LTD.	
Area: WILKINSON LAKES	
SOUTH AUSTRALIA	
Ref:	U1/20-4
JAN. 1979	G. WEBER

(3339-H)



1978
WILKINSON LAKES PROJECT, S.A.
DRILLING PROGRAMME 1
EL-413

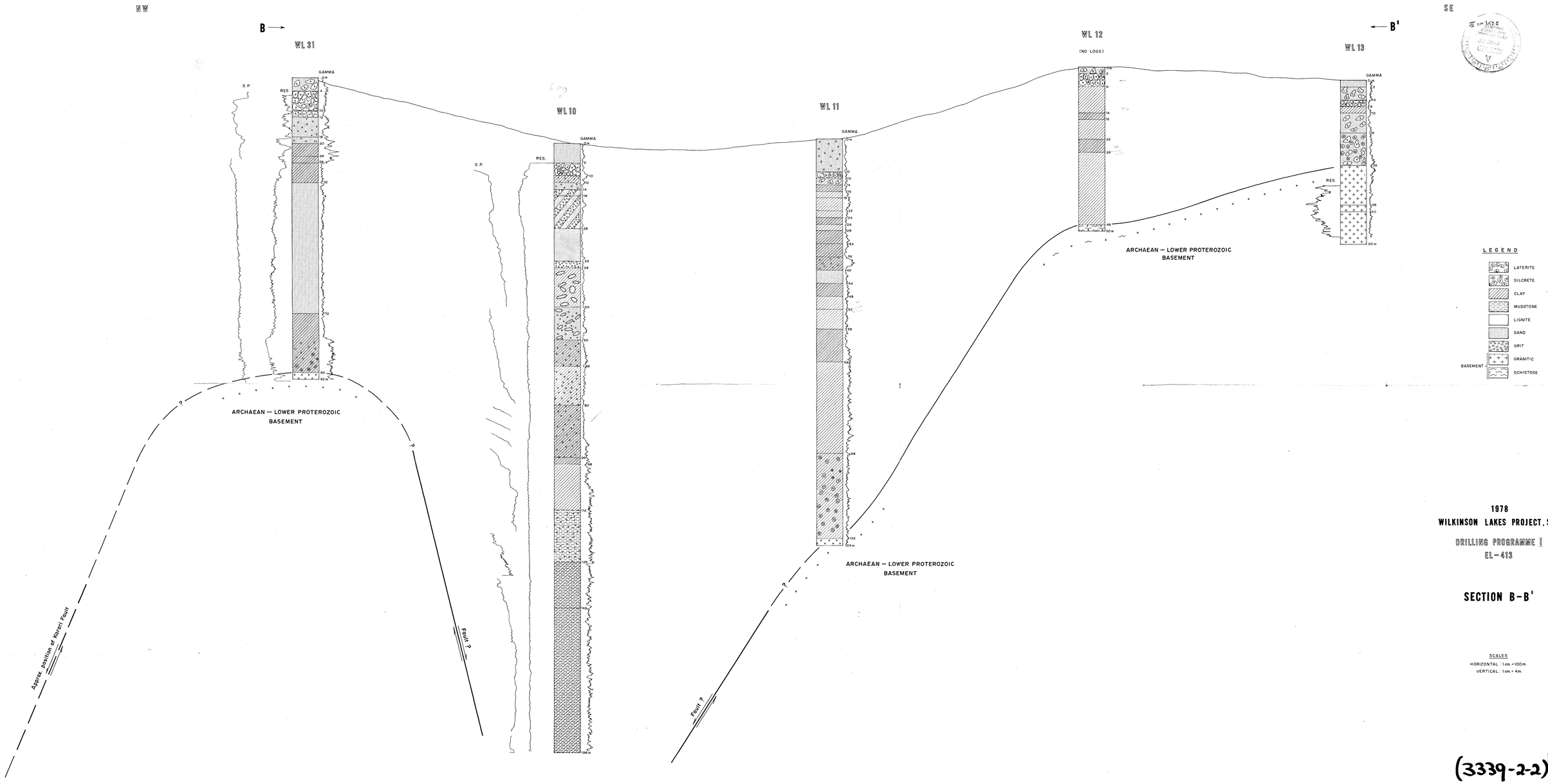
SECTION A-A'

SCALES
HORIZONTAL : 1cm = 100m.
VERTICAL : 1cm = 4m.

FIGURE 3

BP MINING DEV. AUST. PTY. LTD.	
Area: WILKINSON LAKES	S.A.
Ref: SC/20/4	
JANUARY 1979	J. WEBER
Drafted by: T. MASTERS	

(3339-II-1)



1978

WILKINSON LAKES PROJECT, S.A.

DRILLING PROGRAMME I

EL – 413

SECTION B–B'

SCALES

HORIZONTAL : 1cm = 100m.

VERTICAL : 1cm = 4m.

FIGURE 4

BP MINING DEV. AUST. PTY LTD.	
Area	WILKINSON LAKES
	S.A.
Ref.	WL/20-4
JANUARY 1979	G. WEBER
Drafted by	C. MACLEAY

(3339-2-2)

W

C →

E

← C'

WL 14

WL 15

WL 16

GAMMA

S. P.

RES.

0m

4

6

8

10

20

24

38m

2

12

14

32

58

60m.

38

39m.

ARCHAEAN — LOWER PROTEROZOIC
BASEMENT

?

LEGEND

LATERITE
SILCRETE
CLAY
MUDSTONE
LIGNITE
SAND
GRIT
BASEMENT — GRANITIC
SCHISTOSE

1978
WILKINSON LAKES PROJECT, S.A.

DRILLING PROGRAMME I
EL-413

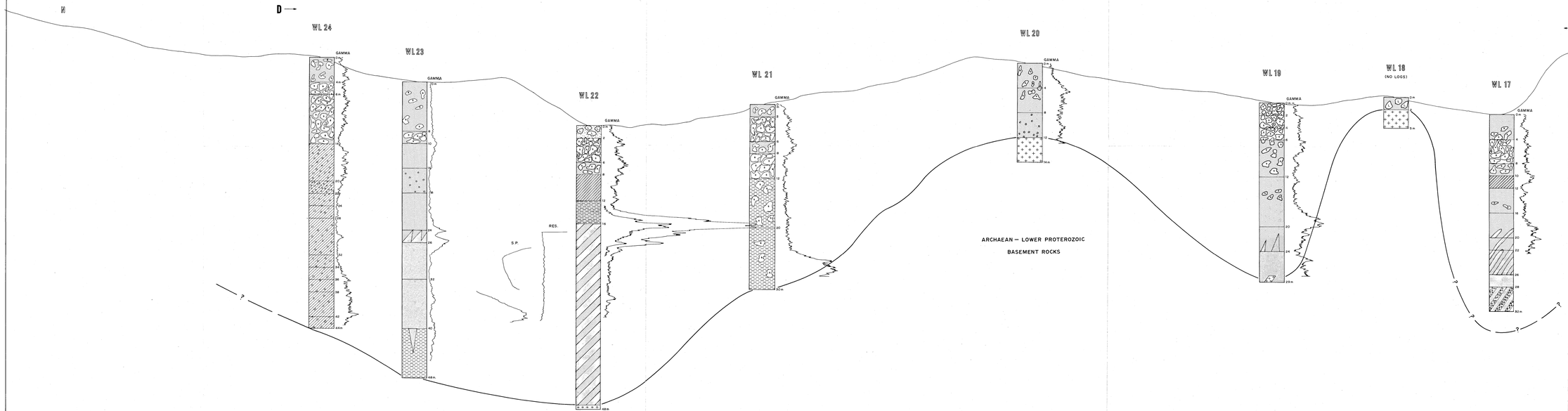
SECTION C-C'

SCALES
HORIZONTAL : 1 cm. = 100 m.
VERTICAL : 1 cm. = 2m.

FIGURE 5

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-4	
JANUARY 1979	G. WEBER
Drafted by: C. MACLEAY	

(3339-2-3)



LEGEND

- LATERITE
- SILCRETE
- CLAY
- MUDSTONE
- LIGNITE
- SAND
- GRIT
- BASEMENT — GRANITIC
- BASEMENT — SCHISTOSE

1978

WILKINSON LAKES PROJECT, S.A.

DRILLING PROGRAMME I

EL-413

SECTION D-D'

SCALES

HORIZONTAL : 1cm = 100m.

VERTICAL : 1cm = 2m.

FIGURE 6

BP MINING DEV AUST PTY LTD	
Area WILKINSON LAKES	
	S.A.
Ref	01/20/4
JANUARY 1979	S. WEBER
Drafted by: C. MACLEAY	

(3339-2-4)

W

E →

E

← E'

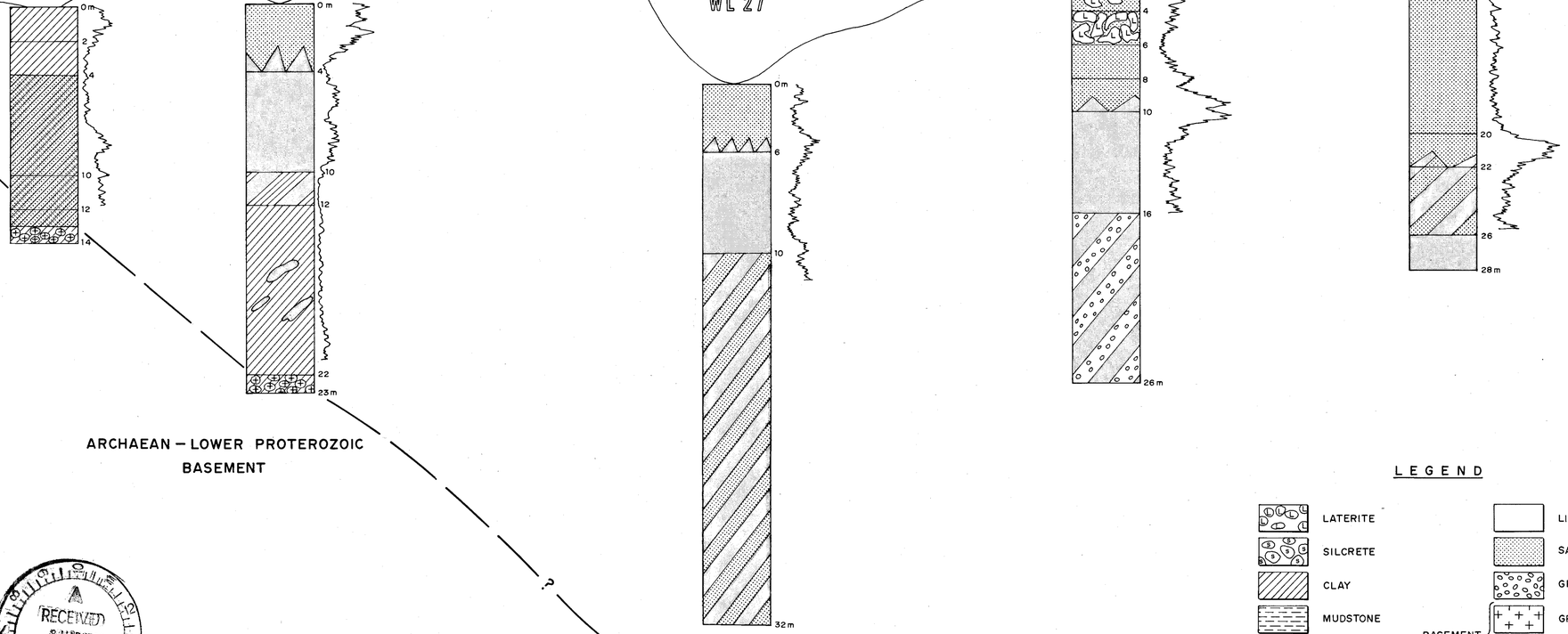
WL 25

WL 26

WL 27

WL 28

WL 29



ARCHAEAN – LOWER PROTEROZOIC
BASEMENT

?

?

LEGEND

- LATERITE
- SILCRETE
- CLAY
- MUDSTONE
- LIGNITE
- SAND
- GRIT
- BASEMENT: GRANITIC
- BASEMENT: SCHISTOSE

1978
WILKINSON LAKES PROJECT, S.A.

DRILLING PROGRAMME I
EL – 413

SECTION E–E'

SCALES

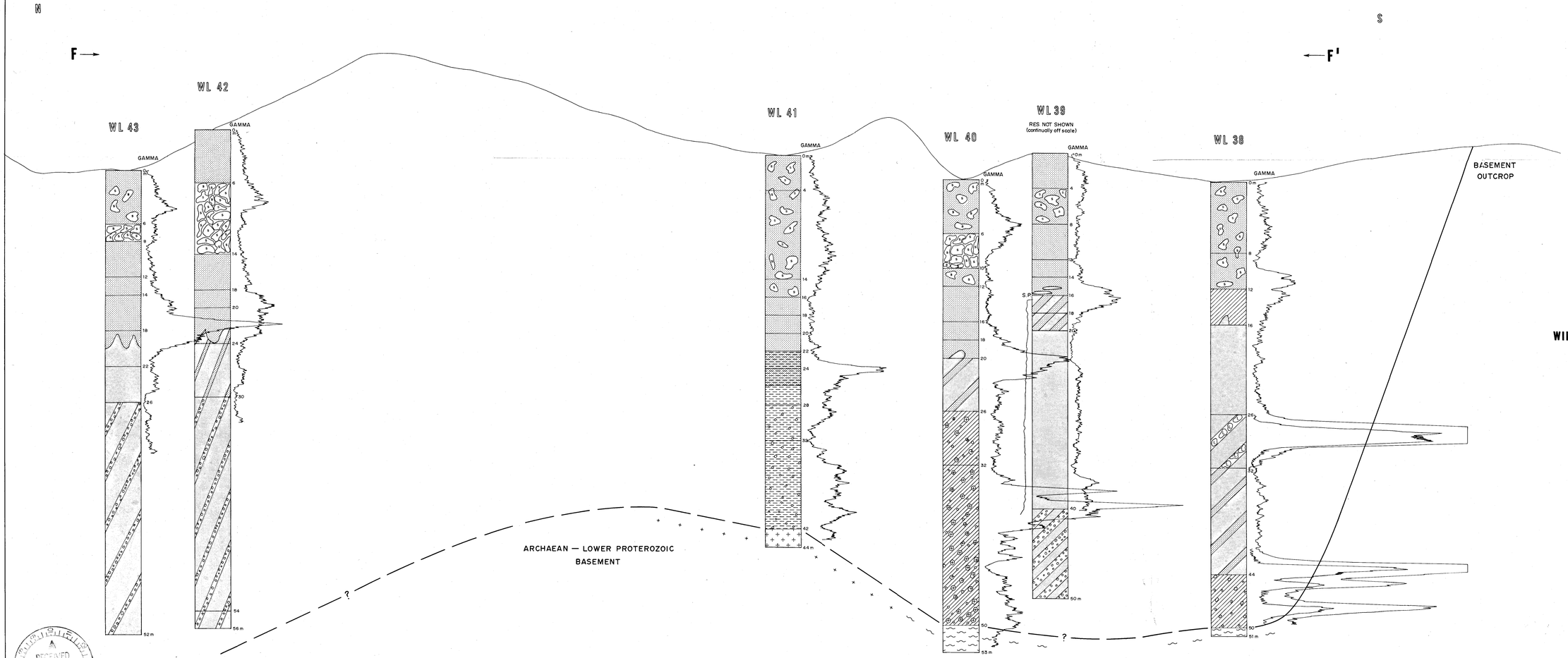
HORIZONTAL : 1 cm. = 100 m.

VERTICAL : 1 cm. = 2 m.

FIGURE 7

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES S.A.	
Ref: U1/20-4	
JANUARY 1979	G. WEBER
Drafted by: C. MACLEAY	

(3339-2-5)



LEGEND

- LATERITE
- SILCRETE
- CLAY
- MUDSTONE
- LIGNITE
- SAND
- GRIT
- GRANITIC (BASEMENT)
- SCHISTOSE

1978
WILKINSON LAKES PROJECT, S.A.

DRILLING PROGRAMME I
EL-413

SECTION F-F'

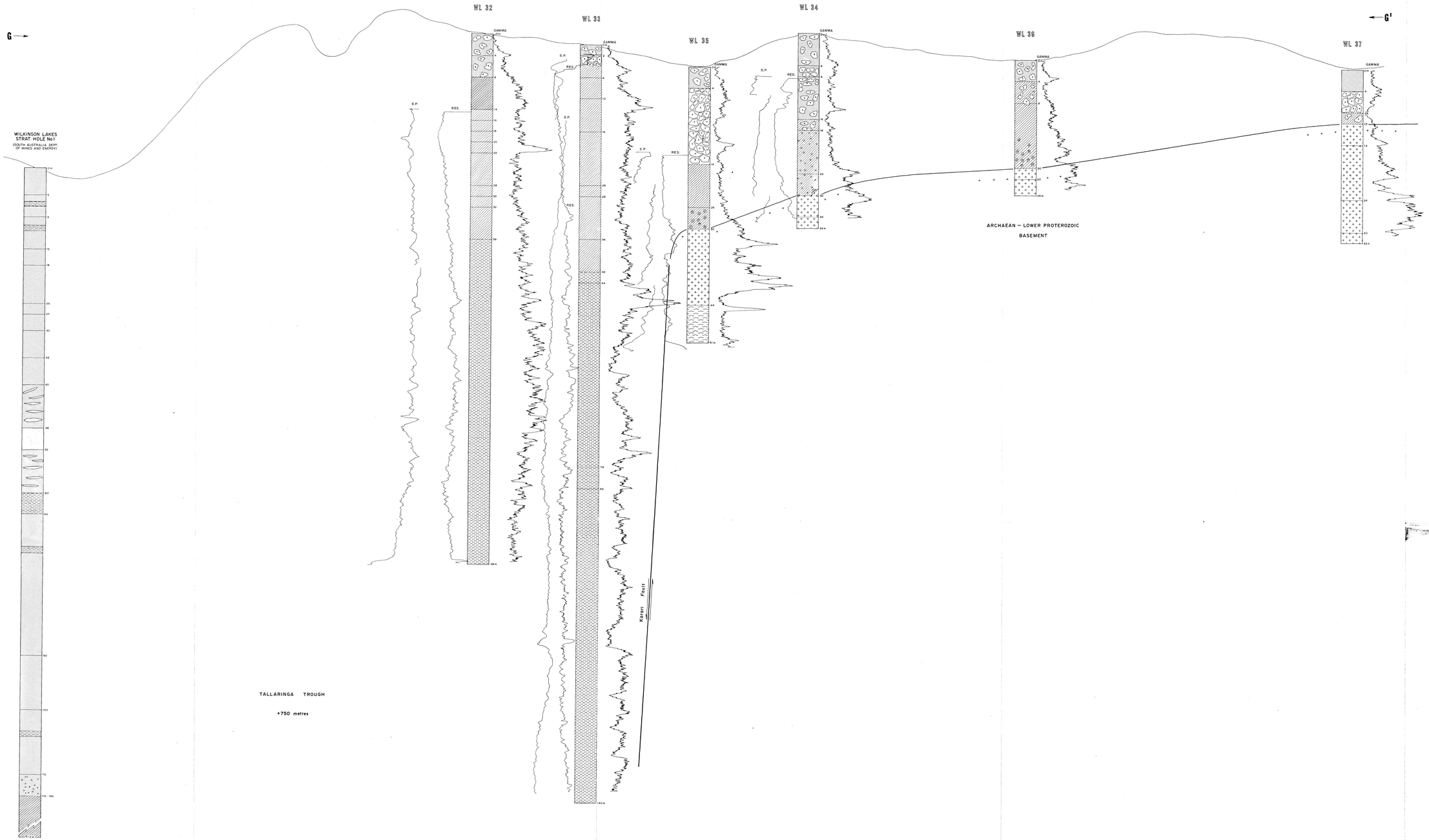
SCALES

HORIZONTAL : 1 cm. = 100 m.
VERTICAL : 1 cm. = 2m.

(3339-2-6)

FIGURE 8

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S.A.	
Ref:	01/20-4
JANUARY 1979	G. WEBER
Drafted by: C. MACLEAY	



1978
WILKINSON LAKES PROJECT, S.A.
DRILLING PROGRAMME I
EL – 413

SECTION G-G'

SCALES
HORIZONTAL : 1cm = 100m.
VERTICAL : 1cm = 2m.

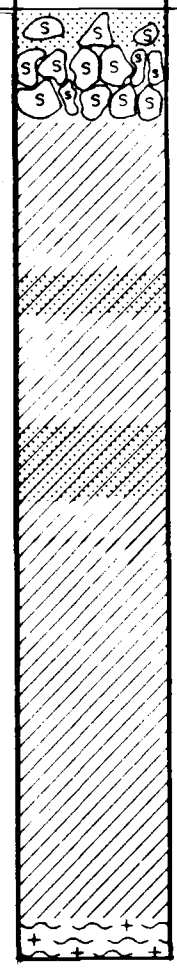
(3339-2-7)

FIGURE 9
BP MINING DEV AUST PTY LTD
Area WILKINSON LAKES
S.A.
Ref 3339-2-7
JANUARY 1978 | A. WEBER
Drafted by: C. MACLEAY

BPMDA DRILL HOLE LOG

HOLE No.	W.L.12	DATE STARTED	14.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	14.09.78	RANGE		RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED		TIME CONSTANT		SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	50 m.	PAPER SPEED		BIAS	
STATE	S.A.	LOGGED DEPTH		LOGGING SPEED		FLUID LEVEL	
GEOLOGIST	WEBER	ELEVATION		BACK GROUND		PROBE No.	
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3137	HOLE DIAMETER		STANDARD	
LOGGING Co.	GEOSCIENCE	EASTINGS	5917	K-FACTOR			

LITHOLOGIES — Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose (Basement)

GAMMA S.P. RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
		0- 2 (500)	Sands and Silcrete: Pale reddish brown (10R5/4) silcrete and clayey sands.
		2- 6 (525) (575)	Silcrete and Grit: Light gy. (N7) silcrete and Pale red (10R6/2) angular sandy grit.
		6- 14 (625) (675) (625) (625) (625)	Clays: Dk.yellowish orange (10YR6/6), Grayish orange (10YR7/4) and Pale red (10R6/2) mottled clays. At 12m. some qtz. grit particles occur.
		14- 16 (675)	Sandy Clays: Pale reddish brown (10R5/4) silty-sandy clays.
		16- 22 (650) (625) (575)	Clay: Grayish orange (10YR7/4 silty clays.
		22- 26 (575) (525)	Sandy Clay: Dk.yellowish orange (10YR6/6) sandy clays. At 25 m. some med. gy. (N5) clays appear.
		26- 48 (525) (650) (550) (550) (575) (550) (600) (650) (600) (600) (600)	Clays: Med. gy (N5) clays slightly silty. Some bands slightly indurated.
		48- 50 (525)	Basement: V.hard, granitic basement. Some schistose fragments. E.O.H.

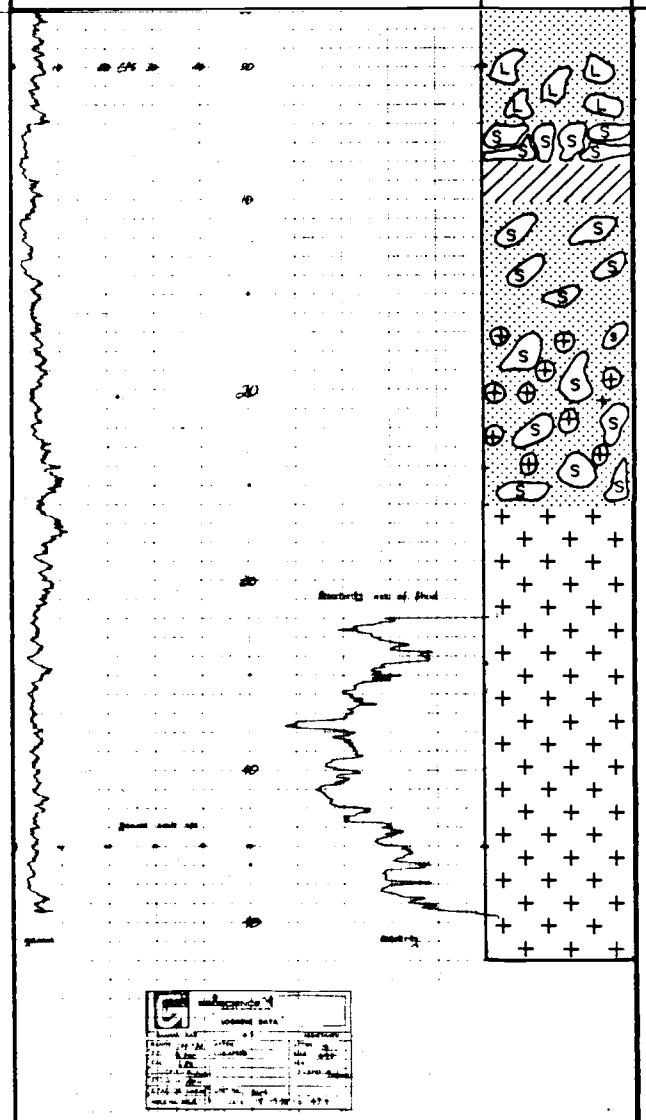
N.B. HOLE CLOSED AT 10M AND COULD NOT BE LOGGED BY GEOSCIENCE

3339-2-8

BPMDA DRILL HOLE LOG

HOLE No.	WL 13	DATE STARTED	14.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	15.09.78	RANGE	100 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	15.09.78	TIME CONSTANT	2 sec.	SP SCALE	NO RESISTIVITY LOG
LOCATION	TALLARINGA	DRILLED DEPTH	50m	PAPER SPEED	1cm/m	BIAS	490
STATE	S.A.	LOGGED DEPTH	48.4m	LOGGING SPEED	9m/min.	FLUID LEVEL	32m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	2c.p.s.	PROBE No.	AP-1
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3118	HOLE DIAMETER	4.75 inch	STANDARD	495
LOGGING Co.	GEOSCIENCE	EASTINGS	5931	K·FACTOR	1.44×10^{-5}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose



INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0– 2 (425)	Sands: Pale reddish brown (IOR5/4) and grayish red (5R4/2) surficial sands.
2– 6 (475)	Laterite and Sands: Grayish red (5R4/2) laterite and pale reddish brown (IOR5/4) sands.
(475)	
6– 8 (450)	Silcrete: Grayish pink (5R8/2) silcrete.
8– 10 (400)	Clay: Dk. yellowish orange (IOYR6/6) grayish orange (IOYR7/4) mottled clays.
10–16 (475)	Sands and Silcrete: Pale pink (5RP8/2) m - v.c.g. sands and grit ang. grains generally
(525)	clear occ. Frosted, iron stained with grayish pink (5R8/2) silcrete.
(475)	
16–26 (525)	Sands, Silcrete and Basement: Pinkish gy (5YR8/1) c - v.c.g. sands containing granitic
(500)	basement particles. Also some dk yellowish orange (IOYR6/4) laterite particles.
(400)	
(475)	
(475)	
26–38 (500)	Weathered Basement: Grayish orange pink (5YR7/2) clayey, sandy grit comprised of
(450)	weathered Basement.
(500)	
(450)	
(400)	
(450)	
38–40 (450)	Basement: Pale yellowish brown (IOYR6/2) containing basement chips and pyritic biotite layer.
40–50 (425)	Basement: Light Olive gy (5Y5/2) becoming Olive gy (5Y3/2) Fresh granitic basement -
(450)	somepyrite. Qtz - Feldspar - porphyry. V. hard drilling.
(475)	
(500)	
(450)	

E.O.H.

3339-2-9

BPMDA DRILL HOLE LOG

HOLE No.	WL.18	DATE STARTED	28.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	28.09.78	RANGE		RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED		TIME CONSTANT		SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	5 m	PAPER SPEED		BIAS	
STATE	S.A.	LOGGED DEPTH		LOGGING SPEED		FLUID LEVEL	
GEOLOGIST	WEBER	ELEVATION		BACK GROUND		PROBE No.	
DRILLING Co.	BROWN	CO-ORDS: NORTHINGS	2873	HOLE DIAMETER	4.75 inch	STANDARD	
LOGGING Co.		EASTINGS	6129	K-FACTOR		Basement	

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose

GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 2	Sand and Laterite: Dk. reddish brown (10R4/6) surficial bimodal sands and laterite.
				2- 4	Basement: Grayish yellow green (5GY7/2) weathered granitic basement
				4- 5	Basement: Grayish yellow green (5GY7/2) fresh granitic basement.
					E.O.H.

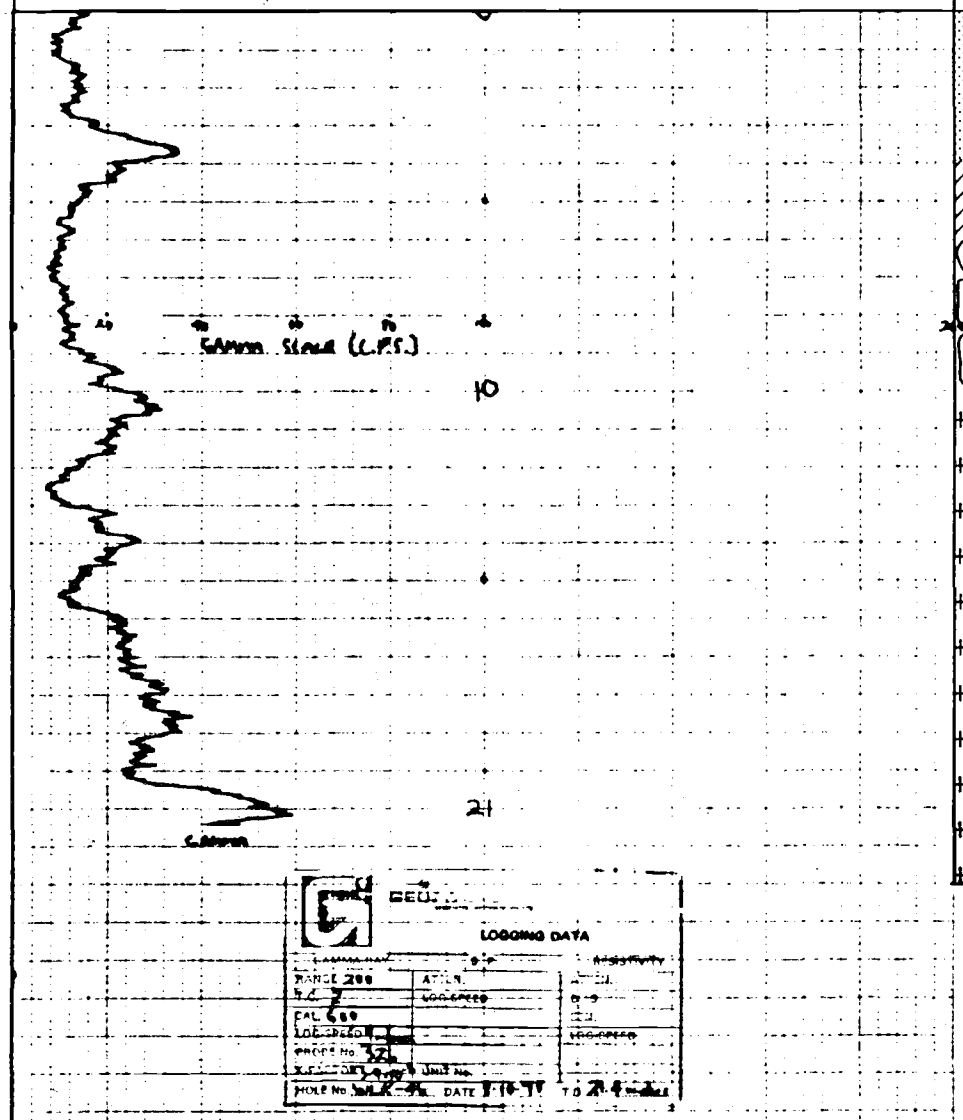
3339-2-10

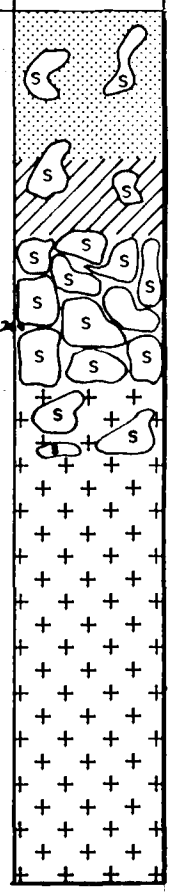
3339-2-11

BPMDA DRILL HOLE LOG

HOLE No.	WL.46	DATE STARTED	08.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	08.10.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	08.10.78	TIME CONSTANT	2 Sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	23 m.	PAPER SPEED	1 cm./m.	BIAS	
STATE	S.A.	LOGGED DEPTH	22.4 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	13 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2971	HOLE DIAMETER	4.75 inch	STANDARD	4490
LOGGING Co.	GEOSCIENCE	EASTINGS	6319	K-FACTOR	3.9 x 10-6		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose





INTERVAL (Surface ometer	Scintill- c.p.m.)	DESCRIPTION
0- 4	(425)	Sands and Silcrete: Mod.reddish brown (10R4/6) surficial, Fe.-stain qtz. sands containing silcrete lumps.
	(450)	
4- 6	(450)	Clays and Silcrete: Mod.reddish brown (10R4/6) clays containing V.pale orange (10YR8/2) silcrete chips.
6- 10	(475)	Silcrete: Mod.orange pink (5YR8/4) friable, broken silcrete layer.
	(375)	
10- 12	(475)	Silcrete and Basement: V. pale orange (10YR8/2) silcrete, then pale yellowish brown (10YR6/2) weathered granitic basement.
12- 16	(425)	Weathered Basement: Pale yellowish brown (10YR6/2) friable weathered granitic basement.
	(400)	
16- 20	(400)	Weathered Basement: Pale red-purple (5RP6/2) iron-stained weathered, friable granitic basement.
	(525)	
20- 23	(550) (475)	Basement: V.light gy (N8) and dk.yellowish brown (10YR4/2) granitic basement becoming fresh and hard drilling.

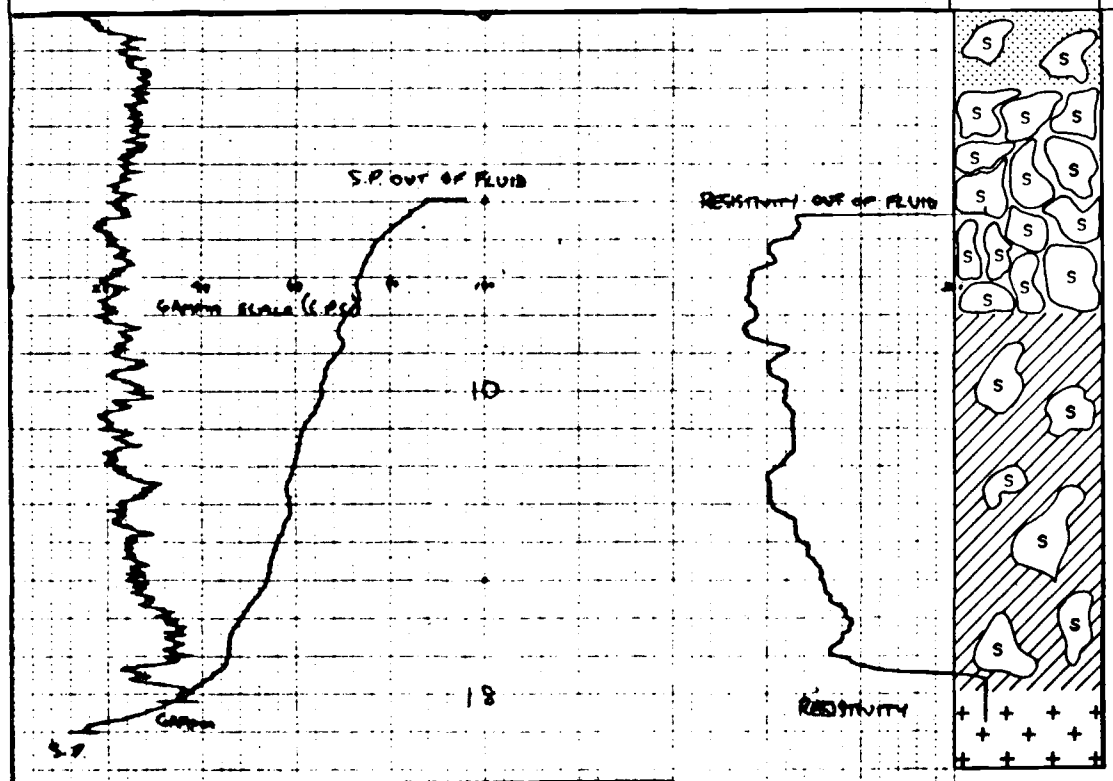
E.O.H.

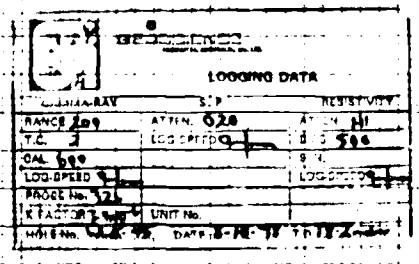
3339-2-12

BPMDA DRILL HOLE LOG

HOLE No.	WL. 45	DATE STARTED	07.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	07.10.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	07.10.78	TIME CONSTANT	2 SEC.	SP. SCALE	020
LOCATION	TALLARINGA	DRILLED DEPTH	20 m.	PAPER SPEED	1 cm./m.	BIAS	500
STATE	S.A.	LOGGED DEPTH	19.2 m.	LOGGING SPEED	9 m/min.	FLUID LEVEL	5 m.
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	13 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2979	HOLE DIAMETER	4.75 inch	STANDARD	4490
LOGGING Co.	GEOSCIENCE	EASTINGS	6255	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose — Basement





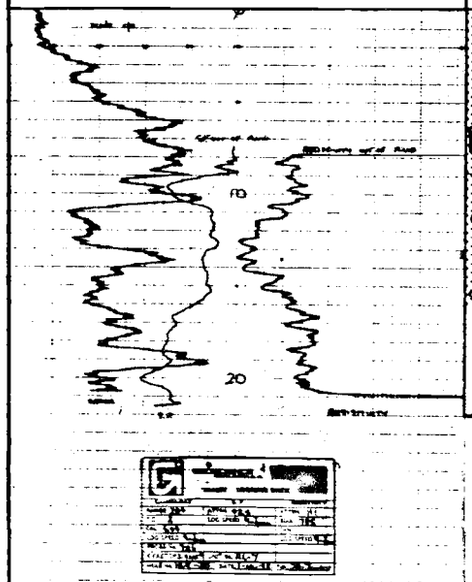
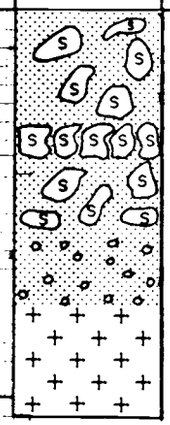
INTERVAL (Surface Scintillometer c.p.m.)		DESCRIPTION
0– 2	(425)	Sands and Silcrete: Mod.reddish brown (10R4/6) surficial Fe.stained bimodal qtz. sands and sil.particles.
2– 8	(475)	Silcretes: Pale olive (10Y6/2) and mod.reddish brown (10R4/6) silcretes.
	(500)	
	(500)	
8– 18	(500)	Clays and Silcrete: Mottled V.light gy (N8), mod.reddish brown (10R4/6) and dk.yellowish orange (10YR6/6) silcretes and clays. Some particles of granitic basement.
	(500)	
	(550)	
	(500)	
	(475)	
18– 20	(475)	Basement: Fresh Granitic Basement.
		E.O.H.

3339-2-13

BPMDA DRILL HOLE LOG

HOLE No.	WL 30	DATE STARTED	01-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	01-10-'78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	01-10-'78	TIME CONSTANT	2 sec.	SP. SCALE	024
LOCATION	TALLARINGA	DRILLED DEPTH	20 m	PAPER SPEED	1 cm/m	BIAS	650
STATE	S.A.	LOGGED DEPTH	21.7 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	7.8 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3077	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	5910	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Basement: Granitic, Schistose

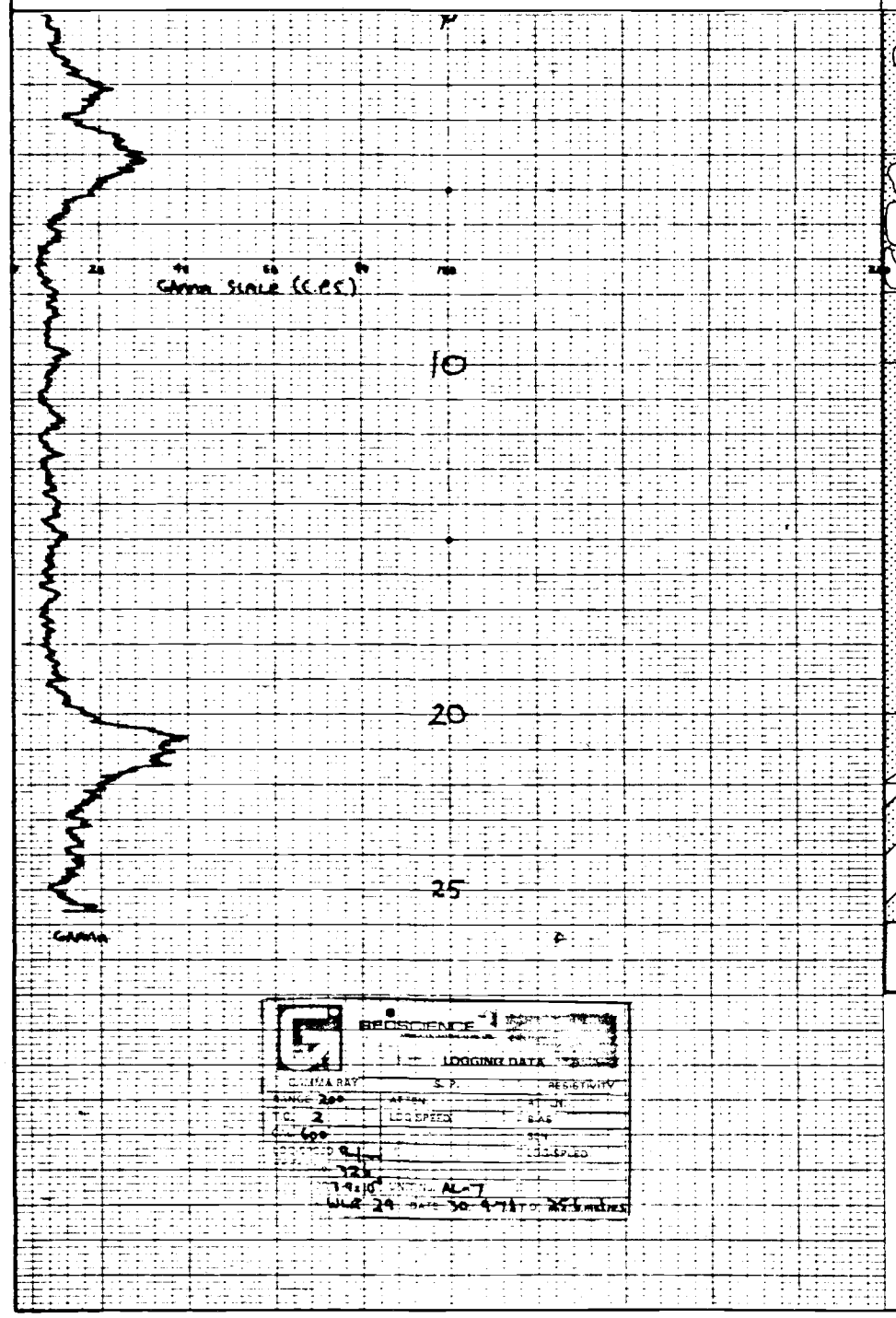
GAMMA S.P. RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
		0– 6 (450) (475) (475)	Sands and Silcrete: Mod. reddish brown (10R4/6) surficial, bimodal qtz. sands and Pale red (10R6/2) silcrete nodules.
		6– 8 (500)	Silcrete: Grayish orange (10YR7/4) silcrete.
		8– 12 (675) (725)	Silcrete and Sands: Mottled v.light gay. (N8) Pale purple (5P6/2), dusky yellow (576/4) silcrete and sands.
		12– 16 (600) (600)	Sand & Grits: V.light gy(N8), Pale purple (5P6/2),dusky yell. (5Y6/4) sands & grits con.v.pale green (10G8/2) muds and mod.reddish brown (10R6/4) lateritic lumps. Mica's present.
		16– 18 (625)	Basement: Pale red (5R6/2) weathered granitic basement.
		18– 22 (600) (475)	Basement: Pale yellowish brown (10YR6/2) weathered basement. V.hard drilling.

3339-2-14

BPMDA DRILL HOLE LOG

HOLE No.	WL 29	DATE STARTED	30-09-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30-09-'78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30-09-'78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	30 m	PAPER SPEED	1 cm/m.	BIAS	
STATE	S.A.	LOGGED DEPTH	26.6 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	426
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2953	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6053	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose



GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4 (325)	Sands and Laterite: Mod.reddish brown (10R4/6) bimodal, iron-stained qtz. sands containing Pale red (10R6/2) silcrete particles.
				(325)	
				4- 8 (325)	Laterite and Sands: Mod.reddish brown (10R4/6) laterite and interstital sands.
				(425)	
				8- 10 (325)	Sands: Dk. yell. orange ((10YR6/6) f.g. and c.g. bimodal qtz. sands iron-stained, rounded to w.rounded. Occ. thin sil. layers.
				10- 20 (325)	Sands: Very pale orange (10YR8/2) becoming Pale yellowish orange (10YR8/6) at 12m iron stained, bimodal f.g and v.c. g. qtz. sands.
				(275)	
				(375)	
				(350)	
				(350)	
				20- 22 (325)	Sands: Pale yell. orange (10YR8/6) bimodal sands becoming Dk.yellowish bn. (10YR4/2) sands due to lignite staining.
				22- 26 (325)	Lignites and Sands: Dk. yellowish brown (10YR4/2) F.g and V.c.g. bimodal sands containing upto 60% lignitic material.
				(350)	
				26- 28 (350)	Lignites: Dusky yellowish brown (10YR2/2) lignites containing m-v.c. sands and grits.

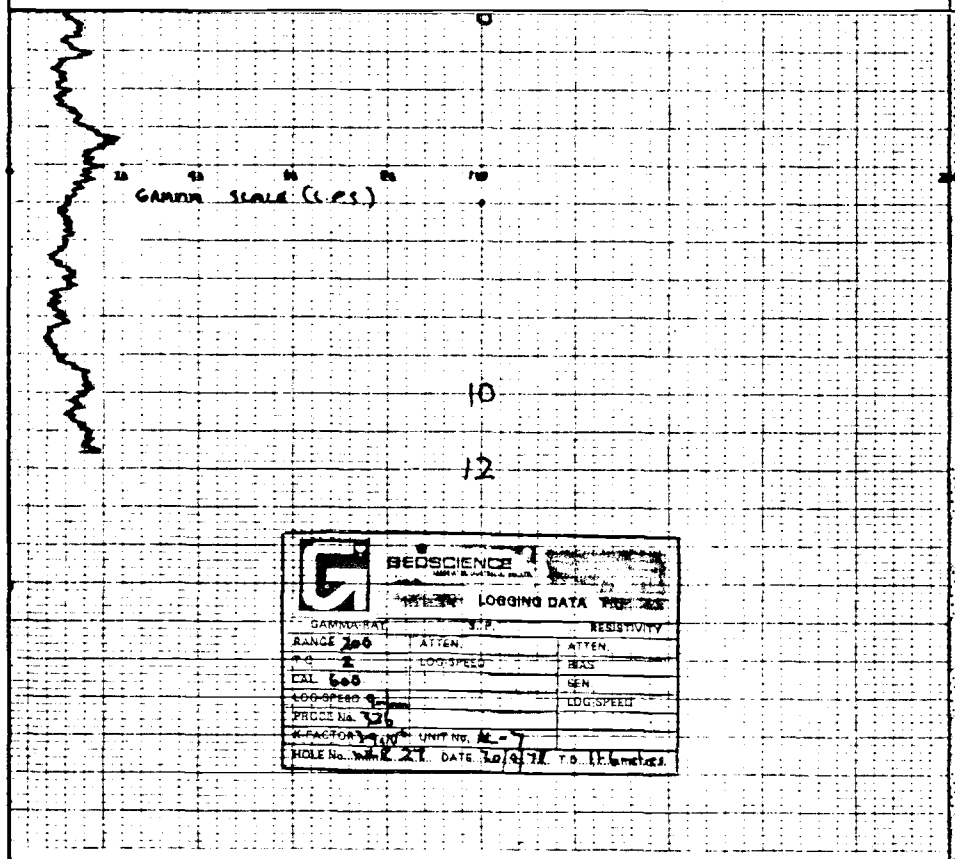
HOLE ABANDONED AT THIS DEPTH DUE TO CAVING SANDS.

3339-2-15

BPMDA DRILL HOLE LOG

HOLE No.	WL 27	DATE STARTED	30-09-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30-09-'78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30-09-'78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	32 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	12.6 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2934	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6038	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Basement: Granitic; Schistose



GAMMA / S.P. / RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
		0- 4	Sands: Light Brown (5YR6/4) becoming Dusky Brown (5YR2/2) at 3m. surficial sands. Lignites stain the sands at 3m.
		4- 10	Lignites: Dusky Brown (5YR2/2) lignites.
		10- 32	Sandy Lignites: Dusky Brown (5YR2/2) lignites containing m-c. g. qtz sands.

HOLE ABANDONED AT THIS DEPTH DUE TO CAVING LIGNITIC SANDS.

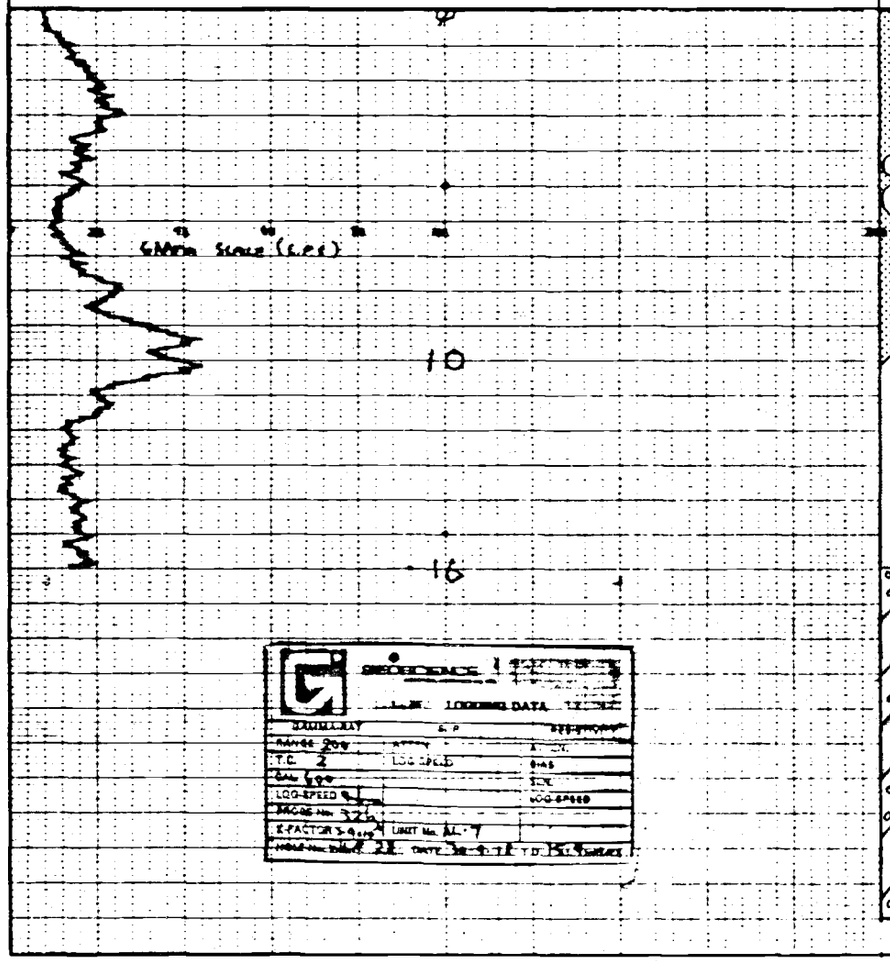
3339-2-16

BPMDA DRILL HOLE LOG

HOLE No.	WL 28	DATE STARTED	30-09-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30-09-'78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30-09-'78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	26 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	16.9 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2942	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6046	K-FACTOR	3.9 x 10^{-6}		

Basement

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose



LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
	2– 4 (425)	Sands: Moderate reddish brown (10R4/6) bimodal sands containing some laterite nodules.
	(475)	
	4– 6 (475)	Laterite: Mod. reddish brown (10R4/6) laterite.
	6– 8 (425)	Sands: Dk.yellowish orange (10YR6/6), light bn. (5YR6/4) iron-stained and a V. light gray (N8) bomodal qtz. sands.
	8– 10 (400)	Sand: Mod. brown (5YR4/4) bimodal sand becoming Dusky Bn. (5YR2/2) lignitic stained sand at 9 m.
	10– 16 (475)	Lignites: Dusky Brown (5YR2/2) lignites.
	(425)	
	(400)	
	16– 26 (400)	Gritty Lignites: Dusky Brown (5YR2/2) lignites containing ang. qtz. grits.
	(375)	
	(375)	
	(400)	
	(350)	

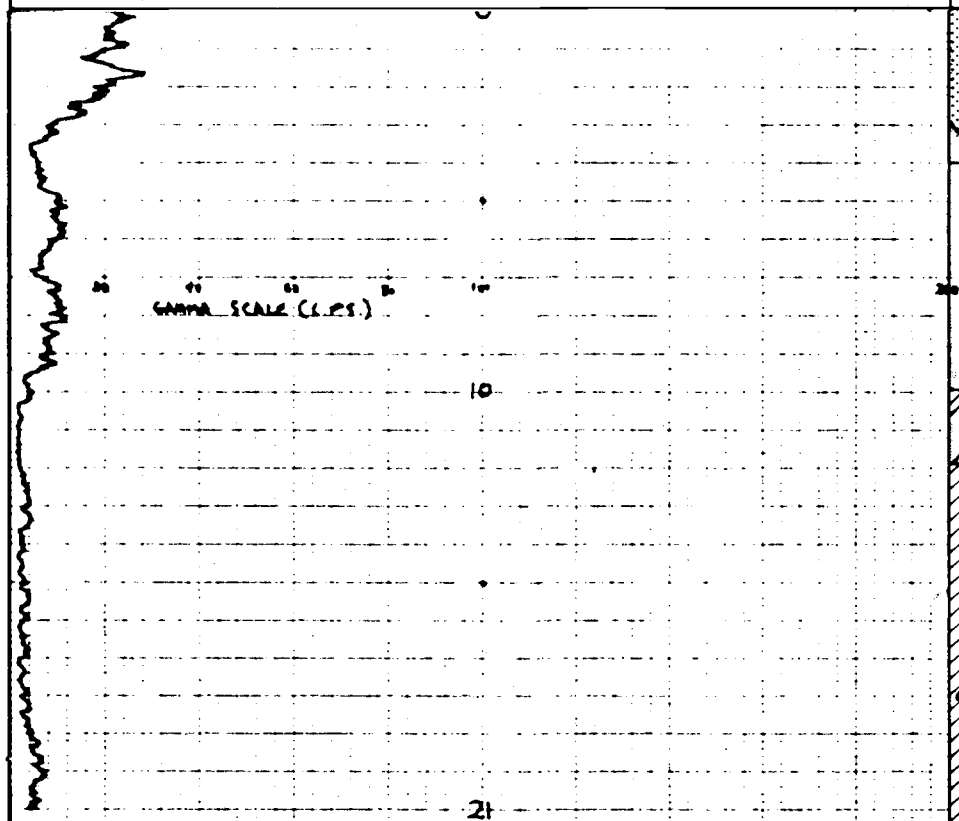
3339-2-17

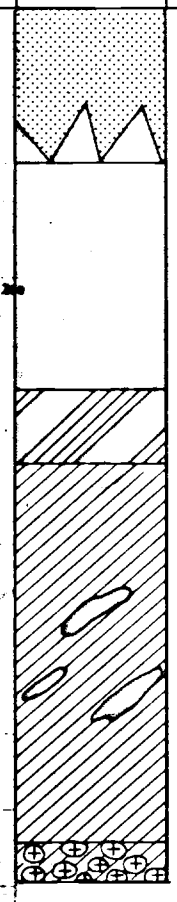
BPMDA DRILL HOLE LOG

HOLE No.	WL 26	DATE STARTED	30-09-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30-09-'78	RANGE	200 c.p.s.	RESIST SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30-09-'78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	23 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	22 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2927	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6031	K-FACTOR	3.9×10^{-6}		

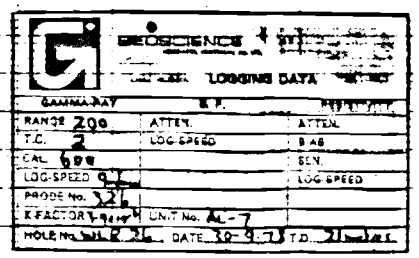
LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose

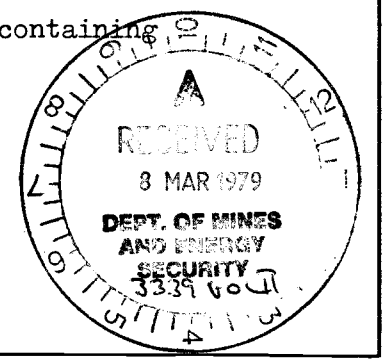
GAMMA | S.P. | RESISTIVITY | LITHOLOGICAL LOG | INTERVAL (Surface Scintillometer c p m) | DESCRIPTION





0- 4	Sands: Light brown (5YR6/4) surficial f-m and v.c.g. (bimodal) ang. qtz sands. At 3m some grayish brown (5YR3/2) sloppy lignites occur.
4- 10	Lignites: Grayish brown (5YR3/2) lignites.
10- 12	Lignites and Clays: Grayish brown (5YR3/2) lignites and olive gray (5Y4/1) clays.
12- 22	Clays: Olive gray (5Y4/1) clays sometimes containing black (N1) lignitic lumps.
22- 23	Clays and Basement: Olive gray (5Y4/1) clays containing pieces of granitic basement.



