DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

Rept.Bk.No. 80/56

A REPORT ON THE RELINQUISHED AREAS OF E.L. 280 OUTSIDE THE AREA OF E.L. 434.

GEOLOGICAL SURVEY

By

C.G. GATEHOUSE

AUGUST, 1980.

D.M. No. 125/77

CONTENTS

TABLES

APPENDICES

FIGURES

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

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A REPORT ON THE RELINQUISHED AREAS OF E.L. 280 OUTSIDE THE AREA OF E.L. 434

SUMMARY

Exploration Licence 280 was taken out by the Director-General of the South Australian Department of Mines and Energy on 24th January 1977 to cover exploration for coal in the Polda Basin on central Eyre Peninsula. A one-rig drilling programme, designed to evaluate both the eastern and western areas of E.L. 280 indicated that an area 15 km west of Lock was prospective. Subsequently the western area of E.L. 280 and much of the eastern area outside the Lock coal deposit was relinquished. This report summarises the drilling and geology within the relinquished area.

LOCATION, PHYSIOGRAPHY

E.L. 280 on central Eyre Peninsula consists of two separate areas (Fig. 1). The western area covers a northwestern extension of the Polda Basin and the eastern area includes the eastern end of that basin (Fig. 2).

Lock, a township of approximately 400 population, in central Eyre Peninsula (Fig. 1) serves the surrounding farming community. It lies at the intersection of the Port Lincoln-Wudinna and Cleve-Elliston roads on the railway line from Ceduna to Port Lincoln.

Physiographically central Eyre Peninsula consists of low undulating hills cleared in part of mallee. Cleared land near Lock is used for grain production and grazing. The western

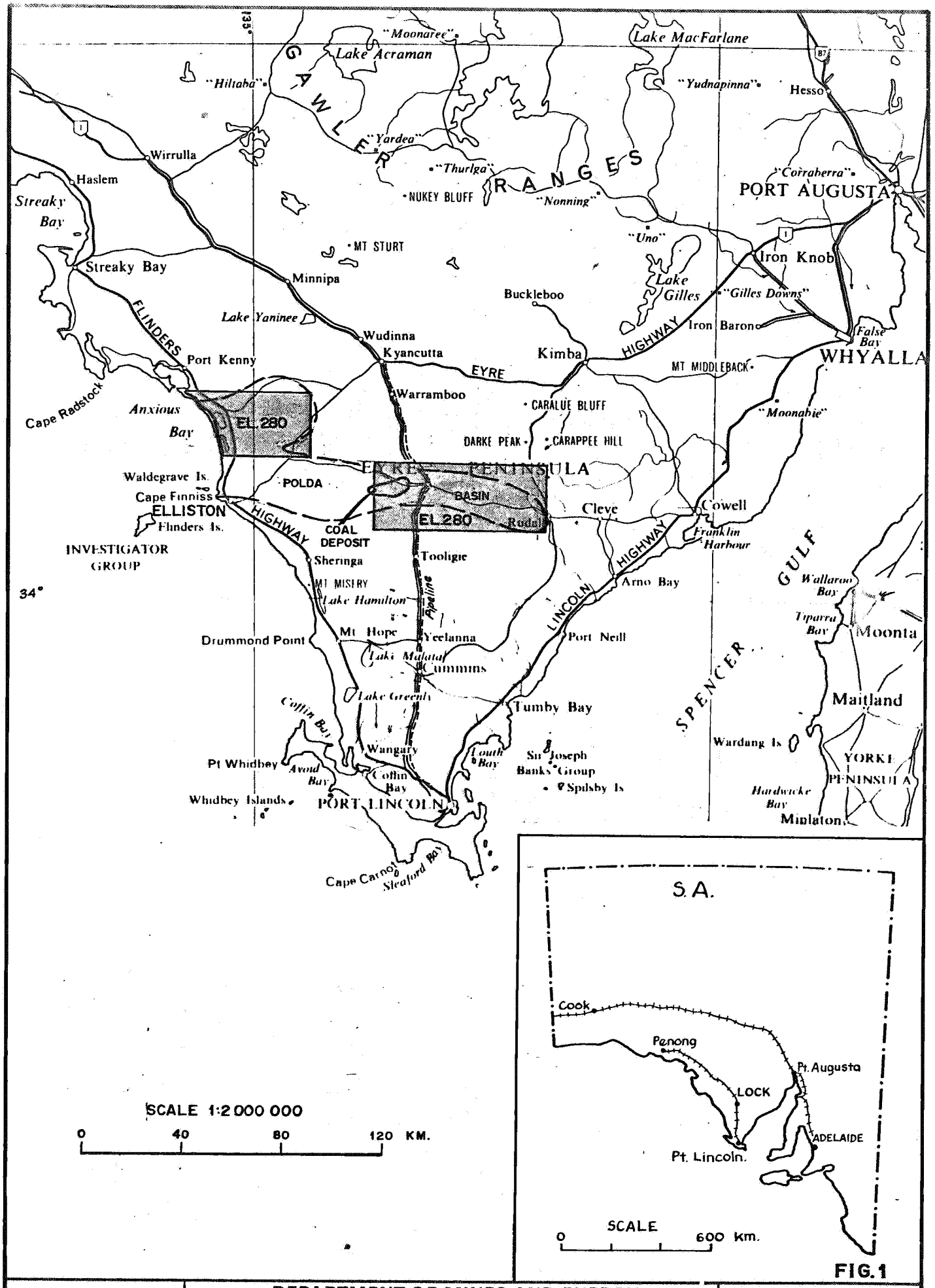

FIG.1

	DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	SCALE: 1:2,000,000 1:20,000,000
COMPILED: C. Gatehouse	LOCK COAL DEPOSIT — EYRE PENINSULA	DATE: Feb. 1979.
DRN: G.J.T. CKD:	LOCALITY PLAN	PLAN NUMBER S13887
B.W. Wright for C.O.O. 15/10/80		

1195, 1762

section of E.L. 280 is a calcreted sand plain with isolated hills rising to 100 m above the plain. Land use is pastoral and dominated by sheep. Annual rainfall is up to 400 mm and the evaporation rate is as high as 2100 mm (Laut and others 1977).

PREVIOUS INVESTIGATIONS

Geological, geophysical and hydrogeological studies of the central Eyre Peninsula have been carried out over many years but few comprehensive summaries of those works have been prepared. Beaney (1962) summarised hydrogeological investigations for the period 1911 to 1937; Nelson (1974) reviewed geophysical work in the Polda Basin; and Morgan (1974) described the regional geology.

The search for coal on central Eyre Peninsula apparently began when a sheep herder in 1923 recognised coal fragments in the spoil heap from a water well at Win Gully (Fig. 2). Subsequently the Central Eyre Peninsula Coal and Oil Company was formed to deepen the well from 27 m depth to 46 m depth by percussion drilling. No significant coal was found and interest lapsed.

In 1976 the S.A. State Energy Committee recommended the investigation and evaluation of South Australia's poorly known coal deposits (State Energy Committee Report, 1976). The SADME selected the Lock area as one of those to be investigated by drilling, since stratigraphic drilling by the Department in 1965 led to the recognition of prospective Jurassic sediments within the Polda Basin (Harris & Foster, 1974).

PROGRAMME OF INVESTIGATION

Exploration Licence E.L. 280 taken out by the Director-General, South Australian Department of Mines and Energy covered the conduct of this programme. The licence was granted on 24th January

1977 and renewed on 23rd January 1978. Exploration licence E.L. 434 was granted to the Electricity Trust of South Australia (ETSA) on 28th November, 1978, replacing part of E.L. 280.

A regional drilling programme under E.L. 280 included the stratigraphic wells Colton No. 1, Tuckey No. 1, and Mucka-Cudla No. 1 (reports in preparation by Biostratigraphy Division, SADME); and a series of holes numbered P2 to P23 in the vicinity of the now-established coal deposit (Fig. 2). Polda No. 1 was a stratigraphic hole drilled in 1965 (Harris and Foster, 1974). Drillhole P 28, part of a subsequent programme of investigative drilling, is included in this report. During this one-rig drilling phase the drillhole locations were determined in advance by discussion between the Supervising Geologist Fossil Fuels Division and the onsite geologist. Drilling funds were supplied by the S.A. Department of Mines and Energy.

