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"EXTRA PLANS"

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TENEMENT HOLDER: CRA Exploration Pty. Ltd.

147 numbers

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CRA EXPLORATION PTY. LIMITED

REPORT ON THE SURRENDER OF SHERINGA E.L. 688, AND PARTIAL SURRENDER OF McLACHLAN E.L. 670 AND TUCKEY E.L. 687, POLDA BASIN, SOUTH AUSTRALIA, 17TH MAY, 1982.

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DATE: 25TH MAY, 1982.

SUBMITTED BY: D.R. McBain

ACCEPTED BY:

CONTENTS

1. SUMMARY

Subsequent to a detailed review of existing data a drilling programme of 23 open and one partially cored hole was undertaken in 1980. The follow-up 1981 eight open hole drilling programme was designed to test areas untried by the first drilling programme, and to follow-up promising lignitic intersections.

The results from the drilling programmes show the lignite potential of the areas under consideration to be limited, with generally only thin seams of lignite being present. The lateral extent of these seams is generally limited. The portion of McLachlan E.L. 670 to the west of E.L. 800 was the only area to exhibit potential. Multiple seams of Jurassic lignite were intersected, in this area, but due to the small area, poor quality of the seams and high percentage of interseam waste it is not considered economically viable.

No anomalous base of precious metal values were identified in the basement or overlying sediments.

It is recommended that Sheringa E.L. 688, and the southern portions of McLachlan E.L. 670 and Tuckey E.L. 687 be surrendered.

2. CONCLUSIONS

2.1 The fault on the northern margin of the Polda Basin is not very evident to the west of E.L. 800.

2.2 No significant coal intersections were made in the Sheringa or west McLachlan areas.

2.3 The economic potential of the Jurassic and Eocene coal intersections in holes 80LRM30,31,81LRM56 and 59 to the west of E.L. 800 is not significant in view of the small area, poor quality of the seams, and the high percentage of interseam waste.

2.4 Potential reserves of Jurassic and Eocene coals, in the Southern Polda Basin area, are 72 and 80 million tonnes respectively. However, the seams in this area are thin (<1.3 metres), laterally discontinuous and generally of poor quality. The above potential reserves are not considered economically viable.

2.5 No significant coal intersections were made at less than 150 metres in the central portion of the basin.

2.6 No anomalous base or precious metal values were identified in the basement or overlying sediments.

3. RECOMMENDATIONS

3.1 It is recommended that the whole of Sheringa E.L. 699 be surrendered.

3.2 It is recommended that the southern portions of McLachlan E.L. 670 and Tuckey E.L. 687 by surrendered.

4. INTRODUCTION

The Polda Basin Tenements, covering 4,168 square kilometres, comprise three E.L.'s - McLachlan E.L. 670, Tuckey E.L. 687 and Sheringa E.L. 688 (see Plan No. SAa 1500). These three exploration licences extend from Sheringa on the west coast of the Eyre Peninsula, through Lock to Rudall in the east.

McLachlan E.L. 670 was granted to CRA Exploration Pty. Limited on 7th July, 1980, with Tuckey E.L. 687 and Sheringa E.L. 688 on 11th August, 1980, for a period of twelve months. Subsequently, the E.L.'s were granted for a further twelve months.

The areas to be surrendered (Plan SAa 1500) are detailed below:-

McLachlan E.L. 670 - The areas bounded as follows:

Commencing at a point being the intersection of latitude 33°30'S and longitude 135°20'E, thence east to longitude 135°25'E, thence south to the northern boundary of the Bascombe Well Conservation Park, thence west, and generally south-easterly along the north and westerly boundaries of the said park, respectively, to latitude 33°45'S, thence west to a line parallel to and 800 metres inland from the High Water Mark, Great Australian Bight, thence generally north-westerly along the said line to longitude 135°00'E, thence north to latitude 33°40'S, thence east to longitude 135°20'E, and north to point of commencement, and commencing at a point being the intersection of latitude 33°35'S and longitude 135°40'E, thence east to longitude 135°55'E, thence south to latitude 33°45'S, thence west to the eastern boundary of the Bascombe Well Conservation Park, thence generally northerly and north-westerly along the eastern boundary of the said park to latitude 33°37', thence east to longitude 135°40', and north to the point of commencement.

Tuckey E.L. 687 - The portion of the E.L. to the south of latitude 33°38'S.

Sheringa E.L. 688 - The whole exploration licence area.

This report details all work carried out within the above areas, prior to surrender.

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5. REGIONAL GEOLOGY

The Polda Basin is a narrow, graben-like, intracratonic basin elongated east-west in Precambrian basement rocks of the Gawler Block. The limits of the basin are not well defined (Harris and Foster, 1974). Precambrian igneous, sedimentary and metamorphic rocks form boundaries in the north, east and west. (Johns, 1957; Harris and Foster, 1974). Gravity contours give an approximate limit in the south (McInerney, 1977).

The origin of the basin is not known. Palaeozoic rifting leading to breakup and separation of the Australian and Antartic plates during the Eocene was suggested by Fraser and Tilbury (1979). Precambrian rifting was proposed by Morgan (1974). Permo-carboniferous, Jurassic and Tertiary sediments are known within the graben.

Permo-Carboniferous glacigene sediments (Cooper, 1980a) consisting of blue-grey and green claystone occur widely beneath the Lock coal deposit and to the west. They have been regarded by CRA Exploration Pty. Ltd. as economic basement.

Late Jurassic sediments of the "Polda Formation" are well defined by sub-surface exploration within the area of the Lock coalfield. They are also known (sub-surface only) in the Sheringa area, along the southern margin of the Basin near Tooligie Hill, to the east of Lock and in the central part of the basin. The formation consists predominantly of grey to black sands, silts clays and coals.

Tertiary sediments occur extensively throughout the basin. Eocene, Miocene and possibly Pliocene sediments have all been identified by sub-surface exploration. (Harris, 1973; Gatehouse, 1981). The mid-Eocene Poelpena Formation is most widely recognised, and comprises carbonaceous and oxidised sands, gravels, clays and lignite.

Quaternary sediments overlie a large area of the Polda Basin. Sands and clays of the Bridgewater Formation are thickest in the east, whilst the Ripon Calcrete is best developed towards the coast.

6. WORK CARRIED OUT

6.1 Data Acquisition and Evaluation

All the S.A.D.M.E. and previous company exploration data was acquired. The data was subjected to a rigorous appraisal and evaluation. The 1980 drilling programme was formulated on the results of the evaluation.

6.2 Geophysics

6.2.1 Gravity

Subsequent to the 1980 drilling programme one gravity traverse, was undertaken to the west of E.L. 800 (Plan SAa 1502), by Geoterrex Pty. Limited in February, 1981. The survey data is supplied in Appendix I.

The object of the gravity survey was to determine the location and the magnitude of faulting inferred from the 1980 drilling programme. Interpretation of the gravity data appears in Appendix I.

6.2.2 Borehole

A truck mounted, computerised, geophysical logging unit, contracted from Geoex Pty. Ltd., logged all boreholes on completion of drilling. Caliper, short and long spaced density, natural gamma, neutron, self potential and resistance logs were provided for most holes. The full suite of logs was run on two probes.

Logging speed was constant at 5 metres/minute.

6.3 Drilling

6.3.1 General

Thirty one open-holes and one partially cored hole were drilled in two campaigns for a total of 2960 metres, 54 metres of which were cored (Plan SAa 1499). 23 open-holes and one partially cored hole were drilled in the 1980 drilling programme using a Thompson Drilling/Geoex combination. During the 1981 drilling programme eight open-holes were drilled using a W.L. Sides and Son/Geoex combination.

To the west of McLachlan E.L. 670 and on Sheringa E.L. 688 some drilling problems were encountered with the surface calcrete layers and cavernous limestone.

The core from 80L30C was immediately wrapped in polythene to prevent moisture loss from the lignitic intervals.

The aim of the two drilling programmes was to adequately test the potential of the Polda Basin for viable economic, shallow deposits of lignite of Tertiary or Jurassic age.

Geological borehole logs are presented in Appendix II. Boreholes, with the prefix 80, from the 1980 drilling programme have only chip logs. The logs, from boreholes with the prefix 81, from the 1981 drilling programme are geophysically corrected.

Graphic stratigraphic and geophysical logs are presented in Appendix III. The logs, with the prefix 80, are not geophysically corrected.

6.3.2 Stratigraphy & Palynology

A detailed stratigraphic analysis of the basin was not the aim of the drilling programme. However a large amount of sub-surface information was obtained during exploration and this has greatly added to the available data on most of the units within the Polda Basin.

Differentiation of the middle Eocene Poelpena Formation from the Jurassic "Polda Formation" was the major problem in determining the stratigraphic succession in the main part of the basin. The boundary determined by Harris and Foster (1974) is difficult to recognise in both cuttings and geophysical logs.

Selected samples from a number of holes in the 1980 programme were sent for palynological investigation to resolve the problem. The report by W.K. Harris forms Appendix V of this report. Rotary mud samples were dated and no contamination was evident. The dates are considered reliable.

The Miocene unit described by Harris (1973) was not readily identified during exploration. A ?Tertiary age is indicated from a sample from 80LRM3. A Pliocene age was very tentatively suggested by Harris (Appendix V).

Several attempts were made to draw structure contour and isopach maps of the Tertiary and Jurassic coal-bearing sequences. This proved difficult because of rapid facies variations, the generally low drilling density, the lithological and geophysical similarity of the Tertiary and Jurassic sequences and the lack of marker horizons. Cross-sections were drawn. Tentative correlations using downhole geophysical logs are shown on these sections (Plans SAa 1356, 1358,1360,1503,1504)

Basement contour maps were completed for the Sheringa and western McLachlan area (Plan SAa 1286).

Detailed Polda Basin lithological descriptions are presented in Appendix IV, and summarised in Table 6.3.2.

TABLE 6.3.2

STRATIGRAPHY OF THE POLDA BASIN REGION

AGE			NAME	ROCK UNIT	THICKNESS (metres)	LITHOLOGY	STRATIGRAPHIC RELATIONS	EXPRESSION
CAINOZOIC	QUARTERNARY	Pleistocene		Bridgewater Formation	30m	Sand, off-white cemented calcareous, clay interbeds	Uppermost unit in sequence	Outcrops west of Lock and in cliffs Drill Holes
		?		Undifferentiated	6-7m	Clay, vari-coloured, calcareous	Underlies Bridgewater Formation	
	TERTIARY	Middle Miocene		Undifferentiated	70m	Green to grey clay & carbonaceous clays. Grey poorly sorted coarse sand & carbonaceous sand	Relationships unknown. Correlated with Munno Para Clay	Many holes in Polda Trough
		Middle Eocene		Poelpena Formation	Greater than 200m	Grey, dark grey & brown coarse sand & lignite. Very carbonaceous	Unconformably on Jurassic. Overlain unconformably by ?Miocene Quaternary.	Many holes in Polda Trough - absent on southern edge. 81L41C cored hole.
MESOZOIC	Upper Jurassic			Polda Formation	Greater than 130m	Dark grey to black very carbonaceous fine sand, silt & lignite and very coarse grey sands	Unconformably on Permian & pre-Cambrian. Unconformably overlain by Tertiary in Polda Basin, conformably by Cretaceous on Ceduna Terrace	Many drill holes in Polda Trough
PALAEOZOIC	Permian			Boorthanna Formation	150m	Pyritic diamictite & clay	Unconformably on Archean & Proterozoic. Unconformably overlain by Jurassic	Polda No. 1 Stratigraphic drill hole. Tuckey No. 1 Stratigraphic drill hole 80L30C cored hole.
PROTEROZOIC	Adelaidean			Corunna Conglomerate	Exceed 200m	Conglomerate, sandstone & Shale	Unconformably on Lincoln Complex. Unconformably overlain by Permian, Jurassic & Tertiary	
	Carpentarian		Lincoln Complex			Granite, gneiss, migmatite, granulite augen gneiss, quartzo-feldspathic gneiss. Synkimban Orogeny granites. Basic intrusives.	Overlain unconformably Corunna Conglomerate. Underlain by Hutchison Group	Southeast and northeast of Lock
	Nullaginian		Hutchison Group	Middleback Formation Warrow Quartzite		Metasiltstone, schist, iron formation, marble & quartzite	Overlain by Lincoln complex & underlain unconformably by Sleaford Complex	Outcrops southeast of Lock. May occur in drill holes.
	Lower Proterozoic & Archean		Sleaford Complex	Widbey Granite Kiana Granite	?	Granite, granite gneiss schist, granulite, metasediments, basic intrusives	Overlain unconformably by Hutchison Group	Outcrops north & south of Lock. May occur in drill holes

6.3.3 Drilling Results

Several boreholes intersected coal or lignite seams. Table 6.3.3 summarises these intersections.

6.3.4 Coal occurence

Within the Polda Basin, drilling has revealed the existence of numerous coal horizons, both in the Eocene Poelpena Formation and the Jurassic "Polda Formation".

Coal occurence and proposed correlations are shown in a series of approximately north south and east west cross sections (Plans SAa 1356,1503,1504).

Table 6.3.3 summarizes coal intersection information.

Tertiary coal appears to have accumulated over a large area, however, for the most part the seams are thin and do not appear to be laterally extensive. The number of seams may vary. The greatest thickness of Jurassic coal was intersected in the area immediately west of E.T.S.A. E.L. 800.

The preliminary feasibility study on the E.T.S.A.'s Jurassic, Lock coal deposit indicated that the complexities of beneficiating coal from the interseam sediments preclude development of the Jurassic coal in this area. Eocene lignite appears more favourable.

For ease of discussion the Polda Basin has been sub-divided into three main areas of coal occurrence, which are:

1. Sheringa and western McLachlan area - comprising Sheringa E.L. 688 and that portion of McLachlan E.L. 670 west of Bascombe Well Conservation Park.

2. Area west of E.T.S.A. E.L. 800 - small portion of McLachlan west of E.T.S.A. E.L. 800 which includes holes 80LRM30,31, 81LRM56,57,58 and 59.

3. Southern Polda Basin area - comprising an elongate area along the southern margin of the basin in both Tuckey E.L. 687 and McLachlan E.L. 670.

6.3.4.1 Sheringa and Western McLachlan Area

Carbonaceous Jurassic sediments are present in the area to the north of Sheringa E.L. and the adjoining western McLachlan E.L. area.

Table 6.3.3 - Summary of Coal Intersections

Borehole Number	Depth		Interval (M)	Coal Thickness (M)	No. of Seams
	From	To			
80LRM4	121.5	123.5	2.0	2.0	1
80LRM16	43.0	58.5	15.5	5.0	3
80LRM18	90.5	115.5	25.0	10.4	9
80LRM19	27.5	33.0	5.5	2.5	2
80LRM20	95.0	116.0	21.0	7.0	4
80LRM30	48.2	63.0	14.8	7.0	3
80LRM31	82.5	116.0	33.5	13.9	9
81LRM56	46.56	51.13	4.57	3.48	3
	107.08	107.85	0.77	0.77	1
81LRM57	34.64	35.28	0.64	0.64	1
	53.35	54.58	1.23	1.23	1
81LRM59	62.50	62.96	0.46	0.46	1
	76.30	77.89	1.59	1.19	2
	85.55	90.95	3.86	3.24	3
	119.27	121.20	1.93	1.93	1
	129.35	131.40	2.05	0.70	3
81LRM63	32.98	34.20	1.22	1.22	1

Jurassic carbonaceous and lignitic sands and clays are thinly developed in a slightly elongated depression into which hole 80LRM35 was drilled (Plan SAa 1286). These sediments onlap onto Pre-cambrian basement.

Few coal seams are developed and these are very clayey and of poor quality. The seams are thin (between 0.5m and 1m) and are not laterally consistent. No Eocene lignite was intersected.

Potential for development of a significant economic deposit of Jurassic coal in this area is limited. The nature of Jurassic coal in this area and its problems of recovery as determined by E.T.S.A. (Owens, pers. com.) further downgrade the area. No further drilling is recommended.

6.3.4.2 Area west of E.T.S.A. E.L. 800

Both Jurassic and Eocene coals were intersected in this area. They represent the westerly extension of the E.T.S.A.'s Lock coal deposit.

Four holes 81LRM56,57,58 and 59 were drilled to follow-up intersections in holes 80LRM30 and 31. Individual seams do not correlate well, however the Jurassic and Eocene carbonaceous zones are consistent throughout the area (Plan SAa 1358).

Depth to the top of the main Jurassic seam varies from approximately 60 metres in 80LRM30, to more than 80 metres in 80LRM31. Seam splitting is common. The seams are mostly thin and multi-stacked with abundant clay partings. Coal quality is variable. The thickness of seams is a function of ash content.

Significant lignite intersections near the base of the Poelpena Formation were made in holes 80LRM30 and 81LRM56. One seam was intersected in 80LRM30. Seam splitting is observed in 81LRM56. Coal quality appears good from the geophysical logs. The seam does not continue to the south and was not intersected in 81LRM55 four kilometres to the north.

A potential tonnage of only 20 million tonnes of Eocence lignite exists in this area, surrounding holes 81LRM56 and 80LRM30. A two metre seam thickness is assumed.

Potential tonnage of Jurassic coal in this area is only 60 million tonnes assuming a three metre coal thickness. Seam thickness is variable. Strip ratios will be greater than 15 to 1.

6.3.4.3 Southern Polda Area

Coal and carbonaceous sediments of Jurassic age were intersected along the poorly defined southern margin of the basin in holes 80LRM18,20 81LRM63. The seams are thin (one metre or less) and grade vertically into lignitic clay. Interseam partings are common and are relatively thick. Coal quality, as inferred from the geophysical logs, is poor. The seams have high ash contents, which is to be expected of Jurassic coal.

Depth to the top of the main coal bearing zone is 77 metres at its shallowest intersection in hole 80LRM20 and is greater than 90 metres in holes 80LRM19 and 81LRM63.

Individual seams are discontinuous between borehole. Carbonaceous bands as well as coal seams disappear abruptly in a north east, "basin ward" direction, between 80LRM20 and 19.

This phenomenon is most likely a factor of the rapid facies variations typical of fluvial deposition in the Polda Basin.

Major coal accumulations were not intersected in any of the holes drilled in the central portion of the basin (viz. 80LRM15,14,12,11,23). The sandy facies recognised here (Plan SAa 1499) may represent the main channel axis.

Jurassic coal in this southern area occurs largely in a north-west - south-east trending zone which appears to flank the higher basement areas along the poorly defined southern basin margin. The limit of coal development south of holes 80LRM18 and 20 has not been tested. However the area in which a potentially economic deposit of coal may be developed is limited by shallowing basement.

Thin (less than 1.3 metre) Eocene lignite seams were intersected in holes 80LRM19, 81LRM61 and 63. The quality of the lignite varies.

From the limited drilling data available it appears that the Eocene lignite in this area was deposited as a thin blanket type deposit during short periods of relative stability. Coal accumulation does not appear to have been influenced by basement proximity as in the northern McLachlan area.

Assuming a coal thickness of 2 metres, a potential tonnage of only 72 million tonnes of Jurassic coal is indicated in a strip 12 kilometres long by 2 kilometres wide, centred on holes 80LRM18 and 20, below 77 metres depth.

The potential for economic accumulations of either Jurassic or Eocene coals in this area is restricted. Kerogen potential has not been tested.

6.3.5 Coal Analyses

With only one partially cored hole drilled, 80L30C, coal qality information is sparse.

Proximate and Ultimate analyses from the Eocene and Jurassic coals are shown in Table 6.3.5.

The Eocene coal seam directly overlies the Jurassic coal measures, but can be distinguished by palynology and coal quality. In the quality data the two most marked differences between the Eocene and Jurassic lignites are the % Total Moisture and the % Ash; in the Eocene, % total moisute is almost double the Jurassic figure. The % ash of the Eocene seam is less than half of the Jurassic coal seams.

The Eocene coal is relatively high in ash, relatively low in sodium, by South Australian standards, and is high in Sulphur.

Laboratory alayses sheets are presented in Appendix VI.

6.3.6 Geochemistry

Assay results for the 1980 and 1981 rotary mud drilling programmes are presented in Appendix VII. Selected samples were analysed for uranium, copper, lead, zinc, cobalt, silver, molybdenum, gold, tin, tungsten and tantalum, which may have been present as either in-situ basement or placer concentrations.

No significant anomalies were determined.

With the exception of the base metals copper, lead and zinc, which returned background values, the majority of elements analysed were below detection. However, 25 p.p.m. tantalum was reported in hole 80LRM11 and 25 p.p.m. to 35 p.p.m. tungsten occurred in holes 80LRM39 and 81LRM67.

These results do not encourage further exploration.

D.R. McBAIN

DRM/lmc

TABLE 6.3.5

COAL ANALYSES

										COAL COMPOSITION % (DRY BASIS)					
Hole No.	Age	Sample No.	Sample Interval (M)	From (M)	To (m)	Moisture Content	Ash % Dry Basis	Volatile Matter	Fixed Carbon	C	H	N	S	Na	Heat Value MJ/KG
80L30C	Eocene	889301	2.80	48.16	51.02	51.44	14.25	45.84	39.91	56.60	3.75	0.55	5.16	0.47	21.90
80L30C	Jurassic	889302	1.31	58.49	59.8	26.42	45.20	36.19	18.61	35.57	3.69	0.49	2.91	0.38	15.2
80L30C	Jurassic	889303	2.68	60.12	62.80	26.93	34.86	43.03	22.11	43.59	4.48	0.76	2.82	0.35	18.96

REFERENCES

Cooper, B.J., 1980; Biostratigraphy of Permian samples from S.A.D.M.E. Lock No. 1, South Australian Dept. of Mines and Energy, open file report. Report Book 80/109.

Fraser, A.R. and Tilbury, L.A., 1979; Structure and stratigraphy of the Ceduna Terrace region of the Great Australian Bight. APEA J., 19 pp. 53-65.

Gatehouse, C.G., 1979; Investigation of the Lock Coal under E.L. 280, South Australian Dept. of Mines and Energy, Unpub. Report no. 79/141.

Harris, W.K. 1973; Chevron Exploration Corp., palynological examination of selected drill holes, Polda Basin, Eyre Peninsula, E.L. 37 South Australian Dept. of Mines and Energy, Open File report, 778 (unpub.)

Harris, W.K. and Foster, C.B., 1974; Stratigraphy and palynology of the Polda Basin, Eyre Peninsula. Mineral Resources Review, South Australia, 136, pp 56-78

Johns R.K., 1957; Danke map sheet, Geological Atlas of South Australia, 1:63 360 series. Geol. Survey, South Australia.

Johns R.K., 1961; Geology and mineral resources of southern Eyre Peninsula. Bull. Geol. Surv. South Australia, 37 62p.

McInerney, P.M., 1977; Seismic refraction investigations in the Polda Basin. South Aust. Dept. Mines and Energy open file report. Report Book 77/74

Morgan, 1974; Progress and Final reports, Exploration of E.L. 37 Lock Area, South Aust. Dept. Mines open file report. Env. 2256 (unpub).

Springbett, G.M. 1980; Polda Basin coalfield - Lock coal deposit, South Australia. The Electricity Trust of South Australia, Coal resources Branch Internal report.

KEYWORDS

Coal - sub-bituminous, Coal-lignite, Carbonaceous, Sandstone, Shale, Jurassic, Eocene, Analyses-coal, Analyses-Fischer, Drill-rotary, Geophys-borehole.

LOCATION

Kimba SI53-7 1:250 000

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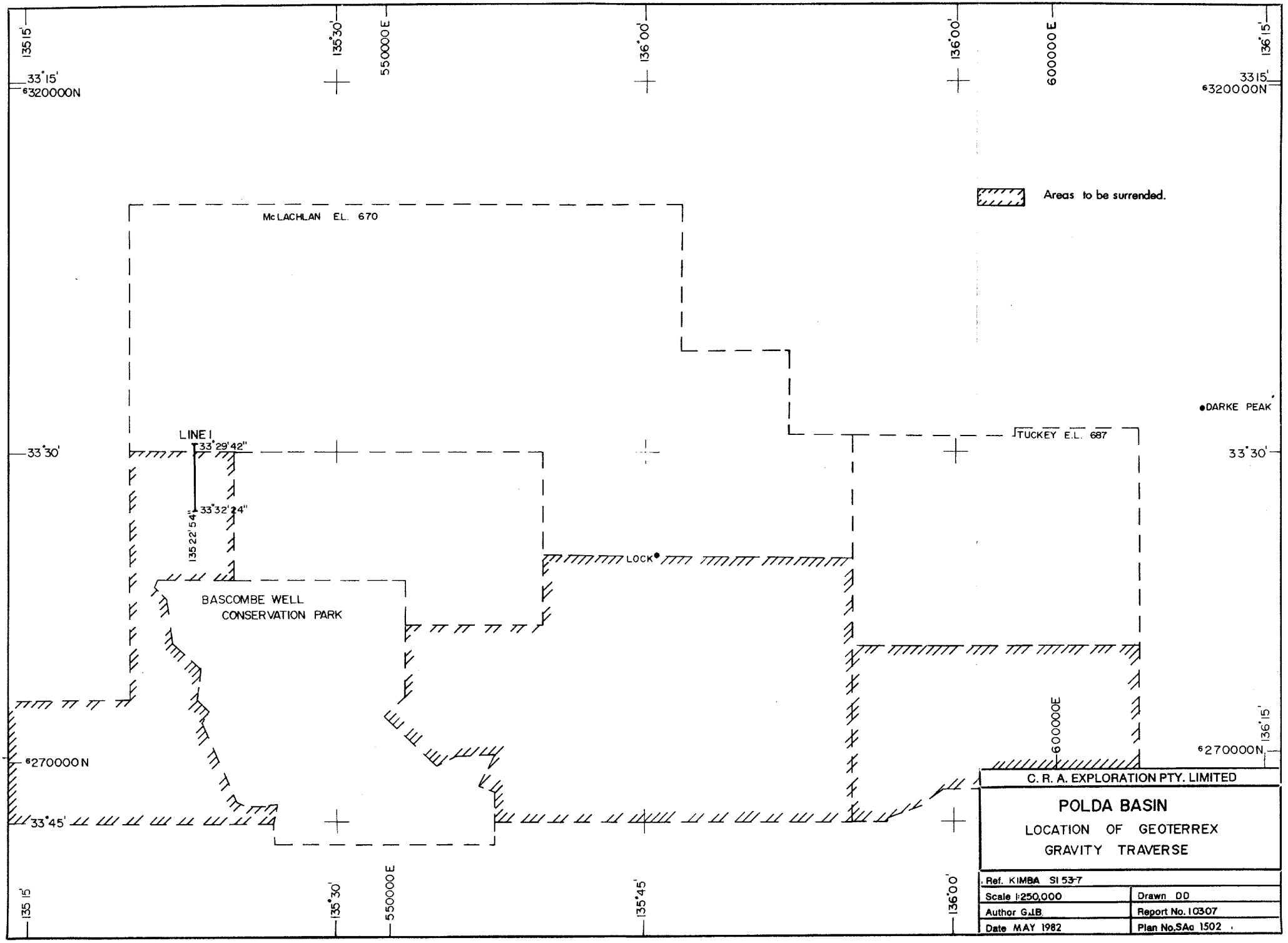
135°15'
135°30'
550000E
136°00'
136°00'
600000E
136°15'
33°15'
6320000N
Areas to be surrended.
McLACHLAN EL. 670
DARKE PEAK
LINE I
33°29'42"
33°32'24"
135°22'54"
TUCKEY E.L. 687
33°30'
LOCK
BASCOMBE WELL
CONSERVATION PARK
6270000N
33°45'
135°45'
C. R. A. EXPLORATION PTY. LIMITED
POLDA BASIN
LOCATION OF GEOTERREX
GRAVITY TRAVERSE
Ref. KIMBA SI 53-7
Scale 1:250,000
Drawn DD
Author G.J.B.
Report No. 10307
Date MAY 1982
Plan No. SAa 1502

APPENDIX I

CRA EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)
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Head Office: 55 COLLINS STREET, MELBOURNE 3001

P.O. BOX 254 Norwood
TELEPHONE: 42 8871
TELEGRAMS: "EXPLORECO"
TELEX: AA88605

26th March1982.

Memorandum to: D.R. KENNEDY

Copy to: J.P. HOWARD

Memorandum from: G.J. BUBNER

Re: INTERPRETATION OF POLDA BASIN GRAVITY DATA

Estimates of the position and dip of the fault on the northern boundary of the Polda Basin have been obtained from computer modelling of gravity data. Location of the traverses is shown on Plan SAa 1502, with station locations incrementing from 00mN to 5000mN.

The modelling is described in detail in the section entitled "Interpretation".

Data Acquisition

One traverse, approximately five kilometres long, were surveyed by Geoterrex Pty. Ltd. in February, 1981. Stations were read at 200 metre intervals using a La Coste and Romberg gravity meter, and elevations obtained with an optional level and staff. The data has been reduced for a Bouguer density of 2.67 gm/cc, and repeatability of the Bouguer values is estimated at better than $\pm$ 0.03 milligals.

Method of Interpretation

A contour map of Bouguer gravity compiled from S.A.D.M.E. and CRAE data was used to obtain regional gradients. The observed Bouguer gravity, linear regionals and residual Bouguer gravity are plotted in figures 1 & 2.

Quanititative interpretation using the method of Grant and West ("Interpretation Theory in Applied Geophysics"; 1967; pp 282-285) was initially attempted. Dips and displacements obtained from the characteristic curves were plausible, but depths to basement on the upper side of the faul- were inconsistent in areas of drill hole control. The results from this exercise were used only as a rough guide in choosing initial parameters for modelling.

The figures listed in the table have been derived from models generated using a 2D forward modelling program. Some drill hole information to the north of the fault was available to control the depth to the upper surface. Adjusting the absolute amplitude of the residual profile to match the calculated curve, the residual was then input into a 2D inversion program, as a cross-check on the forward-modelling results. In all cases the models from the two programs were sufficiently consistent.

In choosing a density contrast, the rock types are assumed to be granitic /gneissic or schistose basement against sediments ranging from unconsolidated Tertiary cover to consolidated Mesozoic silts and sands, for which densities of 2.7 gm/cc and 2.3 gm/cc respectively have been used.

Interpretation

Line 1: The gravity relief on this traverse is relatively flat, with a variation of only two milligals from maximum to minimum amplitude (Figure 7). There is no evidence to suggest that the fault is present on this traverse.