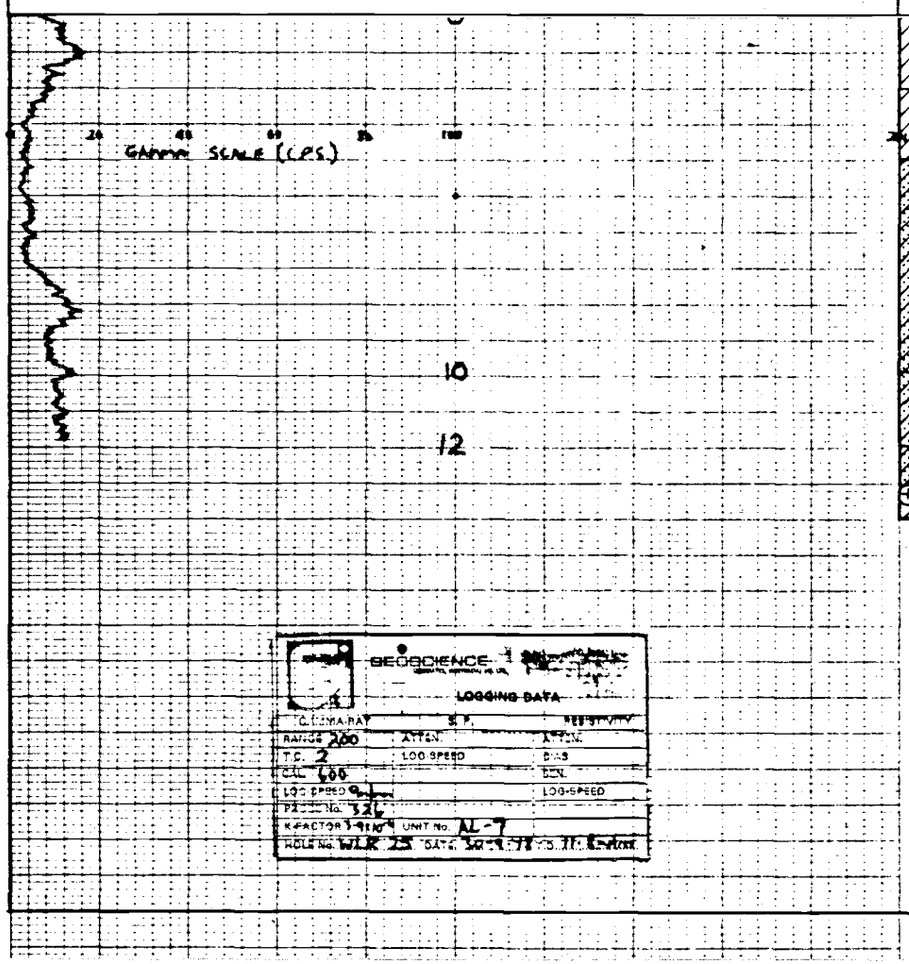


3339-2-18

BPMDA DRILL HOLE LOG

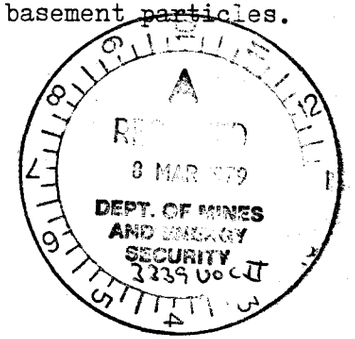
HOLE No.	WL 25	DATE STARTED	30-09-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30-09-'78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30-09-'78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	13 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	12.8 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2919	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6020	K-FACTOR	3.9×10^{-06}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose; Basement



LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
	0– 2 (425)	Clays: Mod.yellowish bn. (10YR5/4) and Dk.yell. orange (10YR6/6) surface clays. Some V.light gy. (N8) silty clays also present.
	2– 4 (425)	Clays: Pale Olive (10Y6/2) and Grayish orange (10YR7/4) clays containing qtz. sand.
	4– 10 (450) (425) (500)	Sandy Clays: Pale Olive (10Y6/2) sandy clays.
	10– 12 (525)	Sandy Clays: Dk. greenish yellow (10Y6/6) sandy clays some weathered basement particles.
	12– 14 (525)	Basement and Sandy Clays: Dk. greenish yellow (10Y6/6) sandy clays containing slightly weathered granitic basement particles.

E.O.H.



3339-2-19

BPMDA DRILL HOLE LOG

HOLE No.	WL.20	DATE STARTED	28.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	28.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	28.09.78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	14 m	PAPER SPEED	1cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	13.8 m	LOGGING SPEED	9m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9 c.p.s.	PROBE No	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2904	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	6121	K-FACTOR	3.9×10^{-6}		

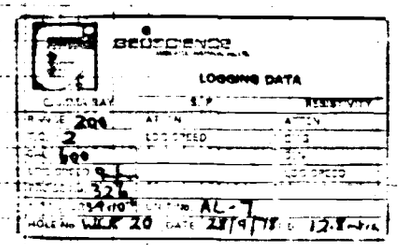
LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose

GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4	Sands and Silcretes: Mod. reddish brown (10R4/6) F.g. clayey sands and mod. orange pink (10R7/4) silcretes.
				4- 8	Silcretes and Sands: Mod. orange pink (10R7/4) gravelly silcretes and sands.
				8- 12	Sands: Mod. reddish brown (10R4/6) sands containing quartz chips - basement?
				12- 14	Granite: Pale red purple (5RP6/2) granitic basement particles

"GAMMA" SCALE (C.P.S)

10

13

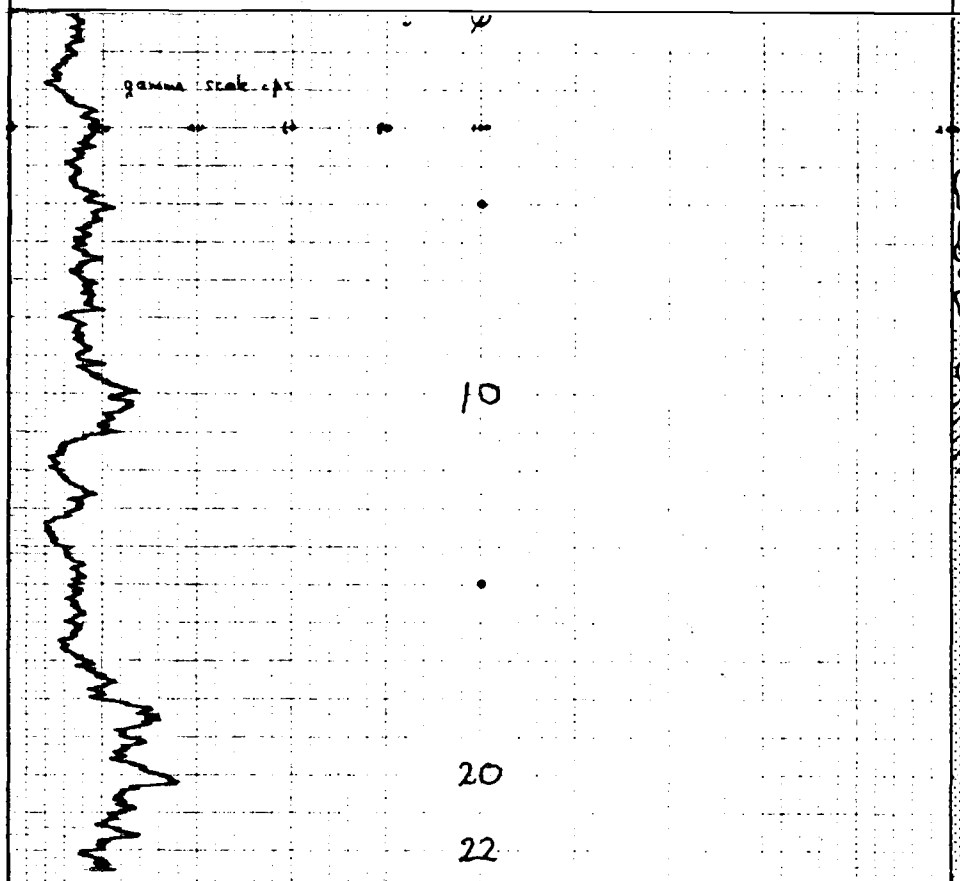


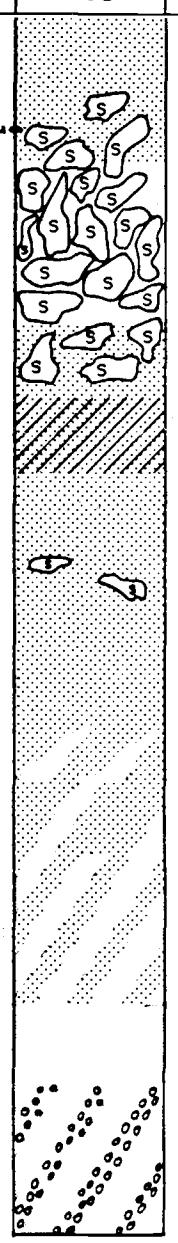
3339-2-20

BPMDA DRILL HOLE LOG

HOLE No.	WL.17	DATE STARTED	28.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	28.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	28.09.78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	32 m	PAPER SPEED	1cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	23.5 m	LOGGING SPEED	9m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2863	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	6120	K-FACTOR	3.9×10^{-6}		

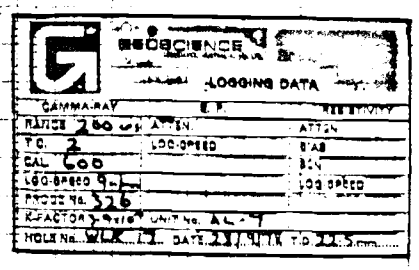
LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose. Basement

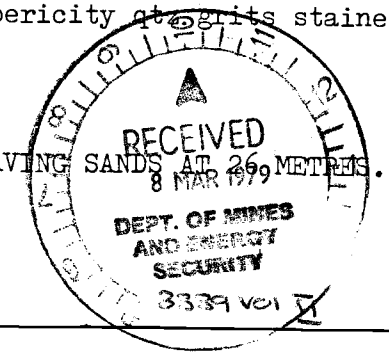




INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0- 4 (525) (575)	Sands: Light brown (5YR6/4)surficial, bimodal, sub-angular to sub-rounded mod.sphericity qtz. sands some silcrete lumps appear at 2 m
4- 8 (525) (550)	Silcrete: Mod.reddish orange (10R6/6)silcrete changing to a mod. orange pink (10R7/4) at 6 m.
8- 10 (550)	Sands and Silcrete: L.brown (5YR6/4)m.g. qtz.sands. Up to 40% of sample mod. orange pink (10R7/4) silcrete.
10- 12 (500)	Sand and Clay: Light brown (5YR6/4) sand and light gy. (N7) clay.
12- 16 (500) (450)	Sands: Mod.reddish brown (10R4/6) and mod.reddish orange (10R6/6) f.g. rounded iron-stained qtz. sands. At 14m some silcrete chips observed.
16- 20 (500) (525)	Sands: P.yellowish orange (10YR8/6) & P.yellowish brown (10YR5/6)f.g. sand becoming increasingly stained by lignitic material. Occ. dk.gy. (N3) lignite lumps.
20- 22 (600)	Sands: Mod.reddish brown (10R4/6) and Mod.brown (5YR3/4)f.g. sands containing lignitic material.
22- 26 (550) (525)	Sands and Lignites: Dusky brown (5YR2/2)f.g. sands containing up to 30% dk. gy. (N3) Lignite.
26- 28 (525)	Lignite: Blackish red (5R2/2) sandy lignites.
28- 32 (475)	Lignitic Grits: Olive black (5Y2/1) to Dusky yellowish brown (10YR2/2) c-V.c.g. sub. ang. to sub.rounded, mod.spericity qtz. grits stained with lignitic material.

HOLE ABANDONED AT 32 METRES DUE TO CAVING SANDS AT 26 METRES.



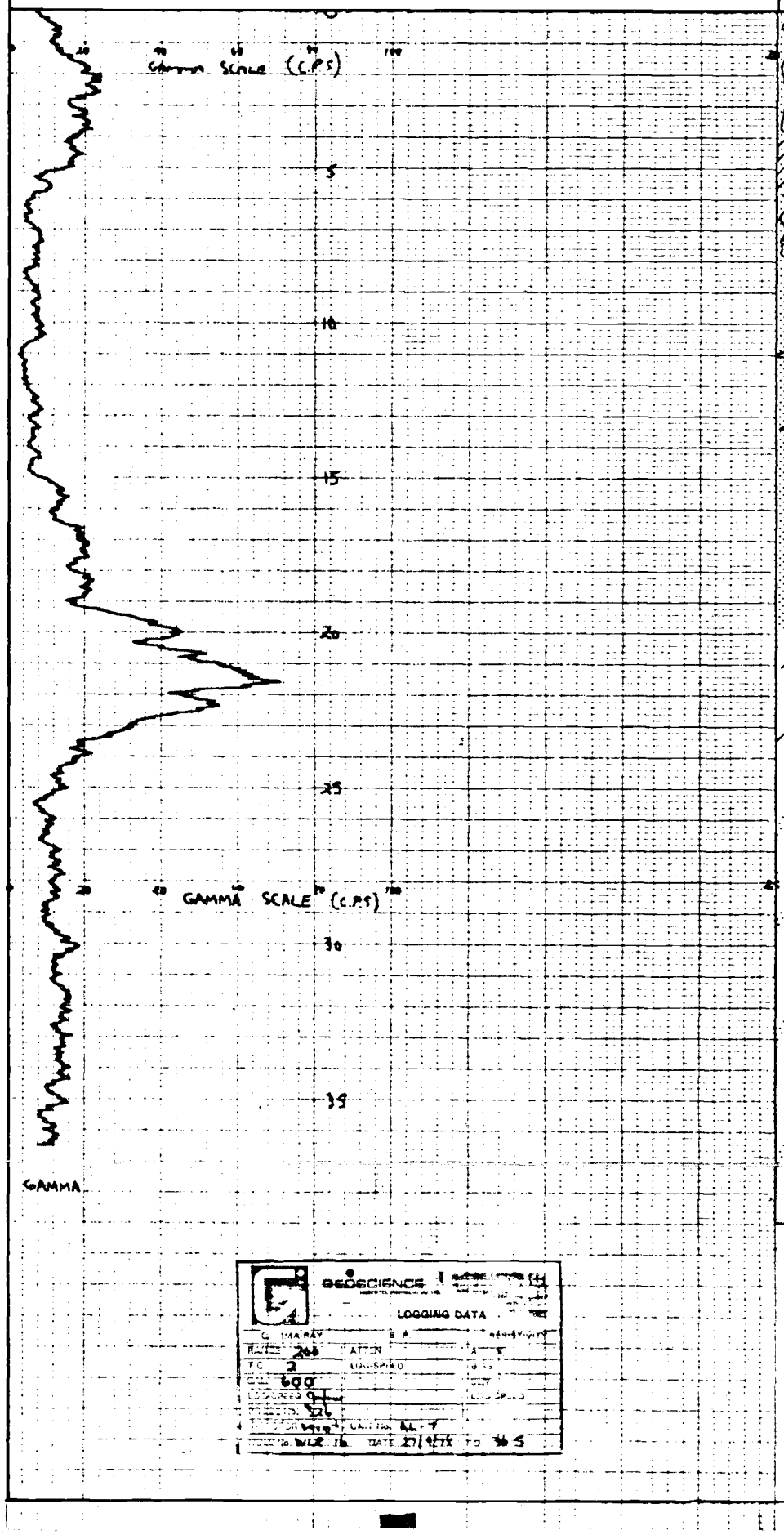


3339-2-21

BPMDA DRILL HOLE LOG

HOLE No.	WL.16	DATE STARTED	27.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	27.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	27.09.78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	39 m	PAPER SPEED	1cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	37.5 m	LOGGING SPEED	9m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	10 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3109	HOLE DIAMETER	4.75 inch	STANDARD	4100
LOGGING Co.	GEOSCIENCE	EASTINGS	6063	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose



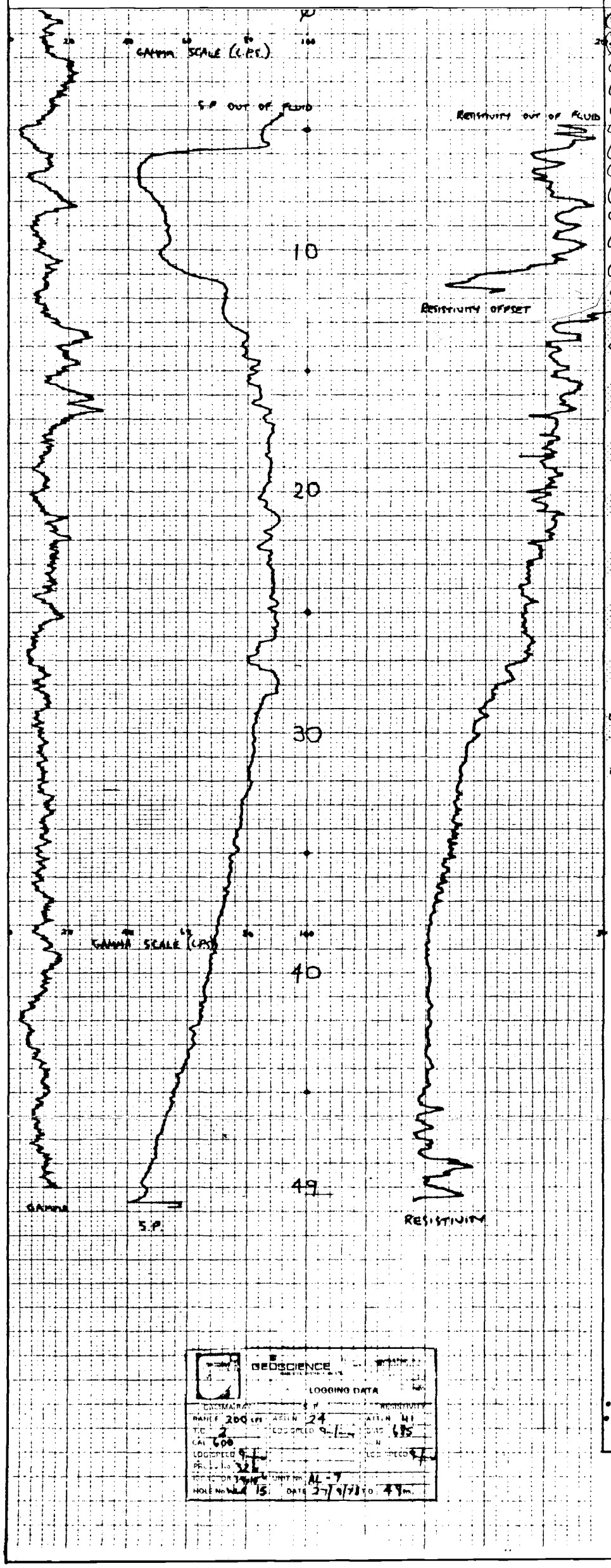
INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0- 4 (500) (525)	Silcrete and Sand: Moderate red (5R5/4) silcrete. The top 2 m containing sand.
4- 6 (500)	Clay: 90% yellowish gray (5Y7/2) clay containing some m.-c.g. qtz. sand grains. ang-v.ang mod.sphericity. 10% mod.red (5R5/4) silcrete.
6- 8 (475)	Silcrete: V.light gy (N8)silcrete containing m.-c.g. rounded - well rounded generally clear qtz. occ.iron stained highly spherical sand gr.
8- 10 (525)	Sands: Grayish orange pink (10R8/2) m.g. indurated qtz sands.
10- 20 (525) (400) (400) (425) (450)	Sands: Mod.orange pink (10R7/4) m.g.qtz sands contain some thin bands of v.light gy (N8) silcrete to 14m. At 17m, a 1m band of v.light gy (N8) kaolinitic sands occurs.
20- 24 (425) (500)	Clays and Lignites: Grayish orange (10YR7/4) clays containing an increasing percentage of blackish-red (5R2/2) lignites.
24- 38 (500) (475) (475) (500)	Lignites: Blackish-red (5R2/2) sandy lignites.
38- 39	Lignites: Blackish-red (5R2/2) lignites containing Granite chips, some pyrite also present.
	E.O.H.

3339-2-22

BPMDA DRILL HOLE LOG

HOLE No.	WL 15	DATE STARTED	26.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	27.09.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINAON LAKES	DATE LOGGED	27.09.78	TIME CONSTANT	2 sec.	SP SCALE	24
LOCATION	TALLARINGA	DRILLED DEPTH	60 m	PAPER SPEED	1cm/m	BIAS	685
STATE	S.A.	LOGGED DEPTH	50 m	LOGGING SPEED	9m/min.	FLUID LEVEL	4.4 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3103	HOLE DIAMETER	4.75 inch	STANDARD	4100
LOGGING Co.	GEOSCIENCE	EASTINGS	6041	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose



GAMMA	S P	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 2 (375)	Sands and Silcrete: Mod.reddish orange (10R6/6) surficial sands, clays and silcrete.
				2- 12 (425)	Silcrete: Mod.reddish brown (10R4/6) iron stained silcrete becomes less iron stained with depth (fresher). Qtz particles generally milky qtz grit angular particles. Some minor sands and laterite particles.
				(425)	
				(450)	
				(400)	
				(425)	
				12- 14 (400)	Sands: grayish yellow (10YR7/4) and feldspathic v.light gy (N8) sands. The bottom ½ metre is comprised of blackish red (5R2/2) lignitic mat.
				14- 32 (450)	Lignites and Sands: Blackish red (5R2/2) lignites containing varying amounts of c.-v.c.g.sands and some grits, angular, qtz stained with lignitic material.
				(450)	
				(450)	
				(500)	
				(475)	
				(500)	
				(525)	
				(525)	
				(500)	
				32- 58 (500)	Lignites: Blackish red (5R2/2) lignites.
				(425)	
				(425)	
				(500)	
				(550)	
				(550)	
				(475)	
				(475)	
				(425)	
				(450)	
				(450)	
				(450)	
				(450)	
				58- 60 (550)	Lignites and Clays: 50% blackish-red (5R2/2) lignites and 50% light grey (N7) clay which contains ang.to v.ang.milky qtz.grit particles

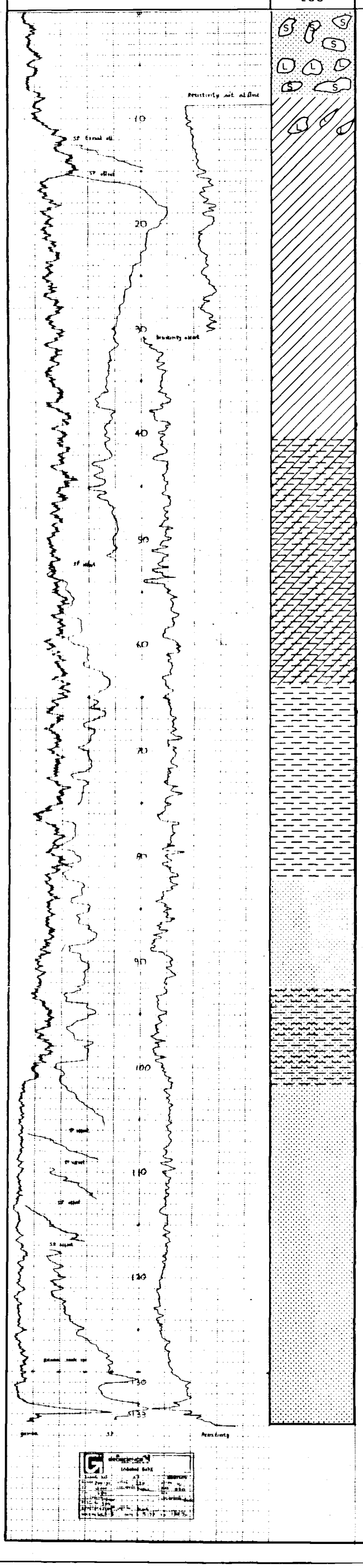
HOLE ABANDONED AT 60 METRES DUE TO LOST CIRCULATION AT 8-10 METRES.

3339-2-23

BPMDA DRILL HOLE LOG

HOLE No.	W.L.5	DATE STARTED	01.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	06.09.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	06.09.78	TIME CONSTANT	2 sec.	SP. SCALE	220
LOCATION	TALLARINGA	DRILLED DEPTH	187 m 134-0	PAPER SPEED	1 cm/m	BIAS	550
STATE	S.A.	LOGGED DEPTH	185.7 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	8.8 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	6 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3146	HOLE DIAMETER	4.75 inch	STANDARD	1605
LOGGING Co.	GEOSCIENCE	EASTINGS	5836	K-FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Basement: Granitic; Schistose



INTERVAL	Scintillometer c.p.m.	DESCRIPTION
0- 4	(350)	Silcrete and Sands: Light Red (5R6/6) and grayish orange pink (10R8/2) silcrete particles
	(400)	in a f.g. qtz. sand.
4- 6	(450)	Laterite Sand and Clay: Grayish orange pink (5YR7/2) laterite and sands with white(N9) clays.
6- 10	(450)	Silcrete and Sands: Light red(5R6/6) and grayish orange pink (10R8/2) silcrete and sands.
	(475)	
10- 12	(475)	Clays: Mottled pale red (10R6/2) and v.light gy.(N8) clays occ. small laterite pieces.
12- 14	(550)	Clays: Grayish orange pink (5YR7/2) and light gy.(N7) clays.
14- 16	(675)	Clays: Dk yellowish orange (10YR6/6) and mod.yellowish bn.(10YR6/4) clays.
16- 22	(675)	Clay: Grayish orange (10YR7/4) clay.
	(600)	
	(575)	
22- 30	(625)	Clay: Dusky yellow (5Y6/4) becoming mod. yellowish brown (10YR6/4) clay. Some
	(625)	layers indurated.
	(500)	
30- 32	(525)	Clay: Grayish orange (10YR7/4) clay with some indurated bands.
32- 40	(500)	Clay: Grayish orange (10YR7/4) clay becoming Pale yellowish brown (10YR6/2) clays
	(575)	containing indurated bands.
	(575)	
	(600)	
	(575)	
40- 56	(650)	Clays and Mudstones: Light olive gy(5Y5/2) clay and pale brown (5YR5/2)
	(700)	more indurated mudstone bands. The mudstones contain chlorite along
	(700)	joint planes and some pyrites.
	(650)	
	(650)	
	(625)	
	(550)	
	(450)	
56- 64	(475)	Clays and Mudstones: Pale yellowish brown (10YR6/2) clays and
	(550)	mudstone bands. At 58m some pale red (10R6/2) clays occur.
	(625)	
	(550)	
64- 72	(550)	Mudstones: Light gy(N7)and greenish gy. (5G6/1) mudstones. occ pale red (10R6/2)
	(500)	mudstones.
	(475)	
72- 82	(450)	Mudstones: Light gy(N7) and med. gray(N5) mudstones containing pale red
	(475)	limonitic lumps - old silcrete land surface? From 74m chlorite and pyrite
	(450)	observed on joint planes.
	(450)	
	(450)	
	(475)	
82- 92	(475)	Sands: Greenish gy. (5GY6/1) and mod. reddish brown (10R4/6) indurated sands
	(475)	v.hand drilling. Pale red silcrete type particles also present. Occ. thin
	(450)	v.light gy N8 mudstone bands occur.
	(475)	
	(475)	
92-102	(450)	Sands and Mudstones: Med gy(N5) and light olive gy (5Y6/1) indurated sands and mudstones.
	(475)	
	(450)	
	(400)	
	(450)	
102-134	(450)	Sands: V.light gy(N8) and med. gy(N5) indurated, bimodal, m-f and v.c.g. clean qtz. sands.
	(475)	Sands rounded to well rounded clear qtz. grains. Occ. iron stained bands occur.
	(400)	Qtz. grit particles occur at 122 metres. Drilling became v.hard at
	(400)	130 metres where mica flakes were first observed.
	(400)	
	(400)	
	(450)	
	(400)	
	(450)	
	(450)	
	(400)	
	(400)	
	(400)	
	(400)	
	(400)	
	(450)	

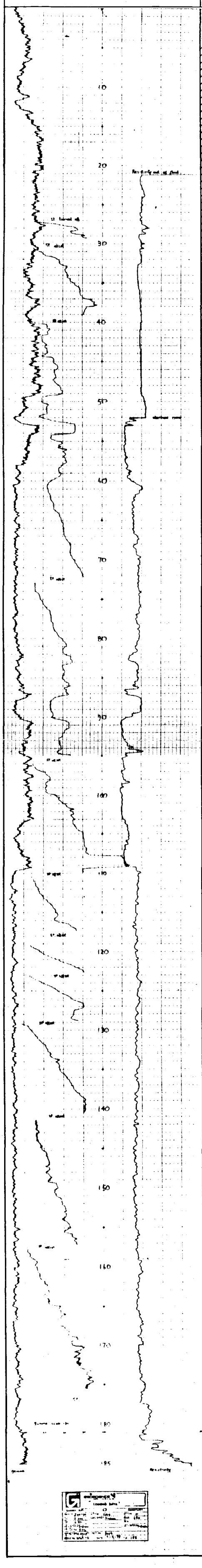
HOLE STOPPED AT THIS DEPTH.

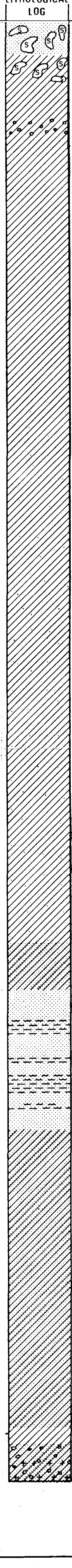
3339-2-24

BPMDA DRILL HOLE LOG

HOLE No.	W.L.6	DATE STARTED	06.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	07.09.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	07.09.78	TIME CONSTANT	2 sec.	SP. SCALE	240
LOCATION	TALLARINGA	DRILLED DEPTH	187 m	PAPER SPEED	1 cm/m	BIAS	690
STATE	S.A.	LOGGED DEPTH	185.7 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	21.2 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	5 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3146	HOLE DIAMETER	4.75 inch	STANDARD	1523
LOGGING Co.	GEOSCIENCE	EASTINGS	5836	K·FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose





INTERVAL	(Surface Scintillometer c.p.m.)	DESCRIPTION
0– 4	(575) (550)	Sands and Silcrete: Mod.reddish brown (10R4/6), pale pink (5RP8/2) bimodal qtz sands and silcrete.
4– 12	(600) (625) (575) (525)	Clays and Silcrete: Pale, greenish yellow (10Y8/2) silcreted clays and mod.reddish brown (10R4/6) silcrete.
12– 14	(475)	Clay and Grit: Med.gy (N5) clays and grit part. v.ang.clear, mod.sphericity.
14– 16	(500)	Clay: Grayish-purple (5P4/2) grayish yellow (5Y8/4) and light brown (5YR6/4) clays.
16– 20	(575) (575)	Clay: Grayish-orange pink (5YR7/2) and v.pale orange (10YR8/2) clays.
20– 26	(600) (575) (575)	Clay: Grayish-yellow green (5GY7/2) and light brown (5YR5/6) and grayish-orange (10YR7/4) mottled clays.
26– 30	(650) (675)	Clay: Dusky yellow clay (5Y6/4) becoming dark yellowish orange (10YR6/6) with some mod.reddish orange (10R6/6) clay.
30–118	(600) (550) (550) (550) (650) (600) (625) (600) (675) (675) (600) (600) (575) (575) (625) (600) (550) (550) (575) (575) (575) (550) (550) (525) (500) (450) (500) (550) (650) (475) (550) (525) (575) (650) (600) (625) (550) (575) (550) (550) (600) (600)	Clay: Med.grey clay (N5). Becomes slightly silty at 48 m. At 50 m.thin sandy intercalations occur m.f.g. sand – well rounded high sphericity.
118–122	(600) (625)	Sandy Clay: Med.light gy (N6) and dk yellowish orange (10YR6/6) and pale red (10R6/2) mottled sandy clays.
122–124	(575)	Clayey Sands: Med.light gy (N6) clayey sands.
124–142	(475) (475) (525) (550) (575) (525) (525) (550) (525)	Sands: Med.light gy (N6) sands m.–c.g.well rounded highly spherical containing up to 20% med.dk.gy (N4) mudstone pieces.
142–180	(550) (550) (575) (575) (475) (525) (525) (550) (450) (425) (475) (525) (500) (500) (525) (600) (575) (575) (600)	Sands and Clays: Med.light gy (N6) sands and mottled grayish orange (10YR7/4) and pale red (10R6/2) clays. Clays increase in percentage to 75% at 180 m.
180–182	(550)	Clays: Grayish orange (10YR7/4) and med.gy (N5) clays.
182–187	(525) (525) (600)	Sands, Grits and Clays: Grayish orange (10YR7/4) and med.gy (N5) clays and sands containing qtz.grit particles. Granitic basement particles, pyrite and hornblende? observed. Very hard drilling. Pyrite very prevalent.

E.O.H.

3339-2-25.

BPMDA DRILL HOLE LOG

HOLE No.	W.L.7	DATE STARTED	07.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	10.09.78	RANGE		RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED		TIME CONSTANT		SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	208 m.	PAPER SPEED		BIAS	
STATE	S.A.	LOGGED DEPTH		LOGGING SPEED		FLUID LEVEL	
GEOLOGIST	WEBER	ELEVATION		BACK GROUND		PROBE No.	
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3163	HOLE DIAMETER		STANDARD	
LOGGING Co.	GEOSCIENCE	EASTINGS	5822	K-FACTOR		Basement	

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose

GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface	Scintill-ometer	c.p.m.)	DESCRIPTION
				0- 4		(475)	Sands and Laterite: Pale red (10R6/2) bimodal m-c.g. and grit qtz. sands, iron stained subangular
						(450)	to subrounded moderate sphericity with some dk.red dish brown (10R3/4) silcrete chips.
				4- 16		(475)	Silcrete: Dk reddish brown (10R3/4) weathered silcrete becoming fresher with grayish orange
						(500)	(10YR7/4) and v.pale orange (10YR8/2) silcrete chips.
						(550)	
						(500)	
						(450)	
						(425)	
				16- 20		(450)	Sands: Light gy. (N7) m-c.g.sands containing qtz. grit particles. Some bands of
						(450)	pale red (10R6/2) sandy clays.
				20- 26		(475)	Sandy Clays: Grayish orange pink (10R8/2) and dk.yellowish orange (10YR6/6) m.c.g.
						(450)	qtz. sandy clay containing mica flakes and qtz. grits generally angular. At 24 m the sample
						(450)	contains a pinkish grey (5YR8/1) clay.
				26- 30		(450)	Clay: Grayish orange pink (10R8/2) clay containing sand and grit sized particles.
						(525)	Some micas observed.
				30- 38		(525)	Grit: Grayish orange pink (10R8/2) qtz grit. Grains frosted, some iron-stained. V.ang. to
						(500)	angular mod.sphericity. Some clay which contains mica flakes. At 36 m colour is a greenish gy.
						(550)	(5GY6/1).
						(450)	
				38- 42		(550)	Clays: Pale olive (10Y6/2) and pale red (5R6/2) clays. Some minor qtz. sand.
						(450)	
				42- 50		(500)	Sandy Clay: Med. light gy. (N6) f.g.sandy clays containing mica flakes occ.grit particles.
						(475)	
						(475)	
						(550)	
				50- 52		(600)	Gritty Clay: Med.gy. (N5) silty clay containing subang. to subrounded qtz. and laterite particles.
				52- 70		(600)	Sandy Clay: Med.gy. (N5) clays containing up to 50% m-c.g. sand constituent.
						(525)	Becomes more sandy with depth.
						(525)	
						(500)	
						(500)	
						(450)	
						(400)	
						(400)	
						(450)	
				70-140		(400)	Clayey Sand: Med.gy. (N5) sandy clays containing med.dk.gy. (N4) mudstone fragments.
						(500)	Sands are generally m-f.g.qtz. sands, sub-ang. to sub-rounded highly spherical generally
						(525)	clear occasionally frosted.
						(450)	
						(475)	
						(500)	
						(500)	
						(500)	
						(400)	
						(450)	
						(500)	
						(475)	
						(400)	
						(450)	
						(500)	
						(450)	
						(450)	
						(400)	
						(450)	
						(450)	
						(500)	
						(475)	
						(500)	
						(450)	
						(475)	
						(500)	
						(450)	
						(425)	
						(475)	
						(450)	
						(450)	
						(500)	
						(550)	
						(450)	
						(450)	
				140-168		(450)	Sand and Clay: Med.light gy. (N6) clay containing occ.pieces of grayish orange (10YR7/4)
						(400)	and light gy. (N7) clay.
						(450)	
						(450)	
						(400)	
						(450)	
						(450)	
						(450)	
						(475)	
						(575)	
						(450)	
						(500)	
						(500)	
						(500)	
				168-208		(575)	Sands, clays and grits: Med.light gy (N6) sands and clays containing weathered basement
						(550)	grit particles of angular qtz, feldspar? some schist, and much pyrite.
						(575)	

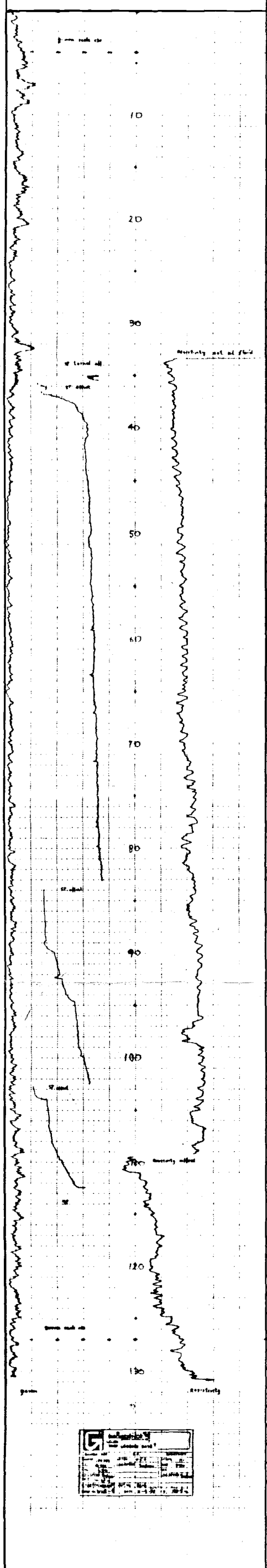
HOLE ABANDONED AT THIS DEPTH. PROBE LOST IN THIS HOLE AT 180 METRES.
THEREFORE NO ELECTRIC AND GAMMA LOGS.

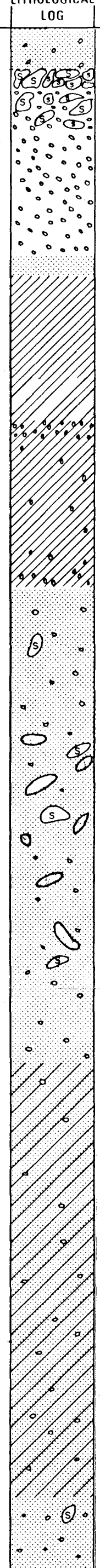
3339-2-26

BPMDA DRILL HOLE LOG

HOLE No.	W.L.8	DATE STARTED	10.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	11.09.78	RANGE	100 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	11.09.78	TIME CONSTANT	2 sec.	SP SCALE	050
LOCATION	TALLARINGA	DRILLED DEPTH	186 m	PAPER SPEED	1 cm/m.	BIAS	550
STATE	S.A.	LOGGED DEPTH	131.5 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	33.4 m
GEOLOGIST	WEBER	ELEVATION		BACK GRDUND	2 c.p.s.	PROBE No.	AP - 1
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3176	HOLE DIAMETER	4.75 inch	STANDARD	512
LOGGING Co.	GEOSCIENCE	EASTINGS	5807	K-FACTOR	1.44 x 10^{-5}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose





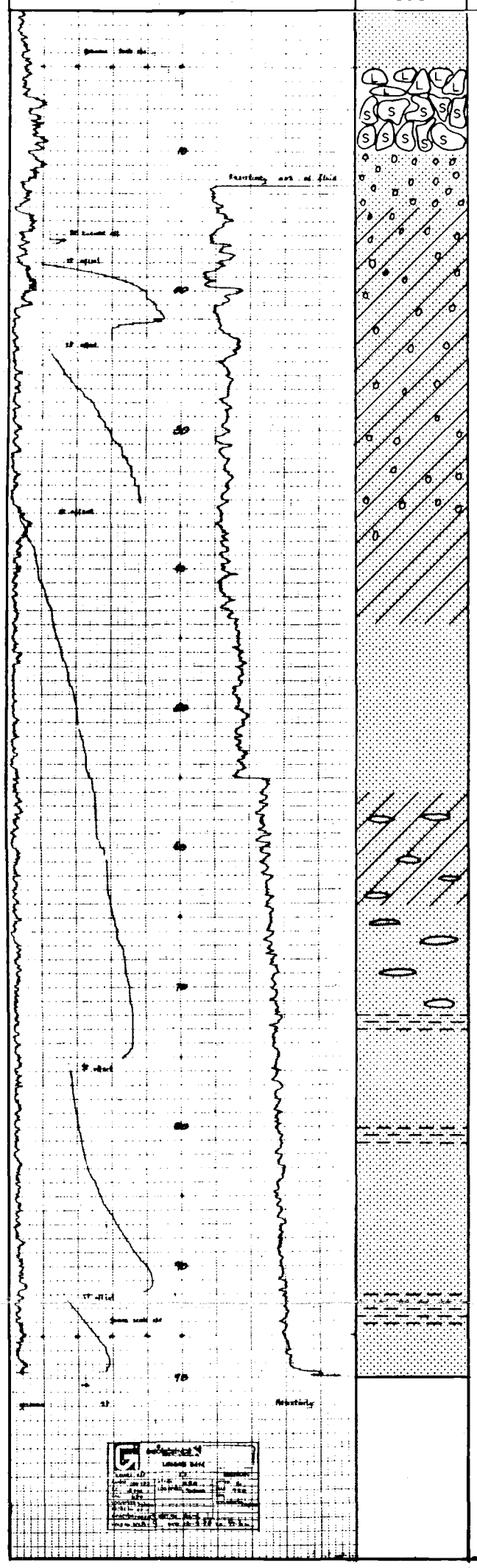
INTERVAL	(Surface Scintillometer c.p.m.)	DESCRIPTION
0- 4	(400) (500)	Sand: Pale reddish brown (10R5/4) m-c.g. clayey sands with qtz. grit particles iron stained.
4- 6	(450)	Silcrete: V.light gy (N8) and Mod. reddish brown 10R4/6 silcrete. Some sand.
6- 10	(425) (500)	Silcrete and Grits: Mod.reddish brown (10R4/6) silcrete and dark yellowish orange (10YR6/6) qtz. grits subang. highly spherical cemented by clay.
10- 22	(475) (425) (375) (400) (425) (425)	Grit: Pale red (10R6/2) clean qtz. grits cemented by clays, subang. to rounded highly spherical, clay stained, iron stained. Some silcrete.
22- 24	(475)	Sands: V. pale orange (10YR8/2) m-f.g. clayey sands. Silcrete comprises 20% of sample.
24- 32	(475) (450) (450) (500)	Clays: V.light gy (N8), dk yellowish orange (10YR6/6) and Mod.reddish brown (10R4/6) silty clays.
32- 34	(425)	Clays and Lignites: Dk.yellowish orange (10YR6/6) & a dusky yellowish bn. (10YR2/2) lignitic clay.
34- 38	(500) (575)	Lignitic sands: Dusky yellowish brown (10YR2/2) lignitic m-f.g. qtz. sand.
38- 40	(500)	Clay and Grits: Dusky yellowish brown clayey sands & lt.gy. clays (N7) contains qtz. grits.
40- 54	(550) (475) (425) (425) (450) (400) (450)	Clayey Sands: Grayish olive (10Y4/2) m-f.g. clayey sands. Some grit particles occur in the sample at 52 m.
54-100	(425) (475) (425) (400) (350) (400) (375) (350) (375) (375) (350) (375) (400) (425) (400) (400) (425) (425) (450) (375) (425)	Sand: Light olive gy (5Y5/2) clayey m-f.g. qtz. sand containing grit particles. When washed coarse fraction comprised of yellow iron stained frosted qtz. fragments angular to sub rounded clear and frosted qtz. grit. Pyrite can make up to 10% of sample. Some silcrete particles also observed. - Lignitic material occurs in sample between 66 and 92 m.
100-142	(450) (450) (500) (500) (500) (450) (450) (500) (450) (500) (475) (500) (500) (450) (475) (475) (500) (525) (500) (525) (500)	Sands: Light olive gy (5Y5/2) m-c.g. sands and grit particles. Pyritic qtz. grains ang. to sub-ang. clay cements the sands.
142-186	(550) (450) (400) (475) (450) (475) (550) (500) (400) (400) (500) (450) (500) (475) (425) (500) (450) (450) (400) (450) (400) (500)	Gritty Sands: Light olive gy (5Y5/2) m-c.g. angular sands containing ang. qtz. grit particles and some pale red (10R6/2) silcrete particle. Some 30% of sample consists of sandy carbonaceous clays.
		E.O.H. HOLE COMPLETED AT THIS DEPTH.

3339-2-27

BPMDA DRILL HOLE LOG

HOLE No.	W.L.9	DATE STARTED	12.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	12.09.78	RANGE	100 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	12.09.78	TIME CONSTANT	2 sec.	SP. SCALE	080
LOCATION	TALLARINGA	DRILLED DEPTH	98 m	PAPER SPEED	1 cm/m.	BIAS	950
STATE	S.A.	LOGGED DEPTH	98.6 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	12.4 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	1 c.p.s.	PROBE No.	AP - 1
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3195	HOLE DIAMETER	4.75 inch	STANDARD	513
LOGGING Co.	GEOSCIENCE	EASTINGS	5788	K-FACTOR	1.44×10^{-5}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose



INTERVAL (Surface	Scintillometer c.p.m.)	DESCRIPTION
0- 4	(350)	Sands: Mod.reddish brown (10R4/6) surficial bimodal m-cg. sands and grit particles cemented by
	(375)	clay.
4- 6	(400)	Laterite: Grayish pink (5R8/2) laterite cemented by clays
6- 10	(350)	Silcrete: v. light gy (N8) and pale red (10R6/2) silcrete particles, iron stained on joint sur-
	(425)	faces. Also present is a v. light gy (N8) micaceous clay.
10- 14	(450)	Sandy Grit: Pale pink (5RP8/2) qtz sandy grit. Mica's prevalent in clayey portion.
	(450)	
14- 16	(450)	Grits and Clays: Pale pink (5RP8/2 qtz. grit and dk. yellowish orange (10YR6/6)and light gy(N7)clays.
16- 22	(450)	Sands and Clays: v. light gy(N8)c-v.c. qtz. sand containing 20% qtz. grit particles containing pale
	(475)	yellowish brown (10YR6/2) and dk. yellowish orange (10YR6/6) clay lumps in it.
	(500)	
22- 34	(425)	Gritty-sandy Clays: v. light gy(N8)sandy clay and pale red (10R6/2) clay containing qtz grit
	(400)	particles. At 26m. a grayish pink (5R8/2) sandy clay with qtz. grit particles.
	(425)	
	(425)	
	(425)	
	(400)	
34- 44	(475)	Clayey Sands: Greyish pink (5R8/2) gritty sandy clays and med.gy(N5)clayey sands.
	(475)	
	(500)	
	(425)	
	(425)	
44- 56	(400)	Sands: Light olive gy. (5Y5/2) sands. Subrounded to rounded, high sphericity occassional sands iron
	(400)	stained.
	(400)	
	(350)	
	(425)	
	(400)	
56- 64	(400)	Sands: Light olive gy. (5Y5/2) sands. Occassional carbonaceous specks observed in thin clayey hor-
	(375)	izons.
	(300)	
	(425)	
64- 98	(400)	Sands: Light olive gy (5Yt/2) clean qtz sands well rounded contain med.gy (N5) mudstone flecks
	(400)	occ. carbonaceous clays. Pyrite conspicuous in all samples. Carbonaceous clays finish at 70 metres.
	(400)	
	(400)	
	(375)	
	(450)	
	(400)	
	(400)	
	(425)	
	(375)	
	(375)	
	(350)	
	(325)	
	(325)	
	(375)	
	(400)	
	(375)	
	(375)	

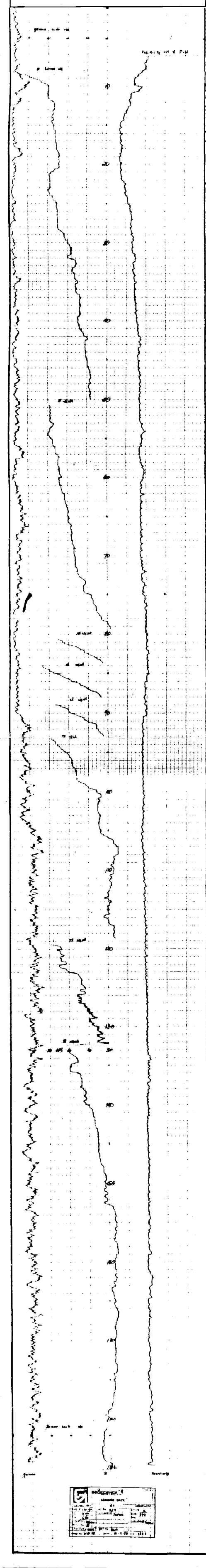
E.O.H. COMPLETED AT THIS DEPTH.

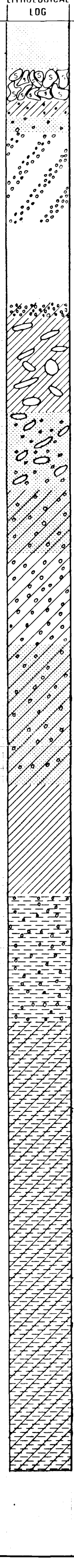
3339-2-28

BPMDA DRILL HOLE LOG

HOLE No.	W.L.10	DATE STARTED	12.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	13.09.78	RANGE	100 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	13.09.78	TIME CONSTANT	2 sec.	SP. SCALE	210
LOCATION	TALLARINGA	DRILLED DEPTH	186 m	PAPER SPEED	1 cm/m	BIAS	990
STATE	S.A.	LOGGED DEPTH	186.3 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	6.1 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	2 c.p.s.	PROBE No.	AP - 1
DRILLING Co.	THOMPSON	CO-ORDS NORTHINGS	3171	HOLE DIAMETER	4.75 inch	STANDARD	495
LOGGING Co.	GEOSCIENCE	EASTINGS	5888	K-FACTOR	1.44×10^{-5}	Basement	

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose





GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c p m)	DESCRIPTION
				0- 6 (375) (375) (475)	Sands: Pale reddish brown (10R5/4) bimodal qtz. sands-ang-subrounded m-f.g. and grit particles occasionally iron stained. Last metre contains silcrete particles.
				6- 10 (425) (400)	Silcrete: Grayish pink (5R8/2) and Pale red (10R6/2), mod.reddish brown (10R4/6) silcrete.
				10- 12 (450)	Gritty Clay: Mod. orange pink (5YR8/4) sandy, gritty clay.
				12- 14 (425)	Sandy Grit: Dark gy (N3) v.c. sand and f.g. grit bimodal stained with carbonaceous material.
				14- 26 (450) (375) (375) (425) (400) (375)	Gritty Lignites: Brownish grey (5YR4/1) grit stained with lignitic material. Occasional sandy layers.
				26- 36 (375) (350) (350) (400) (325)	Lignites: Dk. yellowy brown (10YR4/2) lignites and sand.
				36- 38 (425)	Grits and Clays: Pale yellowy brown (10YR6/2) grits and clays stained with lignitic material.
				38- 50 (425) (400) (425) (500) (475) (425)	Clays: Med. light gy (N6) silty clays containing lignites which stain the clay surface to a Med. yellowish brown colour.
				50- 60 (450) (425) (400) (425) (375)	Sandy Grits: Med. light gy (N6) c. to v.c. g sands and qtz grits subang. to subrounded. Stained by lignites.
				60- 68 (400) (375) (400) (400)	Clays, sands and Grits: Light gy (N7) silty clays with qtz. sands and grit layers. The clay content increases to 60% at 68 m.
				68- 80 (375) (375) (425) (425) (475) (450)	Clays and Grits: Light gy (N7) silty clays containing qtz. grit particles.
				80- 96 (425) (475) (500) (400) (375) (475) (425) (525)	Clays, Sands and Grits: Light gy (N7) silty clays with qtz. sands and grit layers.
				96- 98 (475)	Sandy Clays: Med.bluish gy. (5B5/1) silty occ.sandy clays. Occ.dusky blue(5PB3/2) clays cont. pyrite.
				98-112 (500) (475) (500) (500) (475) (525) (550)	Clay: Predominantly med.bluish gry. (5B5/1) silty clays.
				112-128 (525) (575) (575) (575) (625) (675) (625) (650)	Mudstones: Pale brown (5YR5/2) and Med. gy. (N5) mudstones. Some bands indurated. Occasional qtz. grit angular grains and pyrite lumps.
				128-142 (675) (700) (600) (575) (600) (575) (600)	Clays and Mudstones: Light bluish gy. (5B7/1) clays with occasional lumps of pale brown (5YR5/2) and grayish red (5R4/2) mudstones.
				142-186 (625) (600) (550) (600) (600) (575) (500) (475) (475) (525) (600) (600) (625) (650) (625) (625) (625) (625) (475) (625) (550) (600)	Mudstones and Clays: Pale brown (5YR5/2) mudstones with light bluish gry. (5B7/1) clays.