LITHOLOGICAL LOGGING

Cuttings from rotary-drilled holes were sampled at the casing-head for each two-metre interval from surface to total depth, excepting cored intervals. Samples were collected in a large sieve placed adjacent to the casing in the headrace of the mudtank. Where lignitic intervals were encountered samples were collected at one-metre intervals and stored in calico bags to dry.

Problems encountered during sample recovery included poor returns; no returns through loss of circulating fluids; and uphole contamination.

The cuttings were described at the time of drilling by the geologist in charge of the hole. After electric logging, the descriptions were reinterpeted and an interpreted-log drawn up for each drillhole (Appendix 1). Composite logs summarise the available information on each drillhole (Appendix 2).

Cores were taken for stratigraphic information.

All cores and cuttings are stored at the South Australian Department of Mines and Energy Core Library, Glenside, and are available for inspection.

GEOPHYSICAL LOGGING

Geophysical logging of the drillholes was done by the SADME using a hand operated portable "Neltronic" device capable of logging to a depth of 270 m recording one probe at a time.

Drillholes P2 and P5 were logged for gamma ray, neutron, spontaneous potential, and resistivity, and P8 to P12, and P28 for the above suite together with density. Drillholes P13 and P21 were logged for gamma ray, neutron and density, and gamma-neutron respectively. Copies of the logs are in Appendix 1.

GEOLOGY OF THE POLDA BASIN

The Polda Basin is an elongate east-west trough containing sediments of Permian and Jurassic age.

At the foot of Mount Wedge is an outcrop of coarse-grained and conglomeratic sandstones of ?Precambrian age (Harris and Foster, 1974). A similar outcrop occurs at Talia Caves south of Venus Bay; Nelson (1974) refers to this as "Precambrian (Mount Wedge grit)".

Pale grey feldspathic sandstone with interbeds of pebbly sandstone in drillhole P3 is considered to be Precambrian in age and related to outcrop strata as illustrated by Harris and Foster (1974) in their figure 12. No other occurrences of this unit are known.

Palynomorphs found in drillhole P8 in sediments below 148 m indicate a Permian age.

Drillholes P5, P12, and P21 intersected rocks which lithologically are comparable with Permian sediments in P8.

Sediments in P8 consist of pale grey, grey-green and dark brown feldspathic micaceous mudstone which is moderately hard and contains boulders of quartzite and biotite schist near total depth. The sandstones consist of pale grey, poorly sorted granule to boulder-sized quartz-biotite gneiss, mica feldspar schist, and quartzite in a finer-grained ground-mass.

Permian glacigene sediments are known from the Cooper Basin (Merrimelia Formation), Arckaringa Basin (Stuart Range Beds and Lake Phillipson Beds) (Ludbrook, 1969). The latter contain arenaceous foraminifera and indicate marine environments of deposition during Early Permian in the St. Vincent Basin.

The presence of glacial sediments on Eyre Peninsula significantly increases the known extent of Permian sedimentation in South Australia.

The Polda Formation of Late Jurassic age contains interbedded coal, carbonaceous clay, pale grey claystone, sandy claystone and fine-grained sandstone; it overlies either Permian glacigene sediments or metamorphic "basement". Harris and Foster (1974) consider that spores and pollen in this unit indicate an arboreal depositional environment.

Within the relinquished areas of E.L. 280 (Figs. 1 and 2) the Polda Formation was intersected in all the drillholes in the eastern area. No Late Jurassic sediments were found in the western area.

Three holes - P8, P12, and P21 passed through Late Jurassic rocks into sediments of Permian age. Drillholes P9, P10, P11, and P13 were not drilled deep enough to penetrate rocks thought to be Permian.

The Polda Formation does not crop out and its distribution is known only from drillhole information.

Unconformably overlying the Polda Formation is the Poelpena Formation which is of Tertiary age. Only P9 and P10 at the eastern end of the Polda Basin, did not intersect this unit.

The Poelpena Formation consists of generally unconsolidated fine-grained quartz sand, fine-grained quartz sandstone with scattered orange-coloured grains, hematite-cemented fine to coarse grained sandstone, minor lignite, and minor claystone. Coarse-grained gravel beds sometimes containing nodular pyrite often are found close to or at the base of the unit.

Deposition probably occured in non-marine, alternating paludal-fluviatile environments (Harris & Foster, 1974).

Distribution of the unit is shown in Figure 2. Thickening to the southwest is indicated from holes drilled in the licence area and from Polda Stratigraphic Hole No. 1.

The Quaternary Bridgewater Formation, consisting of calcrete with minor underlying sandstone and clay, occurs over much of the area of E.L. 280. The unit is only a few metres thick and the calcrete unit may not everywhere be present.

Sediments penetrated in the several drillholes in the Polda Basin show a geological history of short periods of glacial, fluvial, and paludal-fluvial sedimentation in an east-west elongate trough.

RESULTS OF DRILLING

Eleven holes were drilled in the relinquished areas of E.L. 280; of these only P21 intersected coal. Large areas of the eastern end of the Polda Basin have not been tested adequately for coal. The extension of the Polda Basin north of Colton requires more adequate investigations by drilling.

Table 1 is a summary of the intersected formation tops, and total depths of drillholes, within the relinquished area.

CONCLUSIONS

Scattered drilling in the eastern and western areas of E.L. 280 has not adequately explored these areas for coal. The extent of the Permian glacigene sediments requires further investigation by drilling, particularly east of drillhole P10. The lateral extent of the Late Jurassic Polda Formation also requires more drilling.

FORMATION TOPS (METRES)/(THICKNESS)

DRILL HOLE	BRIDGE WATER	POELPENA	POLDA	(PERMIAN) un-named	MT. WEDGE GRITS	T.D. (metres)
P2	SURFACE (12.4)	12.4 (32.2+)	-	-	-	46.6
P3	SURFACE (14.4)	14.4 7.8	-	-	22.6 (4.4)	27.0
P4	SURFACE (4.2)	4.2 (81.8)	-	-	-	85.0
P5	SURFACE (16.2)	16.2 (68.1)	-	84.3 5.7+	-	94.0
P8	SURFACE (3.2)	3.2 (100.5)	103.7 (45.0)	148.0 (108.2)	-	256.2
P9	SURFACE (5.0)	-	5.0 (38.0+)	-	-	43.0
P10	SURFACE (5.4)	-	5.4+ (24.6)	-	-	30.0
P11	SURFACE (3.4)	3.4 (21.3)	24.7 (15.3+)	-	-	40.0
P12	SURFACE (5.3)	5.3 (10.4)	15.7 (47.5)	63.2 (11.8)	-	75.0
P13	SURFACE (9.0)	9.0 (38.5)	47.5+ (10.5+)	-	-	58.0
P21	SURFACE (4.6)	4.6 (91.7)	96.3 (16.7)	?118.2+ (4.8+)	-	123.0
P28	SURFACE (6)	6 (10)	16 (32)	-	-	48

TABLE 1

RELINQUISHED AREAS - E.L. 280
DRILLHOLES: FORMATION TOPS AND THICKNESSES

REFERENCES

Beaney, H.L., 1962. The Polda Freshwater Basin - A summary of investigations of the basin over the period 1911 to 1937. ETSA file 62/11.

