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EL 127

LAKE COONARBINE

PROGRESS AND FINAL REPORTS FOR THE PERIOD 1/6/74 TO 31/5/75

Submitted by
Tricentrol Australia Ltd
1975

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PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 2432. CYLINDER 2432/1.- Logs. - Transparancies.

TENEMENT E.L. 127.
TENEMENT HOLDER. TRICENTROL AUSTRALIA LTD.

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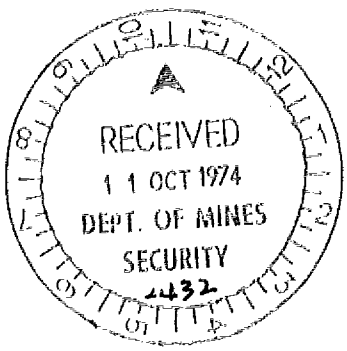
TRICENTROL AUSTRALIA LIMITED

LAKE COONARBINE, E.L.127

QUARTERLY REPORT FOR PERIOD ENDED 31/8/1974



T. W. MIDDLETON

OCTOBER 1974

C O N T E N T S

INTRODUCTION

A Phase II Rotary drilling programme was carried out in the Lake Coonarbine EL127 (formerly Lake Tinko EL69 - Lake Elder EL34) area, between August 1 and August 15, 1974. This programme was drawn up to follow a trough or channel, partly delineated during the phase I drilling. Drilling traverses at 4.8 km intervals were spaced between previous traverses, with centres about 0.8 km apart.

Following abnormally high rainfall earlier in the year, access was somewhat restricted due to submerged or impassable creek and lake crossings, however, alternative routes to the required drill sites were located.

Appended are summaries of the drill hole lithologies and anomalous gamma activity together with a plan showing hole locations.

DRILLING

Drilling commenced on August 1st and was completed on August 15th, 1974. During this period 27 holes were completed for 1899.5 m drilling.

The drilling was carried out by W.L. Sides and Sone Pty. Ltd. of Melbourne, using a Mayhew 1000 rotary rig.

Drilling conditions were generally quite good apart from the necessity to drill with water, virtually from the surface, and the tendency for clay "balling up" to occur in most holes. Fresh drilling water was obtained from local lakes and claypans.

GEOPHYSICAL LOGGING

A "Neltronic" gamma ray - spontaneous potential - single point resistivity logging unit, hired from the Mines Department (operator A.W. Young), was used for hole probing.

Only fair electric log definition was possible in most cases, the most sensitive scale settings being required generally. This would appear to be due to high ground water salinity, especailly marked in the vicinity of Billeroo Creek.

A gamma probe calibrated to 1200 - 1300 counts per second = $\frac{1}{2}$ lb/ton U_3O_8, was used throughout.

LITHOLOGIC LOGGING AND SAMPLING

All holes were lithology logged by the writer at the drillsite while drilling was in progress.

A representative spread of about 50% of the holes was grab sampled (compositing 2 x 1.5m samples) and retained for future reference.

GEOLOGY

1) Basement Structure and Lithology

The previously delineated "Tinko Trough" has been found to be more complex than previously thought, however, a well defined channel is indicated on each traverse drilled, with an apparent tributary indicated on line D-D' (see map). The channel trends generally north-north-east and has only been closely defined in the zone thought most prospective, ie. between lines B-B' and E-E'.

The most commonly encountered basement rock, in particular from line C-C' north, is a quartz-felspar (rhyolitic?) porphyry of unknown age, but presumably Proterozoic - possibly Carpentarian (cf. Pepegoona Porphyry, Gawler Range Volcanics). The porphyry when first intersected is often quite hard and unweathered or else strongly kaolinised. In the latter case it is manifest as a white kaolinitic clay with residual quartz phenocrysts which are typically bipyramidal and brownish tinged.

An inferred Cambrian "red-bed" sequence (Frome Group?) occurs on section lines A-A' and B-B', comprising red to purplish brown shales and siltstones and their clay derivatives.

Cretaceous sediments, as encountered throughout the Lake Elder area apparently did not onlap this far south or else were stripped prior to the onset of Tertiary sedimentation.

2) Tertiary Stratigraphy and Lithologies

The stratigraphy of the Cainozoic sediments as observed in the channels is tabulated with lithologies outlined:

QUATERNARY		Reddish brown aeolian sands, claypan. (av 5m)
OLIGOCENE - MIOCENE	Namba Formation (Callen)	Grey clays often mottled yellow-brown, gypseous at top. Minor quartz sand interbeds. Includes basal Etadunna Formation limestone equivalent on line E-E'. (av 50m).
PALEOCENE - EOCENE	Eyre Formation	Comprises three reasonably well defined members: 1) Upper sand - fine to coarse, rounded, polished, colourless to milky quartz, quartzite, few "chert" pebbles, mostly oxidised north to section D-D'. 2) Intermediate clay sequence, carbonaceous, lignitic, more well developed north from section D-D'. 3) Basal carbonaceous, pyritic sand containing rounded quartz sand, plus abundant locally drived quartz, in particular the bipyramidal crystals - little travelled.

A whitish clay observed in lines A-A' and B-B' and refered to as the "Billeroo Clay", is tenatively placed in the upper Eyre Formation member.

GAMMA ACTIVITY

Anomalous gamma activity has been observed in the Eyre Formation sedements in the channel and in basement rocks.

The highest reading, - 1550 c.p.s. in hole LC2 at 74.4m depth is either in a Tertiary basal clay or else in Cambrian basement.

In the carbonaceous clays, peaks to 860 c.p.s. were recorded on interfaces with sand as far north as section D-D'. Further north where reducing conditions, only, exist, no significantly anomalous peaks were recorded.

T. W. Middleton

EXPENDITURE REPORT

	$
GEOLOGICAL AND SUPERVISION	4,732.30
PLANS AND REPORTS	65.20
DATA ACQUISITION	214.62
DRILLING	6,218.14
GEOPHYSICAL LOGGING	1,900.25
VEHICLE HIRE	441.06
TRAVEL, ACCOMMODATION AND CAMP	326.72
COMMUNICATIONS	59.66
ADMINISTRATION	3,489.48
	$17,447.43

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 26	81	0 - 2.0	SAND - reddish, aeolian - Q		
		2.0 - 49.0	SAND to 13m-gypseous then CLAY, grey - T		
		49.0 - 63.0	SAND - minor lim.stn. - T	49-63	
		63.0 - 70.0	CLAY 1m then SAND - pyritic - T	64-70	
		70.0 - 81.0	SILTSTONE ? brown - G?		
LC 27	73.4	0 - 3.0	SAND - reddish aeolian - Q		
		3.0 - 12.0	SAND - gypseous - T	3-12	
		12.0 - 48.5	CLAY - grey, some SAND interbeds - T		
		48.5 - 65.0	SAND - minor lim.stn.- T	48.5-65	
		65.0 - 73.4	BASEMENT - silty CLAY, often SILTSTONE - SHALE - G		

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
HC 21	110	0 - 3.0	SAND - minor calcareous material - Q		
		3.0 - 58.0	CLAYS - grey, mottled, minor sand - T		
		58.0 - 60.0	Calcareous CLAY, MARL - Etadunna Fm. - T	60-76	
		60.0 - 76.0	SAND, light grey, pyritic, rnd. coarse - T		
		76.0 - 79.0	CLAY - greenish grey - T		
		79.0 - 82.0	SAND as 60-76	79-82	
		82.0 - 88.0	Carbonaceous CLAY, LIGNITE - T		
		88.0 - 103.5	SANDS + Carb. CLAY, LIGNITE - T	88-103.5	Lower sands contain much euhedral, rnd., fractured quartz.
		103.5 - 110.0	QUARTZ FELSPAR PORPHYRY - PG		
HC 22	79.5	0 - 59.0	C LAYS, gypseous at top grey, mottled y-b - T		
		59.0 - 62.0	LIMESTONE, CLAYS - T - Etadunna Fm.		
		62.0 - 78.5	SANDS - pyritic with interbedded CLAY, LIGNITE - T	62-70	
		78.5 - 79.5	SANDSTONE? QUARTZITE? brown, siliceous - G?	74.5-78.5	
HC 23	85	0 - 1.5	SAND - reddish, aeolian - Q		
		1.5 - 40.5	CLAYS, gypseous at top, grey, mottled y-b - T		
		40.5 - 57.0	SAND - grey, pyritic, some CLAY interbeds - T	40.5-70	γ = ~1100 cps at 50.4 - clay interbed
		57.0 - 73.0	CLAY, LIGNITE - pyritic - T		
		73.0 - 83.5	SAND - pyritic, carb., coarse - T	73-78.5	
		83.5 - 85.0	QUARTZ FELSPAR PORPHYRY - PG		γ background 240 cps
HC 24	53.4	0 - 3.0	SAND - reddish, aeolian - Q		
		3.0 - 41.5	CLAYS, grey, mottled y-b - T		
		41.5 - 47.5	SAND - coarse, minor lim.stn. - T		
		47.5 - 53.4	QUARTZ FELSPAR PORPHYRY - PG		
HC 25	78.5	0 - 1.5	SAND - reddish aeolian - Q		
		1.5 - 47.0	SAND - gypseous then CLAY, grey mottled y-b - T		
		47.0 - 68.0	SAND - minor lim.stn - T	47-68	
		68.0 - 72.0	CLAY, LIGNITE - pyritic - T		
		72.0 - 75.0	SAND - pyritic, carbonaceous - T		
		75.0 - 77.0	CLAY, LIGNITE - T	72-75	γ = 360 cps at 71.6 m
		77.0 - 78.5	SHALE - dark brown - G?		

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 17	78	0 - 16.5	SAND - red-brown, aeolian - Q		
		16.5 - 52.0	CLAY - grey, mottled, minor sand - T		
		52.0 - 64.0	SAND, fine to coarse, minor PY, CLAY interbeds - T		γ 320 cps at 61.4 - clay interface
		64.0 - 66.0	CLAY - grey pyritic - T		γ > 200 cps 64-66.4, peaks to 280 cps
		66.0 - 75.0	SAND - Coarse rnd.-washed + euhedral, little Pyrite frags.	washed, 66-75	
		75.0 - 78.0	QUARTZ FELSPAR PORPYRYR - PG		
LC 18	75.5	0 - 10.5	SAND - red-brown, aeolian - Q		
		10.5 - 49.0	CLAY, grey, mottled, minor sand - T		
		49.0 - 61.0	SAND + CLAY, interbeds - pyritic, rnd. and euhednal - T	49-55	
		61.0 - 63.0	CLAY, grey, pyritic	58-61	
		63.0 - 68.5	SAND - pyritic, euhedral qtz.	63-68.5	γ av 320 cps 61-62.8m
		68.5 - 74.0	SILT, clayey-dark brown, pyritic + sand - T		γ =520 cps at 68.8m
		74.0 - 75.5	QUARTZ FELSPAR PORPHYRY - PG		γ =300 cps
LC 19	56.5	0 - 7.5	SAND - red-brown, aeolian - Q		
		7.5 - 37.0	CLAY - grey, mottled - T		
		37.0 - 56.0	SAND - rnd + euhedral + CLAY - T	37-38, 39-41	
			sandy, silty CLAY interbeds	44-48, 51-52	
		56.0 - 56.5	QUARTZ FELSPAR PORPHYRY, little penetration - PG	54-56m	γ av 200 cps 51-52.6m
LC 20	93.5	0 - 9.0	SAND, becoming calcreceous, some CLAYS - red-brown		
		9.0 - 64.0	CLAYS, grey, minor sand interbeds - T		
		64.0 - 65.0	LIMESTONE - hard, white amorphous - T		
		65.0 - 75.0	SAND - grey, coarse, rnd. to angular, pyritic - T	65-75)	
		75.0 - 78.0	carbonaceous CLAY - brown, highly organic - T	)	
		78.0 - 88.0	SAND - pyritic rnd. + euhedral qtz.- T	)Eyre Fm?	max γ 110 cps
		88.0 - 93.0	CLAY - dark brown, carbonaceous, some SAND	78-88)	
		93.0 - 93.5	QUARTZ FELSPAR PORPHYRY ? - PG	89-91)	

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 13	81m	0 - 3.0	SAND - red-brown, aeolian - Q		
		3.0 - 49.0	CLAYS - grey, mottled, some SAND interbeds - T		γ = 380 cps at 40.4 m
		49.0 - 57.0	SAND - light grey, coarse at base, some lim.stn. - T	49-57	
		57.0 - 65.0	CLAY - bleached, mottled, then med. dark grey, carbonaceous - T		γ = 720 cps at 60m
		65.0 - 78.0	SAND - poorly sorted, pyritic, brown stains common euhedral qtz., little travelled - T	65-78	
		78.0 - 79.0	CLAY - brown, silty, carbonaceous - T		
		79.0 - 81	QUARTZ FELSPAR PORPHYRY - PG		γ = 250 cps at 78.2m
LC 14	69.5	0 - 4.5	SAND - red-brown aeolian - Q		
		4.5 - 45.5	CLAYS - grey, mottled, minor sand - T	45.5-47	γ = ~250 cps at 48.2 (clay interface, poor sand cuttings return)
		45.5 - 54.5	SAND - coarse, (some), non-stained - T	49-54.5	
		54.5 - 67.5	CLAYS (predom.) +SAND interbeds - non stained pyritic, with bipyramidal qtz. + rnd. - T	56-59	γ +200 cps 61-66.5m
				66.5-67.5	γ = 560 cps at 64.8m
		67.5 - 69.5	QUARTZ FELSPAR PORPHYRY - PG		γ av 250 cps
LC 15	48.8	0 - 1.5	SAND - red-brown, aeolian - Q		
		1.5 - 39.0	CLAYS, grey, mottled - T		
		39.0 - 45.0	SAND, little travelled euhedral+ well washed, some coarse basal pebbles to 12mm. Minor lim.stn. - T	39-43	
		45.0 - 48.8	QUARTZ FELSPAR PORPHYRY - PG		γ background 200 cps
LC 16	59.2	0 - 6.0	SAND, red-brown aeolian, some gypsum - Q		
		6.0 - 46.0	CLAY, grey, mottled, minor sand - T		
		46.0 - 54.0	SAND, rnd. to subhedral qtz., minor lim. stn.? some PY grains + CLAY interbeds - T	46-48	
				50-54	
		54.0 - 59.2	QUARTZ FELSPAR PORPHYRY, decomp. - PG		γ background 140 cps.