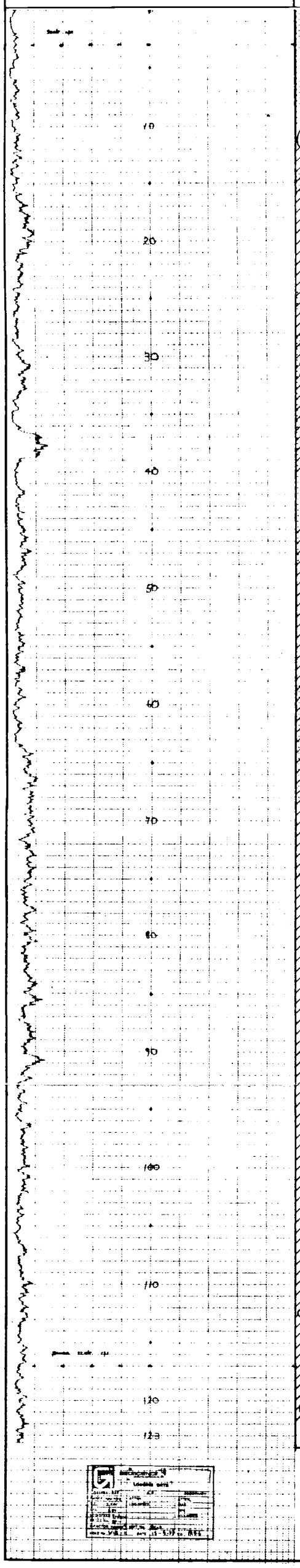
E.O.H. HOLE ABANDONED AT THIS DEPTH.

3339-2-29

BPMDA DRILL HOLE LOG

HOLE No.	W.L. 11	DATE STARTED	13.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	13.09.78	RANGE	100 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	13.09.78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	124 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	124.6 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	2 c.p.s.	PROBE No.	AP-1
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3153	HOLE DIAMETER	4.75 inch	STANDARD	495
LOGGING Co.	GEOSCIENCE	EASTINGS	5904	K-FACTOR	1.44×10^{-5}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose; Basement



INTERVAL (Surface ometer)	Scintill- c p m)	DESCRIPTION
0- 10	(425)	Sands and Grits: Mod.reddish brown (10R4/6) f-m.g. qtz. sands containing angular to subangular
	(375)	qtz. grits.
	(350)	
	(350)	
	(350)	
10- 12	(375)	Laterite: Dk. reddish brown (10R3/4) laterite.
12- 14	(425)	Laterite and Clays: Dk.reddish bn.(10R3/4) laterite with Pale red (10R6/2) & v.lt.gy (N8)silty clays.
14- 16	(375)	Sandy Clays: Pale red (10R6/2) v.lt.gy (N8) and Dk.reddish brown (10R3/4) sandy clays cont. grit pts.
16- 18	(375)	Clay: Pale red purple(5RP6/2) and v.lt.gy (N8) silty clays. Occasional sand and grit fragments.
18- 22	(500)	Clay: Mottled Dk.yellowish orange(,0YR6/6)grayish orange(10YR7/4) Med. dk. gy. (N4) clays. At
	(550)	22 m. some Pla.red (10R6/6) sandy clays appear.
22- 24	(525)	Clay: Predominantly Med. dk. grey (N4) clay.
24- 26	(475)	Clayey Sand: Predominantly Pale green (10G6/2) clayey sand.
26- 28	(400)	Clay: V. light gy (N7) clay slightly sandy.
28- 32	(400)	Sandy Clay: V. light gy (N7) and light gy (N6) sandy clays. At 30 m. some Pale red (10R6/2)
	(425)	clays appear.
32- 36	(475)	Sandy Clay: Med. dk. gy. (N4) silty to f. sandy clays.
	(450)	
36- 40	(425)	Clays and Sands: Med. dk. gy. (N4) and pale yellow brown (10YR6/2) f-g. sands, occasional grit
	(400)	particles.
40- 44	(450)	Sand: Med. gy.(N5) m-v.c.g. subang. to subrounded moderate sphericity frosted qtz. sands.
	(475)	
44- 48	(450)	Sand and Clay: Med. gy.(N5) sands and Mod.greenish yellow(10Y7/4) and Med.dk.gy (N4) clays.
	(450)	
48- 52	(450)	Clay: Pale yellowish bn (10YR6/2), mod.brn(5YR3/4) and med. gy.(N5) silty clays.
	(425)	
52- 58	(475)	Clay: Light gy (N7) silty clay.
	(450)	
	(400)	
58- 68	(400)	Sandy Clays: Pale brown (5YR5/2), moderate brown (5YR3/4) and med. dk. gy. sandy clays.
		c-v.c.g. qtz. sands.
	(475)	
	(425)	
	(450)	
68- 96	(475)	Clay: Medium dk. gy. (N4) silty clays.
	(450)	
	(450)	
	(425)	
	(425)	
	(425)	
	(500)	
	(525)	
	(500)	
	(525)	
	(425)	
	(475)	
	(425)	
	(475)	
	(575)	
	(525)	
96-122	(450)	Clays and Basement Grits: Light bluish gy. (5B7/1) clays containing v. coarse grit particles of
	(425)	granitic basement. Most are well rounded.
	(525)	
	(575)	
	(525)	
	(525)	
	(425)	
	(425)	
	(525)	
	(500)	
	(450)	
	(500)	
	(500)	
122-124	(500)	Basement: V. hard, fresh, granitic basement.

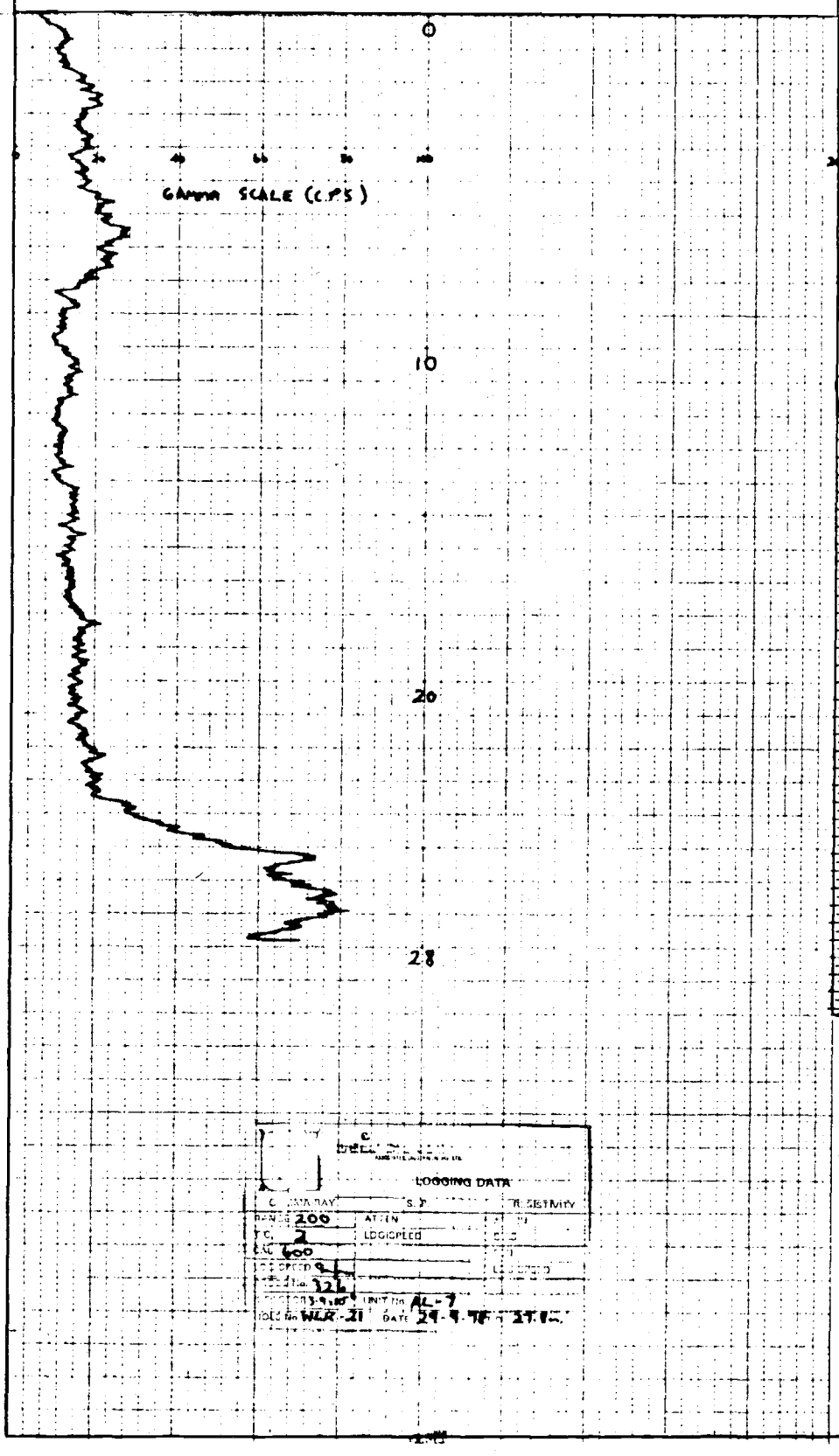
E.O.H.

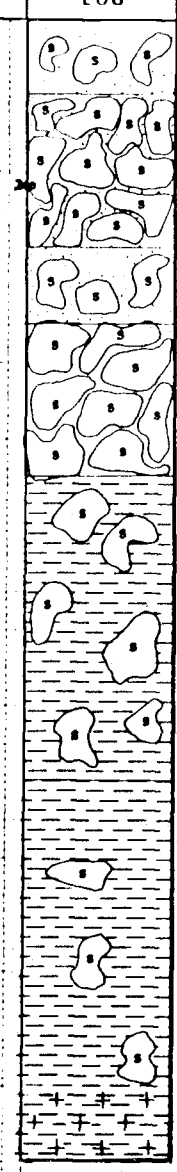
3339-2-30

BPMDA DRILL HOLE LOG

HOLE No.	WL.21	DATE STARTED	28.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	29.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	29.09.78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	30 m	PAPER SPEED	1cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	28.8 m	LOGGING SPEED	9m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	10 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2928	HOLE DIAMETER	4.75 inch	STANDARD	4420
LOGGING Co.	GEOSCIENCE	EASTINGS	6122	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic (Basement); Schistose





INTERVAL (Surface	Scintillometer c.p.m.)	DESCRIPTION
0- 2	(425)	Sands and Silcrete: Grayish orange pink (10R8/2) surficial sands and silcrete.
2- 6	(450)	Silcrete: Pale reddish brown (10R5/4) hard silcrete and sand.
	(425)	
6- 8	(425)	Silcrete and Sand: Mod.reddish orange (10R6/6) silcrete and f.g. sand
8- 12	(400)	Silcrete: Mod.reddish brown (10R4/6) iron stained silcrete. V.hard.
	(450)	
12- 20	(425)	Silcrete and Mudstones: Mod.reddish brown (10R4/6) iron stained silcretes, also present are Dk.yellowish orange (10YR6/6) silcretes and V.light gy. (N7) silcretes. The mudstones are generally V. dusky purple in colour.
	(375)	
	(375)	
	(375)	
20- 30	(325)	Mudstones and Silcrete: The mudstones are light brown (5YR5/6) becoming Mod.brown (5YR4/4) at 24 m. and Pale brown at 26 m. Silcrete particles are found throughout generally of a V.light gy. (N7) colour. At 28 m. the sample is comprised of 50% granitic basement.
	(400)	
	(450)	
	(575)	
	(525)	

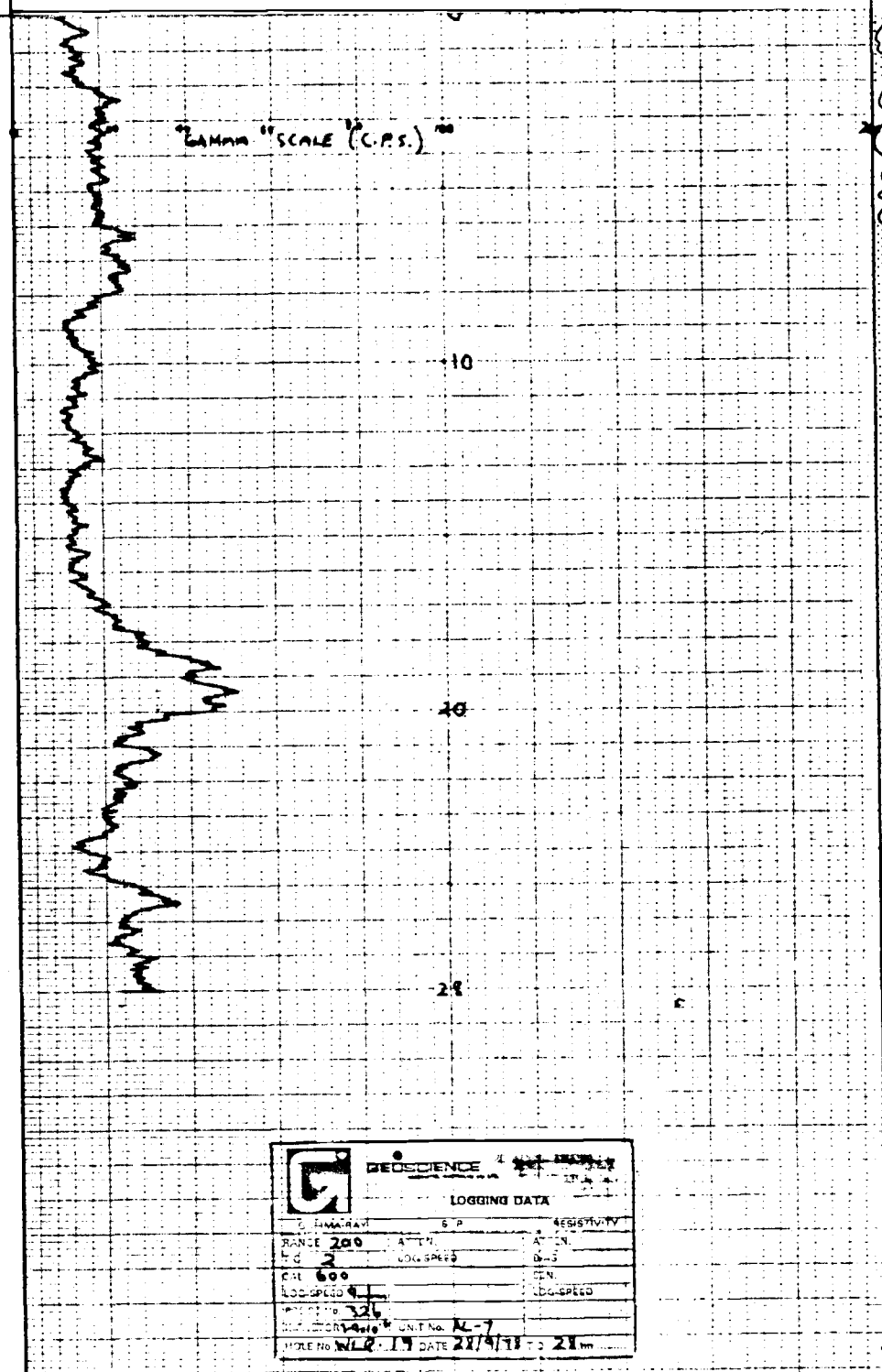
E.O.H.

3339-2-30

BPMDA DRILL HOLE LOG

HOLE No.	WL.19	DATE STARTED	28.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	28.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	28.09.78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	29 m	PAPER SPEED	1cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	29 m	LOGGING SPEED	9m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2883	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	6121	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose



GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 2 (500)	Sands and Silcrete: Mod.reddish brown (10R4/6) surficial bimodal sands and silcrete.
				2- 4 (575)	Silcrete: Mod. orange pink (10R7/4) and V.light gy (N7) silcrete.
				4- 6 (550)	Silcrete: Pale red (5R6/2) silcrete.
				6- 12 (575) (550) (525)	Silcrete and Sands: Pale red (5R6/2) silcrete with light brown (5YR4/6) indurated sands and Reddish orange (10R5/6) sands.
				12- 20 (525) (500) (475) (450)	Sands: Mod.reddish orange (10R6/6) and mod.reddish brown (10R4/6) iron stained rounded f.g. qtz. sands. From 14-16 m some laterite lumps. At 16 m the sands are bimodal f.+v.c.g.grayish orange (10YR7/4) sands. At 18 m the sands are light brown (5YR5/6) in colour.
				20- 24 (500) (475)	Sands: Dark yellowish brown (10YR4/2) bimodal sands containing some lignitic material. Lignitic material more prevalent with depth.
				24- 29 (500) (500) (450)	Lignites: Dusky yellowish brown (10YR2/2) very wet lignites. Granitic basement chips 28-29 metres.

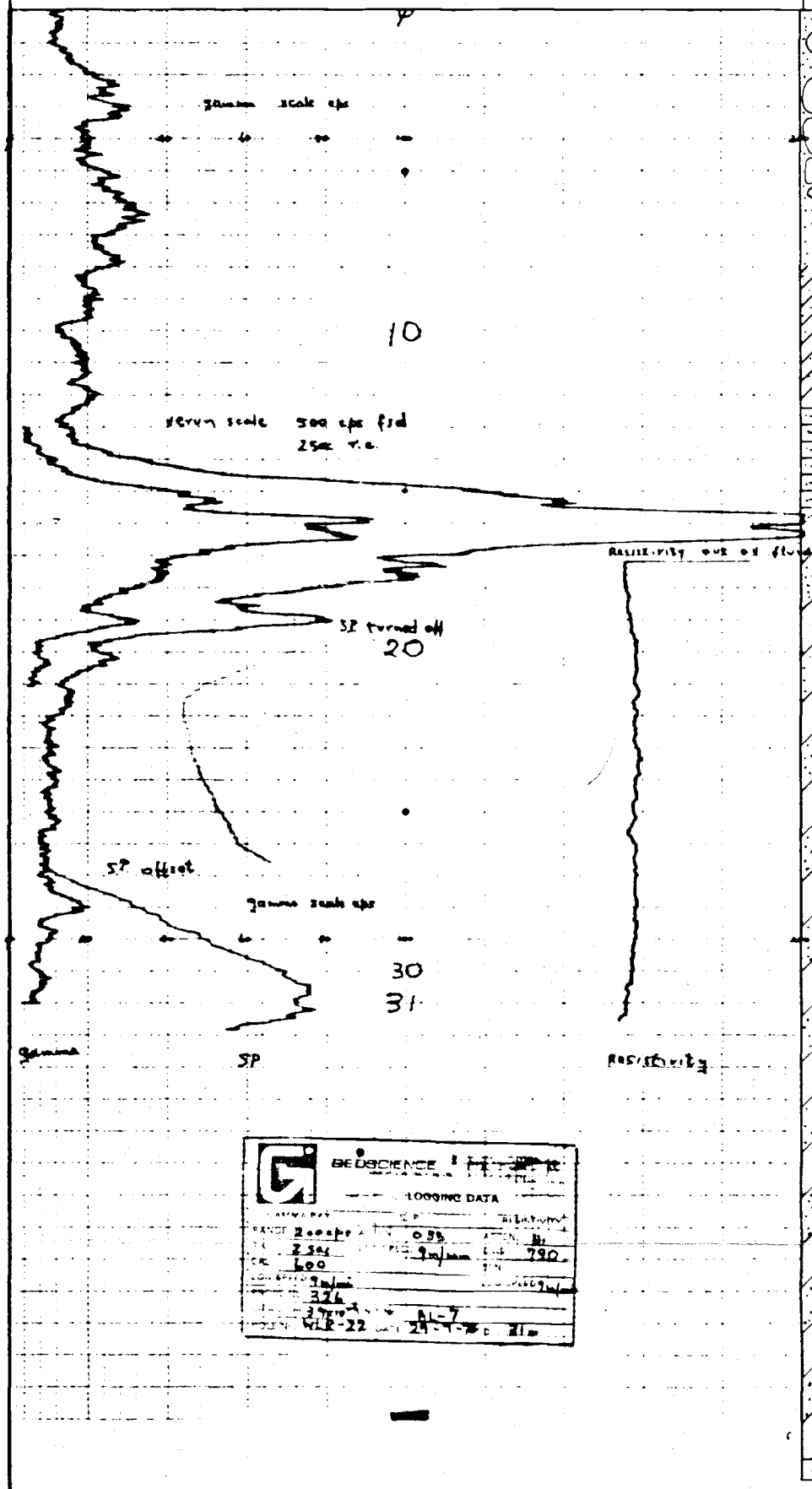
E.O.H.

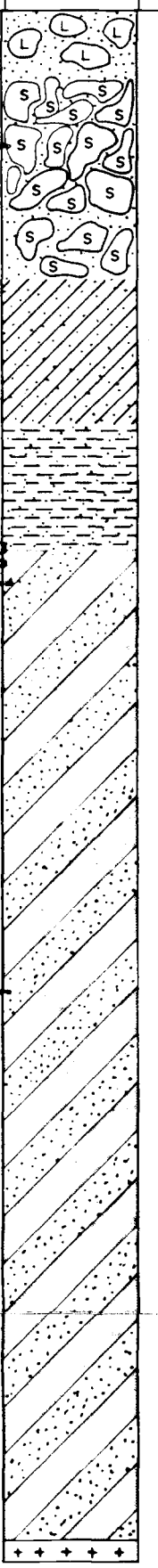
3339-2-31.

BPMDA DRILL HOLE LOG

HOLE No.	WL.22	DATE STARTED	29.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	29.09.78	RANGE	200/500 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	29.09.78	TIME CONSTANT	2 sec.	SP SCALE	035
LOCATION	TALLARINGA	DRILLED DEPTH	50 m	PAPER SPEED	1 cm/m	BIAS	790
STATE	S.A.	LOGGED DEPTH	32 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	17.2 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	10 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-OROS: NORTHINGS	2943	HOLE DIAMETER	4.75 inch	STANDARD	4420
LOGGING Co.	GEOSCIENCE	EASTINGS	6122	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose





INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0- 2 (575)	Sand & Laterite: Mod.reddish brown (10R4/6) surficial sands with grayish orange pink (5YR7/2) laterite.
2- 6 (550)	Silcrete: Light brown (5YR6/4) and V.light gy (N8) silcrete becoming palered (10R6/2) and Mod.reddish brown (10R4/6) at 4 m.
(525)	
6- 8 (550)	Silcrete and Sands: Mod.reddish brown (10R4/6) silcrete and sands. The sands are iron stained bimodal f-m and v.c. - grit grain sizes.
8- 12 (650)	Sandy Clays: V. light gy. (N8) sandy clays. Some red tinge from thin layers iron stained mottled with Dk.yellowish orange (10YR6/6) clays.
(525)	
12- 16 (475)	Sands and Mudstones: Dk. reddish brown (10R3/4) sandy muds and some laterite. At 15 m. some lignitic material observed.
(625)	
16- 46	Lignites: Dusky yellowish brown (10YR2/2) muddy-f.g.sandy lignites.
	The sandy faction increases and becomes coarser grained to 44 m. where basement grit particles are observed. Hole completed in granitic basement at 46 metres.

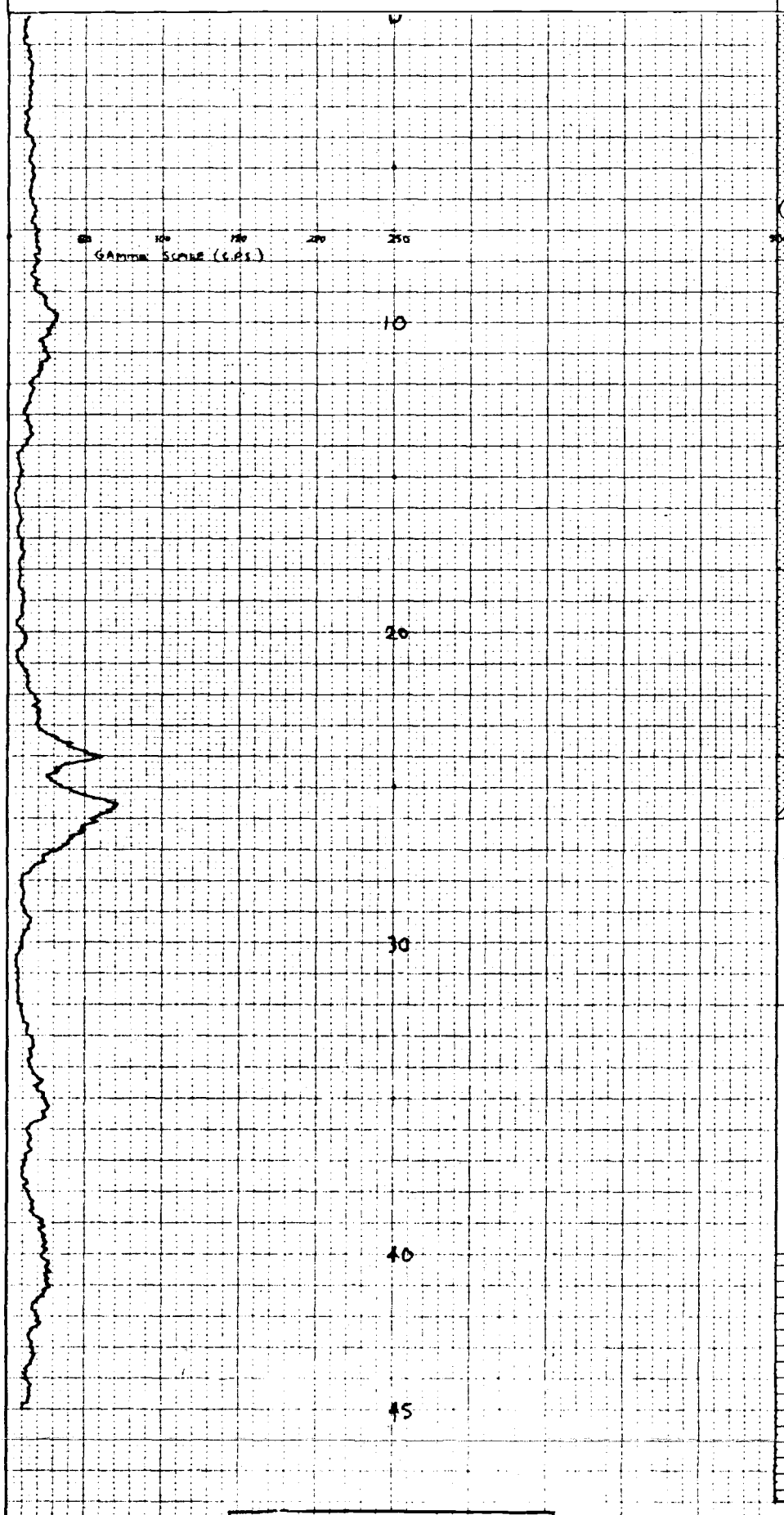
E.O.H.

3339-2-32

BPMDA DRILL HOLE LOG

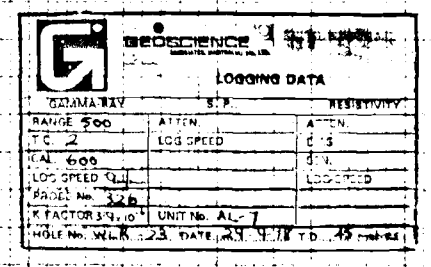
HOLE No.	WL.23	DATE STARTED	29.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	29.09.78	RANGE	500 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	29.09.78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	48 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	46 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	10 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2958	HOLE DIAMETER	4.75 inch	STANDARD	4420
LOGGING Co.	GEOSCIENCE	EASTINGS	6122	K-FACTOR	3.9×10^{-6}		

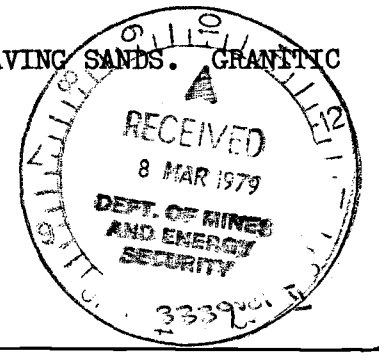
LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic (Basement); Schistose



INTERVAL	(Surface Scintillometer c.p.m.)	DESCRIPTION
0– 8	(500)	Sands: Mod. reddish brown (10R4/6) bimodal, iron stained qtz. sands containing some silcrete lumps.
	(500)	
	(475)	
	(425)	
8– 10	(550)	Silcrete and Sands: Mod. reddish brown (10R4/6) silcrete and f.g. qtz. sands.
10– 14	(500)	Sands: Mod. reddish orange (10R6/6) f.g. sands and at 13 m. some V. light gy. (N8) clay containing some sand particles.
	(450)	
14– 18	(400)	Sands and Grits: Mod. reddish bn. (10R4/6) f.g. Fe. stained qtz. sands. At 16m. pale yell. orange (10YR8/6) sands appear which contain sub-ang. to sub-rounded qtz. grit and grayish orange
	(400)	(10YR7/4) sil. particles.
18– 24	(475)	Sands: Light Brown (5YR5/6) f.-m.g. rounded to well rounded highly spherical iron stained qtz. sands.
	(425)	
	(425)	
24– 26	(450)	Lignitic Sands: Mod. brown (5YR3/4) lignitic muddy sands.
26– 32	(475)	Lignites: Black (N1) dry. lignites.
	(450)	
	(475)	
32– 40	(425)	Lignites: Dusky yellowish brown (10YR2/2)
	(375)	
	(425)	
	(425)	
40– 48	(400)	Mudstone: Pale yellowish brown (10RY6/2) mudstones very weathered containing some lignitic material. At 42m qtz. and feldspar grit particles very angular occur.
	(500)	
	(500)	
	(525)	

HOLE ABANDONED AT THIS DEPTH DUE TO CAVING SANDS. GRANITIC BASEMENT PROBABLY VERY CLOSE.



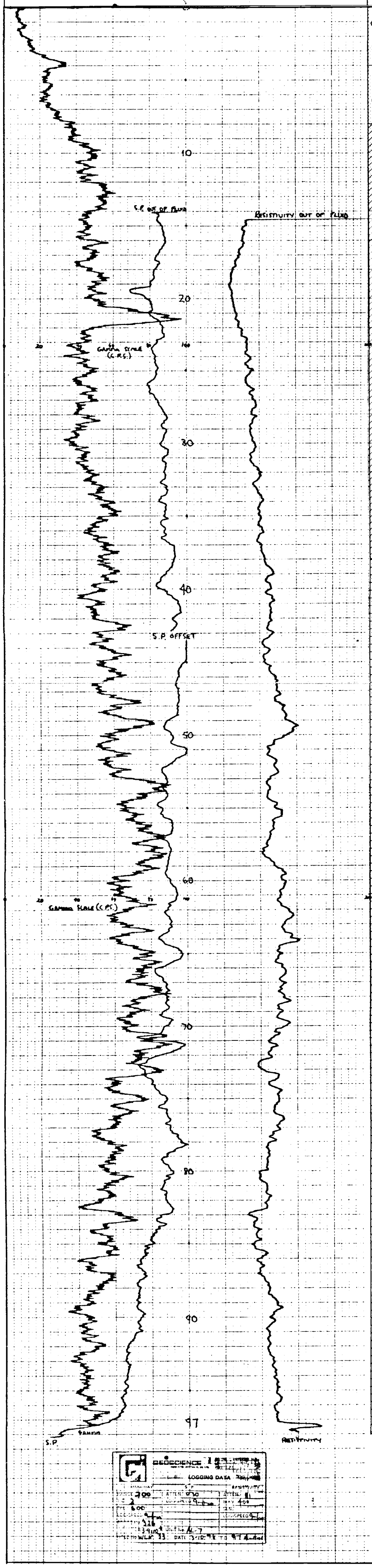


3339-2-33

BPMDA DRILL HOLE LOG

HOLE No.	WL 32	DATE STARTED	03-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	03-10-'78	RANGE	200 c.p.s.	RESIST SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	03-10-'78	TIME CONSTANT	2 sec.	SP SCALE	030
LOCATION	TALLARINGA	DRILLED DEPTH	140 m 98.0	PAPER SPEED	1 cm/m.	BIAS	400
STATE	S.A.	LOGGED DEPTH	138.8 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	14.1 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	7 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3001	HOLE DIAMETER	4.75 inch	STANDARD	4400
LOGGING Co.	GEOSCIENCE	EASTINGS	5683	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Basement (Granitic), Schistose



INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0- 4	Sands and Silcrete: Pale red (10R6/2) bimodal sands and mod.reddish orange (10R6/6) silcrete.
4- 8	Sands and Silcrete: Mod.reddish orange (10R6/6) f.g.sands and light gy (N7) iron stained on outside silcrete lumps.
8- 14	Clays and Sands: V.light gy (N8) clays often silty and mod. reddish orange (10R6/6) f.g. sands.
14- 16	Clays: V.light gy (N8) and pale red (10R6/2) clays.
16- 18	Clays: Dk.yellowish orange (10YR6/6), v.light gy. (N8) and Pale red (10R6/2) mottled clays.
18- 20	Clay: Mod.reddish orange (10R6/6) slightly silty clays.
20- 22	Clay: Light brown (5YR5/6) slightly silty clay.
22- 28	Clay: Dk.yellowish orange 10YR6/6 clay.
28- 30	Clay: Mod.reddish brown (10R4/6) slightly indurated clay.
30- 32	Clays: Banded Light Olive gy (5Y5/2) and Mod.reddish brown 10R4/6 clays.
32- 38	Clays: Greenish gy (5GY6/1) slightly indurated silty clays. Some mod.reddish brown (10R4/6) bands.
38- 98	Mudstones: Moderate reddish brown (10R4/6) indurated mudstones. Some bands greenish gy (5GY6/1). Occasionally the greenish gy mudstones predominate.

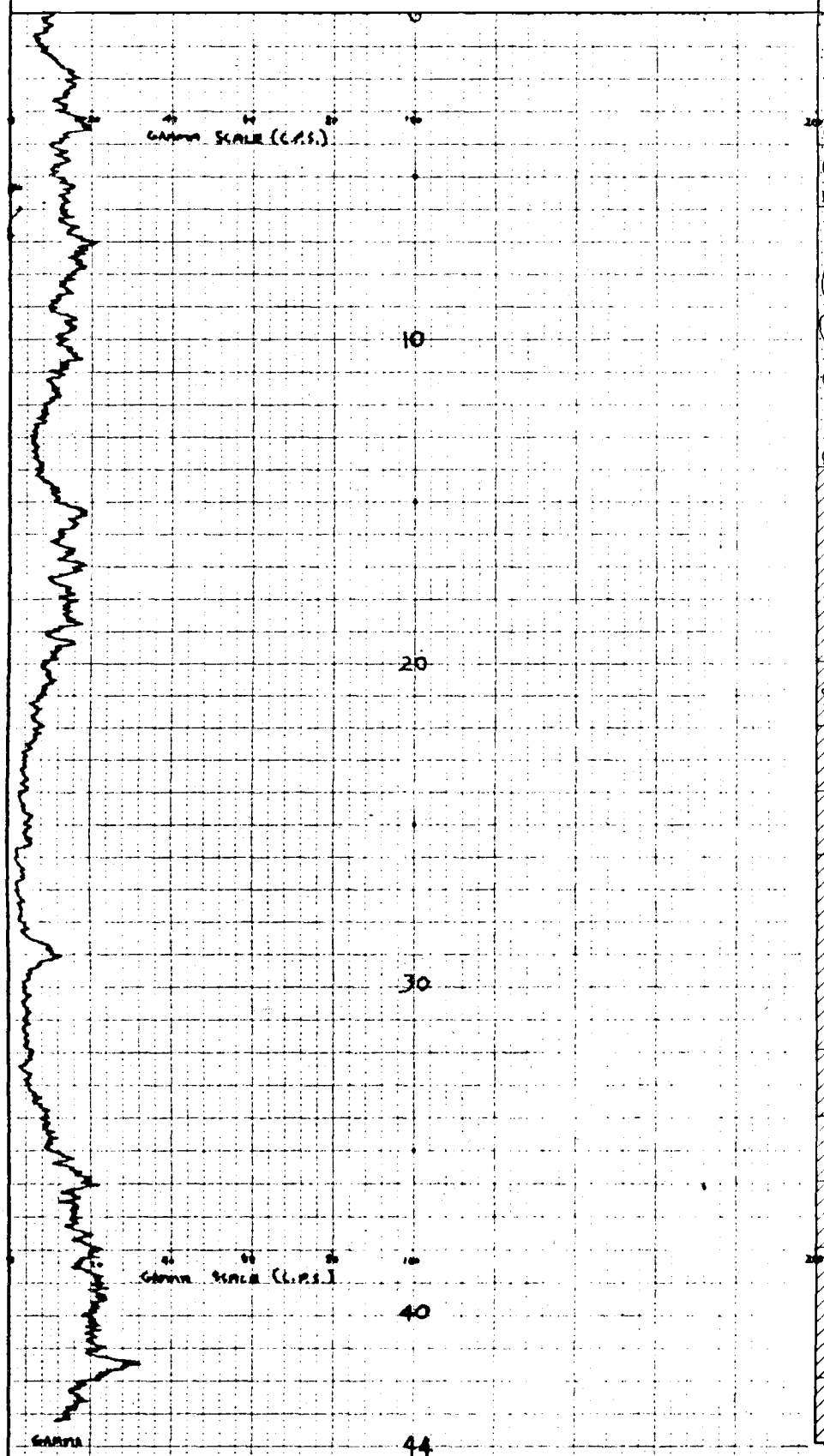
HOLE ABANDONED IN MUDSTONES AT 98 METRES.

3339-2-33

BPMDA DRILL HOLE LOG

HOLE No.	WL.24	DATE STARTED	29.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	30.09.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	30.09.78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	44 m	PAPER SPEED	1 cm/m	BIAS	
STATE	S.A.	LOGGED DEPTH	44.2 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2967	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6123	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose



GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4 (450)	Sands and Silcrete: Mod.reddish brown (10R4/6) bimodal, iron-stained qtz. sands and some silcrete.
				(425)	
				4- 6 (450)	Silcrete and Sands: Very pale orange (10YR8/2) silcrete and sands.
				6- 14 (350)	Silcrete and Sands: Grayish orange (10YR7/4) becoming Pale yellowish orange (10YR8/6) and then V.Pale orange (10YR8/2) at 10m. silcrete. The qtz. sands associated with the silcrete are m.g. iron stained,
				(425)	rounded - well rounded, highly spherical.
				(375)	
				(400)	
				14- 20 (400)	Clays and Grits: V.pale orange (10YR8/2) clays containing ang. qtz. grains. Occ. pale green (5G7/2) silcrete type layers.
				(400)	
				(400)	
				20- 22 (375)	Grits and Clays: Pale yellowish bn. (10YR6/2) grits and clays. The grits are sub.ang. to sub.rounded. Horizon contains some lat.
				22- 24 (325)	Clays and Grits: Pale pink (5RP8/2) clay containing qtz. grit.
				24- 26 (325)	Clays and Grits: Mod.orange pink (10R7/4) clays containing iron stained qtz. grit particles.
				26- 32 (300)	Clays and Grits: V.light gy (N8)and P.purple (5P6/2)clays containing grit particles.
				(325)	
				(325)	
				(325)	
				32- 34 (350)	Clays and Grits: Pale yellowish brown (10YR6/2) clay containing grit particles.
				34- 36 (375)	Clays and Grits: Yellowish gy(547/2)clay containing grit particles.
				36- 38 (375)	Clays and Grits: Light gy (N7) clay containing grit particles.
				38- 42 (375)	Clays and Weathered Basement: Med.Bluish gy. (5B5/1)clays containing basement grit particles.
				(450)	
				42- 44 (475)	Basement: Med.Bluish gy. (5B5/1)clays containing fresh granitic basement particles.

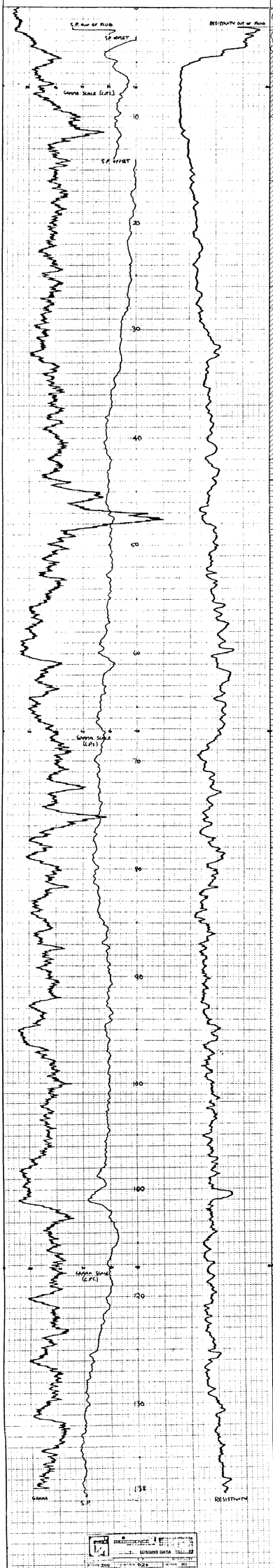
E.O.H.

3339-2-34

BPMDA DRILL HOLE LOG

HOLE No.	WL 33	DATE STARTED	03-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	03-10-'78	RANGE	200 cps	RESIST SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	03-10-'78	TIME CONSTANT	2 sec.	SP SCALE	020
LOCATION	TALLARINGA	DRILLED DEPTH	140 m	PAPER SPEED	1 cm/m.	BIAS	525
STATE	S.A.	LOGGED DEPTH	138.8 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	2 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	7 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3001	HOLE DIAMETER	4.75 inch	STANDARD	4400
LOGGING Co.	GEOSCIENCE	EASTINGS	5683	K-FACTOR	3.9×10^{-6}	Basement	

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose



LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
	0- 2 (300)	Sand and Silcrete: Mod.reddish bn. (10R4/6) bimodal qtz. sands and yell. gy. (5Y7/2) sil. iron stained on joint planes.
	2- 6 (325)	Silcrete: Yellowish gry (5Y7/2) silcrete, iron stained on joint planes
	6- 10 (375) (400) (350)	Sandy clays: Mod.reddish bn.(10R4/6) and yellowish gy. (5Y8/1) sandy clays.
	10- 16 (425) (400) (425)	Clays: Dk.yellowish orange (10YR6/6) and Mod.reddish brown (10R4/6) silty clays.
	16- 26 (400) (375) (350) (325) (375)	Clays: Light brown (5YR5/6) and dk.yellowish orange (10YR6/6) clays.
	26- 28 (375)	Clays: Dk.yellowish orange (10YR6/6) and light bn. (5YR5/6) clays.
	28- 36 (400) (375) (325) (350)	Clay: Mostly grayish orange (10R7/4) clay. (32-34 m. sample light brown (5YR5/6) contamination after drill was stopped?)
	36- 42 (375) (400) (450)	Clays: Light brown (5YR5/6) clays some indurated bands.
	42- 44 (500)	Mudstones: Greenish gy (5GY6/1) Mudstones. 10% of sample light brown (5YR5/6) clays.
	44- 76 (600) (625) (650) (425) (450) (475) (450) (425) (450) (350) (400) (425) (425) (425) (450) (450) (500)	Mudstones: Light Bluish gy (5B7/1) mudstones. Some Mod.reddish brown (10R4/6) mudstones occur at 50 metres.
	78- 82 (500) (500)	Mudstones: Light Bluish gy. (5B7/1) mudstones. Some Mod.reddish brown (10R4/6). However v.hard drilling - Qtzite band?
	82- 40 (500) (425) (450) (475) (475) (425) (400) (400) (425) (450) (400) (375) (350) (375) (350) (375) (400) (425) (400) (400) (500) (450) (550) (500) (450) (375) (400) (425) (450)	Mudstones: Pale brown (5YR5/2) competant mudstones intercalated with light bluish gy (5B7/1) muddy layers. The overall colour is a light brownish gy (5YR6/1). The compentant Mudstones become Pale red (10R6/6) in colour at 108 m.

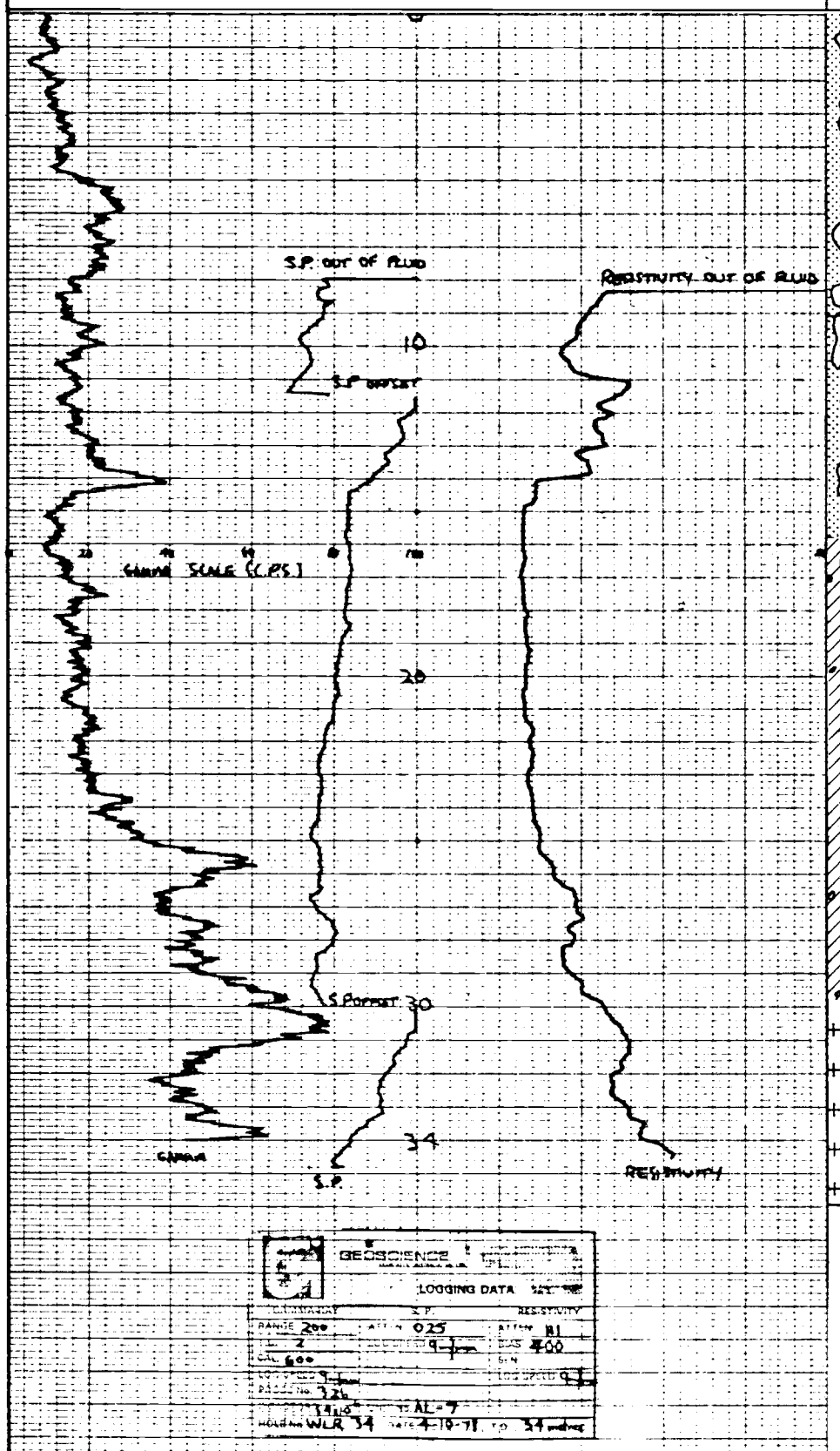
HOLE ABANDONED AT THIS DEPTH

3339-2-34

BPMDA DRILL HOLE LOG

HOLE No.	WL 34	DATE STARTED	04-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	04-10-'78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	04-10-'78	TIME CONSTANT	2 sec.	SP. SCALE	025
LOCATION	TALLARINGA	DRILLED DEPTH	36 m	PAPER SPEED	1 cm/m.	BIAS	400
STATE	S.A.	LOGGED DEPTH	34 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	8 m.
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3003	HOLE DIAMETER	4.75 inch	STANDARD	4750
LOGGING Co.	GEOSCIENCE	EASTINGS	5705	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose; Basement



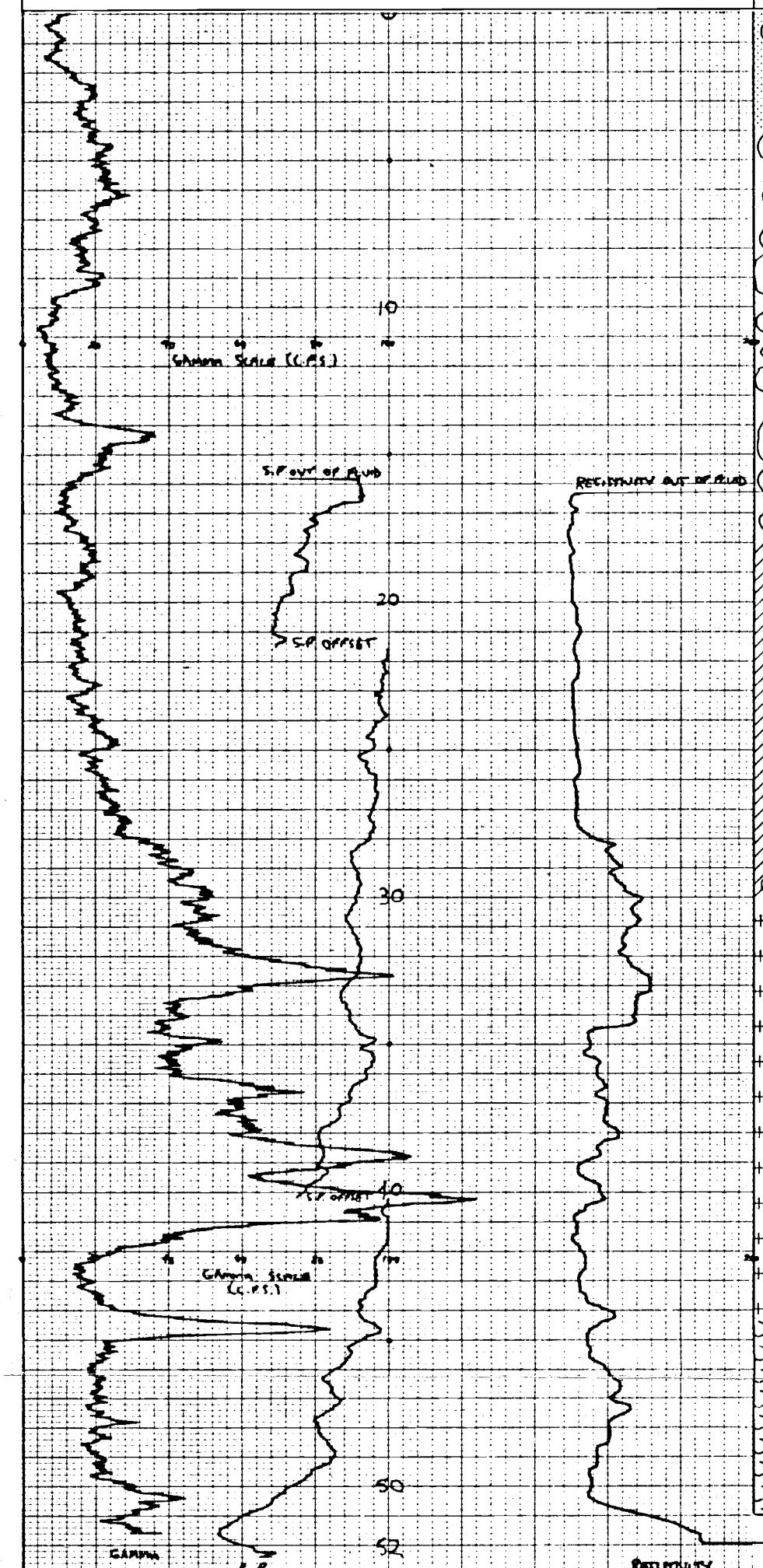
GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0– 6 (350) (375) (300)	Sands and Silcrete: Mod.reddish brown (10R4/6) bimodal, iron-stained qtz. sands containing silcrete lumps.
				6– 8 (475)	Laterite and Sands: Mod.orange red (10R6/6) lat. and sands.
				8– 16 (450) (375) (325) (325)	Silcrete and Sands: Mod.reddish bn. (10R4/6) iron-stained, weathered silcrete becoming fresher yellowish gy. (5Y7/2). The qtz. grains within the silcrete become V.coarse grit in size at 14 m.
				16– 18 (300)	Silcrete and Clays: V.pale orange (10YR8/2) fresh silcrete and white (N9) clays containing qtz grit particles.
				18– 26 (325)	Gritty Clays: White (N9) clays containing ang-sub.ang. generally cloudy occ. slightly iron-stained mod. sphericity qtz. grits.
				26– 30	Gritty Clays: as above but pink and cream feldspars present.
				30– 34	Weathered Basement: Weathered Granitic Basement.
				34– 36	Fresh Basement: Fresh Granitic Basement.