G.J. BUBNER

GJB/lmc

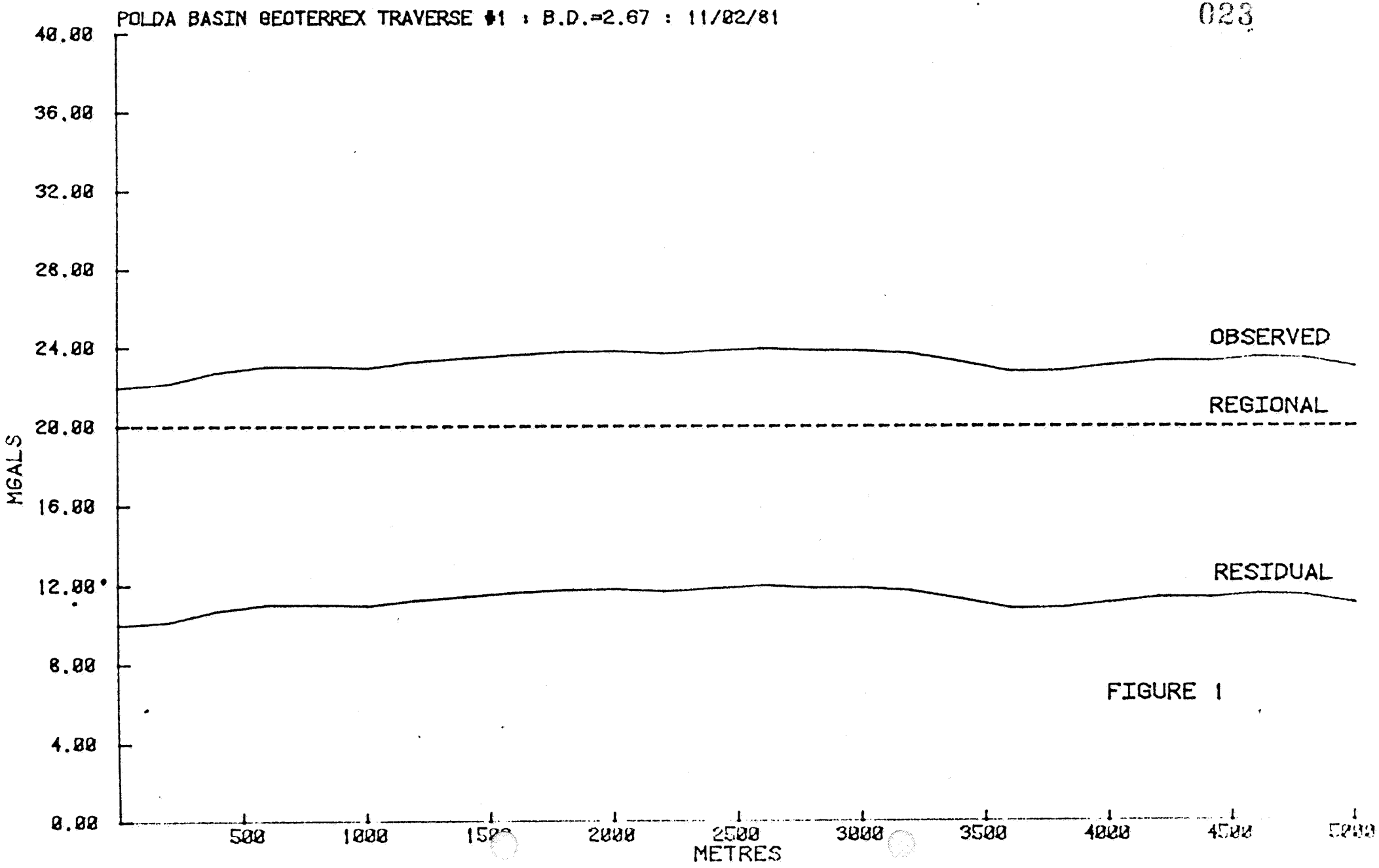

POLDA BASIN GEOTERREX TRAVERSE #1 : B.D.=2.67 : 11/02/81
40.00
36.00
32.00
28.00
24.00
20.00
16.00
12.00
8.00
4.00
0.00
MGALS
OBSERVED
REGIONAL
RESIDUAL
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
METRES

FIGURE 1

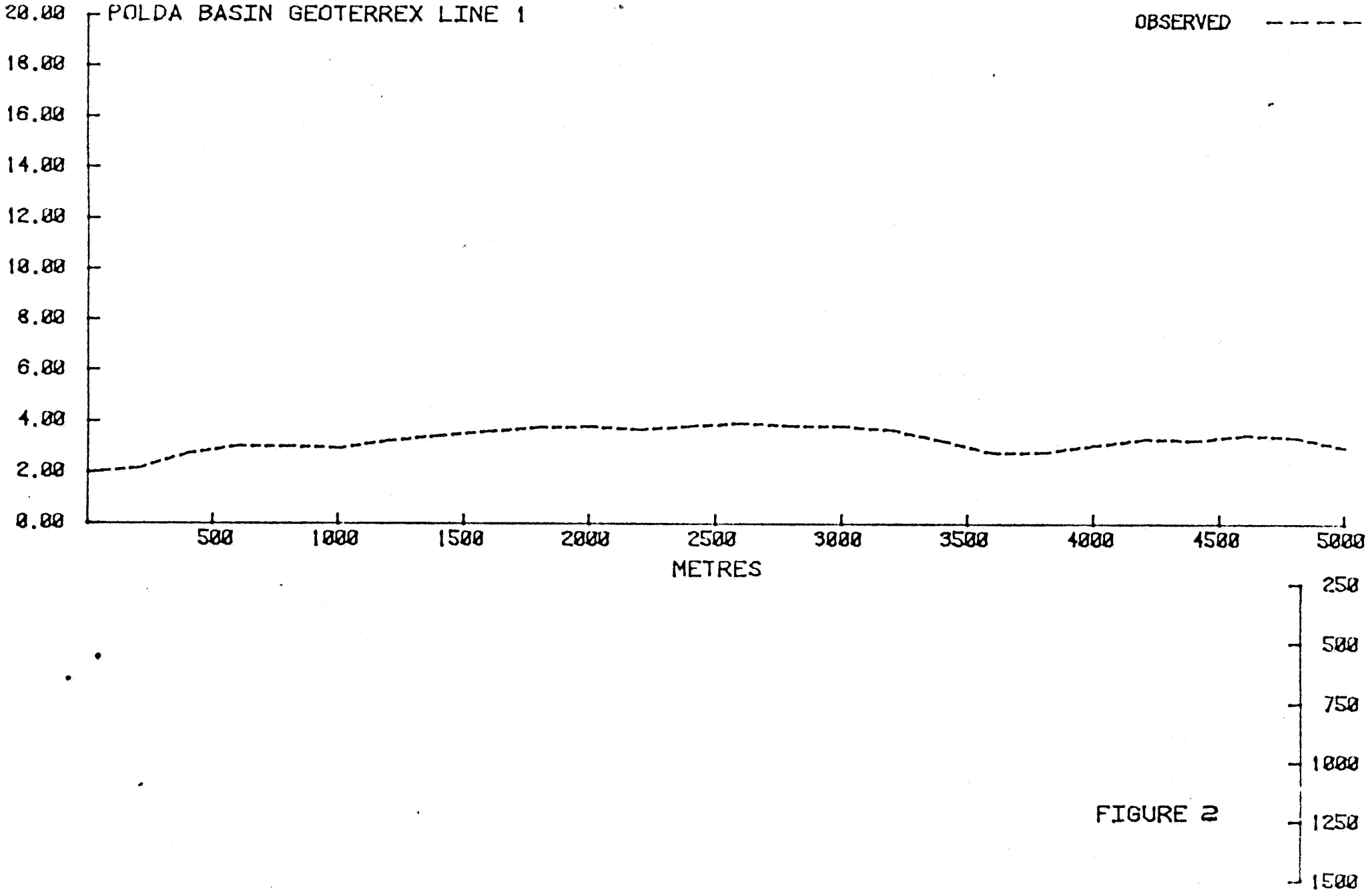

POLDA BASIN GEOTERREX LINE 1
OBSERVED
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
METRES
250
500
750
1000
1250
1500

FIGURE 2

LOGISTICS REPORT ON A

RELATIVE GRAVITY SURVEY

AT

LOCK, SOUTH AUSTRALIA

CARRIED OUT BY

GEOTERREX PTY LTD, AUSTRALIA

ON BEHALF OF

C.R.A. EXPLORATION

Job. No. 85-1283
Date: February 1981
Geophysicist: G. Piper

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

1) INTRODUCTION

From the 6th February, 1981 to 20th February, 1981 Geoterrex Pty Ltd carried out a regional gravity survey in the Lock area of South Australia, on behalf of C.R.A. Exploration.

The purpose of this survey was to locate a major fault which was of an east-west trending nature. This fault was to be used as an indicator to possible coal deposits i.e. an increas in basement depth along one side of the fault giving rise to an increase in the thickness of the sedimentary sequence which contains the coal measure.

2) PERSONNEL

Geoterrex provided an experienced geophysicist/crew chief (G. Piper) and a surveyor/technician (B. McMahon) for the field work. C.R.A. provided a field assistant (J. Carbone) to assist the Geoterrex crew.

3) SURVEY PROCEDURE

C.R.A. defined the starting point of each of five lines to be gridded, and surveyed using the gravity technique. The lines were gridded using 'chain and compass' with pegs being used to mark stations at 200 metre intervals. Pegs were marked with line number and station number. The lines being numbered 1 through 5 with line 1 being designated as the westernmost line. The southern most peg on each line was designated 0000 with the co-ordinate numbers increasing northwards.

The lines were then marked onto the 1:31,680 and 1:50,000 base maps of the areas using the location of distinct cultural and natural features.

These lines were then optically levelled using a Wild automatic level with a closure of +/- 5cms over 5 kilometres being maintained. All levels were adjusted to the Australian Height Datum by optical ties to known Bench Marks in the area.

A LaCoste and Romberg Gravity Meter, G586, was used to survey the stations established. Measurement loop times (typically less than one hour) were kept to a minimum to minimise the effects of instrument drift and to allow tidal drift to be assumed to be linear for calculation purposes. An arbitrary base level of 100.00 mgal was chosen for the survey base, station 0000/line 1, and all bouguer gravity values calculated are with respect to this station.

4) DATA REDUCTION AND PRESENTATION

Data reduction was performed assuming tidal drift to be linear throughout each data reading loop. Under this assumption the 'tidal drift' and 'meter drift' were considered as a single 'drift' correction which was applied to each reading. Using the optical elevations and a 'bouguer density' of $2.67 gcm^{-3}$, the free air and bouguer correction were calculated and applied to the data. A latitude correction was also applied to the data. This correction was calculated from the latitude gradient north of $33^{o}36'00"S$ and south of $33^{o}29'00"S$ (a correction of + 748 x 10^{-6} mgal m^{-1} is applied for each metre a station falls north of latitude $33^{o}36'00"S$)

From the above, data plots of Bouguer Gravity and elevation were prepared and submitted to C.R.A. The field data sheets and daily production reports are appended to this report.

5) DATA ACCURACY

The final error in the "Bouguer Gravity' values will be a combination of 'measurement error' and 'instrumentation error'.

Using the expression listed below an estimate of the error inherant in a survey can be obtained.

$$G = g_{obs} + c.h. + g_{\phi} + g_T$$

where:

g_{obs} = observed gravity (corrected for tidal and meter drift)

c = elevation correction constant (combined free air and Bouguer correction)

h = station elevation

g_{ϕ} = latitude correction

g_T = terrain correction

The total error in the Bouguer gravity value, e_G, may then be expressed as:-

$$e_G^2 = eg_{obs}^2 + (c.e._h)^2 + eg_o^2 + e_T^2$$

where:-

eh is of the order of +/- 5cms (max. loop misclosure)

$c.e._h$ = +/- (.05 x .19686) mgal

eg_o (max) = +/- .007mgal (as station positions are considered accurateto +/- 10m N/S)

As repeat gravity values are calculated using the same elevation and latitude corrections then the standard deviation of the bouguer gravity values is equal to the error in the observed gravity value (i.e. eg_{obs})

Therefore using the histogram in Figure 1:-

eg_{obs} = +/- .027 mgal

Hence:

$$e_G^2 = (.027)^2 + (.05 \times .19686)^2 + (.007)^2$$

$$= .000729 \text{ mgal}^2 + .0001452 \text{ mgal}^2$$

and

$$e_G = +/- .03 \text{ mgal}$$

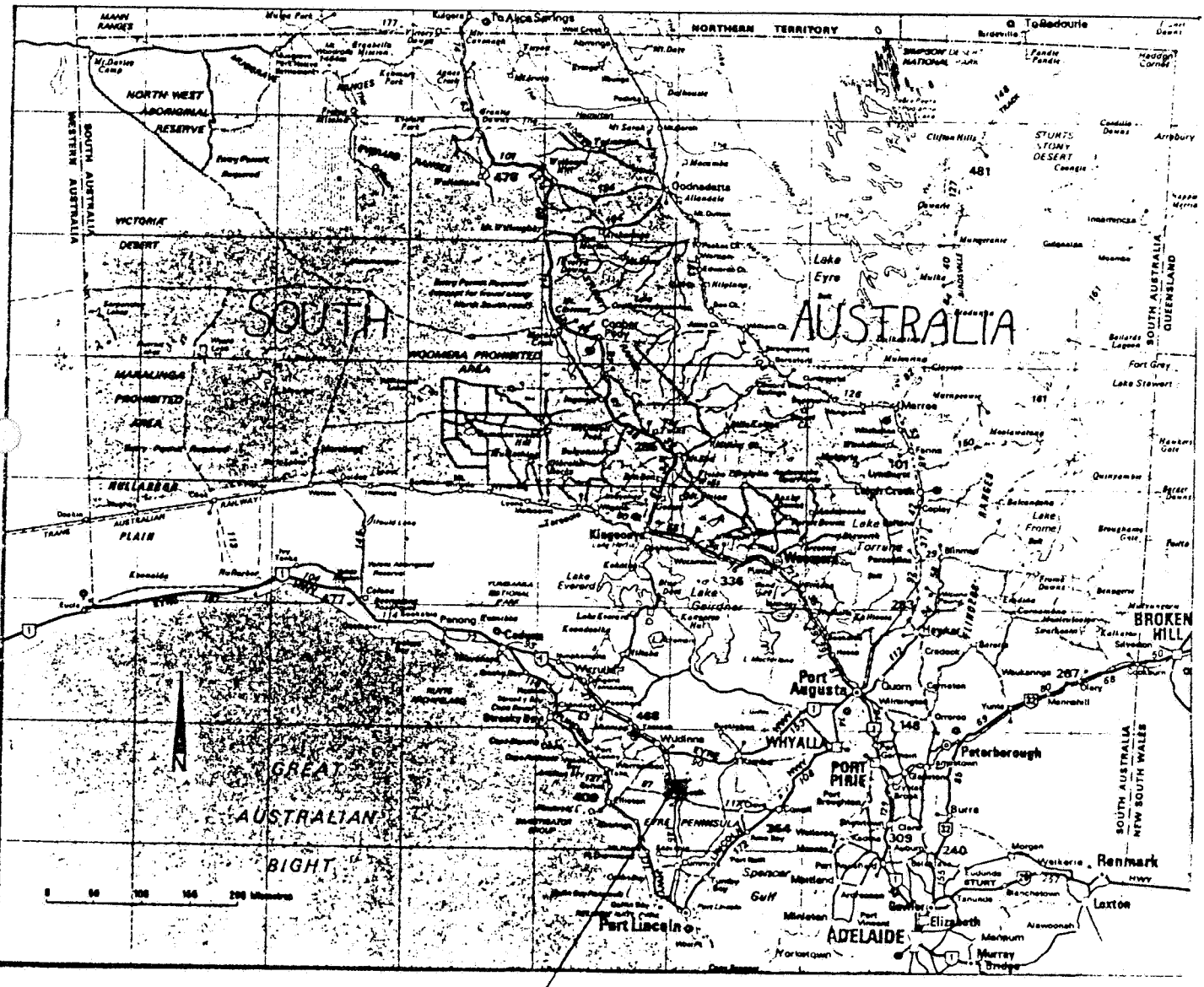
6) CONCLUSIONS

In the course of this survey 130 stations were established. Using approximately a 10% repeat statistic an accuracy of +/- .03 mgal has been determined as being representative. The main sources of inaccuracy are represented as being from instrument/tidal drift and elevation determination.

Respectfully submitted,

Greg Piper
Geophysicist

FIGURE 1 LOCATION DIAGRAM

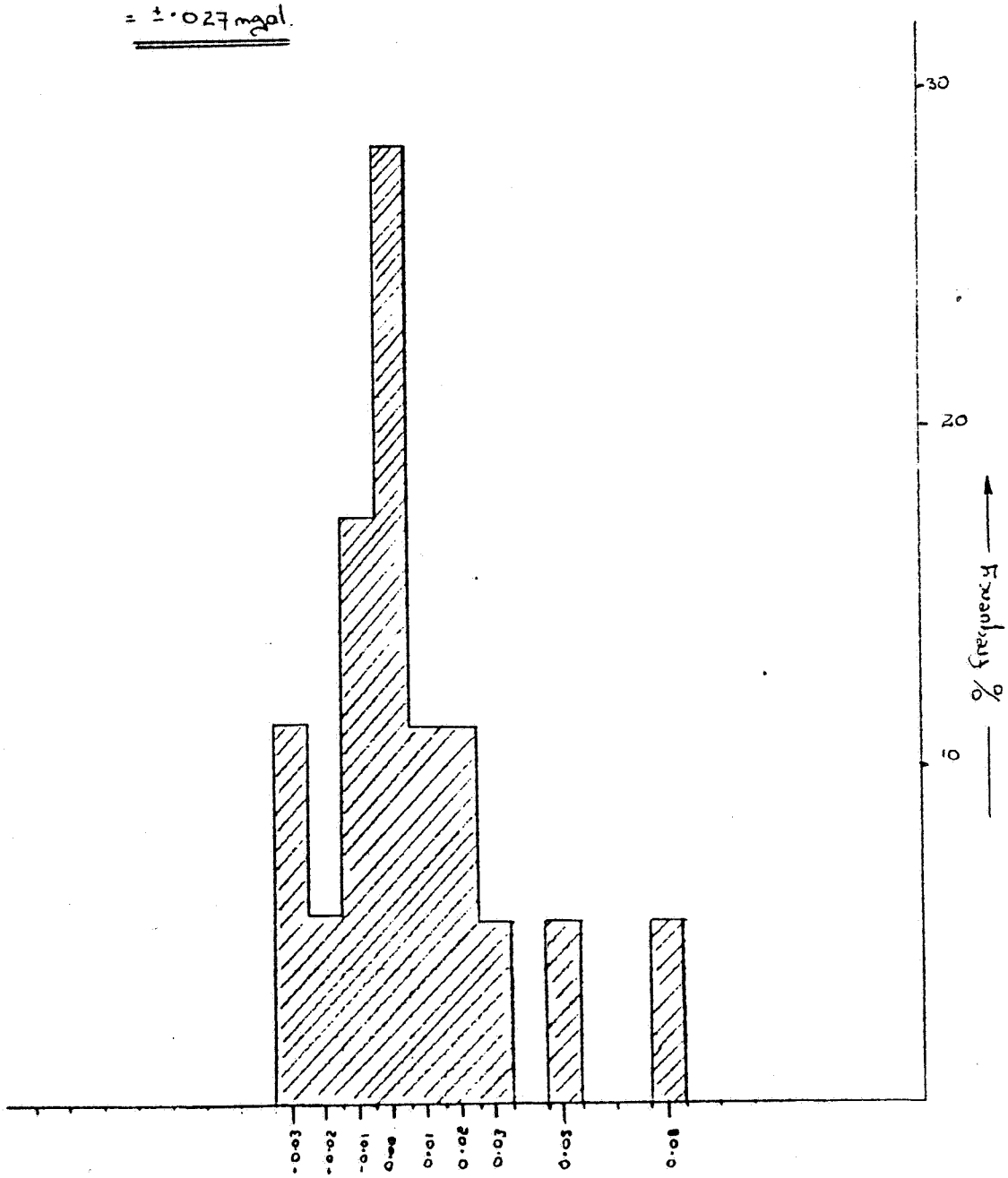


036

HISTOGRAM SHOWING GRAVITY REPEAT VARIATION

$$S.D. = \sqrt{\frac{\sum_1^N (x - \bar{x})^2}{N-1}}$$

$$= \pm 0.027 \text{ mgal.}$$



A P P E N D I X 1

Equipment Specifications

(1) LaCoste and Romberg 'Model G Gravity Meter'

(2) Wild NAK-O Level

This instruction manual is issued for

Model G Gravity Meter #G- 586

Reading Line: 2.90

Operating Temperature: 54.5 °C

The LaCoste & Romberg Model G gravity meter and the accessories that are normally supplied with the gravity meter are shown on the following pages. Model G gravity meters have a range of over 7000 milligals, a reading accuracy of ±.01 milligal, and a drift rate of less than 1 milligal per month.

LaCoste & Romberg gravity meters are sealed to eliminate any effect from changes in the atmospheric pressure. As a safety precaution, they are also internally pressure compensated. The sensor is completely temperature controlled and then enclosed with a magnetic shield.

The gravity meter, carrying case and battery weigh about 19 pounds. The battery charger and [illegible] approximately 8 pounds.

LaCoste and Romberg Model G Geodetic Gravity Meter

The LaCoste and Romberg, Model G Gravity Meter and the accessories that are normally supplied with the gravity meter are shown in Figures 1 thru 4. Model G Gravity Meters have a range of over 7000 Milligals, a reading accuracy of ± .01 Milligal, and a drift rate of less than 1 mgl. per month.

LaCoste and Romberg Gravity Meters are sealed to eliminate any effect from changes in the atmospheric pressure. As a safety precaution, they are also internally pressure compensated. The sensor is completely demagnetized and then enclosed within a magnetic shield.

The gravity meter, carrying case and battery weigh about 19 pounds. The battery charger and levelling disc weigh an additional 8 pounds.

TABLE 1

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MILLIGAL VALUES FOR LACOSTE & ROMBERG, INC. MODEL G GRAVITY METER #G- 536

COUNTER READING*	VALUE IN MILLIGALS	FACTOR FOR INTERVAL	COUNTER READING*	VALUE IN MILLIGALS	FACTOR FOR INTERVAL
000	000.00	1.02727	3600	3697.90	1.02806
100	102.73	1.02711	3700	3800.70	1.02810
200	205.44	1.02696	3800	3903.51	1.02813
300	308.13	1.02686	3900	4006.32	1.02815
400	410.82	1.02679	4000	4109.14	1.02818
500	513.50	1.02676	4100	4211.96	1.02819
600	616.18	1.02672	4200	4314.78	1.02821
700	718.85	1.02671	4300	4417.60	1.02822
800	821.52	1.02671	4400	4520.42	1.02823
900	924.19	1.02673	4500	4623.24	1.02823
1000	1026.86	1.02675	4600	4726.07	1.02820
1100	1129.54	1.02677	4700	4828.89	1.02817
1200	1232.21	1.02680	4800	4931.70	1.02812
1300	1334.89	1.02682	4900	5034.51	1.02807
1400	1437.58	1.02686	5000	5137.32	1.02802
1500	1540.26	1.02690	5100	5240.12	1.02796
1600	1642.95	1.02694	5200	5342.92	1.02790
1700	1745.65	1.02699	5300	5445.71	1.02783
1800	1848.35	1.02703	5400	5548.49	1.02774
1900	1951.05	1.02708	5500	5651.27	1.02769
2000	2053.76	1.02713	5600	5754.03	1.02751
2100	2156.47	1.02720	5700	5856.78	1.02738
2200	2259.19	1.02724	5800	5959.52	1.02722
2300	2361.91	1.02731	5900	6062.24	1.02704
2400	2464.64	1.02736	6000	6164.94	1.02684
2500	2567.38	1.02741	6100	6267.63	1.02661
2600	2670.12	1.02748	6200	6370.29	1.02637
2700	2772.87	1.02755	6300	6472.93	1.02612
2800	2875.62	1.02763	6400	6575.54	1.02585
2900	2978.38	1.02770	6500	6678.12	1.02557
3000	3081.16	1.02775	6600	6780.68	1.02529
3100	3183.93	1.02781	6700	6883.21	1.02501
3200	3286.71	1.02788	6800	6985.71	1.02471
3300	3389.50	1.02793	6900	7088.18	1.02442
3400	3492.29	1.02798	7000	7190.62	
3500	3595.09	1.02803			

* Note: Right-hand [illegible] on counter indicates approximately 0.1 milligal.

10-[illegible]-80

TL-

WILD NAK-O LEVEL

Technical Data

Heighting accuracy of a single 30m/100ft sight with an adjusted instrument (i.e. estimation on normal staff)	about +/- 1mm		+/- 0.003ft
Telescope	erect image		
Magnification	20x		
Clear objective aperture	30mm		1.18in
Field of view at 100m/ft	3.6m		3.6ft
Shortest focussing distance	0.9m		3.0ft
Multipliaation constant	100		
Additive constant	0		
Tilting range of compensator	+/- 15'		
Sensitivity of circular bubble	8' per 2mm		
Horizontal circle (metal)	400^{o}	or	360^{o}
Diameter	100mm		3.94in
Graduation interval	1^{o}	or	1^{o}
Reading by estimation	0.1^{o}	or	0.1^{o}

A P P E N D I X 2

Bench Mark Location Diagrams

GEOTERREX GRAVITY DATA SHEET

SHEET NO. 1 | BASE STAT

CLIENT C.R.A. | DATE FEB. 11 '81 | INSTRUMENT G-586 | REF. LEVEL BOOK - P. 6, ALT SHEETS - P. | P_1 = P_2 = P_3 = 2.67 | CORR BASE (mgals)

JOB NO. 81-132 | AREA [illegible] S.A. | METER CONST. — | OPERATOR G. PIPER | C_1 C_2 C_3 | STAND. CORR (mgals)

$C_n = 0.3086 - 0.04185 - P_n$

REMARKS [RPT?]	LINE	STAT	RDG [DIV]	TIME	TIDAL Mgals	CORR RDG [Mgal]	ELEV [Meters]	LAT or LAT CORR [Km North of N.S.B.]	[Mgal]	BOUGUER GRAVITY P_1	P_2	P_3	REMARKS
GRAVITY BASE	1	2400	3075·73	9:40									
	1	2400	3099·00	11:06									
	1	2200	3098·82	11:23									
	1	2000	3098·99	11:33									
	1	1800	3099·23	11:38									
	1	1600	3098·81	11:45									
	1	1400	3098·77	11:52									
	1	1200	3098·92	11:58									
	1	1000	3098·56	12:05		3182·96	47·246		5·748			100·97	
	1	0800	3098·76	12:20		3182·66	47·263		5·598			101·04	
	1	0600	3098·88	12:32		3182·77	47·529		5·449			101·04	
	1	0400	3098·61	12:40		3182·49	48·244		5·299			100·75	
PIPE COLLAR TAG No. SQR 69 CONCRETE PAD No. 325 634900 204		0200	3097·38	12:49		3181·23	52·449		5·150			100·17	
		0000	3097·84	12:58		3181·70	49·718		5·000			100·00	DEFINED BY GEOPHYSICIST AS STARTING BOUGUER VALUE
(RPT.)	1	0200	3097·38	13:09		3181·22	52·449		5·150			100·16	(RPT.)
(R.P.T.)	1	0000	3098·2	13:20									
	1	1000	3098·59	13:27		3182·46	47·246		5·748			100·97	
	1	2400	3099·23	13:52		3183·14	42·965		6·795			101·84	
	1	2200	3098·98	1401		3182·89	44·205		6·646			101·69	
	1	2000	3099·21	14:20		3183·12	44·419		6·496			101·81	
	1	1800	3099·21	14:27		3183·12	45·015		6·347			101·78	
	1	1600	3098·85	14:34		3182·75	46·910		6·197			101·63	

(SEE SHEET TOP OF)

Norrisprint

SHEET NO. 2 — **GEOTERREX GRAVITY DATA SHEET** — BASE STAT

CLIENT G.R.A. | DATE 11-2-81 | INSTRUMENT 586 | REF. LEVEL BOOK - P. 60, ALT SHEETS - P. | P_1= P_2= P_3= 2.67 | CORR BASE (mgals)

JOB NO. 35-283 | AREA LOCH SA | METER CONST. — | OPERATOR G. PIPER | C_1 C_2 C_3 | STAND. CORR (mgals)

$C_n = 0.3086 - 0.04185 - P_n$

REMARKS [RPT?]	LINE	STAT	RDG [DIV]	TIME	TIDAL Mgals	CORR RDG [Mgal]	ELEV [Meters]	LAT or LAT CORR [Km North of N.S.B.]	[Mgal]	BOUGUER GRAVITY P_1	P_2	P_3	REMARKS
	Loop B	1100 N	3098.80	14:44		3182.70	47.030		6.047			101.16	
		1200 N	3098.95	14:49		3182.86	46.922		5.898			101.26	
		1000 N	3098.57	14:55		3182.47	47.247		5.7481			100.97	SEE SHEET 1 FOR THIS VALUE OF STA. 1000N, START POINT FOR LOOP
*RPT.		2200 N	3099.03	15:04		3182.94	44.205		6.646			101.74	(RPT.) ← ⊛
RPT.		2200 N	3099.22	15:09		3183.14	42.965		6.795			101.87	
	LUNCH	BREAK											
		2400 N	3099.14	16:17		3183.05	42.965		6.795			101.84	(WOULD HAVE USED 101.87 101.84 AS STARTING PT. FOR LOOP, WAS IN MIDDLE
		2600 N	3098.92	16:26		3182.82	43.933		6.945			101.95	
		2800 N	3098.58	16:32		3182.46	44.466		7.095			101.85	
		3000 N	3099.20	16:47		3182.88	41.496		7.244			101.83	
	Loop C	3200 N	3098.70	16:53		3182.56	41.620		7.394			101.69	
		3400 N	3097.91	16:58		3181.75	42.856		7.544			101.27	
		3600 N	3097.24	17:05		3181.05	43.266		7.693			100.00	
		3800 N	3097.35	17:11		3181.16	42.079		7.843			100.83	
*(RPT.)		3400 N	3097.94	17:17		3181.76	42.856		7.544			101.28	(RPT.)
(RPT.)		3400 N	3098.05	17:28		3183.05	42.965		6.795			101.84	
		3800 N	3097.36	17:40		3181.22	42.079		7.843			100.83	
		4000 N	3097.60	17:47		3181.47	41.461		7.992			101.10	
		4200 N	3097.70	17:52		3181.57	41.421		8.142			101.35	
	Loop D	4400 N	3097.41	17:59		3181.27	41.992		8.292			101.31	
		4600 N	3097.09	18:05		3180.94	44.024		8.441			101.53	
3016.99		4800 N	3096.99	18:11		3180.84	43.241		8.591			101.42	10 57
		5000 N	3096.68	18:19		3180.52	42.866		8.741			101.03	15
		3800 N	3097.37	18:35		3181.22	42.079		7.843			100.83	
Norrisprint LOCH HOTEL			3075.90	19:02									

⊛ (SEE SHEET 1 TOP OF 2)

APPENDIX II

POLDA BASIN BORELOGS

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:56
GRID TYPE:TRANSVERSE MECATOR
EASTING:333830.000
NORTHING:857370.000
ACCURACY:APPROXIMATE
DATUM:MSL

COLLAR RL:47.000
SHEET REF:5930-1
INDEX:
TOTAL DEPTH:122.500
COMMENCED:23/06/81
COMPLETED:27/06/81
INCL:90
AZIM:

PARISH:SQUIR
HUNDRED:19
SECTION:
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:5.4
DATE MEASURED:27/06/81
PLUG DEPTHS:0.0-120.29M
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

LISTED ON 16/10/81

BORE: LRM ROTARY OPEN HOLE 56

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
.000			OPEN HOLE 0.0M TO 120.50M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
5.000	5.000	CALCRETE	PINK, BUFF, SANDY, MODERATELY STRONG ROCK, CALCARENITE.		
7.200	2.200	CALCRETE AND CLAY	80:20, CALCRETE: CREAM, OFF-WHITE, SANDY, MODERATELY STRONG ROCK, CLAY: CREAM, OFF-WHITE, SILTY, SOFT CLAY.		
10.800	3.600	SAND	MOTTLED, CREAM, GREEN, VERY FINE AND MEDIUM GRAINED, CLAYEY, VERY LOOSE SAND. ADDITIONAL FEATURES INCLUDE:RED, YELLOW, CLAY MATRIX.		
15.600	4.800	SAND	RED, YELLOW, FINE TO COARSE GRAINED, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND. ADDITIONAL FEATURES INCLUDE:GREEN, PURPLE, VERY COARSE GRAINED. UPWARD COARSENING CYCLE.		
17.300	1.700	CLAY	GREEN, BLUE, SOFT CLAY.		
29.600	12.300	SAND	DARK, BROWN, VERY FINE AND MEDIUM GRAINED, SLIGHTLY CARBONACEOUS, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND. SLIGHTLY LIGNITIC BANDS. MACRO UPWARDS COARSENING NCYCLE TO MIDDLE.		
35.900	6.300	SAND	BUFF, GREY, FINE TO COARSE GRAINED, QUARTZOSE, SUBROUNDED GRAINS, WELL SORTED, COMPACT SAND. MACRO UPWARD FINING CYCLE TO TOP.		
46.560	10.660	SAND	BUFF, GREY, VERY FINE AND MEDIUM GRAINED, QUARTZOSE, SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND.		
48.680	2.120	LIGNITE	DARK, BROWN, SOFT CLAY.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 56 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
49.030	.350	CLAY	DARK, BROWN, LIGNITIC, SILTY, FIRM CLAY.		
49.330	.300	LIGNITE	DARK, BROWN, SLIGHTLY, SILTY, SOFT CLAY.		
50.070	.740	SAND	BROWN, FINE TO COARSE GRAINED, SLIGHTLY CARBONACEOUS, SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND.		
51.130	1.060	LIGNITE	DARK, BROWN, SOFT CLAY.		
58.000	6.870	SAND	BROWN, VERY FINE AND FINE GRAINED, SLIGHTLY CARBONACEOUS, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
61.300	3.300	SAND	GREY, MEDIUM TO GRANULAR GRAINED, LITHIC-QUARTZ, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. TWO PEBBLE BANDS.		
62.600	1.300	SAND	GREY, VERY FINE AND MEDIUM GRAINED, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
65.800	3.200	CLAY	BROWN, FIRM CLAY. CARBONACEOUS BANDS TO TOP AND MIDDLE.		
68.200	2.400	SILT AND SAND	60:40. SILT: SANDY. SAND: GREY, VERY FINE GRAINED, QUARTZOSE, MODERATELY SORTED, LOOSE SAND.		
71.670	3.470	CLAY	BROWN, SILTY, FIRM CLAY, COARSENING UPWARDS. SLIGHTLY CARBONACEOUS BANDS.		
72.770	1.100	CLAY	DARK, BROWN, CARBONACEOUS, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY, LIGNITIC.		
73.460	.690	CLAY	DARK, BROWN, LIGNITIC, SOFT CLAY.		