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 8	60	0 - 1.5	SAND - red-brown aeolian- Q		
		1.5 - 41.5	CLAYS, -grey, mottled, minor sand -	Eyre Fm? T	
		41.5 - 49.5	SAND fine lim.stn at top becoming coarse gr - Eyre Fm? T		
		49.5 - 55.0	CLAYS, light, med. dark grey - E. Fm?-T	41.5-49.5	
		55.0 - 60.0	SHALE mauvish brown, decom at top - K?		ɣ = 200 cps at 50.4m
LC 9	64	0 - 12.0	SAND -aeolian at top becoming gypseous		
		12.0 - 37.0	CLAYS - grey, mottled, minor sand		
		37.0 - 46.0	SAND, CLAY interbedded, poorly sorted sands, minor lim.stn.	37-46 (clay interbeds)	
		46.0 - 50.0	CLAY - light grey (Billeroo Clay?)		ɣ av 240 cps, peaks to 320 cps
		50.0 - 54.0	SAND - light grey, minor lim. stn. some subhedral qtz. xtals	50-54m	
		54.0 - 55.0	CLAY		ɣ peak of 1100 cps at 54.6m
		55.0 - 64.0	QUARTZ - FELSPAR POYPHYRY Decomp. at top to Kadinitic clay set with euhedral quartz xtals. Becoming harder with depth		ɣ av 240 cps
LC 10	61	0 - 3.0	SAND-red-brown aeolian- Q		
		3.0 - 40.0	CLAY - grey, mottled, minor sand - T	37-39	
		40.0 - 50.0	CLAY, light grey, silvery (Billeroo Clay) with SAND interbeds - slight lim.stn. - T	40-42	ɣ peaks to 340 cps in clay
		50.0 - 61.0	QUARTZ FELSPAR PORPHYRY - decomposed -PG?	45-50	ɣ background 280 cps
LC 11	55	0 - 11.0	SAND - red-brown, aeolian - Q		sited near top of sand ridge
		11.0 - 45.0	CLAY, gypseous at top, grey, mottled, sand interbeds - T		
		45.0 - 51.0	SAND - fine to coarse, minor lim. stn. - T	45-50m	
		51.0 - 55.0	QUARTZ FELSPAR PORPHYRY - PG ?		ɣ background 200 cps peak 350 cps.
LC 12	48	0 - 5.0	SAND , red-brown, aeolian- Q		
		5.0 - 30.0	CLAYS - light, med. grey, mottled - T		
		30.0 - 38.5	SAND - fine to coarse, minor lim.stn thin CLAY bed at base	31-37	
		38.5 - 48.0	QUARTZ FELSPAR PORPHYRY - PG		ɣ = 220 cps at 37.8 m

APPENDIX I

SUMMARIES OF LITHOLOGIC LOGS

HOLE NO.	DEPTH (METRES)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 1	58	0 - 3.0	LOAM, pink aeolian SAND - Q		
		3.0 - 23.0	Gypseous CLAY, CLAY - grey)		
		23.0 - 44.0	CLAYS - limonitic stn with interbedded) T SAND - mostly whitish, non-stained)	35-44	
		44.0 - 54.5	CLAY light grey becoming coffee-brown)		
		54.5 - 58.0	SHALE - chocolate brown becoming hard) G		clay is possibly a derivative after shale γ av 120 cps
LC 2	79.5	0 - 3.0	Orange brown aeolian SAND - Q		
		3.0 - 35.0	CLAYS, silty CLAY grey becoming yellow-brown		
		35.0 - 42.0	SANDS with interbedded CLAY, sands whitish non-stained	35-42	
		42.0 - 58.0?	CLAYS silvery grey, minor mottling, Billeroo Clay		
		58.0 - 74.0	SAND some CLAY interbeds sand) Eyre Fm. 58-74 limonitic becoming coarse, pebbly at base)		High γ +200 cps 43.5-55m -max ~500 cps
		74.0 - 79.5	Grey CLAY transition to SHALE mauve-brown - G		γ = ~1550 cps at 74.4 m
LC 3	70	0 - 1.5	Æolian SAND		
		1.5 - 49.0	Gypseous SAND then CLAYS-mostly greys) some thin sand interbeds 12-17m, 35-46m)		
		49.0 - 58.5	Cemented SAND 1m then silvery grey CLAY) T becoming silty, with some fine white sand)		γ + 200 cps 46-48.8m Max peak 320 cps
		58.5 - 70.0	Grey CLAY with transition to SHALE by 66m - greenish grey G		

APPENDIX I

HOLE NO.	DEPTH (METERS)	INTERVAL	DESCRIPTION	SAND UNIT	GAMMA LOG
LC 4	61	0 - 36.0	Thin aeolian SAND then grey CLAYS - T with minor sand interbeds.	34-36	
		36.0 - 48.0	Grey CLAYS becoming silvery grey some sand content (Billeroo Clay) - T		ɣ Background 180-200cps peaks to 800 cps, this unit
		48.0 - 55.0	CLAYS with SAND interbeds (oxidised - T	50-52	
		55.0 - 60.0	SILTSTONE, brown then SHALE blue-grey-G		
		60.0 - 61.0	QUARTZ FELSPAR PORPHYRY - PG		
LC 5	79.5	0 - 40.0	Gypseous CLAY then grey CLAYS some greyish SAND (slightly limonitic) - T	35-40	
		40.0 - 54.0	CLAYS light grey becoming silvery grey Billeroo Clay. - T		ɣ peaks to 340 cps
		54.0 - 59.0	CLAYS	59-66,68-71	ɣ = 320 cps at 57.6 m
		59.0 - 71.0	SANDS - whitish, some limonitic stn, CLAY,-T SILT - T		
		71.0 - 79.5	Silty CLAY - decom. derivative, light choc. - G?		
LC 6	79.5	0 - 1.5	Aeolian SAND		
		1.5 - 34.0?	Gypseous at top then grey CLAYS - T		
		34.0 - 60.0	Mixed grey CLAYS But predom light, silvery grey plastic CLAY (Billeroo Clay) - T		ɣ av 140 cps, 36-46m ɣ av 240 cps, peaks to 500 cps 46-54m
		60.0 - 75.0	SAND - becoming coarse fractured, cloudy limonitic stn. at top - T	60-75	ɣ av 140 cps, 54-59m
		75.0 - 78.0	CLAYS, grey, brownish - T		ɣ = 250 cps 59-60m
		78.0 - 79.5	SANDSTONE orange-brown, hard - G?		
LC 7	61	0 - 1.5	SAND - red-brown, aeolian - Q		
		1.5 - 30.0	CLAYS - grey, mottled yellow-brown - T		
		30.0 - 41.0	CLAY - light, silvery grey (Billeroo Clay?) - T	41-45	ɣ background 140 cps peaks to 220 cps at 37.(
		41.0 - 45.0	SAND - pale buffish, fine to coarse, lim. stn. - T		ɣ = 250 cps at 45.6m
		45.0 - 47.0	CLAY - light grey - T		
		47.0 - 61.0	BASEMENT -brick red, then chocolate silty mudstone - G?		

LAKE FROME

E.L. 127
1431 sq. km.

Lakeside Bore No.1
T.D. 1076 ft (328·1m)
Base camp site
Sed. U 630/1
T.D. 560 ft. (176·8m)
Salt Lagoons
Mudguard Swamp
Sed. U 630/2
464 ft. (141·4m)
Button Dam
Yd
Salt Creek
Lagoon
Lagoon
Eurinilla Creek
Lake Coonarbine
Billeroo Creek
Coombe Dam
Black Oak Bore
Coombes Bore (Artes)
Collins Lagoon
Mc Kenzie Bore
Johnsons New Dam
Napiers Wells Dam
Billeroo Well & Hut
"Frome Downs" 8 mls.
Lake Tom Claypan
Rutherfords Dam
Wild Horse Lagoon
Horse Shoe Lagoon
Coolibah Dam
Box Swamp
Base camp site
Lake Pinpa
Lake Namba
Lake Tinko
Channel
Billeroo
Eurinilla
Windbag Dam
Dam
Hut
Banavie Bore (Aband.)
Billeroo Tank
Bore and Tank
Old Glenmanya
T.D. 890ft. (271·3 m)
Glenmanya Bore
Yalkalpo No.1
T.D. 721 ft. (219·8m)
Lake Yalkalpo
Wycalpa Dam & Catch
Lake Yantawena
Billeroo W.H.
Minad
Mercers Dam
Togo Dam
Catch Dam
Burmah Dam
Tank
Swamp Dam
Benagerie Bore (P.D.)
Sed.U.
Napiers Catch
Pioneer Dam
Pioneer Bore
Emu Dam
Lake Benagerie
Sullivans Dam
Dams
"Benagerie"
Yd.
Blueshirt Dam
Freckletons Dam
Box Swamp Dam
Yd

SEDIMENTARY URANIUM N.L. HOLES
514/1 514/2 514/3 514/4 514/5 514/6 514/7 514/8 514/9 514/10 514/11 514/12 514/13 514/14 514/15 514/17

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

140°00' 140°03' 140°20' 140°30' 140°48' 31°00' 31°24' 31°30'

FENCE DOG PROOF VERMIN

T.N.

LOCATION DIAGRAM

Alice Springs
QUEENSLAND
Charleville
L.Eyre
SOUTH AUSTRALIA
L.Torrens
L.Frome
L.Gairdner
Frome Downs
E.L. 127
Port Augusta
Broken Hill
Yunta
Port Pirie
NEW SOUTH WALES
E.L. 63
ADELAIDE
SYDNEY
CANBERRA
VICTORIA
MELBOURNE

● PHASE I ROTARY DRILLHOLE
○ PHASE II ROTARY DRILLHOLE
E.L. BOUNDARY
A – A' LINE OF SECTION

TRICENTROL AUSTRALIA LIMITED

ENV 2432-1

PLAN SHOWING

ROTARY DRILLHOLE LOCATIONS

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE : AUG., 1974	AUTHOR : T.W.M.	PLAN No 127/1
SCALE : 1 inch = 2 miles	DRAFTED : L.R.F.	

Tricentrol
AUSTRALIA LIMITED
(Incorporated in Victoria)

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Sydney, N.S.W. 2000. Australia
Telephone 02-27 7507
Telegraphic Address Tricentrol Sydney
Telex AA24073

Ref: 73.300.00607
18th December, 1974

The Director,
Department of Mines,
P.O. Box 38, Rundle Street P.O.,
ADELAIDE, S.A. 5000

Dear Sir,

E.L. 127, LAKE COONARBINE

QUARTERLY REPORT FOR PERIOD ENDED 30/11/1974

Herewith is our quarterly report re the above area.

Technical Report

No field activity was undertaken during the last quarter. We are currently appraising the results of our August drilling programme before deciding on the next course of action.

Expenditure Report

Head Office Technical & Administration	464
Plans and Reports	78
Insurance	124
Communications	16
	$682

Yours faithfully,
Tricentrol Australia Limited

L.S. Denholm
MINERAL EXPLORATION MANAGER

TWM/lw

B. EXPENDITURE REPORT

1/6/1974 - 21/5/1975

E.L.127

	$
Geological & Supervision	5232
Drilling	6218
Geophysical Logging	1900
Vehicle Hire	441
Travel, & Accommodation	327
Communications	76
Plans & Reports	143
Data acquisition	215
Insurance	124
Head Office technical & Administration	3953
	$18,629

Tricentrol
AUSTRALIA LIMITED
(Incorporated in Victoria)

31st Level, Australia Square, Sydney, N.S.W., 2000, Australia
Telephone: 02-27 7507. Telegrams Tricentrol, Sydney. Telex AA24073

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Ref: 73.300.00607
3 April, 1975

The Director of Mines
Department of Mines
P.O. Box 38, Rundle Street P.O.
ADELAIDE, S.A. 5000

Dear Sir,

E.L. 127 LAKE COONARBINE
QUARTERLY REPORT FOR PERIOD ENDED 1/3/1975

GENERAL

No field work has been undertaken in the last quarter.

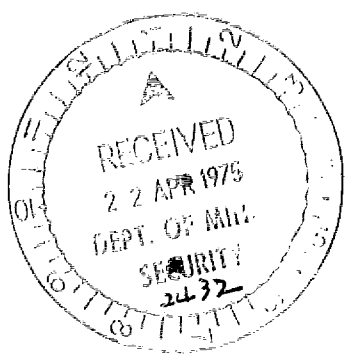
EXPENDITURE

No expenditure was incurred during the past quarter.

Yours faithfully,

T.W. Middleton
For Mineral Exploration Manager

TWM/lw



TRICENTROL AUSTRALIA LIMITED

LAKE COONARBINE E.L.127

RELINQUISHMENT REPORT

A TECHNICAL REPORT

T. W. MIDDLETON

MAY 1975

Appendix I Geophysical Logs Analysis Tables

Plan 127/2	Basement Structure
Plan 127/3	Eyre Formation Isopachs
Plan 127/4	Isopachs of anamalous gamma activity in Tertiary Strata
Plan 127/5	Cross Section A-A'
Plan 127/6	Cross Section B-B'
Plan 127/7	Cross Section C-C'
Plan 127/8	Cross Section D-D'
Plan 127/9	Cross Section E-E'

TECHNICAL REPORT

SUMMARY OF EXPLORATION ACTIVITY

a) The southern part of E.L.127 was originally held by Tricentrol Australia Ltd. in joint venture with Getty Mining Pty. Ltd. as E.L.69 (Lake Tinko) and the northern part was that area of E.L.34 (Lake Elder) retained after relinquishment of the major part.

A 50 hole rotary drilling programme, undertaken in E.L.69 during 1973, indicated the possible existence of a channel-like feature incised in pre-Tertiary basement and largely filled with sands, oxidised in the southern part and non-oxidised in the northern part of the E.L.

b) E.L.127 (Lake Coonarbine) was granted for a period of one year commencing 1/6/1974 and a 26 hole rotary drilling programme was undertaken in July/August 1974, attempting to more closely delineate the channel and discover that section wherein an oxidation-reduction interface (and hence a "roll-front" uranium type cell) might occur.

Drilling was undertaken by W.L.Sides & Son Pty. Ltd. of Melbourne using a Mayhew 1000 rotary rig and employing water flushing throughout. In all 27 holes were completed (LC1-27) for a total of 1899.5m drilling. The programme was supervised by the writer who also carried out lithology logging and cuttings grab sampling.

All holes were logged with a S.A.D.M. portable "Neltronic" gamma ray - spontaneous potential - single point resistivity logging unit (operator A.W. Young), down open holes with fresh surface water - bentonite mud drilling medium. Fair quality electric log definition was obtained without having to resort to neutron logging techniques. A gamma probe calibrated to 1200-1300 c.p.s. = $\frac{1}{2}$ lb/tonne U_3O_8 was used throughout.

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Drillhole sectioning and correlation using electric log indicated cutoffs plus cuttings information was employed for office compilation purposes. Drill traverse sections are indicated on plans 127/5 - 127/9.

SUMMARY OF GEOLOGY - (Formations after R.A. Callen: "Geology of the Frome 1:250,000 Geological Map and Adjacent Regions" S.A.D.M. 1974).

a) Pre-Tertiary Basement

The "Benagerie High" basement ridge, extending northwards from the Olary-Willyama Lower Proterozoic block, has previously been, ? recognized and partly delineated by water boring and earlier uranium exploration drilling. The 1974 drilling in E.L.127, together with the 1973 programme in E.L.'s 69 and 34 has been based on the western flank of this feature and has indicated it to have been in part, effectively positive from the Proterozoic through to the start of the Paleocene.

The oldest basement rock is a quartz felspar porphyry (rhyolite?) with prominent bipyramidal quartz phenocrysts. Where encountered in drill cuttings, it appears fresh and little altered or else varyingly decomposed and recognizable only by the quartz phenocrysts. The age of this rock is not known, however, it is most likely Carpentarian, possibly related to acid volcanics of the Mount Painter or Gawler Blocks.

The porphyry is overlain in the north and west by a "red-bed" shale -siltstone sequence, and their clay derivatives, of inferred Middle Cambrian age. This laps part of the way onto the "Benagerie High" and was apparently deposited, on an undulating basement. A limestone unit, presumably part of this sequence, was recognised in the S.A.D.M. Yalkalpo No.1 stratigraphic hole and also in Tricentrol Hole L.T.25, 0.8 km west of Coolibah Dam.

The Upper Cretaceous Marree Formation equivalent, which occurs in

/....3

the northern part of E.L.127 and extensively to the north, where it is recognised as a monotonous bluish to olive greenish grey silty clay, presumably wedges out in the vicinity of Lake Pinpa. It may have been stripped to some extent at the beginning of the Paleocene and certainly, deep channel scouring activity took place at the beginning of that epoch.

The existence of an apparent channel system, incised in all pre-Tertiary rocks, which was recognised during the 1973 drilling, has been confirmed by the 1974 programme. The form of this is demonstrated on plan 127/2.

b) Tertiary Stratigraphy

The Tertiary sequence, which is not strictly differentiated on stratigraphic grounds from the exploration viewpoint, is broadly divided into two members, the basal Eyre Formation and the upper Namba Formation. The petrophysical interpretation is shown in sections 127/5 - 127/9.