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APPENDIX 1

COAL BORE LOGS

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P 2
UNIT NO. 652 000 EO 4

COALFIELD:
COORDINATES: E: 523500m
(AMG) N: 6308500m
DRILLER: SADME

INTERVAL DRILLED 0m - 46.6m
INTERVAL CORED 18.0 - 46.6m
GROUND E L.:
LOGGED BY: G.M. MEYER
DATE: 14.2.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
8.0	8	CALCRETE
20.4	12.4	CLAYSTONE AND SANDSTONE, CARBONACEOUS, SANDSTONE FINE, WELL SORTED, QUARTZ.
20.8	0.4	COAL
43.0	22.2	SANDSTONE CARBONACEOUS, PYRITIC, MEDIUM, WELL SORTED, AND CLAY WITH QUARTZ PEBBLES AT BASE.
45.2	2.2	CLAY WITH PYRITIC WOOD FRAGMENTS.
46.6	1.4	GRANITE WEATHERED

REMARKS

SHEET ... OF ... DRG. NO. S

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DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P 3
UNIT NO. 652 000 E05

COALFIELD:
COORDINATES: E: 523200m
(AMG) N: 6306800 m
DRILLER: SADME

INTERVAL DRILLED 0m - 27.0m
INTERVAL CORED NIL
GROUND E L.:
LOGGED BY: G.M. MEYER
DATE: 16.2.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
9	9	CALCRETE
17.8	8.8	SANDSTONE, CLAYEY, MOTTLED GREY, GREEN, YELLOW, RED, FINE, WELL-SORTED, QUARTZ, PEBBLY IN PARTS.
22.6	4.8	CLAY, BLACK, CARBONACEOUS, WITH 10% SANDSTONE
27.0	4.4	SANDSTONE GREY, FELDSPATHIC, QUARTZ.

REMARKS

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COAL BORE LOG

HOLE NO. P 4
UNIT NO. 644015901

COALFIELD:
COORDINATES: E: 509700m
(AMG) N: 6308800m
DRILLER: SADME

INTERVAL DRILLED 0m - 85m
INTERVAL CORED NONE
GROUND E L.:
LOGGED BY: G.M. MEYER
DATE: 18.2.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
4	4	CALCRETE
32.2	28.2	SANDSTONE SOFT, AND CEMENTED, FINE-MEDIUM, BECOMING COARSER NEAR BASE, CONGLOMERATIC AT BASE.
51.2	19.0	CLAY, AND MINOR SAND, CARBONACEOUS CLAY, FINE SAND, GRADING DOWNHOLE TO SAND, VERY COARSE, WITH SUBROUNDED QUARTZ GRANULE NEAR BASE.
59.4	8.2	CLAY, CARBONACEOUS, WITH MINOR WOODY COAL SEAMS
78.4	19.0	CLAY AND MINOR SAND
85.0	6.6	SANDSTONE, FELDSPATHIC, MEDIUM TO VERY COARSE, QUARTZ, WITH CLAY INTERBEDS.

REMARKS

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DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P 5
UNIT NO. 644014802

COALFIELD:
COORDINATES: E: 510200m
(AMG) N: 6304400m
DRILLER: SADME

INTERVAL DRILLED 0m - 94.0m
INTERVAL CORED NONE
GROUND E L.:
LOGGED BY: G.M. MEYER DATE:

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
11.2	11.2	CALCRETE WITH 20%-30% SAND, AND MINOR CLAY
26.0	14.8	SANDSTONE RED BROWN, FINE, WITH SANDY CLAY, AND MEDIUM TO COARSE SAND, GRANULES AND PEBBLES.
49.6	23.6	CLAY AND SILT WITH SANDSTONE INTERBEDS, BECOMING CLEAN, AND COARSE GRAINED TOWARDS BASE
63.1	13.5	CLAY AND SAND CLAY CARBONACEOUS, SANDSTONE OF FINE-MEDIUM, WELL ROUNDED QUARTZ.
84.4	21.3	SAND, MEDIUM TO VERY COARSE, RARE GRANULES, SUBROUNDED-WELL ROUNDED, MINOR CLAY AND WOODY COAL
94.0	9.6	CLAYSTONE AND SHALE BLUE-GREY, SOFT, WITH MINOR SAND.

REMARKS

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MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. POLDA 8
UNIT NO. 557003201

COALFIELD: LOCK
COORDINATES: E: 577100 (AMG) N: 6281200
DRILLER: SADME
INTERVAL DRILLED 0-256.2m
INTERVAL CORED NIL
GROUND E L.:
LOGGED BY: G. Meyer
DATE: 1/8/79

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
0.8	0.8	CALCRETE; pale brown
9.2	8.4	SANDY CLAY; orange, brown with 20% fine to med. sand.
26.2	17.0	SANDSTONE; orange, brown, V. fine to med. minor coarse Qtz. granules near base.
27.0	0.8	CLAY; white
33.0	6.0	CLAYEY GRANULE SANDSTONE; white to yellow, hard with 10-20% clay matrix and 30-40% Qtz. granules.
33.8	0.8	Undifferentiated (?) clay
37.4	3.6	CLAYEY SANDSTONE; grey, micaceous, med. gr., with 10-40% clay matrix. Grades to SANDSTONE; white to pale brown, med. to coarse minor carbonaceous laminae.
38.0	0.6	Undifferentiated (?) clay
44.8	6.8	SANDSTONE; white to pale brown, med. to coarse
45.3	0.5	Undifferentiated (?) clay
46.8	1.5	MUDSTONE; pale brownish grey, micaceous
54.4	7.6	SANDSTONE; pale grey, mod. soft to mod. hard, micaceous fine sand to granule size. Carbonaceous laminae in part.
56.8	2.4	MUDSTONE; dark grey, micaceous, carbonaceous
73.6	16.8	SANDSTONE; pale grey, white, micaceous, fine and coarse to very coarse, subangular to subrounded, minor pyrite, micaceous clay.
77.2	3.6	MUDSTONE; dark brown to grey, mod. hard, micaceous, carbonaceous
84.0	6.8	SANDSTONE; medium to very coarse subangular to subrounded clear and minor yellow, iron stained.
97.6	13.6	MUDSTONE minor coal carbonaceous
103.6	6.0	SANDSTONE; coarse to very coarse, minor granules, sub-rounded to subangular grains. lesser medium harder sandstone. Clayey near base.
104.4	0.8	CARBONACEOUS MUDSTONE; dark brown, micaceous
121.6	17.2	MUDSTONE; pale to dark grey near base, brown, micaceous, carbonaceous, soft. Minor pale brown, white, brittle claystone. Minor black, vitreous coal stringers.
123.4	1.8	SANDSTONE & GRAVEL; undifferentiated
131.8	8.4	MUDSTONE; dark grey, micaceous, denser than above, carbonaceous. Minor clayey coal stringers.
134.8	3.0	SANDSTONE; medium to coarse, subrounded to rounded grains.
147.2	12.4	MUDSTONE and SANDSTONE, interbedded; mudstone grey, carbonaceous, sandstone medium to coarse, rounded.
148.0	0.8	COAL; probably interbedded with SAND; coarse to very coarse
159.2	11.2	MUDSTONE; pale grey, brownish grey, soft, micaceous, carbonaceous. Minor shale
161.5		SAND & GRAVEL; coarse quartz granules 4 mm
166.4	4.9	SANDY MUDSTONE; pale grey with up to 30% fine sand
174.4	8.0	CONGLOMERATIC MUDSTONE; pale grey, soft to dark brown, carbonaceous, mod. hard. Pebbles of quartzite
196.0	21.6	CONGLOMERATIC MUDSTONE AND SANDSTONE; Mudstone is pale to dark grey, greenish grey, dense, moderately hard, feldspathic micaceous. Sandstones contain granule to boulder size quartz - biotite gneiss, quartzite, and weathered mica-feldspar schist. Minor coarse to very coarse SAND.

REMARKS

SHEET ... OF ... DRG. NO. S

MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. POLDA 8
UNIT NO. 557003201

COALFIELD: LOCK
COORDINATES: E: 577100
(AMG) N: 6281200
DRILLER: SADME
INTERVAL DRILLED 0-256.2m
INTERVAL CORED NIL
GROUND E L.:
LOGGED BY: G. Meyer
DATE: 1/8/79

UNIT (BASE) (m)	THICKNESS (m)	DESCRIPTION
256.04	60.04	MUDSTONE. Mudstone is brownish grey, pale grey, mod. hard. With sandstone interbeds occur between 205 and 215 m and are pale grey, pale greenish grey, soft, micaceous, Very fine, clayey in part. Boulders of quartzite and biotite schist occur near base.
256.2	0.16	SANDSTONE; pale grey, indurated, poorly sorted, calcite and pyrite cement, boulders of quartzite, gneiss, and schist.