POLDA BASIN — BORELOGS

LISTED ON 16/10/81

BORE: LRM ROTARY OPEN HOLE 56

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
73.940	.480	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, SOFT CLAY.		
74.220	.280	CLAY	DARK, BROWN, LIGNITIC, SOFT CLAY.		
74.740	.520	CLAY	DARK, BROWN, CARBONACEOUS, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY, LIGNITIC.		
89.600	14.860	SAND AND SILT	90:10, SAND: GREY, VERY FINE AND MEDIUM GRAINED, SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND, SILT: LIGHT, GREY, BUFF, SANDY, LOOSE SAND.		
94.800	5.200	CLAY AND SILT	80:20, CLAY: BROWN, SOFT CLAY. CARBONACEOUS BANDS, SILT: BROWN, CLAYEY, SOFT CLAY.		
97.200	2.400	SAND AND CLAY	60:40, SAND: LIGHT, GREY-BROWN, VERY FINE AND FINE GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR GRAINS, VERY LOOSE SAND, CLAY: BROWN, CARBONACEOUS, SOFT CLAY.		
100.300	3.100	SAND	LIGHT, GREY-BROWN, MEDIUM AND COARSE GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
101.560	1.260	CLAY	BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
102.500	.940	SAND	LIGHT, GREY-BROWN, MEDIUM GRAINED, SUBANGULAR GRAINS, WELL SORTED, VERY LOOSE SAND.		
103.620	1.120	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		
105.340	1.720	CLAY	BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 56 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
107.080	1.740	SAND	LIGHT, GREY-BROWN, MEDIUM AND COARSE GRAINED, SUBANGULAR GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
107.850	.770	LIGNITE	DARK, BROWN, SOFT CLAY.		
108.240	.390	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		
110.600	2.360	SAND	LIGHT, GREY-BROWN, FINE TO COARSE GRAINED, SUBANGULAR GRAINS, WELL SORTED, VERY LOOSE SAND.		
112.100	1.500	CLAY AND CLAY	70:30. CLAY: BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY. CLAY: LIGHT, BROWN, SOFT CLAY.		
113.200	1.100	SAND AND CLAY	50:50. SAND: FINE TO COARSE GRAINED, WELL SORTED. CLAY.		
			---TOP OF BOORTHANA FORMATION 113.200 M--		
120.500	7.300	SAND	GREEN, FINE TO GRANULAR GRAINED, CLAYEY, FELDSPATHIC-QUARTZOSE, ANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, WEATHERED FELDSPAR GRANITE AND METAMORPHIC FRAGMENTS, CLAYEY MATRIX..	BOORTHANA FORMATION	
			---BASE OF BOORTHANA FORMATION 120.500 M--		
			-------GEOLOGICAL THICKNESS 7.300 M-----		

END OF BORE AT 120.500 M.

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN

BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:57
GRID TYPE:TRANSVERSE MECATOR
EASTING:333800.000
NORTHING:854050.000
ACCURACY:APPROXIMATE
DATUM:MSL

COLLAR RL:66.000
SHEET REF:5930-1
INDEX:
TOTAL DEPTH:72.720
COMMENCED:28/06/81
COMPLETED:29/06/81
INCL:90
AZIM:

PARISH:SQUIR
HUNDRED:1
SECTION:
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CNTR:GEOEX PTY LTD
WATER LEVEL:11.0
DATE MEASURED:29/06/81
PLUG DEPTHS:0.0 - 72.72M
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 57 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
.000			OPEN HOLE 0.0M TO 72.72M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
2.000	2.000	CALCRETE	CREAM, PINK.		
16.800	14.800	SAND	RED, CREAM, FINE TO GRANULAR GRAINED, QUARTZOSE, FELDSPATHIC, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. ADDITIONAL FEATURES INCLUDE:YELLOW, ANGULAR GRAINS, SLIGHTLY CLAYEY MATRIX ESPECIALLY TO TOP, ANGULAR FELDSPAR GRAINS, SUB-ROUNDED TO ROUNDED QUARTZ PEBBLES.		
21.400	4.600	CLAY	GREY-BROWN, BUFF, SLIGHTLY, MICACEOUS, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:WHITE, PLASTIC CLAY, SLIGHTLY SILTY IN PARTS.		
33.080	11.680	SAND	YELLOW, GREY, MEDIUM TO GRANULAR GRAINED, LITHIC-QUARTZ, FELDSPATHIC-QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
34.640	1.560	CLAY	GREY-BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY, MICACEOUS.		
35.280	.640	LIGNITE	BROWN, SOFT CLAY.		
35.700	.420	CLAY	GREY, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
35.960	.260	CLAY	GREY-BROWN, CARBONACEOUS, SOFT CLAY.		
36.540	.580	CLAY	GREY, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
47.500	10.960	SILT AND SILT	70:30, SILT: GREY-BROWN, SLIGHTLY, SANDY, LOOSE SAND, SECONDARY CHLORITE, COMMON, DISSEMINATED, ACCESSORY WHITE MICA.		

POLDA BASIN — BORELOGS

BORE: LRM ROTARY OPEN HOLE 57 — LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
			COMMON, GRAINS. ADDITIONAL FEATURES INCLUDE:MICACEOUS, SILT: BROWN, GREY-BROWN, CLAYEY, MICACEOUS, SOFT CLAY.		
50.770	3.270	SAND	GREY, MEDIUM AND VERY COARSE GRAINED, QUARTZOSE, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
53.350	2.580	CLAY	GREY-BROWN, MICACEOUS, FIRM CLAY, CARBONACEOUS FLECKS, COMMON, CARBONACEOUS BANDS AND SLIGHTLY SILTY BANDS.		
54.580	1.230	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
57.290	2.710	SAND	BROWN, GREY, FINE TO GRANULAR GRAINED, QUARTZOSE, SLIGHTLY CARBONACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND. UPWARD FINING CYCLE.		
57.630	.340	SILT	BROWN, CARBONACEOUS, SOFT CLAY.		
60.660	3.030	SAND	GREY, MEDIUM TO GRANULAR GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND, UPWARD FINING CYCLE.		
61.240	.580	CLAY	DARK, BROWN, LIGNITIC, SOFT CLAY.		
72.200	10.960	SAND	GREY, VERY FINE AND FINE GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND, FINING UPWARDS. ADDITIONAL FEATURES INCLUDE:FINE TO COARSE GRAINED, ? BASEMENT GRAVEL.		
72.720	.520	CLAY	LIGHT, GREEN, WHITE, SANDY, FELDSPATHIC-QUARTZOSE, STIFF CLAY. PERMIAN BASEMENT.		

END OF BORE AT 72.720 M.

EARTH SCIENCE COMPUTER SERVICES

LRM ROTARY OPEN HOLE 57

CRA

POLDA BASIN

BOREHOLES

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:58
GRID TYPE:TRANSVERSE MECATOR
EASTING:333767.000
NORTHING:851000.000
ACCURACY:APPROXIMATE
DATUM:MSL

COLLAR RL:89.000
SHEET REF:5930-1
INDEX:
TOTAL DEPTH:50.050
COMMENCED:30/06/81
COMPLETED:30/06/81
INCL:90
AZIM:

PARISH:SQUIR
HUNDRED:1
SECTION:
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:1.4
DATE MEASURED:30/06/81
PLUG DEPTHS:0.0 - 50.05M
CASED DEPTH:
UNITS:

AVAILABLE DATA
NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 58 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
.000			OPEN HOLE 0.0M TO 50.05M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
3.500	3.500	CALCRETE	PINK, CREAM, SANDY, MODERATELY STRONG ROCK.		
7.400	3.900	SAND	PINK, CREAM, FINE TO COARSE GRAINED, WELL SORTED, COMPACT SAND, CLAYEY MATRIX. MACRO UPWARD COARSENING CYCLE.		
10.200	2.800	SILT	MOTTLED, GREEN, RED, CLAYEY, FIRM CLAY.		
12.500	2.300	SILT	MOTTLED, RED, CREAM, SANDY, COMPACT SAND, FINING UPWARDS.		
14.200	1.700	CLAY	MOTTLED, RED, GREEN, FIRM CLAY.		
26.800	12.600	SAND	PINK, RED, MEDIUM TO GRANULAR GRAINED, FERRUGINOUS, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, WEAKLY CEMENTED SAND, SECONDARY IRON OXIDE, COMMON, STAINING. PEBBLE BANDS.		
34.300	7.500	SANDSTONE	OFF-WHITE, PINK, MEDIUM TO GRANULAR GRAINED, FERRUGINOUS, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, MODERATELY WEAK ROCK, SECONDARY IRON OXIDE, COMMON, STAINING. PEBBLE BANDS.		
38.300	4.000	SILT	OFF-WHITE, YELLOW, CLAYEY, FIRM CLAY.		
50.050	11.750	CLAY	GREEN-GREY, BROWN, MICACEOUS, FIRM CLAY, SECONDARY CHLORITE, COMMON, DISSEMINATED, ACCESSORY WHITE MICA, COMMON, GRAINS. SILTY IN PARTS. FEW QUARTZ AND FELDSPAR GRAINS.		

END OF BORE AT 50.050 M.

EARTH SCIENCE COMPUTER SERVICES

LRM ROTARY OPEN HOLE 58

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:59
GRID TYPE:TRANSVERSE MECATOR
EASTING:337133.000
NORTHING:850967.000
ACCURACY:APPROXIMATE
DATUM:MSL

COLLAR RL:85.000
SHEET REF:5930-1N
INDEX:
TOTAL DEPTH:152.000
COMMENCED:01/07/81
COMPLETED:03/07/81
INCL:90
AZIM:

PARISH:SQUIR
HUNDRED:1
SECTION:
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:8.9
DATE MEASURED:03/07/81
PLUG DEPTHS:0.0 - 152M
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 59 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOH SAMP NO SEC NUMB
.000			OPEN HOLE 0.0M TO 152M B.O.H. S.A.D.M.E. SAMPLES TAKEN.		
2.000	2.000	CALCRETE	LIGHT, YELLOW, SANDY, MODERATELY STRONG ROCK.		
7.000	5.000	SAND	YELLOW, FINE AND MEDIUM GRAINED, CALCAREOUS, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
10.400	3.400	SAND	LIGHT, YELLOW, MEDIUM TO GRANULAR GRAINED, CALCAREOUS, SUBROUNDED GRAINS, MODERATELY SORTED, WEAKLY CEMENTED SAND.		
12.700	2.300	CLAY	RED-BROWN, SILTY, FIRM CLAY. SILTY MAINLY TO BASE.		
31.200	18.500	SAND	CREAM, YELLOW, COARSE GRAINED AND GRANULAR, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. PEBBLE BANDS.		
35.000	3.800	SAND AND CLAY	70:30. SAND: CREAM, YELLOW, COARSE GRAINED, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. CLAY: SLIGHTLY, SILTY.		
44.400	9.400	CLAY AND SILT	80:20. CLAY: LIGHT, GREY-BROWN, SLIGHTLY, SILTY, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:MICACEOUS. SILT: LIGHT, GREY-BROWN, CLAYEY, MICACEOUS, SOFT CLAY.		
52.100	7.700	CLAY AND SILT	60:40. CLAY: LIGHT, GREY-BROWN, SILTY, SOFT CLAY. SILT: GREY, YELLOW, SLIGHTLY, CLAYEY, SOFT CLAY.		
62.500	10.400	SAND	GREY, FINE TO COARSE GRAINED, QUARTZOSE, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND, SECONDARY PYRITE, SPARSE.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 59 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
			CONCRETIONS, ACCESSORY WHITE MICA, COMMON, GRAINS, TWO MACRO UPWARD COARSENING CYCLES, SILT BAND AT BASE OF UPPER CYCLE..		
62.960	.460	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
68.500	5.540	CLAY AND SILT	60:40, CLAY: LIGHT, GREY-BROWN, SLIGHTLY, SILTY, SOFT CLAY. SILT: LIGHT, GREY-BROWN, SLIGHTLY, CLAYEY, SOFT CLAY.		
71.830	3.330	SAND	GREY, MEDIUM GRAINED, QUARTZOSE, MICACEOUS, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND, FINING UPWARDS, SILTY TO TOP.		
72.080	.250	CLAY	BROWN, CARBONACEOUS, MICACEOUS, SOFT CLAY.		
75.010	2.930	CLAY	BROWN, MICACEOUS, SOFT CLAY.		
76.300	1.290	CLAY	GREY-BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
76.740	.440	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
77.140	.400	CLAY	GREY-BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
77.890	.750	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
78.360	.470	CLAY	GREY-BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
78.790	.430	CLAY	GREY-BROWN, CARBONACEOUS, SOFT CLAY.		
80.100	1.310	CLAY	GREY-BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		

BORE: LRM ROTARY OPEN HOLE 59

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
85.550	5.450	SAND	GREY-BROWN, FINE AND MEDIUM GRAINED, QUARTZOSE, MICACEOUS, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
86.910	1.360	LIGNITE	DARK, BROWN, SLIGHTLY, CLAYEY, SOFT CLAY.		
87.530	.620	SILT	BROWN, SOFT CLAY.		
88.620	1.090	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
89.370	.750	SILT	BROWN, SOFT CLAY.		
89.630	.260	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		
90.160	.530	SILT	BROWN, SOFT CLAY.		
90.950	.790	LIGNITE	DARK, BROWN, CLAYEY, SOFT CLAY.		
99.000	8.050	SAND	GREY, FINE AND MEDIUM GRAINED, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND.		
105.500	6.500	CLAY	GREY-BROWN, FIRM CLAY, SILTY BANDS.		
106.590	1.090	CLAY	GREY-BROWN, BROWN, SLIGHTLY CARBONACEOUS, FIRM CLAY.		
113.590	7.000	SAND	GREY, MEDIUM AND COARSE GRAINED, QUARTZOSE, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND.		
115.200	1.610	CLAY	GREY-BROWN, SOFT CLAY.		
116.230	1.030	SAND	GREY, VERY FINE AND FINE GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
116.700	.470	CLAY	GREY-BROWN, SOFT CLAY.		
117.420	.720	CLAY	BROWN, SILTY, SOFT CLAY.		

BORE: LRM ROTARY OPEN HOLE 59 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
117.710	.290	CLAY	GREY-BROWN, SOFT CLAY.		
118.510	.800	SILT	GREY-BROWN, SANDY, SOFT CLAY.		
119.270	.760	CLAY	BROWN, SLIGHILY CARBONACEOUS, SOFT CLAY.		
121.200	1.930	LIGNITE	DARK, BROWN, SOFT CLAY.		
121.550	.350	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		
129.350	7.800	SAND AND CLAY	70:30, SAND: GREY, VERY FINE AND MEDIUM GRAINED, QUARTZOSE, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND, COARSENING UPWARDS. CLAY: SLIGHTLY, SILTY, SOFT CLAY, CARBONACEOUS FLECKS, COMMON.		
129.600	.250	LIGNITE	DARK, BROWN, SLIGHTLY, CLAYEY, VERY WEAK ROCK.		
130.450	.850	SAND	FINE AND MEDIUM GRAINED.		
130.540	.090	LIGNITE	DARK, BROWN, VERY WEAK ROCK.		
131.040	.500	CLAY	BROWN, LIGNITIC, SOFT CLAY.		
131.400	.360	LIGNITE	DARK, BROWN, SLIGHTLY, CLAYEY, VERY WEAK ROCK.		
132.060	.660	SAND	GREY, FINE AND MEDIUM GRAINED.		
132.570	.510	CLAY	GREY, SOFT CLAY.		
133.780	1.210	SILT	GREY, SOFT CLAY.		
134.000	.220	CLAY	BROWN, SLIGHTLY, LIGNITIC, SOFT CLAY.		
134.290	.290	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		

POLDA BASIN BORELOGS

LISTED ON 16/10/81

BORE: LRM ROTARY OPEN HOLE 59

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
134.470	.180	CLAY	BROWN, SLIGHTLY, LIGNITIC, SOFT CLAY.		
136.100	1.630	SILT	GREY, SLIGHTLY, CLAYEY, SOFT CLAY.		
140.000	3.900	SAND	GREY, MEDIUM AND COARSE GRAINED, QUARTZOSE, WELL SORTED, LOOSE SAND.		
140.690	.690	SILT			
140.990	.300	CLAY	BROWN, SLIGHTLY, LIGNITIC, VERY SOFT CLAY.		
142.870	1.880	CLAY	LIGHT, BROWN, SILTY, VERY SOFT CLAY.		
143.160	.290	CLAY	BROWN, SLIGHTLY CARBONACEOUS, VERY SOFT CLAY.		
144.440	1.280	CLAY	LIGHT, BROWN, VERY SOFT CLAY.		
144.720	.280	CLAY	BROWN, SLIGHTLY, LIGNITIC, VERY SOFT CLAY.		
150.000	5.280	SAND AND CLAY	50:50, SAND: VERY FINE AND FINE GRAINED, CLAY: BROWN, SLIGHTLY CARBONACEOUS, VERY SOFT CLAY, SLIGHTLY LIGNITIC TO BASE.		
152.000	2.000	SAND	GREEN, FINE AND MEDIUM GRAINED, CLAYEY, SILTY, POORLY SORTED, WEAKLY CEMENTED SAND, ADDITIONAL FEATURES INCLUDE:FELDSPATHIC, ? PERMIAN DIAMICTITE BASEMENT.		

END OF BORE AT 152.000 M.

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN

BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:61
GRID TYPE:AMG
EASTING:590800.000
NORTHING:6273825.000
ACCURACY:APPROXIMATE
DATUM:AHD

COLLAR RL:94.000
SHEET REF:6030-1
INDEX:
TOTAL DEPTH:169.000
COMMENCED:14/07/81
COMPLETED:15/07/81
INCL:90
AZIM:

PARISH:MURLO
HUNDRED:5
SECTION:RR
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:2.7
DATE MEASURED:15/07/81
PLUG DEPTHS:
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 61 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
	.000		OPEN HOLE 0.0 TO 169.0M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
1.700	1.700	CALCRETE	CREAM, MODERATELY STRONG ROCK.		
6.600	4.900	CLAY	RED, BROWN, SILTY, STIFF CLAY.		
18.700	12.100	SAND	LIGHT, GREEN, RED, FINE TO GRANULAR GRAINED, SUBROUNDED GRAINS, WELL SORTED, COMPACT SAND. ADDITIONAL FEATURES INCLUDE:WHITE, SEVEN PEBBLE BANDS, CHIPS DIVERGE AND INDICATE CLAYEY FINE GRAINED SAND FOR THIS UNIT.		
19.500	.800	CLAY	BROWN, CARBONACEOUS, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY, LIGNITIC.		
21.100	1.600	SAND	VERY FINE AND MEDIUM GRAINED, WELL SORTED.		
22.400	1.300	CLAY	DARK, GREY, SOFT CLAY.		
24.000	1.600	SILT AND SAND	70:30, SILT: GREY, SOFT CLAY, SAND: VERY FINE GRAINED, MODERATELY SORTED.		
29.300	5.300	SAND	GREY, VERY FINE AND MEDIUM GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. TWO UPWARD FINING CYCLES WITH SILT BAND ON TOP OF ALOWER CYCLE.		
30.400	1.100	SILT AND SAND	80:20, SILT: GREY, SLIGHTLY, SANDY, COMPACT SAND. SAND: GREY, VERY FINE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND.		
31.900	1.500	CLAY	BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
34.000	2.100	SAND	DARK GREY, MEDIUM GRAINED, QUARTZOSE.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 61 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
			SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND.		
35.200	1.200	CLAY	BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
94.600	59.400	SAND	GREY, BROWN, VERY FINE AND MEDIUM GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. ADDITIONAL FEATURES INCLUDE:COARSE GRAINED, SLIGHTLY, MICACEOUS. SEVERAL UPWARD FINING CYCLES WITHIN A MACRO UPWARD COARSENING CYCLE IN LOWER PART OF UNIT AND A MACRO UPWARD FINING CYCLE IN UPPER PART OF UNIT.		
96.500	1.900	CLAY	LIGHT GREY, SLIGHTLY, SILTY, FIRM CLAY. ADDITIONAL FEATURES INCLUDE:MICACEOUS.		
101.900	5.400	SAND AND SILT	TOWARDS BASE OF UNIT: 60:40. SAND: GREY, VERY FINE AND MEDIUM GRAINED, SLIGHTLY, MICACEOUS, SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND, FINING UPWARDS. ADDITIONAL FEATURES INCLUDE:COARSE TO VERY COARSE GRAINED, QUARTZOSE. SILT: LIGHT, GREY, BROWN, MICACEOUS, FIRM CLAY, FINING UPWARDS, SANDY TO BASE. UNIT FINES TO TOP.		
105.100	3.200	CLAY	LIGHT, GREY, BROWN, SILTY, MICACEOUS, FIRM CLAY.		
121.800	16.700	SAND	GREY, FINE TO COARSE GRAINED, QUARTZOSE, SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
125.800	4.000	CLAY	LIGHT, GREY-BROWN, MICACEOUS, FIRM CLAY. SLIGHTLY SILTY ESPECIALLY TO BASE.		
133.000	7.200	SAND	GREY, FINE AND MEDIUM GRAINED, QUARTZOSE.		

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
			SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
145.800	12.800	SILT AND SAND	60:40. SILT: LIGHT, BROWN, BUFF, SANDY, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:GREY. SAND: GREY, VERY FINE AND MEDIUM GRAINED, SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
146.800	1.000	CLAY	LIGHT, BROWN, BUFF, SILTY, SOFT CLAY. ADDITIONAL FEATURES INCLUDE:GREY.		
158.400	11.600	SAND AND SILT	70:30. SAND: GREY, VERY FINE AND MEDIUM GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. UPWARD FINING CYCLE TO TOP OF UNIT. SILT: OFF-WHITE, BUFF, SANDY, MICACEOUS, LOOSE SAND.		
167.000	8.600	CLAY	DARK, GREY, MICACEOUS, SOFT CLAY, ACCESSORY BLACK MICA, COMMON. ADDITIONAL FEATURES INCLUDE:BUFF, GREY.		
169.000	2.000	SAND	GREY, MEDIUM TO GRANULAR GRAINED, FELDSPATHIC-QUARTZOSE, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, VERY LOOSE SAND, ACCESSORY BLACK MICA, COMMON. BASEMENT ?SCHISTOSE.		

END OF BORE AT 169.000 M.

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:62
GRID TYPE:AMG
EASTING:590125.000
NORTHING:6277520.000
ACCURACY:APPROXIMATE
DATUM:AHD

COLLAR RL:95.000
SHEET REF:6030-1
INDEX:
TOTAL DEPTH:202.000
COMMENCED:15/07/81
COMPLETED:15/07/81
INCL:90
AZIM:

PARISH:MURLO
HUNDRED:14
SECTION:RR
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:4.7
DATE MEASURED:15/07/81
PLUG DEPTHS:
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 62 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
.000			OPEN HOLE 0.0 TO 202.0M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
1.100	1.100	CALCRETE	CREAM, BUFF, SANDY, MODERATELY STRONG ROCK.		
4.700	3.600	CLAY	RED, BROWN, FIRM CLAY, SILTY TO BASE.		
8.000	3.300	CLAY AND SAND	50:50, CLAY: RED, BROWN, FIRM CLAY, SILTY TO BASE. SAND: WHITE, YELLOW, MEDIUM AND COARSE GRAINED, SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND.		
14.600	6.600	SAND	YELLOW, OFF-WHITE, MEDIUM TO GRANULAR GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, COMPACT SAND. FOUR PEBBLE BANDS TO BASE CONTAINING ANGULAR QUARTZ PEBBLES.		
15.500	.900	CLAY	SLIGHTLY, LIGNITIC.		
26.100	10.600	SAND	YELLOW, OFF-WHITE, VERY FINE AND FINE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, COMPACT SAND. ADDITIONAL FEATURES INCLUDE:MEDIUM TO GRANULAR GRAINED, TWO UPWARD COARSENING CYCLES.		
28.700	2.600	CLAY	LIGHT, GREY, MICACEOUS, FIRM CLAY. SLIGHTLY SILTY IN MIDDLE.		
30.000	1.300	SAND	YELLOW, OFF-WHITE, FINE AND MEDIUM GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND.		
40.100	10.100	SILT AND SAND	60:40, SILT: GREY, BROWN, MICACEOUS, FIRM CLAY. SAND: BUFF, GREY, VERY FINE AND FINE GRAINED, SILTY, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED,		

POLDA BASIN

BORELOGS

BORE: LRM ROTARY OPEN HOLE 62

LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
			LOOSE SAND.		
44.100	4.000	SILT AND SILT	TOWARDS TOP OF UNIT: 70:30. SILT: BUFF, CLAYEY, MICACEOUS, FIRM CLAY. SILT: SANDY.		
50.300	6.200	CLAY AND SILT	60:40. CLAY: BUFF, MICACEOUS, FIRM CLAY. SILT: SANDY.		
92.100	41.800	SILT AND SAND	70:30. SILT: BUFF, GREY, SLIGHTLY, SANDY. ADDITIONAL FEATURES INCLUDE:BANDS, MICACEOUS. SAND: BUFF, GREY, VERY FINE AND FINE GRAINED, ROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
99.500	7.400	SAND AND SILT	60:40. SAND: BUFF, GREY, VERY FINE AND FINE GRAINED, SILTY, BANDS, ROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND, FINING UPWARDS. SILT: SLIGHTLY, CLAYEY, FINING UPWARDS.		
122.100	22.600	SILT AND SILT	50:50. SILT: CLAYEY. SILT: SLIGHTLY, SANDY.		
123.300	1.200	SAND	VERY FINE AND FINE GRAINED, MODERATELY SORTED.		
125.200	1.900	CLAY	LIGHT, GREY, MICACEOUS, SOFT CLAY.		
156.800	31.600	SILT AND CLAY	90:10. SILT: SLIGHTLY, SANDY, VERY LOOSE SAND. CLAY: LIGHT, GREY, SILTY, MICACEOUS, SOFT CLAY. TWO MACRO UPWARD FINING CYCLES.		
158.800	2.000	CLAY			
175.300	16.500	SILT	FINING UPWARDS. INCREASINGLY SANDY TO BASE.		

BORE: LRM ROTARY OPEN HOLE 62 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
178.700	3.400	CLAY, CLAY	70:30, CLAY: LIGHT GREY, SILTY, KAOLINITIC, SOFT CLAY, ADDITIONAL FEATURES INCLUDE:MICACEOUS, CLAY: LIGHT GREY, SLIGHTLY, SILTY, SOFT CLAY, ADDITIONAL FEATURES INCLUDE:KAOLINITIC, MICACEOUS,		
185.300	6.600	SILT	FINING UPWARDS, INCREASINGLY SANDY TO BASE,		
186.200	.900	CLAY	BROWN, LIGNITIC, SOFT CLAY,		
187.200	1.000	CLAY	LIGHT GREY, SOFT CLAY,		
187.600	.400	CLAY	BROWN, CARBONACEOUS, SOFT CLAY,		
188.400	.800	CLAY	LIGHT, BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY,		
190.200	1.800	CLAY	LIGHT, GREY, SOFT CLAY,		
191.300	1.100	CLAY	LIGHT, GREY, SILTY, SOFT CLAY,		
198.300	7.000	SILT AND SILT	50:50, SILT: CLAYEY, SILT: SANDY,		
202.000	3.700	SAND	GREY, FINE TO COARSE GRAINED, QUARTZOSE, MICACEOUS, SUBANGULAR GRAINS, MODERATELY SORTED, WEAKLY CEMENTED SAND, MODERATELY CEMENTED, BASEMENT ?QUARTZITE,		

END OF BORE AT 202.000 M.