In consideration of the channel sediments, which have been the subject of exploration in this E.L., three major units have been recognised:

1) upper sand comprising fine to coarse, often well rounded polished, colourless to milky quartz and quartzite; this becomes more prominent further north in the area and it is oxidised (lightly limonitic stained) as far north as section D-D' in most holes.

2) An intermediate clay sequence, becoming carbonaceous, even lignitic with depth, extending on a thin veneer to as far south as section B-B' (LT42) but more well developed to the north.

3) A basal generally non-oxidised, carbonaceous, pyritic sand containing some rounded, polished material but mainly little travelled quartz grains- in particular the bipyramidal crystals derived from porphyry.

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The three unit sequence is best observed in the deepest part of the channels and is only poorly developed in the south.

A whitish, distinctive clay unit, extending south from section C-C', has been tentatively placed as a facies of upper sand unit. It is best developed in section A-A'. This placement is arbitrary and in general, it is hard to pick the top of Eyre Formation in the south.

The limestone (dolomitic?) and marl sequence of the Etadunna Formation as observed throughout the former Lake Elder and northern Lake Coonarbine areas was only encountered on section E-E', and there as a thin, hard amorphous limestone band with minor marl and grey and greenclays. This is now placed as a basal unit of the Namba Formation which for the most part comprises grey clays, with some yellow-brown mottling and minor sand interbeds.

Gypsum, claypan and aeolian sands of varying thickness (less than 10m generally) overly the Namba Formation.

The maximum thickness of Cainozoic sediments encountered was 104m in LC21 on section E-E'

ANOMALOUS GAMMA ACTIVITY

Anomalous gamma activity is restricted to the Eyre Formation equivalents or the basement rocks.

The porphyry, typically, often shows background activity of over 200 c.p.s. especially at the top, where decomposed. The cause of the activity is not known, it may be normal high uranium background or else potassium.

The inferred Cambrian often shows higher order values especially at the upper interface, however distinction between this and basal Tertiary clays is difficult. In LC2, the peak of 1550 cps was recorded at 74.4m depth at the interface with an oxidised sand.

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In the Eyre Formation lower unit, the peak values recorded were 1100 cps in a basal clay in LC9, and 860 cps in a lignite interbed in LC25.

In the Eyre Formation middle unit, the maximum peak recorded was 720 cps in carbonaceous clay in LC13 while in the upper unit, the highest peak was 1100 cps in a clay interbed in LC23. The whitish clay placed in the upper unit shows characteristic higher gamma activity backgrounds of about 200 cps with the highest peak of 800 cps in LC4.

In general, taking into account the 1974 drilling and the previous programme under EL69, anomalous gamma activity in Tertiary sediments has only been recorded in the Eyre Formation in the channels, with the highest values in the area from section B-B' to D-D', ie. the area where there is a change from total oxidation to totally non-oxidised sands. Only lower order values have been recorded north from section D-D' where sediments with reducing condition, only, exist.

Anomalous values to 800 cps were recorded previously at the upper interface of the Cretaceous sediments, in the region just north from Lake Pinpa, this being the area where the Cretaceous wedges out.

CONCLUSIONS

1. Two significant occurences of uranium mineralisation have been discovered to date in Tertiary channel sediments in this general area: at Yarramba, about 60 km south east of Lake Namba; and on Curnamona, about 35 km west south west of Lake Namba. The former is about 25 km north east of the Olary Block granite-pegmatoid metamorphic complex,while the latter is about 50 km north of the Croker Well - Mt. Victoria uranium deposits in the same complex. Both of the occurences are at present,and would have been through the Tertiary

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influenced by surface and or sub-surface drainage from the Olary Block which is the indisputable source of the uranium.

2. The influence of drainage from the Olary Block on the Tertiary channel sediments just east of Lake Namba would presumably have been reduced by the additional distance involved while the basement rocks of the "Benagerie High" may not have been as strongly uraniferous. In addition this latter feature was not positive during the Upper Palaeogene sedimentation.

3. While no significant uranium occurences have been discovered in the channel just east of Lake Namba, that section between drill traverses A-A' to B-B' is regarded as the most prospective part of the E.L., being an area of change from oxidation to reducing conditions in the Eyre Formation sediments. Under different politico-economic circumstances further investigation may have been warranted.

T.W. MIDDLETON

APPENDIX I

GEOPHYSICAL LOGS ANALYSIS TABLE - 1973 PROGRAMME

Hole No.	Depth	Collar R.L.	Depth/R.L. Basement (PG, G or K)	Depth/R.L. top of Eyre Fm.	Depth/R.L. top of Ettadunna Fm.	Thickness Eyre Fm.	Thickness/% Sand Eyre Fm.	Thickness/% Oxidised Sand Eyre Fm.	Thickness (m) > 200 c.p.s. /highest peak (ex. Basement)
LT1	64.2	100	57/43G	52/48	A	5	3/60	?3/100?	0/60
LT2	61.4	98	?55/47PG	49/49	A	6	2/33	2/100?	0/135
LT3	73.6	98	?65/33G?	51/47	A	14	13/92	?/50?	0/55
LT4	73.4	104	?66.5/37.5G?	60/44	A	6.5	6/92	0/0?	0/55
LT5	71.4	104	?65.5/38.5G?	61/43	A?	4.5	4.5/100	0/0?	0/55
LT6	85	105	?81/24G	67/38	A?	14	12/85	0/0?	0/120
LT7	85.3	102	?75.5/26.5G	62/40	A?	13.5	13.5/100	0/0	0/50
LT8	83.6	104	72/32G	67/37	64	5	5/100	0/0	0/65
LT9	94.	102	74/28K?	67/35	65	7	7/100	0/0	0/65(k800)
LT10	88.6	100	74/26K	67/33	64	7	7/100	0/0	0/55 (k420)
LT11	91.5	102	79.5/22.5K	69/33	66	10.5	10.5/100	0/0	0/50 (k560)
LT12	82.1	94.	71/23K	?60/34	58	11	6/54	0/0	0/95 (k800)
LT13	82.1	94	69/25K	?62/32	51	7	4/57	0/0	0/70 (k190)
LT14	85.5	95	74/21K	?67/28	58	7	7/100	0/0	0/60 (k135)
LT15	94.9	100	85/15K	72/28	57?	13	13/100	0/0	0/50
LT16	94.9	100	87/13K	77/23	61	10	10/100	0/0	0/50
LT17	74.7	89	61/28K?	?49/40	A?	12	9/75	?9/100?	0/80 (k370)
LT18	69.3	89	55/34K?	45/44	A	10	10/100	0/0	0/80 (k320)
LT19	72.7	93	68/25PG	47/46	A	21	20/95	?10/50?	0/190
LT20	62.9	97	60/37PG	51/46	A	9	8/88	0/0	0/130
LT21	88.	101	69/32K?	57/44	54?	12	12/100	0/0	0/60
LT22	94.9	101	92.5/8.5PG	53/48	A	39.5	29/73	0/0	0/150
LT23	62.5	99	56/43PG	36/63	A	20	19/95	?9.5/50?	0/80
LT24	87.8	99	81/18G?	58/41	A	23	23/100	0/0	0/55
LT25	94.9	99	75/24G?	58/41	A?	17	17/100	?2/11	0/60
LT26	62.	95	?58/37G	?54/41	A	4	2/50	0/0?	0/50
LT27	69.3	102	56.5/45.5G	?53/49	A	3.5	2/57	0/0?	0/45
LT28	60.9	98	?48/50PG	44.5/53.5	A	3.5	2.5/71	2.5/100?	0/60
LT29	64.6	93	54/39G?	43/50	A	11	11/100	11/100?	0/60
LT30	60.	100	50/50G?	35/65	A	16	16/100	0/0?	0/65

APPENDIX I

GEOPHYSICAL LOGS ANALYSIS TABLE - 1973 PROGRAMME

Hole No.	Depth	Collar R.L.	Depth/R.L. Basement (PG, G or K)	Depth/R.L. top of Eyre Fm.	Depth/R.L. top of Ettadunna Fm.	Thickness Eyre Fm.	Thickness/% Sand Eyre Fm.	Thickness/% Oxidised Sand Eyre Fm.	Thickness (m) > 200 c.p.s. /highest peak (ex. Basement)
LT31	83.8	102	71.5/30.5G	36/66	A	35	21/60	9/42	0.4/240
LT32	31.0		np	np/-			?		
LT33	92.4	116	84.5/31.5G	47/69	A	37.5	19/50	?12/100	0.8/300
LT34	72.7	128	63/65G?	49/79	A	14	1/7	1/100?	0/170
LT35	69.3	123	?57/66G?	46/77	A	11	?0/0	0/0	0/175
LT36	69.3	123	?54.5/68.5G?	43/80	A	11.5	1/8	1/100?	0/195
LT37	75.7	128	?63/65G?	52/76	A	11	2/18	2/100?	0/105
LT38	101.3	128	?93/35G?	60/68	A	33	15/45	15/100	0/110
LT39	66.3	128	?/?	??		?	3/?	3/100	0/65
LT40	79	130	?61/69G?	??	A	?	0	0	0/65
LT41	10.6	135	np	np	np	-	-	-	-
LT42	83.6	106	75/31G	?47/59	A	37	24/64	19/79	2.0/440
LT43	64.4	111	?47/64G?	44/67	A	1.5	1.5/100	1.5/100	0/95
LT44	96.4	104	77/27K?	69/37	64	10	10/100	0/0	0/80
LT45	86	104	75.5/28.5K?	63/41	60	12.5	11/88	0/0	0/55
LT46	91.9	104	75/29K	?61/43	57	14	12/85	0/0	0/185
LT47	94.9	107	75/32K	63.5/43.5	58	11.5	11/95	0/0	0/50
LT48	97.9	114	80/34K	69/45	64	11	11/100	0/0	0/50
LT49	93.4	96	?87/9PG	51/45	A	36	?22/61	0/0	0/90
LT50	103.2	111	?91/20PG	65/46	A	26	?18/69	0/0	0/140

APPENDIX I

GEOPHYSICAL LOGS ANALYSIS TABLE - 1974 PROGRAMME

Hole No.	Depth	Collar R.L.	Depth/R.L. Basement (PЄ,Є or K)	Depth/R.L. top of Eyre Fm.	Depth/R.L. top of Ettadunna Fm.	Thickness Eyre Fm.	Thickness/% Sand Eyre Fm.	Thickness/% Oxidised Sand Eyre Fm.	Thickness (m) > 200 c.p.s. /highest peak (ex. Basement)
LC1	58.	101	?44/57Є	34/A?67	A	10	10/100	10/100	0/145
LC2	79.5	103	75/28Є	41/72	A	34	14/41	14/100	9.8/1525
LC3	70.	107	?58/49Є	?43/64	A	15	5/33	5/100	2.4/330
LC4	61.	102	54.5/47.5Є	35/67	A	19.5	2/10	2/100	6.2/800
LC5	79.5	105	73/32Є	40/65	A	33	11/33	11/100	5.0/340
LC6	79.5	109	77/32Є	46/63	A	31	13/41	13/100?	6.0/500
LC7	61.	107	?47/60Є	37/70	A	10	4/40	4/100	1.6/250
LC8	60.	94	55/39Є	42/52	A	13	8/61	8/100?	0/195
LC9	64.	95	?55/40PЄ	?45/50	A	10	4/40	4/100	8/1100
LC10	61.	96	50/46PЄ	41/55	A	11	4/36	4/100	3.2/340
LC11	55.	104	51/53PЄ	44/60	A	7	5/71	5/100	1.0/340
LC12	48.6	96	38.5/57.5PЄ	31/65	A	7	4/57	4/100	0.4/220
LC13	81.	93	78.5/14.5PЄ	?42/51	A	36.5	25/68	12/50	4/720
LC14	69.5	98	67.5/30.5PЄ	?45/53	A	22.5	10.5/46	6.5/61	7/560
LC15	48.6	88	45/43PЄ	34.5/53.5	A	10.5	8/76	8/100	0/80
LC16	59.2	96	54/42PЄ	46/50	A	8	6/75	2/33	0/155
LC17	78.	101	75/26PЄ	52/49	A	23	20/86	0/0	3.2/320
LC18	75.5	99	74/25PЄ	49/50	A	25	20/80	0/0	4.8/520
LC19	56.5	99	56/43PЄ	?44/55	A	12	7/58	4/57	1.0/210
LC20	93.5	103	93/10PЄ?	64.5/38.5	63/	28.5	19/66	0/0	0/110
LC21	110.	100	104/-4PЄ	60/40	58/	44	28/63	0/0	0.8/230
LC22	79.5	100	?78.5/21.5Є?	62/38	59/	18.5	12/64	0/0	0/85
LC23	85.	94	83.5/10.5PЄ	41.5/52.5	A	42	?25/59	?0/0?	1.2/1100
LC24	53.4	89	47.5/41.5PЄ	41/48	A	6.5	4/61	?0/0?	0/140
LC25	78.5	104	?77/27Є	47/57	A	30	19/63	?10/52	3.5/860
LC26	81.	102	70/32Є	49/53	A	21	15/71	?6/40	0.6/260
LC27	73.4	103	65/38Є	47/56	A	18	13/72	?13/100	0/60

E

E'

LC 22

LC 20

LC 21

100m R.L.

50m R.L.

0m R.L.

T.D. 79·5m

T.D. 93·5m

T.D. 110m

REFERENCE

- Sand (o = oxidized, r = non-oxidized)
- Silt
- Clay
- Limestone
- Carbonaceous material
- Pyrite
- Gypsum
- Top of Etadunna Fm.
- Top of Eyre Fm.
- Basement
- Cambrian? Shale, siltstone, sandstone.
- Undifferentiated Quartz-felspar porphyry.

Gamma Anomalous Zones

- 200 – 400 cps
- 400 – 800 cps
- 800 – 1200 cps
- > 1200 cps

ENV 2432-2

TRICENTROL AUSTRALIA LIMITED

CROSS SECTION E-E'

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE: AUG., 1974.	AUTHOR: T.W.M.	PLAN Nº 127/9
SCALE: V 1cm = 5m (1:500) H. 1cm = 100m (1:10,000)	DRAFTED: L.R.F.	

A

A'

LC 4

LC 5

LC 6

LC 7

100m R.L.

50m R.L.

0m R.L.

o

o

o

o?

o

T.D. 61 m

T.D. 61 m

T.D. 79·5 m

T.D. 79·5 m

REFERENCE

Sand o = oxidized r = non-oxidized

Silt

Clay

Limestone

Carbonaceous material

Pyrite

Gypsum

Top of Etadunna Fm.

Top of Eyre Fm.

Basement

Cambrian? Shale, siltstone, sandstone.

Undifferentiated Quartz-felspar porphyry.

Gamma Anomalous Zones

200 – 400 cps

400 – 800 cps

800 – 1200 cps

> 1200 cps

ENV 2432-3

TRICENTROL AUSTRALIA LIMITED

CROSS SECTION A-A'

LAKE COONARBINE E.L. 127 SOUTH AUSTRALIA

DATE: AUG., 1974.	AUTHOR: T.W.M.	PLAN Nº
SCALE: V. 1cm = 5m (1:500) H. 1cm = 100m (1:10,000)	DRAFTED: L.R.F.	127/5

B

B'

LT 30

LC 3

LT 31

LC 2

LT 42

LC 1

LT 43

100m R.L.

50m R.L.

0m R.L.

T.D. 60m

T.D. 30m

T.D. 83·6m

T.D. 79·5m

T.D. 83·6m

T.D. 58m

T.D. 64·4m

REFERENCE

- Sand o = oxidized, r = non-oxidized
- Silt
- Clay
- Limestone
- Carbonaceous material
- Pyrite
- o Pebbles
- Gypsum
- Top of Etadunna Fm.
- Top of Eyre Fm.
- Basement
- Cambrian? Shale, siltstone, sandstone.
- Undifferentiated Quartz-felspar porphyry.