3339-2-345

BPMDA DRILL HOLE LOG

HOLE No.	WL 35	DATE STARTED	04-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	05-10-'78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	05-10-'78	TIME CONSTANT	2 sec.	SP. SCALE	028
LOCATION	TALLARINGA	DRILLED DEPTH	51 m	PAPER SPEED	1 cm/m.	BIAS	425
STATE	S.A.	LOGGED DEPTH	52.6 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	15.8 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3003	HOLE DIAMETER	4.75 inch	STANDARD	4450
LOGGING Co.	GEOSCIENCE	EASTINGS	5693	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose (Basement), Schistose



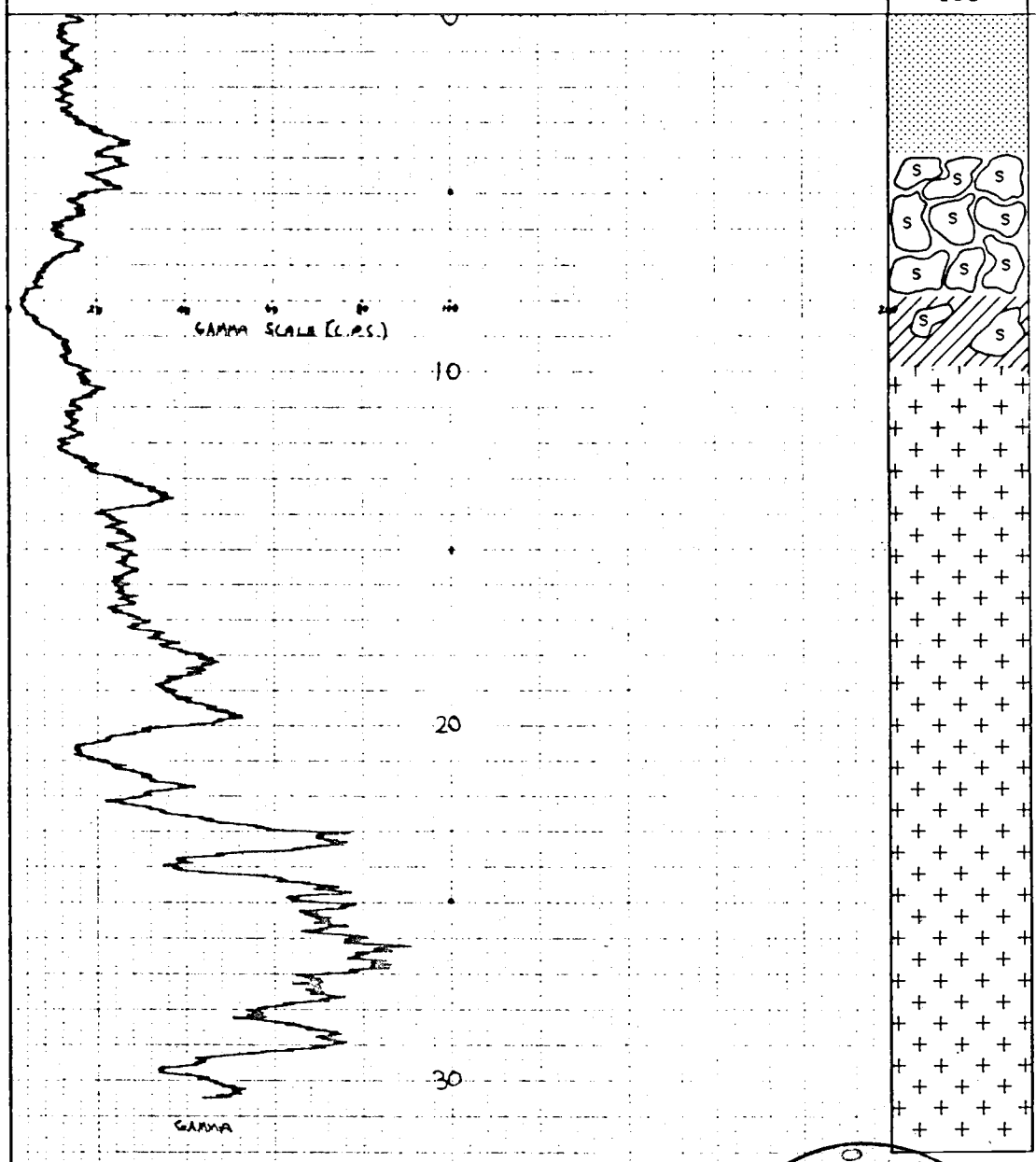
INTERVAL	(Surface Scintillometer c.p.m.)	DESCRIPTION
0– 4	(350)	Sands and Silcrete: Mod.reddish brown (10R4/6) bimodal, iron-stained surficial sands containing fragments of silcrete.
	(325)	
4– 14	(350)	Silcrete: Highly weathered, iron-stained mod.reddish brown (10R4/6) silcrete becoming fresher yellowish gy (5Y7/2) sil.at 8 m. At 12 m. the silcrete is V.light gy (N8) and has some light gy. (N7).qtz.ss. layers in it.
	(400)	
	(350)	
	(325)	
	(375)	
14– 18	(375)	Silcrete: Light red (5R6/6) iron-stained and fresh (V.light gy N7) silcrete.
	(425)	
18– 26	(350)	Clays: V.light gy (N7) sand-grit Kaolinitic clays. At 23 m. thin bands of Mod.red (5R4/6) clays occur.
	(350)	
	(375)	
	(400)	
26– 30	(425)	Clays and Basement: V.light gy (N7) qtz grit clays containing some weathered granitic basement fragments.
	(350)	
30– 44	(425)	Basement: Generally fresh light olive gy (5Y5/2) granitic basement, well fractured, soft drilling.
	(500)	
	(525)	
	(600)	
	(650)	
	(800)	
	(825)	
44-51	(650)	Basement: Fresh Mica chlorite schist, hard drilling.
	(575)	
	(550)	
	(550)	

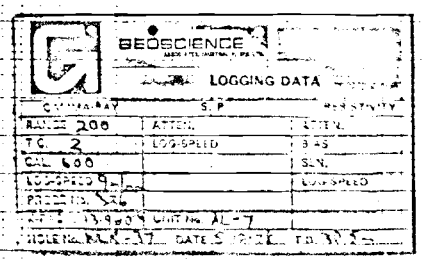
3339-2-36

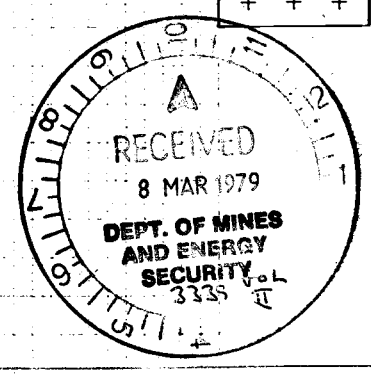
BPMDA DRILL HOLE LOG

HOLE No.	WL37	DATE STARTED	05-10-78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	05-10-78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	05-10-78	TIME CONSTANT	2 sec.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	32 m	PAPER SPEED	1 cm/m.	BIAS	
STATE	S.A.	LOGGED DEPTH	31.5 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	No fluid
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3005	HOLE DIAMETER	4.75 inch	STANDARD	4450
LOGGING Co.	GEOSCIENCE	EASTINGS	5761	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose







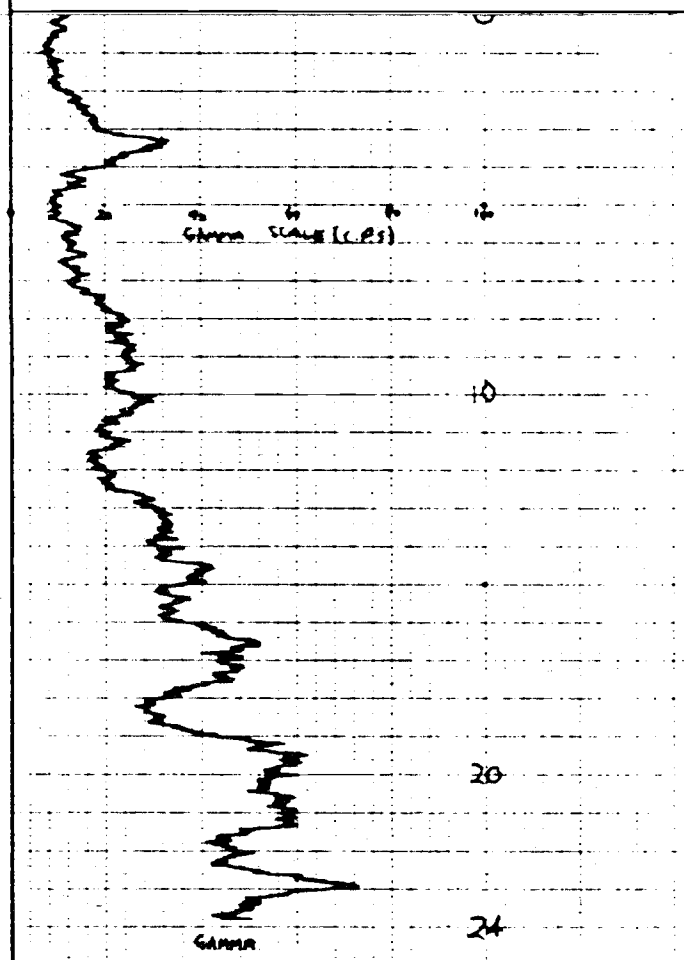
GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4 (425) (375)	Sands: Mod.reddish brown (10R4/6) iron-stained bimodal qtz. sands.
				4- 8 (375) (375)	Silcrete: Mod.reddish brown (10R4/6) weathered iron-stained silcrete becoming light gy fresher silcrete at 7 m.
				8- 10 (375)	Silcrete and Clays: Mod.reddish brown (10R4/6) sil. At 9 m.grayish orange pink (10R8/2) kaolinitic clays.
				10- 14 (325) (425)	Weathered Basement: Pale red purple (5RP7/2) weathered basement.
				14- 24 (475) (400) (450) (550) (500)	Weathered Basement: V.light gy (N8) becoming light gy (N7) weathered basement.
				24- 30 (500) (600) (750)	Weathered Basement: Light greenish gy (5G8/1) weathered basement. Becoming very hard at 27 m.
				30- 32 (500)	Basement: Yellowish gy. (5Y7/2) slightly weathered basement. V. hard drilling.
					E.O.H.

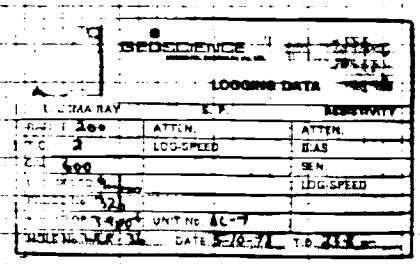
3339-2-37

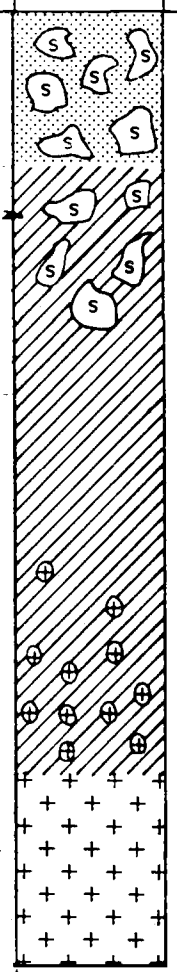
BPMDA DRILL HOLE LOG

HOLE No.	WL 36	DATE STARTED	05-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	05-10-'78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	05-10-'78	TIME CONSTANT	2 sec.	SP. SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	25 m	PAPER SPEED	1 cm/m.	BIAS	
STATE	S.A.	LOGGED DEPTH	24.8 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3007	HOLE DIAMETER	4.75 inch	STANDARD	4450
LOGGING Co.	GEOSCIENCE	EASTINGS	5727	K-FACTOR	3.9 x 10-6		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose







GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4 (375)	Sands and Silcrete: Mod.reddish brown (10R4/6) bimodal iron-stained qtz. sands with some greyish yellow (10YR7/4) silcrete at 3 m.
				(375)	
				4- 8 (350)	Clays and Silcrete: Dk.yellowish orange (10YR6/6) clays with grayish orange pink (5YR7/2) silcrete pieces.
				(300)	
				8- 20 (350)	Clays and Weathered Basement: White (N9) clays containing ang.clear qtz. grit particles. Basement chips become recognisable at 14 m.
				(350)	
				(325)	
				(450)	
				(500)	
				(525)	
				20- 22 (550)	Basement: Yellowish gy. (5Y8/1) weathered granitic basement.
				22- 25 (550)	Basement: Light bluish gy. (5B5/1) fresh granitic basement, drilling very hard.
				(375)	

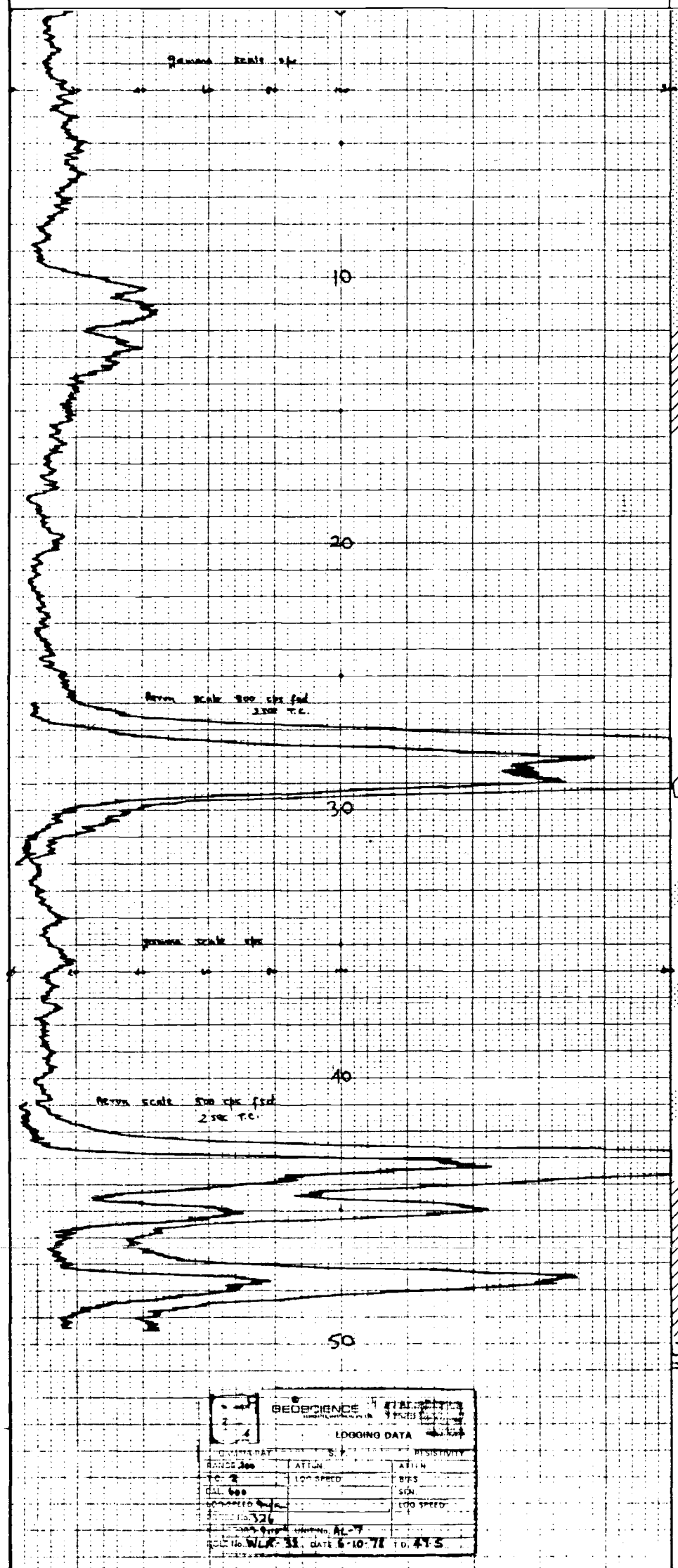
E.O.H.

3339-2-38

BPMDA DRILL HOLE LOG

HOLE No.	W.L. 38	DATE STARTED	05.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	06.10.78	RANGE	200/500 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	06.10.78	TIME CONSTANT	2 SEC.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	51 m.	PAPER SPEED	1 cm/m.	BIAS	
STATE	S.A.	LOGGED DEPTH	50.5 m.	LOGGING SPEED	9 m/min.	FLUID LEVEL	No fluid
GEOLOGIST	WEBER	ELEVATION	-	BACK GROUND	9 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2987	HOLE DIAMETER	4.75 inch	STANDARD	4820
LOGGING Co.	GEOSCIENCE	EASTINGS	5917	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose — Basement



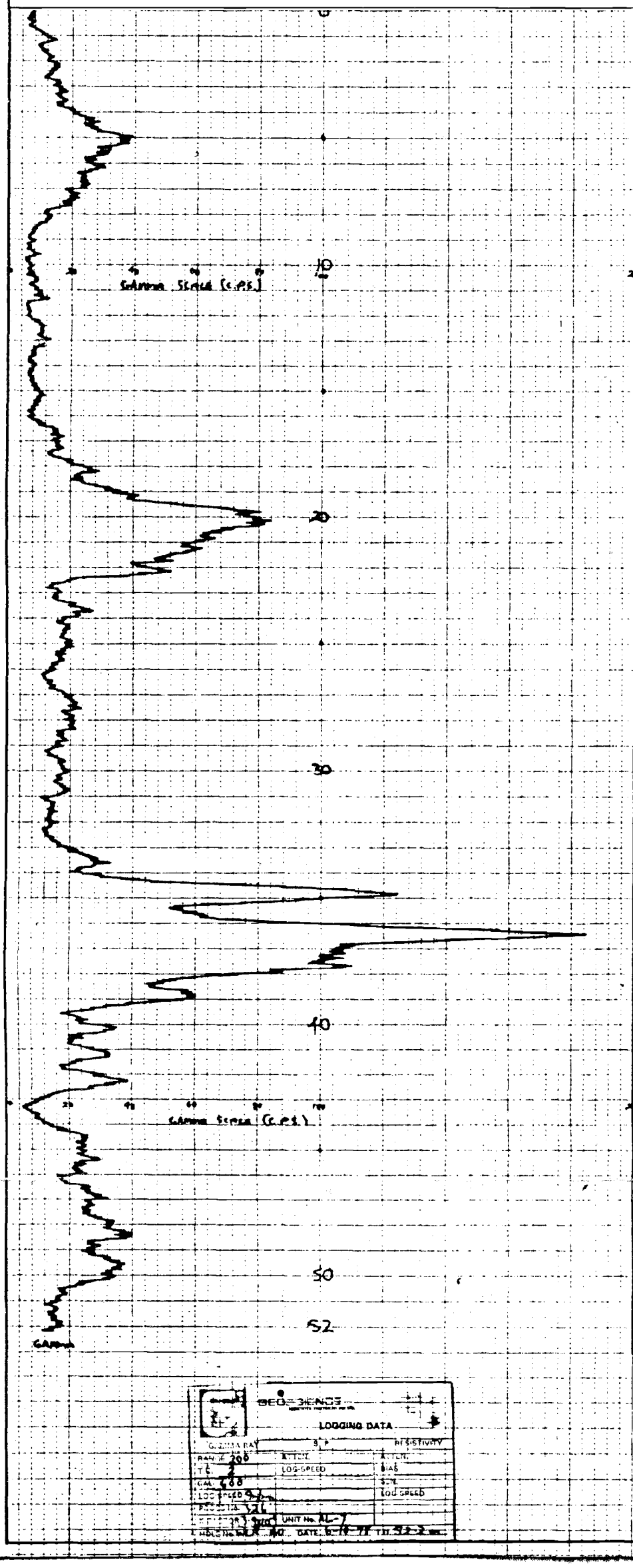
GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c p m)		DESCRIPTION
				0- 8	(400)	Sands and Silcrete: Pale red (10R6/2) bimodal qtz. sands with silcrete particles.
					(425)	
					(475)	
					(475)	
				8- 12	(350)	Sands and Silcrete: Pale red (10R6/2) and Mod.reddish brown (10R4/6) iron-stained bimodal qtz. sands containing silcrete particles.
					(475)	
				12- 16	(450)	Clays: Pale red (10R6/2) and Mod.reddish brown (10R4/6) clays. At 15 m. some lignitic lumps present.
					(475)	
				16- 26	(500)	Lignites: Grayish brown (5YR3/2) lignites.
					(500)	
					(425)	
					(425)	
					(450)	
				26- 32	(475)	Lignites and Laterites: Dk.yellowish brown (10YR4/2) lignites cont. pyritised wood fragments and red silcrete type particles.
					(575)	
					(825)	
				32- 44	(975)	Lignitic Muds: Pale brown (5YR5/2) lignitic muds containing med-V.c.g. qtz. grains.
					(800)	
					(650)	
					(450)	
					(475)	
					(475)	
				44- 50	(575)	Clays and Grits: Light bluish gy (5B7/1) clays containing qtz. chip fragments. Basement ?
					(525)	
					(525)	
				50- 51	(575)	Basement: Weathered Basement.

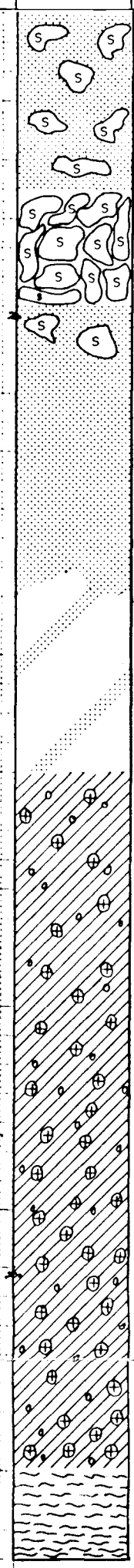
3339-2-40

BPMDA DRILL HOLE LOG

HOLE No.	W.L.40	DATE STARTED	06.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	06.10.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	06.10.78	TIME CONSTANT	2 SEC.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	53 m.	PAPER SPEED	1 cm/m.	BIAS	
STATE	S.A.	LOGGED DEPTH	53.2 m.	LOGGING SPEED	9 m/min.	FLUID LEVEL	No FLUID
GEOLOGIST	WEBER	ELEVATION	-	BACK GROUND	9 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2999	HOLE DIAMETER	4.75 inch	STANDARD	4820
LOGGING Co.	GEOSCIENCE	EASTINGS	5906	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose





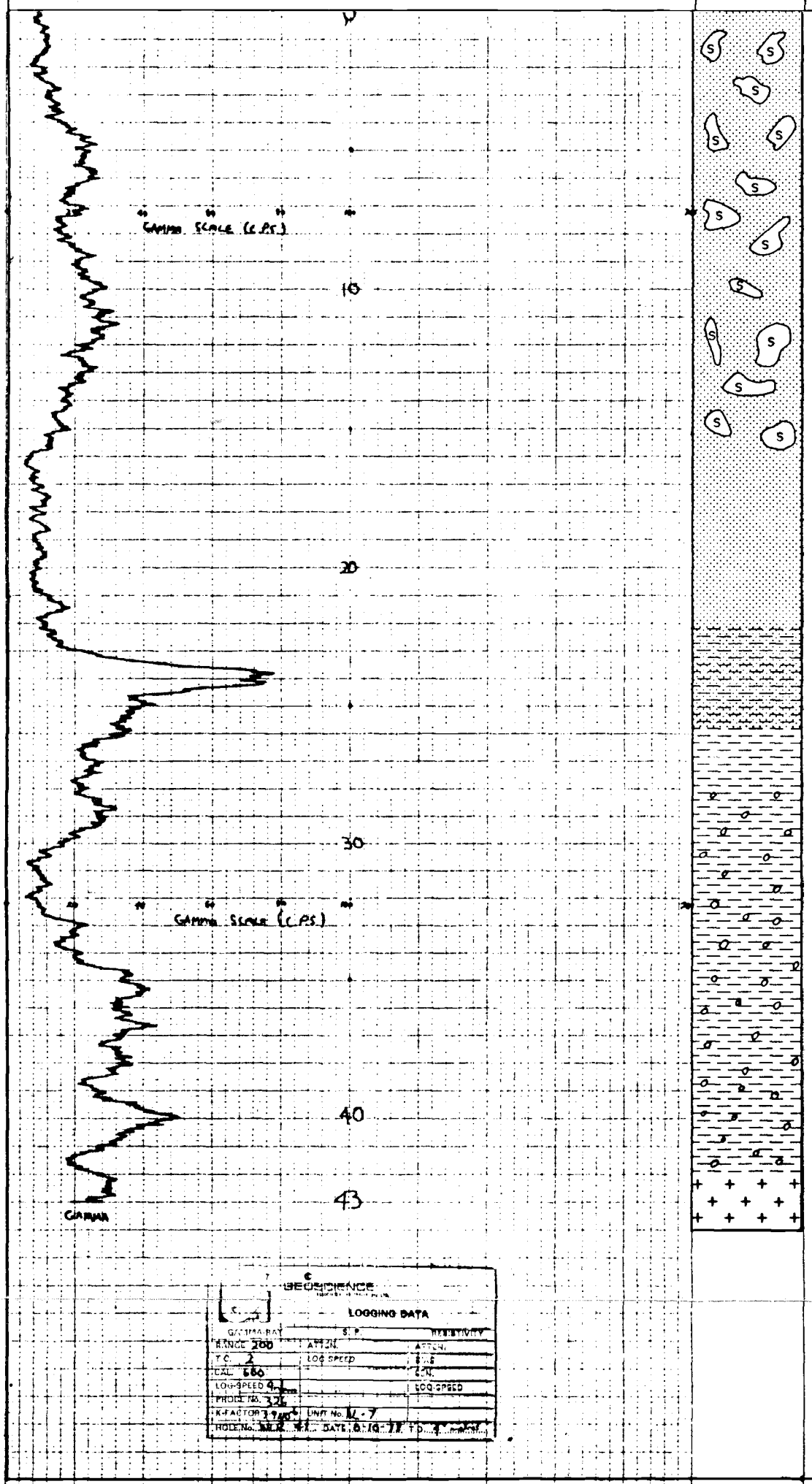
INTERVAL (Surface Scintillometer c.p.m.)		DESCRIPTION
0– 6	(400)	Sands and Silcrete: Lt.br. (5YR6/4) becoming mod.reddish br. (10R4/6) iron-stained bimodal qtz. sands containing silcrete particles (Mod.orange pink (10R7/4) in colour).
	(400)	
	(450)	
6– 10	(450)	Silcrete: Mod.reddish br. (10R4/6) Friable iron-stained weath. sil. becoming pale reddish br. (10R5/4) and V.light gy (N8) fresh sil.
	(425)	
10– 12	(375)	Silcrete and Sands: 1 m. fresh but Fe-stained on joint planes & 1m. of bright yell.orange (10YR10/6) f.g. grit.bimodal qtz sand.
12– 16	(375)	Sand: Pale yellowish orange (10YR8/6) f.g.qtz sand occ.grains iron-stained.
	(375)	
16– 18	(325)	Sands: Moderate reddish brown (10R4/6) f.g.qtz sands.
18– 20	(350)	Sands: Grayish yell. (10YR7/4) f.g.qtz sands cont. lig.lumps.
20– 26	(350)	Lignites: Grayish red (5R4/2) f.g. sandy lignites.
	(400)	
	(375)	
26– 32	(375)	Gritty Clays: Overall a pale yellowish brown (10YR6/2) clay, comp. of light gy (N7) and mod.brown (5YR3/4) clays cont.qtz. grit particles.
	(400)	
	(425)	
32– 50	(400)	Clays and Basement: Light olive gy. (5Y6/1) clays containing qtz. grit particles and granitic basement particles - pyritic.
	(400)	
	(450)	
	(475)	
	(525)	
	(525)	
	(625)	
	(550)	
	(475)	
50– 53	(450)	Schist: Biotite schist fragments v.hard drilling.
	(475)	
		E.O.H.

3339-2-41

BPMDA DRILL HOLE LOG

HOLE No.	WL.41	DATE STARTED	06.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	06.10.78	RANGE	200 c.p.s.	RESIST SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	06.10.78	TIME CONSTANT	2 SEC	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	44 m.	PAPER SPEED	1 cm./m.	BIAS	
STATE	S.A.	LOGGED DEPTH	44 m.	LOGGING SPEED	9 m./min	FLUID LEVEL	No fluid
GEOLOGIST	WEBER	ELEVATION	-	BACK GROUND	9 c.p.s.	PROBE No	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3008	HOLE DIAMETER	4.75 inch	STANDARD	4820
LOGGING Co.	GEOSCIENCE	EASTINGS	5838	K-FACTOR	3.9 x 10-6		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Schistose; Basement



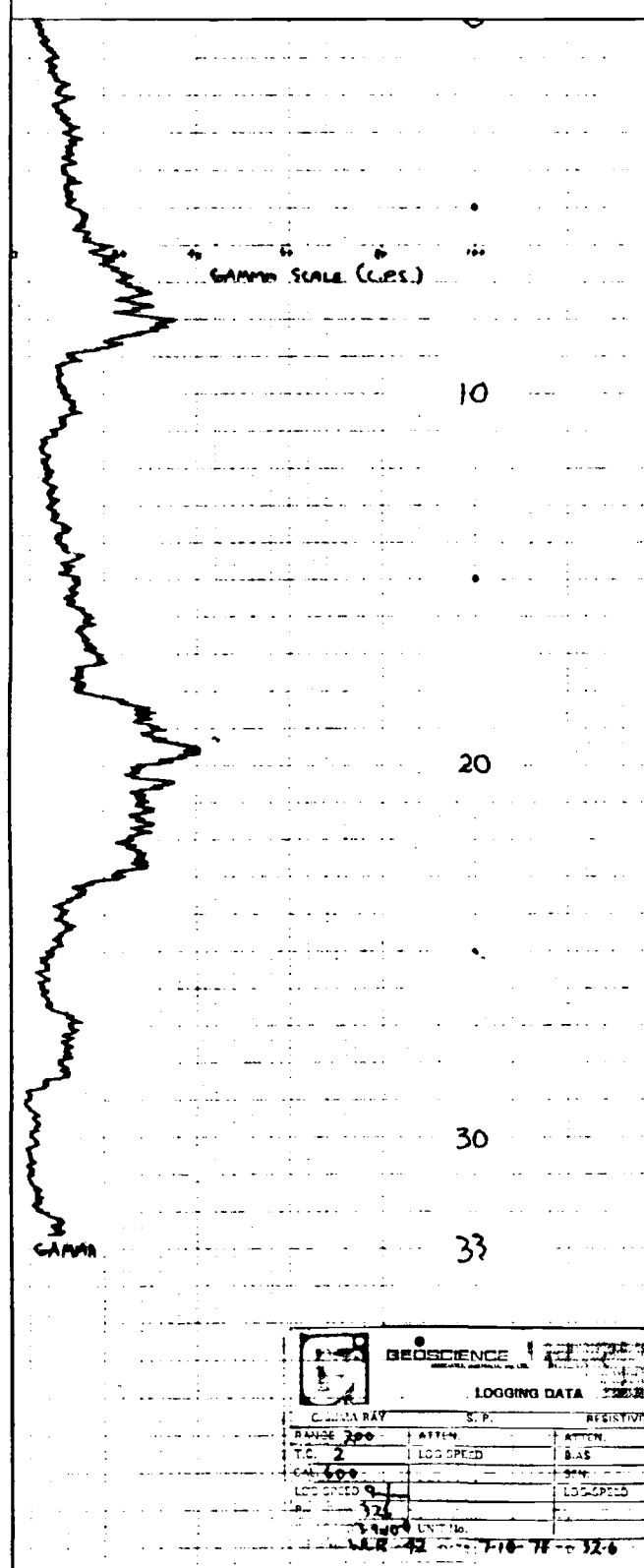
GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c p m)	DESCRIPTION
				0– 4 (375)	Sands and Silcrete: Mod.reddish orange (10R6/6) iron stained bimodal qtz. sands containing silcrete modules.
				(400)	
				4– 14 (375)	Sands and Silcrete: Mod.reddish brown (10R4/6) qtz sands and iron-stained weathered friable silcrete.
				(375)	
				(400)	
				(475)	
				(475)	
				14– 16 (325)	Sands and Silcrete: Pale reddish brown (10R5/4) sands and iron-stained silcrete.
				16– 18 (300)	Sands: Bright mod.reddish brown (10R4/6), Pale yel.orange (10YR6/6) f.g. qtz sands containing V.pale orange (10YR8/2) indurated sand bands.
				18– 20 (375)	Sands: Mod.brown (5YR4/4) and greyish orange (10YR7/4) indurated sands.
				20– 22 (400)	Sands: Mottled V.pale orange (10YR8/2), Dk.yellowish orange (10YR6/6), Dusky red (5R3/4) and V.dusky red (10R2/2) indurated sands.
				22– 24 (400)	Mudstones: Dark yellowish orange (10YR6/6) mudst. cont. chips of Dk.yellowish orange (10YR6/6) indurated sands.
				24– 28 (400)	Mudstones and Sands: Pale yellowish orange (10YR8/6) mudstones cont. chips of ang. V.c.g. sands to grit. Also dusky red (5R3/4) laterite and indurated sands.
				(350)	
				28– 32 (475)	Mudstone: Greyish orange (10YR7/4) mudstone containing qtz. grit particles.
				(425)	
				32– 42 (500)	Mudstones and Grits: Yellowish gy. (5Y7/2) mudstones containing qtz. grit fragments.
				(450)	
				(425)	
				(425)	
				(425)	
				42– 44 (425)	Granitic Basement: Light Olive gy. (5Y5/2) granitic basement.
					E.O.H.

3339-2-42

BPMDA DRILL HOLE LOG

HOLE No.	W.L. 42	DATE STARTED	06.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	07.10.78	RANGE	200 c.p.s.	RESIST SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	07.10.78	TIME CONSTANT	2 SEC.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	56 m.	PAPER SPEED	1 cm./m.	BIAS	
STATE	S.A.	LOGGED DEPTH	33.6 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3018	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	5885	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose



GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 6 (400) (375) (375)	Sands: Mod.reddish brown (10R4/6) bimodal iron-stained qtz sands occasional silcrete particles.
				6- 14 (375) (475) (425) (400)	Silcrete: Mod.reddish brown (10R4/6) silcrete weathered and friable.
				14- 18 (425) (450)	Sands: Grayish orange pink (5YR7/2) f.g.qtz. sands occ.particles iron-stained.
				18- 20 (475) (450)	Sands: Pale red (10R6/2) clayey f.g.qtz. sands.
				20- 24 (500)	Sands: Dk.yellowish brown (10YR6/2) f.g.lignitic sands.
				24- 30 (500) (550) (525)	Sandy Lignites: Grayish brown (5YR3/2) f.g. sandy lignites.
				30- 54 (450) (475) (325) (350) (400) (400) (450) (425) (425) (400) (425) (400) (425) (375)	Lignites: Blackish red (5R2/2) lignites containing angular qtz. grit particles.
				54- 56	Lignites and Basement: Blackish red (5R2/2) lignites containing granitic basement particles. V.hard drilling.

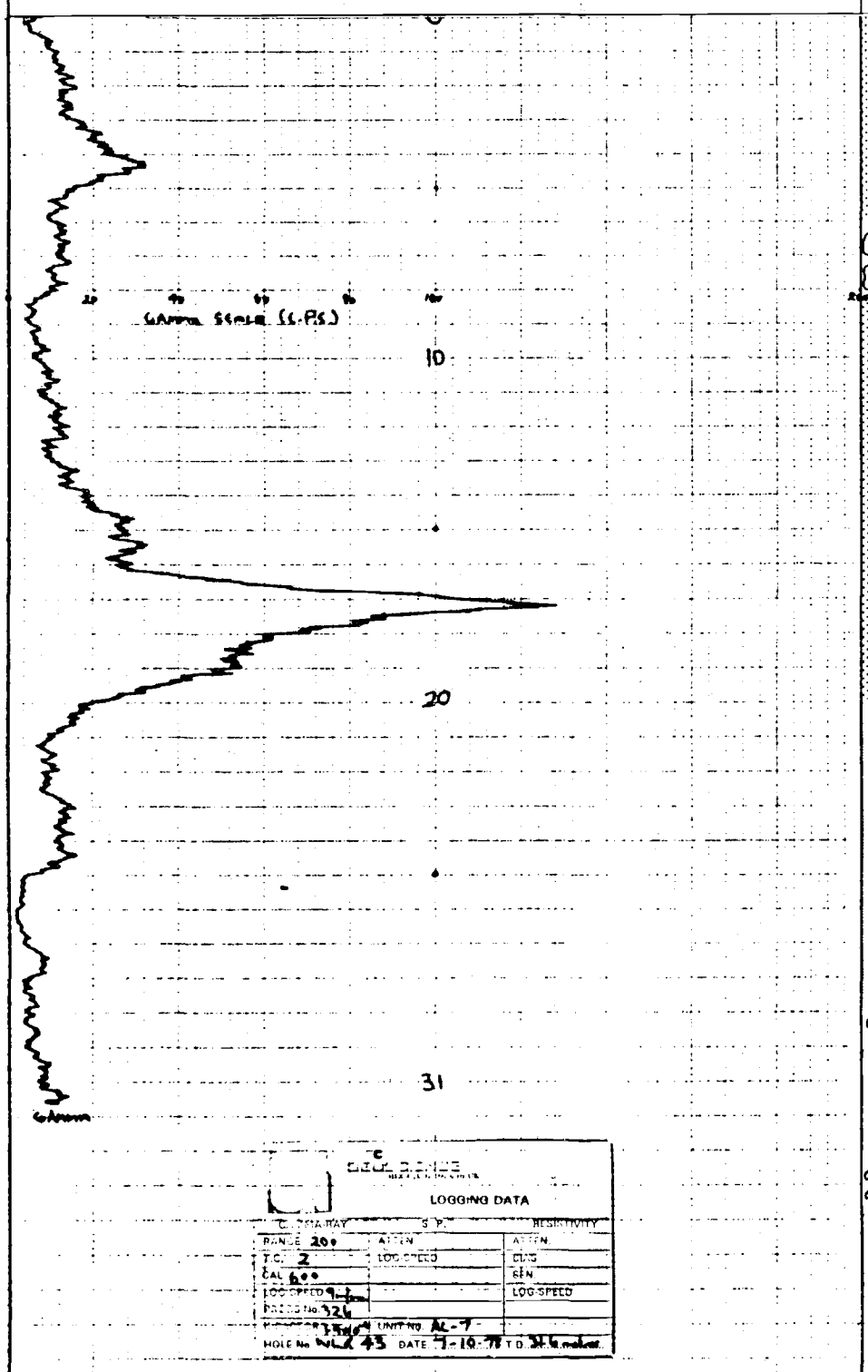
E.O.H.

3339-2-43.

BPMDA DRILL HOLE LOG

HOLE No.	W.L.43	DATE STARTED	07.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	07.10.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	07.10.78	TIME CONSTANT	2 SEC.	SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	52 m.	PAPER SPEED	1 cm./m.	BIAS	
STATE	S.A.	LOGGED DEPTH	32.6 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3023	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	5881	K-FACTOR	3.9 x 10-6		

LITHOLOGIES — Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose



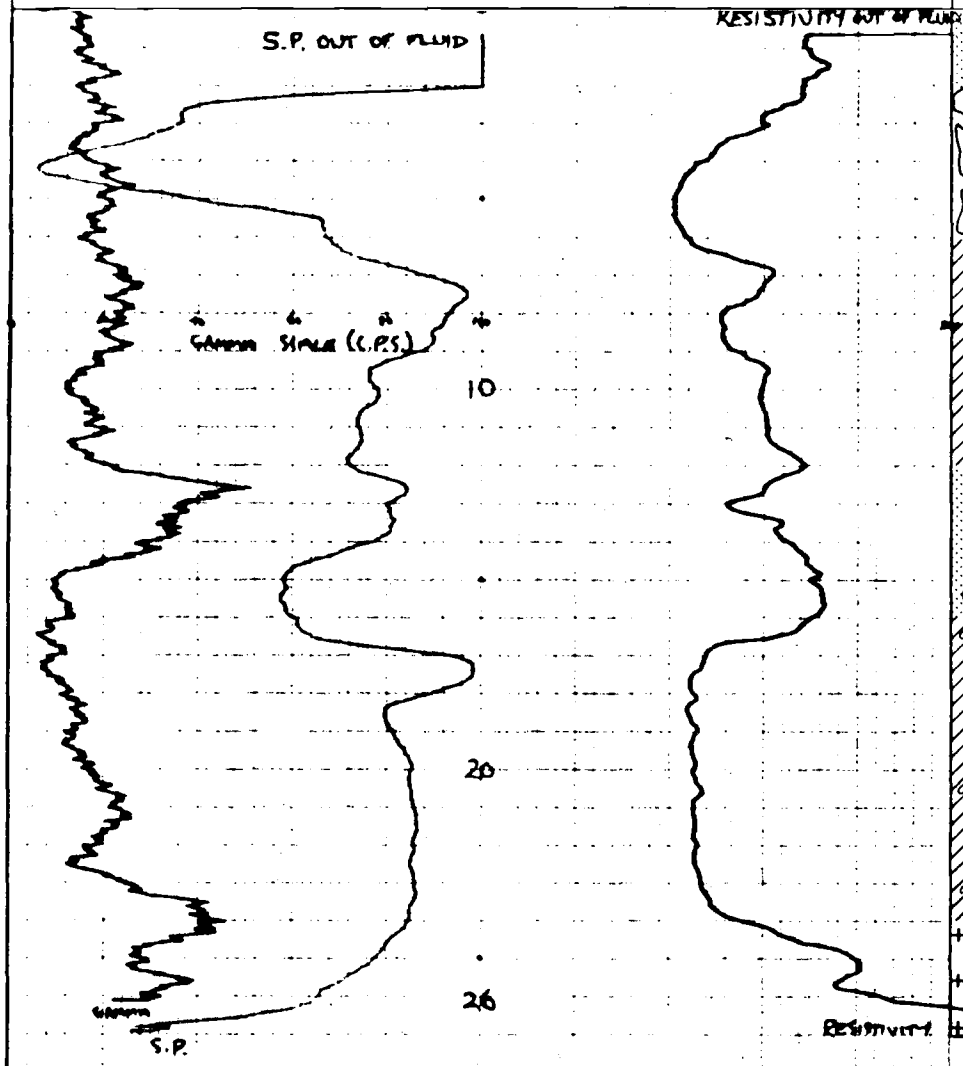
GAMMA	S.P	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c p m)	DESCRIPTION
				0- 6 (375)	Sands and Silcrete: Mod.reddish brown (10R4/6) iron-stained, bimodal qtz sands containing silcrete particles.
				(450)	
				(425)	
				6- 8 (425)	Silcrete: Mod.reddish orange (10R6/6) weathered and fresh silcretes.
				8- 12 (400)	Sands: Mod.yellow (5Y7/6) F.g.qtz sands.
				(375)	
				12- 14 (400)	Sands: Pale yellowish orange (10YR8/6) f.g.qtz. sands.
				14- 18 (350)	Sands: Yellowish grey (5Y7/2) f.g.qtz. sands which contain small nodules of Kaolin.
				(375)	
				18- 22 (425)	Sandy Lignites: Mod. brown (5YR3/4) sandy lignites.
				(450)	
				22- 26 (500)	Lignites: Dusky brown (5YR2/2) lignites.
				(500)	
				26- 52 (350)	Gritty Lignites: Dusky brown (5YR2/2) lignites containing qtz grit Particles.
				(375)	
				(350)	
				(350)	
				(350)	
				(325)	
				(375)	
				(450)	
				(375)	
				(375)	
				(350)	
				(325)	
				(400)	HOLE ABANDONED AT THIS DEPTH DUE TO COMPRESSOR BEING UNABLE TO LIFT SAMPLE.

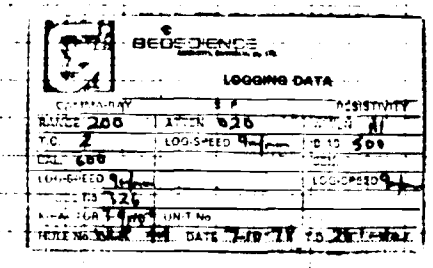
3339-2-44

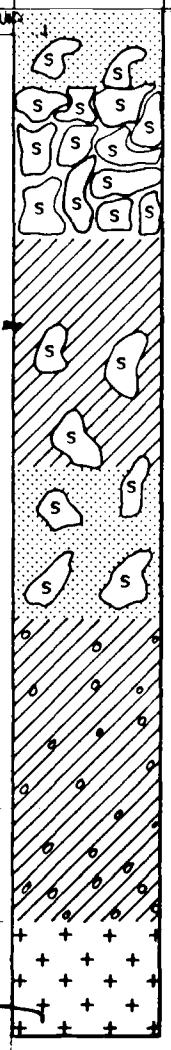
BPMDA DRILL HOLE LOG

HOLE No.	WL 44	DATE STARTED	07.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	07.10.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	07.10.78	TIME CONSTANT	2 SEC.	SP SCALE	020
LOCATION	TALLARINGA	DRILLED DEPTH	27 m.	PAPER SPEED	1 cm./m.	BIAS	500
STATE	S.A.	LOGGED DEPTH	27.1 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	0.5 m.
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	8 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2979	HOLE DIAMETER	4.75 inch	STANDARD	4600
LOGGING Co.	GEOSCIENCE	EASTINGS	6255	K-FACTOR	3.9 x 10-6		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic (Basement), Schistose







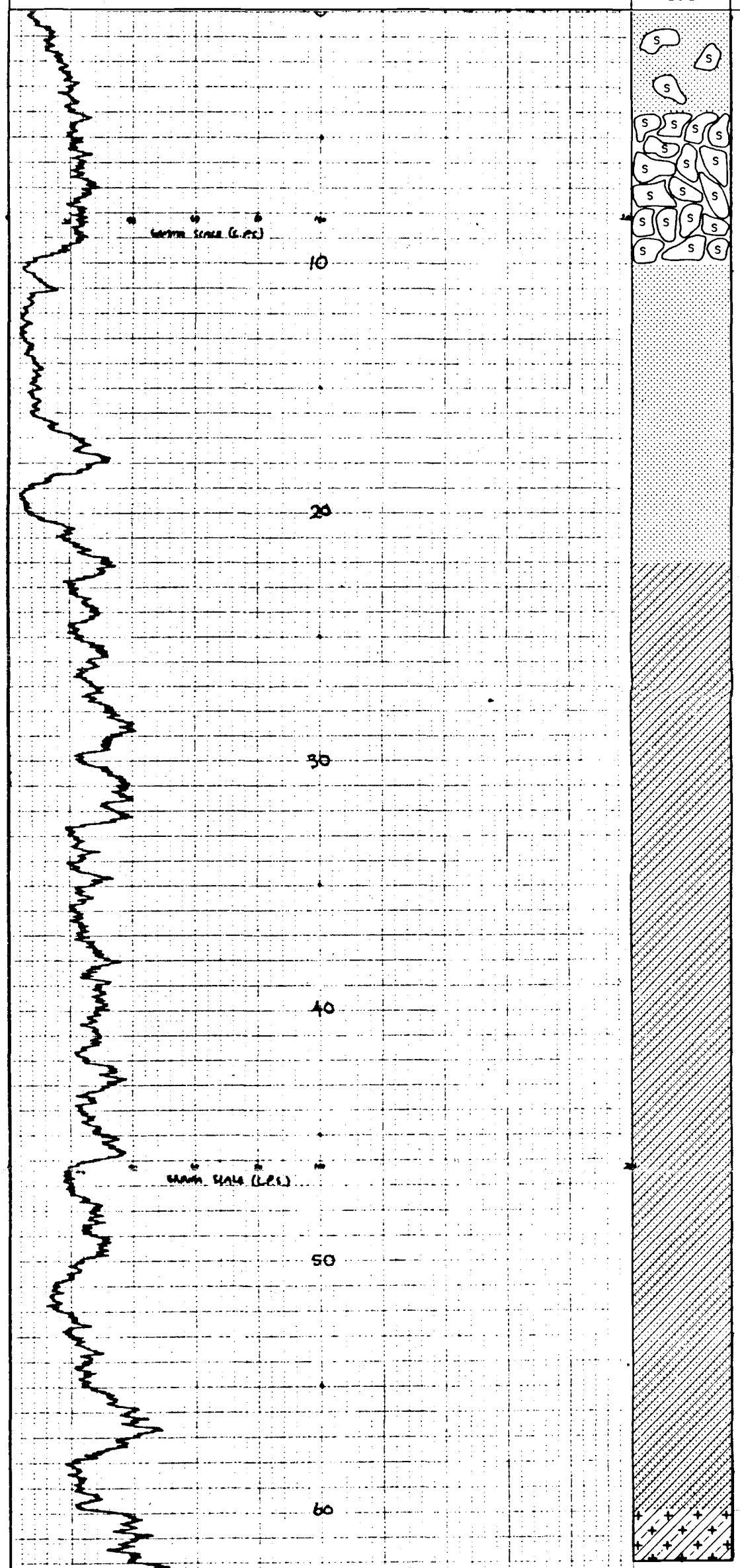
INTERVAL (Surface Scintillometer c p m)	DESCRIPTION
0– 2 (575)	Sands and Silcrete: Mod.reddish brown (10R4/6) surficial Fe.stained bimodal qtz. sands cont. heavily Fe.stained weathered sil. particles.
2– 6 (500)	Silcrete: Mod.reddish brown (10R4/6) highly weathered sil.becoming V.light gy (N8) fractured and friable silcrete.
(525)	
6– 8 (550)	Clay: Grayish orange pink (5YR7/2) and V.light gy. (N8) clays cont. grit fragments and occ. hard sil.bands.
8– 12 (550)	Clays and Silcrete: Mottled dk.yellowish orange (10YR6/6), V.light gy (N8) mod.reddish brown (10R4/6) clays and silcrete.
(625)	
12– 16 (600)	Sands and Silcrete: Yellowish gy. (5Y7/2) indurated sands and pale yellowish orange (10YR8/6) silcrete.
(575)	
16– 24 (525)	Grits and Clays: Pale red (10R6/2) iron-stained qtz. grits with white (N9) Kaolinitic clays containing qtz. grit particles.
(550)	
(525)	
(500)	
24– 27 (625)	Basement: V. weathered, fractured, iron-stained granitic basement.
(650)	E.O.H.

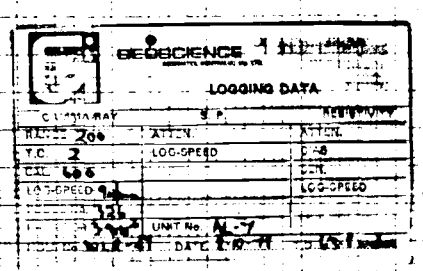
3339-2-45

BPMDA DRILL HOLE LOG

HOLE No.	WL.47	DATE STARTED	08.10.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	08.10.78	RANGE	200 c.p.s.	RESIST. SCALE	
PROJECT	WILKINSON LAKES	DATE LOGGED	08.10.78	TIME CONSTANT	2 Sec.	SP. SCALE	
LOCATION	TALARINGA	DRILLED DEPTH	62 m.	PAPER SPEED	1 cm./m.	BIAS	
STATE	S.A.	LOGGED DEPTH	64.8 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	NO FLUID
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	13 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	2991	HOLE DIAMETER	4.75 inch	STANDARD	4 490
LOGGING Co.	GEOSCIENCE	EASTINGS	6171	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose





GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 4 (425)	Sands and Silcrete: Light brown (5YR6/4) surficial iron-stained bimodal qtz. sands containing silcrete chips.
				(450)	
				4- 10 (475)	Silcrete: Mod.reddish brown (10R4/6) friable, weathered silcrete, becomes fresher and v.light gy (N8) in colour.
				(500)	
				(550)	
				10- 12 (475)	Sands: V.pale orange (10YR8/2) f.g. qtz. sands. Some layers indurated.
				12- 14 (500)	Sands: V.pale orange (10YR8/2) f.g.qtz. sands becoming dk.yellowish orange (10YR6/6) f.g.qtz. sands.
				14- 18 (450)	Sands: Dk.yellowish orange (10YR6/6) f.g.qtz. sands. At 17 m becomes grayish orange pink (5YR7/2) f.g.qtz. sands containing indurated bands.
				(425)	
				18- 20 (425)	Sands: Gy. orange pink (5YR7/2) and V.light gy. (N8) f.g.qtz. sands containing indurated bands. Becomes Pale red purple (5RP4/2).
				20- 22 (425)	Sands: Light brown (5YR5/6), Dk.yell.orange (10YR6/6) and V.light gy (N8) m-c.g. qtz. sands containing indurated bands.
				22- 60	Sandy Clays: Yellowish grey (5Y7/2) m.g.qtz. sandy clays.
				60- 62	Clays and Basement: Yellowish gy (5Y7/2) sandy clays containing granitic basement particles. V.hard drilling.
					E.O.H.

3339-2-46

BPMDA DRILL HOLE LOG

HOLE No.	WILKINSON LAKES NO.1 (SPDME)	DATE STARTED	05.06.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	-	DATE COMPLETED	09.08.78	RANGE		RESIST. SCALE	
PROJECT	STRATIGRAPHIC DRILLING	DATE LOGGED	-	TIME CONSTANT		SP SCALE	
LOCATION	TALLARINGA	DRILLED DEPTH	710 m	PAPER SPEED		BIAS	
STATE	S.A.	LOGGED DEPTH	-	LOGGING SPEED		FLUID LEVEL	
GEOLOGIST	G.PITT	ELEVATION	-	BACK GROUND		PROBE No.	
DRILLING Co.	MINES DEPT	CO-ORDS: NORTHINGS		HOLE DIAMETER	10.8 cm	STANDARD	
LOGGING Co.		EASTINGS		K-FACTOR		Basement	

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Schistose

GAMMA	S.P.	RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
				0- 5	Sand: Red-brown, m-c.g. well rounded qtz, sand.
				5- 9	Sand: Red-brown, f.g. sand containing some silt.
				9- 15	Sand: Red-brown, m-c.g. well rounded minor silty matrix.
				15- 18	Sand: Yellow, m-c.g. well rounded, qtzose, fragments of red-brown cemented sand.
				18- 25	Sand: Pale grey c.g. clean silicous, cemented with fragments of cemented v.f.g. sandstone.
				25- 27	Sand: Yellow to pale grey, bimodal f. and c.g. well rounded qtz. sand.
				27- 30	Sand: Yellow m.g. well rounded and sorted.
				30- 35	Sand: Red-brown, m-c.g. qtzose, rounded.
				35- 40	Sand: Pale gy. m-c.g. round, clean, qtzose.
				40- 48	Lignites and Sands: f-c.g. lignitic sands.
				48- 52	Lignites.
				52- 60	Lignites and Sands: f. and c.g. sub-angular to rounded qtz. sands lignitic.
				60- 64	Silt: Medium grey containing minor m-c.g. qtz. sands.
				64- 90	Sand: Med. gy. silty v.c.g. ang. to sub-ang. qtz. sand.
				90-100	Sand: Med. gy f-m.-c.g. rounded qtz. sand.
				100-112	Sand: Med.gy m.g. qtzose, slightly silty gametiferous?
				112-116	Sand: Med.gy c-m.g. garnets, pebbly.
			710m	116-160	Clay: Grey-green, sandy, soft.

116 m TOP OF CAMBRIAN SEQUENCE.

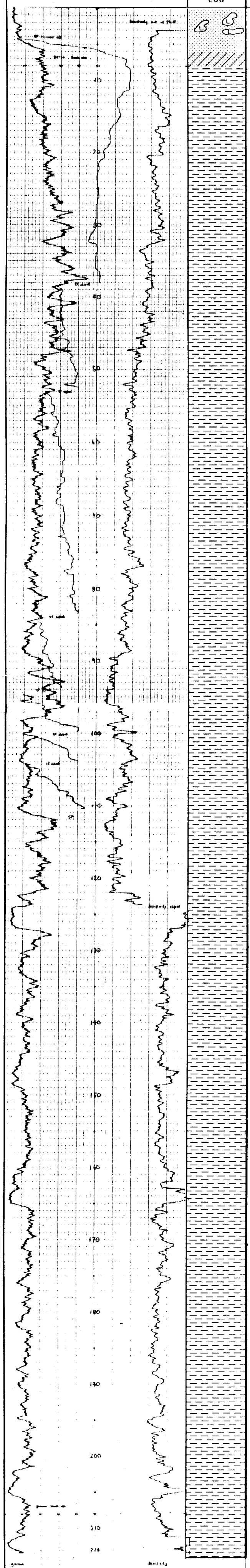
THE HOLE INTERSECTED ESSENTIALLY CLAYS AND MUDSTONE TO 283 m. FROM 283 m TO 560 m THE HORIZONS WERE SILTSTONES AND LIMESTONES. THE EVAPORATE SEQUENCE BEGAN AT 573 m. THE HOLE WAS COMPLETED AT 710 m.