CRA

POLDA BASIN

BORELOGS

EARTH SCIENCE COMPUTER SERVICES

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:63
GRID TYPE:AMG
EASTING:605200.000
NORTHING:6271900.000
ACCURACY:APPROXIMATE
DATUM:AHD

COLLAR RL:110.000
SHEET REF:6130-4
INDEX:
TOTAL DEPTH:170.000
COMMENCED:15/07/81
COMPLETED:16/07/81
INCL:90
AZIM:

PARISH:RUDAL
HUNDRED:15
SECTION:
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:10.6
DATE MEASURED:16/07/81
PLUG DEPTHS:
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

BORE: LRM ROTARY OPEN HOLE 63 LISTED ON 16/10/81

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DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
	.000		OPEN HOLE 0.0 TO 170.00M B.O.H. SAMPLES 891057 TO 891126 DESPATCHED ON D.P.O. NO. T0131 TAKEN OVER INTERVAL 30 TO 170M. CORRECTED DEPTH FOR TOP OF SAMPLE 891057 IS 26.60 M..		
1.500	1.500	CALCRETE	CREAM, MODERATELY STRONG ROCK.		
2.800	1.300	CLAY	CREAM, RED-BROWN, SOFT CLAY.		
5.100	2.300	SAND	FINE AND MEDIUM GRAINED, MODERATELY SORTED.		
7.200	2.100	SILT	MOTTLED, GREEN, RED-BROWN, FIRM CLAY.		
10.400	3.200	CLAY	MOTTLED, GREEN, RED-BROWN, SILTY, FIRM CLAY.		
11.900	1.500	SILT	GREEN, FIRM CLAY.		
12.600	.700	SILT	LIGNITIC.		
13.800	1.200	CLAY	SILTY, SLIGHTLY CARBONACEOUS.		
14.700	.900	SILT	SLIGHTLY, CLAYEY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY CARBONACEOUS.		
15.400	.700	CLAY	SILTY, SLIGHTLY CARBONACEOUS.		
17.000	1.600	SAND AND SILT	80:20. SAND: FINE AND MEDIUM GRAINED, SLIGHTLY CARBONACEOUS, MODERATELY SORTED. SILT: SLIGHTLY CARBONACEOUS.		
19.800	2.800	CLAY	CARBONACEOUS. ADDITIONAL FEATURES INCLUDE:LIGNITIC, BANDS.		
21.100	1.300	SAND AND SILT	70:30. SAND: VERY FINE AND MEDIUM GRAINED, MODERATELY SORTED. SILT.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 63 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
23.800	2.700	CLAY	DARK, GREY-BROWN, WHITE, SILTY, BANDS, FIRM CLAY.		
25.400	1.600	SAND	WHITE, VERY FINE AND FINE GRAINED, SUBANGULAR GRAINS, MODERATELY SORTED, COMPACT SAND. ADDITIONAL FEATURES INCLUDE:MEDIUM AND VERY COARSE GRAINED.		
26.600	1.200	CLAY	WHITE, GREEN-GREY, SILTY, FIRM CLAY.		
32.470	5.870	SAND	WHITE, COARSE GRAINED AND GRANULAR, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. TWO MACRO UPWARD COARSENING CYCLES. FIVE PEBBLE BANDS.		
32.980	.510	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
34.200	1.220	LIGNITE	DARK, BROWN, FIRM CLAY.		
34.630	.430	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
34.880	.250	CLAY	DARK, BROWN, LIGNITIC, FIRM CLAY.		
35.220	.340	CLAY	BROWN, CARBONACEOUS, FIRM CLAY.		
35.460	.240	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
35.790	.330	CLAY	BROWN, SLIGHTLY, SILTY, FIRM CLAY. ADDITIONAL FEATURES INCLUDE:SLIGHTLY CARBONACEOUS.		
36.180	.390	CLAY	BROWN, CARBONACEOUS, FIRM CLAY.		
37.250	1.070	SILT			

BORE: LRM ROTARY OPEN HOLE 63

LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
37.470	.220	CLAY	BROWN, SLIGHTLY CARBONACEOUS, FIRM CLAY.		
41.800	4.330	SAND	GREY, FINE TO COARSE GRAINED, QUARTZOSE, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. MAXIMUM GRAIN SIZE CYCLE.		
44.700	2.900	SILT AND SILT	TOWARDS TOP OF UNIT: 60:40, SILT, SILT: CLAYEY.		
81.200	36.500	SAND	GREY, VERY FINE AND FINE GRAINED, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, VERY LOOSE SAND. ADDITIONAL FEATURES INCLUDE:MEDIUM AND VERY COARSE GRAINED, QUARTZ PEBBLES UP TO 2CM IN COARSER PARTS. FIVE MAXIMUM GRAIN SIZE CYCLES. SILT BAND ON TOP OF THIRD CYCLE FROM THE BASE..		
85.000	3.800	CLAY AND CLAY	80:20, CLAY: BUFF, BROWN, SILTY, SOFT CLAY, CLAY: BUFF, BROWN, SOFT CLAY.		
87.700	2.700	SAND	BUFF, GREY, FINE TO COARSE GRAINED, QUARTZOSE, MICACEOUS, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
92.900	5.200	CLAY AND CLAY	60:40, CLAY: GREY-BROWN, SILTY, FIRM CLAY. CLAY: GREY-BROWN, FIRM CLAY.		
93.620	.720	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, FIRM CLAY.		
94.600	.980	CLAY	DARK, BROWN, LIGNITIC, FIRM CLAY.		
102.200	7.600	CLAY AND CLAY	60:40, CLAY, CLAY: SILTY.		
103.300	1.100	SILT	SANDY TO BASE.		

BORE: LRM ROTARY OPEN HOLE 63 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
113.400	10.100	SAND	GREY, BUFF, VERY FINE AND FINE GRAINED, MICACEOUS, SUBROUNDED GRAINS, WELL SORTED, LOOSE SAND, ADDITIONAL FEATURES INCLUDE:MEDIUM AND VERY COARSE GRAINED, UPWARD FINING CYCLE.		
113.900	.500	CLAY	BROWN, SOFT CLAY.		
114.600	.700	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, SOFT CLAY.		
115.200	.600	CLAY	BROWN, SOFT CLAY.		
115.600	.400	CLAY	BROWN, CARBONACEOUS, SOFT CLAY.		
116.100	.500	CLAY	BROWN, SOFT CLAY.		
116.900	.800	CLAY	DARK, BROWN, SLIGHTLY, LIGNITIC, SOFT CLAY.		
118.300	1.400	CLAY	BROWN, SOFT CLAY.		
120.000	1.700	SILT	BUFF, BROWN, MICACEOUS, FIRM CLAY.		
123.600	3.600	SAND	VERY FINE AND FINE GRAINED, WELL SORTED, FINING UPWARDS.		
125.000	1.400	SILT	BUFF, BROWN, MICACEOUS, FIRM CLAY.		
157.600	32.600	SAND AND SILT	90:10, SAND: VERY FINE AND MEDIUM GRAINED, WELL SORTED, TWO UPWARD COARSENING CYCLES TO BASE, SILT.		
158.000	.400	CLAY			
163.600	5.600	SAND	VERY FINE AND FINE GRAINED, WELL SORTED, TWO UPWARD FINING CYCLES.		
164.100	.500	SILT	SLIGHTLY, CLAYEY.		

POLDA BASIN

BORELOGS

BORE: LRM ROTARY OPEN HOLE 63

LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
165.700	1.600	SAND	VERY FINE AND FINE GRAINED, WELL SORTED, COARSENING UPWARDS.		
166.800	1.100	CLAY			
168.600	1.800	SILT			
170.000	1.400	SAND	GREY, MEDIUM TO GRANULAR GRAINED, QUARTZOSE, SUBANGULAR GRAINS, POORLY SORTED, VERY LOOSE SAND. BASEMENT ?GRANITIC.		

END OF BORE AT 170.000 M.

EARTH SCIENCE COMPUTER SERVICES

POLDA BASIN

BORELOGS

ORGN:81
NAME:LRM
TYPE:ROTARY OPEN HOLE
HOLE NUMBER:68
GRID TYPE:TRANSVERSE MECATOR
EASTING:371100.000
NORTHING:850500.000
ACCURACY:APPROXIMATE
DATUM:AHD

COLLAR RL:158.000
SHEET REF:6030-4N
INDEX:
TOTAL DEPTH:160.000
COMMENCED:19/07/81
COMPLETED:20/07/81
INCL:90
AZIM:

PARISH:MCLAC
HUNDRED:23
SECTION:RR
LOG ORGINSATION:CRA
LOGGED BY:MJNF
DRLL CNTRCTR:SIDES
DRILL TYPE:MAYHEW 1000
TECHNIQUE:MUD

CORE SIZE:
GEOPHYS CONTR:GEOEX PTY LTD
WATER LEVEL:1.8
DATE MEASURED:20/07/81
PLUG DEPTHS:
CASED DEPTH:
UNITS:

AVAILABLE DATA

NEUTRON
GAMMA
LONG SPACED DENSITY
BRD
SP
R
C

BORE: LRM ROTARY OPEN HOLE 68 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
.000			OPEN HOLE 0,0 TO 160,0M B.O.H. NO SAMPLES TAKEN FOR ANALYSIS.		
1.300	1.300	SANDSTONE	CREAM, RED-BROWN, FINE AND MEDIUM GRAINED, MODERATELY STRONG ROCK, SECONDARY CALCRETE, COMMON, CEMENT.		
5.000	3.700	SILT	DARK, RED, BROWN, CLAYEY, SLIGHTLY CARBONACEOUS, FIRM CLAY.		
9.500	4.500	SAND	CREAM, WHITE, FINE AND MEDIUM GRAINED, SUBANGULAR GRAINS, MODERATELY SORTED, COMPACT SAND.		
10.300	.800	CLAY	SILTY.		
21.500	11.200	SAND	MOTTLED, CREAM, PINK, FINE TO COARSE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND. ADDITIONAL FEATURES INCLUDE:VERY COARSE GRAINED.		
22.700	1.200	CLAY	LIGHT, BROWN, SLIGHTLY CARBONACEOUS, SOFT CLAY.		
26.200	3.500	SAND	MOTTLED, CREAM, PINK, FINE AND MEDIUM GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, WELL SORTED, COMPACT SAND. UPWARD FINING CYCLE TO TOP.		
32.000	5.800	CLAY AND SAND	60:40. CLAY: CREAM, PINK, SILTY, SOFT CLAY. SAND: CREAM, PINK, VERY FINE AND FINE GRAINED, MODERATELY SORTED, COMPACT SAND.		
39.400	7.400	SAND AND CLAY	60:40. SAND: CREAM, PINK, FINE TO COARSE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, COMPACT SAND. CLAY: CREAM, PINK, SILTY, SOFT CLAY.		

POLDA BASIN — BORELOGS

LISTED ON 16/10/81

BORE: LRM ROTARY OPEN HOLE 68

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
48.900	9.500	SAND	OFF-WHITE, CREAM, MEDIUM TO GRANULAR GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, VERY LOOSE SAND.		
58.200	9.300	CLAY	GREY, SILTY, BANDS, SOFT CLAY, 25CM BAND OF LIGNITE IN MIDDLE, KAOLINITIC BANDS OTO TOP.		
77.400	19.200	SAND	CREAM, VERY FINE GRAINED, QUARTZO-FELDSPATHIC, SUBANGULAR GRAINS, WELL SORTED, LOOSE SAND. ADDITIONAL FEATURES INCLUDE:FINE TO COARSE GRAINED, TWO SILT BANDS TO BASE AND ONE TO TOP. TWO MACRO UPWARD COARSENING CYCLES.		
79.000	1.600	CLAY	GREY, BROWN, SLIGHTLY, SILTY, TWO CARBONACEOUS BANDS.		
93.600	14.600	SILT AND CLAY	60:40, SILT: GREY, CLAYEY, SOFT CLAY. CLAY: GREY, SILTY, SOFT CLAY.		
105.600	12.000	SAND AND SILT	60:40, SAND: GREY, VERY FINE AND MEDIUM GRAINED, SILTY, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. SILT: GREY, SOFT CLAY.		
117.000	11.400	CLAY	GREY, SILTY, SOFT CLAY.		
118.400	1.400	SILT	GREY, CLAYEY, BANDS, SOFT CLAY.		
126.800	8.400	SAND, SILT	60:40, SAND: GREY, VERY FINE AND FINE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. SILT: GREY, SLIGHTLY, SANDY, LOOSE SAND. ADDITIONAL FEATURES INCLUDE:BANDS.		
132.800	6.000	CLAY	GREY, SOFT CLAY.		

POLDA BASIN BORELOGS

BORE: LRM ROTARY OPEN HOLE 68 LISTED ON 16/10/81

DEPTH TO BASE	ESTIM THICK	ROCK TYPE	GEOLOGICAL DESCRIPTION OF DATA	SEAM NAME	SM WOR SAMP NO SEC NUMB
140.500	7.700	SILT	SANDY IN MIDDLE.		
148.600	8.100	SAND AND SILT	80:20. SAND: GREY, VERY FINE AND FINE GRAINED, SUBANGULAR TO SUBROUNDED GRAINS, MODERATELY SORTED, LOOSE SAND. SILT.		
160.000	11.400	CLAY AND CLAY	60:40. CLAY: DARK, GREY, BROWN, SILTY, SOFT CLAY. CLAY: DARK, GREY, BROWN, SOFT CLAY. BASEMENT ?GRANITE.		

END OF BORE AT 160.000 M.

CO-ORDINATES 386100 yd E / 850300 yd N AZIMUTH Vertical DRILLERS Thompson Drillers COMMENCED 1 SEP 86 DEPTH 152 m HOLE No. 8ϕLRM 11

RL COLLAR +110 m (m.s.l) INCLINATION DRILL TYPE Mayhew 1000 COMPLETED CASING LEFT DPO No(s)

ROTARY MUD

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				orange red ferrug qtz sandy clay uncon white nodules of calcrete fg sandy ferrug silt on		884726				
2	4				vfg sandy silty - sst. green brown - red well consol indurated		884727				
4	6				vfg-fg well sorted sst - yell to orange well consol SA SR well cemented some clay		884728				
6	8				sst as above + calcrete nodules on orange sandy clay		884729				
8	10				sst well cemented qtz fg-vfg white - brown red		884730				
10	12				as above + ...		884731				
12	14				as above + uncon light yell - white silty sand qtz fg-mg SA-SR.		884732				
14	16				vfg uncon sand as above		884733				
16	18				sand as above fg + white - light grey vfg-fg qtz sandy clay uncon		884734				
18	20				sand as above white to light brownish clayey sandy silt		884735				
20	22				fg mixed c cg-vcg SR-R qtz light yellow mainly fg		884736				
22	24				fg - granular silty pinky yellow uncon qtz SR-WR		884737				
24	26				sand as above yellow fg-cg no silt		884738				
26	28				sand fg-granular white - light brn grey clayey silt <10%		884739				
28	30				light yell grey qtz fg-cg no clay as above		884740				
30	32				qtz sand pinky yel silt-granular tr musc some hem		884741				
32	34				vfg - vcg sand vfg is silty + mica SA-SR. specs hem light yel		884742				
34	36				very light yel silty mg - granular SA-SR some white clay + mica		884743				
36	38				as above some clay micaceous		884744				
38	40				fg - mg silty + clayey tr vfg clayey silt with micaceous slightly yellow grey		884745				
40	42				pebbly mg sand uncon 30% clay white silty SA-R		884746				
42	44				fg as above silty + clayey		884747				
44	46				pyr mica fg-cg silty + clayey slightly qtz SA-R		884748				
46	48				vfg-mg micaceous qtz SA-SR light grey		884749				
48	50				fg-cg as above		884750				

SUMMARY AND

LOGGED BY MJNF DATE 1 Sep 80

SHEET 1 OF 3

CRAE 117

DR CC CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80 LRM 11

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				sad as above cg - vcg SR - rocks		884751				
52	54				mg - granules as above "		884752				
54	56				vfg - cg micaceous incon gtz pyr tr.		884753				
56	58				vfg - mg micaceous " clay <10%		884754				
58	60				vfg - - mg some granules as above clayey <1%		884755				
60	62				mg - vcg granules silty.		884756				
62	64				vfg - fg. micaceous. silty white clay 10%		884757				
64	66				as above some cg. no clay tr pyr SA - SR		884758				
66	68				as above		884759				
68	70				fg - mg micaceous as above		884760				
70	72				mg - granular micaceous SA - SR		884761				
72	74				fg - cg clayey micaceous.		884762				
74	76				fg vcg micaceous SA - R		884763				
76	78				mg - cg as above		884764				
78	80				mg - fg slightly silty.		884765				
80	82				mg as above		884766				
82	84				fg - mg cg micaceous slightly clay		884767				
84	86				mg - cg SA - R 5% clay white mica		884768				
86	88				fg - mg mainly fg micaceous.		884769				
88	90				mg - cg some clay		884770				
90	92				mg - cg " tr mica fg		884771				
92	94				mg as above		884772				
94	96				mg - cg clay 5% cg mica		884773				
96	98				cg vcg mica 2% clay		884774				
98	100				fg - cg slightly clayey		884775				

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SUMMARY AND _____ LOGGED BY _____ DATE _____

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. BOLRM 11

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				mg fg-mica no clay		884776				
102	104				~~fg mg~~ uncon SA-SR		884777				
104	106				fg- granular 2% clay +silt white		884778				
106	108				~~no~~ cg SR-R.		884779				
108	110				mg SA-R. tr mica		884780				
110	112				mg -pebbly SA-SR tr mica.		884781				
114	114				fg clayey micaceous		884782				
116	116				fg-mg SA-R		884783				
118	118				as above		884784				
120	120				mg SR		884785				
122	122				fg SR-R.		884786				
124	124				fg-mg+cg micaceous slightclayey		884787				
126	126				fg-granular SA-R. tr mica		884788				
128	128				light grey mg well sorted A-R. tr mica		884789				
130	130				fg-vcg tr clay		884790				
132	132				cg-granular ppr.		884791				
134	134				fg-mg same cg+gran SR tr vitreous lig chips	* vitreous lig chips	884792				
136	136				fg-mg white clay soft brown lig clay micaceous lig chips + woody frags brown + dull black.	= coal band <30%	884793				
138	138				as above ~~lig clay chips~~ 20%		884794				
140	140				fg-mg white clayey <5% lig chips black		884795				
142	142				fg-vfg white light grey clayey silt tr lig		884796				
144	144				fg-mg micaceous and SA-SR+clay silt 20% light grey		884797				
146	146				vfg-fg sandy silt as above 40-50 tr with lig		884798				
148	148				fg sand micaceous as dry clayey silt white coal.		884799				
150	150				as above		884800				
	152				as above						

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SUMMARY AND _____ LOGGED BY _____ DATE _____

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~~ROTARY MUD~~ DRILL ~~CORE~~ LOG

CO-ORDINATES 382100 yd E / 850600 yd N   AZIMUTH Vertical   DRILLERS Thompson Drillers   COMMENCED 15/9/80   DEPTH 148m   HOLE No. 80LAM12

RL COLLAR +128m (m.s.l.)   INCLINATION ____   DRILL TYPE Mayhew 1000   COMPLETED ____   CASING LEFT ____   DPO No(s). ____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				pink orange grey clayey silt + calcrete		884802				
2	4				clay as above + sst white well cemented fg SA-SR white + calcrete		3				
4	6				white-red brown sst as above +/ calcrete qtz		4				
6	8				sst as above some clay as above		5				
8	10				fg-mg uncon sand pale orange SA-SR qtz hem stained		6				
10	12				sand as above fg		7				
12	14				as above fg-vfg qtz.		8				
14	16				fg sandy white clay some sand vcg+cg SR		9				
16	18				light grey white mg white clayey [illegible] part SA-SR. uncon		810				
18	20				fg-mg sand uncon SR some clay lumps whitish yell		11				
20	22				vfg-fg sand + some soft white sandy clay		12				
22	24				vfg + clayey + vcg granular + pebbly SA-SR		13				
24	26				vfg-mg light yellow		14				
26	28				as above some clay		15				
28	30				fg-vcg white clay fg sandy 50%	sandy clayey	16				
30	32				soft white fg sandy clay pinkish [illegible] part	clay	17				
32	34				clay as above 60% sand fg as above.		18				
34	36				clay as above fg-mg		19				
36	38				clay as above 30% sand fg micaceous layers.		820				
38	40				mg-cg yellow sand SA-SR [illegible] clayey		21				
40	42				fg-granular as above no mica clay white 30%		22				
42	44				fg-vcg SR-SA clay 10%		23				
44	46				fg-mg clay 5%		24				
46	48				sand mg-vcg SA-R		35				
48	50				fg-mg tr vfg mica some clay		26				

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED 2 SEP 84 DEPTH _____ HOLE No. BOLRM12

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				vfg-fg micaceous slightclayey		8848 27				
52	54				as above + cg SR slightly clayey		28				
54	56				vfg-fg 5% clay + micaceous		29				
56	58				fg-granular some clay + mica		830				
58	60				fg-mg micaceous		31				
60	62				mg-cg qtz sand SR-SA. light brown clay sandy 30%		32				
62	64				fg-granular some clay		33				
64	66				mg-cg clayey		34				
66	68				fg-vcg clayey		35				
68	70				cg-pebbly clayey 60% light brown mica		36				
70	72				fg-cg 5% clay		37				
72	74				fg-granular clayey		38				
74	76				granule-pebbly 2cm conglom SR clayey + mica		39				
76	78				fg-mg clay 20%		840				
78	80				mg-gran micaceous pyritic clay <20%		41				
80	82				mfg-vcg " pyritic clayey		42				
82	84				fg-mg clayey+clay <10% micaceous		43				
84	86				vfg-fg clayey micaceous		44				
86	88				White-light brown clayey micaceous silt + cg sd cuspate pyr		45				
88	90				mg sd + silt as above		46				
90	92				fg sandy gran silty + silt 30% mica		47				
92	94				mg-gran & silty sd pebbly		48				
94	96				fg-mg Some clayey silt		49				
96	98				cg-gran slightly silty		850				
98	100				fg-cg silty clay 30%		51				

SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE _____

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CO-ORDINATES

R.L. COLLAR _____ AZIMUTH _____ DRILLERS _____

INCLINATION _____ DRILL TYPE _____

DRILL CORE LOG

COMMENCED _____ DEPTH _____ HOLE No. 80KRM12

COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				mg clayey silt light fawn brown 40-50%		8848 52				
102	104				fg - gran clayey						
104	106				mg SR qtz no clay		53				
106	108				mg-cg no clay		54				
108	110				cg-vcg SA-SR no clay no mica		55				
110	112				cg-pbbly SR pyr.		56				
112	114				mg rodarse no clay pyr.		57				
114	116				mg-vcg " "		58				
116	118				fg-pvcg SA-SR "		59				
118	120				mg-cg no clay tr pyr.		860				
120	122				mg-vcg A-SR.		61				
122	124				mg-cg some clay no mica		62				
124	126				fg clay <10%		63				
126	128				mg SR-R no clay		64				
128	130				mg-vcg some clay+silt		65				
130	132				fg-silty clayey micaceous		66				
132	134				rodarse tr granules silty		67				
134	136				cg SA-SR		68				
136	138				fg slightly micaceous		69				
138	140				fg-mg " "		870				
140	142				mg-cg tr clay		71				
142	144				fg tr clay		72				
144	146				mg-pebbly clayey SA-SR		73				
146	148				fg-gran "		74				
							8848 75				

SUMMARY AND SPECIAL COMMENTS _____

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PROJECT

ROTARY MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 380500 yd E / 846100 yd N   AZIMUTH Vertical   DRILLERS Thompson Drillers   COMMENCED   DEPTH 122m   HOLE No. 80LRM15

RL COLLAR +102m (m.s.l.)   INCLINATION   DRILL TYPE Mayhew 1000   COMPLETED   CASING LEFT —   DPO No(s).

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				yellow clayey sand + calc		885035				
2	4				calcrete clayey sand - sandy clay as above		36				
4	6				sandy clay then SST + fg-mg qtz yel white to red		37				
6	8				white qtz SST + well cemented white - red fg SA-SR well sorted some claystone		38				
8	10				as above		39				
10	12				SST as above up to mg + sand mg uncon sand qtz SR reddish ferruginous		40				
12	14				orange mg-cg uncon sand qtz SR		41				
colour change 14	16				fg-mg whitish pink qtz uncon as above		42				
16	18				as above		43				
18	20				as above + red green mottled very sandy clay		44				
22	22				vfg-mg sand qtz yel pink as above no clay		45				
24	24				fg-vcg sand yel light grey + red uncon as above		46				
26	26				light grey/brown qtz A-SR fg-gran uncon		47				
28	28				fg-cg as above ferug stain in part clayey light green in part		48				
30	30				fg-granular white sand uncon SA-SR qtz + fg feldspar		49				
32	32				as above + white kaol clay fg-mg sandy 20%		50				
34	34				white - light grey silty micaceous ltg speckled soft clay kaolinitic		51				
36	36				as above light white some brown ltg chips		52				
38	38				as above 10-20% ltg chips		53				
40	40				sand uncon white qtz SA-SR mg-gran		54				
42	42				as above mg + white kaol + light grey clayey silt micaceous fg sandy		55				
44	44				sand fg-cg 20% clay as above		56				
46	46				sand fg-cg mainly mg-cg no clay		57				
48	48				sand mg-vcg clay as above		58				
50	50				clay silt mica ltg clayey speckled light brown silt organic clay white sandy kaolin some sand		885059				

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CO-ORDINATES ______ AZIMUTH ______ **DRILL CORE LOG** PROJECT ______

RL COLLAR ______ INCLINATION ______ DRILLERS ______ DRILL TYPE ______

COMMENCED ______ COMPLETED ______ DEPTH ______ CASING LEFT ______ HOLE No. 80LRM15 DPO No(s). ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
52	52				sand cg SA-SR as above						
~~54~~	54				cg-~~veg~~ gran SA-SR "		885060				
54	56				light grey brown silty micaceous lt speckled		61				
56	58				sandy clayey silt. some sand light brown silty clay lt speckles + chips		62				
58	60				some lge black cg sandy as above micaceous + brown orange clay	* lg c	63				
60	62				lg 5-10 light grey brn + dark brown orgclay mix.	* r c	64				
62	64				+ lt speckled no chips as above no chips		65				
64	66				" – lt chips mica pyr + mg-gran		66				
66	68				A-SR qtz fspar. med grey clay light brown lt speck sand as above		67				
68	70				as above clay mg sand to lt chips		68				
70	72				light grey grey brn clay micaceous silty lt flecks		69				
72	74				light grey clay micaceous as above. sandy mg-cg fspathic. SA-SR or lt chips		70				
74	76				as above light gy-gybrn. sand cg fspathic.		71				
76	78				sand cg-pebbly qtz some fspar. A-SR some clay		72				
78	80				as above mg-gran some white brn		73				
80	82				fg pebbly [illegible] sand as above clay light brn grey lt speckles		74				
82	84				cg sand + clay 40% as above		75				
84	86				light grey-brown silty clay mica + lt specks. sand cg-veg		76				
86	88				as above + sand as above fspar etc.		77				
88	90				dark brown grey micaceous clay some mg sand lt chips +		78				
90	92				as above to lt chips		79				
92	94				as above		80				
94	96				dark brn grey silty mica lt speckles.		81				
96	98				as above thin band lt + brown black lg [illegible]		82				
98	100				mg-cg fspar qtz SA-SR light [illegible]		83				
							885084				

SUMMARY AND SPECIAL COMMENTS ______

LOGGED BY ______ DATE ______

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M15

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM 15

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				sand micaceous mg-cg as above		88595				
102	104				" mg-cg clay 30% lig clasts <5		86				
104	106				clay brn-gy as above to lig		87				
106	108				clay grey brown sand mg-vcg.		88				
108	110				sand cg-gran SR qtz fspar		89				
110	112				Vcg-gran SR qtz fspar.		90				
112	114				fg-vcg pyr mica fspar		91				
114	116				mg sfspar pyr to lig 5% clay as above		92				
116	118				mg-cg " clay as above 10%		93				
118	120				mg-vcg + pebbly sd clay as above 10-20 pyr.		94				
120	122				cg-Vcg qtz fspr no clay		88595				

SUMMARY AND SPECIAL COMMENTS

LOGGED BY _____ DATE _____

SHEET 3 OF 3

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PLAN No.M 414

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ROTARY / MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 40900 yd N AZIMUTH Vertical DRILLERS Thompson Drillers COMMENCED 3 SEP 80 DEPTH 76 m HOLE No. 80LRM16

RL COLLAR ± 100 m (m.s.l.) INCLINATION ______ DRILL TYPE Mayhew 1000 COMPLETED 3 SEP 80 CASING LEFT — DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				well consol orange fg sandy clay		885096				
	4				light orange sandy clay st some fg red sst poorly cemented at base		885097				
4	6				stiff v clayey sand fg light pink orange calcrete		885098				
	8				fg reddy orange sst poorly consol clay mtx		c 885099				
8	10				qtz SA-SR white - yel fg well cemented sand qtz		885100				
	12				as above + fg uncon silty sand		885101				
12	14				sand as above uncon fg yell white SA-SR qtz		885102				
	16				fg pink → pebbly cg white clayey white sand kd?		885103				
16	18				mg-vcg sand qtz A-SR feldspathic white white kaol clay mtx micaceous		885104				
	20				sand as above fg-mg clayey as above		885105				
20	22				white clay micaceous 20% stiff dark grey brown micaceous carbonaceous clay		885106				
	24				clay light brn grey micaceous sand interbeds fg-cg qtz sand fspar + pyr sand <10%	as per hole 15	885107				
24	26				as above light grey - light fawn sand cg-vcg A-SA pyr <5%		885108				
	28				clay light - dark grey lig flecks + chips 50% sand pyritic	C	885109				
28	30				fawn sand brn gy + dk gy brn micaceous clays + sand lig chips fg - pebbly sand A-SR qtz py fspar	C	885110				
	32				light brn gry + fawn 50 50 clay minor sand		885111				
32	34				light gry brn lig fleck clay + fawn minor sand soft		885112				
	36				dk grey brn sandy clay lig flakes mica		885113				
36	38				as above cg - gran A-SA mica lig chips	C	885114				
	40				light brn grey lig speckled clay sand cg-gran A-SA - fspar etc		88115				
40	42				dark grey - light grey mg - cg A-SR qtz fm coal chips	C	885116				
	44				50 50 light white fawn dark brn grey lig flecked silty clay sand mg qtz pyr		885117				
44	46				light grey brn etc as above qtz pyr cg A-SA		885118				
	48				fawn light grey brn micaceous silty clay minor sand fg-cg A qtz fm pyr and 30%		885119				
48	50				as above fg - mg A-SA qtz + pyr 50%		885120				

SUMMARY AND SPECIAL COMMENTS ______

LOGGED BY MJNF DATE ______

SHEET 1 OF 2

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PLAN No M 414

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DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM16

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	52				sand fg–cg A–SA qz m pyr 30% clay as above.		885121				
	54				" mg–vcg A–SA qz pyr 40% clay as above		22				
	56				sand fg–mg some lig chips clay 20%	c	23				
	58				sand vfg mg very felspathic ~~fs~~ A–SA lig + clay ~~not~~ > 30%		24				
	60				sand vfg–cg clay light grey–brn lig bands ~~fit~~		25				
	62				as above fg light grey brown clay		26				
	64				sand then clay grey/brn ~~c~~ 40% coal frags	c	27				
	66				" mg–vcg A–SA very fpyr Qfm coaly chips orange calcareous band		28				
	68				fg–cg sand minor clay as above		29				
	70				fg–cg sand A–SA qfm pyr.		130				
	72				fg – vcg pebbly pyr qfm some clay ang subang–SR grey clay coal chips	coal chips	31				
	[illegible]				fg – pebbly 2cm some clay as above some frags qtz f m granite? some R pebbles. tr lig chloritic mica sch.		32				
	[illegible]				SR–WR pebbles. ASA qfm hard green sandy clay pyr flecks rounded pebbles		885133				

SUMMARY AND SPECIAL COMMENTS ______ LOGGED BY ______ DATE ______

CRAE 117

SHEET 2 OF 2

~~ROTARY MUD~~ DRILL ~~CORE~~ LOG

CO-ORDINATES 8240070 E / 8407000 N AZIMUTH Vertical DRILLERS Thompson Drillers COMMENCED DEPTH 124 m. HOLE No. 80LRM17

RL COLLAR +90 m (m.s.l.) INCLINATION DRILL TYPE Mayhew 1000 COMPLETED CASING LEFT — DPO No(s).

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	2				pink calcrete		885133				
	4				well cem orange sandy clay some calcrete		885134				
	6				as above		885135				
	8				fg sst well cem qtz white - orange + uncon sand fg - mg.		885136				
	10				as above		885137				
	12				sand uncon SA-SR white vfg - vcg. qf.		885138				
	14				as above mg white kaol clayey		885139				
	16				as above mg - cg white kaol bands.		885140				
	18				as above kaol 40%. qfm SA-R mg-cg		885141				
	20				fg-mg 10% kaol bands.		885142				
	22				mg some gran + clayey.		885143				
	24				fg-mg 10% clay		885144				
	26				mg-cg clayey qfm		885145				
	28				fg - cg + light brown grey kaol clay		885146				
	30				fg - vcg white kaol some brown qfm		885147				
	32				vfg - mg some clay + tr lig. + brown sandy clay	tr lig	885148				
	34				mg clayey		885149				
	36				fg - mg qtz feldspar mica		885150				
	38				vfg - cg slightly micaceous		885151				
	40				fg - cg qtz feldspar		885152				
	42				fg - mg qf ~~A~~-SR white qtz sand uncon		885153				
	44				near 43.5 goes to well cem light brown grey micaceous fg sandy clay		885154				
	46				as above		885155				
	48				light grey micaceous tr lig [illegible]	tr coal [illegible]	885156				
	50				" " brown micaceous clay		885157				

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SUMMARY AND SPECIAL COMMENTS

LOGGED BY MJNF DATE

SHEET 1 OF 3

CRAE 117
PLAN No M414

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ DRILL CORE LOG
RL COLLAR ______ INCLINATION ______ DRILL TYPE ______
COMMENCED ______ DEPTH ______ HOLE No. 80LRM11
COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				light-lt grey light grey brn clay micaceous						
52	54				black carb flecks sand qf fg=cg A-SR. light - dark grey brown clay lg chips micaceous	bi woody frags	885158				
54	56				mg sand qf. clay as above cg - gran sand as above	lg chips	885159				
56	58				fg - cg some clay		885160				
58	60				fg - mg - vcg mica dark grey light grey clay + white clayey silt micaceous		885161				
60	62				fg - pebbly micaceous mica schist pebble A-SR		885162				
62	64				sand qfm fg - gran A-SR		885163				
64	66				mg - cg as above		885164				
66	68				mg - cg clay white 20%		885165				
68	70				cg - pebbly clay 30%		885166				
70	72				fg - cg qf some f sparse M		885167				
72	74				vfg - gran white clay 10%		885168				
74	76				cg - vcg clayey		885169				
76	78				fg - pebbly mainly cg qf some m		885170				
78	80				fg - pebbly - " vcg qf SA - R		885171				
80	82				" - gran " cg		885172				
82	84				mg - pebbly main gran clay 30% white		885173				
84	86				as above clay 20		885174				
86	88				fg - gran clayey		885175				
88	90				cg - pebbly		885176				
90	92				fg - mg clayey		885177				
92	94				sand mg - pebbly then white clay then dark grey light mica clay		885178				
94	96				sand fg - mg 10% clay some white some [illegible]		885179				
96	98				fg - cg clay 10% white - brown grey lg flecks micaceous		885180				
98	100				as above [illegible]		885181				
							885182				

slipped down J?