Gamma Anomalous Zones

- 200 – 400 cps
- 400 – 800 cps
- 800 – 1200 cps
- > 1200 cps

ENV 2432-4

TRICENTROL AUSTRALIA LIMITED

CROSS SECTION B-B'

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE : AUG., 1974.	AUTHOR : T.W.M.	PLAN Nº
SCALE : V. 1cm = 5m (1:500) H. 1cm = 200m (1:20000)	DRAFTED : L.R.F.	127/6

C

C'

LC 26

LC 25

LC 27

LC 8

LC 9

LC 10

LC 11

LC 12

100m R.L.

50m R.L.

0m R.L.

o

r

o?

?

T.D. 81 m

T.D. 78·5 m

T.D. 73·4m

T.D. 60m

T.D. 64 m

T.D. 61 m

T.D. 55m

T.D. 48·6 m

REFERENCE

Sand o = oxidized r = non-oxidized

Silt

Clay

Limestone

Carbonaceous material

Pyrite

Gypsum

Top of Etadunna Fm.

Top of Eyre Fm.

Basement

Cambrian? Shale, siltstone, sandstone.

Undifferentiated Quartz-felspar porphyry.

Gamma Anomalous Zones

200 – 400 cps

400 – 800 cps

800 – 1200 cps

> 1200 cps

ENV 2432-5

TRICENTROL AUSTRALIA LIMITED

CROSS SECTION C-C'

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE : AUG., 1974.	AUTHOR : T.W.M.	PLAN Nº
SCALE : V. 1cm = 5m (1:500) H. 1cm = 200m (1:20000)	DRAFTED : L.R.F.	127/7

D

D'

100m R.L.

50m R.L.

0m R.L.

LC 24

LC 23

LC 13

LC 14

LC 15

LC 16

LC 17

LC 18

LC 19

T.D. 53·4m

T.D. 85m

T.D. 81 m

T.D. 69·5 m

T.D. 48·6 m

T.D. 59·2m

T.D. 78 m

T.D. 75·5 m

T.D. 56·5m

o?

o

r

REFERENCE

- Sand (o = oxidized, r = non-oxidized)
- Silt
- Clay
- Limestone
- Carbonaceous material
- Pyrite
- Gypsum
- Top of Etadunna Fm.
- Top of Eyre Fm.
- Basement
- Cambrian? Shale, siltstone, sandstone.
- Undifferentiated Quartz-felspar porphyry.

Gamma Anomalous Zones

- 200 – 400 cps
- 400 – 800 cps
- 800 – 1200 cps
- > 1200 cps

ENV 2432-6

TRICENTROL AUSTRALIA LIMITED

CROSS SECTION D-D'

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE : AUG., 1974.	AUTHOR: T.W.M.	PLAN Nº
SCALE : V. 1cm =5m(1:500) H. 1cm =200m(1:20,000	DRAFTED: L.R.F.	127/8

LAKE FROME

Lakeside Bore No.1
T.D. 1076 ft (328·1m)
Base camp site
T.D. 560 ft. (176·8m)

Salt Lagoons

Mudguard Swamp
Sed. U 630/2
464 ft. (141·4m)

140°00'
140°30'
30°48'
31°00'
31°30'
140°20'

E.L. 127
1431 sq. km.

Button Dam
Yd

Salt Creek
Lagoon
Eurinilla Creek
Lake Coonarbine
Billeroo Creek

Bore and Tank
Old Glenmanya
T.D. 890ft. (271·3 m)
Glenmanya Bore
Yalkalpo No.1
T.D. 721 ft. (219·8m)
T.N.

Lake Yalkalpo
Wycalpa Dam & Catch

Coombe Dam
Coombes Bore (Artes)
Black Oak Bore
Collins Lagoon
Mc Kenzie Bore
Johnsons New Dam
Lake Tom Claypan
Napiers Wells
Billeroo Well & Hut
"Frome Downs" 8 mls.
Dam
Ruthertords Dam
Wild Horse Lagoon
Horse Shoe Lagoon
Coolibah Dam
Box Swamp
Base camp site
Lake Pinpa
Lake Namba
Lake Tinko
Billeroo
Eurinilla
Windbag Dam
Banavie Bore (Aband)
Hut
Billeroo Tank
Minad
Dam
Billeroo W.H.
Lake Yantawena
Mercers Dam
Togo Dam
Catch Dam
Burmah Dam
Tank
Swamp Dam
Box Swamp Dam
Freckletons Dam
Napiers Catch
Pioneer Dam
Pioneer Bore
Emu Dam
Sullivans Dam
Lake Benagerie
Dams
"Benagerie"
Yd.
Benagerie Bore (P.D.)
Sed. U.
Blueshirt Dam

514/1 514/2 514/3 514/4 514/5 514/6 514/7 514/8 514/9 514/10 514/11 514/12 514/13 514/14 514/15 514/17

FENCE
DOG FENCE
PROOF FENCE
VERMIN FENCE

LOCATION DIAGRAM

Alice Springs
QUEENSLAND
Charleville
L.Eyre
SOUTH AUSTRALIA
L.Torrens
L.Frome
L.Gairdner
'Frome Downs'
E.L. 127
Port Augusta
Broken Hill
Yunta
NEW SOUTH WALES
E.L. 63
Port Pirie
ADELAIDE
SYDNEY
CANBERRA
VICTORIA
MELBOURNE

LEGEND

BASEMENT CONTOURS IN METERS
[ie. the base of the 'Eyre Formation' – may be Cretaceous, Cambrian or undifferentiated porphyry]

N.B. Datum is the collar of LT 1 at Coolibah Dam – taken as 100m. For holes north of Black Oak Bore, all collar elevations are designated 100m

● PHASE I ROTARY DRILLHOLE
○ PHASE II ROTARY DRILLHOLE
E.L. BOUNDARY
A – A' LINE OF SECTION

ORDER OF MAXIMUM GAMMA PEAK
○ <200 cps
○ 200–400 cps
○ 400–800 cps
○ 800–1200 cps
○ >1200 cps

N.B. Peaks in Tertiary unless designated K-top of Cretaceous

TRICENTROL AUSTRALIA LIMITED

PLAN SHOWING
ENV 2432-7
BASEMENT STRUCTURE

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE : AUG., 1974	AUTHOR : T.W.M.	PLAN No
SCALE : 1 inch = 2 miles	DRAFTED : L.R.F.	127/2

ORDER OF MAXIMUM GAMMA PEAK

- < 200 cps
- 200 - 400 cps
- 400 - 800 cps
- 800 - 1200 cps
- > 1200 cps

N.B. Peaks in Tertiary unless designated K – top of Cretaceous.

- PHASE I ROTARY DRILLHOLE
- PHASE II ROTARY DRILLHOLE
- E.L. BOUNDARY
- A – A' LINE OF SECTION
- ISOPACHS OF EYRE FORMATION IN METRES
- NORTHERN LIMIT OF OXIDATION IN EYRE FORMATION SANDS

TRICENTROL AUSTRALIA LIMITED

ENV 2432-8

PLAN SHOWING

EYRE FORMATION ISOPACHS

LAKE COONARBINE E.L. 127
SOUTH AUSTRALIA

DATE: AUG., 1974	AUTHOR: T.W.M.	PLAN No
SCALE: 1 inch = 2 miles	DRAFTED: L.R.F.	127/3

LAKE FROME

Lakeside Bore No.1
T.D. 1076 ft (328·1m)

Base camp site

Salt Lagoons

Mudguard Swamp

Sed. U 630/2
464 ft. (141·4m)

140°00'

140°30'

30°48'

E.L. 127
1431 sq. km.

Button Dam

Yd

Salt Creek

Lagoon

Bore and Tank
Old Glenmanya
T.D. 890ft. (271·3m)

Glenmanya Bore

Yalkalpo No.1
T.D. 721 ft. (219·8m)

T.N.

Eurinilla Creek

Lake Coonarbine

Billeroo Creek

Black Oak Bore

Coombe Dam

Lake Yalkalpo

Wycalpa Dam & Catch

31°00'

140°20'

140°30'

Coombes Bore (Artes)

Windbag Dam

Dam

Hut

Banavie Bore (Abandoned)

Billeroo Tank

Collins Lagoon

Mc Kenzie Bore

Lake Pinpa

Johnsons New Dam

Napiers Wells

Dam

Billeroo Well & Hut

Dam

"Frome Downs" 8 mls.

Lake Tom Claypan

Lake Namba

Creek

Wild Horse Lagoon

Rutherfords Dam

Horse Shoe Lagoon

Coolibah Dam

Box Swamp

Base camp site

514/17

514/14

514/12

514/11

514/10

514/13

514/15

514/6

Box Swamp Dam

514/7

Freckletons Dam

514/8

514/9

514/4

514/3

514/2

514/1

514/5

Minad

Dam

Billeroo W.H.

Lake Yantawena

Lake Tinko

Eurinilla

Creek

Mercers Dam

Togo Dam

Catch Dam

Burmah Dam

Tank

Swamp Dam

Benagerie Bore (P.D.)

Sed. U.

DOG FENCE

PROOF FENCE

VERMIN FENCE

Napiers Catch

Pioneer Dam

Pioneer Bore

Emu Dam

31°24'

140°10'

140°20'

Lake Benagerie

Sullivans Dam

Dams

"Benagerie"

Yd.

Blueshirt Dam

31°30'

LOCATION DIAGRAM

Alice Springs

QUEENSLAND

Charleville

L. Eyre

SOUTH AUSTRALIA

L. Torrens

L. Frome

L. Gairdner

'Frome Downs'

E.L. 127

Port Augusta

Broken Hill

Yunta

NEW SOUTH WALES

E.L. 63

Port Pirie

ADELAIDE

SYDNEY

CANBERRA

VICTORIA

MELBOURNE

ORDER OF MAXIMUM GAMMA PEAK

- ○ < 200 cps
- ○ 200–400 cps
- ○ 400–800 cps
- ○ 800–1200 cps
- ○ > 1200 cps

N.B. Peaks in Tertiary unless designated K – top of Cretaceous

- ● PHASE I ROTARY DRILLHOLE
- ○ PHASE II ROTARY DRILLHOLE
- E.L. BOUNDARY
- ISOPACHS OF THICKNESS >200 cps. (TERTIARY ONLY) IN METRES
- \+ > 5m. OVER 200 cps.

TRICENTROL AUSTRALIA LIMITED

PLAN SHOWING

ENV 2432-9

ISOPACHS OF ANOMALOUS GAMMA ACTIVITY IN TERTIARY STRATA

LAKE COONARBINE E.L. 127 SOUTH AUSTRALIA

DATE : AUG. , 1974	AUTHOR : T.W.M.	PLAN Nº 127 / 4
SCALE : 1 inch = 2 miles	DRAFTED : L.R.F	

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 SOUTH AUSTRALIA

HOLE NO.	LC 1	CONTRACTOR	W.L. Sides & Son P/L	STARTED	1/8/1974
LOCATION	6mi. E.S.E. Coolibah Dam	GAMMA LOGGED	S.A. Mines Dept	COMPLETED	1/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	58m(d) 58.6m(l)	HOLE DIAMETER	4¾in.	SCALE	1 : 118
COLLAR ELEV.	101m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	Sandy, clayey LOAM light brown	.....	overall lim.stn					Air drilled 0-13.5m
	SAND light brownish pink, fine to coarse	. . . .	as above				1/3	
3		. . . .						
	GYPSUM band - 0.2m thick gypseous, sandy, silty CLAY		sl. brown lim.stn	Minor black				
	light grey mottled light brown, khaki-green at top		sl. khaki-green stn	lignitic clay			1/6	
6								
			10-20% brown, garnish stn.	mottling			1/9	
9								
	Redear light grey		minor ferrug stn				1/12	limit of oxidation
12								
							1/15	
15								
	CLAY Light grey mottled darker grey Minor yellow-brown						1/18	
18								
							1/21	
21								
	Common yellow-brown mottling		30% lim stn				1/24	
24								

24								
27	Sandy, silty CLAY, some SAND interbeds 24-31.5m Predom yellow-brown 24-25.5m then light grey whitish grey		80/. lim sta 10/. lim sta				1/27	
30	Sand is light grey; poorly sorted, fine to coarse with odd pebble to 5mm, and		Clay rare lim sta sand				1/30	
33	to sub ang; colorless to cloudy qtz. Becoming less sandy						1/33	
36							1/36	
39	Gradually increasing yellow-brown mottling		20/. lim sta				1/39	
42			30/. lim sta				1/42	
45	CLAY Light grey - dk tan grey		Minor lim sta				1/45	
48	becoming strongly mottled pink to purple then medium coffee brown		30/. lim sta				1/48	
51	Very strongly pigmented ochreish clay - coffee brown		70/. lim sta				1/51	
54	Medium brown entirely		40/. lim sta				1/54	More or less a transition to shale - basement from 43.5m?
57	SHALE Deep chocolate brown, becoming increasingly hard, competent						1/57	- Cambrian! T.D. 57m Sandin 53m Logging 58.6m Logging
60							1/60	

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARDINE E.L. 127 S.A.

HOLE NO.	LC2	CONTRACTOR	W.L. Sides & Son A/c	STARTED	2/8/1974
LOCATION	½mi W of LC1 on track	GAMMA LOGGED	S.A. Mines Dept	COMPLETED	2/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	79.5m(1)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	103m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND light orange-brown, aeolian		overall lim.stn				2/3	Air drilled 0-7.5m
6	Gypseous sandy CLAY Light orange-brown		Common lim.stn				2/6	
9	SAND Pale orange-buff fine to medium		as above				2/9	
	CLAY, silty Med grey then light grey		10-20% lim.stn					
12	some calcareous mottling						2/12	
15							2/15	
18	CLAY light to med grey		minor lim.stn				2/18	
21							2/21	
24							2/24	

24								
27	CLAY, silty CLAY As previously Light, med grey		10% lim.stn				3/27	
30							3/30	
33							3/33	
36	Mostly whitish grey 33-36m						3/36	
39	Med-dark brownish grey from 36-40.5m			Dark color due to carb. material ?			3/39	
42			20%+ yellow				3/42	
45			brown lim.stn				3/45	
48							3/48	
51	CALC-CEMENTED SAND -hard, off-white cement with non stained qtz sand.						3/51	"Billaroo CLAY"
51	CLAY light silvery grey, off-white		10%+ lim.stn					
54	with some pink, reddish pink mottling, finely textured but becoming silty with depth						3/54	
57							3/57	
57	CLAY, silty CLAY, sandy CLAY As above but becoming		10%+ lim.stn					
60	increasingly siltier with some fine qtz. sand content in parts — more or less a fine sand with clay matrix						3/60	

LC3/3/3
034

60								
63	CLAYS Light to mod grey - fine gr, occasionally silty textural - possibly decomposition							Difficult to pick break from previous clays
66	derivative							- Possibly Cambrian Arrow Group? material
69	Gradual transition to harder competent SHALE - light-med, slightly greenish grey quite silty							
72								T.D. sampling 69m drilling ~70m logging 69.8m
75								
78								
81								

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC 3	CONTRACTOR	W. L. Sides & Son P/L	STARTED	2/8/1974
LOCATION	1 mi W of LC2	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	2/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	70m (d)	HOLE DIAMETER	4 3/4 in.	SCALE	1:118
COLLAR ELEV.	107m RL	PROBE DIAMETER	1 1/4 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown aeolian		several lim.stn				3/3	Air-drilled 0 - 6m
3	Gypseous SAND Light red-brown; fine to med gr. common gypsum fragments		as above					
6	GYPSUM, gypseous SAND, CLAY - probably some thicker gypsum bands. Sand as above, light grey clay		common lim.stn				3/6	
9	CLAY Light to med grey		minor lim.stn				3/9	
12	CLAY with SAND interbeds Clay light, med grey, mottled yellow-brown, buff, greenish with common black MnO2? mottling Sand fine gr, buffish - common yellow-brown limonitic stain		50% + lim.stn clay 30% + lim.stn sand				3/12 3/15	
15	some calcareous & limonitic cement						3/18	
18	CLAY, silty CLAY Light, med grey Some yellow-brown, black mottling		10% lim.stn				3/21	
21							3/24	
24								