3339-2-47

BPMDA DRILL HOLE LOG

HOLE No.	W.L.3	DATE STARTED	30.08.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	31.08.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	31.08.78	TIME CONSTANT	2 sec.	SP. SCALE	250
LOCATION	TALLARINGA	DRILLED DEPTH	214 m	PAPER SPEED	1 cm/m.	BIAS	610
STATE	S.A.	LOGGED DEPTH	214 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	3 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	6 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3113	HOLE DIAMETER	4.75 inch	STANDARD	1724
LOGGING Co.	GEOSCIENCE	EASTINGS	5866	K-FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose



INTERVAL	(Surface Scintillometer c.p.m.)	DESCRIPTION
0- 4	(475)	Laterite and Sand: Light brown (5YR6/4) surficial laterite and m.f.g. subang. to
	(425)	rounded, frosted and iron stained qtz sands.
4- 6	(450)	Sand: Light brown (5YR6/4) m-f.g.qtz.sand subang-rounded,frosted,iron stained grains. Some laterite.
6- 8	(500)	Sandy Clays: Pale reddish brown (10R5/4) f.g. sandy clays. Occ. laterite lumps.
8- 12	(675)	Mudstones: Mottled dusky yellow (5Y6/4), mod.reddish bn (10R6/6) mudstones.
	(675)	
12- 16	(650)	Mudstones: Pale reddish brown (10R5/4) and yellowish grey (5R7/2) banded mudstones.
	(600)	
16- 22	(650)	Mudstones: Pale red purple (5RP6/2) mudstones containing thin sandy intercalations.
	(575)	
	(575)	
22- 26	(550)	Mudstones: Mottled pale red (10R6/2) and light greenish gy. (5G8/1) banded mudstones.
	(575)	
26- 32	(725)	Mudstones: Pale red (5R6/2) and grayish green (10G5/2) banded mudstones.
	(625)	
	(650)	
32- 36	(750)	Mudstones: Dominantly pale yellowish bn.(10YR6/2) some pale red & grayish green bands.
	(725)	
36- 44	(750)	Mudstones: Pale red (5R6/2) and grayish green (10G5/2) banded mudstones, some layers
	(700)	more silicified. Occ.specks of pyrite observed.
	(775)	
	(850)	
44- 74	(675)	Mudstones: Pale red (5R6/2) and greyish red (5R4/2) silty mudstones.
	(650)	occ. bands silicified, Banded.
	(600)	
	(600)	
	(625)	
	(625)	
	(650)	
	(700)	
	(575)	
	(625)	
	(575)	
	(625)	
	(600)	
	(675)	
74-106	(550)	Mudstones: Grayish red (5R4/2) and grayish green (10GY5/2) silty mudstones. Occ. thin
	(650)	sand bands, green bands -chloritic. Occ. specks of pyrite observed.
	(500)	
	(525)	
	(575)	
	(575)	
	(600)	
	(525)	
	(575)	
	(525)	
	(625)	
	(675)	
	(800)	
	(675)	
	(600)	
	(575)	
	(550)	
106-118	(575)	Mudstones: Grayish green (10GY5/2) weathered mudstones.
	(525)	
	(550)	
	(550)	
	(725)	
	(700)	
118-124	(575)	Mudstones: Greenish gy (5G6/1) weathered silty mudstones.
	(625)	
	(550)	
124-130	(575)	Mudstones: Grayish red (5R4/2) and greenish grey (5G6/1) silty mudstones. Some layers very
	(475)	weathered.
	(500)	
130-134	(525)	Mudstones: Light bluish grey (5B7/1) weathered mudstone.
	(600)	
134-138	(500)	Mudstones: Light bluish grey (5B7/1) and grayish red (5R4/2) weathered mudstones, with med.
	(600)	dk.gy (N4) silicified siltstone lenses.
138-214	(575)	Mudstones: Pale red (10R6/2) and light bluish gy (5B7/1) weathered mudstone chips.
	(550)	
	(650)	
	(600)	
	(575)	
	(475)	
	(575)	
	(600)	
	(525)	
	(525)	
	(550)	
	(500)	
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	(575)	
	(500)	
	(575)	
	(550)	
	(550)	
	(475)	
	(600)	
	(550)	
	(500)	
	(575)	
	(550)	
	(525)	
	(550)	

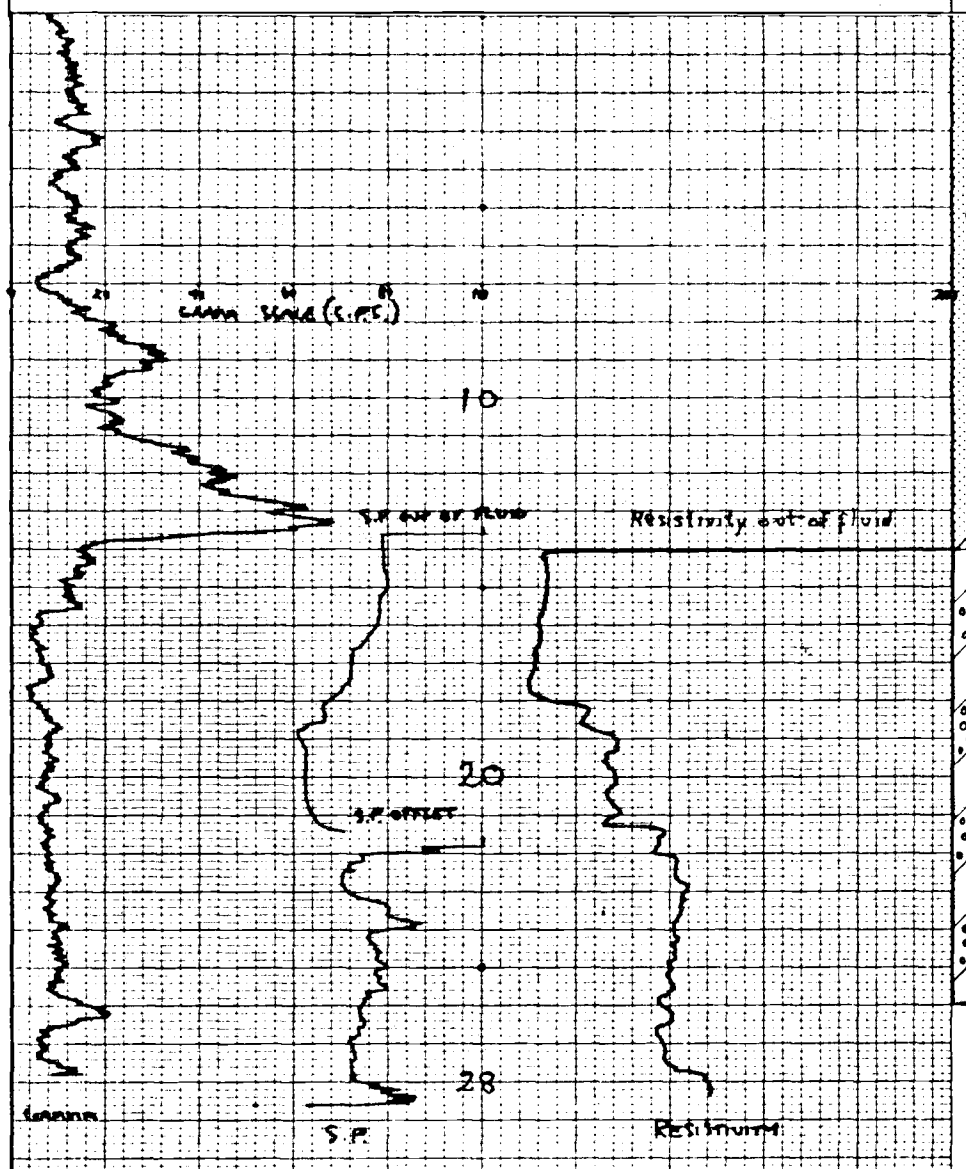
HOLE ABANDONED AT THE DEPTH.

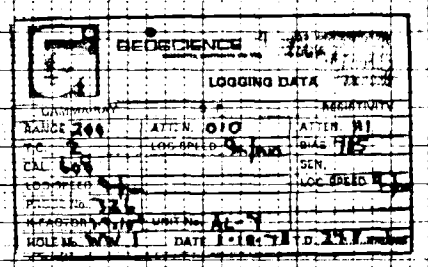
B.P hole

BPMDA DRILL HOLE LOG 3339-2-48

HOLE No.	W.W.1	DATE STARTED	01-10-78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	01-10-78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	01-10-78	TIME CONSTANT	2 SEC	SP. SCALE	010
LOCATION	TALLARINGA	DRILLED DEPTH	38 m	PAPER SPEED	1 cm./m.	BIAS	785
STATE	S.A.	LOGGED DEPTH	28.8 m.	LOGGING SPEED	9 m./min.	FLUID LEVEL	13.6 m.
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	11 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3010	HOLE DIAMETER	4.75 inch	STANDARD	4560
LOGGING Co.	GEOSCIENCE	EASTINGS	6070	K-FACTOR	3.9 x 10-6		

LITHOLOGIES: Laterite, Silcrete, Clay, Mudstone, Lignite, Sand, Grit, Granitic, Basement, Schistose





INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0- 2	Sands and Silcrete: Mod. reddish brown (10R4/6) surficial sands and silcrete lumps.
2- 4	Silcretes and Sand: Pale pink (5RP8/2), Pale red (5R6/2) and Mod. reddish brown (10R4/6) silcretes and sands.
4- 6	Sands and Silcrete: Grayish orange pink (10R8/2) bimodal sands and silcrete pieces.
6- 10	Sands: Pale red (10R6/2), V.pale orange (10YR8/2) and Dk. yellowish orange (10YR6/6)m.-c.g.and grit bimodal sands.
10- 12	Sands: Grayish orange pink (5YR7/2) and V.pale orange (10YR8/2) m.to f.g. qtz sands.
12- 14	Sands: Mod. brown (5YR3/4) & Dusky brown (5YR2/2) f.g. sands containing lignites.
14- 26	Gritty Lignites: Dusky brown (5YR2/2) well rounded qtz.grit gravels containing lignitic materials.

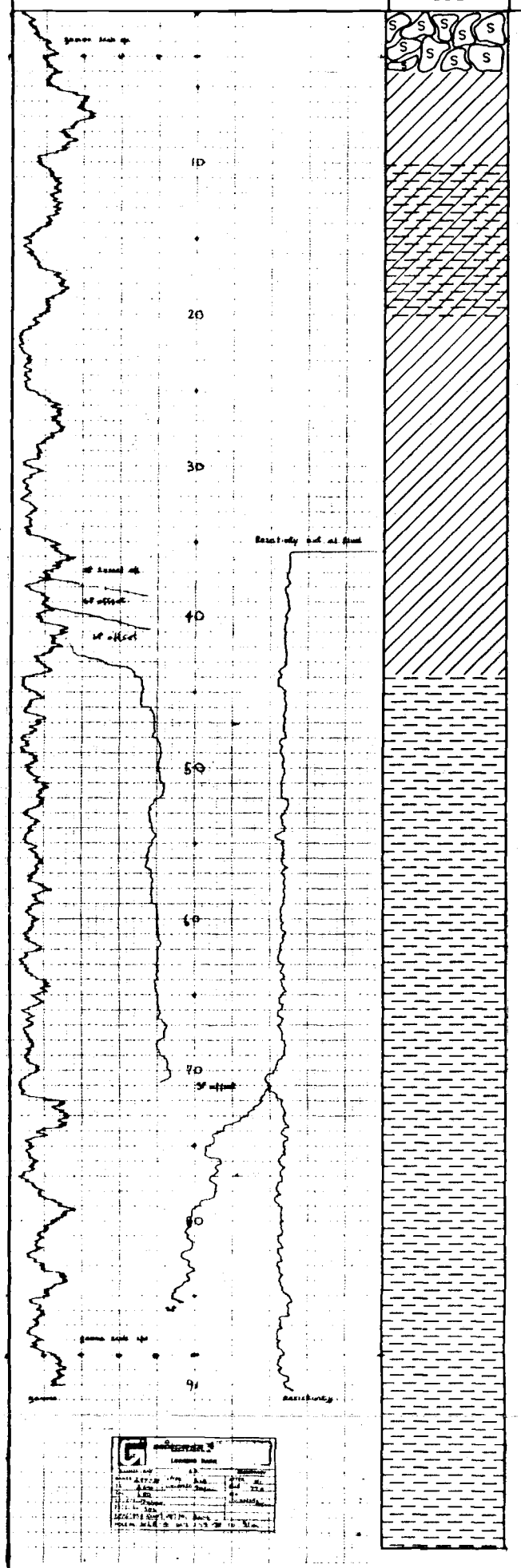
E.O.H. HOLE STOPPED AT THIS DEPTH DUE TO CAVING LIGNITIC GRITS.

3339-2-49

BPMDA DRILL HOLE LOG

HOLE No.	W.L.4	DATE STARTED	31.08.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	1.09.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	1.09.78	TIME CONSTANT	2 sec.	SP. SCALE	210
LOCATION	TALLARINGA	DRILLED DEPTH	102 m	PAPER SPEED	1 cm/m	BIAS	770
STATE	S.A.	LOGGED DEPTH	91.7 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	35.6 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	6 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3117	HOLE DIAMETER	4.75 inch	STANDARD	1560
LOGGING Co.	GEOSCIENCE	EASTINGS	5873	K·FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose



INTERVAL (Surface Scintillometer c.p.m.)	DESCRIPTION
0– 4 (450) (475)	Silcrete: Pinkish gy. (5YR8/1), pale red (I0R6/2) and v. light grey (N8) silcrete.
4– 8 (500) (575)	Clay: Yellowish gy. (5Y7/7) occ. mod reddish brown (I0R4/6) laterite. Clays become grayish orange (I0YR7/4) and light brown (5YR5/6) at 6 m.
8– 10 (525)	Clay: Mottled lt. brown (5YR5/6) and v. light gy. (N8) and mod. red (5R4/4) clays.
10–14 (500) (550)	Clays and Mudstones: Brownish (5YR4/1) silicified mudstones and grayish orange (Q0YR7/4) clays.
14–20 (525) (475) (600)	Clays and Mudstones: Yellowish gy. (5YR7/2) clay becoming pinkish gy. (5YR8/1) and grayish orange (I0YR7/4) weathered mudstones.
20–22 (525)	Clay: Grayish orange (I0YR7/4) clay.
22–30 (450) (450) (525) (550)	Clay and Mudstone: Yellowish gy. (5Y7/2) clay with harder mudstone bands through sample.
30–34 (550) (525)	Clay: Light Olive gy. (5Y6/1) clay some silicified bands.
34–36 (475)	Clay: Yellowish gy. (5Y7/2) clay with some light bluish gy. (5B7/1) clay.
36–44 (550) (625) (575) (600)	Clay: Light bluish gy. (5B7/1) clay. Pyrite present 38–40 m.
44–48 (525) (475)	Mudstone: Med. light gy. (N6) and v. light gy. (N8) compent. mudstones in a grayish orange (I0YR7/4) incompetant mud.
48–50 (400)	Mudstone: Med. light gy. (N6) mudstone with occassional small pieces of sandstone m.c.g.
50–102 (475) (550) (475) (475) (475) (500) (525) (425) (450) (525) (550) (500) (575) (550) (550) (500) (500) (500) (525) (525) (550) (650) (575) (525) (500) (525)	Mudstone: Med. lgt. gy. (N6) and v. lgt. gy. (N8) mudstone with greenish gy. (5GY6/1) f.g. sands also some pinkish gy. (5YR8/1) f.g. silicified sands. At 65m some pyrite specks observed in the darker more siliceous mudstone bands.

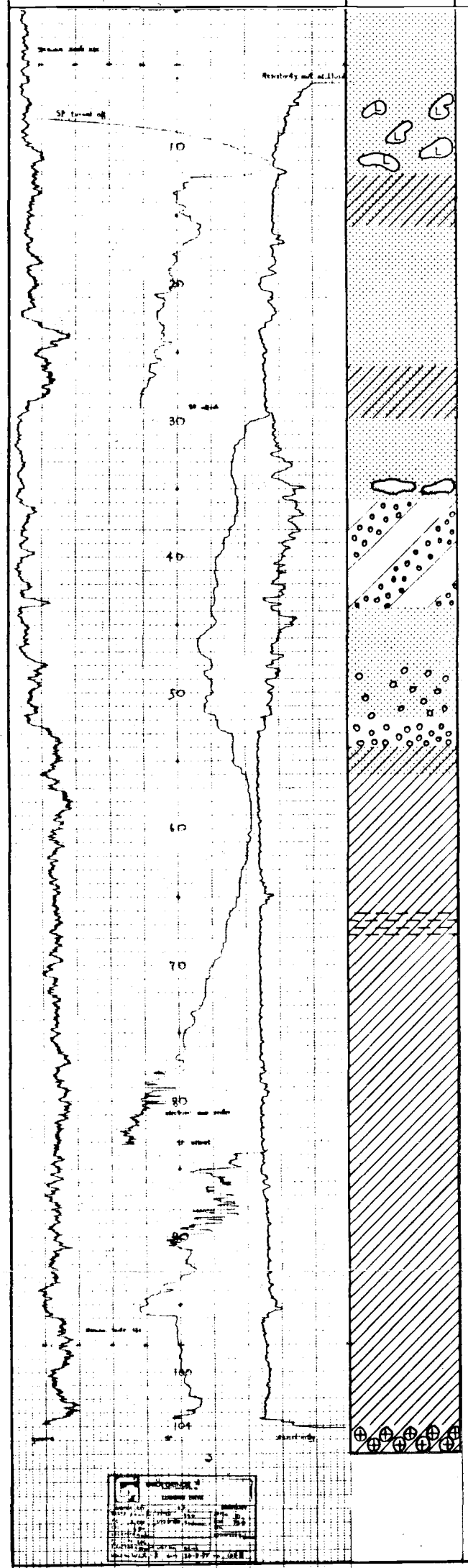
HOLE COMPLETED AT 102m IN MUDSTONES

3339-2-50

BPMDA DRILL HOLE LOG

HOLE No	W.L.2	DATE STARTED	29.08.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	29.08.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	29.08.78	TIME CONSTANT	2 sec.	SP SCALE	350
LOCATION	TALLARINGA	DRILLED DEPTH	106 m	PAPER SPEED	1 cm/m.	BIAS	750
STATE	S.A.	LOGGED DEPTH	104.5 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	5.3 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	6 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3123	HOLE DIAMETER	4.75 inch	STANDARD	1478
LOGGING Co.	GEOSCIENCE	EASTINGS	5858	K-FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement: Schistose



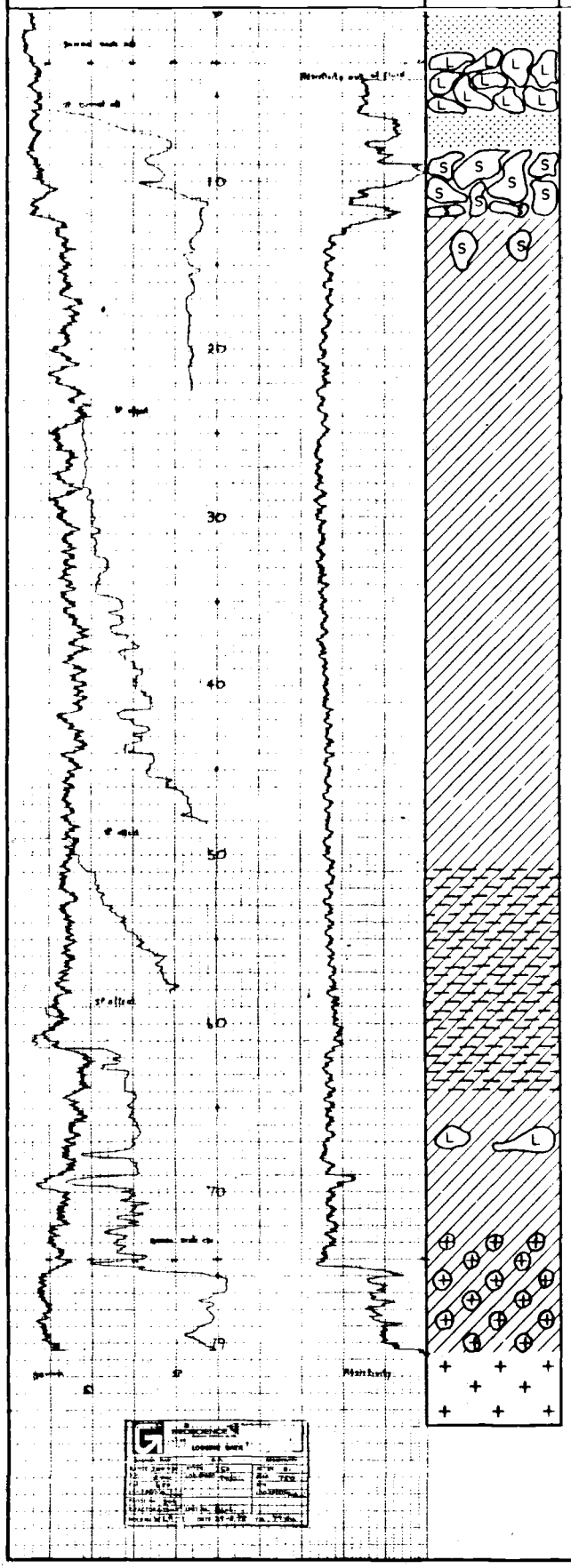
GAMMA S.P. RESISTIVITY	LITHOLOGICAL LOG	INTERVAL (Surface Scintillometer c p m)	DESCRIPTION
		0- 6 (375)	Sands: Pale reddish brown (10R5/4) m-f.g. and v.c.g. bimodal qtz sands.
		(400)	Subrounded, Frosty and iron stained.
		(425)	
		6- 12 (450)	Sand and Laterite: Mod.reddish orange (10R6/6) laterite and bimodal sands as above.
		(400)	
		(450)	
		12- 16 (375)	Sand and Clay: Mod.reddish brown (10R4/6) m-f.g. iron stained qtz. sand and grayish orange
		(475)	pink (10R8/2) clay.
		16- 18 (450)	Sand: Pale reddish bn. (10R5/4) m.g. sand. Occasional lumps of white Feldspathic clay.
		18- 26 (450)	Sand: Mod.reddish orange (10R6/6) sand m.g. subrounded to rounded qtz. sand. Particles.
		(450)	generally Frosted some clear, iron stained. Occ. white clay particles.
		(500)	
		(450)	
		26- 28 (450)	Sandy Clay: Pale red (5R6/2) m.c.g., rounded sands cemented clays.
		28- 30 (450)	Sandy Clay: Grayish green (5G5/2) m-f.g. qtz. sand cemented by clays.
		30- 32 (450)	Sand: Pale Pink (5RP8/2) m-f.g qtz. sands rounded and clear particles.
		32- 36 (375)	Sand: Light gy(N7) m-f.g. qtz. sands subrounded to rounded, clear grains occ.
		(400)	grit particles. Black lignitic material present in last metre.
		36- 44 (425)	Lignitic Grits: Grayish black (N2) well washed sands and grits subangular -
		(350)	subrounded, Frosted grains.
		(400)	
		(375)	
		44- 48 (400)	Sand: Pale yellowish brown (10YR6/2) f.g. qtz sands subrounded to rounded. occ.
		(350)	lumps of lignitic material. occ. grit particles.
		48- 50 (375)	Grit and Sands: Light gy(N7) ang. to subrounded qtz. grit upto 3mm diameter. m.g. qtz. sands also.
		50- 52 (425)	Sands and Grit: Light gy(N7) m-v.c.g. qtz. sand subang to subrounded and occ. grit particles.
		52- 54 (475)	Grit: Light gy(N7) qtz grit ang. to subrounded. Some m-f.g. qtz. sand.
		54- 56 (450)	Sandy Clay: Light gy(N7) m.g. qtz. sand and grit in a light gy clay.
		56- 66 (525)	Clay: Pale blue (5PB7/2) clay. White specks - foraminifera? noted at 64m.
		(650)	
		(650)	
		(600)	
		(550)	
		66- 68 (525)	Clay: Pale blue (5PB7/2) clays containing a silty component.
		68-104 (575)	Clay: Light bluish gray (5B7/1) clays. occ. white specks - foraminifera? seen.
		(500)	
		(575)	
		(600)	
		(550)	
		(550)	
		(500)	
		(550)	
		(600)	
		(550)	
		(600)	
		(625)	
		(500)	
		(500)	
		(550)	
		(575)	
		(575)	
		(575)	
		104-106 (600)	Basement: Light bluish gy (5B7/1) clay containing basement chips of hornblende, qtz, pyrite red chert, etc.

3339-2-51

BPMDA DRILL HOLE LOG

HOLE No	W.L.1	DATE STARTED	28.08.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	28.08.78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	28.08.78	TIME CONSTANT	2 sec.	SP. SCALE	350
LOCATION	TALLARINGA	DRILLED DEPTH	84 m	PAPER SPEED	1 cm/m.	BIAS	750
STATE	S.A.	LOGGED DEPTH	80 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	4 m.
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	6 c.p.s.	PROBE No.	306
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3130	HOLE DIAMETER	4.75 inch	STANDARD	1590
LOGGING Co.	GEOSCIENCE	EASTINGS	5851	K-FACTOR	4.27×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Basement: Granitic; Schistose



INTERVAL (Surface)	Scintillometer c.p.m.	DESCRIPTION
0- 2	(450)	Sand: Pale reddish bn.(10R5/4)iron stained f.g. and grit bimodal sands. Grains subangular & frosted
2- 6	(450)	Laterite and sand: Mod. reddish orange(10R6/6)laterite modules with m.g. and v.c.g. bimodal sands.
	(450)	Many sand grains iron stained, sub-angular occ. grit grains.
6- 8	(450)	Sand: Mod.reddish orange (10R6/6)m-f.g. qtz sand,iron stained,frosted,sub-ang. to sub-rounded.
8- 12	(475)	Silcrete: V.light gy. (N8) silcrete.
	(550)	
12- 14	(525)	Silcrete and Clay: V.light gy. (N8) silcrete and a white (N9) clay.
15- 18	(600)	Clay: White(N9) clay
	(650)	
18- 20	(550)	Clay: L.gy(N7)clay containing small particles of gysh. orange(10YR7/4)and yellowish gy.(5Y7/2)clay.
20- 26	(550)	Clay: Mottled,v.pale orange(10YR8/2),light gy.(N7),yellowish gy.(5Y8/1)and light greenish gy. (5Y8/1)
	(575)	clays.
	(600)	
26- 32	(600)	Clay: Light grey(N7)occ. grayish orange(10YR7/4) layers.
	(650)	
	(600)	
32- 62	(600)	Clay: Light bluish grey(5B7/1)clay. A silty component occurs at 50 metres
	(600)	
	(700)	
	(600)	
	(625)	
	(625)	
	(600)	
	(600)	
	(625)	
	(550)	
	(650)	
	(650)	
	(600)	
	(500)	
	(550)	
62- 66	(500)	Silty Clay: Greenish gy.(5G6/1)clay with bands of p.red(10R6/2)silty layers.
	(550)	
66- 68	(600)	Laterite and Clay: p.red(10R6/2)laterite and l.gy(N7)clays containing qtz. grit grains.
68- 74	(600)	Silty clay: L.gy(N7)slightly silty clays occ.grit grains and greyish orange(10YR7/4)clay.
	(600)	
74- 80	(600)	Clay and Basement: Med.light gy(N6)clays containing granitic basement fragments and occ. red
	(650)	chert modules.
	(675)	
	(700)	
80- 84	(600)	Basement: Qtz-hornblende,-Feldspar gneiss. Some fluorite present?
	(600)	

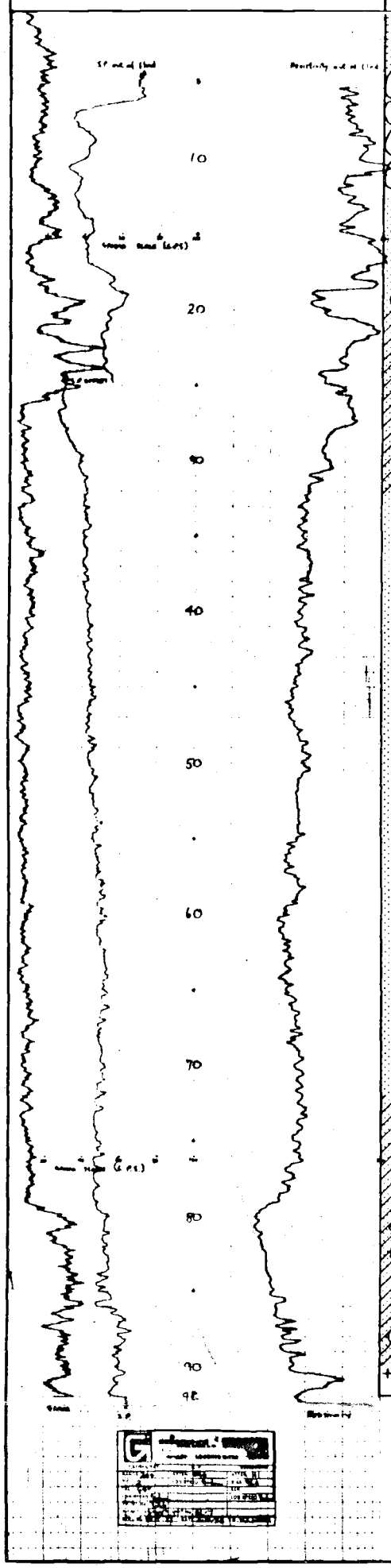
E.O.H.

BPMDA DRILL HOLE LOG

3339-2-52.

HOLE No.	WL 31	DATE STARTED	01-10-'78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	02-10-'78	RANGE	200 c.p.s.	RESIST. SCALE	HI
PROJECT	WILKINSON LAKES	DATE LOGGED	02-10-'78	TIME CONSTANT	2 sec.	SP. SCALE	040
LOCATION	TALLARINGA	DRILLED DEPTH	92 m	PAPER SPEED	1 cm/m.	BIAS	960
STATE	S.A.	LOGGED DEPTH	93 m	LOGGING SPEED	9 m/min.	FLUID LEVEL	4.2 m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9 c.p.s.	PROBE No.	326
DRILLING Co.	THOMPSON	CO-ORDS: NORTHINGS	3187	HOLE DIAMETER	4.75 inch	STANDARD	4300
LOGGING Co.	GEOSCIENCE	EASTINGS	5873	K-FACTOR	3.9 x 10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic (Basement); Schistose



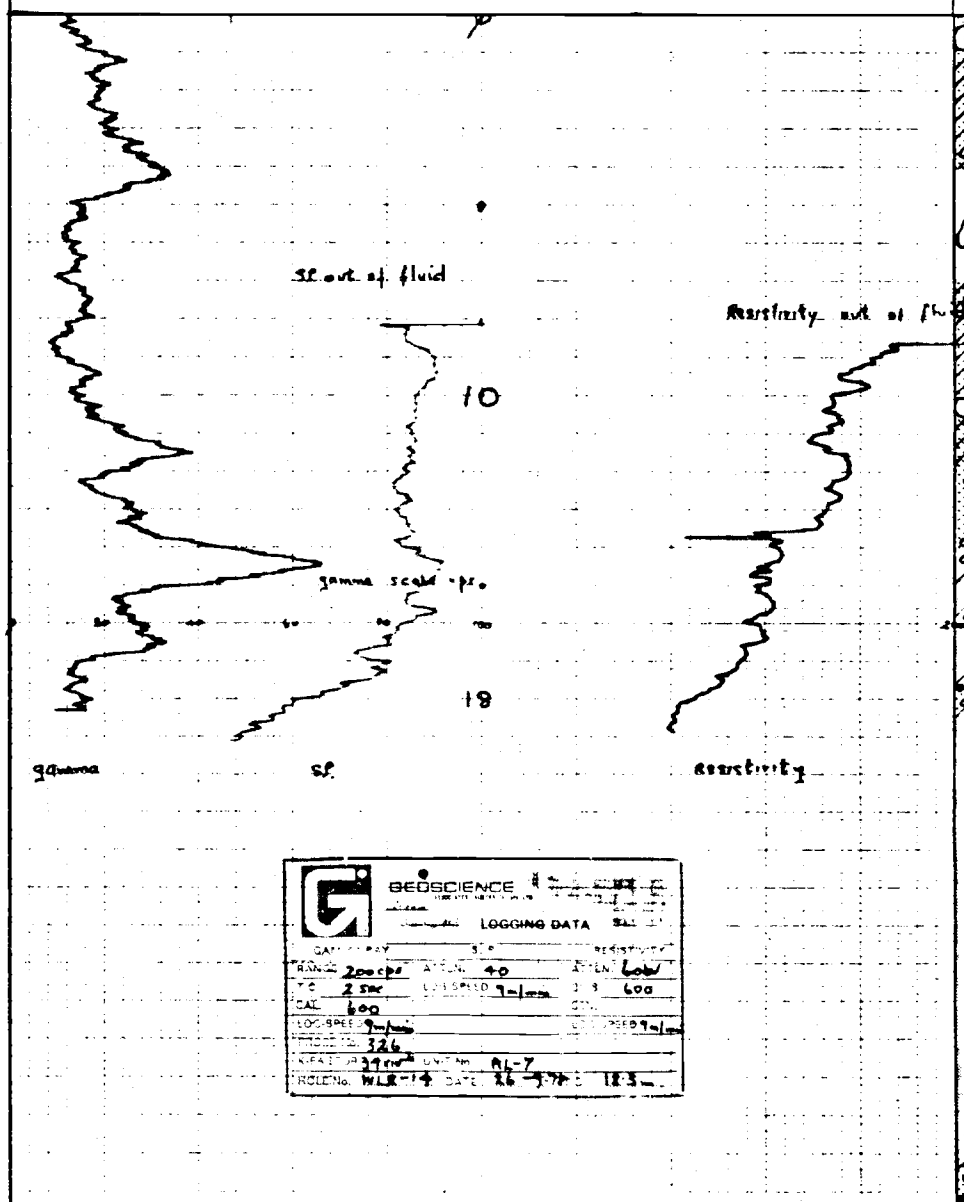
INTERVAL (Surface ometer	Scintill- c p m.)	DESCRIPTION
0- 4	(425) (475)	Sands and Silcrete: Mod.reddish brown (10R4/6) surficial, bimodal sands and friable silcrete.
4- 10	(450) (475) (500)	Silcrete: Mod.reddish brown (10R4/6) weathered silcretes.
10- 12	(425)	Silcretes: V.light gy (N8) silcretes, iron stained on joint planes.
12- 18	(400) (450) (450)	Gritty Sands: V.light gy(N8) and mod.reddish brown(10R4/6)angular qtz.grit sands some iron stained.
18- 20	(500)	Gritty Sands & Clays: Pale pink(5RP8/2)gritty sands then 1m of lt. gy.(N7)and gy. or. (10YR7/4) clays.
20- 24	(475) (550)	Clayey Sands: V.light gy (N8) clayey sands containing some dusky red (5R3/4) clayey sands.
24- 26	(575)	Clayey Sands: as above and also some Pale reddish brown (10R5/4) gritty clays.
26- 32	(450) (425) (425)	Clayey Sands: V.light gy (N8) m.g. qtzose clayey sands.
32- 72		Sands: Grayish orange pink (10R8/2) m-f.g. and v.c.g. bimodal sands. Qtz. grains generally very clean well rounded and occ. iron stained.
72- 90		Clayey Sands: Grayish orange pink (10R8/2) clayey sands also some med. gy (N5) sandy clay pieces. At 80 m. grit (basement?) particles appear.
90- 92		Basement: Fresh granitic basement pieces some well rounded others angular. Comprised of gneisses, granitic rock. E.O.H.

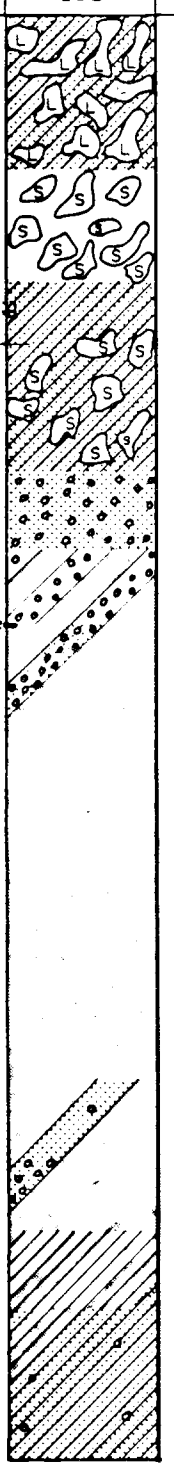
3339-2-53

BPMDA DRILL HOLE LOG

HOLE No.	WL 14	DATE STARTED	15.09.78	GAMMA LOG		ELECTRIC LOG	
EXPL. LICENCE No.	413	DATE COMPLETED	26.09.78	RANGE	200 c.p.s.	RESIST SCALE	LO
PROJECT	WILKINSON LAKES	DATE LOGGED	26.09.78	TIME CONSTANT	2 sec.	SP SCALE	40
LOCATION	TALLARINGA	DRILLED DEPTH	38m	PAPER SPEED	1cm/m.	BIAS	600
STATE	S.A.	LOGGED DEPTH	19.3m	LOGGING SPEED	9m/min.	FLUID LEVEL	8.2m
GEOLOGIST	WEBER	ELEVATION		BACK GROUND	9c.p.s.	PROBE No	326
DRILLING Co.	THOMPSON	CO-ORDS NORTHINGS	3102	HOLE DIAMETER	4.75 inch	STANDARD	4091
LOGGING Co.	GEOSCIENCE	EASTINGS	6019	K-FACTOR	3.9×10^{-6}		

LITHOLOGIES: Laterite; Silcrete; Clay; Mudstone; Lignite; Sand; Grit; Granitic; Basement; Schistose





INTERVAL (Surface Scintillometer cpm)	DESCRIPTION
0- 4 (425)	Laterite: Mod. reddish brn. (10R4/6) ditto sand. Horizon cemented by a clay component.
(450)	
4- 8 (425)	Silcrete: Pale reddish brn. (10R5/4) becoming v.light gy. (N8) silcrete with depth. At 7 m. a pale reddish brn. (10R5/4) laterite occurs which forms 10% of sample. At 8 m. a dk.yellowish orange (10YR6/6) sandy clay appears.
(400)	
8- 12 (450)	Sands: 20% Pale red (10R6/2) m-f.g. 40% dk.yellowish orange (10YR6/6) m-f.g. cemented by c.g. clayey sands light red (5R6/6). 30% of sample is v.light gy (N8). Silcrete.
(425)	
12- 14 (375)	Grit: 65% Med.drk.gy. (N4) subrounded to rounded, highly spherical milky-qtz. grits. 35% light brn. (5YR6/4) m-c.g. sands.
14- 16 (400)	Grits and Lignites: Med.dk.gy. (N4) grits (as above) and Olive black (5Y2/1) lignite.
16- 20 (375)	Lignites: Olive black (5Y2/1) contain some sand and qtz. grit particles.
(450)	
20- 28 (425)	Lignites: Olive black (5Y2/1) occasional samples con. minor clastics.
(425)	
(375)	
(500)	
28- 32 (500)	Lignites and Sands: Grayish brn. (5YR3/2) lignitic sands. Clastics comprise about 20% of sample. Sands c-v.c. g. At 30 m. angular - sub angular qtz. grits form 20% of sample.
(425)	
32- 34 (425)	Clayey Lignites: Washed lignitic brownish-gy (5YR4/1) mods. v. little sands.
34- 38 (450)	Clay: Yellowish gy (5Y[illegible]/2) clay contains some lignitic component. Clay contains some sand[illegible] grit particles.
(425)	

HOLE ABANDONED AT 38 METRES DUE TO CONTINUA[illegible]TON LOSS IN GRITS AT 14 M.

(ENV3339-(2)-53)

PLATE 1

VIEW LOOKING WEST ALONG TRACK TO MARALINGA. WINTER GRASSES SHOOTING AFTER RAINS. BURNT OUT DESERT MULGA AND FIR TREES OCCUR THROUGHOUT THE LICENCE AREA WITH ONLY OCCASIONAL UNBURNT STANDS.

PLATE 2

AERIAL VIEW OF A SALT PAN SHOWING THE AVERAGE DENSITY OF TREE COVER AND THE FLAT TO GENTLY UNDULATING TOPOGRAPHY OF THE LICENCE AREA.

1. INTRODUCTION

Exploration Licence 413 covers an area of 2 460 square kilometres in central - western South Australia in the vicinity of Wilkinson Lakes (Refer Figure 1). The licence area covers a portion of the Wilkinson Trough, an arcuate fault bounded structure tending south from the Arkaringa Basin.

This report details the exploration drilling undertaken in the licence area during August, September and October 1978. The drilling programme was designed to test unconsolidated sediments on the edge of the Tallaringa Trough, the Mulgathing Trough and numerous palaeodrainage channels for the presence of uranium mineralisation.

2. ACCESS, CLIMATE AND VEGETATION

Access to the licence area is by graded tracks from Tarcoola through Mulgathing and Commonwealth Hill Stations. The major part of EL 413 lies to the west of the Dingo Fence. The main access track runs west from the Dingo Fence Gate to Maralinga, with tracks off this road originally graded as firebreaks for the large scrub fire which burnt through the area in 1972 (Refer Fig. 2). The other main access track runs beside the Dingo Fence (north-south). Off track access is good in 4 W.D. vehicles excepting after heavy rains.

The climate is arid with long hot summers and short winters. The average rainfall is 15 cm. varying between 4 cm and 36 cm. The bulk of the rain falls in the cooler winter months but heavy summer thunderstorms also occur.

Although the vegetation was severely affected by the bush fire in 1972 the area contain small clumps of fir and desert mulga. General ground vegetation is mainly saltbush with annual grasses which shoot after rains (Plate 1).

A general aerial view which shows the flat, to gently undulating nature of the licence area is shown in Plate 2.

3. PREVIOUS EXPLORATION

Exploration work in the vicinity of the Wilkinson Lakes and Lake Antony gave some impetus to acquiring the licence area to test for uranium mineralisation. A summary of exploration work in the vicinity of EL 413 follows :

3.1 South Australian Department of Mines and Geological Survey

In the late sixties the South Australian survey commenced a stratigraphic drilling programme to correlate sediments within the Arkaringa Basin. In 1969 a seismic survey was performed on the southern edge of the Wallira Trough to determine velocity targets for the stratigraphic drillholes. This seismic survey delineated the position of the Karari Fault to the north-east of EL 413 (Milton 1969).

Three holes were drilled, Wallira No. 1, Wallira No. 2 and Wallira West No. 1 (Townsend 1976). The holes showed a narrow arcuate trough on the southern edge of the Arkaringa Basin contained Upper Palaeozoic sediments (Permian) in the east . The basin becomes gradually deeper containing Lower Palaeozoic sediments (Cambrian) to the west in Wallira West No. 1. In 1974 a series of seismic lines were completed over the eastern edge of the Tallaringa Trough on the track running west from the Dingo Fence Gate (Refer Fig. 2). The Karari Fault system was outlined as a single fault system on the western edge of EL 413 (Milton 1974).

A fourth stratigraphic hole Wilkinson Lakes No. 1 was completed in August 1978. This hole situated some four kilometers west of the western boundary of EL 413, intersected Lower Palaeozoic carbonates and evaporites below 117 metres.

A drilling programme was completed within the Garford Palaeochannel system in 1974 by South Australian survey personnel. Some sixteen drillholes were completed which showed a series of channel deposits containing Tertiary sediments. The channels had been incised into Mesozoic and Permian sediments, and Precambrian crystalline basement (Pitt et.al.1978). From this drilling programme further work showed the Miocene Garford Formation was formed under fluviolacustrial conditions and overlies the Eocene lignite beds of the Pidinga Formation. (Benbow and Pitt 1978)

3.2 Exploration Company Reports (Uranium)

3.2.1 Uranerz (Australia) Pty Ltd, EL 157 :

Exploration Licence 157 lies approximately 50 kilometres south-east of EL 413. The exploration target was Lower Permian sediments deposited in the narrow elongate Mulgathing Trough. The target horizon was carbonaceous, basal arkoses in palaeochannels within the Mulgathing Trough. Refraction seismic and gravity surveys were completed which delineated a thin trough up to six kilometres wide and five hundred metres deep. A total of eighteen drillholes were completed and electrically and radiometrically logged. No radiometric anomalies were located in the drillhole logging. Some sixteen samples were

assayed by fluorimetry. The highest values obtained were of the order of 3.6 ppm uranium.

3.2.2 C.R.A. Exploration Pty Ltd S.M.L. 710 and 711:

C.R.A. Exploration applied for licence areas 710 and 711 which cover salt lakes on the south-eastern corner of EL 413. The areas were prospected by an airborne radiometric survey. Radiometric anomalies were followed up with ground traverses, hand auger and Jacro auger holes. Uraniferous values upto 643 ppm over 0.5 metres were found associated with Eocene lignites on the northern edge of Lake Bring (Close 1973). C.R.A. concluded that the anomalous radiometric readings on the salt lakes were mainly due to the uranium daughter products and relinquished the area.

3.2.3 Nobelex N.L. EL 288 :

This licence area was granted in February 1977. The area covers the lower reaches of the Garford Palaeochannel system where the South Australian survey had recently completed their investigation (Refer Section 3.1). Four areas were gridded and surveyed with a proton magnetometer and total count radiometrics. Two prospects were diamond drilled to test magnetic anomalies. Both holes intersected pyroxene rich granulites containing magnetite. No radiometric anomalies were found when the core was scanned with a scintillometer.

3.3 Exploration Company Reports (Minerals)

A summary of all base metal exploration on the Tarcoola 1:250 000 map sheet was published in 1975 in the Mineral Resources Review, South Australia. Langsford (1975) resampled interesting prospects outlined by previous company exploration. A summary of the work is included here as an example of the types of basemetal mineralisation that may occur within EL 413.

Anomalous amounts of copper and molybdenum occur in altered granites in a north-east striking shear zone 3.5 kilometres north of Coates Hill. The shear zone is exposed over an area 1 800 by 250 metres. Anomalous amounts of copper, bismuth and silver occur in quartz veins cutting altered granitic rocks at the Muckanippie gold prospect. Minor pyrite mineralisation assocated with a dyke intrusion in diorite to the south showed only low metal contents. Langsford also collected a number of cuttings and chip samples from bores and wells from the western portion of the Tarcoola sheet. Cuttings from the Chinchilla Bore, eight kilometres south-south-east from Mount Christie contain anomalous nickel, zinc, cobalt and copper values, suggesting that the bore penetrated an ultramafic body similar to that occurring at Blackfellows Hill.

Granites from the western portion of Tarcoola contain 3 to 5 ppm molybdenum compared with less than 3 ppm for granites from the central and eastern portions. The significance of this higher local background is not as yet understood.

4. GEOLOGY

The oldest rocks known in the licence area were previously thought to have belonged to the Cleve Metamorphics of Lower Proterozoic age. Recent Rb/ Sr age dates show that many of the intrusives are on the Proterozoic / Archaean age boundary so the metasediments are Archaean in age. They have also been intruded by granitic intrusives contemporaneous with the Kimban Orogeny which occurred at about 1 800 m.a. (Webb & Thompson 1977). The Gawler Craton is believed to have stabilized about 1 400 m.a.

The Gawler Craton is flanked by Palaeozoic sediments which occur in narrow arcuate troughs on the northern edge of the craton. The Wilkinson trough cuts through the north-western corner of the licence area.

A drainage system which flowed approximately north-south with east-west trending branches, developed in early Tertiary times. Within this system a sequence of clays, sands and lignites were deposited. This drainage system can now be recognised as a subtle topographic depression. Most of the area has been covered by recent dune sands which mask much of the potential basement outcrop.

5. PRESENT PROGRAMME

5.1 General Planning

The drilling programme was undertaken to test the unconsolidated sediments in the area for the presence of uranium mineralisation. From a literature survey two target horizons presented themselves in the licence area. The first was roll-front sandstone uranium orebodies along the downthrown side of the Karari Fault on the south-eastern side of the Wilkinson Trough. The second was the Fluviolacustrinal sediments of the Miocene Garford Formation which is believed to immediately overlie the Eocene Pidinga Formation lignites within the early Tertiary Palaeochannels.

Initially it was planned to drill approximately 4 000 metres in a series of holes across the Karari Fault and some holes across the recognisable Palaeochannel systems where access could be gained. Due to mechanical breakdowns and deeper drilling than expected across the Karari Fault system the programme was modified as it proceeded.

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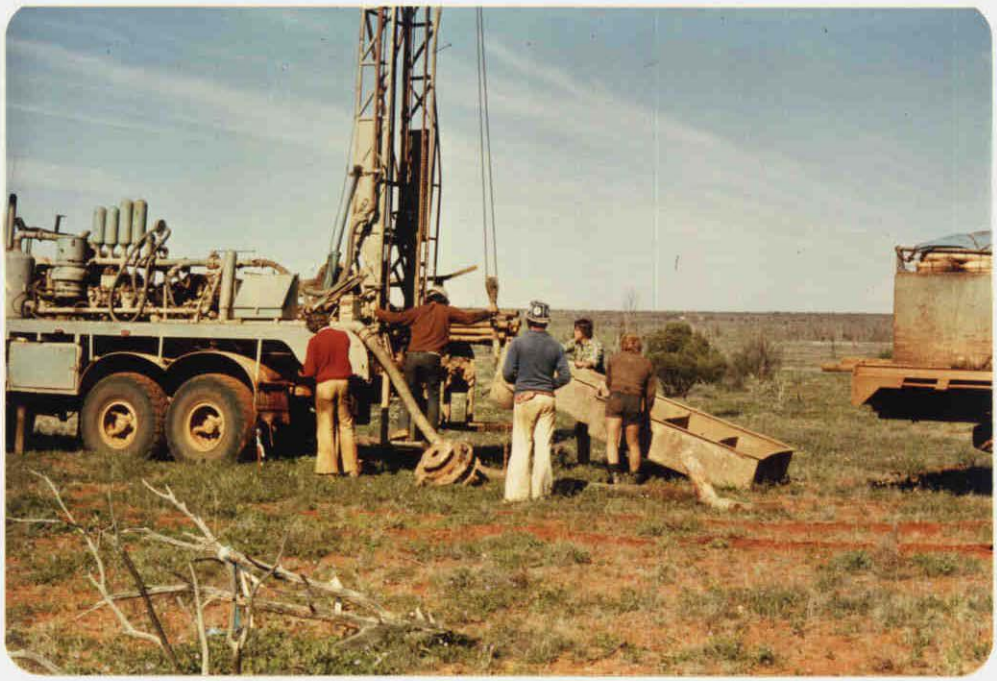
PLATE 3



VIEW OF THE MAYHEW 1000 DRILLING RIG MOUNTED ON A WHITE 6 x 6 TRUCK. THE NISSAN WATER TRUCK 1000 GALLONS CAN BE SEEN ON THE R.H.S. SAMPLING IS BY SHOVEL FROM THE FIRST CHAMBER OF THE MUD PIT. SAMPLES ARE LAID OUT IN ORDER ON HESSIAN MATTING FOR LOGGING AND SAMPLING.

In addition to the down hole logging for gamma radiation, self potential and resistivity, the holes were lithologically logged by describing drill cutting collected every two metres. Representative portions of the cuttings were returned to Melbourne for further examination and another sample of each horizon has been forwarded to the Core Storage building in Adelaide. Copies of the original lithological, gamma and electrical logs are held on file. All holes were levelled using an aneroid barometer. The drill hole logs showing gamma, electric response and lithology are enclosed with the report (Volume II).

5.2 Technical Detail

Thompson Drilling Company of Millicent, South Australia, were contracted to carry out the drilling programme which commenced on the 28th August, 1978. The drilling rig was a Mayhew 1 000 mounted on a White truck 6 x 6. The drilling was rotary air/mud with a hole diameter of 12 centimetres (Refer Plate 3). Each hole was logged radiometrically, and electrically,(resistivity and Self Potential), by Geoscience Pty. Ltd. Adelaide.

A total of forty-eight holes were drilled for an advance of 3 213 metres. Three holes were unable to be logged, W.L. 7 caved and a probe was lost at 200 metres, W.L. 12 encountered swelling clays at 10 metres which prevented the hole from being probed, and W.L. 18 which intersected granitic basement at 2 metres (Refer Table 1). A total of 2 727 metres of drilling were radiometrically and electrically logged. Two holes showed anomalous gamma radiation (values in excess of 200 c.p.s.) and were relogged on a 500 c.p.s. full scale deflection and a digital printout obtained.

The initial drilling programme was envisaged to be completed in four to five weeks however difficult drilling (silcrete horizons) and mechanical troubles resulted in the programme being halted for a week (September 16th to 24th) and the drilling programme being completed in seven weeks.

A total of twenty-one holes for an advance of 2 192 metres were drilled to define the structure and position of the Karari Fault zone. Nineteen holes (682 metres) were drilled across Tertiary Palaeochannel systems. One hole was drilled on the side of a Palaeodrainage channel to test for water for Commonwealth Hill Station. Some seven holes (269 metres) were drilled to test sediments connected with the northerly extension of the Mulgathing Trough, however, the objective of these holes to locate the trough were not successful.

TABLE 1.

DRILLHOLE SUMMARY WILKINSON LAKES

020

AUGUST - OCTOBER 1978

EL 413

Drillhole Number	Date Started	Date Finished	Depth Drilled (metres)	Depth Logged (metres)	Tallaringa 1:250,000 Imperial Transverse Marcator Grid		Remarks
					Eastings	Northings	
1	28/8/78	28/8/78	84	80	5851	3130	
2	29/8/78	29/8/78	106	104.5	5858	3123	
3	30/8/78	31/8/78	214	214	5866	3113	
4	31/8/78	1/9/78	102	91.7	5873	3117	
5	1/9/78	6/9/78	135	134.4	5882	3100	
6	6/9/78	7/9/78	187	185.7	5836	3146	
7	7/9/78	10/9/78	208	NIL	5822	3163	Probe lost at 200 m.
8	10/9/78	11/9/78	186	131.5	5807	3176	Caving sands below 132 m.
9	12/9/78	12/8/78	98	98.6	5788	3195	
10	12/9/78	13/9/78	186	186.3	5888	3171	
11	13/9/78	13/9/78	124	124.6	5904	3153	
12	14/9/78	14/9/78	50	NIL	5917	3137	Hole caved at 10 m.
13	14/9/78	15/9/78	50	48.4	5931	3118	
14	15/9/78	26/9/78	38	19.3	6019	3102	
15	26/9/78	27/9/78	60	50	6041	3103	
16	27/9/78	27/9/78	39	37.5	6063	3109	
17	28/9/78	28/9/78	32	23.5	6120	2863	
18	28/9/78	28/9/78	5	NIL	6120	2873	Not logged
19	28/9/78	28/9/78	29	29	6121	2883	
20	28/9/78	28/9/78	14	13.8	6121	2904	
21	28/9/78	29/9/78	30	28.8	6122	2928	
22	29/9/78	29/9/78	50	32	6122	2943	
23	29/9/78	29/9/78	48	46	6122	2958	
24	29/9/78	30/9/78	44	44.2	6123	2967	
25	30/9/78	30/9/78	13	12.8	6020	2919	
26	30/9/78	30/9/78	23	22	6031	2927	
27	30/9/78	30/9/78	32	12.6	6038	2934	Caving lignitic sands at 13 metres.
28	30/9/78	30/9/78	26	16.9	6046	2942	Caving gritty lignites at 17 metres

TABLE 1 (cont'd)

Drillhole Number	Date Started	Date Finished	Depth Drilled (metres)	Depth Logged (metres)	Tallaringa 1:250,000 Imperial Marcator Traverse Grid		Remarks
					Eastings	Northings	
29	30/9/78	30/9/78	30	26.6	6052	2953	
30	1/10/78	1/10/78	20	21.7	5910	3077	
31	1/10/78	2/10/78	92	93	5873	3187	
32	2/10/78	3/10/78	98	98.4	5672	3000	
33	3/10/78	3/10/78	140	138.8	5683	3001	
34	4/10/78	4/10/78	36	34	5705	3003	
35	4/10/78	5/10/78	51	52.6	5693	3003	
36	5/10/78	5/10/78	25	24.8	5727	3007	
37	5/10/78	5/10/78	32	31.5	5761	3005	
38	5/10/78	6/10/78	51	50.5	5917	2987	
39	6/10/78	6/10/78	50	41	5908	2995	Caving lignitic grits at 42 metres
40	6/10/78	6/10/78	53	53.2	5906	2999	
41	6/10/78	6/10/78	44	44	5898	3008	
42	6/10/78	7/10/78	56	33.6	5885	3018	Caving lignitic grits at 34 metres.
43	7/10/78	7/10/78	52	32.6	5881	3023	Caving lignitic grits at 34 metres.
44	7/10/78	7/10/78	27	27.1	6218	2985	
45	7/10/78	7/10/78	20	19.2	6255	2979	
46	8/10/78	8/10/78	23	22.4	6319	2971	
47	8/10/78	8/10/78	62	64.8	6171	2991	
WW1	1/10/78	1/10/78	38	28.8	6070	3010	Caving lignitic sands at 30 metres.

5.3 Personnel

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Project Geologist :	G.B. Weber
Leading Field Hand :	M.J. Murphy
Drilling Contractor :	Thompson Drilling Co. Pty Ltd
Driller :	R. Brown
Assistant Drillers :	L. Martin
	K. McDonald
Assistants :	D. Watts
	P. Hayward
Logging Contractors :	Geoscience Associates (Aust) Pty Ltd.
Operators :	J. Blichfeldt
	T. Crawford
	P. Waldron
Analytical Chemists :	A.C.S. Laboratories Pty Ltd Adelaide
Petrographic Services :	Central Mineralogical Services Pty Ltd Adelaide

6. RESULTS

6.1 Drilling

6.1.1 Wilkinson Trough

From seismic work (refer section 3.1) the position of the Karari Fault was known on the Dingo Fence Line to the north-east of the licence area and on the Maralinga track on the western edge of EL 413. Both surveys showed the Karari Fault - the south-eastern bounding structure of the Wilkinson Trough as a single fault structure.