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PLAN No M 414

SUMMARY AND SPECIAL COMMENTS

LOGGED BY ______ DATE ______
SHEET 2 of 3

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM17

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	102				sand mg-granular pebbly SA SR light grey micaceous clay - dark grey pyritic		885183				
	104				clay med grey brown soft, black coaly fragments micaceous. 1% granular black coal chips	1% coal chips	885184				
	106				as above ± fg sand SA-R 2% coal chips as above	2% coal chips	885185				
	108				as above + fg sand minor + coal flags	coal flags	885186				
	110				clay as above sand 40% fg-sand pyrite cg-gran SA-R coaly	coal flags	885187				
	112				clay as above + vcg-gran 30% bands micaceous thin lig chips	thin coal chips	885188				
	114				clay as above mg-gran. SA-SR tr coaly flags	tr coal	885189				
	116				mg-vcg g some f clay as above 80%		885190				
	118				SAA-SA g f pyr mg-vcg slightly clayey sand		885191				
	120				as above + pebbly some clay 10-20% small lig partings		885192				
	122				mg-gran slightly clayey		885193				
	124				fg-gran as above pyr 2-5% clay		885194				

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PLAN No M 414

SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE _____

ROTARY MUD DRILL LOG

CO-ORDINATES 386300 yd E, 8390000 yd N — AZIMUTH Vertical — DRILLERS Thompson Drillers — COMMENCED 10 Sep 80 — DEPTH 124m — HOLE No. 80CRM18

RL COLLAR +90m (m.s.l.) — INCLINATION — DRILL TYPE Mayhew 1000 — COMPLETED 10 Sep 80 — CASING LEFT — — DPO No(s)

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				fg sand qtz SR + silt + orange/pink calc		885195				
2	4				calcrete as above minor clay		885196				
4	6				calcrete ~~to~~ green + red mg sandy clay very sandy 40%		885197				
6	8				mod well consol green sandy clay cg-fg SR qtz		885198				
8	10				fg-mg sand qtz some fspar musc. soft white kaol clay		885199				
10	12				mod well consol micaceous kaol clay slightly silty		885200				
12	14				clay as above + sand fg-cg micaceous SA-SR 40%		885201				
14	16				fg-cg sand white clay kaol clay muscovite SA-SR qtzose feldspathic		885202				
16	18				sand cg-pebbly clay 30%		885203				
18	20				fg-mg qtz fspar sand uncon. micaceous		885204				
20	22				sand fg-mg some pebbles clay white + light fawn micaceous 10%		885205				
22	24				mg-cg A-SA qtz + m <5% clay		885206				
24	26				SA-SR mg-gran qm clay white light fawn 40%		885207				
26	28				pebbly qm A-SR clay 30		885208				
28	30				A-SR fg-gran clay light fawn micaceous 30%		885209				
30	32				A-SR some small pebble 2½-8cm qtz m clay 10%		885210				
32	34				cg-gran mica qt clay 40		885211				
34	36				cg-pebbly clay white-fawn SA-SR m		885212				
36	38				pebbly clay 40%		885213				
38	40				cg-gran clay 10% SR		885214				
40	42				interbedded clay gran-pebble clay 40%		885215				
42	44			pyr	fg-gran SR-R mica clay 40% uncon		885216				
44	46				pyr fg-pebbly SA-SR clay 20% mg		885217				
46	48				vfg-fg + pebbly SA-SR clay 10%		885218				
48	50				fg-cg micaceous qm clayey cg-gran some clay		885219				

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DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM18

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

drilling rate down

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				fg–gran qfm 2% clay SA–SR						
	54				as above except tr pyr		20				
54	56				as above		21				
	58				fg–vcg A–SR qfm + tr clay		22				
58	60				light grey – med brn grey clay carb micaceous speckles woody partings tr		23				
	62				med grey [illegible] clay carb speckles micaceous sparse brown woody chips		24				
62	64				clay as above 2–5% pyr gran & pebbly 30% qtz SA–SR woody chips		25				
	66				pebbles SR–R clay light fawn & grey mica & speckles & chips	chips pyrite > 2%	26				
64	68				sml – lge pebbley 2cm SR–R some granules [illegible] felsp + musc clay 5%		27				
	70				cg – pebb A–R tr clay qfm		28				
70	72				fg–cg SA–SR qfm pyr clay 2%		29				
	74				fg – pebbly mg pyr clay 2%		885230				
74	76				gran – pebbly SA–SR clay 20% qfm pyr		31				
	78				cg – gran qfm pyr clay speckled 10%		32				
78	80				as above mg – gran clay + brown lig clay micaceous pyr mica		33				
	82				lig clay carb speckled minor sand + woody lig chips		34				
82	84				as above + brn grey clay lig speckles lig < 2% mg – gran qtz minor micaceous pyr		35				
	86				clay brown + white pyr some qtz cg SR		36				
86	88				as above		37				
	90				soft light brn grey micaceous silty some soft brn as above minor sand pyr		38				
90	92				light grey – med brn gy carb flecked woody lumps <2% sand mg–cg A–SR py musc <10		39				
	94				as above woody parting 5% lumps		885240				
94	96				clay as above black brn lig chips 10–20% fg–mg mica py sand minor		41				
	98				as above 20–30% sand as above		42				
98	100				clay as above [illegible] 20–30 sand as above		43				
							885244				

SUMMARY AND SPECIAL COMMENTS

LOGGED BY [illegible] DATE 10 SEP 80

SHEET 2 OF 3

DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM18

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				clay as above ~~coaly frags~~ 10-20		245				
					micro sand hard band indurated fossil siltst						
	~~104~~				lt bn - gy brn calc speckled clay.		246				
					as above ~~coaly chips~~ 5% minor sand + py						
104	106				as above coaly interbeds <5%	<5%	247				
	108				as above lig clays etc + coaly frags <5	<5%	248				
108	110				as above soft - mod consol lig chips	5-10%	249				
					5-10% siltstone lighter bn band as above						
	112				med - dk grey micaceous clay - well		250				
					consol <2% lig	<2%					
112	114				med grey clay micaceous thin lig		885251				
					bands <2% sand mg - gran qf m py <10	<2%					
	116				grey clay as above sand 20% cg ~~A~~ - SA		252				
					qf py + coal chips py replacing coal						
116	118				soft clay as above lig speckle 2-3	2-3%	53				
					py replacing wood. sand mg - kg SA - SR						
	120				soft clayey micaceous silt carbonaceous	2%	54				
					lig frags <2%						
120	122				clay as above some sand tr lig	trace coal	55				
					py sand 20-30%						
	124				sand vcg - gran SA - SR qf m clay		56				
					30% some lig frags	trace coal.					
124	126										

SUMMARY AND ______ LOGGED BY ______ DATE 10 Sep 80

ROTARY MUD DRILL LOG

CO-ORDINATES 398100 ydE / 8836900 ydN — AZIMUTH Vertical — DRILLERS Thompson — COMMENCED ____ — DEPTH 120m — HOLE No. 80LRM19

RL COLLAR +95m (msl) — INCLINATION ____ — DRILL TYPE Mayhew 1000 — COMPLETED ____ — CASING LEFT — — DPO No(s) ____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				vfg-fg aeolian sand qtz + white calcrete		885257				
2	4				white calcrete		258				
4	6				well con red/orange + green clayey + very sandy silt fg.		259				
6	8				red clay + hard semi indur fg green sst.		260				
8	10				green + white well consol fg sst + silty		61				
10	12				yellow sandy clay fg white qtz sand + white fg sst		62				
12	14				mod well consol clay mtx in white fg qtz sst + yellow clayey sst		63				
14	16				uncon whitish fg sand uncon qtz some as above		64				
16	18				as above		65				
18	20				as above + mod well consol sandy + silty grey clay.		66				
20	22				as above		67				
22	24				Sand as above + yell clay no clay + brown grey clay + hard indurated [illegible]		68				
24	26				white greenish grey + med grey clay + black sandy up to 30%		69				
26	28				stiff heavy grey silty clay + brown lig clay + qtz sand mg-vfg pyrite mostly grey clay		270				
28	30				30% clay + brown micaceous lignite clay silty + sandy, heavy clay mg-gran sand py 10-20%		71				
30	32				stiff dark grey clay + brown lig sand 40% well con		72				
32	34				as above some white micaceous		73				
34	36				brown lig/lig clay minor grey clay		74				
36	38				as above + micaceous light brown lig sand mg-fg some lig 30%	c	75				
38	40				cg sand well con white clayey m sand fg-mg stiff grey lig + fg sand mg		76				
40	42				as above stiff [illegible] grey lig 20% sand fg-mg A-SR 50%	c	77				
42	44				mg SA-SR qtz sand uncon white silty clayey sand 10%		78				
44	46				sand as above py no clay		79				
46	48				fg-cg sand clay-sandy stiff 50%		280				
48	50				lig dark [illegible] 2% fg-vfg sand qtz m clay lumps sandy 10-20		885281				

SUMMARY AND ____ — LOGGED BY MJNF — DATE ____

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DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM19

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				clay white sandy very micaceous cg-gr sand 10%		885282				
	54				sand fg-gran A-SR qm clay sand well con 30%		83				
54	56				fg-mg qfm 2% clay.		84				
	58				fg-pebbly clay 40-50 SA-SR		85				
58	60				fg-cg clay 30-40		86				
	62				fg-mg SA-SR, qfm. no clay		87				
62	64				mg qfm A-SR clay 5%.		88				
	66				vfg-fg qm 2% clayey sand		89				
66	68				fg-vcg A-SR. qfm clayey sand 5%		885290				
	70				mg-cg. clay 10%		91				
70	72				fg-mg qm. clay 2%		92				
	74				fg-cg mainly mg clay <2%		93				
74	76				mg SA-SR slightly clayey		94				
	78				fg-pebbly clay 2% qfm		95				
78	80				fg-mg micaceous qm		96				
	82				cg-vcg SR-R clay 5%		97				
82	84				mg-vcg. SR-R qtz sand to clay		98				
	86				fg-cg qm SR-R		99				
86	88				fg-vcg mainly fg-mg qf fm tr clay		885300				
	90						1				
90	92				cg-gran qfm SA-SR pyr + minor clay <2%		2				
	94				fg and cg-gran qf slight clay? with bands		3				
94	96				silty-vcg A-SR clay 5-10 pyr		4				
	98				vcg-pebbly clay 30% pyr		5				
98	100				fg-mg R-SR qfm clay <2		885306				

darker brn grey

SUMMARY AND ______ LOGGED BY ______ DATE ______

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM19

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				fg-vcg SA-SR clayey 5% qfm pegs		885304				
	104				~~mg-cg~~ qfm clay <2		885305				
104	106				q vein/quartzose mg SR-R		885306				
	108				q-fg-gran SA-SR clay 2%		885307				
108	110				fg-gran clay 5-10% pegs SA-SR		885310				
	112				fg-vcg qm minor clay±silt		885311				
112	114				mg-pebbly qfm quartzose mj-cg in clay		885312				
	116				mg-gran SA-SR qfm clay, interbed 10-20%		885313				
116	118				mg-cg qfm SA-SR in clay		885314				
	120				fg-pebbly ~~5%~~ in clay soft + silty qfm		885315				
120	122										
	124										
124	126										

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SUMMARY AND _____ LOGGED BY _____ DATE _____

395600 yd E

ROTARY MUD DRILL LOG

CO-ORDINATES 833200 yd N AZIMUTH Vertical DRILLERS Thompson COMMENCED DEPTH 122m HOLE No. 80LRM20

RL COLLAR INCLINATION DRILL TYPE Mayhew 1000 COMPLETED CASING LEFT — DPO No(s)

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				sand mg-cg SR-R qtzose to white clay some granules in ton		885316				
2	4				orange + light grey sand fg-cg SR-R clayey + silty qtzose		885317				
4	6				calcrete + orange silty clay + some sand as above		885318				
6	8				as above		885319				
8	10				calcrete + orange calcrete cemented s-t sand as above		885320				
10	12				fg-mg sand to calcrete: orangey yellow		885321				
12	14				sand as above fg qtzose + thin clay soft light grey clayey silt + dark grey carb stiff clay		885322				
14	16				clay as above		885323				
16	18				soft dark brown-black carb clay + some light grey clay		885324				
18	20				light grey + some dark grey silty + fg sandy in part fg sandy interbeds		885325				
20	22				clays as above sand as above brown carb clayey silt all soft		885326				
22	24				as above brown lig clayey silt 10-20% clays as above		885327				
24	26				sand cg-vcg SR-R pyrite lumps qtzose light grey		885328				
26	28				lignite / lig clay + light fawn + light grey clay and granular etc lig 30-40	lignite	885329				
28	30				lignite lig clay underlain by sand vfg-mg SR-R qtz light br		885330				
30	32				sand fg some cg some white claynuts [illegible] lig		885331				
32	34				mainly fg some vcg to mica minor clay		885332				
34	36				fg-granular micaceous qtz clay white very sd sand bands & claynuts 50%		885333				
36	38				fg-mg gran + pebbly in part 5% claynuts		885334				
38	40				as above silty + clayey SA-SR		885335				
40	42				fg-gran SA-SR qtz white clay to mica sandy clay 40		885336				
42	44				vcg-pebbly SA-SR pyr lumps clay 10%		885337				
44	46				pyr lumps sand as above light clay white clay + fawn soft clay coaly sandy layers	coal fragments	885338				
46	48				as above vitreous coaly [illegible]	vitreous coal chips	885339				
48	50				pyr balls sand cg-gran [illegible] clay soft micaceous SA-SR		885340				

SUMMARY AND

LOGGED BY MJNF DATE 11 SEP 80

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DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM20

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	52				sand g-gran qtz clay light brn gy 30% coaly frags subrnd.		885341				
	54				sand fg-mg qtz tr mica + silt clay white, light grey brown clay woody + [illegible] chips		885342				
	56				sand mg-vcg qtz [illegible] clay as above 40% woody frags + coaly bits		885343				
	58				cg-vcg qtz clay as above coaly [illegible] + lignitic clay		885344				
	60				clay & sand cg-gran light gy brown coaly chips		885345				
	62				clay as above soft brn + grey some [illegible] qtz SA-R coal still		885346				
	64				sand + clay as above cg-gran SR-R coaly chips <5%		885347				
	66				fg-gran sand qtz SR-R		885348				
	68				sand mg-gran clay light grey brn 30 no coaly chips		885349				
	70				semistiff grey brn clay + light brn grey 30% sand mg-gran SR		885350				
	72				sand mg-cg SA-SR qtz uncon lightgrey		885351				
	74				[illegible] grey brown soft clay + light grey tr coal speckled clay sandy mg-fg sand <20	tr coal	885352				
	76				fg-gran qtz SA-R gy brown + white clay + coaly chips 40% clay	coal chips	885353				
	78				clay brn grey speckled soft-well con coaly chips <2%	<2% coal chips	885354				
	80				sand uncon mg-gran SA-SR qtz tr clay tr mica		885355				
	82				as above vcg-gran qtz tr clay		885356				
	84				fg-vcg clay 20% ~~coaly~~ + woody chips	20%	885357				
	86				sand fg gran SA-R clay brn grey speckled + white tr coaly chips	coal chips	885358				
	88				clay med brn grey some sand gran [illegible] chips	coal chips	885359				
	90				grey clay ~~brn woody~~ chips minor sand	coal chips	885360				
	92				clay as above brn grey speckled 40% sand vcg [illegible] SA-R		885361				
	94				grey clay soft 40% tr lignite coal sa gran SA-R	trace coal	885362				
	96				as above [illegible]		885363				
	98				clay as above 10% sand fg-g [illegible] SA-SR <2% coaly chips	2% coal	885364				
	100				minor clay grey cg-vcg coal 40-50% [illegible] black [illegible] coal	coal 40-50%	885365				

coal c

SUMMARY AND ______ LOGGED BY ______ DATE ______

DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM20

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	102				grey clay cut speckled very coaly black + [illegible] brown + black 30-40%		885366				
	104				lig + brown grey clay coal 75%		885367				
	106				clay + coal ~~50~~-60%		885368				
	108				br grey clay + brn coal frags 10% sand mg - cg A-SR qtz mainly clear		885369				
	110				clay soft med br grey, light brown and coaly chips ≤5% qtz fg - cg A-SR <20		885370				
	112				brown grey clay, brown lig flecks sand as above		885371				
	114				med soft lightish grey clay cut speckled sand mg - lge pebbles 2.5 cm. A-R		885372				
	116				br. grey clay sand mg 20-30 cg A-SR qtz		885373				
	118				clay br grey lig chips <2% qtz sand A-SA qtz, [illegible] fg - gran		885374				
	120				clay + sand as above 50/50 coaly chips 5-10 mica		885375				
	122				fg - pebbly A-SA qtz sand 5% clay to lig		885376				

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SUMMARY AND ______ LOGGED BY ______ DATE 11 SEP 80

355700 yd E — ROTARY MUD — LOG

CO-ORDINATES 8 38100 yd N — AZIMUTH Vertical — DRILLERS Thompson — COMMENCED 11Sep80 — DEPTH 68m — HOLE No. 80CRM21

RL COLLAR +60m (m.s.l.) — INCLINATION — DRILL TYPE Mayhew 1000 — COMPLETED — CASING LEFT — DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete, minor clay on surface pink+white		885377				
2	4				as above ss+c calc cement		885378				
4	6				fg poorly consod white + yell gtzose sst		885379				
6	8				silty SA-SR stiff white clayey sand as above		885380				
8	10				as above		885381				
10	12				as above + uncon sand light gray + red brown fg		885382				
12	14				red brown hem stained gtz sand + light grey sand uncon fg		885383				
14	16				Vfg red sand + silt		885384				
16	18				as above		885385				
18	20				as above hem stain		885386				
20	22				as above		885387				
22	24				as above silty becoming lighter in		885388				
24	26				as above thin clay interbeds white + sandy		885389				
26	28				as above		885390				
28	30				Vfg light brn-gray uncon gtz sand lignite sand + light grey to dk gy sandy + clayey silt		885391				
30	32				Vfg sand as above mainly sand uncon		885392				
32	34				sand as above V-fg light brown + pebbly beds. A-SR gtz pebble beds & bivalves 2%		885393				
34	36				fg - plstg A-SA fg clay/lig 40-50 bivalve shell 2% blk mg sandy	lignite 40-50 bivalves <1cm shells + frags	885394				
36	38				Vfg & pebbly bits A-SA fg clay		885395				
38	40				as above VA-A Vfg gtz, lig sandy cla + shells		885396				
40	42				as above lig < 20% < 10% mag		885397				
42	44				Vfg + cg - pebbly VA-SA gtz pyr lig clay + woody chips < 20		885398				
44	46				gtz VA-A vcg + grav some white + lt-blk pyr		885399				
46	48				as above mg - pebbly some fg clay 30%		885400				
48	50				mg-cg as above 10% white clay soft	pyr	885401				

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SUMMARY AND — LOGGED BY MJNF — DATE 11SEP80

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CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM21

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				vfg-fg as above SA-SR		885402				
52	54				vcg-gran A-SR		885403				
54	56				qtz fg-gran tonica tr fpy VA-BR		885404				
56	58				mg-pebbly as above white clay 10%		885405				
58	60				mg-as above <10% clay, tr fpy VA-A		885406				
60	62				vcg-pebbly VA-A weathered fspar white kaol <5% micaceous fpy		885407				
62	64				mg-vcg. as above		885408				
64	66				mg-pebbly white clay silty, lumps Sbf 30-40		885409				
66	68				cg-pebbly white clay <10%		885410				

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SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE 11 SEP 80

SHEET 3 OF 3

356300 yd E — ROTARY MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 8430000 yd N — AZIMUTH Vertical — DRILLERS Thompson — COMMENCED _____ — DEPTH 68m — HOLE No. SOLRM22

RL COLLAR +70m (m.s.l.) — INCLINATION _____ — DRILL TYPE Mayhew 1000 — COMPLETED _____ — CASING LEFT — — DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				soft/fri calcrete		885411				
2	4				cream calcrete		885412				
4	6				fg-mg yel/orange sand + clayey sand + sandy clay SA-SR		885413				
6	8				clay as above + fg sst white + yell/brn well cemented clayey in part		885414				
8	10				white red orange + yell/brn fg silicified qtzose sst well sorted SA-SR occasionally as above		885415				
10	12				as above		885416				
12	14				vfg-fg mica sand qtz silty pinkish & white hard sst beds as above		885417				
14	16				vfg-fg as above		885418				
16	18				vfs-fs sand qtzose some hard beds creamy pink & as above		885419				
18	20				vfg-mg sand as above		885420				
20	22				as above		885421				
22	24				as above		885422				
24	26				vfs sand pinkish as above		885423				
26	28				vfg sand as above		885424				
28	30				as above		885425				
30	32				vfs-fg SR-R sand pink + red + yellow black		885426				
32	34				vfg-fg sand pink-black red brn-pinkish as above fldsp in part		885427				
34	36				vfg-mg qtz sd as above + fg stone		885428				
36	38				vfg-mg pinkish to black fg sst = 1 qtzose sand		885429				
38	40				as above		885430				
40	42				as above darker black brown some lignite thin bed. fg clay	tr lignite	885431				
42	44				darker pink black vfg-fg sand SA-SR + fg clay soft pink micaceous clay		885432				
44	46				brown black sand pinkish as above + fg clay		885433				
46	48				as above + mg-cg qtz SA-SR sand <2%		885434				
48	50				white kaolinitic clay < mg-vcg sand qtz SA-R <20%		885435				

SUMMARY AND _____ — LOGGED BY MSNE — DATE _____

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DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. JOCRM 22

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				Hg-fg black grey sand micaceous clay 10-20% – fn fg clay cg-vcg qtz sand minor		885436				
52	54				clay soft white sandy + micaceous sand VA-SR mica qtz ~~mg~~ - pebbly 30%		885437				
54	56				A-SR sand qtz mica pyr clay as above 40-50		885438				
56	58				clay as above mg-cg A-SR as above pyr 30-40		885439				
58	60				as above mg-cg 30-40		885440				
60	62				clay as above >60 sand very pyritic mg-vcg <A-SR		885441				
62	64				sand mg-pebbly clay 40-50 pyritic		885442				
64	66				fg-gran qtz sand pyritic SA-SR clay 30%		885443				
66	68				as above micaceous + pyr fspar. grains		885444				

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SUMMARY AND SPECIAL COMMENTS ______

LOGGED BY ______ DATE 11SEP80

SHEET 2 OF 3

ROTARY MUD

CO-ORDINATES 374000 ydE 847400 ydN AZIMUTH Vertical DRILLERS Thompson COMMENCED DEPTH 124m HOLE No. 80LRM23

RL COLLAR +118m (m.s.l.) INCLINATION DRILL TYPE Mayhew 1000 COMPLETED CASING LEFT — DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				soft sandy + calcrete nodules pink+orange clay		885445				
2	4				pink calcrete + fg-mg sandy orange stiff clay		885446				
4	6				vfg-cg orange sand hem staining on grains		885447				
6	8				fg well cemented qtzose sst white to yellow colours		885448				
8	10				fg well cemented qtzose sst white yellow pink+red coloured		885449				
10	12				sst as above + mg-vcg SR-R yellow-orange coloured qtz sand uncon orange clay+silt		885450				
12	14				light greeny cream well consol claystone silty-part some sand as above		885451				
14	16				claystone as above less well consol + pinky brown soft clay		885452				
16	18				as above + yellow silty clay		885453				
18	20				as above light brown clay mainly		885454				
20	22				mud well con light brown micaceous clay		885455				
22	24				as above		885456				
24	26				as above		885457				
26	28				as above + light green claystone + light orange yellow claystone		885458				
28	30				softened grey micaceous clay + cream-fawn clay		885459				
30	32				as above		885460				
32	34				soft light brn-grey micaceous clay + lt brn micaceous silty silt		885461				
34	36				light brown-fawn micaceous soft clay		885462				
36	38				silt grey-fawn soft micaceous silty clay		885463				
38	40				as above + sand qtz mg-cg A-SR		885464				
40	42				sand mg-vcg qtz SA-SR uncon micaceous clayey + some clay as above		885465				
42	44				sand fg-cg qtz as above		885466				
44	46				bedded vfg-pebbly sand qtz A-SR clayey + clay as above		885467				
46	48				as above						
48	50				vfg-pebbly 1cm qtz f-spar mica sand SA-SR some light grey-fawn clay						
					light grey-pink vfg-fg qtz mica sand uncon silty + clayey						

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SUMMARY AND SPECIAL COMMENTS

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. BOLRM23

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				vf g – mg sand qtz as above micaceous some light – med grey clay silty + micaceous		885469				
52	54				as above some cg – gran SA–SR qtz sand interbeds pyritic		885470				
54	56				clay light grey/brown + brown lg cart speckled sand fg – gran SA–SR qtz micaceous + pyrite + tr coal chips	trace coal chips	885471				
56	58				clay and sand mg – gran as above pyritic		885472				
58	60				light grey + brown grey silty micaceous carbonaceous speckled clay Coal frags subbitum <2%	<2% coal	885473				
60	62				as above	<2%	885474				
62	64				lt grey cart speckled clay tr subbitum coal frags some sand fg – cg SA–SR qtz in part	tr	885475				
64	66				light grey + grey brown speckled clay		885476				
66	68				mod well consol mod brown grey micaceous clay		885477				
68	70				as above + brown clay coal frags <2%	<2%	885478				
70	72				as for 66–68 + sand cg SA–SR qtz		885479				
72	74				as above tr coal fragments	trace	885480				
74	76				med – lt grey clay micaceous poorly consol tr coal fragments	trace coal	885481				
76	78				mod – lt brown grey clay as above		885482				
78	80				as above v sparse carbonaceous speckled		885483				
80	82				as above		885484				
82	84				light grey + med grey micaceous clay mod well consol		885485				
84	86				as above tr coal frags	trace coal	885486				
86	88				med brown grey clay cart speckled, sand qtz fspar SA–SR fg–cg uncon interbeds		885487				
88	90				med – dark grey mod well consol micaceous clay		885488				
90	92				clay as above light grey lt + thin chert band reddish very hard some coaly frags	trace coal	885489				
92	94				as above		885490				
94	96				light green-grey micaceous + carbonaceous clayey silt soft some med grn clay		885491				
96	98				as above + tr coal some mg–cg qtz sand	trace coal	885492				
98	100				as above + pyrite		885493				

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SUMMARY AND _____ LOGGED BY _____ DATE 12 SEP80

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM23

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				sand fg-gran qtz fspar mica uncon sand some clay as above		885494				
102	104				med brown grey slightly micaceous mod well consol some sand fg-gran SA-SR qtz fspar interbeds		885495				
104	106				med-light grey clay minor sand as above		885496				
106	108				med brown grey micaceous clay mod well consol		885497				
108	110				as above + grey brown + minor black coal parting		885498				
110	112				~~sm~~ soft light brown grey micaceous clay minor < 2% coal chips	<2%	885499				
112	114				as above		885500				
114	116				mod consol light-med grey micaceous clay tr coal.	trace coal	885501				
116	118				as above + light green grey clay + clayey silt		885502				
118	120				light greeny grey well consol mg-fg qtz sandy clay		885503				
120	122				as above		885504				
122	124				well consol light greeny grey mg-fg qtz sandy clay		885505				

SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE 12 SEP 80

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370000mE — ROTARY MUD DRILL LOG

CO-ORDINATES 848300mN — AZIMUTH Vertical — DRILLERS Thompson — COMMENCED — DEPTH 120m — HOLE No. 80LRM24

RL COLLAR +130m (m.s.l.) — INCLINATION — DRILL TYPE Mayhew 1000 — COMPLETED — CASING LEFT — — DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				c.: yellow brown sandy clay stiff some calcrete		885507				
2	4				green yell + orange mottled fg sandy clay stiff well consol		885508				
4	6				as above green + red		885509				
6	8				sst fg-vcg SA-SR qtz mod well lithified white to red clay matrix poorly sorted		885510				
8	10				as above white fg sst.		885511				
10	12				white siltstone well lithified + white kaolinitic clay fg-cg sandy		885512				
12	14				bedded fg white qtz sst + white siltstone. White to orange sandy clay + light greyey fawn clay		885513				
14	16				light grey fawn clay soft		885514				
16	18				as above		885515				
18	20				as above + white kaolinitic soft micaceous clay. cg-vcg qtz sand interbeds SA-SR in part		885516				
20	22				white kaolinitic clay cg-pebbly qtz grit SA-R bands		885517				
22	24				white + fawn clay some grit as above		885518				
24	26				soft white kaolin silty + vfg sandy		885519				
26	28				as above + fawn clay		885520				
28	30				as above		885521				
30	32				as above some sand		885522				
32	34				white kaolin micaceous vfg-fg sandy		885523				
34	36				as above mg-gran SA-SR uncon qtz sand interbeds		885524				
36	38				mg-vcg sand gf SA-R micaceous + kaolinitic clay white soft sandy		885525				
38	40				mg-cg as above clay as above		526				
40	42				light grey-white qtz fspar mg-cg some gran SA-SR inconsol + mica		527				
42	44				sand as above mg + white kaolinitic clay 30%		528				
44	46				cg-pebbly SR-R qtz fspar tr mica sand uncon + white kaol clay 30%		529				
46	48				gran-pebbly as above + sand + clay		530				
48	50				fg-vcg sand minor clay		885531				

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SUMMARY AND SPECIAL COMMENTS

LOGGED BY MJNF — DATE 12 SEP 80

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM29

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	52				vfg - mg sand qtz fspar as above 10% kaol clay		885532				
	54				fg-vcg sand as above minor clay		533				
J?	56				mg - pebbly qtz sand SR-R pyrite patches of yellow partially lithified sst + clay matrix		534				
J	58				fg-cg sand as above + med grey brown micaceous clay mod well consol		535				
	60				clay med grey brown carb speckled + mg-cg sand as above		536				
	62				clay as above carbonaceous in part + black subbitum coal chips + sand gf		537				
	64				med brown grey stiff micaceous carbonaceous speckled clay, some sand mg-vcg		538				
	66				as above + black coal chips		539				
	68				clay as above + black subbit coal flaps		540				
	70				clay as above 2% coal - thin coal partings		541				
	72				clay as above 2-5% coal as above minor fg-cg sand thin quartzite band		542				
	74				med grey brown micaceous clay coal partings + coal		543				
	76				as above + light brown grey clay + coal		544				
	78				light grey + med grey soft - mod well consol micaceous clay		885 545				
	80				med grey well consol micaceous clay		546				
	82				clay as above		547				
	84				olive green grey clay well consol micaceous brown carbonaceous clay + tr coal		548				
	86				clay as above coal flaps 5-7%		549				
	88				clay as above + light grey micaceous clay coal flaps 2%		550				
	90				light olive green grey clay + brown green grey clay banded silty in part.		551				
	92				brown grey soft - poorly consol clay micaceous		552				
	94				as above + band soft orange claystone		553				
	96				light brown grey micaceous soft clay to carbonaceous speckles		554				
	98				med grey brown well consol micaceous clay + tr coal		555				
	100				as above black subbituminous coal 5-7%		885 556				