24								
	CLAY As previously						2/27	
27	SILT Light - med grey							
	CLAY, silty Light, med greys becoming increasingly yellow-buff, yellow-brown mottled		30/ 1/m.stk				2/30	
30								
			50/+ 1/m.stk				2/33	
33								
							2/36	
36								
							2/39	
39	CLAYS as previously + SAND interbeds		50/+ 1/m.stk					
	Sand - whitish bland, non stained poorly sorted fine to coarse gr. md. to sub ang; colorless to cloudy qtz.		clays				2/42	
42								
	CLAYS as previously light, med greys, yellow-buff, yellow-brown Becoming fairly		50/+ 1/m.stk				2/45	
45								
							2/48	
48								
	CLAY Pale silvery grey to tan grey very finely textured, plastic Minor yellow-brown mottling		minor 1/m.stk				2/51	"BILLEROO CLAY" hereinafter referred to as.
51								
							2/54	
54								
							2/57	
57								
							2/60	
60								

60								
63	SAND with CLAY interbeds Sand is light grey overall & poorly sorted fine to coarse (fine-med predom) sub-rnd		30/. med to strong orange-brown				1/63	Drilling behaviour indicates sand with interbedded clay.
66	to sub ang; colorless to cloudy qtz - occasionally with limonite cementing Clays light med grey yellow-brown		lim/sta 30/.+ lim/sta clays				1/66	Predom. clay cuttings
69			minor lim/sta sand				1/69	
72	Sand becoming coarser Coarse basal sand with pebbles to 6mm - often quite blocky		10-20/. strong orange	some brown			1/72	
75	fractured milky qtz. some coarse slightly tarnished mica flakes Gravel to 10mm CLAY light-med grey, micaceous		brown lim/sta lim/frag	wood frags?			1/75	Some sl. rounded prismatic qtz pebbles Cambrian?
78	decomp. dervatite Becoming brownish mauve & gradually more competent — SHALE. mauve-brown finely silty						1/78	Frome Beds?
81							1/81	T.D. 78m. sampled T.D. 79.5m. drilled T.D. 79m. logging
84							1/84	
87							1/87	
90								
93								
96								

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC4	CONTRACTOR	W.L. Sides & Son P/L	STARTED	2/8/1974
LOCATION	Approx 1mi S. of Lake Tinko	GAMMA LOGGED	S.A Mines Dept.	COMPLETED	3/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	61m (d)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	102m RL	PROBE DIAMETER	1½in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	Aeolian SAND - 1m then Gypseous CLAY Light grey, mottled greenish, brown		20-30% limstn Clay				4/3	Air drilled 0-6m
6	CLAY Med, light, greenish grey		10-20% limstn				4/6	
9	Some black MnO₂? motting						4/9	
12	CLAY with SAND interbeds Clays light, med grey mottled		20% limstn				4/12	
15	yellow-brown, Sand buffish fine gr. CLAY silty CLAY light to med greys		Minor limstn				4/15	
18							4/18	
21							4/21	
24							4/24	

Depth	Description	Log	Notes					Sample	Remarks
24									
27	CLAY, silty CLAY As previously		10/4 limestone Clays					4/27	
30								4/30	
33								4/33	
36	Sandy, silty CLAY, CLAY light, med, dark brownish grey.		as above					4/36	
39	Fair fine to med qz colourless qtz sand content Probably some sand interbeds Clays becoming more compact							4/39	
42								4/42	
45								4/45	
48	CLAY Light silvery grey, very plastic, finely textured		[illegible] red, pink mottling					4/48	"Bilmore CLAY"
51	CLAY Compact, brittle (claystone?) light, med brownish grey		[illegible] limestone					4/51	
54	CLAY with SAND interbeds Clay as above, sand poorly sorted fine to coarse, not to sub-ang, colourless to cloudy qz.		10/ [illegible] limestone sand					4/54	
57	BASEMENT? - pink, becoming med brown [illegible] SHALE [illegible]							4/57	Thin wedge of Cambrian
60	[illegible] becoming harder [illegible] blue-grey SHALE Refused on hard QUARTZ FELSPAR PORPHYRY - [illegible] groundmass [illegible] penetration							4/60	Frome Group? Pre-Cambrian [illegible]? T.D. 60m (8) 61m (9)

040

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC 5	CONTRACTOR	W.L. Sides & Son P/L	STARTED	3/8/1974
LOCATION	½mi E of LC4	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	3/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	79.5m(d)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	105m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	Shallow claypan then GYPSUM - bands of xtalline white-colorless		minor limsth				5/3	Air drilled 0-6m
3	Gypseous CLAY whitish, light grey, common							
6	xtalline gypsum nodules, bands						5/6	
9	CLAY Med to dark grey		minor limsth				5/9	
12	CLAY Khaki-grey, black mottled increasing yellow-brown mottling		10-20% limsth				5/12	
15	Some fine sand interbeds - buff-tan at base						5/15	
18	CLAY, silty CLAY light, med, dark grey minor black MnO2? & yellow brown limonite mottling		minor limsth				5/18	
21							5/21	
24							5/24	

24								
27	CLAY, silty CLAY As previously						5/27	
30	Sharp increase in yellow-brown, buff mottling, Sandy, silty CLAY - light grey mottled yellow-brown buff. Abnt fine sand content		30/1 l/m.sta				5/30	
33							5/33	
36							5/36	
39	Some thin sand interbeds - mostly fine gr., whitish colour mixed orange limonite stain.						5/39	
42							5/42	
	CLAY Light-med grey mottled reddish pale yellow brown. Finely textured very plastic.		20-30/ l/m.sta					"Bulkeroo Clay"
45							5/45	
48	Becoming a pale silvery grey with decreased mottling						5/48	
51							5/51	
54	Becoming very soapy to feel Satiny appearance Some marush mottling						5/54	
57	CLAY, CLAYSTONE with SAND interbeds - Clay light, med/ Brownish grey, very compacted, brittle Sand mostly fine to med gr.		10-25/ l/m.sta Clay 30/+ l/m.sta				5/57	Plant material cuttings above
	Sub rnd to sub ang; colourless to cloudy qtz common; orange brown staind		Sand.					
60	SAND See over						5/60	Pebbles embedded in sand

60								
63	SAND Whitish, very poorly sorted fine to coarse; rnd to sub ang quartz cloudy to milky + colorless [illegible] orange-brown stain	. . . .	minor orange brown lim. stn				5/63	Drilling in sand (Cont. washed clay cuttings)
	Coarser to 5mm + pebbles at base	. . . . . o. o.						
66	CLAY light, med brownish, greenish grey compacted, brittle	— — — — —	minor lim.stn				5/66	Drilling in clay (washed sand)
69	~~SAND~~ SILT with SAND interbeds? - light brownish grey	. . . .					5/69	Drilling in Sand? with clay interbeds.
	Coarse basal sand to 8mm rnd to sub ang mostly cloudy, fractured qtz. more commonly limonitic stained	. . . . o o	Some limonitic cement				5/72	
72	BASEMENT? Silty CLAY - decomposition dolomitic	/ / /						Drilling in clay - sand washed up from interval
75	light grey, light bluish grey becoming a light chocolate brown with some harder	/ / / / / / / / /					5/75	Cambrian Frome Group?
78	siltstone bands	/ / / / / / /					5/78	
								T.D. 78m sampled T.D. 79.5m drilled

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LT6	CONTRACTOR	W.L. Sides & Son P/L	STARTED	3/8/1974
LOCATION	½ km E of LT5	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	3/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	79.5 m (d)	HOLE DIAMETER	4¾ in	SCALE	1:118
COLLAR ELEV.	109 m	PROBE DIAMETER	1¼ in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown, aeolian		overall limstn				6/3	Airdrilled 0-1.5m
3	GYPSUM with SAND, CLAY Yellow gypsum bands with		common lim.stn					
	interbedded sand, light grey calcareous clay						6/6	
6	Gypseous CLAY Mid grey mottled dark grey,		10-20% brownish					
	whitish		lim.stn.				6/9	
9	CLAY More homogeneous med. grey		minor lim.stn					
12							6/12	
15	CLAYS Light greenish grey mottled black then light grey mottled yellow-brown		20-30% lim.stn				6/15	
18	Some pale bluish fine sand interbeds 15-18m						6/18	
21							6/21	
24							6/24	

24								
27	CLAYS, silty CLAY more or less as previously but some decreasing mottling. Some more silty bands		10/ limsta				6/27	
30	Light, med, minor dark greys minor yellow-brown, black mottling						6/30	
33	Commonly becoming more compacted - bottle fragments						6/33	
36							6/36	
39							6/39	
42	More homogeneous light-grey more plastic clays More common yellow-brown, buff mottling		10-20/ limsta				6/42	"Bitterroo Clay"
45							6/45	
48	Appearance of some red-purple mottling + yellow-brown						6/48	
51							6/51	
54	Becoming a very pale silvery grey						6/54	
57							6/57	
60	Some brownish, med grey clays - compact, mottle						6/60	

60								
	CLAY as previously but more common red, brownish grey							
63	SAND with CLAY interbeds at top.		Fair orange				6/63	Drilling behaviour indicates sand
66	Some fine gr orange brown limonite stained sand at top		Brown limstn Sand at top				6/66	- most escaping through screen - predominantly clay cuttings to 66m
69	Sand appears white, poorly sorted fine to coarse, sub rnd to angular; mostly cloudy to milky + colourless, fractured						6/69	
72	93 - non stained Some coarse white mica flakes - non tarnished						6/72	
75	CLAYS, CLAYSTONE compact, brittle habit light						6/75	Drilling in clay
78	mid, brownish dark greys, black SANDSTONE hard cemented orangy brown fine gr unable to penetrate						6/78	Cambrian?
								T.D. Sampling 78m T.D. Drilling 78.5m

TRICENTROL AUSTRALIA LIMITED. 046

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC 7	CONTRACTOR	W.L. Sides & Son P/L	STARTED	4/8/1974
LOCATION	½ mi E of LC 6	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	4/8/1974
COORDS	N E	GEOL. LOGGED	T.D. Middleton	SHEET	1 OF 2
TOTAL DEPTH	61m (d)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	107m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown, aeolian		overall lim. sta.					Air drilled 0-3m
3	Gypseous, sandy CLAY light-grey. Common stalline gypsum frags		common lim sta				7/3	
6	CLAY Med. grey fairly homogeneous		minor lim sta				7/6	
9	CLAY Light greenish grey mottled		10-20% lim. sta				7/9	
	black (MnO_2?) yellow-brown							
12	CLAY with SAND interbed(s) Clay as above - light greenish grey		30% lim sta				7/12	
	mottled yellow-brown Sand pale buffish, fine gr.		Clay, Sand					
15	Silty CLAY, CLAY light, med, minor dark greys		minor lim. sta				7/15	
18	Minor yellow brown, more common blackish mottling Thin sand interbed(s) 16.5-18m - whitish fine gr.						7/18	
21	Common silt grade content						7/21	
24							7/24	

LC 7/2/

047

24								
27	CLAY, silty CLAY As previously Light, med. greys.		Minor lim. str.				7/27	
30							7/30	
							7/33	
33	CLAY becoming more homogeneous		15-20% lightly				7/33	"B. Heroo Clay"?
36	Light med to silvery grey very plastic, satiny appearance		lim. str.				7/36	
39	Often a creamy coloring						7/39	
42	Some more compacted, buttle clays - med brownish grey						7/42	
45	SAND Pale pinkish, very poorly sorted; fine to coarse, rnd to sub ang, colorless to milky qtz - predom cloudy; common white kaolinitic matrix		10% f orange brown lim str. at top				7/45	Drilling behaviour indicates sand
48	CLAY Mix colors as previously light silvery grey mottled yellowish-buff finely textured, satiny appearance		20% lim str				7/48	Drilling in clay - sand cuttings from above intervals appear
51	BASEMENT? At first a bright brick red		overall lim? str.				7/51	Cambrian
54	becoming a deep chocolate brown Consistency of a silty clay with common mica flakes						7/54	Frome Group?
57	- a decomposition derivative often a silty mudstone, siltstone Some med greenish grey laminated mudstone bands						7/57	
60	Becoming increasingly harder						7/60	T.D. sampled 60m drilled ~61m logged

X

048

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC 8	CONTRACTOR	W.L. Sides & Son P/L	STARTED	6/8/1974
LOCATION	Section C-C' western end	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	7/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	60m(d)	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	94 m RL	PROBE DIAMETER	1 1/4 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown aeolian							Air drilled 0-3m
3	Gravelly SAND, CLAY Light grey clay, mottled white, reddish						8/3	Sited several metres above level of small salt lake
6	CLAY Med to dark grey, greenish grey Common black mottling						8/6	with common petrified wood at bed level.
9							8/9	
	SAND Light grey, mod sorted fine-med gr.		nor lim. sta?					
12	CLAY silty CLAY Light/med grey		Minor lim. sta				8/12	
15	Minor brown, yellow-brown, black mottling						8/15	
18							8/18	
21							8/21	
24							8/24	

Depth	Description	Notes	Notes	Sample	Remarks
24					
27	CLAY, silty CLAY As previously			8/27	
30				8/30	
33	SAND Light grey mod sorted fine to coarse, minor stained coarse	minor limstn		8/33	
36	CLAYS As previously Minor sand interbeds as above	10-20% limstn		8/36	
39	Clays becoming very compacted - brittle cuttings, common yellow-buff mottling			8/39	
42				8/42	
45	SAND Whitish mostly fine gr at top			8/45	Drilling in Sand mostly clay
48	becoming buffish, poorly sorted fine to coarse (latter predom) av 2-3mm; mostly sub rnd to angly; predom cloudy to white	50%+ buffish orange limstn		8/48	
51	milky fractured qtz. Very coarse basal sand av 3mm+ to 6mm; slightly more well rnd, lesser staining	5% strong orange limstn	rare pink fresh felspar frags.	8/51	
54	CLAYS light, med, dark greys, minor greenish common yellow-brown mottling			8/54	Drilling in Clay
57	CLAYS - SHALE decreasing clay - deep maroonish brown becoming harder, shaley with depth			8/57	Cambrian Frome Group
	Hard penetration in shale			8/58.5	
60					T.D sampled 58.5 drilled 60m logged 59m 60

TRICENTROL AUSTRALIA LIMITED. 050

ROTARY DRILLING LOG.