The first part of the drilling programme was to test the down throw side of the Karari Fault for scree and alluvial fan type sediments that may contain uraniferous mineralisation. Drilling next to the Karari Fault did not disclose the presence of any coarse grained clastics. Drilling further out into the Wilkinson Trough drilling did not recover any cuttings likely to contain uraniferous mineralisation and the gamma response in these holes was very low.

In W.L. 7 the downhole probe was lost at 200 metres when the hole caved. A fishing tool was put down, but the operation was abandoned when the cable broke above the probe.

6.1.2 Karari Fault Zone

The drilling programme initially began by testing the edge of the Wilkinson Trough. W.L. 1 intersected basement at 80 metres. The next hole, W.L. 2, one kilometre to the south-east was expected to hit basement at a shallower depth. However, W.L. 2, although drilled at a lower elevation, intersected basement at 104 metres, and the next hole W.L. 3, a kilometre further to the south-east drilled to 212 metres. Drilling continued and a subsidiary trough was outlined to the south-east of the Karari Fault. (Refer Figures 2, 3 and 4). The actual size and position of this subsidiary trough is not yet known, although it was located on two drill lines some five kilometres apart. The subsidiary trough was not located on the section line incorporating drill holes W.L. 32 to W.L. 37 (refer Figure 8). The sediments intersected in the subsidiary trough were lithologically not much different from the Wilkinson Trough excepting in W.L. 5 where a quartz sand, well rounded but very indurated, was intersected at 82 metres. Drilling was continued to 134 metres when the hole was abandoned. When the hole was radiometrically logged, a thin, sharp radiometric anomally was recorded at 132 metres. It was proposed that the indurated horizon could be channel sands, however, the sand grains are remarkably uniform in size and roundness.

6.1.3 Tertiary Palaeochannels

The Tallaringa and Garford Palaeochannel systems have been previously described (Pitt et.al.1978). In the licence area the position of the Tallaringa Palaeodrainage system becomes rather obscure. In the initial reconnaissance survey, other subtle depressions were observed and tentatively identified as further Palaeochannels. At present, the identifying feature of Palaeochannels is the presence of a Tertiary lignitic sequence. All holes drilled in depressions across Palaeochanne have intersected differing thicknesses of lignitic material. However, this does not preclude the possibility that the lignitic sequence is much more widespread than previously thought, and is not necessarily confined to Palaeochannel systems.

Three Palaeochannel systems were drilled. Access was gained by previously graded fire tracks. Holes were drilled where these tracks happened to cross the channel systems. By this method, the channels were drilled at random down their lengths and holes were sited to give maximum information across them. Most holes when radiometrically logged, showed anomalous gamma activity between the Eocene Pidinga Formation lignites and the overlying Garford Formation. Many holes encountered wet, sloppy, gritty lignites, and drilling often had to be abandoned due to the holes caving before basement was reached.

Holes that could not be logged due to caving were sampled and assays sent off for analysis. By this method, a 2 metre intersection in W.L. 27 between 26 and 28 metres was found to contain 42.4 ppm U_3O_8. This value is quite anomalous as the hole at this stage was continually collapsing, and contamination with other horizons would have been considerable.

W.L. 22 drilled on Section D-D' (refer Figure 6) contained a radiometri anomally in the order of 220 c.p.s. over one metre between 16 and 17 m. in reddish brown lignitic muds overlying a lignitic sequence. Assays of this horizon returned values of 81 ppm U_3O_8.

W.L. 38 drilled on Section G-G' (refer Figure 9) contained a radiometric anomally in the order of 400 c.p.m. over 1.5 metres between 27.5 and 23 metres, in dark yellowish brown lignites containing pyritised wood fragments and red silcrete type particles. Chemical assays over a two metre interval returned values of 16.5 ppm from 28 to 30 metres. Thorium assays showed an anomalous zone between 28 and 34 metres, and the displacement of assay values to gamma values could be due to sampling error. Another anomalous uranium assay value occurs between 37 and 39 metres where a value of 35 ppm U_3O_8 was obtained. This result may also be due to sampling error as there is no corresponding gamma kick in the radiometric log.

6.1.4 Mulgathing Trough

Seven drill-holes were sited to test the edges of the Mulgathing Trough Although this trough is well known to the south-east, the only evidence for the trough in the licence area is a break in the Karari Fault magnetic pattern to the north-east of the licence area.

Three holes were drilled on the track west from the Dingo Gate Fence, and these holes intersected lignites and basement rocks, without any evidence of the edge of the Mulgathing Trough. From recent data, the holes are believed to have been drilled too far to the west, but the licence boundary inhibits further drilling to the east to test this hypothesis.

Four drillholes W.L. 44 to 47 were drilled east of Two Stone Bore Gate to determine the position of the Mulgathing Trough in this area of E.L. 413. Basement was intersected at approximately 20 metres in the first three holes and 60 metres in the last hole.

TABLE 2

DETAILS OF RADIOMETRIC ANOMALIES

HOLE NUMBER	DEPTH (METRES)	PEAK HEIGHT C.P.S.	X BACKGROUND	PEAK WIDTH METRES (AT HALF PEAK HEIG
W.W.1	13.3	68	6	2.4
W.L.5	132.8	80	5	0.6
W.L.16	21.6	71	7	3.8
W.L.21	27.0	82	4	3.5
W.L.22	16.2	260	13	2.0
W.L.23	25.5	73	7	3.6
W.L.28	10.0	44	2	2.0
W.L.29	21.0	40	3	2.0
W.L.32	21.4	98	2	1.2
W.L.33	47.6	120	2	3.5
W.L.38	38.1	43	20	1.7
W.L.39	16.2	44	3	2.8
W.L.40	20.0	84	8	3.4
	36.0	186	9	4.2
W.L.41	24.0	78	4	1.5
W.L.43	17.2	128	8	1.7

The position of the Mulgathing Trough in this area was not found. In a recent discussion with Mr. R. Nelson (South Australian Dept. of Mines) he believes the Mulgathing Trough may split just south of the Lake Anthony with one branch trending north towards the Indooropilly Outstation and the other branch turning, due west. This division of the trough in this area has yet to be confirmed with drillhole information.

6.2 Geophysical

All drillholes were probed by Geoscience Association (Aust.) Pty. Ltd., using a gamma, resistivity and self potential probes. A total of 2 727 metres were logged and only three holes were not probed (refer Section 5.2).

Although it is known that disequilibrium occurs between uranium and its daughter products in this environment (Close 1973) calculations were made on the radiometric values obtained by Geoscience Associates (Aust.) Pty. Ltd.

The method used is that described by Scott et.al.(1961) and Hallenburg (1973). This showed that W.L. 22 contains 0.13 lb $\underline{e}$ U_3O_8 over 2.2 m. between 14.8 and 17.0 metres or 0.1 lb $\underline{e}$ U_3O_8 over 4.6 metres between 14.8 and 19.4 metres. These values are equivalent to 58 ppm. and 44.6 ppm. U_3O_8 respectively. In W.L. 38 calculations showed that between 27.6 and 29.4 metres a grade of 0.33 lb $\underline{e}$ U_3O_8 occurred. This value is equivalent to 147 ppm. U_3O_8.

The above holes have the best radiometric anomalies,however, several other holes contained anomalous zones and are listed in in Table 2.

6.3 Geochemical Results

6.3.1 Uranium Analyses

All chemical analyses were completed in the A.C.S. Laboratories in Adelaide. All samples were dried, crushed and pulverised before analysis. From work carried out by C.R.A. (Close 1973) all samples containing organic component were ashed before analysis. This was carried out in the belief that uranium was being 'fixed' in carbonaceous material, either by the formation of organo-metallic

TABLE 3

Comparison of Analytical Techniques in the Determination of U_3O_8

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Hole Number Sample Interval	% Ash After Ignition	XRF (After Ignition) p.p.m.	U_3O_8 (1) p.p.m. (After Ignition)	U_3O_8 (2) p.p.m. (After Ignition)	U_3O_8 (1) p.p.m. (As Received)	U_3O_8 (2) p.p.m. (As Received)
W.L. 22 16 - 18	77.7	85	7.0	72.3	15.0	81.0
18 - 20	72.2	25	3.0	22.0	5.7	25.5
W.L. 38 26 - 28	65.6	<20	0.9	8.5	1.1	9.0
28 - 30	81.5	<20	1.1	20.0	0.6	16.5
30 - 32	80.1	<20	1.1	11.6	0.9	10.0

(1) Analysis by fluorimetry after $HCl O_4/HNO_3$ leach.

(2) Analysis by fluorimetry after $HF/HClO_4/HNO_3$ leach.

complexes or as discrete grains of uranium minerals within carbonaceous matter. Close found that samples not ashed before acid digestion flocculated the organic matter and all the uranium was not recovered. C.R.A. found some uranium values doubled when ashing occurred. All samples from drillholes W.L. 22 and W.L. 38 were were analysed in full for U_3O_8 and Thorium by XRF and for Potassium by A.A.S. (refer Appendix 2 for results). This showed in W.L. 22 values of 85 ppm. U_3O_8 over 2 metres which is comparable or slightly in excess of grades calculated from radiometric logs (refer Section 6.2). In drillhole W.L. 38, however, the assay results did not compare with the equivalent uranium results from drillhole logging although Thorium values were anomalous in cuttings samples from just below the radiometric zone, which may explain the radiometric kick. Previous work (Taylor 1976) in the Frome Embayment showed uranium assays from cores to be slightly less but equitable with equivalent uranium grades calculated from radiometric logs. However, trouble was experienced with poor core recovery, especially from the upper part of the mineralised horizon. Overall recovery was only 48 percent.

It was decided that five sample intervals from W.L. 22 and W.L. 38 would be reassayed using two differing fluorimetric techniques. These results can be compared in Table 3.

The results of this exercise show :

(i) Ashing does not materially affect the assay result, hence no complexing in organic matter is occurring.

(ii) X.R.F. would give the best U_3O_8 values as long as accurate results are not needed below 20 ppm.

(iii) The hydrofluoric acid digestion allows for the dissolving of refractory minerals that seem to contain some uraniferous mineralisation.

Further analyses of W.L. 27 showed the hydrofluoric/perchloric and nitric acid digestion returned 42.4 ppm. U_3O_8 after a straight perchloric/nitric lead had earlier returned 4.8 ppm. U_3O_8.

All assay results can be referred to in Appendix 2.

6.3.2 Base Metal Analyses

All drillholes that intersected the Archaean-Lower Proterozoic basement had the bedrock samples analysed for Copper, Lead, Zinc and Nickel to determine the background values of these metals in this area of the Gawler Craton. A total of 59 samples from 30 drillholes were analysed for the four elements.

TABLE 4

ANOMALOUS BASE METAL VALUES IN BASEMENT SAMPLES

DRILLHOLE	DEPTH (METRES)	Cu p.p.m.	Pb p.p.m.	Zn p.p.m.	Ni p.p.m.
WL 1	80 - 82	20	40	90	50
WL 13	38 - 40	39	20	70	130
	40 - 42	20	20	50	70
WL 18	28 - 29	40	20	90	100
WL 31	90 - 92	15	20	400	10
	40 - 42	55	40	85	60
WL 35	44 - 46	120	260	450	230
	46 - 48	80	140	300	190
WL 38	50 - 51	100	180	200	170
WL 41	40 - 42	40	30	110	90
	42 - 44	30	20	100	75

Mean values were:-

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Copper	16 - 20 ppm.
Lead	16 - 20 ppm.
Zinc	36 - 40 ppm.
Nickel	36 - 40 ppm.

Table 4 shows samples that contain anomalous base metal values. All assay results can be referred to in Appendix 2.

6.4 Petrological Descriptions

6.4.1 Uraniferous Sample Descriptions

In conjunction with A.C.S. Laboratories, Central Mineralogical Services Pty Ltd. took two samples that returned the highest uranium assays, i.e. W.L. 22 samples 16 - 18 metres and 18- 20 m. and examined untreated polished sections. No obvious uranium minerals were detected.

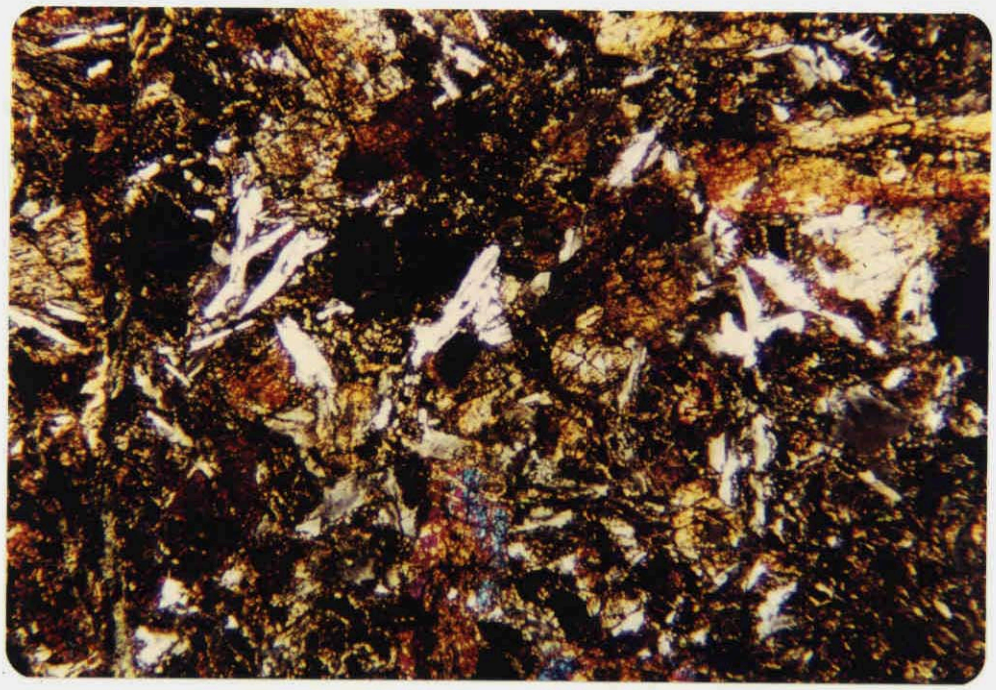
The sample 16 - 18 metres which had returned the assay value of 85 ppm. U_3O_8 was further investigated. A heavy mineral concentrate was prepared (2.27% by weight). The heavy fraction was briquetted and polished and autoradiographed for a period of 168 hours.

An examination of the film showed a number of weak centres of radioactivity which could be correlated with single grains of non-opaque minerals, some of which were recognized as zircon.

The heavy fraction was also examined in immersion oils. The following minerals were detected - opaque oxides (hematite, degraded ilmenite goethite), rutile, zircon (both fresh and metamict varieties monazite, xenotine, kyanite, garnet and other silicates.

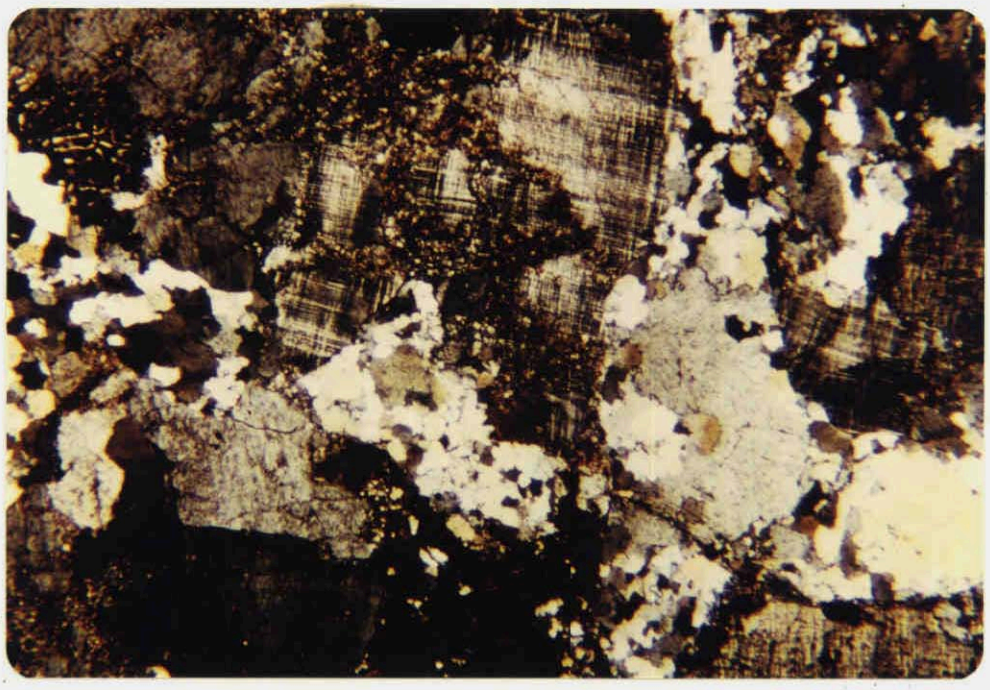
Central Mineralogical Services conclude that there are at least three minerals which are undoubtedly radioactive, especially the metamict zircon. All could contain uranium, and together could account for most, if not all the uranium present in the sample.

PLATE 4



THIN SECTION VIEW OF A HYPERSTHENE MICROGABBRO
12.5 x MAGNIFICATION, CROSSED POLARS WITH TYPICAL DOLERITIC FABRIC COMPOSED OF PLAGIOCLASE LATHS, INTERSERTAL TO SUBOPHITIC PYROXENE.

PLATE 5



THIN SECTION VIEW OF A GRANITE GNEISS
12.5 x MAGNIFICATION, CROSSED POLARS SHOWING STRESSED AND GRANULATED COMPONENTS, STRAIN - EXTINCTION AND FRACTURING.

6.4.2 Rock Descriptions

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Whilst locating drillsites in the licence area, any basement outcrops located were quickly inspected by scintillometer for anomalous radioactivity.

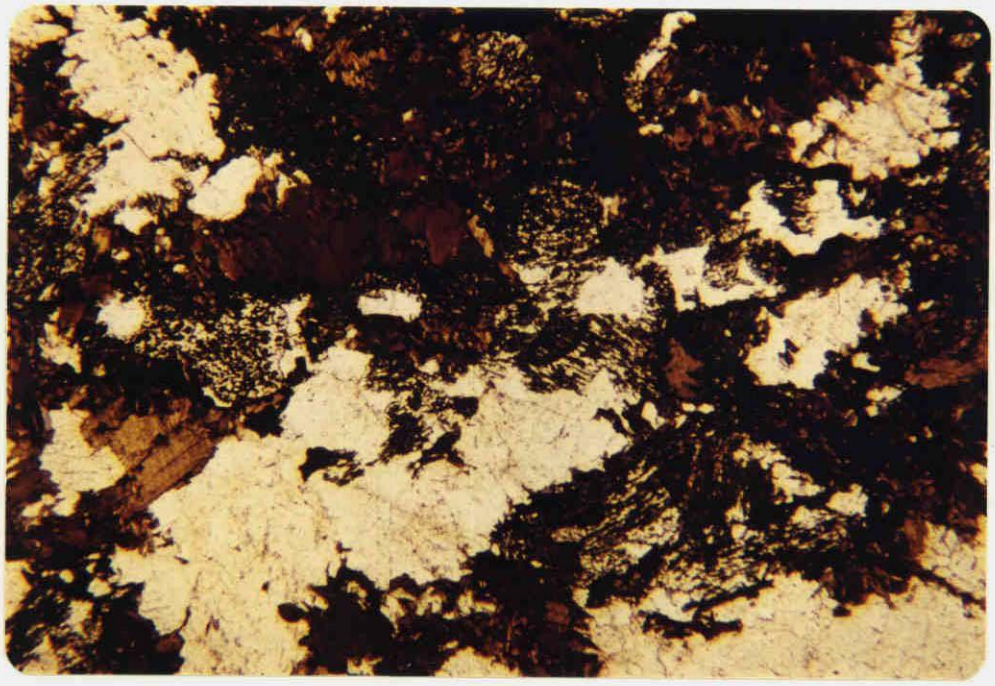
A large outcrop of mainly Granitic basement was located to the west of W.L. 26 outcropping on the lake floor and on the higher ground to the south and west.

A McPhar T.V.I. Serial No. 173-05 showed total radiometric counts in a pegmatitic dyke rock on the floor of the lake surface ranged from 6 000 to 20 000 counts per minute with the highest reading about 25 000 cpm. The strike of this dyke was 167° magnetic and averaged approximately 1 metre in width. The dyke was enclosed in a dark grey schistose rock. Some 200 metres to the west striking at right angles to the pegmatitic dyke was a very dark grey amphibolite dyke rock. To the south on the edge of the lake was a granitic rock with total radiometric counts up to 3 000 cpm. In the area the general background was 200 to 400 cpm.

Three rock samples were submitted for thin section work to Central Mineralogical Services in Adelaide. Sample W.L.R. 1 was a sample of the amphibolite dyke rock. The rock when examined under a microscope was a hypersthene microgabbro characterised by an abundance of pyroxenes. The fabric is uniform and medium grained, typical of a minor intrusive. A photograph has been prepared of the thin section and can be seen in Plate 4. Samples W.L.R. 2 was a sample of a pink, coarsely crystalline felsic rock which is a sample of the granitic dyke. This rock was assayed by A.C.S. Laboratories for uranium and gave a result of 3.5 ppm. U_3O_8. The petrological term for this rock is a granite gneiss since there is clear evidence of dynamic metamorphism and fairly extensive recrystallisation. A colour print of the thin section slide can be seen on Plate 5. The third sample was of the dark grey schistose rock which was petrologically identified as a gneiss comprised essentially of albite , biotite, hornblende and quartz. The rock from mineralogical evidence indicates a sedimentary origin which has undergone two periods of deformation. A colour print of the thin section slide can be seen on Plate 6.

The detailed mineralogical descriptions can be referred to in Appendix 3.

PLATE 6



THIN SECTION VIEW OF A ALBITE - BIOTITE - HORNBLENDE - QUARTZ GNEISS.

12.5 x MAGNIFICATION, PLAIN LIGHT.QUARTZ, PLAGIOCLASE (CLEAR, COLOURLESS), BROWN BIOTITE, AND PATCHES OF FINE, DARK HORNBLENDE (SIEVE TEXTURE).

7. CONCLUSIONS

The initial drilling programme showed the Wilkinson Trough to have a low potential for uranium mineralisation. The Karari Fault system is much more complex than first thought, and a small subsidiary basin exists within the licence area. This shows some potential for uraniferous mineralisation on the down thrown side, (i.e. south-east) for sandstone type uranium mineralisation.

The best radiometric anomalies obtained in the drilling programme were associated with the fluoviolacustrinal Garford Formation and the underlying lignitic Pidinga Formation. Further work on the mineralisation samples has shown that the gamma radiation is associated with refractory minerals which may account for some of the uraniferous mineralisation. Although the analytical results are disappointing, the Palaeochannels still have the potential to host a sandstone type uranium mineralisation. The basement rocks also have potential for hosting economic uraniferous mineralisation.

Very little work has been carried out on base metal mineralisation. Dating of the Gawler Craton has shown the area in general is older than first thought, and many of the metamorphosed sediments may be of Archaean age. Samples analysed for base metals in the drilling programme do show some anomalous values.

8. RECOMMENDATIONS

(a) Further drilling should be undertaken around W.L. 5 to determine the basement structure of the subsidiary trough and the formation in which the small gamma kick occurs.

(b) The Palaeochannels should be traversed with a recording Spectrometer and any anomalous areas be gridded and a alpha-meter survey run. The mineralised "fronte" outlined in the alphometer survey should then be drilled.

(c) Basement outcrops should continue to be inspected for indications of base metal and uraniferous mineralisation.

9. ACKNOWLEDGEMENTS

Exploration Licence 413 lies in an area of the Gawler Craton that has not been previously explored by private enterprise. The personnel at the South Australian Department of Mines and Geological Survey have been extremely helpful in the initial literature surveys. I would especially like to thank Graham Kreig, Graham Pitt, Sue Daly and other members of the survey who have given time for frank discussions and have provided information in collating geological information on the area concerned.

A P P E N D I X O N E

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A P P E N D I X T W O

GEOCHEMICAL RESULTS

ADELAIDE
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SYDNEY
Tel.: 997 8498

A.M.D. Laboratories Pty. Ltd.
63 ALEXANDER STREET
MANLY, N.S.W. 2095

ANALYTICAL RESULTS

50 Mary Street,
UNLEY. 5061. SA.
(P.O. Box 3.)

041

Samples from: B.P.Minerals Aust. Pty.Ltd.

Area:

Samples of:

Preparation: Crush and pulverize.

Batch No.: A2700

Sheet No.: 1

Date: 17/11/78.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Residue after ashing %	XRF U_3O_8 ppm	Fluorimetry U_3O_8 ppm	Th ppm	K %		
WL 3 30-40			<0.5				
40-50			1.5				
50-60			1.2				
WL5 129-131			<0.5				
131-133			<0.5				
133-135			<0.5				
WL 14 12-14			<0.5				
14-16	92.2		<0.5				
16-18	83.8		1.8				
24-26	84.6		1.2				
26-28	83.1		1.4				
28-30	75.3		1.1				
30-32	54.4		0.5				
WL 16 18-20			0.6				
20-22			1.2				
22-24			0.8				
24-26			<0.5				
WL 19 16-18			<0.5				
18-20			<0.5				
20-22			2.8				
WL 22 0- 2		<20		<10	0.23		
2- 4		<20		<10	0.44		
4- 6		<20		<10	0.35		
6-8		<20		<10	0.45		
8-10		<20		<10	0.60		
10-12		<20		<10	0.50		
12-14		<20		<10	0.13		
14-16		<20		<10	0.23		
16-18	77.7	85	—	<10	0.23		
18-20	72.2	25		<10	0.20		
20-22	60.4	<20		<10	0.14		
22-24	63.3	<20		<10	0.22		
24-26	53.9	<20		<10	0.14		
26-28	55.0	<20		<10	0.17		
28-30	49.9	<20		<10	0.09		
30-32	49.3	<20		<10	0.10		
32-34	90.9	<20		<10	0.05		
34-36	90.8	<20		<10	0.03		
36-38	89.7	<20		<10	0.04		
38-40	91.8	<20		<10	0.05		
40-42	92.5	<20		<10	0.06		
42-44	94.5	<20		<10	0.02		
44-46	94.3	<20		<10	0.06		
46-48	95.5	<20		<10	0.03		
48-50	92.8	<20		<10	0.01		
WL 23 22-24			<0.5				
24-26	94.9		<0.5				
26-28	50.0		1.1				
28-30	49.9		<0.5				

ANALYTICAL METHODS: Th by XRF, K by AAS.
All values refer to sample on 'as received' basis, although some analyses eere done on ignited samples.

DISTRIBUTION: B.P.Minerals Aust. Pty.Ltd.

Signed.....

★47131

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ANALYTICAL RESULTS

Samples from: B.P.Minerals Aust.Pty.Ltd.

Area:

Samples of:

Preparation: Crush and pulverize.

Batch No.: Sx A2700

042

Sheet No.: 2

Date: 17/11/78

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Residue after ashing %	AAF U_3O_8 ppm	Fluorimetry U_3O_8	Th ppm	K %		
WL 28 6- 8			<0.5				
8-10			<0.5				
10-12			0.9				
12-14			0.5				
WL 32 18-20			<0.5				
20-22			<0.5				
22-24			<0.5				
50-60			2.1				
60-70			1.9				
WL 33 44-46			4.9				
46-48			3.2				
48-50			2.4				
50-52			0.9				
WL 34 26-28			<0.5				
28-30			<0.5				
30-32			<0.5				
32-34			<0.5				
WL 35 30-32			<0.5				
32-34			<0.5				
34-36			<0.5				
36-38			<0.5				
38-40			<0.5				
40-42			<0.5				
42-44			<0.5				
44-46			<0.5				
46-48			<0.5				
WL 37 22-24			<0.5				
24-26			<0.5				
26-28			<0.5				
WL 38 0- 2		<20		<10	0.20		
2- 4		<20		<10	0.24		
4- 6		<20		<10	0.33		
6- 8		<20		<10	0.38		
8-10		<20		<10	0.23		
10-12		<20		<10	0.27		
12-14		<20		<10	0.20		
14-16	87.6	<20		<10	0.16		
16-18	60.8	<20		<10	0.17		
18-20	62.1	<20		<10	0.15		
20-22	48.9	<20		<10	0.06		
22-24	57.5	<20		<10	0.07		
24-26	53.4	<20		<10	0.14		
26-28	65.6	<20		<10	0.07		
28-30	81.5	<20		140	0.10		
30-32	80.1	<20		100	0.02		
32-34	81.3	<20		120	0.05		
34-36	85.8	<20		<10	0.06		
36-38	82.2	35		<10	0.04		
38-40		<20		<10	0.05		
WL 38 40-42		<20		<10	0.09		

ANALYTICAL METHODS:

DISTRIBUTION: B.P.Minerals Aust.Pty.Ltd.

Signed: K Lewis

★47131

ADELAIDE
Tel.: 272 5733

SYDNEY
Tel.: 977 6495

A.C.S. Laboratories Pty. Ltd.
63 ALEXANDER STREET
MANLY, N.S.W. 2095

50 Mary Street,
UNLEY. 5061. S.A.
(P.O. Box 3)

ANALYTICAL RESULTS

Samples from: B.P.Minerals Aust.Pty.Ltd.
Area:
Samples of:
Preparation: Crush and pulverize.
Batch No.: S A2700

043

Sheet No.: 3
Date: 17/11/78.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Residue after ashing %	XRF U_3O_8 ppm	Fluorimetry U_3O_8	Th ppm	K %		
WL 38 42-44		<20		<10	0.15		
44-46		<20		<10	0.55		
46-48		<20		<10	0.01		
48-50		<20		<10	1.20		
50-51		<20		<10	3.95		
WL 39 12-14			<0.5				
14-16			<0.5				
18-20			<0.5				
WL 40 16-18	91.5		<0.5				
18-20	78.3		<0.5				
20-22	72.6		<0.5				
22-24	88.7		0.9				
24-26	89.6		<0.5				
32-34			<0.5				
34-36			<0.5				
36-38			<0.5				
38-40			<0.5				
40-42			<0.5				
42-44			<0.5				
WL 41 20-22			<0.5				
22-24			<0.5				
24-26			<0.5				
26-28			<0.5				
28-30			<0.5				
WL 39 16-18			<0.5				
WL 42 16-18			<0.5				
18-20			<0.5				
20-22	91.3		<0.5				
22-24	75.3		<0.5				
WL 43 14-16			<0.5				
16-18			<0.5				
18-20	89.2		1.3				
20-22	81.6		1 .5				
WW 1 10-12			<0.5				
12-14			1.2				
14-16	70.0		2.2				

ANALYTICAL METHODS:

DISTRIBUTION: B.P.Minerals Aust.Pty.Ltd.

Signed: H L Bennett

★47131

ADELAIDE
Tel.: 272 5733

ANALYTICAL RESULTS

50 Mary Street,
UNLEY. 5061. S.A.
(Box 3 P.O.)

044 3/2

Samples from: B.P. Mining Development Aust. Pty. Ltd.
Area:
Samples of:
Preparation: Grind, Pulverising.
Batch No.: S A2738

Sheet No.: 1
Date: 12.12.78

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu ppm	Pb ppm	Zn ppm	Ni ppm
WL 1 74-76	20	30	70	40
76-78	20	40	60	20
78-80	20	40	60	30
80-82	20	40	90	50
WLR 2 104-106	10	30	75	60
WL 6 182-184	5	<20	20	10
184-186	10	20	25	20
186-187	10	<20	10	10
Wl 11 118-120	10	<20	30	20
120-122	10	<20	30=	20
122-124	10	30	40	20
Wl 12 46-48	20	20	60	45
48-50	10	40	40	20
WL 13 36-38	30	<20	40	40
38-40	30	<20	70	130
40-42	20	20	50	70
42-44	15	<20	30	40
Wl 16 38-40	10	<20	20	30
Wl 18 2-4	30	30	45	40
WL 19 28-29	40	20	90	100
WL 20 12-14	30	20	40	30
WL 21 28-30	15	20	15	40
WL 23 46-48	<2	20	20	10
WL 24 42-44	<2	<20	10	30
WL 25 12-14	20	20	40	30
WL 26 22-23	20	20	45	45
WL 30 12-14	20	30	30	10
14-16	15	20	45	40
16-18	20	30	55	40
18-20	15	30	40	10
20-22	15	20	35	40
WL 31 90 92	15	20	400	10
WL 34 34-36	5	30	20	10
WL 36 22-24	10	40	30	10
24-25	10	30	15	10
WL 37 28-30	10	30	10	10
30-32	15	<20	40	20
WL 38 50-51	100	180	200	170
WL 40 48-50	40	40	40	25
50-52	30	40	70	45
52-53	10	20	70	30
WL 41 40-42	40	30	110	90
42-44	30	<20	100	75
WL 42 54-56	<2	<20	15	10
WL 44 24-26	30	40	35	25
26-27	45	40	50	50
WL 45 16-18	20	<20	20	25
18-20	40	20	30	30

ANALYTICAL METHODS: Cu., Pb, Zn, Ni by AAS.

DISTRIBUTION: B.P. Mining Dev. Aust. Pty. Ltd.

Signed .....

★47131

ADELAIDE
Tel.: 272 5733

[redacted]

[redacted]

ANALYTICAL RESULTS

50 Mary Street,
Box 3 P.O.,
UNLEY. 5061. S.A.

Samples from: B.P.Mining Development Australia Pty. Ltd.

Area:

Samples of:

045

Preparation: Grind, Pulverised.

Sheet No.: 2

Batch No.: SA2738

Date: 12.12.78

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu ppm	Pb ppm	Zn ppm	Ni ppm		U_3O_8 (1) ppm	U_3O_8 (2) ppm
WL 46 22-23	50	<20	60	40			
WL 47 58-60	50	40	40	40			
Ex A2700							
WL 22 46-48	10	<20	20	10			
48-50	<2	20	20	10			
WL 34 32-34	10	<20	15	10			
WL 35 38-40	30	60	70	55			
40-42	55	40	85	60			
42-44	40	50	70	40			
44-46	120	260	450	230			
46-48	80	140	300	190			
WL 38 48-50	10	40	55	25			
Repeat and Check							
WL 13 36-38	35	<20	40	30			
WL 30 18-20	20	20	40	15			
WL 35 38-40	30	60	60	45			
WL 4 94-95						7.2	1.5
95-96						4.8	1.9
96-97						6.0	2.3
97-98						5.2	3.2
98-99						5.6	2.3
99-100						4.0	5.5
100-101						6.0	5.2
101-102						3.6	4.2
WL 8 142-144						4.4	5.2
144-146						3.0	4.2
WL 17 22-24						4.0	5.2
24-26						2.5	4.9
26-28						1.7	3.9
28-30						1.3	2.3
WL 21 22-24						2.0	3.2
24-26						3.6	3.9
26-28						2.5	4.9
28-30						<0.5	6.2
WL 27 12-14						3.6	4.2
14-16						2.0	1.1
16-18						0.5	<0.5
18-20						3.2	4.7
20-22						1.7	3.7
22-24						1.7	6.3
24-26						4.8	2.9
26-28						4.8	42.4
28-30						4.8	5.7
30-32						6.0	5.4

ANALYTICAL METHODS: Cu, Pb, Zn, Ni by AAS.
U_3O_8 by Fluorimetry.

DISTRIBUTION B.P. Mining Dev. Aust. Pty. Ltd.

Signed .....

★47131

ADELAIDE
Tel.: 272 5733

SYDNEY
[redacted]

A.C.S. Laboratories Pty. Ltd.
[redacted]
MANLY, N.S.W. 2095

ANALYTICAL RESULTS

50 Mary Street,
Box 3 P.O.,
UNLEY. 5061. S.A.

Samples from: B.P. Mining Development Aust. Pty. Ltd.

Area:

Samples of:

046

Preparation: Grind, Pulverising.

Sheet No.: 3

Batch No.: S A2738

Date: 13.12.78

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Ash %	U_3O_8
WL 17 22-24	80.0	3.8
24-26	93.4	4.9
WL 27 12-14	93.4	3.7
14-16	91.1	2.9
16-18	89.1	3.9
18-20	86.3	3.8
20-22	89.1	1.8
22-24	91.4	3.3
24-26	92.0	4.4
26-28	88.3	4.2
28-30	88.3	5.9
30-32	86.6	5.5
Repeat and Check		
WL 17 24-26	93.4	2.9
WL 27 22-24	91.4	2.8

	F ppm
WL 1 74-76	190
76-78	195
78-80	115
80-82	850
WL 2 104-106	90

A2700	U_3O_8(1) ppm	U_3O_8(2) ppm
WL 22 16-18 Ignited	7.0	72.3
18-20 "	3.0	22.0
WL 38 26-28 "	0.9	8.5
28-30 "	1.1	20.0
30-32 "	1.0	11.6
WL 22 16-18 as received	15.0	81.0
18-20	5.7	25.5
WL 38 26-28	1.1	9.0
28-30	0.6	16.5
30-32	0.9	10.0

U_3O_8 (1) by fluorimetry following $HClO_4/HNO_3$ leach.

U_3O_8 (2) by fluorimetry following $HF/HClO_4$ leach.

ANALYTICAL METHODS: U by Fluorimetry.
F by S.I.E.

DISTRIBUTION: B.P. Mining Dev. Aust. Pty. Ltd.

Signed H. L. Lewis

★47131

A P P E N D I X T H R E E

PETROLOGICAL DESCRIPTIONS

Central Mineralogical Services

CMS

251 Magill Road
Maylands, S.A. 5069
Telephone 42 5659

BP MA
16 JAN 1979
RECEIVED

Mr. G. B. Weber
Minerals Geologist
BP Mining Development Aust. Pty. Ltd.
G.P.O. Box 5222BB
MELBOURNE / VIC. 3001

11th January, 1979

REPORT CMS 78/12/35

YOUR REFERENCE:	Purchase Order No. 106 524
DATE RECEIVED:	26th December, 1978
SAMPLE NOS.:	WL R1, WL R2, WL R3
SUBMITTED BY:	G.B. Weber
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 11th January, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
WL R1
Hypersthene-Microgabbro

Job No. CMS 78/12/35 Date Received: 26.12.1978

Reference Purchase Order NO. 106 524

Sample No. WL R1

Nature of Sample: Hand Specimen

DESCRIPTION SECTION No. 26515

a. Hand Specimen:

Dark, uniform, medium-crystalline rock.

Weakly magnetic.

b. Microscopic:

This is a hypersthene-microgabbro, characterised by an abundance of pyroxenes and a relative paucity of plagioclase.

The rock is fairly fresh, considering the abundance of pyroxene; there is no indicatior of metamorphism apart from minor fracturing.

The major constituents are random prismatic crystals of augite, subordinate hypersthen small laths of andesine, with minor oxide opaques and occasional biotite flakes. Much of the pyroxene is marginally altered to pale amphibole and chlorite, and the whole rock is more extensively altered where traversed by fractures and shears, with the formation of fine-grained tremolite-actinolite and pale chlorite.

The fabric is uniform and medium-grained, typical of a minor intrusive.

The hypersthene shows unusual pleochroic colours (light to dark smokey brown), which may be useful in correlating with other basic dykes.

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 11th January, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
WL R2
Granite-Gneiss

Job No. CMS 78/12/35 Date Received: 26.12.1978

Reference Purchase Order No. 106 524

Sample No. WL R2

Nature of Sample: HandSpecimen

DESCRIPTION SECTION No. 26516

a. Hand Specimen:

Pink, coarsely-crystalline felsic rock. K-feldspar stain test positive. Very weakly radioactive (Geiger counter). [illegible] 3-5 ppm U_3O_8 [illegible]

b. Microscopic:

This rock should be termed a granite-gneiss, since there is clear evidence of dynamic metamorphism and fairly extensive recrystallization.

The rock has a very simple composition, consisting of quartz and microcline only as the major minerals; all the others are present in accessory amounts. Quartz and microcline both occur as large shapeless patches with strong strain-extinction; they are marginally granulated and recrystallized to fine mosaics, and are cut by veinlike masses of fine, recrystallized material. In places, the original components are entirely recrystallized.

Accessory minerals include small biotite aggregates, occasional crystals of more or less metamict zircon, fine magnetite, and patches of whitish, semi-opaque leucoxene/rutile. These patches are radioactive and may represent altered brannerite and davidite; both these minerals commonly alter to TiO_2 (in the form of leucoxene-rutile/anatase) with residual radioactivity due to U and/or Th. Traces of allanite may also be present.

Due to the alteration, it is not possible to be more specific about the radioactive mineral, but is was probably a primary constituent.

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 11th January, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
WL R3
Gneiss

Job No. CMS 78/12/35 Date Received: 26.12.1978

Reference Purchase Order No. 106 524

Sample No. WL R3

Nature of Sample: Hand Specimen

DESCRIPTION SECTION No. 26517

a. Hand Specimen:

Greenish mottled, crystalline rock with preferred orientation.

b. Microscopic:

The fabric of this rock suggests that it is a gneiss, and mineralogical evidence indicates a sedimentary origin; the rock has undergone two periods of metamorphism. In relation to sample WL R2, this suggests that WL R2 was emplaced after regional metamorphism, that both WL R2 and 3 were subsequently (mainly dynamically) metamorphosed, followed by the intrusion of WL R1; this interpretation is based purely on petrographic evidence. In this connection, it would be useful to compare material from the "granitic terrain" with WL R2.

The rock is an albite-biotite-hornblende-quartz gneiss, consisting mainly of shapeless interlocking patches of stressed, poorly-twinned albite, aggregates of brown biotite and granular to acicular poikiloblastic hornblende, and interstitial quartz. The hornblende seems to have formed at the expense of the biotite and is thus younger. Occasional subhedral apatite grains are associated with the ferromagnesian aggregates, and isolated, rounded (i.e. detrital) zircon grains are embedded in biotite. Minor leucoxenised ilmenite is also present.

It may well be that the "granitic outcrop" is younger, was responsible for the second metamorphic phase, and is unrelated to WL R2.

H.W. Fander, M. Sc.

BP MINING DEVELOPMENT AUSTRALIA PTY LTD

EXPLORATION LICENCE 413

WILKINSON LAKES AREA, SOUTH AUSTRALIA.

PROGRESS REPORT FOR THE QUARTER ENDED

30TH SEPTEMBER 1978

BP MINING DEVELOPMENT AUSTRALIA P/L.

MELBOURNE, VICTORIA

OCTOBER 1978

T A B L E 2

EXPLORATION LICENCE 413

053

BREAKDOWN OF EXPLORATION EXPENDITURE INCURRED UP UNTIL 30TH SEPTEMBER 1978

Item	$
Plant and Tools	267
Exploration	
Geologicial Services	186
Geochemical and Analytical Services	1 566
Drilling Services	36 189
Field Consumable Stores	1 815
Operations	
Vehicle Operation and Maintenance	1 835
Rental of Equipment	400
Freight and Cartage	-
Travelling Expenses	62
Personnel Services	1 228
Equipment Operation and Maintenance	599
Salaries and Wages	8 862
TOTAL :	$ 53 009

S U M M A R Y

During the quarter ended 30th September 1978, Exploration Licence 413 in the Wilkinson Lakes area of South Australia, was granted to BP Mining Development Australia Pty Ltd, for a term of one year. Exploration targets were defined and in July / August an initial reconnaissance survey of the area was undertaken. Subsequently a rotary drilling programme was commenced and was still in progress at the end of September. To 30th September 1978 twenty nine holes had been drilled and logged for a total advance of 2 231 metres. Full details will be submitted at a later date on completion of the drilling report. Total expenditure to 30th September was $53 009.

KEYWORDS

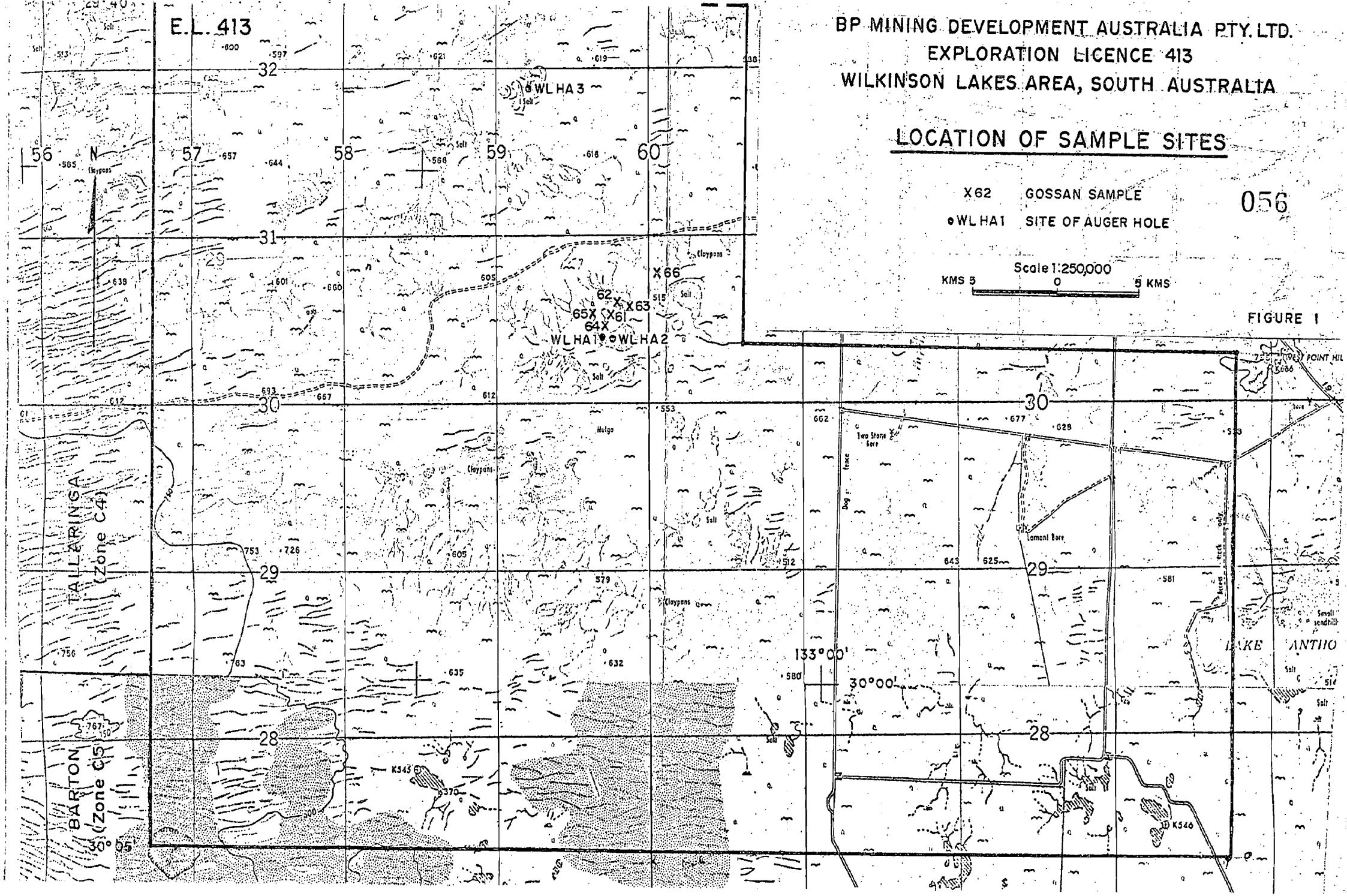
Wilkinson Lakes
reconnaissance survey
geochemical sampling
rotary drilling
uranium

C O N T E N T S

055

LIST OF TABLES

LIST OF FIGURES


BP MINING DEVELOPMENT AUSTRALIA PTY. LTD.
EXPLORATION LICENCE 413
WILKINSON LAKES AREA, SOUTH AUSTRALIA
LOCATION OF SAMPLE SITES
X62 GOSSAN SAMPLE
WL HA1 SITE OF AUGER HOLE
056
Scale 1:250,000
KMS 5 0 5 KMS
FIGURE 1
E.L. 413
WL HA 3
WL HA1
WL HA2
X66
X63
X61
62
65X
64X
TALLARINGA (Zone C4)
BARTON (Zone C5)
133°00'
30°00'
30°05'
Two Stone Bore
Lamont Bore
Claypans
Salt
Mulga
LAKE ANTHO

1. INTRODUCTION

E.L. 413 was granted to BP Mining Development Australia Pty Ltd on 14th July 1978, for a term of one year. The licence covers an area of some 2 438 square kilometres and is located near Wilkinson Lakes, approximately 190 kilometres north-west of Tarcoola in South Australia. The aim of the exploration programme is :

- to investigate a series of early Tertiary palaeochannel sediments for possible uranium mineralisation
- to investigate the uranium potential of sediments of Tertiary, Mesozoic and Palaeozoic age within the Wilkinson Trough
- to examine the basement rocks for base metal mineralisation.

2. REGIONAL GEOLOGY

The oldest known rocks within E.L. 413 are believed to be the Lower Proterozoic Cleve Metamorphics of the Gawler Craton. These are overlain by Palaeozoic and Mesozoic sediments within a narrow, arcuate trough trending south, which is located on the south-west corner of the Arkaringa Basin (known as the Wilkinson Trough). A drainage system which flowed approximately north-south with east-west trending branches, developed in early Tertiary times and within this system a sequence of clays, sands and lignites were deposited. This drainage system can now be recognised as a subtle topographic depression. Much of the area has been covered by recent dune sands which mask much of the older outcrop.

3. FIELD INVESTIGATIONS

3.1 Reconnaissance Survey

A brief reconnaissance survey of the area was conducted from 17th July to 5th August 1978. Operations comprised reconnaissance mapping, and gossan search, ground radiometric traversing and gridding, and auger sampling. The aim of this survey was to follow-up certain airborne radiometric anomalies over some of the lakes and to attempt to define the position of the Karari Fault zone. Samples were collected from gossans and from augering of the lake sediments, and were submitted for analysis. Results are contained in Table 1 and the location of sample sites is shown in Figure 1.

Radiometric traversing was carried out using a hand-held scintillometer (McPhar TV-1). All lake surfaces traversed, showed some anomalous radioactivity, together with a "hot" pegmatite occurrence. No other significant results were located.

Drill hole sites for the proposed rotary drilling programme were also inspected.

3.2 Drilling Programme

A rotary drilling programme was commenced on the Exploration Licence on 28th August. Drilling operations were carried out by Thompson Drilling Company, whilst down-hole radiometric probing was undertaken by Geoscience Associates Pty Ltd. To the 30th September operations were continuing and a total of 29 holes had been drilled and radiometrically logged for an aggregate depth of 2 231 metres. Drill cuttings were collected at two metre intervals and selected samples have been submitted for uranium analysis. The programme was expected to be finalised by mid October.

A detailed report covering all aspects of the drilling programme is currently being prepared. A copy will be forwarded to the Mines Department on completion.

4. EXPENDITURE

The total expenditure incurred on E.L. 413 to 30th September 1978 totalled $53 009. A breakdown of this expenditure is shown in Table 2.

TABLE 1

E.L. 413 INITIAL RECONNAISSANCE SURVEY

ANALYSIS RESULTS

a) GOSSAN SAMPLES

SAMPLE	Ag (ppm)	Pb (ppm)	Zn (ppm)	Cu (ppm)	Ni (ppm)	Mn (ppm)
G1	0.1	12	36	30	3	123
G2	0.1	12	85	30	41	444
G3	0.1	43	205	79	562	2002
G4	0.2	42	35	37	25	84
G5	0.1	26	109	21	7	102
G6	2.5	29	11	10	1	31

b) AUGER SAMPLES (LAKE SEDIMENTS).

SAMPLE	U (ppm)	SAMPLE	U (ppm)
A1	3	A17	4
A2	22	A18	4
A3	56	A19	6
A4	120	A20	6
A5	32	A21	3
A6	14	A22	11
A7	12	A23	19
A8	7	A24	53
A9	7	A25	51
A10	8	A26	9
A11	7	A27	9
A12	8	A28	24
A13	8	A29	6
A14	8	A30	5
A15	4	A31	18
A16	6		

Samples A1 - A14 taken from auger hole WLHA 1.
Samples A15 - A21 taken from auger hole WLHA 2.
Samples A22 - A31 taken from auger hole WLHA 3.

NOTE : ANALYSES BY PILBARA LABORATORIES PTY LTD.

060

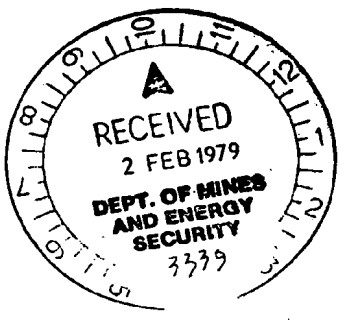
BP MINING DEVELOPMENT AUSTRALIA PTY LTD

EXPLORATION LICENCE 413

WILKINSON LAKES AREA, SOUTH AUSTRALIA.

PROGRESS REPORT FOR THE QUARTER ENDED

31st DECEMBER, 1978



G.B. WEBER
MELBOURNE - VICTORIA
DECEMBER, 1978.

S U M M A R Y

During the quarter ended 31st December 1978 the drilling programme which commenced in September 1978 was completed. A total of 48 rotary drillholes were drilled for an advance of 3213 metres. Several holes drilled in the Palaeodrainage system showed anomalous radiometric anomalies. Radiometric grades ($\geq U_3O_8$) of up to 0.33 lb U_3O_8/ton over 1.8 metres in hole W.L. 38 was obtained. It is believed this horizon occurs in the fluviolacustrinal Garford Formation. A detailed report of the drilling programme is in preparation and will be forwarded on completion. Total expenditure to the 30th November 1978 was $A 79 378.

KEYWORDS

Wilkinson Lakes
rotary drilling
uranium mineralisation
palaeochannels
Tallaringa trough.

C O N T E N T S

062

L I S T O F T A B L E S

L I S T O F F I G U R E S

1. INTRODUCTION

Exploration Licence 413 was granted to BP Mining Development Australia Pty Ltd on 14th July 1978, for a term of one year. The licence covers an area of some 2 438 square kilometres and is located near Wilkinson Lakes some 190 kilometres north-west of Tarcoola central-western South Australia. A rotary drilling programme was instigated to explore the Wilkinson trough sediments and the early Tertiary Palaeodrainage channels for the presence of uranium mineralisation.

2. REGIONAL GEOLOGY

The oldest known rocks within E.L. 413 are believed to be the Lower Proterozoic Cleve Metamorphics of the Gawler Craton. These are overlain by Palaeozoic and Mesozoic sediments within a narrow, arcuate trough trending south, which is located on the south-west corner of the Arkaringa Basin (known as the Wilkinson Trough). A drainage system which flowed approximately north-south with east-west trending branches, developed in early Tertiary times. Within this system a sequence of clays, sands and lignites were deposited. This drainage system can now be recognised as a subtle topographic depression. Much of the area has been covered by recent dune sands which mask much of the Lower Proterozoic basement rocks.

3. DRILLING PROGRAMME

The drilling programme commenced on Monday 28th August and was completed on Sunday 8th October 1978. A total of 48 rotary holes were drilled for an advance of 3 213 metres. Some trouble was experienced with holes caving and a radiometric probe was lost in W.L. 7. (Refer to Table 1 for a summary of the drilling programme).

Analytical results are generally discouraging although $\geq U_3O_8$ grades from radiometric logs showed values up to 0.33 lb $\geq U_3O_8$/ton were obtained from drillhole W.L. 38.

Figure 1 shows the position of the drillholes within the licence area.