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SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE 12 SEP 86

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM24

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
	102				dark grey - brown grey clay lignite in part, coaly fragments.		885557				
	104				as above		885558				
	106				as above + light grey carbonaceous speckled tr coal		885559				
	108				fawn olive green grey + clay as above tr black coal		560				
	110				as above		561				
	112				dark grey brown clay micaceous tr coal. minor pt A-SR mg = pebbly		562				
	114				as above		563				
	116				as above + olive green + brown grey clay 10-20% sand A-SA mg-cg qtz		564				
	118				as above no sand		565				
	120				well consol dark brown grey = ~~tuff~~ clay		885566				

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SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE 12SEP86

SHEET 3 OF 3

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM30

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				fg-cg gty-fsp-mica SA-SR sand as above some white + brown clay coal 5-7%	5-7	885889				
102	104				fg-cg sand as above + apple green silty frags + brown clayey particles coal 5-7%	5-7	890				
104	106				apple green + brown fragments some mg-cg SA-R gty sand tr coal	trace	91				
106	108				well consol apple green clay + brown clay frags some gty sand.		92				
108	110				as above		93				
110	112				as above basement.		885894				

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PLAN No M 414

SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE 15SEP87

SHEET 2 OF 3

ROTARY AIR BLAST DRILL CORE LOG

CO-ORDINATES 565000yd N AZIMUTH Vertical DRILLERS Thompson
RL COLLAR + 52m (m.s.l.) INCLINATION _____ DRILL TYPE Mayhew 1000
COMMENCED _____ DEPTH 112m HOLE No. 80LRM30
COMPLETED _____ CASING LEFT Cemented DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				fg calcareous sand + massive cream calcrete		E85839				
2	4				fg-mg calcareous sst cream well sorted SA-SR qtz grains		840				
4	6				as above		841				
6	8				as above		842				
8	10				well consol lt ~~olive~~ green & claystone sandy + clayey silt		843				
10	12				~~green~~ claystone as above		844				
12	14				green clay yellow green sandy clay + light blue very sandy clay + yellow + red sandy clay		845				
14	16				green yellow, light blue + yellow red sandy clay as above		846				
16	18				clays as above + uncon fg qtz sand white brown SA-SR lgt stained		847				
18	20				fg-mg SR qtz sand brown as above		848				
20	22				mg-cg SR-R qtz sand as above light brown		849				
22	24				fg sand as above		850				
24	~~26~~				fg-cg R sand as above		851				
26	28				fg-cg SR-R sand some f/span light brown		852				
28	30				vfg-fg white qtz sand tr f/span		853				
30	32				vfg-fg + band black with coal frags 2%	2% coal chips	854				
32	34				vfg-fg sand as above + tr black coal	trace	855				
34	36				vfg-fg sand light brown grey tr f/span		856				
36	38				vfg-fg sand as above clayey, micaceous ~ part some lge pebbles of black coal 2-5% + f/span	2-5% coal	857				
38	40				fg-mg uncon light brown micaceous sand no coal		858				
40	42				fg-mg sand as above tr black coal	trace	859				
42	44				fg-mg sand micaceous + slightly clayey tr black coal grey sand	trace	860				
44	46				light brown grey mg sand as above some band black coal frags	1-2% black coal	861				
46	48				fg micaceous sand as above tr lignitic clay + black chips	trace black coal	862				
48	50				mg-cg qtz f/span mica sand as above tr black coal frags	trace black coal	E85863				

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SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY MJNF DATE 14 SEP 80

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DRILL CORE LOG

HOLE No. 80KRM30

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				cg-mg sad as above + soft brown lignite + hard black subbitum coal frags 2%	2% chips	855864				
52	54				fg-cg SA-R sand as above <2% lignite + black coal	<2%	865				
54	56				fg-mg SA-R sad as above tr black coal chips	trace	866				
56	58				fg-cg sad as above tr black + lignite particles	trace	867				
58	60				fg-mg sand as above 2% soft black brown lignite	2% lig	868				
60	62				fg-cg sand qtz fspar mic mica + 50% black mud hard subbit coal fragments	50%	869				
62	64				sad as above + calcareous sst + coal 40-50%	40-50	870				
64	66				coal 70-80% hard black resinous sand. qtz fspar SA 30%	70-80	871				
66	68				coal as above 50-60% fg-cg sad qtz fspar as above large hard coal frags	50-60	872				
68	70				coal 40-50 + fg-cg sad as above	40-50	873				
70	72				coal + sand briggan chunks 2-3cm	80-90	874				
72	74				granular-pebbly SA-R qtz fspar tr white clay 5% black coal.	5%	875				
74	76				fg-pebbly sand as above		876				
76	78				mg-pebbly SA-R qtz fspar minor soft camel brown clay tr coal chips (contam?)	trace	877				
78	80				fg-vcg some pebbly + brown soft micaceous clay 2% coal frags	2%	878				
80	82				granular sand some R pebbles minor soft brown clay coal 20%	20%	879				
82	84				vcg-gran sad qtz (clear + wh) fspar coal frags 20-30% + minor soft brown clay	20-30	880				
84	86				coal 30-40% lge hard black frags + sand vcg gran minor brown clay	30-40	881				
86	88				mg-gran qtz fspar micaceous SA-SR coal 20% brown clay + white kaol clay 20% frags	20%	882				
88	90				sand fg-vcg SA-R + coal 20-25%	20-25	883				
90	92				sad cg-gran as above + coal frags large 20%	20	884				
92	94				vcg-gran sand + white soft kaol clay frgs + black coal 10-15%	10-15	885				
94	96				grany white soft clayey silt + sand qtz fspar mica + green mica mg SA-SR coal small frgs 10%	10	886				
96	98				grany silty clayey silt as above sad mg-cg minor black coal 7-10	7-10	887				
98	100				fg sad grey clay + sad as above coal 15-20	15-20	888				

LOGGED BY _____ DATE 15 SEP 80

SHEET 2 OF 3

ROTARY MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 8565coydN AZIMUTH Vertical DRILLERS Thompson COMMENCED 15Sep80 DEPTH 90·35m HOLE No. 80630C

RL COLLAR +52m (msl) INCLINATION _____ DRILL TYPE Mayhew 1000 COMPLETED 16Sep80 ~~CASING LEFT~~ Cemented DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				sandstone cream fg calcareous (massive calcrete)	massive calcrete	885964				
2	4				as above		965				
4	6				as above		966				
6	8				as above		967				
8	10				sand tight olive green fg-mg SA-SR clayey + silty unconsolidated + some sst as above		968				
10	12				clayey sand as above +		969				
12	14				clay light bluey green + light olive green tr sandy + silty some red + yellow clay		970				
14	16				light green clay as above + sand white light grey unconsolidated qtz + fspar mica 5% black lignitic sand		971				
16	18				sand white-grey fg-vcg SR-R qtz fs/par bgr. <2% lignitic sand		972				
18	20				sand as above fg-gran tr lignitic sand		973				
20	22				sand as above mg-gran pyritic as above light brown grey SA-SR tr lignitic sand		974				
22	24				sand cg-gran as above + tr fg-mg sand as above tr blg sand		975				
24	26				fg & some vcg SR-R sand as above tr lignitic sand		976				
26	28				vfg-fg sand as above tr lignitic sand		977				
28	30				vfg-fg sand as above tr black coaly specks light brown grey		978				
30	32				vfg-fg sand as above 1% coal frags		979				
32	34				fg sand as above		980				
34	36				fg-mg sand as above tr coal		981				
36	38				mg-cg sand as above		982				
38	40				fg-cg sand as above		983				
40	42				fg-cg sand as above		984				
42	44				mg-cg sand as above		985				

LOGGED BY MINF DATE 15 SEP 80

SUMMARY AND

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DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80L30C

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
44.58	46.58				core loss						
46.58	48.16				sand clayey grey micaceous + feldspathic						
48.16	59.02				coal black brown blocky impure bands vitrain bands woody textured fragments abundant grading to lignite + clay down hole						
51.02	54.15				clay light brown stiff micaceous lignitic wood bearing						
54.15	55.70				core loss ?						
55.70	57.6				clay soft sticky light brown micaceous						
					sand fg-vfg gtz feldspar mica well sorted light grey slightly silty going to mg-cg fg V poorly sorted SA-SR gtz sand						
57.6	58.49										
58.49	59.8				coal subbit hard blocky dark black brown clarain + vitrain bands brown lignitic clay + low grade lignite in places + black coaly fragments 59.42-59.52						
59.80	59.91		10cm		sand mg SA-SR gtz feldspathic light to dark brown, clayey + coal clips						
59.91	60.12				gravel white gtz rare mainly unconsol brown clayey + sand A-R gran-pebbly (1-5cm)						
60.12	62.02				coal as above black + dull brown banded subfibrous clarain + vitrain bands						
62.02	62.05				clay light grey brown lignitic						
62.05	62.84				coal as above						
62.84	63.06				clay brown lignitic						

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SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE _____

SHEET 2 OF 5

PROJECT

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80L30C

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
63.06	63.17				clay light grey brown micaceous laminated with thin coal partings + brown lignitic clay						
63.17	63.81				clay brownish grey micaceous silty + fg sandy laminae some current bedding						
63.81	64.78				sand fg-mg Some cg-vcg grey sand grains feldspathic SA-R clayey graded bedding						
64.78	68.41	core loss			core loss ? sand brown grey gt fspar poorly consol ?						
68.41	69.29				sand grey clayey fg-mg some cg SA-SR gt fspar moderately well consolidated						
69.29	72.29				sand grey fawn clayey as above; interbedded silty and clay laminae up to 5cm micaceous						
72.29	73.29				core loss ?						
73.29	74.17				sand grey clayey gran-mg fg-mg bands becoming finer down hole lt grey brown & thin black coally bands <1cm						
74.17	74.41				clay brown carbonaceous well consolidated coal flecks throughout						
74.41	74.67				coal hard black brown becoming subvitreous & crumbly						
74.67	74.79				clay grey brown bedded silty micaceous grading to clayey siltstone						
74.79	75.41	core loss			sand fg-mg gt fspar grey clayey relatively unconsolidated core loss ?						
75.41	75.89				sand stiff grey brown fg pebbly fg-cg beds some black + brown coal bands coal seams 75.51-75.53, 75.72-75.74 75.79-75.81						
75.89	76.61				coal black brown to dull + blocky						

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SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE _____

PROJECT

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80L30C

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
76.61	76.82				clay red grey brown thinly laminated micaceous silty						
76											
76.82	77.49				coal black brown blocky grading from + to brown ~~coal~~ fg + lig clay + shale & black vitrain partings						
77.49	78.61				clay + clayey silt + fg - vfg sand grs of apan mica light fawn - med brown thinly bedded siltstone coaly partings current bedding in parts.						
					sand clayey + silty vfg light fawn - dark grey clay sand silt. laminae <½-4 cm clay laminae up to ± cm coaly beds & sand						
78.61	79.32				clay grey brown - dark brown silty laminae upto 5cm clay lam <± cm sparse coal partings well consolidated						
79.32	80.61				coal black crumbly, + thinly laminated sooty brown carb clay						
80.61	82.60				core loss? pebbly gravel white qtz SR-R						
82.60	82.98				clay brown thinly laminated coally specks + v thin black coal partings ± 2 cm						
82.98	83.26				sand light fawn grey fg-mg SR-SR fspar qtz mica thin clay lam + coal wisps no x bedding						
83.26	83.40				coal crumbly black brown thin stacked seams						
83.40	83.53				clay dk brown as above well consol						
83.53	83.87				coal black crumbly interbedded carb clay bands up to 3 cm pyrite						
83.87	84.6				silt light brown + brown laminated fg sand + clayey micaceous qtz fspar Thinly laminated ± 2 cm well consol						
84.60	84.98				clay brown slightly silty carbonaceous thin coal partings						
84.98	85.0				coal black crumbly						

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PLAN No M414

SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE _____

C.R.A. EXPLORATION PTY. LIMITED

PROJECT

DRILL CORE LOG

HOLE No. 80L30c

CO-ORDINATES | AZIMUTH | DRILLERS | COMMENCED | DEPTH

RL COLLAR | INCLINATION | DRILL TYPE | COMPLETED | CASING LEFT | DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
85.02	85.16				sand fawn fg-mg qtz feldspar carbonaceous thin coaly partings + flecks clayey + silty in part thinly laminated						
85.16	86.07				clay brown-black brown sandy qtz feldspar micaceous carbonaceous silty finely laminated thin coal partings						
					coal 85.29 - 85.33 gran - pebbly pyr in part						
basement 86.07	90.12				clay light green sandy qtz feldspar fg-mg some vfg SA-SR still some 1-1.5 fawn silty patches some vcg feldspar flaps some dark sandy laminae & pyrite large pyrite nodules ½ to 3cm decomposed granite flaps						
90.12	90.35				vcg - gran decomposed feldspar qtz gran clay + pyr						
90.35					clay as above						

LOGGED BY

DATE

337200ydE — ROTARY MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 853300ydN AZIMUTH Vertical DRILLERS Thompson COMMENCED _____ DEPTH 138m HOLE No. 80LRM31

RL COLLAR +78m (m.s.l.) INCLINATION _____ DRILL TYPE Mayhew 1000 COMPLETED _____ ~~CASING LEFT~~ Cemented DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				sil sandy, brown, calcrete cream massive		885895				
2	4				calcrete cream pink sandy		896				
4	6				calcrete as above clay pink soft, sst red brown fg well cemented ferruginous		897				
6	8				calcrete as above + black cherty angular frags clay pink stiff sandy		898				
8	10				calcrete as above + mainly clay pink sandy clay white soft, sandy fg-mg sst		899				
10	12				clay pink sandy + minor yellow well cemented fg sst, ore sst		900				
12	14				clay pink + sandy as above + clay yellow very sandy + yellow mainly yell sand		901				
14	16				pink + yellow sandy clay stiff		902				
16	18				pink + yellow clay as above + grey well indur claystone + some gty sand		903				
18	20				clayey yellow sand as above + vfg-fg yellow gty sand uncon		904				
20	22				fg pink yellow gty sand uncon SA-SR		906				
22	24				sand uncon fg-pebbly SA-SR gty + yellow clay mtx cemented sst yellow		908				
24	26				fg-granular gty sand SA-SR-fspar clayey yellow in part.		910				
26	28				cg-pebbly SA-SR sand as above + white-yellow clayey silt micaceous in part.		912				
28	30				mg-fine pebbly gty fspar as above + white green sandy clay + black carb frags tr.	trace coal	914				
30	32				light brown sand as above some white + yellow sandy clay tr lig.	trace coal	916				
32	34				soft yellow green silty clay micaceous + white silty + sandy clay at brown micaceous cart soft clay	some gty sand as above + black subbit coal chips <5%	917				
34	36				soft brown cart clay + brown woody carb frags minor + white + yellow clay sand mg as before	carb frags	918				
36	38				light grey brown micaceous stiff clay + carbonaceous particles glauconitic? green clay.		919				
38	40				light grey brown green clay clay as above + soft white green clay + light brown lig clay + black coal frags 5%	black coal 5%	920				
40	42				med grey brown micaceous clayey silt black carb flecked		921				
42	44				light green brown grey micaceous clay carb speckled carby clasts some large <10%	coal clasts <10%	922				
44	46				sand green grey gty fspar frgs 70% SA uncon + soft brown green grey clay cart flecked micaceous		923				
46	48				cg-vcg SA-SR as above light fawn-brown clay micaceous carbon speckled clay 30%		924				
48	50				vcg-pebbly A-SR gty fspar uncon sand w/ frgs + clay as above		885925				

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SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY MJNF DATE 15 SEP 80

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. 80LRM31

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				sand grain SA as above ppn some frmn clay stff micaceous carb speckled tr coal	trace coal	885926				
52	54				fg – gran qtz fspar chert A-SA sand minor clay		927				
54	56				fg – vcg SA-SR sand. clay light grey – brown soft micaceous + lignite		928				
56	58				fg – pebbly A-SA + fawn grey clay in part		929				
58	60				vcg – granular A-SA qtz fspar clayey in part		930				
60	62				fg – cg micaceous as above A-SR		931				
62	64				mg – cg qtz fspar mica A-SR + light fawn grey clay mod soft. carb speckled. tr black coal	trace black coal	932				
64	66				sand qtz fspar ppn + light fawn grey soft silt + brown clay coal frags 2-5% ppn	2-5%	933				
66	68				sand cg – vcg A-SA as above + clay light greeny grey brown + brown coal frags <5%	<5%	934				
68	70				brown micaceous soft clay + light grey green as above + coal 10% some large frags	10%	885935				
70	72				clay as above + coal <5%	<5%	936				
72	74				soft brown + cream grey brown micaceous clay carb speckled coal frags <5%	<5% black coal	937				
74	76				soft grey green brown + brown carb speckled micaceous clay tr coal frags	trace	938				
76	78				clay as above coaly fragments < 5%	<5%	939				
78	80				light fawn grey + brown clay tr black coal + sand qtz fspar 10% ppn minor SA-SR	trace	940				
80	82				clay as above + 40% sand vcg SA-SR coal frags <10% ppn	<10	941				
82	84				clay as above + sand cg – vcg SA-SR minor ppn coal frags <10%	<10	942				
84	86				sand vcg – gran A-SA qtz fspar ppn lt grey micaceous clay + soft brown clay coal <10%	<10	943				
86	88				to mg – vcg as above minor + white, light grey + brown ppn 10% coal 10%	10	944				
88	90				sand cg – vcg as above + clay as above coal frags 10-15% ppn tr	10-15	945				
90	92				light fawn micaceous clay + well consol brown clay coal 10% + sand cg – gran as above ppn	10	946				
92	94				clay grey brown micaceous + carb flecked + sand vcg A-SA ppn qtz fspar coal chips 15%	15	947				
94	96				soft brown clayey silt well consol brown carb shale coal frags 5-7% sand mg – cg qtz fspar ppn		948				
96	98				grn grey + brown clay + carb shale as above + sand mg – vcg A-SA qtz fspar coal 5%	5	949				
98	100				cg – gran A-SR sand minor brown + fawn clayey silt 2% coal		885950				

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SUMMARY AND _____ LOGGED BY _____ DATE 15SEP80

DRILL CORE LOG

CO-ORDINATES ______ AZIMUTH ______ DRILLERS ______ COMMENCED ______ DEPTH ______ HOLE No. 80LRM31

RL COLLAR ______ INCLINATION ______ DRILL TYPE ______ COMPLETED ______ CASING LEFT ______ DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
100	102				light grey + grey brown clay · mainly sand		885951				
					cg-vcg fspar qtz pyr A-SA. coal 20% chunks pyr	20					
102	104				grey brown clay as above sand cg-vcg as		952				
					above coal 25-30% some large chips	25-30					
104	106				soft light grey brown - med brown micaceous		953				
					clay + coal 40-50%	40-50					
106	108				as above + some sand coal 30-40%		954				
					cl[illegible] as above	30-40					
108	110				clay as above + black coal 50-60% minor		955				
					cg-vcg qtz fspar [illegible]	50-60					
110	112				soft light grey clayey silt + coal. 60-70	60-70	956				
112	114				as above coal 50-60	50-60	957				
114	116				sand mg-vcg qtz very feldspathic pyrite		958				
					minor clay as above + coal frags 20%	20					
116	118				minor clay as above sand qtz fspar weathered		959				
					granite frags coal chips 40%	40					
118	120				well consol light grey brown micaceous clay		960				
					coal 10% (washed = ?)	10					
120	122				light grey brown micaceous clay coal frags <10%	<10	961				
122	124				light grey brown clay as above + coal 10-15%	10-15	962				
124	126				brown - dark grey black silt + sandy carbonaceous	<5	963				
					clay < 5% coal						
126	128				50% stiff white - light brown micaceous sandy clay		964				
					+ 50% carb clay as above						
128	130				stiff yellowy green-grey sandy + silty clay kaolinite		965				
					+ weathered fspar + some brown carb clay						
130	132				light grey green fspathic sandy clay + brown		966				
					fspathic sandy clay						
132	134				green grey + brown clay as above		967				
134	136				grey green fspathic sandy clay + brown sandy clay		968				
					as above						
136	138				clay as above mainly brown clay		969				

SUMMARY AND ______ LOGGED BY ______ DATE 15 SEP 80

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PROJECT

ROTARY MUD DRILL CORE LOG

CO-ORDINATES 348900ydE / 8276600ydN — AZIMUTH Vertical — DRILLERS Thompson — COMMENCED ______ — DEPTH 36m — HOLE No. 80LRM 32

RL COLLAR +37m (m.s.l) — INCLINATION ______ — DRILL TYPE Mayhew 1000 — COMPLETED ______ — CASING LEFT — — DPO No(s) ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				sand black soil clayey calcrete in part		8860-74				
2	4				calcrete cream white massive sandy texture some clay cream sandy		75				
4	6				as above + quartzite white massive sandy texture clay yellow white sandy soft		76				
6	8				quartzite white massive sandy texture some calcrete		77				
8	10				sand red vfg–mg qtz hem stained SA-SR uncon		78				
10	12				sand red vfg–mg qtz hem stained SA-SR indurated in part		79				
12	14				clay brown grey soft [illegible] sand some hem stained sand [illegible] light grey clay		80				
14	16				[illegible] brown grey [illegible] sandy [illegible] in part [illegible] kaolinitic clay		81				
16	18				clay green		82				
18	20				clay as above		83				
20	22				clay as above		84				
22	24				clay as above		85				
24	26				clay dark green, soft, sandy, chloritic, micaceous		86				
26	28				clay as above and fragments green schist chloritic micaceous and [illegible] quartz angular		87				
28	30				clay and rock chips as above		88				
30	32				as above		89				
32	34				as above less weathered		90				
34	36				as above less weathered		886091				

LOGGED BY MJNF — DATE ______

SUMMARY AND

ROTARY MUD DRILL CORE LOG

CO-ORDINATES 8 15600yd N | AZIMUTH Vertical | DRILLERS J Thompson | COMMENCED 10 Oct 80 | DEPTH 16m | HOLE No. 8OLRM134

RL COLLAR + 18m (m.s.l) | INCLINATION | DRILL TYPE Mayhew 1000 | COMPLETED 10 Oct 80 | ~~CASING LEFT~~ Cemented | DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete cream white breccia angular flinty fragments abundant black + brown		886092				
2	4				calcrete as above		93				
4	6				calcrete as above		94				
6	8				clay green grey + yellow stiff sandy some calcrete as above		95				
8	10				clay as above		96				
10	12				clay green yellow white as above		97				
12	14				clay + calcrete sample erroneous		886098				
14	16				lost circulation - no water return hit basement.		886099				

SUMMARY AND SPECIAL COMMENTS

LOGGED BY MJNF DATE 10 OCT 8

SHEET 1 OF 1

CRAE 117
PLAN No M 414

ROTARY MUD DRILL CORE LOG

CO-ORDINATES 8262000yd N AZIMUTH Vertical DRILLERS Thompson COMMENCED ____ DEPTH 58m HOLE No. BOLR M35

RL COLLAR +30m (m.s.l.) INCLINATION ____ DRILL TYPE Mayhew 1000 COMPLETED ____ ~~CASING LEFT~~ Cemented DPO No(s) ____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete, cream-pink massive sandy + conventionary fg-vcg		886010				
2	4				calcrete as above + ss + calcareous + oolitic last fg-cg oolites		11				
4	6				as above		12				
6	8				as above		13				
8	10				calcareous as above + light green clay fg-mg qtz sandy clay		14				
10	12				as above		15				
12	14				stiff green yellow brown fg-mg sandy		16				
14	16				sand cg-gran white SA-SR qtz some f.spar. minor clay lithics as above		17				
16	18				sand vcg, some pebbles qtz f.spar. clayey lithic + lithic, green clay sandy as above		18				
18	20				sand fg-pebbly as above some clay as above		19				
20	22				sand vfg-vcg as above qtz f.spar SR-R		20				
22	24				sand vfg-vcg as above brown lithic		21				
24	26				sand vfg-pebbly brown as above; clay grey brown calc-speckled ?oolitic sandy		22				
26	28				sand fg-grey qtz f.spar mica; clay as above pyr		23				
28	30				sand fg-mg as above + sandy brown clay as above		24				
30	32				sand fg-cg as above; clay as above		25				
32	34				sand mg-cg as above SR-R; clay light brown grey as above + woody coal frags brown	trace coal	26				
34	36				sand cg-vcg SA-SR qtz f.spar pyr some clay as above + woody coal frags	trace woody coal	27				
36	38				sand vfg-cg as above; clay dark brown lignitic thin coal partings brown sandy micaceous ?oolitic	in black coal	28				
38	40				sand fg-cg as above; clay as lignitic + brown as above		29				
40	42				clay stiff light grey micaceous oolitic + sandy A-SR Kaol. lignitic minor; sand mg-gran SA-SR.		30				
42	44				clay soft + stiff light grey brown to white bentonitic as sandy as above pyr		31				
44	46				clay + sand as above		32				
46	48				clay + sand as above		33				
48	50				clay as above		886034				

shower drilling basement clay?

CRAE 117
PLAN No M414

SUMMARY AND SPECIAL COMMENTS

LOGGED BY MJNF DATE 21/5/7?

SHEET 1 OF 3

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. BGLRM135

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				clay light grey white kaolinite sand 1/3 A-SA weathered feldspar gran-pebbly		886035				
52	54				clay + sand as above		36				
54	56				clay + sand as above		37				
56	58				clay + sand as above		886038				

CRAE 117
PLAN No M 414

SUMMARY AND SPECIAL COMMENTS _____

LOGGED BY _____ DATE 21 SEP 73

SHEET 2 OF 2

ROTARY MUD DRILL ~~CORE~~ LOG

CO-ORDINATES 826200yd EN AZIMUTH Vertical DRILLERS
RL COLLAR +19m (mSL) INCLINATION DRILL TYPE
COMMENCED DEPTH 16m HOLE No. DLRM 3C
COMPLETED ~~CASING LEFT~~ Cemented DPO No(s)

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete white fg-mg gft sandy; clay cream sandy (vuggy)		886002				
2	4				calcrete cream plus massive sandy as above; clay yellow sandy		003				
4	6				calcrete + clay as above		04				
6	8				calcrete as above; clay yellow sandy, light green, soft, sandy		05				
8	10				gravel, white, mg-pebbly fspar gft 50% VA-A		06				
10	12				kaolinised fspar gft A-SR of fspar xtal aggregates; clay green sandy as above sand + gravel mg-pebbly as above, red coloured		07				
12	14				stain on grains; clay green/brown as above as above fspar gft - pink granite frags + kaolin		08				
Basement		14-16					886009				

CRAE 117
PLAN No M 414

SUMMARY AND SPECIAL COMMENTS

LOGGED BY MSNF DATE

130

DRILL CORE LOG

CO-ORDINATES [illegible] N. AZIMUTH ______ DRILLERS Thompson
RL COLLAR +60m (msl) INCLINATION Vertical DRILL TYPE Mayhew 1000
COMMENCED ______ COMPLETED ______
DEPTH 54m HOLE No. 80LRM37
CASING LEFT Cemented DPO No(s). ______

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete cream sandy texture massive		886039				
2	4				calcrete cream + pink as above massive		886040				
4	6				calcrete cream as above		41				
6	8				calcrete as above clay cream yellow soft sandy calcrete		42				
8	10				clay yellow white sandy soft; calcrete white hard		43				
10	12				clay yellow white lightgrey moderately stiff sandy		44				
12	14				clay lightgrey + yellow mottled stiff silty + sandy; sand white qtz fspar f-vfg uncon.		45				
14	16				clay lightgrey stiff very sandy quartzose; dark brown soft carbonaceous; lightgrey yellow stiff sandy; sand	white qtz fspar. SA cg-vcg	46				
16	18				clay white - fawn soft kaolinitic silty sand minor as above vcg - pebbly		47				
18	20				clay fawn kaolinitic as above; dark brown stiff lignitic carbonaceous.		48				
20	22				clay as above, white + brown micaceous coal fragments black brown soft 2%		49				
22	24				clay brown + grey carbonaceous detrital coal frags coal brown mod hard subbit? 5% soft lignitic clay		50				
24	26				clay brown fawn grey micaceous carbonaceous speckled. coal black subbit hard 7-10%; sand A-SA	qtz fspar mica cg-pebbly	51				
26	28				clay sand + coal as above. coal 2-5%		52				
28	30				clay light brown fawn grey + cream sandy soft carbonaceous coal frags 5%		53				
30	32				clay as above coal <5%; sand grey qtz fspar mg - vcg A-SR uncon		54				
32	34				sand qtz white qtz fspar mg - gran SA-SR uncon clay white + fawn soft kaol micaceous silty + coal		55				
34	36				sand + clay as above		56				
36	38				sand as above vcg-gran some white clay		57				
38	40				sand as above qtz very feldspathic some white clay as above pyr		58				
40	42				sand as above some lightgrey clay some pink feldspar fragments		59				
42	44				sand granular white + pink qtz + pink feldspar clay chloritic + kaolinitic A-SA (decomp gneiss		60				
44	46				as above - granular qtz fspar intergrowths		61				
46	48				as above		62				
48	50				sand + clay as above + qtz chl intergrowths		886063				

SUMMARY AND SPECIAL COMMENTS ______

LOGGED BY MJNF DATE 30/?/80 SHEET 1 OF 2

CRAE 117
PLAN No M414

DRILL CORE LOG

CO-ORDINATES _____ AZIMUTH _____ DRILLERS _____ COMMENCED _____ DEPTH _____ HOLE No. ZOLRM37

RL COLLAR _____ INCLINATION _____ DRILL TYPE _____ COMPLETED _____ CASING LEFT _____ DPO No(s) _____

DEPTH FROM(M)	DEPTH TO(M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
50	52				as above		886064				
52	54				5% pink feldspar dacite aggregates, greiss		886065				

SUMMARY AND SPECIAL COMMENTS _____ LOGGED BY _____ DATE 30 SEP 87

CRAE 117
PLAN No M 414

ROTARY MUD DRILL CORE LOG

PROJECT:

CO-ORDINATES: 76700 yd E, 824700 yd N
AZIMUTH:
DRILLERS: Thompson
COMMENCED:
DEPTH: 16 m
HOLE No.:

RL COLLAR: +25 m (m s.l.)
INCLINATION: Vertical
DRILL TYPE: Mayhew 1000
COMPLETED:
~~CASING LEFT~~ Cemented
DPO No(s):

FROM (M)	TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES (WEATH., ALTERATION, FRACTURING, VEINING, MINERALIZATION)	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete cream white massive sandy		[illegible]084				
2	4				calcarenite as above, [illegible] brown to white [illegible]		85				
4	6				[illegible]		86				
6	8				clay yellow white soft sandy, calcrete [illegible]		87				
8	10				clay yellow white sandy as above stiff		88				
10	12				clay as above + claystone white [illegible]		89				
12	14				clay yellow green stiff sandy [illegible]		90				
14	16				clay as above [illegible]		886091				

SUMMARY AND SPECIAL COMMENTS:

LOGGED BY: MJNF
DATE:

SHEET 1 OF 1

CRAE 117
PLAN No M 414

RCTARY MUD DRILL CORE LOG

CO-ORDINATES 8[illegible]yd E / 837100yd N AZIMUTH ____ DRILLERS Thompson PROJECT [illegible]

RL COLLAR + 20m (m.s.l) INCLINATION Vertical DRILL TYPE Mayhew 1000

COMMENCED ____ DEPTH 36m HOLE No. 20LRM 39

COMPLETED ____ CASING LEFT Cemented DPO No(s) ____

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				calcrete white + light brown [illegible] sandy [illegible]		556066				
2	4				as above		67				
4	6				calcrete as above		68				
6	8				calcrete as above; clay [illegible] grey stiff		69				
8	10				clay olive green as above		70				
10	12				clay olive green stiff sandy		71				
12	14				clay as above some calcrete		72				
14	16				clay green yellow very stiff + [illegible];		73				
16	18				clay [illegible] sand; sand [illegible] pebbly R-WR [illegible]		74				
18	20				clay [illegible] as above; sand [illegible] vfg [illegible] gz WR-R [illegible]		75				
20	22				sand yellow vfg + [illegible] pebbly; clay yellow green [illegible] sandy		76				
22	24				sand [illegible] vfg-fg + [illegible] pebbly R-WR [illegible] as above		77				
24	26				sand as above [illegible] clay as above		78				
26	28				clay [illegible]	high γ	79				
28	30				clay green [illegible] silicate [illegible] as above		80				
30	32				[illegible]		81				
32	34				[illegible]		82				
34	36				as above		83				

SUMMARY AND SPECIAL COMMENTS ____

LOGGED BY MJNF DATE 30.96 [illegible]

CRAE 117
PLAN No M414

CO-ORDINATES 851000 yd E / 807300 yd N   ROTARY MUD **DRILL CORE LOG**

AZIMUTH —   DRILLERS Thompson   COMMENCED 1 Oct 80   DEPTH 18 m   HOLE No. 80LRM 40

RL COLLAR +20 m (m.s.l.)   INCLINATION Vertical   DRILL TYPE Mayhew 1000   COMPLETED   ~~CASING LEFT~~ Cemented   DPO No(s)

DEPTH FROM (M)	DEPTH TO (M)	CORE REC. (M)	CORE SIZE	GRAPHIC LOG	CORE DESCRIPTION	SPECIAL FEATURES WEATH., ALTERATION, FRACTURING VEINING, MINERALIZATION	SAMPLE No.	FROM (M)	TO (M)	REC (M)	ASSAY VALUES
0	2				loam brown sandy, calcrete cream yellow sandy		886100				
2	4				sandstone yellow calcareous well consolidated poorly sorted fg-cg A-SA		101				
4	6				sst as above yellow, white orange; clay white soft sandy		102				
6	8				clay white some yellow soft sericitic qtz and gran A-SA		103				
8	10				clay white soft kaolinitic sericitic micaceous sandy		104				
10	12				clay as above; gravel grey smokey qtz feldspar VA-WR some qtz + fspar frags		105				
12	14				granodiorite decomposed vcg VA-A qtz plag bio musc some clay as above		106				
14	16				as above		107				
16	18				as above		108				

SUMMARY AND SPECIAL COMMENTS

LOGGED BY MJNF   DATE 1 Oct 80

SHEET 1 OF 1

CRAE 117
PLAN No M 414

APPENDIX III

GEOEX PTY LTD COMPUTERISED BOREHOLE LOGGING

C.R.A.E. PTY. LTD.
LOCK S.A.