PROJECT: LAKE COONGARBINIE EL 127 South Australia

HOLE NO.	LC9	CONTRACTOR	W L Sides & Son P/L	STARTED	7/8/1974
LOCATION	½km E of LC8	GAMMA LOGGED	SA Mines Dept	COMPLETED	7/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	64m(d) 64m(c)	HOLE DIAMETER	4¾"	SCALE	1:118
COLLAR ELEV.	95m RL	PROBE DIAMETER	1¼m		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown, aeolian		overall lim.stn.					Air drilled 0–6m
3	SAND with GYPSUM Bands Pale buff fine-med gr		freedom lightly				9/3	
6	Sand with gypsum bands		lim stn sand				9/6	
9	CLAY med to light greenish grey black mottled		10–20% lim. stn				9/9	
12	CLAY with SANDS interbeds light, med, greenish greys, common yellow-brown mottling some black mottling		30%-1 lim stn clay moder- lim stn				9/12	
	Sand fine gr, whitish with minor staining		sand.					
15	CLAYS Silty CLAY light, med, dark greys		variable 10–30%				9/15	
18	variable yellow-brown mottling		lim stn				9/18	
21							9/21	
24							9/24	

24								
27	CLAY silty CLAY As previously						9/27	
30	SAND blush, fine to med gr; subrnd to subang; colourless cloudy qtz CLAY light, med grey mottled yellow-brown		minor lim str 20-30% lim str				9/30	
33	CLAY with SAND interbeds Sand light grey, fine to coarse						9/33	
36	CLAYS light, med, dark greys minor light green		10-20% lim str				9/36	
39	CLAY with SAND interbeds Clays predom light grey minor light green Sand light grey; poorly sorted		minor orange lim str sand,				9/39	Drilling indicates interbedded sand-clay sequence
42	fine to coarse, coarse predom rnd to sub ang; colourless to cloudy qtz, minor blush, milky few "chert" grains; few mica flakes		10% lim str clays				9/42	
45	more poorly sorted sand with a few bipyramidal xtals						9/45	
48	little travelled Mica common orange staining CLAY Light grey, finely textured,		10% lim str				9/48	Drilling behaviour indicates clay
51	soft, plastic. Minor greenish common yellow-brown mottling						9/51	Possibly "Bilstone" Clay
54	SAND with CLAY interbeds light grey; poorly sorted; fine to coarse (predom); rnd to subang, colourless, cloudy, milky some reddish		mica strong orange lim str				9/54	
57	some subhedral qtz xtals Light grey, gritty clays Appearance of reddish clay matrix set with subhedral						9/57	
60	euhedral qtz xtals - bipyramidal inferred basement - QUARTZ FELSPAR PORPHYRY						9/60	

LC 9/3/3
052

	QUARTZ FELSPAR PORPHRY bottomed in basalt material - becoming pink granulmass c qtz & white, green part kaolonised felspars	✓ ? ✓ ? ✓ J						Pre-cambrian - Carpentarian?
								T.D. Sampled 63m drilled 64m logged 64m

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC 10	CONTRACTOR	W.L. Sides & Son P/L	STARTED	7/8/1974
LOCATION	½ km E of LC9	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	7/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	61m (d)	HOLE DIAMETER	4¾ in	SCALE	1:118
COLLAR ELEV.	96m RL	PROBE DIAMETER	1¼ in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	CLAYPAN SAND Light red-brown, aeolian material		overall lim.stn				10/3	Air-drilled 0-6m
6	GYPSUM, SAND, CLAY Interbedded orange-brown sand pink, brown, light greenish mottled clay with common white, pink gypsum bands		common lim.stn				10/6	
9	CLAY Light, med greenish grey with black, yellow-brown mottling		10-20% limstn				10/9	
12	CLAY + SAND interbeds. Clay as above, sand pale buff, fine gr, commonly lim.stn		as above 20% lim.stn mod				10/12	
15	CLAY Light, med, dark greys with variable yellow-brown mottling		variable lim stn				10/15	
18							10/18	
21							10/21	
24							10/24	

Depth	Description	Log						Sample	Remarks
24									
27	CLAYS As previously Some sand content 25.5-28.5 - more common yellow-brown		Common limst 20-30%					10/27	
30	mottling							10/30	
33								10/33	
36	Dark grey clay							10/36	
39								10/39	
42	CLAY Blue grey or light grey becoming pale silvery grey with depth		Minor limstn					10/42	"Albany Clay?"
45	Some minor sand interbeds							10/45	
48	Sandy, silty CLAY - consistency Pale silvery grey as above							10/48	Basement
51	with [illegible] sand content - subhedral to euhedral commonly, often bipyramidal dodecahedra - well formed non rounded							10/51	
54	- decomposed QUARTZ-FELSPAR PORPHYRY							10/54	
57	Matrix becoming white, - kaolinitic							10/57	
60								10/60	T.D. sampled 60m drilled 61m logged

X

TRICENTROL AUSTRALIA LIMITED. 055

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL127 South Australia

HOLE NO.	LC 11	CONTRACTOR	W.L. Sides & Son P/L	STARTED	6/8/1974
LOCATION	½ mile E of LC10	GAMMA LOGGED	S.A. Mines Dept	COMPLETED	6/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	55m (d) 54.6m (l)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	104m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Light red-brown aeolian sands (hole sited high on sand ridge)		overall lim. stn				11/3	Air drilled 0-12m
6							11/6	
9							11/9	
12							11/12	
15	Gypseous SAND, CLAY Fine-medium red-brown sand with clayey matrix & gypsum bands. Some red-brown		as above				11/15	
	sandy clays							
18	CLAYS Commonly light red-brown		50% red-brown lim. stn				11/18	
21	mottled at top and with light, med greys w/stained increasing with depth. Some yellow-brown mottling						11/21	
24	occasional black streaks Minor sand interbeds						11/24	

Depth	Description							Sample	Remarks
24–27	CLAYS As previously, light, med, minor dark greys with a variable amount of							11/27	
27–30	yellow-brown mottling, black streaking Some thin sand interbeds. fine-med gr sand with							11/30	
30–33	some limonitic staining							11/33	
33–36								11/36	
36–39								11/39	
39–42								11/42	
42–45	Clay becoming more strongly mottled in appearance -yellow-brown, brick red some sand content		50% lim st					11/45	
45–48								11/48	
48–51	SAND - CLAY interbeds Sand poorly sorted fine to coarse with occ pebbles to 6mm, [illegible] to subang, colourless to milky qz-bluish, clays, minor orange st		minor orange st sand					11/51	
51–54	QUARTZ FELSPAR PORPHYRY [illegible] subhedral to subhedral [illegible] qtz - [illegible] [illegible] then common white kaol matrix some pink pos decomp porphyry							11/54	Pre Cambrian - Carpentarian?
54–57								11/57	T.D. sampling 54m T.D. drilling 55m logging 54.6m
57–60								11/60	

TRICENTROL AUSTRALIA LIMITED.

057

ROTARY DRILLING LOG.

PROJECT: LAKE COCNARBINE EL 127 South Australia

HOLE NO.	LC12	CONTRACTOR	W.L. Sides & Son P/L	STARTED	6/5/1974
LOCATION	½ 0·6m E of LC11	GAMMA LOGGED	SA Mines Dept.	COMPLETED	6/8/1974
COORDS	N E	GEOL. LOGGED	T.W Middleton	SHEET	1 OF 2
TOTAL DEPTH	48·6m (d)	HOLE DIAMETER	4 3/4in	SCALE	1:118
COLLAR ELEV.	96m RL	PROBE DIAMETER	1¼in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	CLAYEY then SAND Light red-brown section		overall limonite				12/3	Air drilled 0-4·5m
6	CLAYS, Light grey to 12m then light,		variable 10-30%				12/6	
9	mod grey, some red-brown and yellow-brown mottling		limonite				12/9	Excessive contamination of samples due to blowouts around collar
12							12/12	
15							12/15	
18							12/18	
21							12/21	
24							12/24	

Depth	Description	Notes	Sample	Remarks
24				
27	CLAYS As previously		12/27	Much contamination
30			12/30	
33	CLAYS as above with SAND interbeds Poorly sorted fine to coarse gr with some well rnd.	Some limsta Sand.	12/33	Drilling indicates sand interbeds
36	pebbles to 5mm. Clays as previously		12/36	
39	Appearance of white Kaolinitic matrix with some euhedral		12/39	
42	quartz xtals - bipyramids etc - decomp QUARTZ FELSPAR PORPHYRY		12/42	
45			12/45	
48			12/48	
51			12/51	T.D [illegible] 48m drilled 48m logged
54			12/54	
57			12/57	
60			12/60	

059

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE CEENARBINE EL 127 South Australia

HOLE NO. LC 13
LOCATION Section D-D', W end
COORDS N E
TOTAL DEPTH 81m(d)
COLLAR ELEV. 43m RL

CONTRACTOR W.L. Sidebottom P/L
GAMMA LOGGED S.A. Mines Dept.
GEOL. LOGGED T.W. Middleton
HOLE DIAMETER 4 3/4in
PROBE DIAMETER 1 1/4in

STARTED 6/8/1974
COMPLETED 6/8/1974
SHEET 1 OF 3
SCALE 1:118

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Red-brown, coarse		variable lim.sta				13/3	Air drilled @ 12m
6	SAND with CLAY interbeds Sand red-brown to reddish grey poorly sorted, fine to coarse Clay light grey mottled red-brown		common lim.sta				13/6	
9	CLAY with SAND interbeds light grey, greenish grey mottled red-brown, yellow-brown Sand as above		50% + lim.sta clay common lim.sta sand				13/9	
12	CLAY, sandy, silty light grey mottled yellow-brown		30% + yellow brown				13/12	
15			lim.sta				13/15	
18	CLAY light, mod grey						13/18	
21							13/21	
24							13/24	

Depth (m)	Description	Log						Sample	Remarks
24–27	CLAY As previously Mostly light grey mottled	— —	10/+ lim. stn					13/27	
27–30	yellow-brown	— —						13/30	
30–33		— —						13/33	
33–36		— —						13/36	
36–39		— —						13/39	
39–42		— —						13/42	
42–45		— —						13/45	
45–48		— —						13/48	
48–51		— —						13/51	Ground cracks around collar - using ground mud pits some
51–54	 SAND Light reddish grey; poorly sorted	— — . . .	10-20% lightly					13/54	contamination Drilling in sand - a degree of
54–57	fine to coarse but predom medium, subrnd to subang; colourless to cloudy qtz; common coarse well rnd sand at base	. . .	to strong orange lim. stn					13/57	contamination by surface sand masks true nature
57–60	CLAYS (+SAND interbeds?) some light, med, greenish greys mottled yellow-brown	— — . . .	lim stn clays					13/60	Drilling in clay predom + sand interbeds. Mostly unwashed sand cuttings

LC13/3/3

061

Depth (m)	Description	Lithology						Remarks
60								
63	CLAYS As previously light, med grey mostly bleached and mottled yellow-brown, reddish	— —	Stiff + plastic clays					Drilling in clay Return water becoming med
66	~~[illegible]~~ Appearance of med to dark grey and blackish clays	— —		Some black lignitic clay				to dark grey indicative of carbonaceous clay
69	SAND Due to mashed and surface contamination it is unable to describe the material from	· · · ·	Few fresh PY frags float	Common brown organic stain		Few white mica flakes slightly		Drilling in sand Common clay cuttings – from above interval
72	this interval with a degree of confidence. The majority of the sand appears a brownish grey; poorly sorted	· · · ·	occ either -ing to qtz	Some black carb wood frags		tarnish -ed.		Also considerable general contamn.
75	fine to coarse; sub rnd to angular – commonly quite heavily fractured grains with slightly brownish tinge; common (~~[illegible]~~) 'pin-granules' stain.	· · · ·	grains					
	Brownish organic stain increasing at base. Some adhering pyrite	· · · ·						
78	CLAY, silty Dark brown greyish brown	— —	Small PY frags	Common fine black carb.				
	Hard penetration at base, suspect overlying bottom – no cuttings however	v z v						Visible [illegible]
81								T.D. sampled 79.5m drilled 81m logged

TRICENTROL AUSTRALIA LIMITED.

062

ROTARY DRILLING LOG.

PROJECT: LAKE COONARGINE, EL127 South Australia

HOLE NO.	LC 14	CONTRACTOR	W.L. Sides & Son P/L	STARTED	7/8/1974
LOCATION	½ mi E of LL 13	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	7/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	69.5m(cl) 69.4m(e)	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	98m RL	PROBE DIAMETER	1 1/4 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Light red-brown, aeolian		overall lim.sth				14/3	Air drilled 0-6m
6	CLAY with GYPSUM BANDS red-brown at top becoming		50/.+ lim.sth				14/6	
9	light grey mottled red-brown Possibly some sand interbeds		Clays				14/9	
12	CLAY Light grey mottled red-brown		50/. lim.sth				14/12	
15	yellow-brown.						14/15	
18	SAND interbeds in CLAY - non oxidised sand with dark brownish grey matrix - organic? CLAY Light, med grey mottled			organic matrix?			14/18	
21	red-brown, yellow-brown						14/21	
24	Sandy-Silty CLAY Light, med grey.						14/24	

24								
27	Sandy, silky CLAY As previously mottled yellow - brown Some sand interbeds? - some orange stained sand		30% in stn clay				14/27	
30	CLAY Becoming a more homogeneous light grey clays, lower yellow-brown mottling						14/30	
33							14/33	
36							14/36	
39							14/39	
42							14/42	
45							14/45	
48	SAND CLAY						14/48	Drilling in sand Drilling in clay
51	SAND Only minor cuttings Some coarse well rounded qtz pebbles to 5mm noted.						14/51	Drilling in sand Only minor sand in cuttings - mostly clay
54							14/54	
57	CLAYS Light-med grey minor yellow-brown mottling						14/57	Drilling in clay
60							14/60	

60								
63	CLAY with SAND interbeds Light to med greys ~~with~~ some (slightly brownish) with appearance of some dark grey carbonaceous	— — . . . . — —	limestn at top then few	some dark grey carb.				
66	clay Sands coarse, nonstained incl some well rnd white qtz pebbles + little travelled bipyramidal dodecahedra (sl. brownish)	— ▫ — . . . . — ▫ —	PY frags	clay.				
	QUARTZ FELSPAR PORPHYRY Decomp. at top then a greyish groundmass with qtz, altered green felspars.	✓ ✓ ✓ ✓ ^ ^						Harder penetration 66-67m (from)
69								T.D. sampler 68m ;
72								drilled ~68.5m logged 69.4m

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC15	CONTRACTOR	W.L. Sides & Son P/L	STARTED	7/8/1974
LOCATION	½ mi NE of LC14	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	8/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	48.8m (d) 48.4m (l)	HOLE DIAMETER	4¾ in	SCALE	1:118
COLLAR ELEV.	88m RL	PROBE DIAMETER	1½ in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND red-brown, aeolian	· · · · · · · ·	overall lim. stn				15/3	Blowouts in ground cracks hole resisted three times
3	CLAYS light, med, dark greys	— — — —	10-30% lim stn					
6	Some yellow-brown mottling, black streaks	— —					15/6	
9		— —					15/9	
12		— —					15/12	
15		— —					15/15	
18		— —					15/18	
21		— —					15/21	
24		— —					15/24	

Depth	Description	Lithology					Sample	Remarks
24								
27	CLAYS, silty CLAY As previously Light, med, minor dark greys mottled yellow-brown	— —	20% + lim. sta				15/27	
30		— —					15/30	
33		— —					15/33	
36		— —					15/36	
39	Becoming more strongly mottled dark grey clay	— —	50% lim. sta				15/39	
42	SAND Poorly sorted, fine to coarse with occas. pebbles to 12mm – well rnd quartzose. Rest of sand rnd to sub ang	. . . .	minor lim sta				15/42	Drilling in sand. Also clay cuttings at top?
45	with some little travelled subhedral qz. Some pink as well as colorless to milky qz. Minor degree of limonitic staining	. . . .					15/45	
48	QUARTZ FELSPAR PORPHYRY decomposed to white kaolinitic matrix with white fels pseudomorphs after felspar and euhedral qtz xtals	v v					15/48	Drilling in clay
51							15/51	T.D. sampled 48m T.D. drilled 48.8m 48.4m
54							15/54	
57							15/57	
60							15/60	

TRICENTROL AUSTRALIA LIMITED.

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ROTARY DRILLING LOG.