REMARKS

SHEET OF DRG. NO. S

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P9
UNIT NO. 254001201

COALFIELD: LOCK
COORDINATES: E: 588300
(AMG) N: 6281400
DRILLER:

INTERVAL DRILLED 0 m - 19.5 m
INTERVAL CORED 19.5 m - 43.0 m
GROUND E L.:
LOGGED BY: G.M. Meyer DATE: 21/3/79

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
18	18	Sand, brown, yellow, white, green, mostly unconsolidated, up to 40% clay, fine to medium, rounded to subrounded.
23.6	5.6	Inter-bedded coal, and clay, with sandy clay. Basal clay dark blue grey, minor grey, pyritic, dense.
37.0	13.4	Sandstone, brown to black, carbonaceous, pyritic in part, poorly sorted, medium to very coarse, subangular to subrounded, quartz to pebbles to 15 mm diameter, quartz. Minor brown clay.
43.0	6.0	Sandstone, pale grey/brown, coarse, subrounded. Underlain by sandstone with clay matrix, carbonaceous, fine, with interbeds of medium to coarse sandstone.

REMARKS

SHEET ... OF ... DRG. NO. S

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DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P10
UNIT NO. 254001801

COALFIELD:
COORDINATES: E: 588600
(AMG) N: 6282200
DRILLER:

INTERVAL DRILLED 0 m - 18 m
INTERVAL CORED 18.0 m - 30.0 m
GROUND E L.:
LOGGED BY: G.M. Meyer
DATE: 21/3/77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
1.6	1.6	Calcrete, pale yellow, hard, sandy at base.
5.4	3.8	Clay, pale green/brown, with 20% medium quartz sand.
15.6	10.2	Sand, white, yellow, grey green, micaceous, with up to 10% fine to medium subrounded quartz sand.
30.0	14.4	Claystone, grey, micaceous, grading in size to sandstone, micaceous, pyritic, well sorted, medium, underlain by claystone - poorly sorted, medium to coarse, with minor quartz pebbles, subangular to subrounded.

REMARKS

SHEET OF
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JOB 402 MF 44

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P11
UNIT NO. 557000501

COALFIELD:
COORDINATES: E: 576800
(AMG) N: 6280300
DRILLER:

INTERVAL DRILLED 0 m - 35.0 m
INTERVAL CORED 35.0 m - 40.0 m
GROUND E L.:
LOGGED BY: M.B. Riley
DATE:

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
3.0	3.0	Calcrete, white, off white, some black, with fine pale brown quartz, and some silt.
11.9	8.9	Sandstone, indurated, unconsolidated near base, fine-medium, subrounded, to coarse grained, subangular.
37.0	25.1	Sand, medium to fine grained, subangular to subrounded, clear, white, yellow with clay matrix.
37.8	0.8	Clay, grey, micaceous pyritic.
39.0	0.2	Sand, medium to coarse, subangular to subrounded, clear, quartz, minor clay.
39.6	0.6	Clay.
40.0	0.4	Sand, fine, to fine grained, subrounded quartz.

REMARKS

JOB 402 MF 44

SHEET ... OF ... DRG. NO. S

MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P12
UNIT NO. 655003101

COALFIELD: LOCK
COORDINATES: E: 574500
(AMG) N: 6274700
DRILLER: SADME

INTERVAL DRILLED 0m - 42m
INTERVAL CORED 42m - 75.0m
GROUND E L.:
LOGGED BY: M.B. RILEY
DATE: 24.3.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
6.0	6.0	SAND - fine to medium grained, some coarse grained, quartz subrounded and clear, becoming indurated with calcareous cement and more coarse grained near base, in soft CLAY matrix, pale buff-brown to red yellow.
15.8	9.8	SAND - medium to mainly coarse grained, subangular to subrounded, slightly calcareous near top, mainly red, some white, yellow and orange, slightly silty and slightly clayey.
40.7	24.9	CLAY - dark grey, some light brown, in bands, micaceous interbedded with SAND, some fine grained, mainly medium to coarse grained quartz, subangular to subrounded, clear.
47.0	6.3	CLAY - light and dark grey, brown, micaceous, lignitic, pyritic in bands, with dark brown LIGNITE in bands up to 5 cm. thick, with pyrite nodules, and thin sand lenses near base.
59.3	12.3	SAND - medium to coarse grained quartz, subangular to subrounded, off-white to grey, slightly clayey, grading to CLAY as above with fine sandy lenses and occasional coarse grained, subangular quartz, with LIGNITE in bands up to 10 cm., grading from dark brown to
63.0	3.7	SAND - medium to coarse grained quartz, subangular to subrounded, off-white to grey, with CLAY, grey as above.
75.0	12.0	SAND - fine grained sand to fine gravel sized quartz, subangular to rounded, white and grey, clayey in part.

REMARKS

SHEET ... OF ... DRG. NO. S

MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P13
UNIT NO. 232002501

COALFIELD: LOCK
COORDINATES: E: 553300
(AMG) N: 6275000
DRILLER: SADME

INTERVAL DRILLED 0m - 32m
INTERVAL CORED 32m - 58.0m
GROUND E L.: 65m (approximate)
LOGGED BY: I.J. Townsend DATE: 26.3.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
0.8	0.8	SOIL - Orange/red, quartz, unconsolidated, subangular medium, clay matrix.
3.0	2.2	CALCRETE, buff/pink, sandy.
9.0	6.0	CLAY, yellow, sandy ranging to red/white, grey, stiff with scattered sand.
30.0	21.0	SAND, yellow, buff, red with some clay, medium to fine, subrounded, quartz.
46.0	16.0	SAND, red with carbonaceous fragments, otherwise as above.
49.0	3.0	SAND, medium to coarse, subangular to subrounded, occasional pebbles, lignitic in part.
58.0	9.0	CLAY, pale brown, grey micaceous, lignitic, sandy in parts, yellow/green towards base.

REMARKS Compiled from electronic logs and field log.

SHEET ... OF ... DRG. NO. S

MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P21

UNIT NO. 486002901

COALFIELD: LOCK

COORDINATES: E: ?

(AMG) N: ?

DRILLER: SADME

INTERVAL DRILLED 0m-100m

INTERVAL CORED 100m-123m

GROUND E L.: ?

LOGGED BY: G.M. Meyer

DATE: 21/4/77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
0.6	0.6	SILT AND SAND, Grey/brown, fine to medium, quartz, unconsolidated.
1.2	0.6	CALCRETE, yellow/brown
17.4	15.2	SAND, pale yellow, fine to coarse, subrounded to rounded, quartz, with 40% calcareous clay, more clay rich down-hole
74.3	56.9	SAND, white, brown/grey in part, very fine to fine with 10% - 30% clay.
		SAND, coarse to very coarse, minor medium, subangular to subrounded, occasionally granule sized.
96.4	22.1	CLAY, grey, soft, micaceous, pyritic, with 10% - 20% very fine - medium, sand, quartz.
118.4	22.0	CLAYSTONE, grey/brown, dark brown, carbonaceous, with < 20% silt; minor coal stringers.
123.0	4.6	SANDSTONE, pale grey, feldspathic, pyritic, medium, 20% - 40% clay pebbles of blue-green schist and quartzite.

REMARKS

SHEET OF

DRG. NO. S

MINES DEPARTMENT — SOUTH AUSTRALIA

COAL BORE LOG

HOLE NO. P28
UNIT NO. 486003003

COALFIELD: LOCK
COORDINATES: E: 565254.7mE
(AMG) N: 6281151.4mN
DRILLER: SADME

INTERVAL DRILLED 0m - 48.0m
INTERVAL CORED NIL
GROUND E L.: 119.3m
LOGGED BY: G.M. Meyer
DATE: 12.8.77

UNIT BASE (m)	THICKNESS (m)	DESCRIPTION
1.4	1.4	CALCRETE: indurated, rubbly
6.2	4.8	SANDY CLAY; reddish brown, sticky, with medium grained sand.
8.0	1.8	SANDSTONE; red, indurated, ferruginous, fine grained.
16.4	8.4	SANDY CLAY grading to CLAYEY SAND; white, pale brown, soft, micaceous, very fine to very coarse grained, gen. inc. with depth, subangular.
40.6	24.2	CLAYSTONE; grey, brownish grey, dense, micaceous, carbonaceous in part, hard, minor coal stringers.
48.0	7.4	CLAYSTONE; mid to pale grey, hard feldspathic.