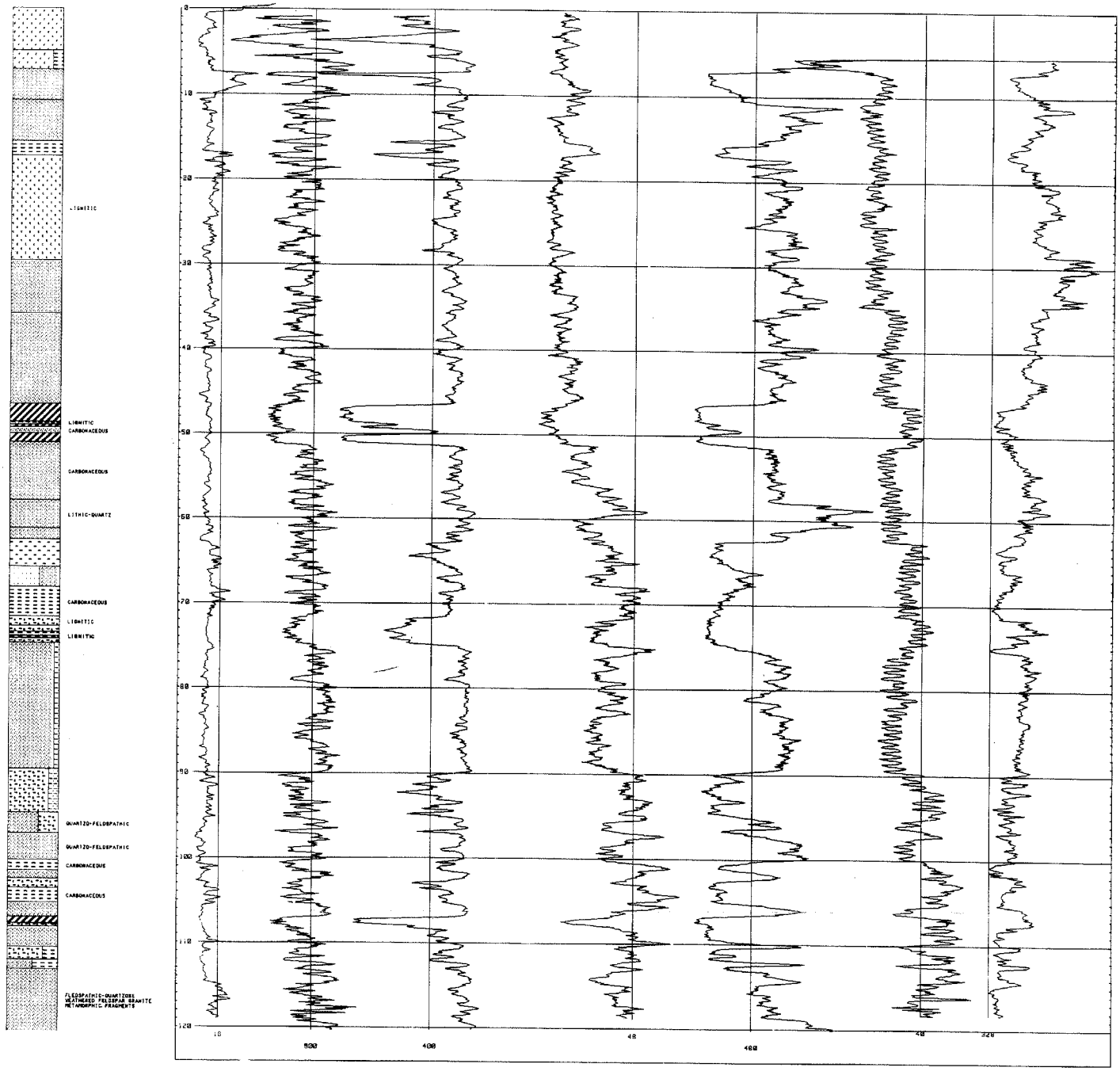
LOGGING SPEEDS:
DENSITY PROBE 5 M/MIN
NEUTRON PROBE 5 M/MIN
DATUM ABOVE GROUND LEVEL 50 M.
CASING DEPTH: N/A m.
TIMEBASE: 200 mS
OPERATOR: M.O'NEILL
DATA LOG VER: 38012.11
DATA PLOT VER: 38105.28

PLOTTING SCALE: 1:200
PLOTTING 1 Point IN 12
FILTERING:
SHORT DENSITY. .5
LONG DENSITY. .5
CALIPER. .2
NATURAL GAMMA. .15
NEUTRON. .5
SELF POTENTIAL. .3
RESISTANCE. .5

BOREHOLE NO. 81LRM56
DEPTH LOGGED 120.29 M.
DATE LOGGED 27/06/81
DATE PROCESSED 27/06/81

SHORT SPACED DENSITY CPS 1800 1200 800 400 0
CAL GM/CC 1.19 1.74
CALIPER cm 8 16 24 32
10 20 30
LONG SPACED DENSITY CPS 800 600 400 200 0
CAL GM/CC 1.19 1.74
NATURAL GAMMA CPS 0 16 32 48 64 80 96
CAL 0 API 100 API
NEUTRON CPS 160 320 480 640 800 960
CAL 28% 19% 1.9%
SELF POTENTIAL mV 0 20 40 60 80
RESISTANCE Ohms 320 324 328 332 336

DEPTH (M.)



LEGEND
LITHOLOGY REFERENCE

LIGNITE
SAND
CLAY
CARB. SAND/STONE
CARB. CLAY
CALCRETE
SILT

CRA EXPLORATION PTY. LIMITED

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 56

REF. Kimba SI 53-7	
SCALE: 1:500	
AUTHOR: M.J.N.F.	REPORT NO: 10307
DATE: DECEMBER 1981	PLAN NO: SAa 1306

GEOEX

PTY LTD · COMPUTERISED BOREHOLE LOGGING

C.R.A.E. PTY. LTD.
LOCK S.A.

LOGGING SPEEDS
DENSITY PROBE 5 M/MIN
NEUTRON PROBE 5 M/MIN
DATUM ABOVE GROUND LEVEL 50 M.
CASING DEPTH: N/A m.
TIMEBASE: 200 mS
OPERATOR: M.O'NEILL
DATA LOG VER: 38012.11
DATA PLOT VER: 38105.28

PLOTTING SCALE: 1 200
PLOTTING 1 Point IN 1
FILTERING :
SHORT DENSITY .5
LONG DENSITY .5
CALIPER .2
NATURAL GAMMA .5
NEUTRON .5
SELF POTENTIAL .3
RESISTANCE .5

BORE HOLE NO. 8 LRM57

DEPTH LOGGED 72.72 M.
DATE LOGGED 29/06/81
DATE PROCESSED 29/06/81

SHORT SPACED DENSITY CPS
1000 900 800 700 600
CAL GM/CC 1.19 1.74

CALIPER cm.
8 16 24 32
10 20 30

LONG SPACED DENSITY CPS
800 600 400 200 0
CAL GM/CC 1.19 1.74

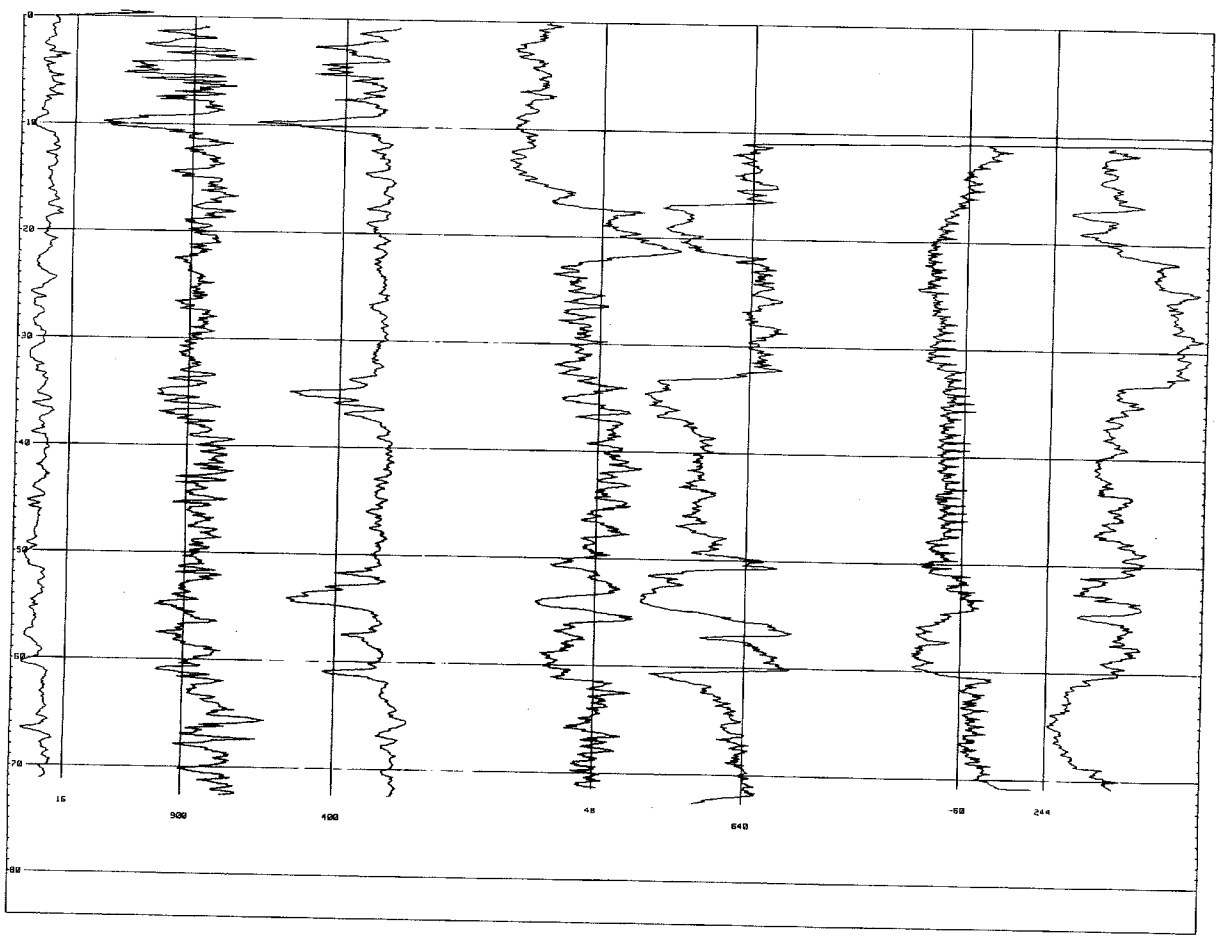
NATURAL GAMMA CPS
0 16 32 48 64 80 96
CAL 0 API 100 API

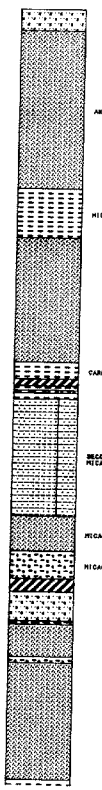
NEUTRON CPS
320 480 640 800 960 1120
CAL 25% 19% 1.5%

SELF POTENTIAL mV
-100 -80 -60 -40 -20

RESISTANCE Ohms
236 240 244 248 252

DEPTH (M.)





ANGULAR FELDSPAR.PEBBLES
MICACEOUS
CARBONACEOUS.MICACEOUS
SECONDARY CHLORITE.WHITE MICA MICACEOUS
MICACEOUS
MICACEOUS.FLECKS

LEGEND
LITHOLOGY REFERENCE

LIGNITE
CARB. SILT/STONE
CLAY
SAND
CARB. CLAY
CARB. SAND/STONE
SILT
CALCRETE

CRA EXPLORATION PTY LIMITED

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 57

REF. Kimba SI 53-7	
SCALE : 1:500	
AUTHOR : M.J.N.F.	REPORT : 10307
DATE : DECEMBER 1981	PLAN No SAa 1307

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Page 147 missing

APPENDIX IV

STRATIGRAPHIC ANALYSIS

The Polda Basin contains a variable sequence of sediments ranging in age from Pre-Cambrian to Recent. The Stratigraphic sequence is not well established. Detailed study of the stratigraphy was not undertaken during coal exploration, however a great deal of sub-surface information was accumulated during drilling.

Brief descriptions of the main stratigraphic units within the Polda Basin follow.

PRE-PERMIAN BASEMENT

Crystalline basement intersected consists of schists, gneisses, granites and minor quartzite. ?Archean chlorite and biotite schist, gneiss and minor granite occur at relatively shallow depths (16-58m) in the Sheringa and western McLachlan area (Plan SAa 1286).

A thin veneer of coarse grained, Pre-Cambrian, arkosic grits and conglomerates (Harris and Foster, 1974) overlies crystalline basement in the Sheringa area. A maximum of six metres is developed in hole 80LRM36.

Micaceous quartzite was intersected in holes along the southern margin of the basin. Depths to basement in this area vary from 169 metres to 202 metres. From regional gravity data (McInerney, 1977) shallowing is expected in a south westerly direction.

PERMO-CARBONIFEROUS "BASEMENT"

Permo-Carboniferous sediments were intersected in the area west of E.T.S.A. E.L. 800 (80L30C). The unit is poorly bedded in parts and consists of light green, weathered pebbly claystones, sandy conglomeratic claystones and feldspathic sandy lenses. The rock fragments consist of slightly altered to highly weathered granite, schist and gneiss fragments.

Large pyrite nodules up to 3cm are common in the more sandy laminae.

The thickness of this unit is unknown, however a stratigraphic hole, Lock No. 1 intersected a minimum thickness of 170 metres. This unit was considered to be "economic basement".

JURASSIC

Poorly sorted, poorly consolidated, grey to dark grey and black carbonaceous sands,silts, clays and minor coals of the "Polda Formation" were intersected in a number of boreholes. Palynological examination of selected samples by Harris (Appendix 4) indicate deposition took place in a non-marine fluviatile environment.

The "Polda Formation" unconformably overlies basement. The formation is only thinly developed in the Sheringa E.L. area and thickens considerably to the north and east in the main part of the basin, attaining a thickness of 50 metres in hole 80LRM30 and greater than 130 metres in 80LRM13.

Clay and coal sequences alternate with sand and silt sequences in a manner typical of fluvial deposition. Coal seams occur in, above, below and often grade vertically into clay.

The clays are grey, dark brown to black (depending on carbonaceous content), commonly micaceous, stiff and finely laminated and may contain thin coaly partings and fragments. Minor sandy material occurs as lenses or disseminated throughout the clay.

The coal is dull brown to black, with minor thin, hard, brittle, bright bands. Chips of this material frequently appeared in cuttings. Soft brown carbonaceous clays often form thin partings within the coal. Coal quality is very variable (refer Section 6.3.5).

The sands are poorly sorted and consist of fine to very coarse grained, subangular to subrounded material. Colour is variable from white, light to dark grey and light to dark brown. Consolidation increases with the percentage of clay and silt matrix. Angular to rounded, gravel size, quartzose material occurs as bands and sporadically distributed within the sands. Poorly developed graded bedding and cross bedding is sometimes present.

EOCENE

The Eocene Poelpena Formation unconformably overlies the "Polda Formation" and consists predominantly of sands, sandy clays, with variable proportions of clay, lignite and silt.

Although a number of distinct units could be correlated between adjacent holes, definite lithological boundaries were not apparent over the entire area. Rapid lateral facies changes result from deposition in a fluviatile environment.

Sands and lignite are the chief lithologies at the base of the formation in the deeper part of the basin. Elsewhere sand, silt, clay, sandy clay and minor lignite alternate.

The sands consist of unconsolidated, poorly sorted material. Grain size generally varies from fine to granular but is pebbly in parts, particularly towards the base of the formation. Roundness varies from subangular to subrounded. Colour is variable from grey, through light grey to brown and dark brown.

A variable amount of clay and silt is commonly dispensed throughout the sands. Clay and silt bands are also intercolated within the sands. Minor light green to grey, fine to coarse sands occur higher in the sequence.

Fine cross bedding and lamination were recognised in core. Quartz is the predominant mineral, however feldspar, pyrite and white mica are common in accessory amounts. Pyrite often occurs as an intergranular cement.

Clays are best developed around the basin margins. These clays are brown to dark brown, usually stiff and contain carbonaceous root traces and coaly fragments. Accessory pyrite and mica are common to abundant in most clay units. Typically the clays are silty to sandy and display a variety of sedimentary structures. Dark grey laminated, slightly silty mudstone bands are occassionally developed within the clays.

Silt is a minor lithology within the formation and is generally grey to dark brown, sandy, micaceous, unconsolidated with abundant disseminated carbonaceous material.

A further clay, sand and sandstone sequence occurs near the top of the Poelpena Formation. These sediments may represent the Miocene sediments of Harris and Foster (1974). The clays are firm and mottled red-brown, red, green-grey, orange, cream and white coloured. Sandy bands are common. Angular quartzite, pegmatite and feldspar fragments are often present.

The off-white, red, red-grey, orange, brown and pink coloured sands consist of poorly sorted fine to coarse grained, angular to subrounded, feldspathic quartzose material.

QUARTERNARY SEDIMENTS

Quaternary sediments comprise the lower member of the Bridgewater Formation consist of mottled yellow to red brown, calcareous, silty or sandy clays and yellow to white fine to medium grained unconsolidated sands. These sands are well sorted with subangular to subrounded grains. Massive hard calcrete nodules occur scattered throughout the section.

The Bridgewater Formation is mainly present in the eastern end of the basin where it is up to 9 metres thick.

The Tipon calcrete is best developed to the west and north of Lock. It consists of hard, pink to brown calcrete interbedded with, or underlain by cream calcareous clays. Concretionary structures characterise the calcrete.

APPENDIX V

PALYNOLOGICAL REPORT

PALYNOLOGY OF 29 SAMPLES FROM THE POLDA BASIN, EYRE PENINSULA, SOUTH AUSTRALIA

by

W K Harris

Consulting Geologist - Palynology

W K HARRIS AND ASSOCIATES

PALYNOLOGICAL REPORT

CLIENT: CRA Exploration Pty Ltd

STUDY: Palynology of selected samples from boreholes in the Polda Basin.

AIMS: Age determination of sediments and specifically differentiation between Jurassic, Eocene and Late Tertiary Units.

INTRODUCTION

Twenty-nine samples were selected from a batch of about forty samples for palynological examination. The rejected samples consisted mainly of coarse sands and red or white clays. Both these lithotypes were considered unsuitable for study because of the lack of palynomorphs in the sands due to winnowing effects and because of oxidation in the clays.

The samples received routine palynological preparation and the age determinations are presented in Table 1.

OBSERVATIONS AND INTERPRETATIONS

Most samples yielded adequate assemblages of spores and pollen to enable a confident assignment of age. Four samples however were barren of spores and pollen but did contain appreciable amounts of organic matter. The age determination of these samples is based on an interpretation of the kerogen components and consequently same caution is warranted in interpreting the age of these samples.

Apart from the samples from 80L5C and 80L30C which are cores, all determinations and subjects to problems of downhole contamination. However most samples did not show obvious mixing of assemblages and the ages quoted are regarded as being more or less reliable.

Early Tertiary assemblages are characterised by an abundance of *Nothofagidites* spp. together with *Haloragacidites harrisii*, a prominent proteaceous component supported by a reasonably diverse assemblage of angiosperm pollen. These assemblages are readily recognised as Eocene in age and have been reported widely throughout the basin and elsewhere on Eyre Peninsula.

A more precise subdivision of the Eocene assemblages is becoming clearer and the assemblages reported here are akin to those of the Middle to Late Eocene rather than the distinctly different Middle Eocene units recognised in Polda No 1 Well. The younger unit has more in common with the marginal marine carbonaceous units occurring in the western parts of the Polda Basin. A characteristic of this time in the Eocene is the development of widespread lignites throughout southern Australia which is much wider and thicker than that of the Middle Eocene.

The assemblages are entirely non-marine and the lithotypes and palynology would suggest deposition in paludal and lacustrine environments associated with meandering stream belts. The presence of marginal marine sediments of similar age to the west would indicate a flood plain environment bordering coasted deltaic sequences.

The Jurassic assemblages are more or less identical with those reported elsewhere in the basin and are dominated by *Tsugaepollenites* spp. together with *Murospora florida Contignisporites cooksonii* and a wide variety of pteridophyte spores. Occasional specimens of the non-marine dinoflagellate *Fusiformacysta* sp. are encountered. The age of this assemblage is Middle to Late Jurassic and deposition took place in a non-marine fluvial environment. The presence of dinoflagellates may indicate some lacustrine influence. A ? Tertiary age is indicated for 80LRM3 (132-134m) on rather limited evidence. The assemblage resembles these from the Pliocene but is very limited in diversity and it would be unwise to be dogmatic about

TABLE I

Summary of Palynological Data

BOREHOLE NO.	DEPTH IN METRES	SAMPLE NO.	AGE
80L 5C	60.28	WM 468	Eocene
80L 5C	65.32	WM 469	Eocene
80L 5C	69.3	WM 470	Eocene
80L 30C	46.93	WM 471	Eocene
80L 30C	50.05	WM 473	Eocene
80L 30C	52.0	WM 474	Late Jurassic
80L 30C	58.50	WM 475	Late Jurassic
80L 30C	61.35	WM 476	Late Jurassic
80L 30C	62.4	WM 478	Late Jurassic
80L 30C	62.8	WM 478	Late Jurassic
RM 8	64-66	WM 483	? Eocene
RM 19	38-40	WM 484	Eocene
RM 21	34-36	WM 485	Eocene
80L RM15	72-74	WM 486	Late Jurassic
80L RM15	114-116	WM 487	Late Jurassic
80L RM7	64-66	WM 488	? Late Jurassic
80L RM39	26-28	WM 489	Late Jurassic
80L RM9	32-34	WM 491	Barren
80L RM3	132-134	WM 492	? Tertiary
80L RM25	102-105	WM 493	Late Jurassic
RM 30	108-110	WM 494	? Late Jurassic
RM 23	48-50	WM 496	Late Jurassic
RM 23	76-78	WM 497	Late Jurassic
RM 23	120-122	WM 495	Late Jurassic
RM 37	20-22	WM 498	Late Jurassic
RM 5	114-116	WM 499	Eocene
RM 7	36-38	WM 500	Eocene
RM 4	122-124	WM 501	Late Jurassic

its age. There is also the possibility of downhole contamination.

No other late Tertiary nor Permian sediments have been identified in the samples submitted.

W K Harris

Consulting Geologist - Palynology

29/5/81

APPENDIX VI

ANALYTICAL REULTS FOR LIGNITE SEAMS IN 81L30C

The Australian
Mineral Development
Laboratories

lemington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/1/6/0 - AC 2318/81

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15th December, 1980.

NATA CERTIFICATE

PART REPORT 1

Mr. M. Flitcroft,
C.R.A. Exploration Pty. Limited,
P.O. Box 1705,
PORT AUGUSTA. S.A. 5700

REPORT ~~AC 2318/81~~

YOUR REFERENCE: DPO No. B 0456

IDENTIFICATION: As listed

DATE RECEIVED: 30th October, 1980

D.K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson
Managing Director

cc P.O. Box 254,
Norwood. S.A. 5067
(Invoice)

glj

Pilot Plant: Osman Place
Thebarton S.A.
Telephone 43 8053
Branch Laboratory: Perth

AMDEL ANALYTICAL SERVICES 12-12-80 JOB AN 2318/81 PAGE 1

PROXIMATE COAL ANALYSIS CODE S1 RESULTS IN PERCENTAGES

	889301	889302	889303
SAMPLE AS RECEIVED			
MOISTURE	51.44	26.42	26.93
VOLATILE MATTER	22.26	26.63	31.44
FIXED CARBON	19.38	13.69	16.15
ASH	6.92	33.26	25.47
	100.00	100.00	100.00
MOISTURE FREE			
VOLATILE MATTER	45.84	36.19	43.03
FIXED CARBON	39.91	18.61	22.11
ASH	14.25	45.20	34.86
	100.00	100.00	100.00

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/1/6/0 - AC 2318/81

23 March 1981

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NATA CERTIFICATE

REPORT COMPLETE

Mr M Flitcroft
CRA Exploration Pty Ltd
PO Box 1705
PORT AUGUSTA SA 5700

REPORT AC 2318/81

YOUR REFERENCE:	DPO No B 0456
IDENTIFICATION:	As listed
DATE RECEIVED:	30 October 1980

D.K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson
Managing Director

cc PO Box 254
NORWOOD SA 5067
(Invoice)

dam

Pilot Plant: Osman Place
Thebarton S.A.
Telephone 43 8053
Branch Laboratory: Perth

ANALYSIS % Dry Coal Basis

SAMPLE MARK	CARBON C	HYDROGEN H	NITROGEN N	SULPHUR S	SODIUM Na	SPECIFIC ENERGY /g
889301	56.60	3.75	0.55	5.16	0.47	21900
889302	35.57	3.69	0.49	2.91	0.38	15200
03	43.59	4.48	0.76	2.82	0.35	18960
METHOD:	----------S2----------					S3

APPENDIX VII

GEOCHEMICAL ANALYTICAL RESULTS

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

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OUR REF.: COM 810107
YOUR REF.: D.P.O. No. B 0119

305 SOUTH ROAD
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA 89323

Mr. M. Flitcroft,
C.R.A. Exploration Pty Ltd.,
P.O. Box 1705,
PORT AUGUSTA. S.A. 5700.

27.2.81

Dear Murray,

RE: JOB COM 810107

Enclosed are the assays for the samples delivered to our laboratory on the 12th February, 1981.