PROJECT: LAKE CORNARBINE EL127 South Australia

HOLE NO.	LC 16	CONTRACTOR	W.L. Sides & Son P/L	STARTED	8/8/1974
LOCATION	1km E of LC15	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	8/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	59.2m (d) 59m (l)	HOLE DIAMETER	4 3/4in	SCALE	1:118
COLLAR ELEV.	96m RL	PROBE DIAMETER	1 7/8in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND Light red-brown, medium		overall lim Sh					Air drilled 0-10.5m
3	Gypseous SAND CLAY Light red-brown. Sand predom		as above				16/3	
6	as above, few clay bands common Gypsum fragments						16/6	
9	Gypseous CLAY with SAND interbeds Clay red-brown, light brown Sand light red-brown as		predom lim. Sh				16/9	
12							16/12	
	Some unstained light-grey clay							
15	Clayey SILT light, med. greys mottled		30% lim Sh				16/15	
	red-brown, yellow-brown. Some black streaks							
18	CLAY, silty CLAY light, med greys mottled		20% lim Sh				16/18	
	yellow-brown		variable					
21							16/21	
24							16/24	

Depth	Description	Notes	Sample	Remarks
24				
27	CLAYS As previously mid to dark greys predom, mottled yellow-brown	20%+ limestn	16/27	
30			16/30	
33	More abundant yellow-brown mottling with depth	50% limstn	16/33	
36			16/36	
39			16/39	
42	CLAY with some SAND interbeds Clays predom. light toned grey with common yellow-brown mottling	30%+ limstn clay some	16/42	
45		orange limstn sands	16/45	
48	More abundant sand - commonly coarse gr colourless to cloudy qtz well rnd to sub ang, some with orange limonitic stain		16/48	
51	SAND Light grey, poorly sorted fine to coarse but coarse predom. [illegible]	limstn at top?	16/51	Cutting almost entirely in sand
	ing; colourless to cloudy qtz [illegible] limonitic staining - possibly contain [illegible] grains	Few P/ grains		
54	Clayey SAND/SILT ? silt - sand - non stained in grey clay matrix		16/54	
57	QUARTZ FELSPAR PORPHYRY decomposed white kaolinitic matrix with euhedral quartz xtals		16/57	
60			16/60	T.D. sampled 58.5m drilled (TD) 57.[illegible] logged 57[illegible]

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TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC17	CONTRACTOR	W.L. Stokes & Son P/L	STARTED	8/8/1974
LOCATION	0.4 km E. of LC16	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	8/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	78m (d) 77.8m (l)	HOLE DIAMETER	4 3/4 in.	SCALE	1:118
COLLAR ELEV.	101m RL	PROBE DIAMETER	1 1/4 in.		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Light red-brown, buff-brown fine to med gr, probably mostly aeolian	....	evenly lim. stn				17/3	Air drilled 0—16.5m
6	Some calcareous bands at top	....					17/6	
9		....					17/9	
12		....					17/12	
15		....					17/24	
18	CLAYS, silty CLAY Light, med grey, black streaked	— —					17/24	
21	at top, mauvish yellow-brown mottling	— —					17/27	
24		— —					17/30	

Depth	Description							Sample	Remarks
24									
27	CLAY silty CLAY As previously light, med greys mottled yellow-brown		varied limestone					17/27	
30								17/30	
33								17/33	
36								17/36	
39								17/39	
42								17/42	
45								17/45	
48	More light grey silty clay							17/48	
51								17/51	
54	SAND with CLAY interbeds light brownish grey appearance, poorly sorted; fine to coarse; rnd to sub ang; mostly		Some FY cement					17/54	Drilling in sand Mostly clay cuttings at top.
57	commonly a cloudy fractured qtz · subhedral. Minor limonite stn grains - probably surface sand contamination							17/57	
60	Probably with fine silty matrix - some adhering to grains.							17/60	

LC17/3/3

Depth	Description		Sample	Remarks
60				
	SAND As previously			
63	CLAY, silty Poor sample quality.	Some PY frags	17/63	Drilling in clay Abn? sand in cuttings from above interval
66	Mostly a light grey silty clay with minor dark grey Some yellow-brown mottling – contamination?	Common lim.stn. 10-20%.	17/66	
67	SAND Brownish grey overall appearance Mostly coarse qtz (av. 2mm), rnd. to angular; comprises	Few PY frags +/ort	17/69	Drilling in sand Common clay cuttings at top
72	largely little travelled brownish angular subhedral qtz from porphyry together with well travelled rounded colourless to milky qtz – some quite fractured; minor bluish		17/72	
75	some "cherts". Some pink slightly rnd. porphyry fragments. Some coarse well rnd. pebbles of Whitish qtz to 5mm at base		17/75	
	QUARTZ FELSPAR PORPHYRY Little penetration. Mostly reddish groundmass with qtz xtals		17/765	unable to penetrate
				TD sampled 76.5m drilled ~78m
				logged 77.8m

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TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL 127 South Australia

HOLE NO.	LC18	CONTRACTOR	W.L. Sides & Son P/L	STARTED	9/8/1974
LOCATION	0.6 mi E of LC17	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	9/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	75.5m (d) 75.8m (l)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	99m RL	PROBE DIAMETER	1¾in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Light red-brown, reddish buff Probably mostly aeolian sand.		overall lim. sta.				18/3	Air drilled 0–9m
6	Some calcrete bands (thin)						18/6	
9							18/9	
12	CLAY, Silty CLAY light, med, greenish grey,		80%+ limonite				18/12	Rods bogged when changing from air to water - eventually freed.
15	mottled yellow-brown		variable				18/15	
18							18/18	
21							18/21	
24							18/24	

LC18/2/

073

24								
27	CLAY, silty CLAY As previously light, med greys mottled		20%+ limestn				18/27	
30	yellow-brown						18/30	
33							18/33	
36							18/36	
39							18/39	
42							18/42	
45	Some sandy silty CLAY as well as [illegible], possibly sand interbeds. Some dark grey to blackish clay - fairly			Common black specks in black clay			18/45	
48	silty & with some black carbonaceous specks						18/48	
51							18/51	
54	CLAY with SAND interbeds Clay light grey, silty Sand very poorly sorted to well [illegible] 8mm pebbles, and [illegible] mostly colourless to cloudy. Some subrounded qtz.		Minor limestn clay some PY frags				18/54	
57	SAND Light grey appearance overall poorly sorted fine to coarse (pebbly) rnd to sub ang; colourless to cloudy & milky qtz; some extended life		Few Py frags + flint				18/57	Drilling entirely in Sand.
60	travelled (from porphyry) + well rnd black, grey, red cherts						18/60	

60								
	CLAY light brownish grey?							Clay drilling mostly sand cuttings
63	SAND More or less as previously		common PY					Sand drilling
66	but with increased proportion of brownish tinged euhedral, subhedral, little travelled qtz from porphyry		frags					
	some grey (light, med, greenish) clay interbeds							
69	silty CLAY (or clayey SILT?) med to dark greyish brown,		common PY bands?	PY freed frags				Clay drilling
	becoming brownish grey.			some lignitic clay				
72	SAND As previously. Poor cuttings representation							Sand drilling
75	QUARTZ FELSPAR PORPHYRY (little penetration) grey-red groundmass with green altered feldspar + qtz xtals							Very hard penetration
78								T.D. sampling 75m drilling (24.7) 75.5
81								

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COOWARBINE EL 127 South Australia

HOLE NO.	LC 19	CONTRACTOR	W.L. Sides & Son P/L	STARTED	9/8/1974
LOCATION	½km E of LC18	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	9/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 2
TOTAL DEPTH	56.5m (d) 56.4m (l)	HOLE DIAMETER	4¾in	SCALE	1:118
COLLAR ELEV.	99m RL	PROBE DIAMETER	1¾in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Light red-brown, buff probably mostly aeolian. some calcareous bands 1.5-3m	. . . .	overall lim.stn				19/3	Air-drilled 0-7.5m
6		. . . .					19/6	
9	CLAY, silty CLAY Mottled, light red-brown at top	. . . . / — —	variable limstn				19/9	
12	then predom light grey with some yellow-brown mottling	— —	10-30%				19/12	
15		— —					19/15	
18		— —					19/18	
21		— —					19/21	
24		— —					19/24	

Depth	Description							Sample	Remarks
24									
27	CLAY, silty CLAY as previously. Light, med grey, minor yellow-brown mottling							19/27	
30								19/30	
33								19/33	
36								19/36	
39	Some silt bands also minor sand interbeds (?)							19/39	
42								19/42	Excessive contam by surface sand due to blowouts around collar.
45	SAND. Poor cuttings return – some coarse cloudy, stained, well rnd. qtz grains also some little washed euhedral – bipyramids							19/45	Drilling in sand
48	Sandy silty CLAY some SAND interbeds? light grey clay with some yellow-brown mottling. Fair colourless qtz sand content	20/4 [illegible] Clay						19/48	Clay drilling
51								19/51	
54								19/54	
57	SAND. [illegible] brown tinged subhedral. bipyramids also coarse [illegible] pebbles to [illegible] QUARTZ FELSPAR PORPHYRY – few cuttings	Pt [illegible]						19/57	Sand Drilling. Very hard penetration. T.O. sandy 55.5m ditto (185?) 56.5m logging
60								19/60	

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TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE COONARBINE EL127 South Australia

HOLE NO.	LC 20	CONTRACTOR	W.L. Sides & Son P.L.	STARTED	1/8/1974
LOCATION		GAMMA LOGGED	S.A. Mines Dept	COMPLETED	2/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	93.5m (dl)	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	103m RL	PROBE DIAMETER	1 3/4 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SAND red-brown, aeolian		weak limonite				20/3	Air drilled 0–3m
3	Calcareous SAND, CLAY red-brown mottled white		common limonite					
6	Clayey silty SAND + CLAY Predom red-brown		predom limonite				20/6	
9							20/9	
12	Gypseous CLAY, SILT red-brown becoming light grey with depth. Gypsum bands!		limonite at top decreasing				20/12	
15	Silty CLAY light grey some yellow-brown mottling		minor limonite				20/15	
18	CLAY light greenish grey, common black mottling, minor yellow-brown. Slightly calcareous						20/18	Some effervescence with dilute HCl
21	CLAY More homogeneous light grey some black mottling + yellow-brown		minor limonite				20/21	
24							20/24	

24								
27	CLAYS As previously Light, med, minor dark greys Possible yellow-brown HC stain		10-20% lm.stn. av.				20/27	
30							20/30	
33							20/33	
36							20/36	
39	SAND interbeds? No sand in cuttings						20/39	Drilling in sand ~1m
42	CLAYS As previously		Clay as above				20/42	
45							20/45	
48							20/48	
51	CLAY with SAND interbeds Minor clear non-stained quartz sand.		Clay as above				20/51	Drilling in sand-clay interbeds
54	CLAYS As previously						20/54	
57							20/57	
60							20/60	

Depth	Description	Log						Sample	Remarks
60									
63	CLAYS As previously							20/63	
66	LIMESTONE CLAYS Firmer hard, white, amorphous blue-green & grey calcareous clays SAND Thin sands at top - some prominent coarse well rnd non stained		Few PY frags Common PY frags					20/66	very hard penetration ETTADUNNA FM? EYRE FM?
69	qtz grits. Generally appears poorly sorted but coarse predom. sand - well polished to sub-ang, colorless		1-2% +/cvt					20/69	Some surface orange - sand contam.
72	to cloudy qtz + milky, brownish small pebbles to 4mm							20/72	
75	Silty CLAY med to dark greyish brown +		Few PY	carb material in dark				20/75	Clay drilling
78	some dark sepia lignitic? clay Becoming more blackish, some sand content Thin sand interbed indicated by drilling behaviour		frags.	Clays more common at base				20/78	
81	SAND More or less as previously with prominent well rnd. coarse poorly sorted. fine to coarse		Common PY frags often	common clay / silt interbeds c abnt				20/81	Sand drilling
84	(latter predom), rnd to subang colorless to cloudy qtz predom. few little rnded subrounded qtz		euhedral	fine black specks				20/84	
87								20/87	
90	CLAY with SAND interbeds? Blackish brown, silty highly carbonaceous with some coarse sand content.		Abnt PY frags 3-5%?	Abnt fine brown-black carb. material				20/90	Highly Fetid odour
								20/92	
	Assumed QUARTZ FELSPAR PORPHYRY								Very hard penetration
93									T.D sampled ~92m drilled (306ft) 93.5m logged

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE [illegible] EL 27 South Australia

HOLE NO.	LC21	CONTRACTOR	W. L. [illegible] & Son P/L	STARTED	12/8/1974
LOCATION	[illegible]	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	12/8/1974
COORDS	N E	GEOL. LOGGED	[illegible] Middleton	SHEET	1 OF 4
TOTAL DEPTH	110m (?)	HOLE DIAMETER	4¾ in	SCALE	1:118
COLLAR ELEV.	100m RL	PROBE DIAMETER	1¼ in		

DEPTH	DESCRIPTION	Graphic Log	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND light red-brown, medium Minor calcareous material		overall limonite				21/3	Air drilled 0–3m
	Sandy, silty CLAY Red-brown		as above					
6	CLAY Light, med greys mottled		10-20% limonite				21/6	
9	-brown, black mottling						21/9	
12	Calcareous CLAYS Light, med, greenish greys						21/12	
	Minor black, yellow-brown mottling							
15	CLAYS, silty CLAY Light, med greys						21/15	
18	Minor yellow-brown mottling						21/18	
21							21/21	
24							21/24	

24								
27	CLAYS as previously light, red, [illegible] dark [illegible] [illegible] yellow-brown mottling		10-35/ 1m Str				21/27	
30							21/30	
33							21/33	
36							21/36	
39							21/39	
42							21/42	
45							21/45	
48	Clays becoming more homogeneous light grey						21/48	Very slow drilling
51							21/51	
54	SAND [illegible] sand but [illegible] [illegible] [illegible] grey - [illegible] stained						21/54	Drilling in sand Mostly clay cuttings
57	CLAY Light grey						21/57	
60	Calcareous CLAY, MARL [illegible] white marly clay light-grey, greenish, yellow-brown						21/60	Etadunna Fm.

LC21/3/3

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63	SAND [illegible] grey [illegible] [illegible] (to 2mm) [illegible]		[illegible] Grey					21/63	Drilling in sand. Eyre Fm. Marking clay
	[illegible] to [illegible] grey [illegible] black [illegible]							21/66	Cuttings at top
69								21/69	
72	Some very coarse brown [illegible] well polished qtzite [illegible] to 8mm			Some brown organic staining to sand				21/72	Drilling in clay 71-72m ~~Drilling in clay~~
75	Some [illegible] greenish silty clay [illegible] Sands as above coarse [illegible]							21/75	
78	Silty CLAY Med to greenish grey		[illegible] grey	Fine black carb specks				21/78	Drilling in clay
81	SAND As previously		[illegible] grey					21/81	Drilling in sand.
84	CLAY, carbonaceous CLAY Med, greenish grey becoming blackish brown, [illegible]		[illegible] grey	highly carbonaceous [illegible] black				21/84	Drilling in clay. Felix colour
87	becoming more of a lignite [illegible] brown [illegible] black [illegible] black [illegible] brown carb [illegible]			[illegible] brown [illegible] [illegible] fabric				21/87	
	Some less carbonaceous light brown silty clay								
90	SAND [illegible], more [illegible]		[illegible]	[illegible] wood				21/90	Drilling in sand. Common clay.
93	As previously [illegible] well rnd qz. qtzite grains [illegible] stained. Some little travelled [illegible] qz.		grey	grey lignite [illegible]				21/93	lignite cuttings
96	CLAY, LIGNITE In the main part a dark [illegible] brown carbonaceous, silty clay (or silt?)		[illegible] grey	[illegible] fine carb. trash				21/96	Drilling in clay

9[illegible]								
[illegible]	[illegible] ... [illegible] (CLAY) [illegible] [illegible] [illegible] in [illegible] is [illegible] grey overall; [illegible] [illegible] (av 3-5mm); [illegible]	[illegible]	[illegible] PY frags	Abnt black -brown carb wood			21/99	Cuttings in sand with clay interbeds - mostly clay
[illegible]	[illegible] [illegible] [illegible] fragments; [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible]	[illegible]		fresh			21/102	cuttings at top - "hole balling up"
105	[illegible] gley, red, brown [illegible] [illegible] with a silty [illegible] [illegible] hard (indicated [illegible]) [illegible] more well [illegible] [illegible] pebbles to 12mm [illegible]	[illegible]					21/105	
108	QUARTZ FELSPAR [illegible] [illegible] decomp Kaolin matrix [illegible] [illegible] [illegible] [illegible]	[illegible]					21/108	
								T.D sampling 108m drilling (330') 110m logging