.. 2

TABLE 1

DRILLHOLE SUMMARY WILKINSON LAKES

AUGUST - OCTOBER 1978

EL 413

064

Drillhole Number	Date Started	Date Finished	Depth Drilled (metres)	Depth Logged (metres)	Tallaringa 1:250,000 Imperial Marcator Grid Eastings	Northings	Remarks
1	28/8/78	28/8/78	84	80	5851	3130	
2	29/8/78	29/8/78	106	104.5	5858	3123	
3	30/8/78	31/8/78	214	214	5866	3113	
4	31/8/78	1/9/78	102	91.7	5873	3117	
5	1/9/78	6/9/78	135	134.4	5882	3100	
6	6/9/78	7/9/78	187	185.7	5836	3146	
7	7/9/78	10/9/78	208	NIL	5822	3163	Probe lost at 200 m.
8	10/9/78	11/9/78	186	131.5	5807	3176	Caving sand below 132 m
9	12/9/78	12/8/78	98	98.6	5788	3195	
10	12/9/78	13/9/78	186	186.3	5888	3171	
11	13/9/78	13/9/78	124	124.6	5904	3153	
12	14/9/78	14/9/78	50	NIL	5917	3137	Hole caved at 10 m.
13	14/9/78	15/9/78	50	48.4	5931	3118	
14	15/9/78	26/9/78	38	19.3	6019	3102	
15	26/9/78	27/9/78	60	50	6041	3103	
16	27/9/78	27/9/78	39	37.5	6063	3109	
17	28/9/78	28/9/78	32	23.5	6120	2863	
18	28/9/78	28/9/78	5	NIL	6120	2873	Not logged
19	28/9/78	28/9/78	29	29	6121	2883	
20	28/9/78	28/9/78	14	13.8	6121	2904	
21	28/9/78	29/9/78	30	28.8	6122	2928	
22	29/9/78	29/9/78	50	32	6122	2943	
23	29/9/78	29/9/78	48	46	6122	2958	
24	29/9/78	30/9/78	44	44.2	6123	2967	
25	30/9/78	30/9/78	13	12.8	6020	2919	
26	30/9/78	30/9/78	23	22	6031	2927	
27	30/9/78	30/9/78	32	12.6	6038	2934	Caving lignitic sands at 1 metres.
28	30/9/78	30/9/78	26	16.9	6046	2942	Caving gritty lignites a 17 metres

Drillhole Number	Date Started	Date Finished	Depth Drilled (metres)	Depth Logged (metres)	Tallaringa 1:250,000 Imperial Marcator Traverse Grid Eastings	Northings	Remarks
29	30/9/78	30/9/78	30	26.6	6052	2953	
30	1/10/78	1/10/78	20	21.7	5910	3077	
31	1/10/78	2/10/78	92	93	5873	3187	
32	2/10/78	3/10/78	98	98.4	5672	3000	
33	3/10/78	3/10/78	140	138.8	5683	3001	
34	4/10/78	4/10/78	36	34	5705	3003	
35	4/10/78	5/10/78	51	52.6	5693	3003	
36	5/10/78	5/10/78	25	24.8	5727	3007	
37	5/10/78	5/10/78	32	31.5	5761	3005	
38	5/10/78	6/10/78	51	50.5	5917	2987	
39	6/10/78	6/10/78	50	41	5908	2995	Caving lignitic grits at 42 metres
40	6/10/78	6/10/78	53	53.2	5906	2999	
41	6/10/78	6/10/78	44	44	5898	3008	
42	6/10/78	7/10/78	56	33.6	5885	3018	Caving lignitic grits at 34 metres.
43	7/10/78	7/10/78	52	32.6	5881	3023	Caving lignitic grits at 34 metres.
44	7/10/78	7/10/78	27	27.1	6218	2985	
45	7/10/78	7/10/78	20	19.2	6255	2979	
46	8/10/78	8/10/78	23	22.4	6319	2971	
47	8/10/78	8/10/78	62	64.8	6171	2991	
WW1	1/10/78	1/10/78	38	28.8	6070	3010	Caving lignitic sands at 30 metres.

A detailed report covering all aspects of the drilling programme is currently being prepared. A copy will be forwarded to the Mines Department on completion.

4. EXPENDITURE

The total expenditure incurred on E.L. 413 to 30th November 1978 totalled $A 79 378. A breakdown of this expenditure is shown in Table 2.

T A B L E 2

BREAKDOWN OF EXPLORATION EXPENDITURE INCURRED TO 30TH NOVEMBER 1978

ITEM	QUARTERLY EXPENDITURE TO 30/11/1978	TOTAL EXPENDITURE TO DATE
PLANT AND TOOLS	215	482
EXPLORATION		
GEOLOGICAL SERVICES	409	574
GEOCHEMICAL AND ANALYTICAL SERVICES	1256	2822
DRILLING SERVICES	5485	41693
FIELD CONSUMABLE STORES	220	2035
DRILLHOLE LOGGING	12624	12624
OPERATIONS		
VEHICLE OPERATING	2455	4290
RENTAL OF EQUIPMENT	89	489
FREIGHT AND CARTAGE	-	-
TRAVELLING EXPENSES	29	91
PERSONNEL SERVICES	1233	2460
EQUIPMENT OPERATION AND MAINTENANCE	-	599
SALARIES AND WAGES	2357	11219
TOTALS	26372	79378

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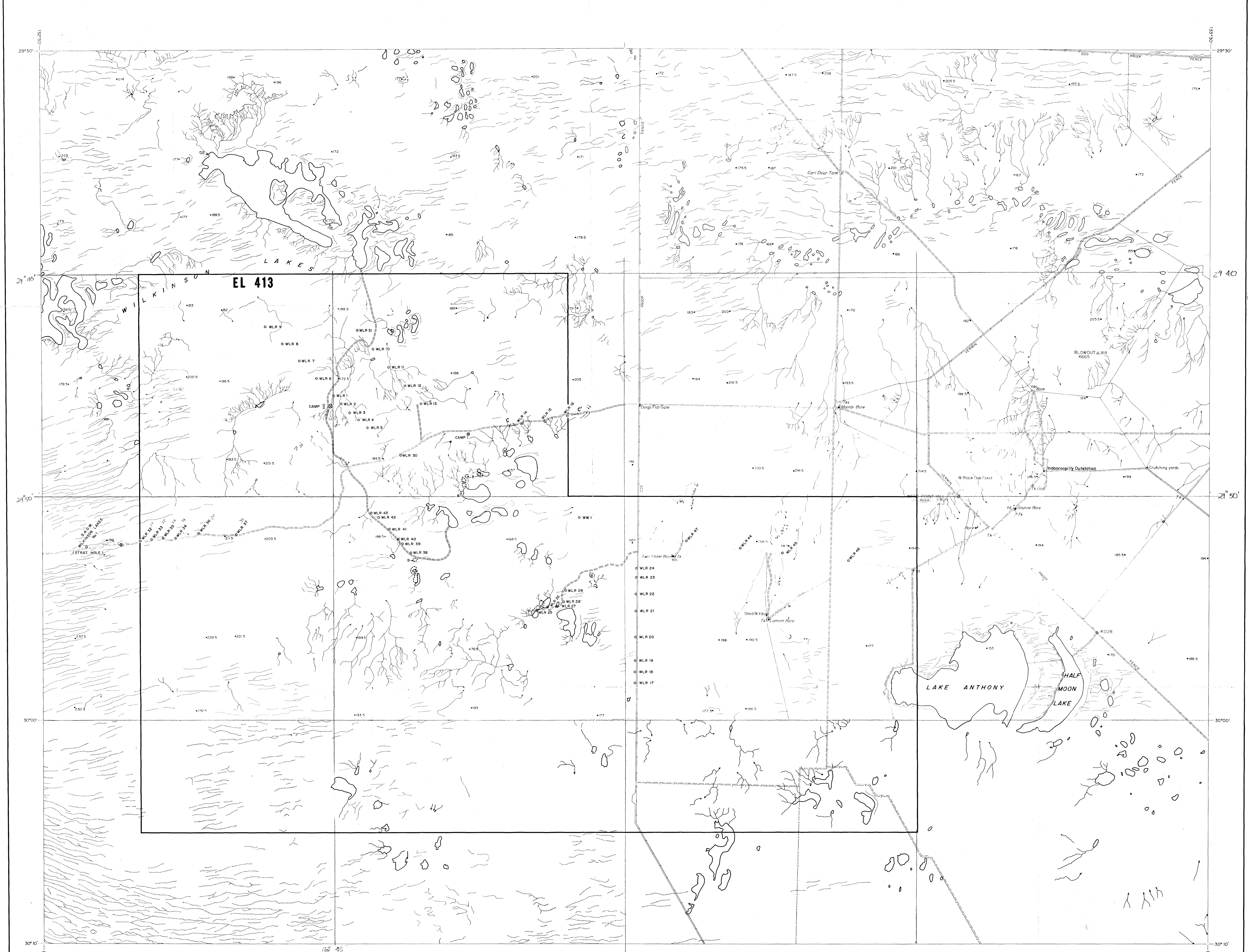

WW1 WATER WELL DRILLED FOR COMMONWEALTH HILL STATION

WLR WILKINSON LAKES ROTARY DRILLHOLES

(B) OUTCROPPING GRANITIC BASEMENT

WILKINSON LAKES PROJECT

E.L. 413, S.A.

DRILL HOLE PLAN
LOCATIONS.

SCALE 1:100,000

Kilometres 2 0 2 4 6 8 10 Kilometres

BP MINING DEV. AUST. PTY. LTD.	
Area: WILKINSON LAKES	
SOUTH AUSTRALIA	
Ref: U1/20-3	
DECEMBER 1978	G. WEBER

(3339-1-2) F.I.

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

068

BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne

Director of Mines
S.A. Department of Mines
and Geological Survey,
P.O. BOX 151
EASTWOOD S.A. 5063

Our Reference	Your Reference	Telephone Extn	Date
		2684800	30th January, 1979.

Dear Sir,

In accordance with Condition 4 of our Exploration Licence No. 413 we are forwarding chip samples from our rotary drilling programme completed October 1978. Enclosed are duplicate copies of each drillhole on a sample submission form completed in this programme.

From discussions with Mines Department personnel, some Mines Department people may wish to examine these cuttings. This is acceptable to us and we would appreciate receiving the results of that work.

The samples are at present stored at BP Largs North installation and we will forward the samples within the next few weeks.

Yours faithfully,

Graeme B. Weber,
Minerals Geologist.

Encl.

RECEIVED
- 1 FEB 1979
DEPT. OF MINES
AND ENERGY
SECURITY
3339

DM - C127

069

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 1

Depth of Hole: 84 m. metres. **Confidential:** Yes/~~No~~

Number of Trays: — Date of Drilling Completion 28 / 08 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEGER

Phone: (03) 2654800 Department/Section: MINERALS

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5851 **Northings:** 3130 **Zone:** 5853

Core Library Details:

Further work required on samples by Core Library staff PACK INTO ~~T~~STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G Graeme Bleeker

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070

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.2

Depth of Hole: 106m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 29/08/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (03) 2684500 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: HR

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5858 **Northings:** 3123 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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Signed G.B.Weber

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071

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.3.

Depth of Hole: 214m. metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... **Date of Drilling Completion** 31/05/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5866 **Northings:** 313 **Zone:** 5H 53.

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Weber

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 4

Depth of Hole: 102 m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 01 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.M.R.A. **Individual:** G.B. WEBER
Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: A13

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5873 **Northings:** 317 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webber

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.S.

Depth of Hole: 135 m. metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 06 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 268 4800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1: 250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 4-13

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5882 **Northings:** 3100 **Zone:** SH 53

Core Library Details:

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Current storage position of samples at the Depot .....

Additional Information

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Signed C.Graeme Blick

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074

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 6.

Depth of Hole: 187m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 07/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G.B. WEBER

Phone: (03) 2684800 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5836 **Northings:** 3146 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G Graeme Bleeker

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L. 7

Depth of Hole: 208m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 10/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLASINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5822 **Northings:** 3163 **Zone:** 5453

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bibby

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076

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL8

Depth of Hole: 186m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 11/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G.B. WEBER

Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH38) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5807 **Northings:** 376 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bleeker

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DM - C127

077

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WLS9.

Depth of Hole: 98m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 12/08/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER
Phone: (08) 268800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: MB.

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5788 **Northings:** 3195 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bleby

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30blks100—12.77 J1603

DM - C127

South Australian Department of Mines and Energy

078

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 10

Depth of Hole: 186m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 13/09/'78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: BPMDA Individual: G.B.WEBER

Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1: 250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5888 **Northings:** 3171 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G Jeanne Bl Weber

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.11

Depth of Hole: 124m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 13/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 2684500 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5904 **Northings:** 3153 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G.B.Weber

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL. 12

Depth of Hole: 50m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 14 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 268 4800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ~~GEE~~ **Section:** .....

100,000 map sheet: WILKINSON (5435) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5917 **Northings:** 3137 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L 13

Depth of Hole: 50m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 15/08/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G.S.WEBER
Phone: (03) 2684200 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH53) 1:250,000 **map sheet:** TALLARINGA

Mineral Tenement No.: 413.

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5931 **Northings:** 318 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L. 14

Depth of Hole: 38 m metres. **Confidential:** Yes/No.

Number of Trays: ..... Date of Drilling Completion 26 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH 53) 1:2 **50,000 map sheet:** TALLARINGA

Mineral Tenement No.: 443

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6019 **Northings:** 3102 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy 083

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.15

Depth of Hole: 60 m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 27/09/'78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.E.R.A. Individual: G.B. WEBER.

Phone: (03) 268800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) 1:2 **50,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 604 **Northings:** 3108 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Blabber

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.16.

Depth of Hole: 39m metres. **Confidential:** Yes/No.

Number of Trays: ..... Date of Drilling Completion 27/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (03) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON ~~LAKES~~ (SH53) 1:2 **50,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413.

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6063 **Northings:** 3109 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L. 17

Depth of Hole: 32m. metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 28 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone: (08) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOOMBI (SG53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: M13

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6120 **Northings:** 2863 **Zone:** SH53

Core Library Details:

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South Australian Department of Mines and Energy 086

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 18

Depth of Hole: 5m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 28 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBBER

Phone (08) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOONBI (5538) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6120 **Northings:** 2873 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bibby

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL. 19

Depth of Hole: 29m metres. **Confidential:** Yes/No.

Number of Trays: ..... Date of Drilling Completion 28 / 08 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 2654500 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: Mount Sir (5538) 1:2 **50,000 map sheet:** TALLARINGA.

Mineral Tenement No.: H13

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6121 **Northings:** 2283 **Zone:** SH 53

Core Library Details:

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy 088

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 20

Depth of Hole: 14m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 28 / 09 / 77

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone: (08) 268800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: TOMKINSON (5538) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 612 **Northings:** 2904 **Zone:** SH 53.

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme B Weber

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South Australian Department of Mines and Energy 089

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL21

Depth of Hole: 30m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 29/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 268 4800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOONBI (SG53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: ~~MOONBI (SG53)~~ 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6122 **Northings:** 2928 **Zone:** 5153

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Blicks

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South Australian Department of Mines and Energy 090

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 22.

Depth of Hole: 50 metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 29 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P. Min. A. Individual: G. B. WEBER

Phone: (03) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: MOONBI (5538) **1:250,000 map sheet:** TALLARINGA.

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 612 **Northings:** 2943 **Zone:** SH53

Core Library Details:

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Blake

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South Australian Department of Mines and Energy 091

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.23

Depth of Hole: 48m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 29/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER
Phone: (08) 268400 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOONBI (SG53) **1:250,000 map sheet:** TALWARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6122 **Northings:** 2958 **Zone:** SH53

Core Library Details:

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 24

Depth of Hole: 44 m. metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 30/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G. B. WEBER.

Phone: (08) 268 4500 **Department/Section:** MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOONBI (SF53-8) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413.

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6123 **Northings:** 2967 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webber

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 25

Depth of Hole: 13m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 30/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER.

Phone: (08) 2684500 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: ~~Mt~~ WILKINSON (SH 53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6020 **Northings:** 2918 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G.B.Weber

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South Australian Department of Mines and Energy

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CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 26

Depth of Hole: 23 m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 30 / 09 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6031 **Northings:** 2927 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webb

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South Australian Department of Mines and Energy

095

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 27

Depth of Hole: 32m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 30/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: BP MDA Individual: G. B. WEBER

Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (~~5738~~) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 443

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6038 **Northings:** 2934 **Zone:** 5H53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

096

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: Wh 28

Depth of Hole: 26m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 30/09/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: BPMDA Individual: G.B. WEBER

Phone: (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH 53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6046 **Northings:** 2942 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webber

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097

South Australian Department of Mines and Energy

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 29

Depth of Hole: 30m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 30 / 09 / '78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: BP MDA Individual: G.B. WEBER

Phone: (08) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA.

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6052 **Northings:** 2853 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bleeker

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South Australian Department of Mines and Energy 098

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 30

Depth of Hole: 20m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 01/10/'78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER

Phone: (08) 268 4500 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH38) 1:250,000 **map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 590 **Northings:** 3077 **Zone:** SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme B Weber

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South Australian Department of Mines and Energy

099

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L. 31

Depth of Hole: 92 m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 02 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER.

Phone: (08) 268 4800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 583 **Northings:** 3187 **Zone:** SI/53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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Signed Jeanne Gibbs

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South Australian Department of Mines and Energy

100

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 32

Depth of Hole: 98m metres. **Confidential:** Yes/No.

Number of Trays: ..... Date of Drilling Completion 03/10/73

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G.B.WEBER

Phone: (03) 268800 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): .....

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: A13

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5672 **Northings:** 3000 **Zone:** SI 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G.B.Weber

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CORE LIBRARY SAMPLE RECEIPT SHEET

101

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 33

Depth of Hole: 140m metres. Confidential: Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 03 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: BPMDA Individual: G.B WEBER

Phone: (08) 263800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): .....

Hundred: ..... Section: .....

100,000 map sheet: WILKINSON (SH38) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: ALB

And, if available, Lat.: ..... Long.: ..... OR Eastings: 5683 Northings: 3001 Zone: SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G Graeme Bluehan

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South Australian Department of Mines and Energy 102

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 34

Depth of Hole: 36m metres. Confidential: Yes/~~No~~

Number of Trays: Date of Drilling Completion 04 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other

Samples Received From: Company: B.P.M.D.A. Individual: G.B. WEBER
Phone: (03) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: Section:

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: A13

And, if available, Lat.: Long.: OR Eastings: 5705 Northings: 3003 Zone: SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

Current storage position of samples at the Depot

Additional Information

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South Australian Department of Mines and Energy

103

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 35

Depth of Hole: 51m. metres. Confidential: Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 05/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (07) 2684500 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... Section: .....

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: 413.

And, if available, Lat.: ..... Long.: ..... OR Eastings: 569 Northings: 3003 Zone: SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Bebbington

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South Australian Department of Mines and Energy 104

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.36

Depth of Hole: 25 m. metres. Confidential: Yes/~~No~~.

Number of Trays: Date of Drilling Completion 05/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER.

Phone: (08) 2684800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: Section:

100,000 map sheet: WILKINSON (SH53) 1:250,000 map sheet: TALLARINGA.

Mineral Tenement No.: 413

And, if available, Lat.: Long.: OR Eastings: 5727 Northings: 3007 Zone: 54

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

Current storage position of samples at the Depot

Additional Information

Signed Graeme Blibbs

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South Australian Department of Mines and Energy

105

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 37

Depth of Hole: 32m metres. Confidential: Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 05 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 268500 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... Section: .....

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: 413

And, if available, Lat.: ..... Long.: ..... OR Eastings: 574 Northings: 3005 Zone: SI53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed G Graeme Blebber

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South Australian Department of Mines and Energy

106

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 38

Depth of Hole: 51m metres. Confidential: Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 06 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: C.B.WEBER

Phone: (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... Section: .....

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: 413.

And, if available, Lat.: ..... Long.: ..... OR Eastings: 5917 Northings: 2987 Zone: SI 53.

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webber

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South Australian Department of Mines and Energy

107

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 39

Depth of Hole: 50m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... **Date of Drilling Completion** 06/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P. M.R.A. **Individual:** G.R. WEBER

Phone: (08) 2684500 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SA38) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5904 **Northings:** 2995 **Zone:** SI 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE BOXES

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Current storage position of samples at the Depot .....

Additional Information

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Signed G.R. Weber

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South Australian Department of Mines and Energy

103

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L. 40

Depth of Hole: 53m metres. Confidential: Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 06/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER

Phone: (08) 2684900 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... Section: .....

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA.

Mineral Tenement No.: 413

And, if available, Lat.: ..... Long.: ..... OR Eastings: 5306 Northings: 2999 Zone: 5#53.

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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South Australian Department of Mines and Energy

109

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.41

Depth of Hole: 44m metres. Confidential: Yes/No.

Number of Trays: Date of Drilling Completion 26/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☐, Uranium ☐, Metallics ☐, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other

Samples Received From: Company: B.P.M.D.A. Individual: S.B.WEBER
Phone: (03) 2684500 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: Section:

100,000 map sheet: WILKINSON (5438) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.: 413

And, if available, Lat.: Long.: OR Eastings: 5898 Northings: 3008 Zone: SI53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

Current storage position of samples at the Depot

Additional Information

Signed S.B.Weber
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South Australian Department of Mines and Energy

110

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ..../..../....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L 42

Depth of Hole: 56m metres. Confidential: Yes/No.

Number of Trays: Date of Drilling Completion 07 / 10 / 76

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other

Samples Received From: Company: B.P.M.D.A. Individual: G.S. WEBER
Phone: (08) 268800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: Section:

100,000 map sheet: WILKINSON (SH 53) 1:250,000 map sheet: TALLARINGA

Mineral Tenement No.:

And, if available, Lat.: Long.: OR Eastings: 588 S Northings: 3018 Zone: SH 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

Current storage position of samples at the Depot

Additional Information

Signed Graeme Blight
Copy 1. Technical Information Section
Copy 2. Core Library

30bks100—12.77 J1603

DM - C127

South Australian Department of Mines and Energy

111

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL43

Depth of Hole: 52m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 07/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.S.WEBER

Phone: (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (SH38) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 43

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 5881 **Northings:** 3023 **Zone:** 54 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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.....

Current storage position of samples at the Depot .....

Additional Information

.....

.....

Signed G.S.Weber

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South Australian Department of Mines and Energy

112

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL44

Depth of Hole: 27m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... **Date of Drilling Completion** 07/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: BPMDA **Individual:** G.B.WEBER

Phone: (08) 2614800 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: Mt Moon 5538 **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6218 **Northings:** 2985 **Zone:** 53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

.....

.....

Signed G.B.Weber

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305/ks100—12.77 J1693

DM - C127

South Australian Department of Mines and Energy

113

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL45

Depth of Hole: 20m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... **Date of Drilling Completion** 07/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: S.P.M.D.A. **Individual:** G.B. WEBER

Phone: (03) 2684800 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: ~~Wentworth~~ McNabi (~~5433~~ 5533) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 443

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6255 **Northings:** 2973 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed .....

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305lks100—12.77 J1603

DM - C127

South Australian Department of Mines and Energy

114

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: W.L.46

Depth of Hole: 23m metres. **Confidential:** Yes/~~No~~

Number of Trays: ..... Date of Drilling Completion 05/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☐, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.

Other .....

Samples Received From: Company: R.P.M.D.A. Individual: G.B.WEBBER

Phone: (08) 2684800 Department/Section: MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOOMBA (SH53) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 637 **Northings:** 2871 **Zone:** 5153

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

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Signed Graeme Webber

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DM - C127

South Australian Department of Mines and Energy

115

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐,
Downhole Hammer ☐, Hand Dug ☐.
2. Whole core ☐, Split core ☐, Slabbed core ☐,
Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WL 47

Depth of Hole: 62 m metres. **Confidential:** Yes/No.

Number of Trays: ..... **Date of Drilling Completion** 05 / 10 / 78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☑, Metallics ☑, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☐.
Other .....

Samples Received From: Company: B.P.M.D.A. **Individual:** G.B.WEBER
Phone: (03) 264800 **Department/Section:** MINING

Location Information:

Descriptive locality (name of place): WILKINSON LAKES

Hundred: ..... **Section:** .....

100,000 map sheet: MOOMBI (SS38) **1:250,000 map sheet:** TALLARINGA

Mineral Tenement No.: 413

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 617 **Northings:** 2991 **Zone:** SH53

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS

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Current storage position of samples at the Depot .....

Additional Information

.....

.....

Signed Graeme Webber

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DM - C127

South Australian Department of Mines and Energy

116

CORE LIBRARY SAMPLE RECEIPT SHEET

Date Samples Received ...../...../.....

Sample Details:

Type of Sample: 1. Diamond ☐, Rotary ☑, Auger ☐, Cable Tool ☐, Downhole Hammer ☐, Hand Dug ☐.

2. Whole core ☐, Split core ☐, Slabbed core ☐, Cuttings ☑, Sludge ☐, Sidewall ☐.

Drillhole Number: WW1

Depth of Hole: 38m metres. **Confidential:** Yes/~~No~~.

Number of Trays: ..... Date of Drilling Completion 01/10/78

Purpose of Drilling: Solid Fuels ☐, Iron Ore ☐, Engineering Investigation ☐, Petroleum ☐, Natural Gas ☐, Stratigraphic ☑, Uranium ☐, Metallics ☐, Non-Metallic Minerals ☐, Drainage ☐, Groundwater Investigation ☑.

Other .....

Samples Received From: Company: B.P.M.D.A. Individual: G.B.WEBER.

Phone: (08) 268 4800 Department/Section: MINING.

Location Information:

Descriptive locality (name of place): WILKINSON LAKES.

Hundred: ..... **Section:** .....

100,000 map sheet: WILKINSON (5438) **1:250,000 map sheet:** TALLARINGA.

Mineral Tenement No.: AW3

And, if available, **Lat.:** ..... **Long.:** ..... OR **Eastings:** 6070 **Northings:** ~~30~~10 **Zone:** SI53.

Core Library Details:

Further work required on samples by Core Library staff PACK INTO STORAGE TRAYS.

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Current storage position of samples at the Depot .....

Additional Information

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.....

Signed G.B.Weber

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BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

117

BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne

Director General
DEPARTMENT OF MINES AND ENERGY
191, Greenhill Road,
PARKSIDE S.A. 5063

Our Reference	Your Reference	Telephone Ext'n	Date
GBW:YT		2684343	30th April, 1979.

Dear Sir,

EXPLORATION LICENCE 413

Progress Report for the Quarter ended 31st. March 1979.

During the quarter under review the following exploration work was carried out : -

Aerial Photographic Interpretation
Hunting Geology and Geophysics (Australia) Pty Ltd was contracted to carry out a photogeological study of E.L. 413 to determine the position of Tertiary Palaeodrainage systems using RC.9 and Landsat imagery.

Field Work
During March 1979 an Alphameter and Toyota mounted radiometric survey was conducted within E.L. 413. The results of this trip are at present being evaluated.

Report Preparations
A report on the 1978 Drilling Programme within E.L. 413 was prepared and dispatched to the Mines Department.

A report detailing the results of the photogeological interpretation work and the alpha and gamma radiometric surveys will be forwarded on completion.

.. 2

EXPENDITURE

The total expenditure incurred on E.L. 413 to 28th February 1979 totalled $ 112 263. A breakdown of this expenditure is attached.

Yours faithfully,

Dr. J.H. Hills
Minerals Exploration Manager.

BREAKDOWN OF EXPLORATION EXPENDITURE INCURRED TO 31st MARCH 1979

ITEM	QUARTERLY EXPENDITURE TO 31/3/1979	TOTAL EXPENDITURE TO DATE
OVERHEADS	500	500
FIXED ASSETS		
PLANT EQUIPMENT	8 654	9 136
TOOL EQUIPMENT	4 834	4 834
EXPLORATION		
GEOLOGICAL SERVICES		718
GEOCHEMICAL AND ANALYTICAL SERVICES	137	3 393
DRILLING SERVICES		41 712
AERIAL PHOTOGRAPHIC SERVICES	168	168
FIELD CONSUMABLE STORES	1 130	3 165
EXPLORATION TENEMENT FEES	25	25
DRILLHOLE LOGGING		12 624
OPERATIONS		
VEHICLE OPERATING	540	4 830
RENTAL OF EQUIPMENT	975	1 560
FREIGHT AND CARTAGE	1 632	1 632
TRAVELLING EXPENSES		534
PERSONNEL SERVICES	757	3 217
EQUIPMENT OPERATION AND MAINTENANCE	178	777
SALARIES AND WAGES	7 908	23 438
	27 438	112 263

April 30th, 1979

QUARTER ENDING MARCH 1979

PROSPECTIVE STATUS OF E.L. 413

Anomalous radioactivity (greater than 4 times background) has been intersected in 9 drillholes. The radiometric anomalies are generally on the contact between the Eocene Pidinga Formation which consists of lignites and the overlying Garford Formation which is comprised of sands and clays.

The mineralisation has only, to date, been tested with widely spaced holes.

The area covered by Exploration Licence 413 is considered prospective and further drilling is recommended.

J.H. Hills
Minerals Exploration Manager

The Director of Mines
Department of Mines and Energy
191, Greenhill Road,
PARKSIDE S.A. 5063

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

121

BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: AustBeePee, Melbourne

Director General
Department of Minerals and Energy
191, Greenhill Road
PARKSIDE S.A. 5063

Our Reference	Your Reference	Telephone Ext'n	Date
GBW:YT	-	2684343	31st July, 1979.

Dear Sir,

EXPLORATION LICENCE 413.

Progress Report for the Quarter Ended 30th June 1979.

During the quarter under review the following exploration work was carried out: -

Field Work

An Alphameter survey and Toyota mounted radiometric survey continued from March 1979 to mid April 1979.

Early in June a reverse circulation drilling programme was commenced in the Wilkinson Lakes area. At month's end a total of 23 holes had been completed for an advance of 807.75 metres.

Report Preparation

A report detailing the results of the photogeological interpretation work and the alpha and gamma radiometric surveys was prepared. This report will be forwarded when completed.

.. 2

Expenditure

The total expenditure incurred on E.L. 413 to the 30th June 1979 totalled $156,075. A breakdown of this expenditure is attached.

Yours faithfully,

Dr. J.H. Hills,
Minerals Exploration Manager.

Encl. 1

BREAKDOWN OF EXPLORATION EXPENDITURE INCURRED TO 30TH JUNE 1979

ITEM	QUARTERLY EXPENDITURE TO 30TH JUNE 1979	TOTAL EXPENDITURE TO DATE
OVERHEADS	606	1 106
FIXED ASSETS		
Plant Equipment	975	10 111
Tool Equipment	276	5 110
EXPLORATION		
Geological Services	6	724
Geochemical Services	219	3 612
Drilling Services	10 161	51 873
Aerial Photographic Services	1 458	1 626
Field Consumable Stores	2 755	5 920
Exploration Tenement Fees	2 345	2 370
Drillhole Logging	4 938	17 562
OPERATIONS		
Vehicle Operation and Maintenance	2 527	7 357
Rental of Equipment	344	1 904
Charter Aircraft	460	460
Freight and Cartage	70	1 702
Travelling Expenses	1 445	1 979
Personnel Services	2 625	5 842
Trade Expenses	14	14
EQUIPMENT OPERATION AND MAINTENANCE	1 260	2 037
SALARIES AND WAGES	9 795	33 233
TOTAL :	42 279	154 542

GBW:YT
9/8/1979.

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

124

BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne

Director General
Department of Minerals and Energy
191 Greenhill Road
PARKSIDE S.A. 5063

Our Reference	Your Reference	Telephone Ext'n	Date
GBW:YT EP/8/3		2684343	1st November, 1979

Dear Sir,

EXPLORATION LICENCE 413

Progress Report for the Quarter Ended 30th September 1979

During the quarter under review the following exploration work was carried out:-

Field Work

The drilling programme which had commenced in early June was completed in mid-September. A total of 964 metres were drilled within E.L. 413.

Report Preparation

A report detailing the results of the photogeological interpretation work and the alpha and gamma radiometric surveys was completed and forwarded to your department during the quarter. A detailed report on the drilling programme was commenced during the period under review. This report will be forwarded when completed.

.. 2

Expenditure

The total expenditure incurred on E.L. 413 to the 30th September 1979 totalled $166 762. A breakdown of this expenditure is attached.

Yours faithfully,

Dr. J.H. Hills,
Minerals Exploration Manager.

Encl. 1

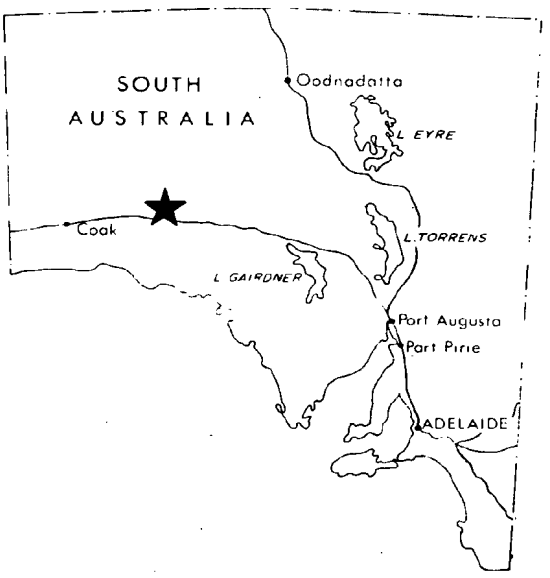
BREAKDOWN OF EXPLORATION EXPENDITURE INCURRED TO 30TH SEPTEMBER 1979

ITEM	TOTAL 1ST YEAR EXPENDITURE TO 30TH JUNE 1979	QUARTERLY EXP. TO 30TH SEPT. 1979	TOTAL EXPENDITURE TO DATE
OVERHEADS	1 106	-	1 106
FIXED ASSETS			
Plant Equipment	10 111	-	10 111
Tool Equipment	5 110	-	5 110
EXPLORATION			
Geological Services	724	-	724
Geochemical Services	3 612	1 310	4 922
Drilling Services	51 873	7 393	59 266
Aerial Photographic Services	1 626	-	1 626
Field Onsumable Stores	5 920	254	6 174
Exploration Tenement Fees	2 370	(337)	2 033
Drillhole Logging	17 562	(748)	16 814
OPERATIONS			
Vehicle Maintenance	7 357	1 058	8 415
Rental of Equipment	1 904	693	2 597
Charter Aircraft	460	-	460
Freight and Cartage	1 702	300	2 002
Travelling Expenses	1 979	91	2 070
Personnel Services	5 842	233	6 075
Trade Expenses	14	-	14
EQUIPMENT OPERATIONA AND MAINTENANCE	2 037	181	2 218
SALARIES AND WAGES	33 233	1 792	35 025
TOTAL:	154 542	12 220	166 762

Exploration Licence 413 was granted an extension for one year on the 3rd September, 1979. A total of the first years expenditure is quoted with the first quarterly expenditure for the second year.

GBW:YT
1/11/1979

BP MINERALS AUSTRALIA PTY. LTD.



LOCATION MAP

1979

REPORT ON PHOTOGEOLOGICAL INTERPRETATION STUDY AND A RADIOMETRIC SURVEY E.L. 413 WILKINSON LAKES AREA SOUTH AUSTRALIA

G.B. WEBER
MELBOURNE - VICTORIA
JUNE, 1979.

SUMMARY

Exploration Licence 413 covers an area of 2 460 square kilometres south of the Wilkinson Lakes in central-western South Australia. During March 1979, Hunting Geology and Geophysics (Australia) Pty Ltd were engaged to undertake a Photogeological study of the palaeo-drainage system within E.L.413. The study showed that to the north of a central ridge of basement rocks a main palaeochannel exists which presently flows north-east to Wilkinson Lakes. Deflation depressions south of the central basement high have obscured any palaeodrainage system that may have occurred in this area.

During April, a field trip was conducted to test certain areas with alphameters around drillholes which gave anomalous radiometric readings during the 1978 drilling programme. These instruments were inserted in grids over the drillhole to determine whether radon gas emanating from surface sands reflect deeper uranium mineralisation. Some small anomalous zones were delineated by this method and will be tested by further drilling. All tracks together with some cross-country traverses were completed, using a vehicle mounted spectrometer. No anomalous radiometric readings were obtained that could not be explained by local features such as lake surfaces, black soils and laterite outcrops.

KEY WORDS

Wilkinson Lakes
alphameters
spectrometer surveys
uranium mineralisation
palaeochannels

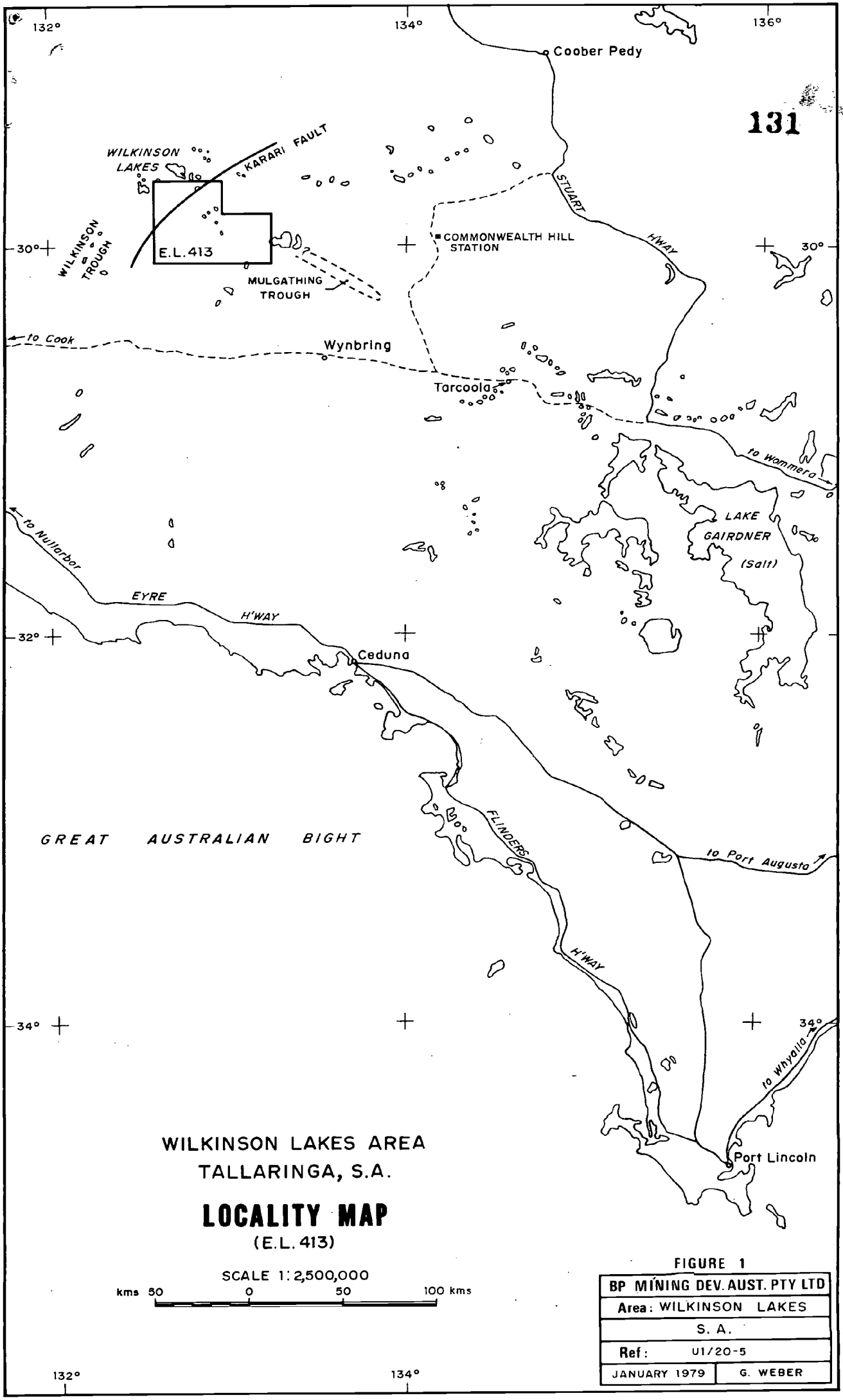
CONTENTS

LIST OF ILLUSTRATIONS

TABLES

FIGURES

APPENDIX



WILKINSON LAKES AREA
TALLARINGA, S.A.

LOCALITY MAP

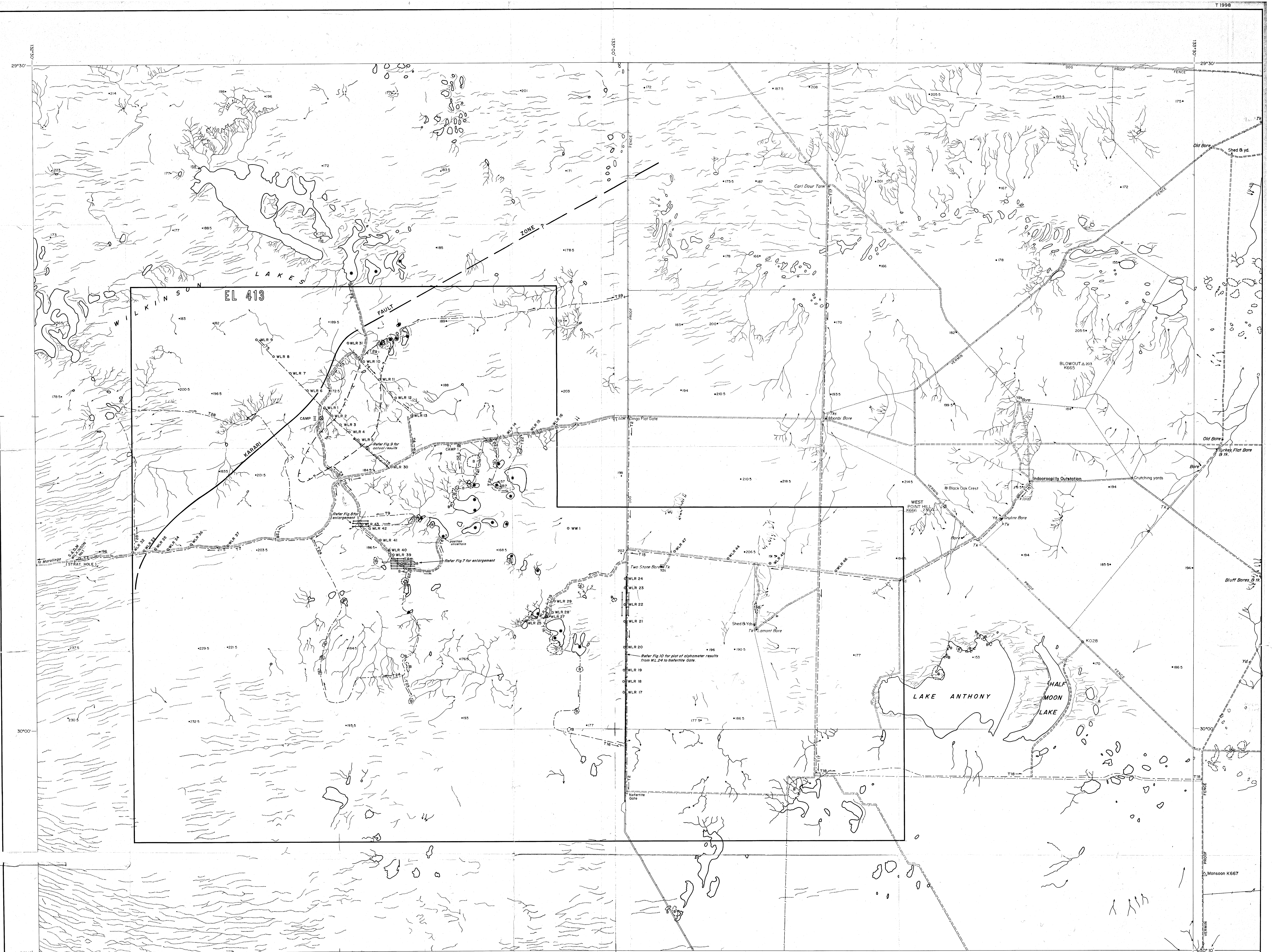
(E.L. 413)

SCALE 1:2,500,000

kms 50 0 50 100 kms

FIGURE 1

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-5	
JANUARY 1979	G. WEBER



EL 413, S.A.
WILKINSON LAKES PROJECT

ALPHAMETER AND VEHICLE MOUNTED SPECTROMETER TRAVERSES

SCALE 1:100,000

Kilometres 2 0 2 4 6 8 10 Kilometres

Legend

- FAULT SYSTEM
- FAULT SYSTEM INFERRED
- SUBSIDIARY TROUGH DIMENSIONS INFERRED
- T16 VEHICLE MOUNTED SPECTROMETER TRAVERSES
- ALPHAMETER GRIDS AND TRAVERSES
- WW1 WATER WELL DRILLED FOR COMMONWEALTH HILL STATION
- WLR 5 WILKINSON LAKES ROTARY DRILLHOLES (BPMDA, 1979)
- (B) OUTCROPPING GRANITIC BASEMENT
- RADIOMETRIC ANOMALY

INDEX MAP

	132°30'–133°	133°–133°30'	133°30'–134°
29°30'–30°00'	WILKINSON 5438	MOONBA 5538	JUMBUCK 5638
30°00'–30°10'	LAKE BRING 5437	MOBELLA 5537	MULGATHING 5637

S. A. DEPT. OF MINES PRELIMINARY COPIES (AS AT JUNE 1979)
(Based on Clarke's 1858 Fig.)

LOCATION MAP

W.A. N.T. QLD. S.A. N.S.W. VIC.

T.N. M.N. 5°

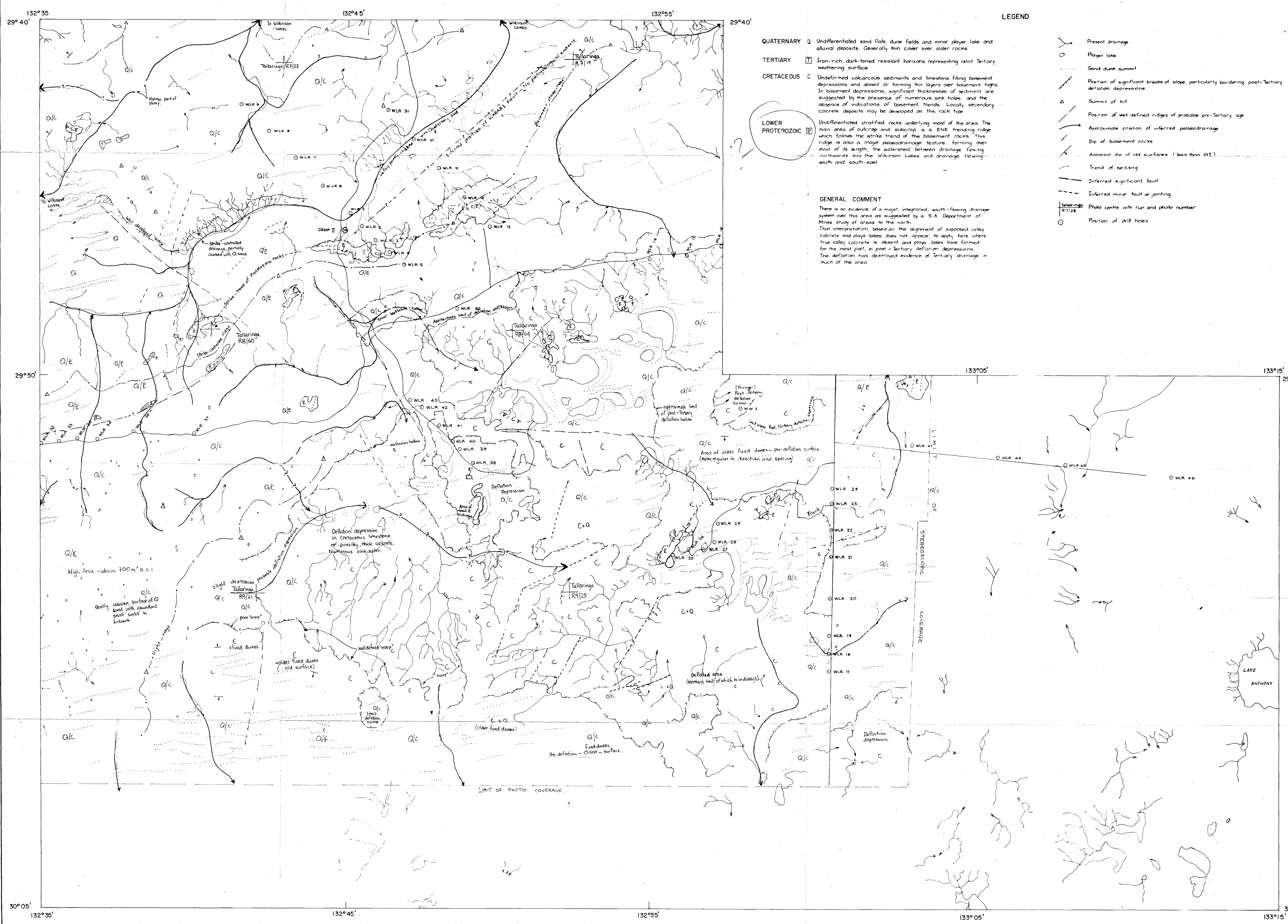
FIGURE 2	
BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
SOUTH AUSTRALIA	
Ref: U1/20-5	
JUNE 1979	G. WEBER
Drafted by: C. MACLEAY	

(3339-3-3)

PHOTOGEOLOGICAL WORKSHEET OF THE
PALAEODRAINAGE SOUTH OF WILKINSON LAKES, SOUTH AUSTRALIA.

EXPLORATION LICENCE 413

Photo scale 1:86 500


132°35'
132°45'
132°55'
133°05'
133°15'
29°40'
29°50'
30°05'
To Wilkinson Lakes.
Wilkinson Lakes.
Tallaringa R7/28
Tallaringa R7/19
Tallaringa R8/60
Tallaringa R8/64
Tallaringa R9/21
Tallaringa R9/25
Narrow part of Valley.
CAMP II
Strike-controlled drainage, partially choked with Q sand
Strike-trend of Proterozoic rocks
High Area - above 700m a.s.l.
Gently uneven surface of Q sand with abundant small sinks in hollows.
slight depression
poor 'scarp'
fixed dunes
older fixed dunes (old surface)
Well defined 'scarp'
Deflation depression in cretaceous limestone or possibly thick calcrete. Numerous sink holes.
Deflation Depression
Area of older fixed dunes - pre-deflation surface (more regular in direction and spacing)
approximate limit of post-Tertiary deflation hollow
Deflated area (Northern limit of which is indistinct)
(older fixed dunes)
fixed dunes
Pre-deflation - older - surface.
Deflation depression.
Track
LIMIT OF STEREOSCOPIC COVERAGE
LIMIT OF PHOTO COVERAGE
LAKE ANTHONY
WLR 43
WLR 42
WLR 41
WLR 40
WLR 39
WLR 38
WLR 44
WLR 45
WLR 46
WLR 24
WLR 23
WLR 22
WLR 21
WLR 20
WLR 19
WLR 16
WLR 17
WLR 29
WLR 28
WLR 27
WLR 31
WLR 30
WLR 13
WLR 11
WLR 10
WLR 9
WLR 8
WLR 7
WLR 6
WLR 5
WLR 3
WLR 2
WW 1
LEGEND
QUATERNARY Q Undifferentiated sand flats, dune fields and minor player lake and alluvial deposits. Generally thin cover over older rocks.
TERTIARY T Iron-rich, dark-toned resistant horizons representing relict Tertiary weathering surface.
CRETACEOUS C Undeformed calcarcous sediments and limestone filling basement depressions and absent or forming thin layers over basement highs. In basement depressions, significant thicknesses of sediment are suggested by the presence of numerous sink holes and the absence of indications of basement trends. Locally secondary calcrete deposits may be developed on this rock type.
LOWER PROTEROZOIC P Undifferentiated stratified rocks underlying most of the area. The main area of outcrop and subcrop is a ENE trending ridge which follows the strike trend of the basement rocks. This ridge is also a major palaeodrainage feature, forming over most of its length, the watershed between drainage flowing northwards into the Wilkinson Lakes and drainage flowing south and south-east.
Present drainage
Player lake
Sand dune summit
Position of significant breaks of slope, particularly bordering post-Tertiary deflation depressions.
Summit of hill
Position of well defined ridges of probable pre-Tertiary age
Approximate position of inferred palaeodrainage
Dip of basement rocks
Apparent dip of old surfaces (less than 10%)
Trend of bedding.
Inferred significant fault.
Inferred minor fault or jointing.
Tallaringa R 7/28 Photo centre with run and photo number
Position of drill holes
GENERAL COMMENT
There is no evidence of a major, integrated, south-flowing drainage system over this area as suggested by a S.A. Department of Mines study of areas to the north.
That interpretation, based on the alignment of supposed valley calcrete and playa lakes does not appear, to apply here where true valley calcrete is absent and playa lakes have formed for the most part, in post-Tertiary deflation depressions.
The deflation has destroyed evidence of Tertiary drainage in much of the area.
0 1 2 3 4 5 6 7 8 9 10 Km

Photographs utilised: 44 colour aerial photographs with 80% overlap at a scale of 1:86 500, taken at 7400 m with a super-wide angle lense.

No field work incorporated in the project.

Undertaken on behalf of B.P. Mining Development Australia Proprietary Limited by Hunting Geology and Geophysics Australia Pty Limited.
Canberra, March 1979
Job No. GA 2/79

3339-3-6

FIGURE 3	
BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
SOUTH AUSTRALIA	
Ref: U1/20-5	
JUNE 1979	G. WEBER

1. INTRODUCTION

Exploration Licence 413 covers an area of 2 460 square kilometers in central-western South Australia in the vicinity of Wilkinson Lakes (refer Figure 1). The licence area lies on the north-western edge of the Gawler Craton where the arcuate northeast - south west trending Karari Fault forms the Wilkinson Trough to the north west.

This report details the Photogeological interpretation of the licence area contracted to Hunting Geology and Geophysics (Australia) Pty Ltd during March and the field trip during April 1979 to the licence area where an Alphameter and Toyota mounted radiometric survey was carried out.

2. ACCESS, CLIMATE AND VEGETATION

Access to the licence area is by graded tracks from Tarcoola through Mulgathing and Commonwealth Hill Pastural Stations. The major part of E.L.413 lies to the west of the Dingo Fence (refer Figure 2). The main access track runs west from the Dingo Fence Gate to Maralinga, with tracks off this road which were originally graded as firebreaks for a large scrub fire which burnt through the area in 1972. The other main access track runs beside the Dingo Fence (north-south). Off track access is good in 4 W.D. vehicles.

The climate is arid with long hot summers and short cool winters. The average rainfall is 15 centimetres varying between 4 and 36 centimetres. The bulk of the rain falls in the cooler winter months but heavy summer thunderstorms also occur.

Although the vegetation was severely affected by a bush fire in 1972, the area contains small clumps of fir and desert mulga. General ground vegetation is mainly saltbush with annual grasses which shoot after rains. The topography is flat to gently undulating with occasional breakaways which form on the edge of drainage channels.

3. PREVIOUS EXPLORATION

Previous exploration work has been described by Weber (1979) in a report detailing drilling within E.L.413.

4. GEOLOGY

On the Gawler Craton, which most of the licence area covers, the granitic metasediments are believed to be Archaean in age which have been intruded by later Granites during the Kimban Orogeny which occurred about 1 800 Ma. The Gawler Craton, in general, is believed to have stabilised about 1 400 Ma, however, in the licence area, the Karari Fault is still thought to be active. This fault forms the north-western edge of the Gawler Craton in this area.

In early Tertiary times, a drainage system developed which can be recognised north of the licence area on landsat imagery. This system flows north-south with east-west trending branches. Within the drainage channels a sequence of sands, clays and lignites were deposited. To the north and east of the licence area this drainage system can be seen as a subtle topographic depression. However, within the licence area itself, definite palaeochannels are very difficult to determine on the ground although evidence for their presence was intersected in the first drilling programme.

5. PROGRAMME

5.1 Photogeological Study

5.1.1 Background

During February 1979 it was decided to engage Hunting Geology and Geophysics before the 1979 field season commenced, to contour the licence area and, from the contours, determine the position of the major Palaeochannels. Huntings were unable to vertically scale to the accuracy needed from the R.C.9 photographs to show the subtle depressions and suggested that a Photogeological study of R.C.9 photographs and landsat imagery be undertaken. This study was completed during March 1979. A letter report was submitted to BP and can be found in Appendix 1 and the Map as Figure 3.