REMARKS

SHEET OF
DRG. NO. S

DRG NO. 77-375

77-375

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO. 12

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No. 655003101

LICENCE : EL 280

COMPANY : S.A.D.M.E.

DRILLER : S.A.D.M.E.

LOCATION : 574500mE 6274700mN

ELEVATION :

LOGS: GAMMA DENSITY NEUTRON S.P. RESISTIVITY

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- C CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- Py PYRITE
- CALCAREOUS

SPUDDED : 23/3/77

COMPLETED: 24/3/77

T.D. : 75·0m

CORED: 42·0-75·0m

COMPILED BY : M.B.RILEY

M.B.R.

DEPTH (m)

LITHOLOGICAL DESCRIPTION

0-6·0m SAND – fine to medium grained, some coarse grained, quartz, subrounded and clear, becoming indurated with calcareous cement and more coarse grained near base, in soft CLAY matrix, pale buff-brown to red, yellow.

6·0-15·8m SAND – medium to mainly coarse grained, subangular to subrounded, slightly calcareous near top, mainly red, some white, yellow and orange, slightly silty and slighty clayey.

15·8-40·7m CLAY – dark grey, some light brown, in bands, micaceous, interbedded with SAND, some fine grained, mainly medium to coarse grained quartz, subangular to subrounded, clear.

40·7-47·0m CLAY – light and dark grey, brown, micaceous, lignitic, pyritic in bands, with dark brown LIGNITE in bands up to 5cm. thick, with pyrite nodules, and thin sand lenses near base.

47·0-59·3m SAND – medium to coarse grained quartz, subangular to subrounded, off-white to grey, slightly clayey, grading to CLAY as above with fine sandy lenses and occasional coarse grained, subangular quartz, with LIGNITE in bands up to 10cm., grading from dark brown to thin black vitrinite bands, cloyey in part.

59·3-63·0m SAND – medium to coarse grained quartz, subangular to subrounded, off-white to grey, with CLAY, grey as above.

63·0-75·0m SAND – fine grained sand to fine gravel sized quartz, subangular to rounded, white and grey, clayey in part.

LITHOLOG

CORE RECOV.

S.P. (mV) ←10→

GAMMA RAY (Counts/sec) 0 25 50 75 100 125

DEPTH (m)

INTERP LOG

SAMPLES

DENSITY (x10³ counts/sec) 12·5 10·0 7·5 5·0 2·5 0

NEUTRON (Counts/sec) 0 100 200 300 400 500

STRATIGRAPHIC COLUMN

QUATERNARY — BRIDGEWATER FORMATION

TERTIARY (EOCENE) — POELPENA FORMATION

LATE JURASSIC — POLDA FORMATION

T.D. 75·0m

334

DRG NO. 78-14

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO 3

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No. 652000E05

LICENCE : EL 280

COMPANY : S.A.D.M.E.

DRILLER : S.A.D.M.E.

LOCATION : 523200mE
6306800mN

ELEVATION :

LOGS: SELF POTENTIAL
GAMMA RAY
NEUTRON
POINT RESISTANCE

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- c CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- Py PYRITE
- f FELDSPATHIC
- //// CROSS BEDDING

SPUDDED : 15/2/77

COMPLETED: 16/2/77

T.D. : 27·0m

CORED:

COMPILED BY : G.M.MEYER

M.F

DEPTH (m)	LITHOLOGICAL DESCRIPTION	LITHOLOG	CORE RECOV.	GAMMA RAY (cps) S.P. (Mv)	DEPTH (m)	INTERP. LOG	SAMPLES	P.R. (ohm) NEUTRON (cps)	STRATIGRAPHIC COLUMN
	0-9 White, pale yellowish brown, indurated calcrete overlying pale yellowish brown, fine to medium grain, and silt size calcite fragments. Generally angular, and weakly consolidated with (5-10%) micrite matrix.			0 25 50 75 100 125 ← 10 →				0 250 500 750 1000 1250 1500 ← 10 →	QUATERNARY / BRIDGEWATER FORMATION
10	9-17·8 Clayey sandstone grading to sandy clay and to pebbly sandstone. Clayey sandstone is mottled pale grey, green, yellow and red, hard, well sorted and fine grained. Sandy clay is moderately hard and contains up to (20%) fine grain sand. Pebbly sandstone is brown, carbonaceous, poorly sorted, fine to coarse grain with subrounded quartz pebbles.		1 2 3 4 5 6		10				? TERT. / UN-NAMED
20	17·8-22·6 Black, carbonaceous, sticky, micaceous, clay grading to black fine grain clayey (10%) sandstone.				20	c c c			TERTIARY (EOCENE) / POELPENA FORMATION
	22·6-27·0 Pale grey, feldspathic (10-20%), hard sandstone interbedded with feldspathic pebbly sandstone. Cross beds dipping up to 10°.					//// f f			PRE-CAMBRIAN / MT. WEDGE GRITS
30					30	T.D. 27m			

3.24

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO 4

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No. 6440159 01

LICENCE E.L. 280

COMPANY S.A.D.M.E.

DRILLER S.A.D.M.E.

LOCATION 509700mE 6308800mN

ELEVATION :

LOGS: SELF POTENTIAL
GAMMA RAY
NEUTRON
POINT RESISTANCE

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- CARBONACEOUS
- PEBBLE, COBBLE
- MICACEOUS
- PYRITE
- FELDSPATHIC

SPUDDED : 16/2/77

COMPLETED: 18/2/77

T.D. : 85.0m

CORED NIL

COMPILED BY : G.M. MEYER

DEPTH (m) | LITHOLOGICAL DESCRIPTION | LITHOLOG | CORE RECOV. | GAMMA RAY (cps) 0 10 20 30 40 50 | SP —25(mv)— | DEPTH (m) | INTERP LOG | SAMPLES | RES. (ohm) 5 | NEUTRON (cps) 0 100 200 300 400 500 600 | STRATIGRAPHIC COLUMN | M.E.

0-4 White, pale yellowish brown, minor pale brown, indurated, concretionary calcrete overlying pale yellow subrounded fine sand, silts minor clay size calcite fragments.

4-32.2 Yellow, generally cleon and soft but minor hard calcite cemented, fine to medium grain. Sandstone becoming coarse towards base. Subangular grains becoming subrounded towards base. Conglomeratic sandstone near base comprises subangular quartz granules, less than 3mm, in fine to medium grain sandstone.

32.2-51.2 Brown, soft, carbonaceous clay overlying interbedded brown, silty (20%) clay and brown moderately hard, fine grain, quartz sand. This grades downwards into pale grey, medium to very coarse grain sand comprising rounded to well rounded quartz grains. Minor subrounded quartz granules near base.

51.2-59.4 Brown carbonaceous clay overlying medium grain sand with minor brown woody coal seams.

59.4-78.4 White and pale grey clay and micaceous, carbonaceous, silty (10-20%) clay and interbedded medium grain sand. Minor coarse sand and granules less than 3mm in part.

78.4-85.0 T.D. Feldspathic sandstones comprising 5% feldspars and 95% medium to very coarse grain, rounded quartz grains. Interbeds of pale grey clay.

base shift

base shift

T.D. 85m

QUAT. BRIDGEWATER FMN

TERTIARY UN-NAMED

TERTIARY (EOCENE) POELPENA FORMATION

DRG. NO. 78-19

POLDA NO. 9

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA BASIN

KIMBA 1:250,000 MAP
TOOLIGIE 1:100,000
WELL No. 254001201

LICENCE : E.L. 280

COMPANY: S.A.D.M.E.

DRILLER : S.A.D.M.E.

LOCATION: 588300mE
6281400mN

ELEVATION :

LOGS: GAMMA
SELF POTENTIAL
POINT RESISTANCE
NEUTRON
DENSITY

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE .

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- C CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- Py PYRITE

SPUDDED : 19/3/77

COMPLETED: 21/3/77

T.D. : 43·0m

CORED: 19·5-43·0m

COMPILED BY : G.M.MEYER

D.R.V.