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE [illegible] EL 127 South Australia

HOLE NO.	AC 22	CONTRACTOR	D.L. [illegible]	STARTED	13/8/1974
LOCATION	[illegible]	GAMMA LOGGED	S.A. [illegible]	COMPLETED	13/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	79.5m (61)	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	160 m RL	PROBE DIAMETER	1 3/4 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	Sandy, silty CLAY dark red-brown (clayey)		[illegible] lim stn				22/3	Air drilled 0-m
3	Gypseous, sandy silty CLAY Broken clay [illegible]		as above					
6	with gypsum bands. Red-brown clay Gypsum mostly, pink to colourless						22/6	
9	Minor gypsum at base						22/9	
12	CLAY Light greenish grey mottled yellow-brown. Minor black mottling		30% lim stn				22/12	
15	CLAY silty CLAY Light, [illegible] grey, minor yellow brown mottling		minor lim stn				22/15	
18	Some black mottling [illegible]						22/18	
21	SILT Light grey, light greenish grey		30% [illegible]				22/21	
24	CLAY [illegible]						22/24	

LC22/2/

24								
27	Clays [illegible] – [illegible] becoming mod. [illegible], with		[illegible] SV. [illegible]					
30	[illegible] yellow-brown, [illegible] black mottling							
33								
36								
39								
42								
45								
48								
51								
54								
57								
60	[illegible], clays [illegible] [illegible]							Very hard. [illegible]

Depth	Description	PY	Other	Remarks
60				
63	SAND Light grey, med-coarse [illegible] [illegible] at top; [illegible] [illegible] [illegible] [illegible] [illegible] white, [illegible]	PY frags from top		Drilling in sand - some clay interbeds. Mostly clay cuttings at top
66	[illegible]	about some cubes		
69	[illegible] sands [illegible] seen in [illegible] (interval 69-72m) is [illegible] [illegible] 2-5mm with pebbles [illegible] 8mm [illegible] [illegible], cloudy, milky, [illegible] qtz, qtzite well polished			
72	Silty, carbonaceous clay - mushroom pink, brownish - dark brown - latter with abnt fine carbonaceous trash. Highly fetid odour	Common PY frags	Abnt fine brown, black carb. trash	Drilling in clay. Abnt [illegible] sand from last interval
75	SAND Poorly sorted, light brown, [illegible] well [illegible]-[illegible] [illegible]. [illegible] fractured grains, pebbles [illegible] [illegible] & milky cloudy fractured qtzite?	Common PY frags	Some brown organic stain	
78	[illegible] [illegible] [illegible] [illegible]			Unable to penetrate
81	[illegible] [illegible] [illegible] Of basement a hard, chocolate-brown [illegible] quartzite? [illegible] cuttings some chert-like, others an indurated sandstone			T.D. sampled 78m drilled (25?) 78 logged 78m
84				

TRICENTROL AUSTRALIA LIMITED. 087

ROTARY DRILLING LOG.

PROJECT: LAKE [illegible] EL 127 [illegible] Australia

HOLE NO.	LC 23	CONTRACTOR	D. L. Soles & Son P/L	STARTED	13/12/1974
LOCATION	[illegible]	GAMMA LOGGED	S.A. Mines Dept	COMPLETED	13/12/1974
COORDS	N E	GEOL. LOGGED	T. D. Nicholls [illegible]	SHEET	1 OF 3
TOTAL DEPTH	85m (d)	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	94m RL	PROBE DIAMETER	1 1/2 in		

DEPTH	DESCRIPTION	Graphic Lith	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND - red-brown aeolian then CLAY, sandy, silty Clay Clay red-brown,		[illegible] lim. stn				23/3	No air drilling
6	CLAY Lightly, mod, greenish grey mottled yellow-brown		30% lim. stn				23/6	
9							23/9	
12	CLAY with some SAND interbeds Clays as previously Sand mostly fine to med gr.		as above minor lim. stn				23/12	
15	[illegible] qz.		[illegible]				23/15	
18							23/18	
21	CLAY, silty CLAY mottled, dark & lightish grey [illegible] yellow-brown mottling		[illegible] lim. stn				23/21	
24							23/24	

Depth	Description	Lithology						Sample	Remarks
24									
27	CLAYS As previously Light, mid, dark greys mottled [illegible] brown		variable [illegible]					23/27	
30								23/30	
33								23/33	
36								23/36	
39								23/39	
42	CLAY with SAND interbeds Clays as previously with some poorly sorted sand - [illegible]							23/42	Sand interbeds
45	CLAY Light, mid greys some yellow-brown mottling		[illegible]					23/45	Drilling in clay
48								23/48	
51	SAND Light grey; poorly sorted, with [illegible] + some little [illegible] cohesion; [illegible]		Few PY frags					23/51	Drilling in sand
54	[illegible] [illegible] common slightly [illegible] [illegible] cohesion [illegible]							23/54	
57	CLAY with SAND interbeds Cream, light to mid grey		common PY					23/57	Clay with sand interbeds.
60	some brownish grey Sands as previously		frags					23/60	

Depth	Description	Log						Remarks
60								
63	CLAY ([illegible]) [illegible] grey at top becoming lighter to dark brown [illegible]	[illegible]	Brown PY frags.					
66		[illegible]		[illegible] black fine carb material				
69	[illegible] lighter grey [illegible] siltstone becoming [illegible] abut.	[illegible]		Abut common black carb. wood frags.				
72		[illegible]						
75		[illegible]						
78	SAND greyish brown overall, well sorted coarse at top. subround to sub ang [illegible] abut	. . . .	Common PY frags	most sand has [illegible] carb				Dullingari sand
81	([illegible]) [illegible] ([illegible]) little travelled Becoming more poorly sorted [illegible] to very coarse	. . . .		[illegible] Abut black carb wood frags.				
	QUARTZ FELDSPAR PORPHYRY [illegible] pink groundmass	v 7 v >						[illegible]
84								T.D. [illegible] 83m [illegible] 85m

TRICENTROL AUSTRALIA LIMITED.

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ROTARY DRILLING LOG.

PROJECT: LAKE [illegible] EL 12? South Australia

HOLE NO.	LC 24	CONTRACTOR	W.L. Sides & Son P/L	STARTED	14/8/1974
LOCATION	[illegible]	GAMMA LOGGED	[illegible]	COMPLETED	14/8/1974
COORDS	N E	GEOL. LOGGED	T. [illegible]	SHEET	1 OF 2
TOTAL DEPTH	[illegible]	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	89m RL	PROBE DIAMETER	1 1/2 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Red-brown, medium		small lim stn				24/3	Air drilled 0-1.5m On E side of Billeroo Ck
6	Sandy silty CLAY Red-brown at top, becoming light buffish grey mottled yellow-brown, black Some sand interbeds		sl lim stn				24/6	
9	CLAYS Light med greys mottled						24/9	
12	yellow-brown, black Minor sand interbeds at top Some silty, sandy-silty clays						24/12	
15							24/15	
18							24/18	
21							24/21	
24							24/24	

Depth	Description	Graphic						Sample	Remarks
24									
	[illegible] no recovery								
27	[illegible] SILTY CLAY [illegible] white brown buff mottled	- -	75/ [illegible]					24/27	
	[illegible] fine med sand content [illegible] stained	- -						24/30	
30	[illegible] CLAY CLAY [illegible]	- -	30/ [illegible]						
33	mottled yellow buff [illegible] increasing with depth	- -						24/33	
36		- -						24/36	
39		- -						24/39	
42		- -						24/42	
45	SAND with CLAY interbeds Poorly sorted but predom coarse to very coarse (gravel with pebbles to [illegible]), well sub-polished to [illegible] (for rethreaded qtz)	. . o	Sand non str.					24/45	
	[illegible] milky, [illegible] qtz, [illegible] grey, pink, [illegible] cherts	o o							
48	QUARTZ FELSPAR PORPHYRY [illegible]	v v						24/48	Hard band at 46.5m
51	Kaolinitic matrix with qtz xtals. [illegible] decomposed [illegible] bottom [illegible] a pink [illegible] !	v <						24/51	
54	qtz phenocrysts + grey, [illegible] altered felspars	v <						24/54	TP sampling 5.25m drilling (1.75–5.34m)
57								24/57	logged
60								24/60	

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: [illegible] EL 127 South Australia

HOLE NO.	[illegible]	CONTRACTOR	[illegible]	STARTED	14/8/1974
LOCATION	[illegible]	GAMMA LOGGED	[illegible]	COMPLETED	14/8/1974
COORDS	N E	GEOL. LOGGED	[illegible]	SHEET	1 OF 3
TOTAL DEPTH	78 5m (d)	HOLE DIAMETER	[illegible]	SCALE	1:118
COLLAR ELEV.	104 m RL	PROBE DIAMETER	[illegible]		

DEPTH	DESCRIPTION	Graphic Lith	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
	SANDY CLAYPAN? red-brown		overall? limonite				25/3	[illegible] air drilling
3	Sandy silty CLAY with GYPSUM red-brown,		as above					
6	SAND with GYPSUM bands Red-brown sand Fairly white gypsum		as above				25/6	
	becoming clayey at base						25/9	
9	Sandy silty CLAY light red-brown, buffish		as above					
12							25/12	
15	CLAY Pale grey some yellow-brown mottling		[illegible]				25/15	
18	CLAY light grey buffish with common yellow-brown mottling?		[illegible] limonite				25/18	
21	CLAYS Mostly light, med. greys some yellow-brown, [illegible]		[illegible]				25/21	
24							25/24	

LC 25/2/3

Depth	Description	Legend					Sample	Remarks
24								
27	CLAYS, silty CLAY As previously Grey, mod. olive dark grey	— —					25/27	
30	Variable yellow-brown, orange mottling	— —					25/30	
33		— —					25/33	
36		— —					25/36	
39		— —					25/39	
42		— —					25/42	
45	SAND interbed (7mm) [illegible], medium gr. sand	. . . .					25/45	
48	CLAYS As previously	— —					25/48	
51		— —					25/51	
54	SAND interbed coarse, med, iron-stained gr. CLAY as previously	. . . .					25/54	
57	SAND Slightly gravelly coarse; poorly sorted fine to coarse, mostly med gr., sub rnd to sub ang, [illegible] to [illegible] gr.	. . . .	5YR/ light mod. orange [illegible]				25/57	[illegible] sand
60		. . . .					25/60	

Depth	Description			Remarks
60				
65	[illegible] some [illegible] [illegible] mainly of fine sand [illegible] [illegible] [illegible] [illegible]			Uncertain as to whether drilling in sand or clay
69	[illegible] [illegible] med. [illegible], brownish grey, [illegible] silt/clay [illegible]			
69.5	[illegible] [illegible] of [illegible] [illegible]			Drilling in sand
72	Sands & brownish [illegible] some dark brown lignite [illegible] [illegible] sands coarser, some well [illegible] [illegible] to cloudy & brownish, fractures often cracked qtz to [illegible]	[illegible] PY frags. more common [illegible]	lignitic clay bands. Black wood frags.	
75	Carbonaceous silty CLAY Med to dark brown, [illegible] Commonly silt, [illegible] content Plant, lignitic material - fine and [illegible] black carb. wood.	Common PY frags.	Plant lignitic material, black wood frags.	Drilling in clay?
	BASEMENT? Silty SHALE hard, dark brown, [illegible]? with fine sand or silt content			CAMBRIAN? Unable to penetrate
78				T.D. [illegible] 78m
				drilling (25/1) 78.5 logging 78m

TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: Lake [illegible] EL 127 South Australia

HOLE NO.	[illegible]	CONTRACTOR	[illegible]	STARTED	14/8/1974
LOCATION	[illegible]	GAMMA LOGGED	[illegible]	COMPLETED	14/8/1974
COORDS	N E	GEOL. LOGGED	[illegible]	SHEET	1 OF 3
TOTAL DEPTH	[illegible]	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	[illegible] m RL	PROBE DIAMETER	1 3/4 in		

DEPTH	DESCRIPTION	Graphic Lith	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND, CLAYPAN, CLAY Red-brown to brown		trace/ limsth				26/3	No air drilling
6							26/6	
9	Gypsum clayey SAND Red-brown sand with clay matrix, gypsum bands		as above				26/9	
12	Becoming more clayey with depth						26/12	
15	CLAY Light grey 12-13.5m then red grey						26/15	
18							26/18	
21							26/21	
24							26/24	

24								
27	CLAY As previously. [illegible]		10-30% limestn cobble				26/27	
30	some yellow-brown mottling						26/30	
33							26/33	
36							26/36	
39							26/39	
42							26/42	
45							26/45	
48							26/48	
51	[illegible] [illegible], cobbles						26/51	[illegible] sand 1.2
54	CLAY As previously Minor sand & [illegible]						26/54	
57							26/57	
60							26/60	

LC26/3/3

Depth	Description	Lithology		Remarks
6?				
6?	SAND with CLAY interbeds [illegible] grey, poorly sorted fine to coarse (mostly medium) [illegible]			Drilling in sand with clay interbeds
[illegible]	[illegible] to cloudy qtz, often [illegible] [illegible] [illegible]			
6?	[illegible] mostly brown [illegible] [illegible] [illegible]			
72	BASEMENT ? A light coffee brown siltstone + some chert brown siliceous bands / shale like beds			Ex[illegible] contamination of clay and sand cuttings. Drilling behaviour indicates clay
75				
78				[illegible] basement? Frome [illegible]
79.5				
				T.D. [illegible] 79.5m drilling ([illegible]) 81m
				logged 80.4m

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TRICENTROL AUSTRALIA LIMITED.

ROTARY DRILLING LOG.

PROJECT: LAKE [illegible] EL 127 South Australia

HOLE NO.	[illegible]	CONTRACTOR	[illegible]	STARTED	15/8/1974
LOCATION	[illegible]	GAMMA LOGGED	S.A. Mines Dept.	COMPLETED	15/8/1974
COORDS	N E	GEOL. LOGGED	T.W. Middleton	SHEET	1 OF 3
TOTAL DEPTH	73 [illegible]	HOLE DIAMETER	4 3/4 in	SCALE	1:118
COLLAR ELEV.	103 m RL	PROBE DIAMETER	1 1/2 in		

DEPTH	DESCRIPTION	Graphic Lith.	Fe.	Carbon	Feldspar	Other	Sample No.	COMMENTS
3	SAND Red-brown aeolian Some calcareous bands		[illegible] limestone				27/3	Air-drilled 0 – 10.5
6	Gypseous SAND Red-brown with gypsum bands Some calcareous mottling Brown clay bands		as above				27/6	
9							27/9	
12	Sandy, silty CLAY Red-brown Some gypsum bands		as above				27/12	
15	CLAY Dark grey mottled yellow-brown		35% + limonite				27/15	
18	CLAYS Light, mid greys mottled yellow-brown		20–30% limonite				27/18	
21	Some sand interbeds 19.5 – 22.5m [illegible] [illegible]						27/21	
24							27/24	

LC 27/2/

095

24								
27	[illegible] [illegible] [illegible] [illegible]						27/27	
30							27/30	
33							27/33	
36							27/36	
39							27/39	
42							27/42	
45							27/45	
48	SAND Light grey appearance overall		minor lignitic				27/48	Drilling in sand some clay
51	poorly sorted; fine to coarse; [illegible] sub-ang; colourless to cloudy [illegible] [illegible] in [illegible] at top. Some clay interbeds at top.		stringy lignite				27/51	interbeds
54							27/54	
57							27/57	
60							27/60	

	[illegible]							
	[illegible]							
	[illegible]							Cambrian – Frome Group
69								
72								
75								T.D. sampling 72m drilling 73.4m logging