5.1.2 Technical Detail

Fifty colour aerial photographs with 80% forward overlap at the scale of 1:86500.

The Photogeological detail was annotated directly in ink onto an acetate drainage map. A Zeiss N2 mirror stereoscope with $1\frac{1}{2}$ times and 6 times magnification was used. The subtle nature of the features of interest necessitated the constant use of stereoscope techniques designed to maximise vertical exaggeration.

Reference was made to one landsat scene, Band 5, scale 1:1 000 000 scene 108-081.

5.1.3 Conclusions

The conclusions of the Photogeological study are as follows:

(i) Lack of a more extensive photo-coverage did not allow a regional picture to be obtained. This photo limitation is due to Licence area being within the Woomera Restricted Area where orders on air photographs are restricted to areas of immediate interest to the user.

(ii) The oldest palaeosurface is represented in the northern most part of the area as a few isolated remmants of a lateritic weathering surface. They occur as low mesas and are the only evidence of a Tertiary surface of this type.

(iii) The whole area has been covered by thin Quaternary sand-flat and dune deposits. The dunes are well vegetated longitudinal dunes of wide and regular spacing.

(iv) The main part of the study area is made up of a gently undulating surface with a large number of depressions in it. The flat areas are formed on flat lying calcareous sediments of assumed Mesozoic age.

Depressions in this surface are irregular in shape and have a generally well defined 'scarp' off the higher surface. They have irregular floors and form areas of internal drainage into playa lakes. Calcareous sediments and locally basement rocks are exposed in them. The form and general aspect of the depressions suggest a deflation origin and not a fluviatile origin. The presence locally of two parallel scarps suggests that there were at least two periods of deflation.

(v) The process of deflation has destroyed much evidence of earlier Tertiary drainage systems.

The overall result of the Photogeological study was to indicate that palaeochannels could not be readily recognised within the major portion of E.L.413, although channels can be recognised on Landsat imagery to the north, east and south of the licence area.

5.2 Radiometric Survey

5.2.1 Background

A radiometric survey was carried out within the licence area during April 1979. A party of four people completed a vehicle mounted spectrometer survey, an alphameter survey over certain areas of interest, and followed up on the ground radiometric anomalies indicated in an earlier aerial survey over the licence area. During the follow up work, all basement outcrops found were examined for gossans and anomalous radioactivity.

5.2.2 Alphameter Survey

Several areas were selected to determine whether radon gas, emanating from mineralised zones intersected in the earlier drilling programme from a depth of approximately thirty metres, could be monitored at surface.

A large grid was pegged around WLR38 and several traverse lines pegged over drillholes WLR43 and WLR22. Long alphameter traverses were completed from WLR5 to WLR30 and south along the Dingo Fence line from WLR24. Several small lines were pegged over the edge of lakes in the vicinity of WLR26 and WLR27. At all alphameter sites, the surface gamma radiation was measured with a hand held spectrometer.

5.2.2.1 Technical Detail

5.2.2.1.1 Alphameters

Alphameters are an intergrating radon meter produced by Alphanuclear Ontario Canada. These alphameters record alpha radiation produced from radon gas and detected by a silicon diffused junction. Holes were drilled using a Pionjar hand held rotary-percussion drill to a depth of 18 inches. The holes were drilled approximately 24 hours before the alphameters were inserted. When the alphameters were inserted, the soil was packed in around the instruments and the rubber cap put over the top. Occasionally, rubber caps and alphameters were removed by inquisitive dingoes.

5.2.2.1.2 Scintillometer

The scintillometer is a McPhar T.V.I. Serial No.5 spectrometer.

5.2.2.2 Results

The alphameters initially caused some problems with some meters reading anomalously high and/or low, and these meters, when recognised, were removed. The daily readings were recorded (refer Table 1) and histograms plotted of the readings obtained (refer Figures 4,5 and 6). There is a definite shift in the mean counts per hour between the 900 series numbers and the 16 and 1 900 series numbers of some 15 counts per hour. The cause of this shift cannot be adequately explained. The result of this variation in means

between the two sets of data caused problems with attempts to contour results. However, the grid over WL38 has been contoured with a background of 60 c.p.h. and at 20 c.p.h. intervals (refer Figure 7).

Standard Deviations and Means were calculated for the various instrument numbers and over the grid around WL38. The results are tabulated below.

TABLE 2.

Calculations of Mean and Standard Deviations of Alphameter Results

	No. of Readings	Mean (cph)	Standard Deviation (cph)
All Alphameter Results	712	72.3	32.3
900 Series Numbers	301	81.0	23.7
1 600 Series Numbers	212	68.7	41.7
1 900 Series Numbers	194	60.3	21.8
1 600 & 1 900 Series Numbers	406	64.7	33.9
Alphameters used in grid around WL38	310	63.7	20.6

The differing results of the 900 series numbers and the 1 600 and 1 900 series numbers numerically support the graphical evidence as seen between the histograms of the counts as plotted in Figures 5 and 6.

Three alphameter lines 200 metres apart were placed around WL43 (refer Figure 8). This shows one anomalous zone some 150 metres to the west of WL43.

A line of alphameters was put in between WL30 and WL5 (refer Figure 9). The results show an anomalous zone to the south-east of WL5 and then a very erratic zone some two kilometres to the south-east. This zone probably reflects shallow basement rocks.

The long alphameter traverse from drillhole WL24 to Nefertite Gate (refer Figure 10) shows anomalous alphameter counts over the first ten kilometres which corresponds to the area drilled. However, most of these anomalies are spot highs except in the vicinity of drillhole WL22. Two parallel lines 200 metres west and east were put in around WL22. These also show anomalous zones in the vicinity of WL22.

ALPHAMETER RESULTS

WILKINSON LAKES

MARCH - APRIL 1979

TABLE 1

DAY	1601	1602	1603	1604	1605	1606	1607	1608	1609	1610	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
1	57.8	74.8	44.4	51.0	74.6	69.2	49.6	85.5	45.3	58.9	35.7	56.3	56.9	50.8	81.0	53.3	47.6	51.7	50.5	45.3
2	56.8	51.3	41.3	71.1	70.3	25.1	53.5	45.8	59.5	44.9	37.4	40.2	57.4	59.4	67.8	N/R	37.9	50.7	48.4	40.2
3	41.4	59.6	41.6	42.5	59.9	41.2	53.1	43.3	47.2	49.5	TESTED	48.5	66.3	57.6	75.1	N/R	39.4	50.1	44.4	53.9
4	400.4	46.8	53.6	54.6	61.0	47.6	49.4	58.9	50.0	48.2		45.5	45.8	46.2	38.3	40.3	40.9	42.1	49.7	50.3
5	TESTED	53.1	53.3	40.8	157.0	38.5	55.6	50.1	51.7	N/R		39.7	TESTED	49.8	42.5	55.9	55.0	40.9	58.3	33.9
6		42.4	38.6	44.9	100.0	42.6	42.9	44.9	43.3	57.0		44.3	46.9	47.1	40.8	44.8	46.9	48.6	57.9	52.2
7		45.0	50.0	41.3	62.2	57.0	48.0	46.7	47.2	56.6		57.2	42.6	51.0	TESTED	58.9	59.3	34.4	49.9	45.2
8		53.7	51.5	52.9	139.9	59.2	49.8	53.5	124.2	62.7		93.0	63.7	50.9		60.9	88.4	67.6	80.6	58.7
9		59.5	91.0	105.1	148.1	40.6	72.2	46.1	98.3	55.0		95.3	89.8	53.5		52.5	58.4	79.9	53.5	61.6
10		65.2	58.9	65.2	190.4	63.2	60.4	42.0	67.0	73.1		71.4	56.2	64.8		50.4	39.0	51.6	115.6	68.5
11		55.7	68.0	70.8	127.6	51.8	78.6	58.1	59.7	62.8		61.3	54.0	53.1		50.6	76.1	52.4	46.9	
12		60.6	72.0	48.5	88.6	49.2	60.6	47.2	42.5	50.4		57.9	37.7	36.8		45.1	50.3	38.0	57.2	63.1
13		63.9	62.1	63.4	TESTED	54.4	61.5	57.5	63.8	73.4		69.0	37.7	40.7		29.0	56.5	52.7	70.5	42.5
14		39.3	41.7	50.8		47.0	51.8	55.5	45.4	44.0		58.3	46.7	41.6		35.4	53.7	69.6	36.2	45.3
15		34.3	55.1	51.1		80.4	65.7	141.1	67.1	59.7		66.9	48.4	54.7		34.5	53.7	64.2	66.7	65.5
16		55.9	184.8	87.3		98.3	76.3	73.8	151.2	91.2		83.3	79.6	50.1		116.9	432.7	93.1	101.0	253.1
17		135.5	70.6	107.8		41.6	97.7	55.1	64.1	125.8		174.7	48.7	118.0		127.1	120.1	46.2	42.2	85.2
18		66.2	68.1	66.8		53.2	63.5	64.8	45.2	54.8		57.1	36.8	79.4		52.2	61.6		57.4	53.5
19		58.9	71.8	72.6		50.0	54.7	77.9	50.1	65.0		57.4	60.3	93.9		55.1	57.4		89.6	71.9
20		116.6	61.6	89.4		61.4	63.5	59.1	78.5	66.5		77.4	58.6	96.3		60.8	77.7		81.4	54.8
21		62.0	95.6	62.6		78.9	50.2	78.5	60.3	63.7		61.7	61.8	62.8		60.6	59.7	55.1	60.7	68.6
23		40.6	72.5	56.3		47.9	63.4	44.9	69.3	33.5		48.8	61.8	68.7		48.5	54.2	34.0	69.0	65.1
24		69.8	64.8	61.9		89.6	58.6	66.9	61.1	104.3		80.2	66.3	104.7		70.8	107.1	101.7	72.3	83.9
25		52.6	142.4	443.7		72.4	N/R	111.3	127.1	3902.4		17.3	14.2	5991.6		356.5	986.8	576.5	49.5	N/R
26		83.9	75.4	75.3		62.6	39.1	45.0	69.1	80.6		64.6	39.1	120.7		80.1	136.4	66.5	80.3	N/R

REMOVED NOT READING

REMOVED BECAUSE OF ANOMALOUS READINGS

REMOVED DUE TO VERY LOW READINGS

REMOVED ALPHAMETER MALFUNCTIONING

INSERTED FOR FOUR DAYS

N/R NO READING

ALPHAMETER RESULTS

WILKINSON LAKES

MARCH APRIL 1979

TABLE 1

DAY	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994
1	60.6	62.0	64.0	1133.5	81.2	310.2	55.2	N/R	77.9	86.4	71.6	100.3	112.6	37.8	53.1	79.2	174.3	84.3	N/R	40.2
2	80.7	60.9	65.4	155.5	110.7	75.0	64.3	TESTED	153.1	66.7	76.4	60.7	198.0	53.5	65.9	75.7	229.5	62.7	N/R	52.5
3	78.7	82.7	76.4	818.3	104.6	81.2	53.9	110.6	82.8	68.9	72.1	65.2	28.1	54.2	50.5	65.7	98.3	64.1	91.2	48.7
4	67.7	105.2	63.7	616.8	68.3	57.2	52.3	85.0	157.0	80.5	64.5	60.9	181.4	86.7	1238.2	184.8	165.6	66.8	78.8	56.7
5	85.3	70.2	62.2	TESTED	86.1	63.8	77.4	71.2	TESTED	63.8	75.5	62.9	153.4	828.8	TESTED	84.5	369.4	56.6	77.4	64.1
6	61.7	65.2	107.6		80.4	90.4	44.0	68.5		63.9	63.0	64.8	TESTED	TESTED		74.8	TESTED	66.8	65.2	56.3
7	47.5	79.9	80.6		58.7	81.8	64.2	74.4		73.4	75.1	74.1				78.4		66.8	84.3	54.7
8	103.5	78.8	62.9		62.2	146.1	108.1	67.3		94.4	61.4	136.7				69.3		116.3	104.3	76.0
9	82.5	87.0	108.5		117.3	N/R	66.8	92.7		80.1	97.9	94.4				90.3		100.1	65.5	72.5
10	108.9	144.7	120.0		139.7	N/R	20.8	50.2		111.2	109.6	134.6				122.7		27.0	175.2	74.3
11	74.2	73.2	104.2		34.5	95.6	TESTED	72.7		70.6	103.6	78.1				169.3		93.5	114.8	44.8
12	184.5	82.4	99.1		125.8	62.3		57.6		33.7	79.2	139.0				93.6		85.0	63.8	93.0
13	71.2	82.8	67.0		56.1	371.1		65.0		85.3	85.2	86.4				54.9		89.8	45.8	57.0
14	29.6	46.9	79.6		TESTED	TESTED		71.6		61.5	49.8	104.4				63.3		86.8	42.1	66.0
15	90.3	56.3	72.4					85.9		79.6	74.4	53.8				71.1		75.4	74.9	52.2
16	117.9	95.1	110.8					137.8		543.7	146.9	N/R				138.3		93.5	137.6	112.6
17	87.2	68.8	77.2					121.3		117.4	93.9	77.3				89.6		74.0	76.4	84.9
18	173.9	64.9	96.8					80.8			136.8	77.1				66.8		96.9	61.5	94.7
19	N/R	66.3	104.0				89.1	59.9			75.1	76.3				79.1		90.3	67.1	61.9
20	TESTED	58.5	89.5				102.4	75.7			62.2	96.7				82.0		83.5	67.8	82.5
21		83.7	88.8				80.9	71.6		73.7	63.3	97.8				64.0		77.2	93.9	67.7
22		82.5	75.6				62.7	69.0		89.9	83.8	80.7				75.8		74.5	87.2	69.6
23		118.0	81.0				78.6	86.4		70.9	64.6	110.8				125.2		112.0	109.7	131.8
24		44.5	128.3				121.6	92.0		698.4	313.4	100.9				836.2		376.8	647.0	155.1
25		84.3	92.9				63.5	72.2		N/R	110.5	79.3				134.3		102.6	113.1	102.7

REMOVED

REMOVED DUE TO VERY HIGH READINGS

ALPHAMETER WOULD NOT EXCITE

REMOVED DUE TO VERY HIGH READINGS

INSERTED IN TEST PIT AT CAMP.

REMOVED DUE TO ANOMALOUS READINGS

INSERTED FOR FOUR DAYS

REMOVED DUE TO HIGH READINGS

REMOVED DUE TO VERY HIGH READINGS

REMOVED DUE TO VERY HIGH READINGS

REMOVED DUE TO VERY HIGH READINGS

Several small alphameter traverses were completed around drillholes WL26 and 27. The lake surfaces scintillometer readings are so high that meaningful alphameter readings were not obtained.

5.2.3 Vehicle, mounted Spectrometer Survey

A decision was made to use a Toyota mounted spectrometer to follow up radiometric anomalies on the ground that were outlined in an airborne programme over EL413. At the same time a reconnaissance survey was carried out to determine whether small radiometric anomalies could be found which may have been missed in the aerial survey.

The traverses completed are plotted on the 1:100 000 Map of EL413 (refer Figure 2).

5.2.3.1 Technical Detail

The vehicle mounted Spectrometer is a McPhar A.V.4 with a 100 cubic inch Sodium Iodide crystal with an internal Ameresium calibration. The results are recorded on a Chessel chart recorder containing a three channel readout with an optional total count or Potassium switch. The chart drive is calibrated to vehicle speed with fiducials at 100 meters. The whole apparatus is mounted in the back of a L.W.B. Toyota landcruiser.

5.2.3.2 Results

No anomalous zones were found that could not be explained by local features (salt lakes, black soils, laterites). Several traverses were undertaken to locate low order radiometric anomalies located in the airborne survey (Traverses 16, 23, 24). In all cases the anomalous zones coincided with small basement outcrops.

5.2.4 Conclusions

The results of the alphameter surveys show some areas that have anomalous readings. However, due to the variations in the mean readings of the 900 series and the 1 600 and 1 900 series alphameters, subtle

variations in readings cannot be contoured with any degree of confidence. The results of readings from the McPhar hand-held spectrometer do not show any anomalous readings corresponding to alphameter anomalies.

The alphameter traverse between WL5 and WL 30 shows an anomalous zone around WL5 and then some two kilometres to the south-east another anomalous zone. This anomalous zone may indicate shallow granitic basement which would be the edge of the mini trough intersected in our previous drilling programme.

The anomalous zones delineated around WL22 show on the traverse lines 200 metres to the east and west. From the plotted data the alphameter traverses should be extended to the south on both lines to cover the anomaly south of drillhole WL22.

The alphameter results around drillholes WL26 and WL27 are very anomalous masking subtle variations. The only way to determine the reason for these anomalies would be by a drilling programme.

The AV4 vehicle mounted spectrometer did not locate any new anomalous zones in the cross-country and track traverses. The spectrometer helped in locating previously delineated airborne anomalies which when located were small granitic basement outcrops.

6. RECOMMENDATIONS

(i) The photogeological study indicated that a major Palaeodrainage system does not cross the licence area from north to south. The previous drilling showed that lignites occur in basement depressions which may represent minor channelways. Therefore, although major channelways cannot be determined and minor channels are masked by recent geomorphological changes, channelways containing uraniferous mineralisation may still be present in the area. Drilling of depressions within the licence area is recommended.

(ii) In the grid around drillhole WL38 alphameter results do not show large anomalous zones. The grid has been contoured

and slightly anomalous zones have been outlines. These should be drilled to determine whether surface radon alpha counts are expressing sub-surface mineralisation. Drilling should also be undertaken around drillholes WL22, 26 and 27 where alphameter results are inconclusive.

(iii) The alphameter results from WL5 to WL30 show an anomalous zone some two kilometers south-east of WL5. Drilling is recommended to test whether the anomalous values are indeed indicating shallow basement. Drilling is also recommended to test the sediments on the down dip side to determine whether the indurated sand present in WL5 is a down dip extension of sands near the edge of the mini-trough and whether these sands contain anomalous radiometric kicks as found in WL5 at 134 metres.

7.0 REFERENCES

WEBER G.B. 1979 Drilling Programme No. 1 E.L. 413 Wilkinson Lakes Area South Australia

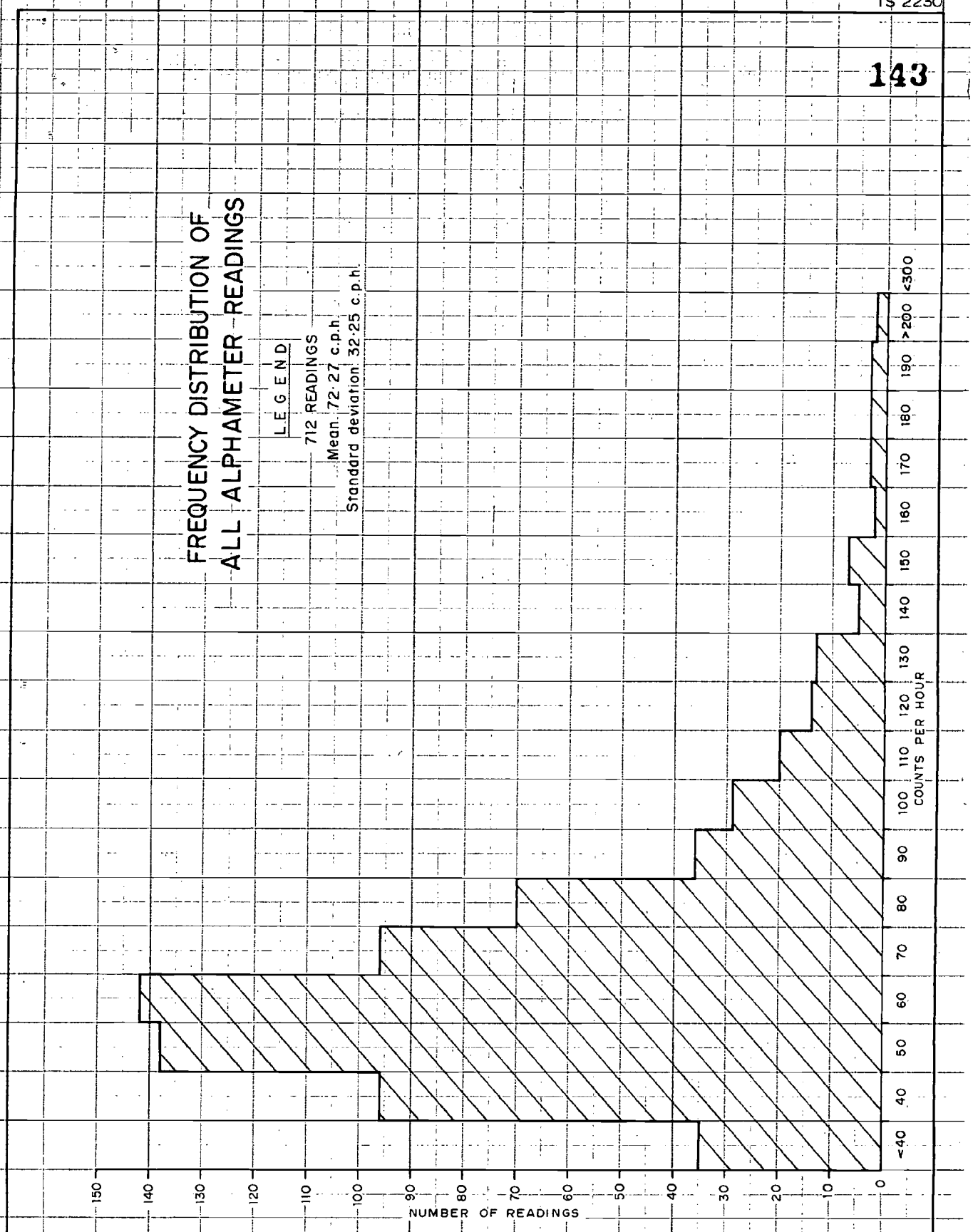


FIGURE 4

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	

FREQUENCY DISTRIBUTION OF B.P. ALPHAMETERS No.900 SERIES

LEGEND

301 READINGS

Mean 80·98 c.p.h.

Standard deviation 32·74 c.p.h.

FIGURE 5

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
	S. A.
Ref:	U1/20-5
MAY 1979	G. WEBER
Drafted by: C MACLEAY	

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FREQUENCY DISTRIBUTION OF NEW AND HIRED ALPHAMETERS SERIAL Nos. 1600's AND 1900's

LEGEND

406 READINGS
Mean 64·7 c.p.h.
Standard deviation 33·88 c.p.h.

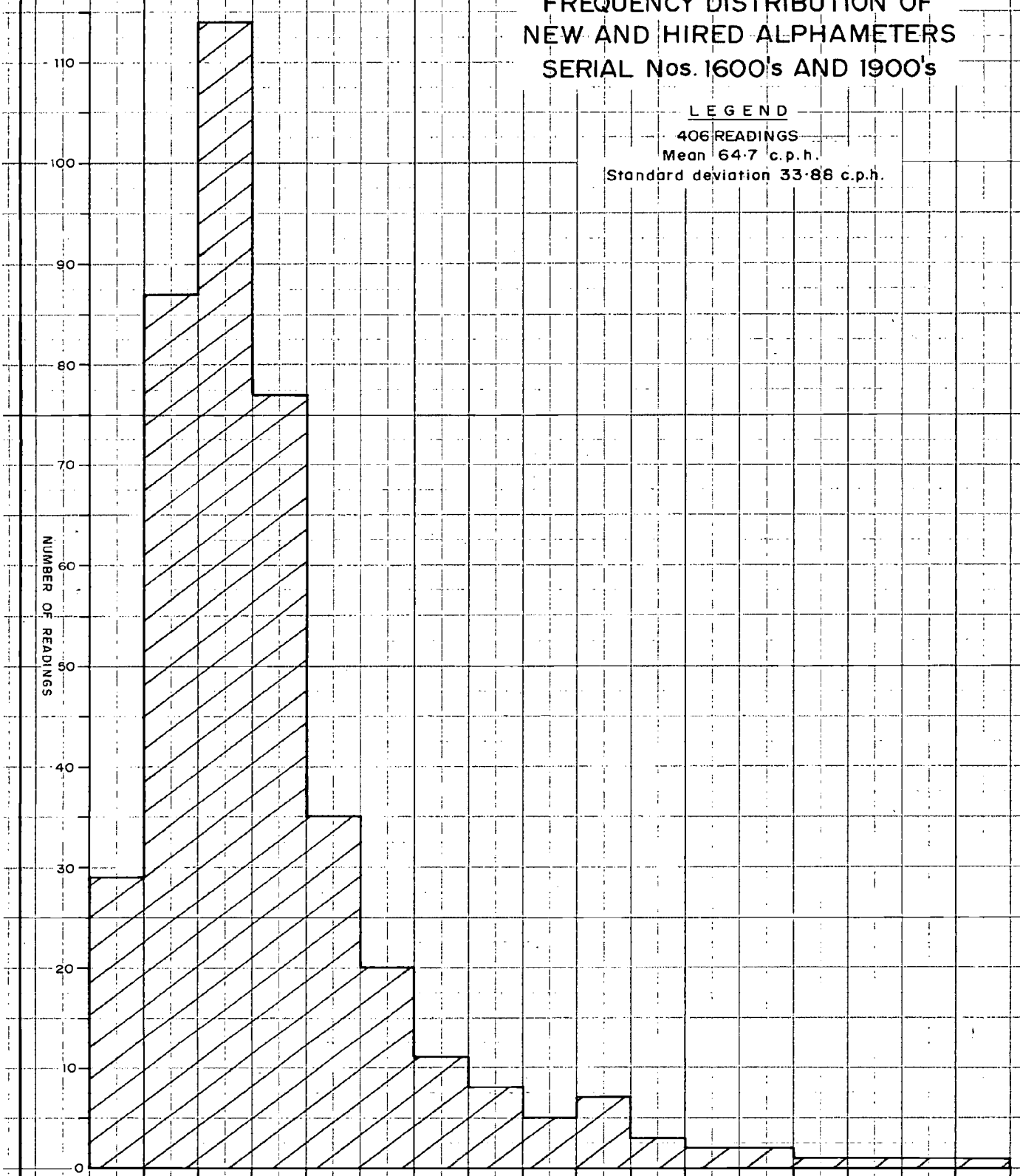
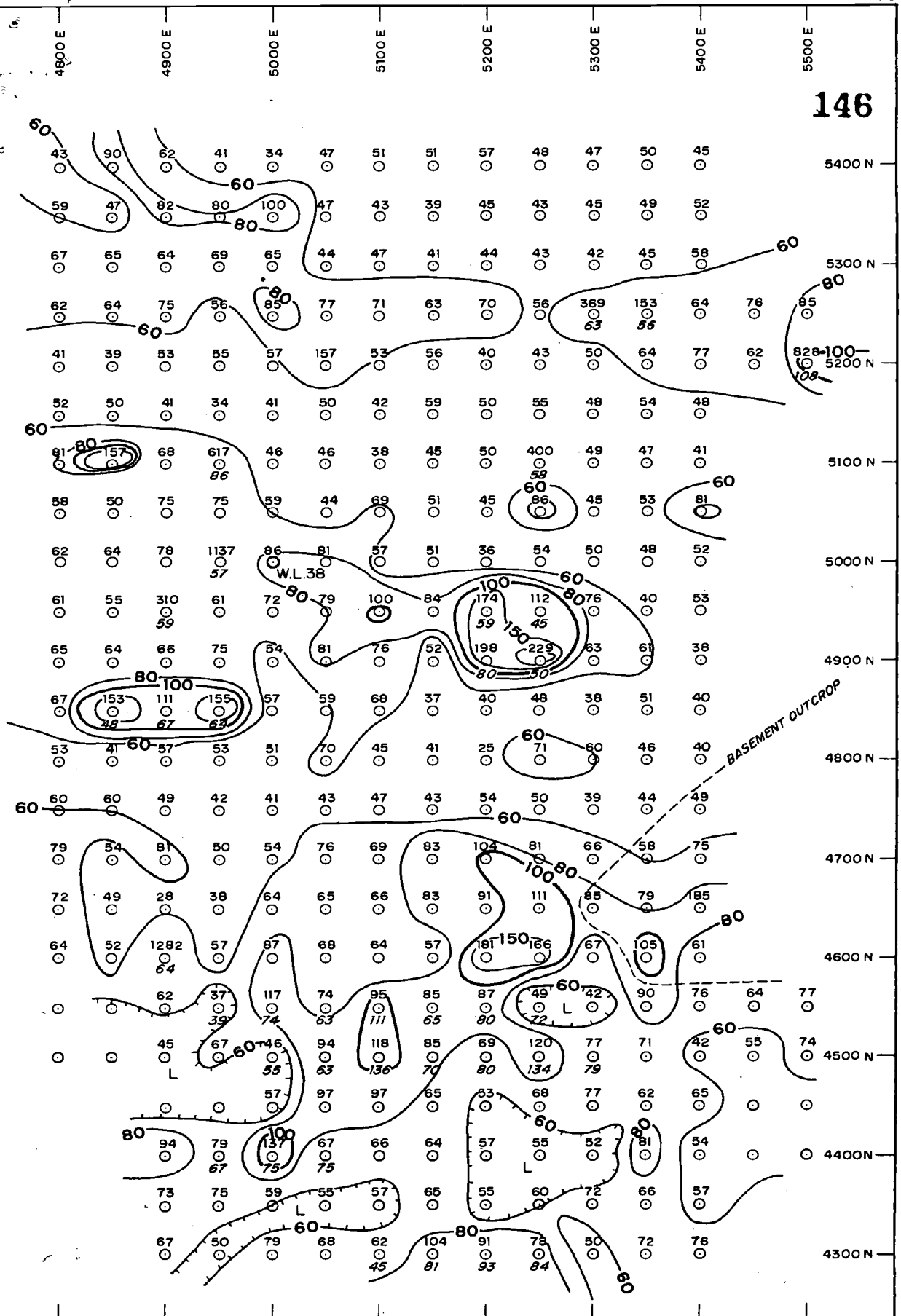


FIGURE 6.

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	



WILKINSON LAKES PROJECT, S.A.

ALPHAMETER CONTOURS ON GRID AROUND WL 38

m. 50 0 50 100 150 m

LEGEND

WL.38 ⊙ Drillhole (8PMDA, 1978)

67 ⊙ 75 Alphameter reading / Alphameter reading repeated

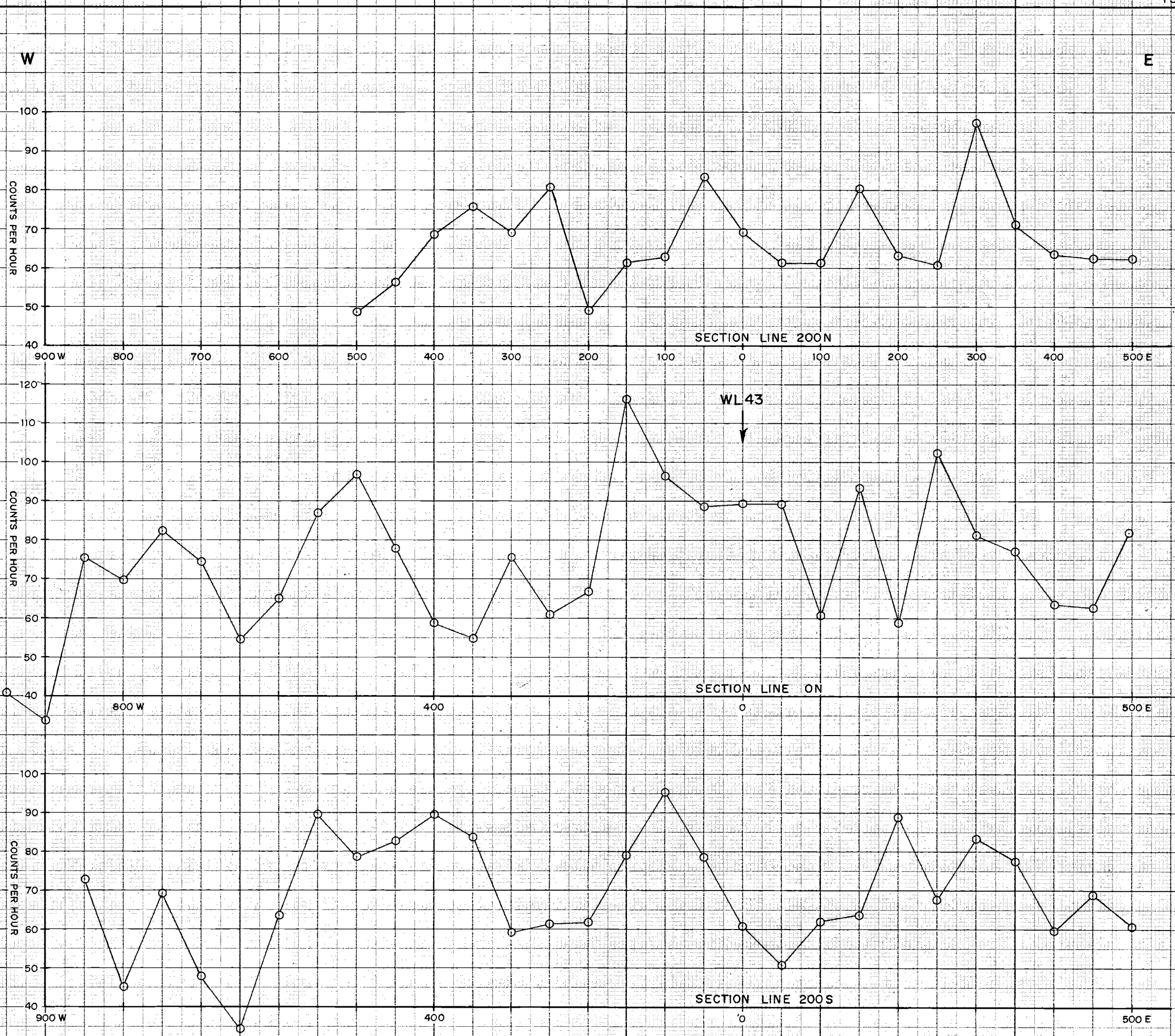
80 Contour (counts per minute)

FIGURE 7

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S.A.	
Ref: U1/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	

BASED ON TS 2165

TS 2233



ALPHAMETER RESULTS
(GRID AROUND WL 43)

Scale : 1cm = 50m

FIGURE 8

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: 01/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	

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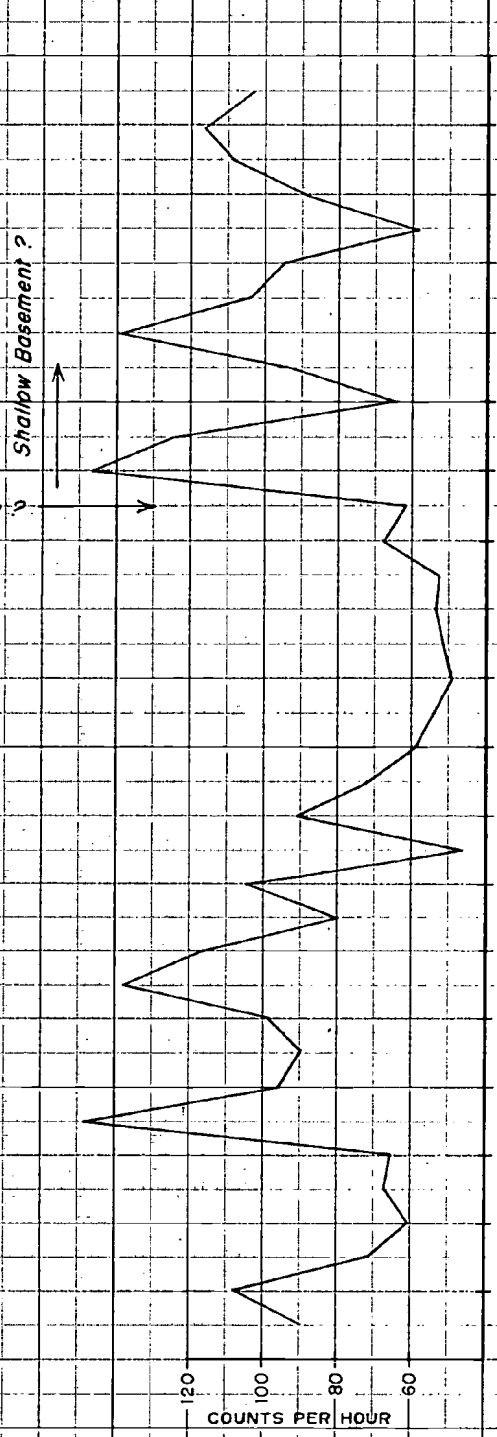
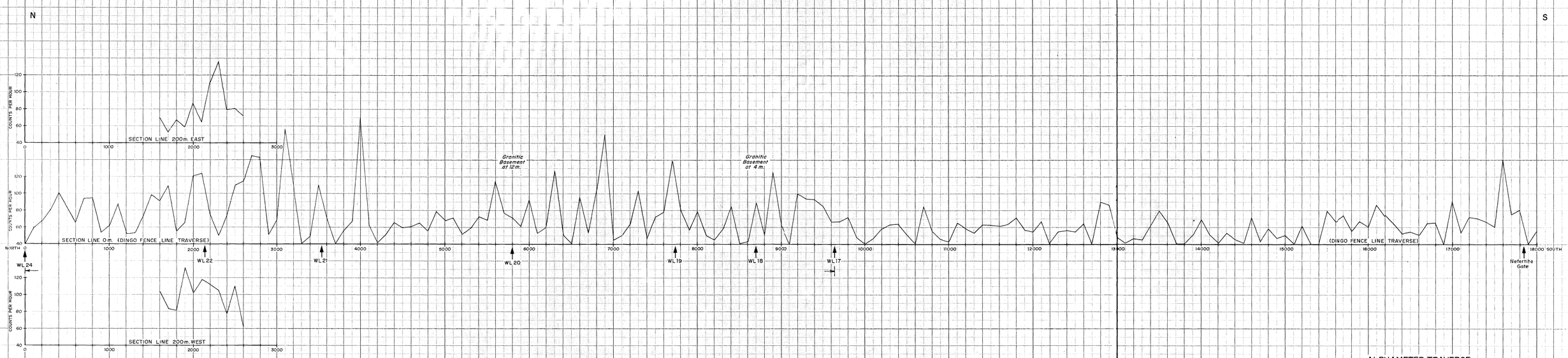


ALPHAMETER TRAVERSE
(SECTION LINE WL5 TO WL30)

Scale : 1cm = 200m

FIGURE 9

BP MINING DEV. AUST. PTY LTD	
Area: WILKINSON LAKES	
S. A.	
Ref: U1/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	



ALPHAMETER TRAVERSE
(from WL24 to Nefertite Gate)

COVERING DRILL HOLE SECTION D-D' FROM WL17 TO WL24

Scale 1cm. = 200m.

3339-3-S

FIGURE 10	
BP MINING DEV. AUST. PTY. LTD.	
Area: WILKINSON LAKES S. A.	
Ref: UI/20-5	
MAY 1979	G. WEBER
Drafted by: C. MACLEAY	

APPENDIX I

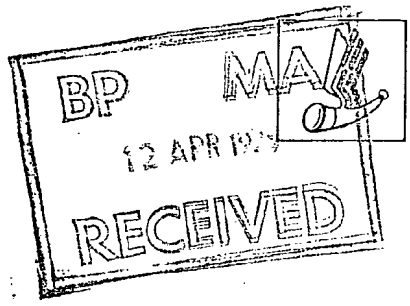
LETTER REPORT: PHOTOGEOLOGICAL STUDY OF PALAEODRAINAGE SOUTH OF WILKINSON LAKES EXPLORATION LICENCE 413 SOUTH AUSTRALIA

Hunting Geology and Geophysics (Australia) Pty. Limited

formerly R. F. Loxton, Hunting and Associates Pty Limited

APPLIED GEOLOGICAL SERVICES

Specialist interpretation of Imagery, Aerial Photography and Geophysical data



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P.O. Box 25, Barker Centre,
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BUSINESS ADDRESS:
10 Barker Street, Canberra, A.C.T. 2603
Telephone: 95 3565
Telegrams: Geosoils Canberra

Our Ref. JGW/kl/241/79

Your Ref.

30th March 1979

The Exploration Manager
BP Mining Development Australia Pty Limited
1 Albert Road
MELBOURNE VIC 3001

Attention: Mr G.W. Weber

Dear Sir,

LETTER REPORT : PHOTOGEOLOGICAL STUDY OF PALAEODRAINAGE SOUTH OF WILKINSON LAKES EXPLORATION LICENCE 413 SOUTH AUSTRALIA
(Our Job No GA2/79)

A photogeological study of Exploration Licence 413, south of Wilkinson Lakes, South Australia, was undertaken on behalf of B.P. Mining Development Australia Proprietary Limited, by Hunting Geology and Geophysics (Australia) Pty Limited over one week in March 1979, with the aim of defining the position of Tertiary palaeodrainage.

Fifty colour aerial photographs with 80 percent forward overlap at the scale of 1:86 500 were provided by BP for the study. Only about three-quarters (1,600 square kilometres) of the Exploration Licence was covered owing to the restriction on the availability of photography in the area for security reasons (part of the area lies within the Woomera rocket-testing facility). The lack of more extensive photo-coverage was a limitation as it did not permit a regional picture of the palaeodrainage to be obtained by photogeological methods. This is especially significant since the results obtained in the present study are at slight variance with those of previous palaeodrainage studies of the region, including those of BP personnel.

Photogeological detail was annotated directly in ink onto an acetate drainage base which was prepared from the enlargement to photoscale of the 1:100 000 map sheet provided by BP. A Zeiss N2 mirror stereoscope with 1½x and 6x magnification was used in the study. The subtle nature of the features of interest necessitated the constant use of stereoscopic techniques designed to maximise vertical exaggeration. (Use of every 4th or 5th print as stereopairs as opposed to the normal use of 60 percent stereo-overlap).

.../...

Reference was made to one LANDSAT scene and interpretations of palaeodrainage by BP personnel and by the S.A. Department of Mines were made available. No field work was carried out. Details of aerial photographs and the LANDSAT scene used in this study are given in Appendix I.

The photogeological worksheet is the most important product of the study, and the following explanatory comments are of a supplementary nature.

The oldest palaeosurface in the study area is represented by a few isolated remnants of a lateritic weathering surface of assumed Tertiary age. These occur as low mesas in the northern-most part of the area and are the only evidence of a Tertiary surface of this type.

The rest of the area is made up of a gently undulating surface with a number of large depressions in it.

The undulating surface is formed, for the most part, on flat lying calcareous sediments of assumed Mesozoic age. Locally, Proterozoic basement rocks are exposed, particularly along a sinuous north-east-trending ridge in the north of the study area. The calcareous sediments appear to attain significant thicknesses in areas of basement depressions but are thin or absent over basement highs.

The surface is generally covered by thin Quaternary sand-flat and dune deposits. The dunes are well-vegetated longitudinal dunes of wide and regular spacing and of dark tone; they make up the oldest dune system in the area.

It is assumed that the undulating surface and the drainage related to it are of Tertiary age. Although there is no direct evidence for this, several lines of evidence support this assumption; for example, the surface predates the oldest dune system (Pleistocene) and is a mature surface with gentle gradients, similar to Tertiray surfaces elsewhere. The absence of lateritic surfaces in the area is probably a reflection of the non-development of this type of surface on calcareous sediments rather than possible erosion of an earlier lateritised surface. The more siliceous Proterozoic basement rocks which in places are exposed on the surface show signs of lateritization.

The depressions in this surface, which together make up about forty percent of the study area, are irregular in shape and under the stereoscope have a generally well defined "scarp" off the higher surface. They have irregular floors and form areas of internal drainage into playa lakes. Calcareous sediments and, locally, Proterozoic basement rocks are exposed in them. Sand dunes developed in the depressions are less regular, less well-vegetated and paler-toned than those of the higher surface, and are considered to be younger in age.

The form and general aspect of the depressions strongly suggest that they are of deflation origin and not of fluviatite origin, and that they have been cut into the higher surface after the development of the older dune systems. That is, they are probably Recent. The presence, locally, of two parallel scarps suggests that there were at least two periods of deflation.

.../...

The process of their formation has destroyed much evidence of earlier Tertiary drainage in the area. However, it is likely that the initial development of the depression took place in topographic lows occupied by palaeostreams. Even if this is the case, later development of the depressions include lateral migration and deepening unrestricted by the original position or base-level of the palaeostreams so that inference of palaeodrainage from them is hazardous.

The main feature controlling palaeodrainage is the ridge of basement rocks extending ENE in a sinuous form from the area of highest altitude in the west of the study area. The sinuous form of the ridge is presumed to reflect basement foliation trends. Over most of its length this ridge forms the palaeowatershed between streams draining northwards and those draining south and south-eastwards.

To the north of this ridge palaeodrainage flowed northwards towards the Wilkinson Lakes area. The major watercourse followed a well-defined valley which displays a sinuosity parallel to the basement ridge. This valley is now largely choked with colluvial, alluvial and aeolian sediments.

South of the ridge, deflation depressions obscure the detail of palaeodrainage although it is apparent that several streams flowed into, and probably out of, the areas now occupied by the depressions. It seems likely that flow continued south-easterly, with the major watercourse flowing out of the south-eastern corner of the study area.

The above interpretation of the palaeodrainage is at variance with a previously suggested LANDSAT interpretation of the same area which, in conjunction with a South Australia Department of Mines interpretation of adjacent areas to the north, (both based largely on the alignment of playa lakes and topographic depressions), suggest the existence of an integrated drainage system flowing south in the vicinity of the basement ridge. The photogeological evidence does not support this interpretation, as there is no indication that the basement ridge has been breached or crossed by such a system within the study area. Neither is there evidence of post-Tertiary dislocation of palaeodrainage systems by tectonic activity, such as movement along the Karari Fault or by up-warping along the axis of the basement high. If such a south-flowing drainage system did exist it is likely that it by-passed the basement ridge to the north east of the study area.

Yours faithfully,
Hunting Geology and Geophysics (Australia) Pty Limited

A.K. Hodgkin

APPENDIX I

List of Aerial Photographs and LANDSAT scenes used.
Exploration Licence 413, South Australia

Source : South Australia Department of Lands colour photogrpahy at a scale of 1:86 5000 taken at 7,400 km with a super-wide-angle lens..

Survey No	Run No	Date	Print Nos	No of Prints	Quality
1391	6*	20.3.72	97-102	6	Good
1391	7	20.3.72	16-27	12	Good
1391	8	20.3.72	58-68	11	Good
1392	9	20.3.72	18-28	11	Good
				50	

Colour prints with 80% overlap

* This run lies outside the area of study and was used in order to complete understanding of the northern part of the area only.

Information On LANDSAT scene
scene 108-081
Band 5

Date

Black and white print at a scale 1:1000 000

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

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BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne

Director General
Department of Mines and Energy
191 Greenhill Road
PARKSIDE. S.A. 5063

Our Reference	Your Reference	Telephone Ext'n	Date
GBW:AC EP/8/3		2684343	8th February 1980

Dear Sir,

EXPLORATION LICENCE 413

Progress Report for the Quarter ended 30th December, 1979

During the quarter under review the following exploration work was carried out: -

Field Work

A water sampling field trip was completed during October. All drillholes and bores within E.L. 413 were sampled where possible. Samples have been analysed and the results are currently being assessed.

Report Preparation

A report detailing the results of the second drilling programme was completed during the quarter. The report will be forwarded under separate cover. A report detailing the results of the water sampling programme is currently being prepared.

2..

Expenditure

Expenditure incurred during the quarter amounted to $6 307. Total expenditure since E.L. 413 was granted a twelve month extension on 3rd July 1979, amounts to $18 527. A breakdown of this expenditure is attached.

We trust this information is satisfactory.

Yours faithfully,

Dr J.H. Hills
Minerals Exploration Manager

Enc:

EXPLORATION LICENCE 413

BREAKDOWN OF EXPLORATION EXPENDITURE

ITEM	EXPENDITURE FOR QUARTER ENDING 31/12/79	TOTAL EXPENDITURE SINCE 3/7/79
FIXED ASSETS		
Plant Equipment	240	240
EXPLORATION		
Geological Services	10	10
Geochemical Services	460	1 770
Drilling Services	-	7 393
Field Consumable Goods	500	754
Exploration Tenement Fees	-	(337)
Drillhole logging	-	(748)
OPERATIONS		
Vehicles	416	1 474
Rental of Equipment	-	693
Freight and Cartage	-	300
Travelling Expenses	11	102
Personnel Services	230	463
Trade Expenses	1	1
Equipment Operation	224	405
WAGES AND SALARIES		
Salaries	4 215	6 007
TOTAL	6 307	18 527

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

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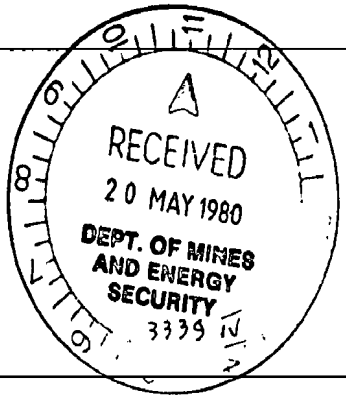
BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne



Director General
Department of Mines and Energy
191 Granhill Road
PARKSIDE S.A. 5063

Our Reference	Your Reference	Telephone Extn	Date
GBW:YT			16th May, 1980.

Dear Sir,

EXPLORATION LICENCE 413

Progress Report for the Quarter ended 3rd April 1980.

During the quarter under review the following exploration work was carried out: -

Review Work

The uranium exploration programme was reviewed during the early part of the quarter. From this work it now seems unlikely that licence area 413 hosts economic uranium mineralisation. However, it is thought that the area has potential to host economic concentrations of base metals and an exploration programme was formulated for the 1980 field season.

Professor D. Boyd from the University of Adelaide has been engaged to re-assess the magnetic data of the north-western area of the Gawler Craton with special reference to licence areas 413 and 514.

Field Work

The 1980 field season commenced on the 11th March 1980. The field work concentrated on locating and mapping basement rocks of the Mulgatting Complex. Samples collected during this trip have been dispatched for both petrological descriptions and trace element analyses.

Report Preparation

The report detailing the results of the water sampling programme is nearing completion and will be forwarded under separate cover.

.. 2

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Expenditure

Expenditure incurred during the quarter amounted to $6 360. Total expenditure to date from 3rd July 1979 amounts to $24 887. A breakdown of this expenditure is attached.

We trust this information is satisfactory.

Yours faithfully,

Dr. J.H. Hills
Minerals Exploration Manager.

Encl.

EXPLORATION LICENCE 413

BREAKDOWN OF EXPLORATION EXPENDITURE

Item	EXPENDITURE FOR PERIOD 1/1/80 to 31/3/80	TOTAL EXPENDITURE SINCE 3/7/79
FIXED ASSETS		
PLANT EQUIPMENT	1 369	1 609
EXPLORATION		
GEOLOGICAL SERVICES	114	124
GEOCHEMICAL SERVICES	(31)	1 739
DRILLING SERVICES	40	7 433
AERIAL PHOTOGRAPHS	153	153
FIELD CONSUMABLE STORES	800	1 554
EXPLORATION TENEMENT FEES	-	(337)
DRILLHOLE LOGGING	-	(748)
OPERATIONS		
VEHICLES	276	1 750
RENTAL OF EQUIPMENT	-	693
FREIGHT AND CARTAGE	10	310
TRAVELLING EXPENSES	362	464
PERSONNEL SERVICES	347	810
TRADE EXPENSES	-	1
EQUIPMENT OPERATION	30	435
WAGES AND SALARIES		
SALARIES	2 890	8 897
TOTAL :	6 360	24 887

QUARTER ENDED 3RD APRIL 1980

PROSPECTIVE STATUS OF E.L. 413

The exploration undertaken within E.L. 413 has failed to locate any economic concentrations of uraniferous mineralisation. A review undertaken early in the quarter indicated the possibility that rocks of the Mulgatting Complex may host economic base metal concentrations. Field work which commenced on the 11th March is assessing the licence area for base metal mineralisation.

Dr. J.H. Hills
Minerals Exploration Manager.

The Director General
Department of Mines and Energy
191 Greenhill Road
PARKSIDE S.A. 5063

BP Mining Development Australia Proprietary Limited
Incorporated in Victoria

BP House, 1 Albert Road, Melbourne
Postal Address: G.P.O. Box 5222BB, Melbourne, 3001
Telephone: 268 4111 Telex: 30166 Telegraphic Address: "AustBeePee", Melbourne

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Director General,
Department of Mines and Energy,
191 Greenhill Road,
PARKSIDE S.A. 5063

Our Reference	Your Reference	Telephone Ext'n	Date
GBW:OR			13th August 1980

Dear Sir,

EXPLORATION LICENCE 413

Progress Report for the Quarter ended 3rd July 1980

During the quarter under review the following exploration work was carried out:-

Field Work

A total of seven weeks were spent in the licence areas in two field trips during the quarter. Field work included mapping and sampling basement outcrops and ground magnetometer traverses over regional magnetic anomalies. Rock samples collected during these trips have been dispatched for petrological descriptions and trace element analyses.

Review Work

Professor D. Boyd from the University of Adelaide continued with his assessment of regional magnetic data of the north-west Gawler Craton area. Interesting zones located in his work had follow-up ground magnetometer traverses completed during field trips.

Report Preparation

The report detailing the results of a water sampling programme, the final report in the uranium exploration programme is currently awaiting dispatch and will be forwarded under separate cover.

A report detailing results of the 1980 field programme in the search for base metal mineralisation is currently being collated.

2..

.2 GBW:OR 13th August 1980

Expenditure

Expenditure incurred during the quarter amounted to $11 583 Total expenditure to date from 3rd July 1979 amounts to $36 470. A breakdown of this expenditure is attached.

During the year BP Mining contracted to spend $50 000 within EL 413 as a condition of the licence. Due to accounting procedure within the B.P. organisation, two accounts for the licence area have yet to be processed. These two accounts are for $12 000 being money spent by Professor D. Boyd in interpreting regional magnetic patterns and $5 000 being a half share in a helicopter survey. These two accounts with previous expenditure would meet the B.P. Mining expenditure commitment.

We trust this information is satisfactory.

Yours faithfully,

Graeme Bibby

Dr. J.H. Hills
Minerals Exploration Manager

Enc.

EXPLORATION LICENCE 413

BREAKDOWN OF EXPLORATION EXPENDITURE

ITEM	EXPENDITURE FOR THE PERIOD 1/4/80-1/7/80	TOTAL EXPENDITURE FROM 3/7/79
OVERHEADS	1	1
FIXED ASSETS		
Plant Equipment	858	2 467
EXPLORATION		
Geological Services	32	156
Geochemical Services	1 303	3 042
Drilling Services		7 433
Airborne Geophysics	643	643
Ground Geophysics	125	125
Aerial Photographs	506	659
Helicopter		
Field Consumable Goods	793	2 347
Exploration Tenement Fees	25	(312)
Drillhole Logging		(748)
INVESTIGATIONS		
Consultancy Fees		
OPERATIONS		
Vehicles	975	2 725
Freight	43	353
Travelling Expenses	362	826
Personnel Services	698	1 508
Equipment Operations	51	486
Rental of Equipment		693
Trade Expenses		1
WAGES & SALARIES		
Salaries	5 168	14 065
TOTAL	11 583	36 470

done

Seltrust Mining Corporation Pty. Ltd.

(Subsidiary of Seltrust Holdings Limited)

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MELBOURNE VIC 3004

Your Reference:

Our Reference :

Director General
Department of Mines and Energy,
191 Greenhill Road,
PARKSIDE S.A. 5063

28th April, 1981

Dear Sir,

EXPLORATION LICENCE 744 - COMBINED QUARTERLY REPORT

for the periods ending 6th January, 1981 and 6th April, 1981.

No field work was carried out during the above six month period. Work pertaining to the exploration licence consisted of compilation of data and preparation of a report which is enclosed.

Yours faithfully,

Dr. J.H. Hills
Regional Exploration Manager