DEPTH (m)	LITHOLOGICAL DESCRIPTION	LITHOLOG	CORE RECOV.	GAMMA RAY (c.p.s.) 0 25 50 75 100 125	DEPTH (m)	INTERP. LOG	SAMPLES	DENSITY (c.p.s.) 12500 10000 7500 5000 2500 0 / NEUTRON (c.p.s.) 0 100 200 300 400 500	STRATIGRAPHIC COLUMN
10	0-18·0m SAND; pale brown, yellow, white and green, generally unconsolidated to weakly consolidated, indurated in part, clayey (up to 40%) in part, fine to medium grained, rounded to subrounded.			←10mV→ S.P.	10			P.R. ←5Ω→	QUATERNARY / BRIDGEWATER FORMATION
20	18·0-23·6m INTERBEDDED COAL and pale grey CLAY overlying SANDY CLAY; dk. brown to greyish brown, minor bright yellow and blue, med. to coarse gr. with up to 40% sand. Overlies KAOLIN; white grading to yellow and grey. Overlies CLAY dk. grey, bluish grey and minor greyish brown, pyritic, sticky, dense.				20				LATE JURASSIC
30	23·6-37·0m SANDSTONE; brown to black, carbonaceous, micaceous, pyritic in part, poorly sorted, med. to v. coarse gr., subangular to subrounded. Granules and pebbles up to 15mm diam., of qtz. and brown micaceous silty clay. Minor CLAY; brownish grey, micaceous.				30				
40	37·0-43·0m SILTY SANDSTONE; pale greyish brown, coarse gr., subrounded. Grades to SANDSTONE; brown, carbonaceous, fine to med. gr. Overlies CLAYEY SANDSTONE; brownish grey, grey, carbonaceous, fine gr., interbedded with med. to coarse gr. sandstone.				40	T.D. 43·0m			POLDA FORMATION

374

DRG NO 78-16

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO 5

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No. 644014802

LICENCE : E.L. 280

COMPANY : SADME.

DRILLER : SADME.

LOCATION : 510200mE
6304400mN

ELEVATION :

LOGS : SELF POTENTIAL
GAMMA RAY
NEUTRON
POINT RESISTANCE

LOGGED BY : SADME.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- c CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- py PYRITE
- fe FERRUGINOUS

SPUDDED : 19/2/77

COMPLETED : 21/2/77

T.D. : 94.0m

CORED : NOT CORED

COMPILED BY : G.M. MEYER

M.F.

DEPTH (m)	LITHOLOGICAL DESCRIPTION
0 – 11.20	Pale grey and pale brown indurated, concretionary calcrete with 20-30% subangular to subrounded quartz sand overlying pale brown, partly cemented fine to coarse grained calcite grains with fine to medium grain quartz sand and minor clay in part.
11.20 – 26.0	Reddish brown, ferruginous, fine grain, sandstone and minor siltstone overlying yellow, grey and white mottled, sandy (fine to med. grain) clay and white and yellow medium to coarse grain sand and granules (rounded) and pebbles up to 5mm in size.
26.0 – 49.60	Black to dark brownish grey, carbonaceous, fine grain sandy and silty clays and clayey silts, and white and grey, soft to moderately hard, micaceous, very fine to medium grain sandstone. Grades downwards to clean, medium to coarse grain sand and minor quartz granules.
49.60 – 63.10	Interbedded brown, carbonaceous clay, brown clayey (10-20%) very fine grain sandstone, and brown, carbonaceous to clean, fine to medium grain sand with rounded to well rounded grains.
63.10 – 84.40	Medium to very coarse grain, subrounded to well rounded, quartz sand and minor quartz granules. Minor white to pale grey clay and minor brown woody coal.
84.40 – 94.0	Pale to bluish grey, micaceous, soft to indurated, claystone and shale with fine grained sand

LITHOLOG | CORE RECOV. | S.P (Mv) | GAMMA RAY (cps) | DEPTH (m) | INTERP LOG | SAMPLES | RR (ohm) | NEUTRON (cps) | STRATIGRAPHIC COLUMN

STRATIGRAPHIC COLUMN: QUATERNARY — BRIDGEWATER FORMATION; TERTIARY (EOCENE) — POELPENA FORMATION

TD 94m

374

DRG NO. 78-21

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO. 13

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No 23200501

LICENCE : EL 280

COMPANY : SA DME.

DRILLER : SA DME.

LOCATION : 553300mE
6275000mN

ELEVATION :

LOGS: SELF POTENTIAL
GAMMA RAY
DENSITY
RESISTIVITY
NEUTRON

LOGGED BY: SA DME.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- C CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- Py PYRITE

SPUDDED : 25/3/77

COMPLETED: 26/3/77

T.D. : 58·0m

CORED: 32·0 – 58·0

COMPILED BY : I.J. TOWNSEND.

DEPTH (m)	LITHOLOGICAL DESCRIPTION
0-·80	SOIL, orange red sandy medium grained clayey.
·80-3·0	LIMESTONE, (calcrete) hard dense off white to pink, sandy.
3·0-9·0	CLAY, yellow off white & reddish mottled, sandy (5%) fine to medium grained
9·0-12·0	SAND, yellow to off white, clayey, fine to medium grained subrounded.
12·0-26·0	SAND, red and white fine to medium grained minor clay.
26·0-30·0	SAND, red fine to medium grained subrounded quartz, very slightly clayey some iron staining
30·0-48·0	SAND, coloured red by drilling mud(?) in upper 2 metres, dark grey to black lignitic and pale brown, medium grained loose very coarse grained to pebbly near base; much more lignitic between 42 and 44m.
48·0-52·0	CLAY, sandy micaceous and SAND grey to buff, core loss assumed to be very sandy soft clay.
52·0-58·0	CLAY, pale brown and grey micaceous lignitic and sancy grading down to off white – yellowish green grey micaceous clay with traces of lignite.

LITHOLOG | CORE RECOV. | GAMMA RAY (cps) ← 10 → S.P(Mv) 0 50 100 150 200 250 | DEPTH (m) | INTERP. LOG | SAMPLES | DENSITY (cps)x10 750 500 250 0 | NEUTRON (cps)x10 0 25 50 75 100 | RESISTIVITY (ohm) ← 5 → | Mud level in bore

T.D. 58m

MF

STRATIGRAPHIC COLUMN

QUATERNARY

BRIDGEWATER FORMATION

TERTIARY (EOCENE)

POELPENA FORMATION

?

LATE JURASSIC

POLDA FORMATION

374

DRG NO 78-27

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO 21

POLDA BASIN

KIMBA 1:250,000 MAP
TOOLIGIE 1:100,000
WELL No. 486002901

LICENCE : EL 280
COMPANY : SADME.
DRILLER : SADME.
LOCATION :
ELEVATION :

LOGS: GAMMA RAY
NEUTRON

LOGGED BY: SADME.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- CARBONACEOUS
- PEBBLE, COBBLE
- MICACEOUS
- PYRITE

SPUDDED : 20/4/77
COMPLETED: 22/4/77
T.D. : 123.0m
CORED: 100–123.0m

COMPILED BY : G.M. MEYER

M.F.

DEPTH (m)	LITHOLOGICAL DESCRIPTION	LITHOLOG
0–10	0–6m SILT & SAND; greyish brown, fine to medium grain.	
	6–12m CALCRETE; pale yellowish brown.	
10–20	12–17.4m CLAYEY SAND; pale yellow, grading to brown fine to coarse grain, with up to 40% calcareous clay matrix. (sand subrounded to rounded.) Grades downwards into SILTY CLAY; brown, 10–20% silt, and CLAY, brownish grey.	
20–30	17.4–74.3m CLAYEY SAND, white, brownish grey in part, micaceous, very fine to fine grain, 10–30% clay. SAND; coarse to very coarse grain, minor medium grain, subangular to subrounded, slightly clayey minor GRAVEL; granule size. CLAY, brownish grey.	
30–40		
40–50		
50–60		
60–70		
70–80	74.3–96.4m SANDY CLAY, grey, soft, micaceous, pyritic in part, 10–20% very fine to medium grain sand. Grades to SILTY CLAY; grey to brownish grey, micaceous, 10–20% silt. Overlies SAND, medium to coarse grain, slightly clayey.	
80–90		
90–100	96.4–118.4m SILTY CLAYSTONE; greyish brown, dark brown, carbonaceous/micaceous with depth; micaceous, generally up to 20% silt, minor coal stringers. Grades to CLAYEY COAL & COAL, light, black, hard.	
100–110		
110–120	118.4–123.0 PEBBLY, CLAYEY SANDSTONE, pale grey, feldspathic, medium grain, 20–40% clay, pebbles of blue-green schist and quartzite. Grades to CLAYSTONE, bluish grey, pyritic.	
120–130		

GAMMA RAY (cps): 0, 25, 50, 75, 100, 125

DENSITY

NEUTRON (cps): 0, 100, 200, 300, 400

% ASH: 80, 60, 40, 20, 0

TD 123.0m

STRATIGRAPHIC COLUMN

- QUAT.
- BRIDGEWATER FORM.
- TERTIARY (EOCENE)
- POELPENA FORMATION
- LATE JURASSIC
- POLDA FORMATION

DRG NO 78 33

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO.28

POLDA BASIN

KIMBA 1:250,000 MAP
TOOLIGIE 1:100,000
WELL No. 486003003

LICENCE : E.L. 280

COMPANY: S.A.D.M.E.

DRILLER : S.A.D.M.E.

LOCATION: 565254·7E
6281151·4N

ELEVATION : A.H.D. 119·3 m

LOGS: SELF POTENTIAL
GAMMA RAY
DENSITY
NEUTRON

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE

- COAL, LIGNITE
- SAND, SANDSTONE
- SILTS, SILTSTONE
- CLAY, SOFT
- SHALE, CLAYSTONE
- CLAYEY COAL
- CARB. CLAY
- LIMESTONE
- DOLOMITE
- C CARBONACEOUS
- PEBBLE, COBBLE
- m MICACEOUS
- Py PYRITE
- Fe FERRUGINOUS
- f FELDSPATHIC

SPUDDED : 11/8/77

COMPLETED: 12/8/77

T.D. : 48·0m

CORED: NO CORING

COMPILED BY : G.M.MEYER

M.F.

DEPTH (m)	LITHOLOGICAL DESCRIPTION
0.0 - 1.4 m	CALCRETE; indurated, rubbly.
1.4 - 6.2 m	SANDY CLAY; reddish brown, sticky, with med. gr. sand.
6.2 - 8.0 m	SANDSTONE; red, indurated, ferruginous, fine gr.
8.0 - 16.4 m	SANDY CLAY grading to CLAYEY SAND; white, pale brown, soft, micaceous, v.fine to v.coarse gr., gen. inc. with depth, subangular.
16.4 - 40.6 m	CLAYSTONE; grey, brownish grey, dense, micaceous, carbonaceous in part, hard, minor coal stringers.
40.6 - 48.0 m	CLAYSTONE; mid to pale grey, hard feldspathic.

LITHOLOG | CORE RECOV.

GAMMA RAY (cps) — S.P. (mV) — 0 20 40 60 80 100

DEPTH (m) 10 20 30 40 50

INTERP. LOG: Fe, M, C, C, C, M, f, f — T.D. 48·0m

SAMPLES: H

DENSITY (cps) x100 — 40 20 0

NEUTRON (cps) — P.R. (ohm) — 0 20 40 60 80 100

STRATIGRAPHIC COLUMN

- QUATERNARY — BRIDGEWATER FORMATION
- TERTIARY (EOCENE) — POELPENA FORMATION
- LATE JURASSIC — POLDA FORMATION

374

DRG. NO. 78-20

COMPOSITE LOG

SOUTH AUSTRALIAN DEPARTMENT OF MINES

COAL DRILLHOLE

POLDA NO. 11

POLDA BASIN

KIMBA 1:250,000 MAP

WELL No. 557000501

LICENCE: E.L. 280

COMPANY: S.A.D.M.E.

DRILLER: S.A.D.M.E.

LOCATION: 576800mE
6280300mN

ELEVATION:

LOGS: GAMMA
DENSITY
NEUTRON
S.P.
RESISTIVITY

LOGGED BY: S.A.D.M.E.

LITHOLOGICAL REFERENCE

COAL, LIGNITE	CLAYEY COAL	PEBBLE, COBBLE
SAND, SANDSTONE	CARB. CLAY	MICACEOUS (m)
SILTS, SILTSTONE	LIMESTONE	PYRITE (py)
CLAY, SOFT	DOLOMITE	
SHALE, CLAYSTONE	CARBONACEOUS (c)	

SPUDDED: 22/3/77

COMPLETED: 22/3/77

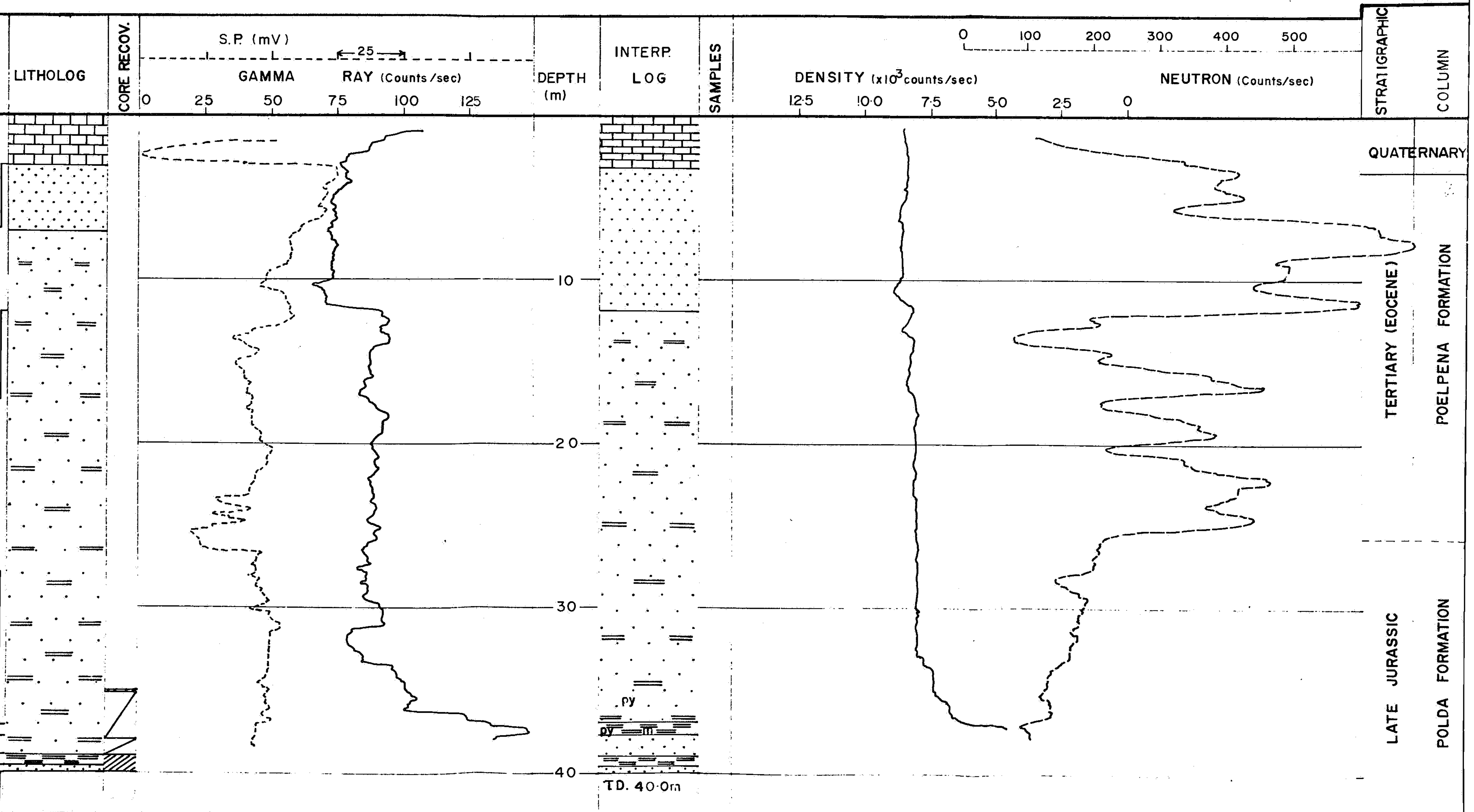
T.D.: 40·0m

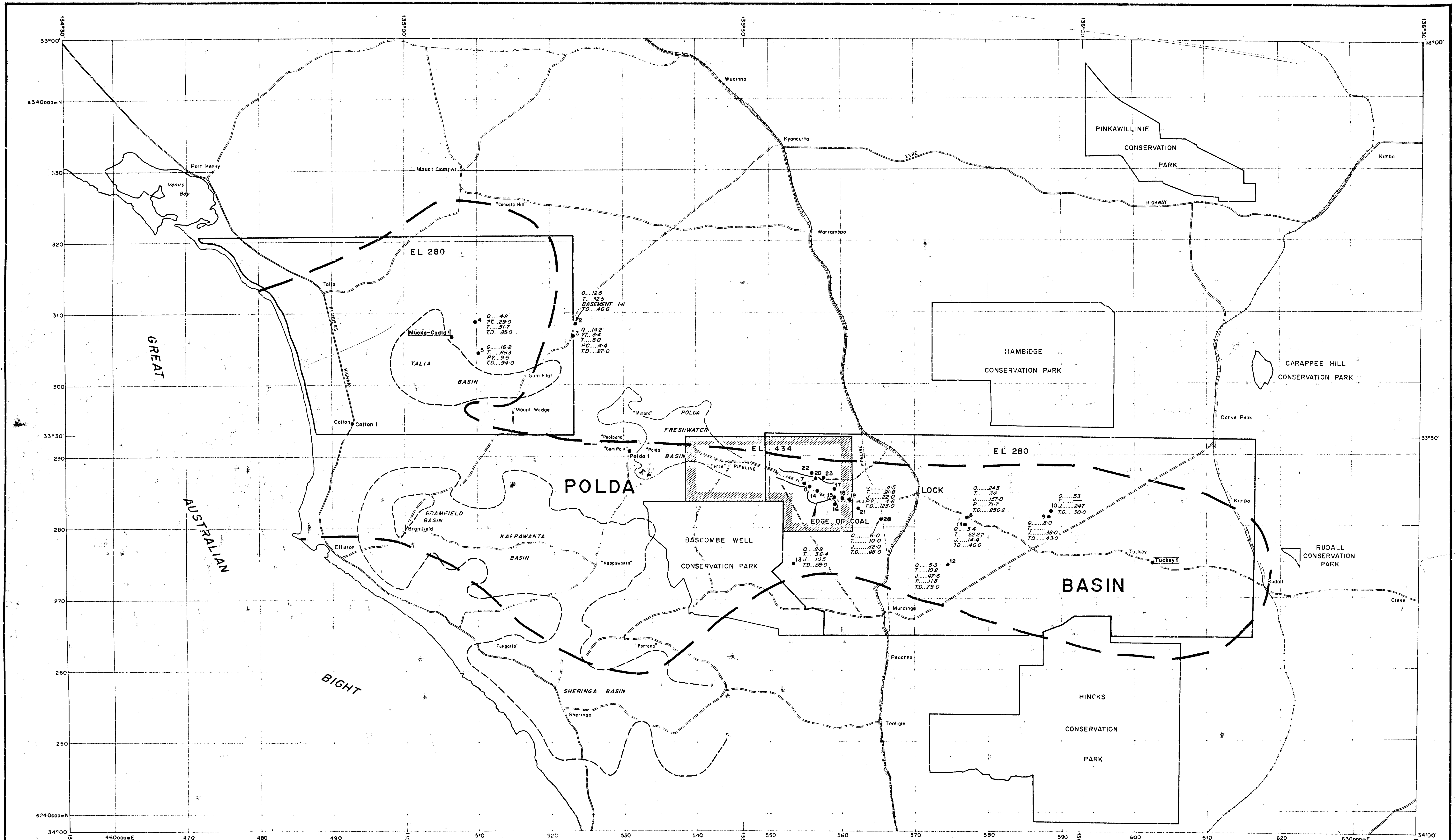
CORED: 35·0 – 40·0m

COMPILED BY: M.B. RILEY

M.B.R.

DEPTH (m)	LITHOLOGICAL DESCRIPTION
	0-3·0m CALCRETE – indurated, off-white to white, some black, containing fine grained, pale brown quartz and unconsolidated red-brown silt.
10	3·0-11·9m SANDSTONE – indurated grading to unconsolidated below, fine and medium grained quartz, subrounded, grading to coarse grained and subangular near bottom, clear, white and yellow, slightly silty and clayey.
20	11·9-37·0m SAND – medium grained to fine gravel sized quartz, subangular to subrounded, clear, white, yellow and grey, with CLAY content increasing towards bottom. Clay is soft, red-brown, yellow, white, micaceous and pyritic towards bottom.
30	37·0-37·8m CLAY – soft, grey, micaceous, pyritic.
	37·8-39·0m SAND – medium to coarse grained quartz, subangular to subrounded, clear, minor light grey clay.
	39·0-39·6m CLAY – as above.
40	39·6-40·0m SAND – fine grained sand to fine gravel sized quartz, subrounded, clear, minor light grey clay.





EL 280
EL 434
EL 280
POLDA
BASIN
TALIA BASIN
BRAMFIELD BASIN
KAPPAWANTA BASIN
SHERINGA BASIN
POLDA FRESHWATER BASIN
EDGE OF COAL
LOCK
GREAT
AUSTRALIAN
BIGHT
PINKAWILLINIE CONSERVATION PARK
HAMBIDGE CONSERVATION PARK
CARAPPEE HILL CONSERVATION PARK
BASCOMBE WELL CONSERVATION PARK
RUDALL CONSERVATION PARK
HINCKS CONSERVATION PARK
Wudinna
Kyancutta
Warramboo
Kimba
Port Kenny
Venus Bay
Mount Damper
"Concata Hill"
Talia
Mucka-Cudla 1
Gum Flat
Mount Wedge
Colton
Colton 1
Polda 1
Elliston
Bramfield
Darke Peak
Kielpa
Tuckey
Tuckey 1
Rudall
Cleve
Murdinga
Peachna
Tooligie
Sheringa
EYRE
HIGHWAY
FLINDERS HIGHWAY
PIPELINE
Q...12·5
T...32·5
BASEMENT...1·6
T.D....46·6
Q....4·2
?T....29·0
T....51·7
T.D....85·0
Q....14·2
?T....3·4
T....5·0
P.C....4·4
T.D....27·0
Q....16·2
T....68·3
P?....9·5
T.D....94·0
Q....4·5
T....91·6
J....22·0
P?....4·6
T.D....123·0
Q....243
T....32
J....157·0
P....71·7
T.D....256·2
Q....53
J....247
T.D....30·0
Q....5·0
J....38·0
T.D....43·0
Q....3·4
T....22·2?
J....14·4
T.D....40·0
Q....6·0
T....10·0
J....32·0
T.D....48·0
Q....8·9
T....38·4
J....10·5
T.D....58·0
Q....5·3
T....10·2
J....47·6
P....11·8
T.D....75·0
33°00'
33°30'
34°00'
134°30'
135°00'
135°30'
136°00'
136°30'
6340000mN
6240000mN
460000mE
630000mE

LEGEND

- • Tuckey 1 — Phase 1 stratigraphic well.
- 20• — Phase 1 drillhole P20.
- Railway.
- Pipeline.
- Road, Track.

Q	Quaternary
T	Tertiary Poldpena Formation
?T	Tertiary (unnamed formation)
J	Jurassic Polda Formation
P	Permian (unnamed formation)
PC	PreCambrian Mt. Wedge Grits
T.D	Total Depth
T....17·9	The figure shown is the unit thickness in metres.

NOTE – This map has the Australian Map Grid in metres (Zone 53) super-imposed over 1:250 000 sheets Elliston and Kimba. Local variations between grid and topography may exist.

SCALE 1:250 000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

FIG.2

DEPARTMENT OF MINES AND ENERGY – SOUTH AUSTRALIA

EXPLORATION LICENCE 280 – EYRE PENINSULA

BASIN OUTLINES AND DRILLHOLES

COMPILED C.G.G.	DRN S.R.	SCALE 1:250 000	PLAN NUMBER
DIRECTOR GENERAL	CKD	DATE DEC 1979	79-667