Yours sincerely,

Harry Fishman
Managing Director

c.c: NORWOOD

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
884009	<4	10	10	18
20	<4	10	10	12
34	<4	12	16	16
49	<4	4	6	2
53	<4	2	8	2
61	<4	2	4	2
70	<4	2	<4	4
77	<4	4	<4	4
884083	<4	10	10	20
87	<4	4	4	6
93	<4	12	12	16
101	<4	14	10	10
109	<4	18	14	12
112	6	16	14	20
118	<4	14	20	12
127	<4	20	22	14
129	6	8	24	14
143	<4	4	6	6
144	<4	4	6	4
151	<4	4	4	4
161	<4	4	<4	8
169	<4	14	16	22
177	<4	12	16	18
185	10	18	24	14
194	<4	14	20	18
201	<4	10	30	14
208	8	10	20	10
211	<4	8	8	12
884223	<4	6	14	8

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
884229	<4	12	16	18
233	<4	8	6	12
242	<4	12	14	20
243	6	10	16	16
244	20	10	170	20
245	22	12	200	18
255	<4	4	16	6
264	<4	2	6	6
274	4	6	6	6
285	<4	20	20	14
287	<4	32	28	26
293	<4	26	28	70
884298	<4	20	22	55
309	<4	12	12	22
315	<4	12	10	16
324	<4	8	16	10
345	<4	4	6	6
351	<4	2	<4	4
356	<4	4	<4	4
359	<4	6	8	12
364	Listed not Received			
376	<4	24	18	30
386	<4	18	28	32
395	<4	8	12	12
398	6	8	14	10
404	<4	6	8	6
410	<4	6	6	6
415	6	18	30	34
884431	<4	4	4	8

.../3

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

167

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
884436	<4	4	<4	4
440	4	18	32	26
444	<4	16	14	28
448	<4	10	10	12
450	6	8	18	18
463	<4	6	12	4
477	<4	34	20	20
489	6	60	40	14
496	<4	46	34	14
506	<4	20	12	16
515	<4	10	10	8
459	<4	14	14	16
527	10	14	28	20
533	6	8	4	8
547	<4	8	<4	6
557	<4	12	10	32
565	8	16	12	50
570	<4	18	16	34
579	<4	14	40	22
590	<4	14	14	12
594	4	10	16	10
604	<4	12	8	12
619	<4	8	<4	6
628	<4	10	4	8
643	<4	10	14	6
672	<4	8	20	4
682	<4	12	16	10
686	6	20	18	10
884700	<4	10	8	14

.../4

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

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ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
884711	<4	12	14	12
725	<4	16	10	55
727	<4	10	10	14
738	<4	6	4	6
748	<4	8	8	6
753	<4	4	6	6
767	<4	4	4	4
778	<4	8	6	8
791	<4	10	4	10
803	<4	16	4	12
812	<4	12	8	6
825	<4	14	12	8
833	<4	12	4	4
842	<4	10	8	6
852	<4	8	4	4
859	<4	8	<4	<2
875	<4	14	8	12
878	6	6	4	6
883	<4	8	8	<2
893	<4	10	8	6
900	<4	16	20	4
907	<4	12	8	12
916	<4	24	16	75
929	<4	20	16	16
943	<4	16	12	18
952	<4	10	<4	8
963	<4	14	12	22
972	<4	10	8	12
884975	<4	10	4	6

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

169

SAMPLE	U	Cu	Pb	Zn
884979	<4	6	<4	<2
987	6	20	24	<2
996	8	50	55	55
885012	<4	26	20	70
22	<4	10	8	14
33	<4	34	36	65
36	<4	12	8	6
48	<4	6	4	2
51	10	32	44	360
62	<4	26	24	420
79	6	30	40	80
95	<4	6	8	12
098	<4	10	4	10
101	<4	8	<4	6
105	<4	4	<4	2
118	4	18	44	95
128	10	8	16	65
133	<4	8	8	12
134	<4	30	12	20
137	<4	6	8	6
151	<4	4	8	2
159	6	30	24	18
176	<4	4	4	4
183	<4	24	24	48
191	<4	8	12	18
197	4	8	8	6
202	<4	6	24	6
217	<4	4	16	6
885239	<4	24	36	90

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

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SAMPLE	U	Cu	Pb	Zn
885255	6	16	28	42
258	<4	10	12	8
260	<4	8	8	4
263	<4	6	<4	4
268	<4	8	8	6
271	<4	12	8	12
279	<4	10	16	6
290	<4	4	8	<2
305	<4	8	4	6
315	<4	6	8	10
317	<4	6	<4	6
322	<4	10	16	6
328	<4	2	<4	<2
337	<4	6	16	22
346	6	16	28	110
361	4	18	16	38
376	<4	20	32	38
378	<4	6	4	8
382	<4	10	<4	6
389	<4	4	4	4
398	4	10	48	16
407	<4	10	12	42
416	<4	6	<4	6
425	<4	4	<4	4
433	<4	4	<4	6
441	4	44	80	34
450	<4	6	32	6
461	10	26	20	10
885467	4	14	12	6

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

171

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
885472	<4	24	20	20
493	<4	60	20	48
496	<4	26	32	48
509	<4	26	8	18
516	<4	10	20	6
529	<4	4	4	2
538	<4	42	32	80
552	6	26	32	60
565	4	14	24	18
570	4	16	8	12
582	<4	4	<4	4
598	4	14	12	4
613	<4	20	12	28
625	<4	14	16	40
628	<4	14	4	14
643	<4	4	<4	<2
656	<4	6	<4	10
669	<4	4	<4	30
678	<4	4	4	20
689	<4	4	12	2
696	<4	8	8	<2
705	<4	4	8	<2
715	<4	8	8	<2
722	<4	4	8	6
737	<4	4	8	20
760	<4	2	4	10
763	<4	6	12	20
767	<4	6	8	4
784	<4	<2	<4	<2
885790	<4	<2	<4	<2

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

172

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
885797	<4	6	8	10
800	<4	6	4	8
809	<4	<2	<4	<2
819	<4	<2	8	12
822	<4	2	<4	90
824	<4	2	8	22
833	8	4	32	10
837	<4	4	24	50
846	<4	6	4	30
857	<4	4	<4	4
868	<4	4	<4	16
882	<4	8	8	12
885894	<4	8	4	32
832605	<4	22	20	40
885902	<4	4	<4	4
914	<4	14	12	75
921	<4	6	4	10
932	4	20	24	44
942	<4	16	16	44
951	<4	8	12	26
886095	<4	4	24	8
097	8	6	12	12
886013	<4	6	8	6
016	<4	6	4	12
021	<4	6	4	6
027	<4	4	4	22
886036	<4	30	24	70
886004	<4	6	12	8
886008	<4	6	8	6

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	U	Cu	Pb	Zn
886044	<4	8	4	4
48	6	22	32	6
53	<4	42	24	16
58	<4	20	8	20
63	6	16	8	18
65	<4	12	4	10
085	<4	2	8	6
88	<4	4	12	4
91	<4	8	16	16
73	<4	10	12	14
76	<4	4	4	4
78	<4	2	<4	2
80	12	12	12	105
83	6	4	4	70
886101	<4	6	8	8
104	<4	4	4	<2
886107	<4	6	4	24

.../10

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	Co	Ag	Mo	Au	Sn	W	Ta
884020	<4	1	-	<0.05	<4	<10	10
49	<4	<1	-	<0.05	<4	<10	<10
53	<4	<1	-	<0.05	<4	<10	<10
61	<4	<1	-	<0.05	8	<10	<10
70	<4	<1	-	<0.05	<4	10	<10
77	<4	1	-	<0.05	<4	<10	<10
87	<4	<1	-	<0.05	-	-	-
177	<4	<1	-	<0.05	4	10	<10
185	8	1	-	<0.05	6	<10	15
223	8	<1	-	<0.05	-	-	-
274	4	<1	-	<0.05	<4	<10	-
285	8	<1	-	<0.05	<4	<10	-
298	20	<1	-	<0.05	16	<10	<10
345	<4	<1	-	<0.05	-	-	-
351	<4	<1	-	<0.05	8	<10	<10
356	<4	<1	-	<0.05	<4	<10	<10
359	16	<1	-	<0.05	<4	<10	<10
364	Listed not Received						
410	<4	<1	-	<0.05	-	-	-
431	<4	<1	-	<0.05	<4	<10	<10
436	<4	<1	-	<0.05	<4	<10	25
450	8	<1	-	<0.05	4	<10	<10
489	8	<1	-	<0.05	-	-	-
496	16	<1	-	<0.05	<4	10	<10
506	8	<1	-	<0.05	<4	<10	10
515	4	<1	-	<0.05	4	<10	<10
533	<4	1	-	<0.05	<4	<10	<10
547	<4	<1	-	<0.05	<4	<10	<10
884557	4	1	-	<0.05	<4	<10	<10

.../11

COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	Co	Ag	Mo	Au	Sn	W	Ta
884565	12	<1	4	<0.05	<4	<10	<10
619	<4	<1	-	<0.05	4	<10	<10
628	<4	1	-	<0.05	10	15	15
643	<4	1	-	<0.05	<4	<10	<10
711	<4	<1	-	<0.05	6	10	<10
725	<4	1	-	<0.05	<4	10	<10
753	<4	1	-	<0.05	-	-	-
778	<4	1	-	<0.05	12	<10	25
791	<4	1	-	<0.05	<4	<10	10
825	<4	1	-	<0.05	28	<10	10
842	<4	1	-	<0.05	-	-	-
859	<4	1	-	<0.05	-	-	-
875	<4	1	-	<0.05	40	15	<10
900	<4	<1	-	<0.05	-	-	-
907	4	1	-	<0.05	<4	<10	<10
929	16	1	-	<0.05	-	-	-
952	<4	1	-	<0.05	<4	<10	<10
963	4	1	-	<0.05	-	-	-
972	4	1	4	<0.05	4	15	<10
979	<4	1	-	<0.05	6	15	<10
884996	20	1	-	<0.05	-	-	-
885012	16	<1	-	<0.05	-	-	-
22	4	1	-	<0.05	-	-	-
51	16	1	-	<0.05	-	-	-
79	12	1	-	<0.05	-	-	-
95	<4	1	4	<0.05	10	<10	<10
118	4	1	-	<0.05	-	-	-
128	4	1	-	<0.05	-	-	-
885133	4	1	4	<0.05	<4	<10	<10

.../12

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	Co	Ag	Mo	Au	Sn	W	Ta
885159	12	1	-	<0 05	-	-	-
183	12	1	-	<0.05	<4	<10	10
191	4	1	-	<0.05	-	-	-
217	12	1	-	<0.05	-	-	-
239	12	1	-	<0.05	-	-	-
255	8	<1	4	<0.05	<4	10	<10
271	4	<1	-	<0.05	-	-	-
279	<4	<1	-	<0.05	-	-	-
290	<4	<1	-	<0.05	-	-	-
305	<4	<1	-	<0.05	6	<10	<10
315	4	<1	-	<0.05	<4	<10	<10
328	<4	<1	-	<0.05	-	-	-
337	<4	<1	-	<0.05	-	-	-
346	12	<1	-	<0.05	-	-	-
361	8	<1	-	<0.05	-	-	-
376	4	<1	-	<0.05	6	15	<10
398	24	<1	-	<0.05	-	-	-
407	32	<1	-	<0.05	-	-	-
441	24	<1	-	<0.05	-	-	-
467	<4	<1	-	<0.05	<4	<10	<10
472	12	<1	-	<0.05	-	-	-
493	12	<1	-	<0.05	-	-	-
529	<4	<1	-	<0.05	<4	10	<10
582	<4	<1	-	<0.05	6	<10	<10
613	24	<1	-	<0.05	-	-	-
625	24	<1	-	<0.05	-	-	-
656	8	<1	-	<0.05	<4	<10	<10
669	4	<1	-	<0.05	-	-	-
885678	4	<1	-	<0.05	6	10	15

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

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SAMPLE	Co	Ag	Mo	Au	Sn	W	Ta
885689	<4	<1	-	<0.05	-	-	-
696	<4	<1	-	<0.05	-	-	-
705	<4	<1	-	<0.05	<4	15	<10
722	<4	<1	-	<0.05	<4	15	10
737	4	<1	-	<0.05	-	-	-
760	<4	<1	-	<0.05	-	-	-
784	<4	<1	-	<0.05	4	<10	10
790	<4	<1	-	<0.05	-	-	-
819	<4	<1	-	<0.05	<4	<10	<10
822	<4	<1	-	<0.05	4	20	15
824	<4	<1	-	<0.05	-	-	-
833	4	<1	-	<0.05	<4	<10	<10
837	12	<1	-	<0.05	<4	10	<10
846	4	1	-	<0.05	-	-	-
857	<4	<1	-	<0.05	-	-	-
882	4	<1	-	<0.05	-	-	-
885894	8	<1	<4	<0.05	<4	<10	20
832605	8	<1	<4	<0.05	6	10	<10
885914	8	1	-	<0.05	-	-	-
932	8	1	-	<0.05	-	-	-
942	8	<1	-	<0.05	-	-	-
885951	4	<1	-	<0.05	-	-	-
886027	8	<1	-	<0.05	-	-	-
36	36	<1	<4	<0.05	4	<10	15
886008	<4	1	<4	<0.05	<4	<10	15
58	<4	<1	-	<0.05	-	-	-
63	<4	<1	<4	<0.05	<4	<10	15
65	<4	<1	<4	<0.05	<4	10	15
886088	4	<1	<4	<0.05	<4	<10	<10

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COMLABS Pty Ltd
COMPUTERISED ANALYTICAL LABORATORIES

ANALYTICAL REPORT

JOB COM 810107

Results in ppm

SAMPLE	Co	Ag	Mo	Au	Sn	W	Ta
886091	4	<1	4	<0.05	<4	15	<10
83	4	<1	<4	<0.05	<4	25	15
104	<4	1	4	<0.05	<4	<10	<10
886107	4	1	<4	<0.05	<4	15	15

Method of Analysis - U, Sn, W, Ta : XRF 1
Cu, Pb, Zn, Co : AAS 1
Ag, Mo : AAS 3
Au : AAS 5 special

C.R.A. EXPLORATION PTY. LTD.
ANALYTICAL RESULT SHEET

Laboratory: COMLABS PTY LTD Lab. rept. no. 811671 CR.A. D.P.O. no. B 0131 Date: 29 OCT 81

TUCKEY E.L. 687.

POLDA BASIN. 81LRM63 Less than detection Limit ⊟

Method											XRF1	XRF1	XRF1	XRF1	AAS1	AAS1	AAS1	AAS1	AAS3	AAS3	AAS3A
Detection limit											4	4	10	10	2	4		4	1	4	0.05
Sample	Metal Content (ppm)																				
Number											U	Sn	W	Ta	Cu	Pb	Zn	Co	Ag	Mo	Au
891057											—	—	—	—	6	18	160	4	—	4	0.05
891058											30	—	—	—	14	24	70	16	—	6	—
891059											16	4	—	—	18	20	26	24	—	8	—
891060											8	—	15	—	14	18	44	12	—	6	—
891061											—	—	—	15	8	12	390	4	—	4	—
891062											4	6	—	—	12	10	34	8	—	6	—
891063											—	8	—	15	8	14	115	8	—	6	—
891064											4	—	20	—	8	16	115	4	—	6	—
891065											—	—	15	—	6	12	90	8	—	10	—
891066											4	6	—	—	4	16	410	4	—	4	—
891067											—	6	—	—	4	8	36	—	—	—	—
891068											—	—	—	—	4	6	48	—	—	—	—
891069											—	—	—	—	6	10	270	—	—	—	—
891070											—	—	—	—	6	10	160	—	—	—	—
891071											—	—	—	—	4	6	100	—	—	—	—
891072											—	10	—	—	2	6	70	—	—	—	—
891073											—	—	—	—	2	12	380	—	—	—	—
891074											—	4	15	—	2	4	85	—	—	—	0.05
891075											—	4	—	—	6	—	38	—	—	—	—
891076											—	6	—	—	4	—	60	—	—	—	—
891077											—	—	—	—	4	—	55	—	—	—	—
891078											—	—	—	—	4	—	26	—	—	—	—
891079											—	—	15	—	2	6	160	—	—	—	—
891080											—	—	—	—	2	—	30	—	—	—	—
891081											—	—	—	—	8	6	44	—	—	—	—
891082											—	—	—	—	10	8	115	—	—	—	—
891083											—	4	—	—	14	20	115	—	—	—	—
891084											—	—	—	—	20	30	130	—	—	—	—

C.R.A. EXPLORATION PTY. LTD.
ANALYTICAL RESULT SHEET

180 Page no. 2 of 3

Laboratory: COMLABS PTY LTD Lab. rept. no. 811671 CR.A. D.P.O. no. B 0131 Date: 29 OCT 81

TUCKEY E.L. 687.

POLDA BASIN. 81LRM63 Less than detection Limit ⊟

Method												XRF1	XRF1	XRF1	XRF1	AAS1	AAS1	AAS1	AAS1	AAS3	AAS3	AAS3A
Detection limit												4	4	10	10	2	4		4	1	4	0.05
Sample Number	Metal Content (ppm)											U	Sn	W	Ta	Cu	Pb	Zn	Co	Ag	Mo	Au
891085												–	–	–	–	20	28	210	–	–	–	–
891086												–	–	–	15	42	26	75	20	–	–	–
891087												–	4	–	–	24	36	20	12	–	–	–
891088												4	10	–	–	30	34	180	8	–	–	0.10
891089												4	6	15	–	26	42	70	8	–	–	0.10
891090												4	8	–	–	24	40	145	8	–	–	0.10
891091												4	10	–	–	40	40	135	8	–	–	0.05
891092												–	8	–	–	36	30	75	20	–	–	–
891093												–	4	–	20	20	34	410	16	–	–	–
891094												–	–	15	–	16	30	110	12	–	–	–
891095												–	–	–	–	18	30	120	12	–	–	–
891096												–	–	–	–	4	38	580	4	–	–	–
891097												–	–	–	–	–	26	80	–	–	–	–
891098												–	–	15	–	8	42	38	4	–	–	–
891099												–	6	–	–	18	36	120	–	–	–	–
891100												–	8	–	–	18	36	130	4	–	–	–
891101												–	–	15	–	22	34	60	8	–	–	0.05
891102												–	4	–	–	18	30	110	4	–	–	–
891103												–	4	15	–	18	34	380	20	–	–	–
891104												–	–	–	–	32	26	210	16	–	–	0.05
891105												4	–	–	–	18	26	270	24	–	–	0.05
891106												–	–	15	–	16	28	340	16	–	–	0.10
891107												–	–	–	–	14	28	210	16	–	–	–
891108												–	6	–	15	12	26	350	12	–	–	0.05
891109												–	6	–	–	8	12	36	4	–	–	–
891110												–	–	–	–	8	10	60	8	–	–	0.10
891111												–	–	–	–	6	6	40	4	–	–	–
891112												–	–	–	–	4	20	410	–	–	–	0.10

C.R.A. EXPLORATION PTY. LTD.
ANALYTICAL RESULT SHEET

Laboratory: COMLABS PTY LTD Lab. rept. no. 811671 C.R.A. D.P.O. no. B 0131 Date: 29 OCT 81

TUCKEY E.L. 687.

POLDA BASIN. 81LRM63 Less than detection Limit ⊖

Method											XRF1	XRF1	XRF1	XRF1	AAS1	AAS1	AAS1	AAS1	AAS3	AAS3	AAS3A
Detection limit											4	4	10	10	2	4		4	1	4	0.05
Sample Number	Metal Content (ppm)										U	Sn	W	Ta	Cu	Pb	Zn	Co	Ag	Mo	Au
891113											–	–	–	–	–	10	46	–	–	–	–
891114											–	4	–	–	–	30	16	–	–	–	–
891115											–	6	–	–	10	26	20	–	–	–	0.05
891116											–	–	–	–	6	34	14	–	–	–	–
891117											–	–	–	–	14	34	70	–	–	–	–
891118											–	4	–	–	16	42	30	–	–	–	–
891119											–	–	–	–	14	32	38	–	–	–	–
891120											–	6	–	–	14	30	70	4	–	–	–
891121											–	–	–	–	14	32	36	8	–	–	–
891122											–	4	–	–	16	24	50	8	–	–	–
891123											–	–	15	–	20	28	46	12	–	–	–
891124											–	–	–	–	18	30	105	12	–	–	–
891125											–	4	–	–	16	34	140	12	–	–	–
891126											–	6	–	–	14	22	200	12	–	–	0.05

135°20'
135°30'
136°00'
33°20'
McLACHLAN E.L. 670
HAMBIGE CONS. PARK
MT. WEDGE
135°40'
ETSA E.L. 800
33°30'
136°09'
33°29'
TUCKEY E.L. 687
33°35'
BASCOMBE WELL CONS. PARK
33°38'
33°40'
135°03'
33°45'
33°44'
135°55'
TOOLIGIE HILL
34°00'
SHERINGA E.L. 688
135°45'
5 0 5 10 15 20 25 30 KILOMETRES
T.N.
M.N.
7°

LEGEND

Area to be surrended

C.R.A EXPLORATION PTY. LIMITED.

POLDA BASIN

TUCKEY E.L.687, SHERINGA E.L.688, McLACHLAN E.L.670

AREAS TO BE SURRENDED

SHEET REF: KIMBA SI53-7

Geol.: D.McB.	Date: MAY 1982	Report No.: 10307
Drawn: J.C.R.	Scale: 1:250,000	Plan No.: SAa 1500

4659-1


Boundary of E.L. 800 (ETSA)
33°35'
33°38'
LEGEND
Area to be surrended
Location of Geological Sections
80LRM61 (169m) Drill Hole Total Depth
POLDA BASIN
AREAS TO BE SURRENDED
1980 - 1981 DRILL HOLES
D Mc B.
MAY 1982
1499

510000 mE

52

53

54

Boundary of McLachlan E.L.670

Boundary of Sheringa E.L. 688

80LRM39 -16.0

80LRM37 -8.0

BASCOME WELL CONSERVATION PARK

ELLISTON

FLINDERS HIGHWAY

80LRM38 -9.0

80LRM36 -3.0

80LRM35 -28.0

80LRM32 -1.0

80LRM34 -2.0

80LRM40 -2.0

GREAT AUSTRALIAN BIGHT

PT LINCOLN

6 27

6 26

6 250000 mN

0 1 2 3 4 5 Kms

LEGEND

Location of geological section

80 LRM 35 — Drill hole 80 LRM 35

+ 28·0m — Relative level of basement -28m above sea level

-20 — Structure contour on basement 5 metre contour interval

CRA EXPLORATION PTY. LIMITED	
POLDA BASIN SHERINGA E.L.688, McLACHLAN E.L.670 STRUCTURE CONTOURS ON BASEMENT SHERINGA AND WESTERN McLACHLAN AREA	
REF KIMBA S153-7	
SCALE 1:100,000	DRAWN J.C.R
GEOL M.J.F	REPORT No. 10307
DATE FEB 1982	PLAN No.: SAa 1286

4659-3

SOUTH

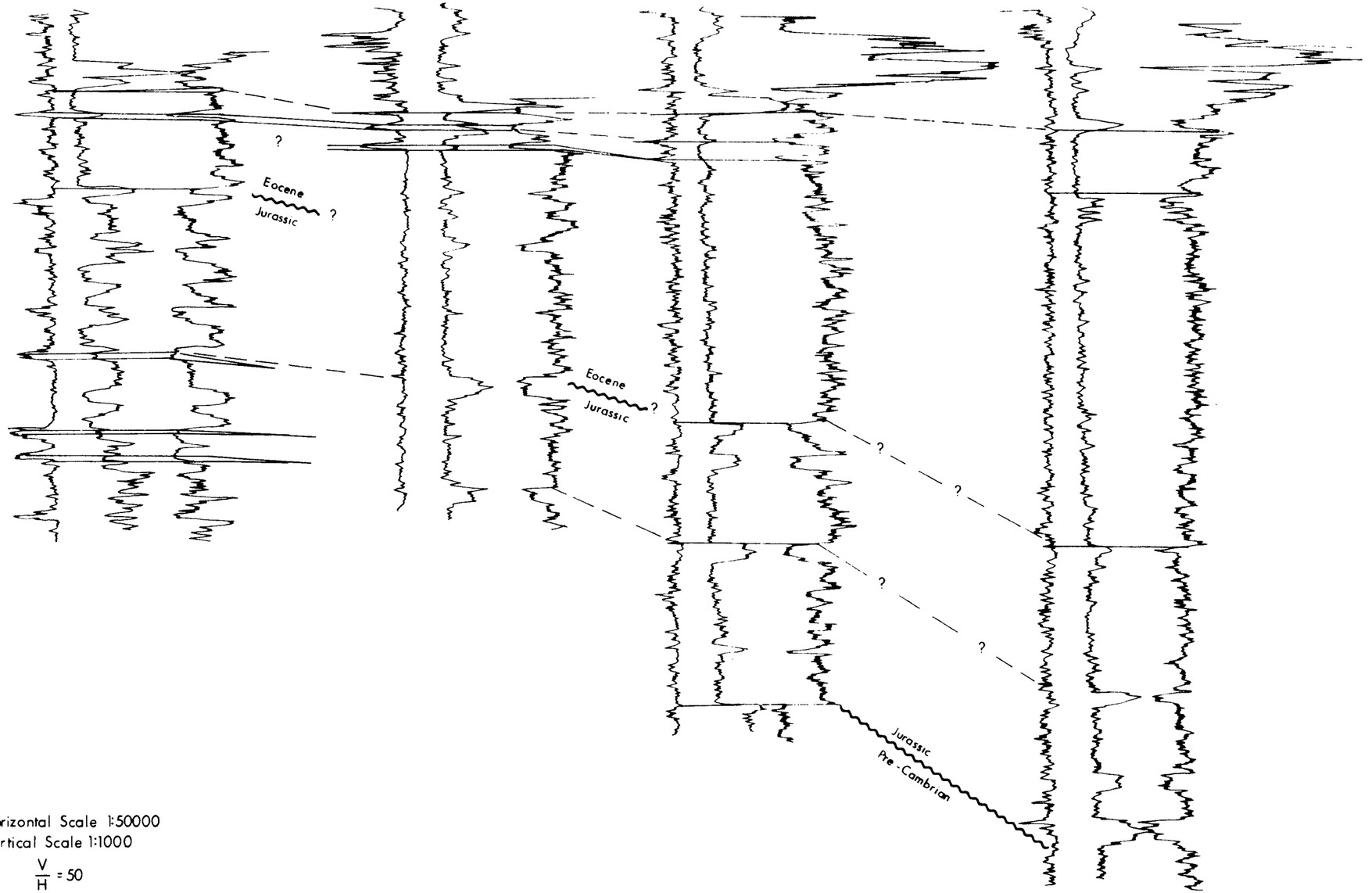
NORTH

J
80LRM20

80LRM19

I
81LRM61

V
81LRM62



80m above M.S.L

40m

M S L

40m below M.S.L

80m

Interpreted Geophysical Correlation.

Unconformity

Coal / Lignite

Long Spaced | Gamma | Neutron

Horizontal Scale 1:50000
Vertical Scale 1:1000

$\frac{V}{H} = 50$

1 0 1 2 3 4 5Kms

CRA EXPLORATION PTY. LIMITED

POLDA BASIN

TUCKEY E. 687 SHERINGA E. 688 MT. ACHILLES E. 672

SECTION J-V

LOOKING WEST

Ref. KIMBA SI 53-7	
Scale	Drawn D.D.
Author M.J.F	Report No. 10307
Date MAY 1982	Plan No SAa 1504

4659-4

W

L

80 LRM 16

80 LRM 17

80 LRM 18

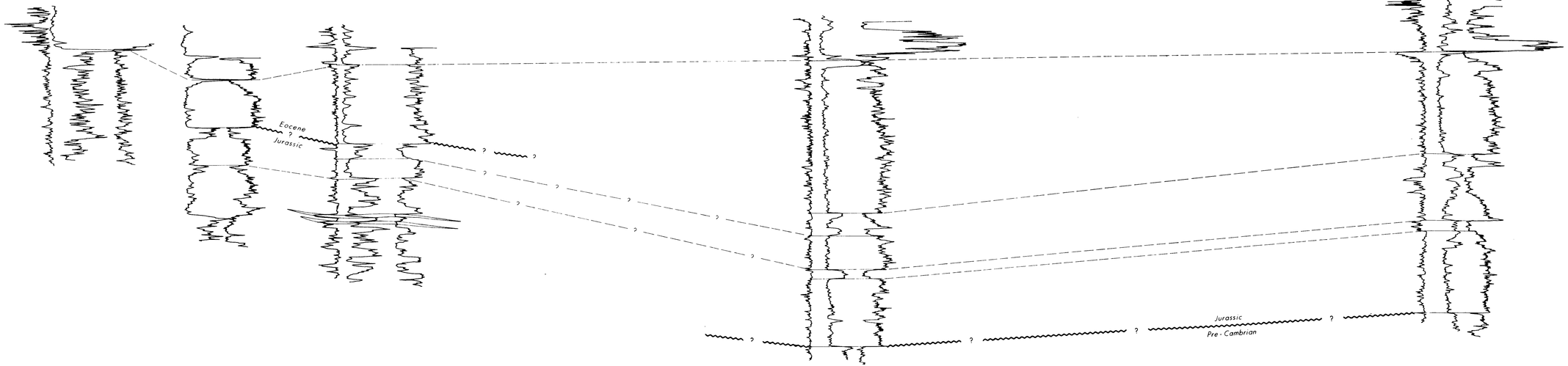
I

81 LRM 61

K

81 LRM 63

E



120m above M.S.L.

80m

40m

Mean Sea Level

40m below M.S.L.

REFERENCE

Interpreted Geophysical Correlation

Unconformity

Coal / Lignite

Long Spaced Density

Gamma Log

Neutron Log

SCALE

KILOMETRES 1 0 1 2 3 4 5 KILOMETRES

HORIZONTAL SCALE. 1:50,000

VERTICAL SCALE. 1:1,000

$\frac{V}{H} = 50$

C.R.A. EXPLORATION PTY. LIMITED

POLDA BASIN

TUCKEY E.L. 687, SHERINGA E.L. 688, McLACHLAN E.L. 670

SECTION K - L

LOOKING NORTH

KIMBA SHEET

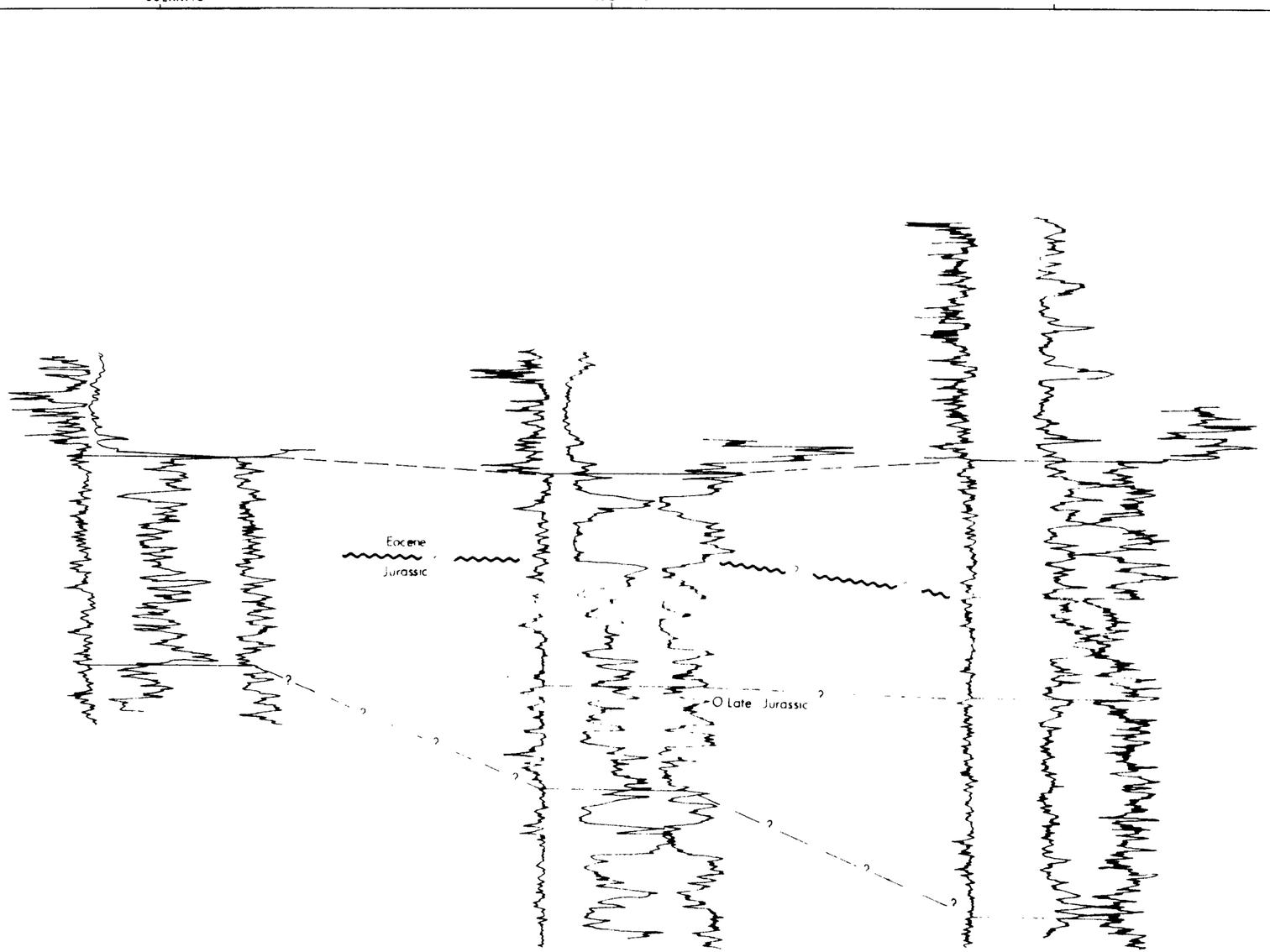
M.J.F.

FEBRUARY 1982

SAp 1360

46595

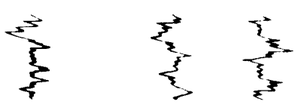
SOUTH L 80LRM16 80LRM15 W 80LRM12 NORTH



160m above M S L
120m
80m
40m
Mean Sea Level
40m below M.S.L

Interpreted Geophysical Correlation
Uncontormity
Palynological Sample

Long Spaced Density Gamma Neutron



Horizontal Scale 1:50000
Vertical Scale 1:1000
$\frac{V}{H} = 50$

1 0 1 2 3 4 5Kms

CRA EXPLORATION PTY LIMITED

POLDA BASIN

SECTION L-W
LOOKING WEST

Ref KIMBA 5153-7	
Scale	Drawn DD
Author M J F	Report No. 10307
Date MAY 1982	Plan No. SAa 1503

4659-6

SOUTH

S

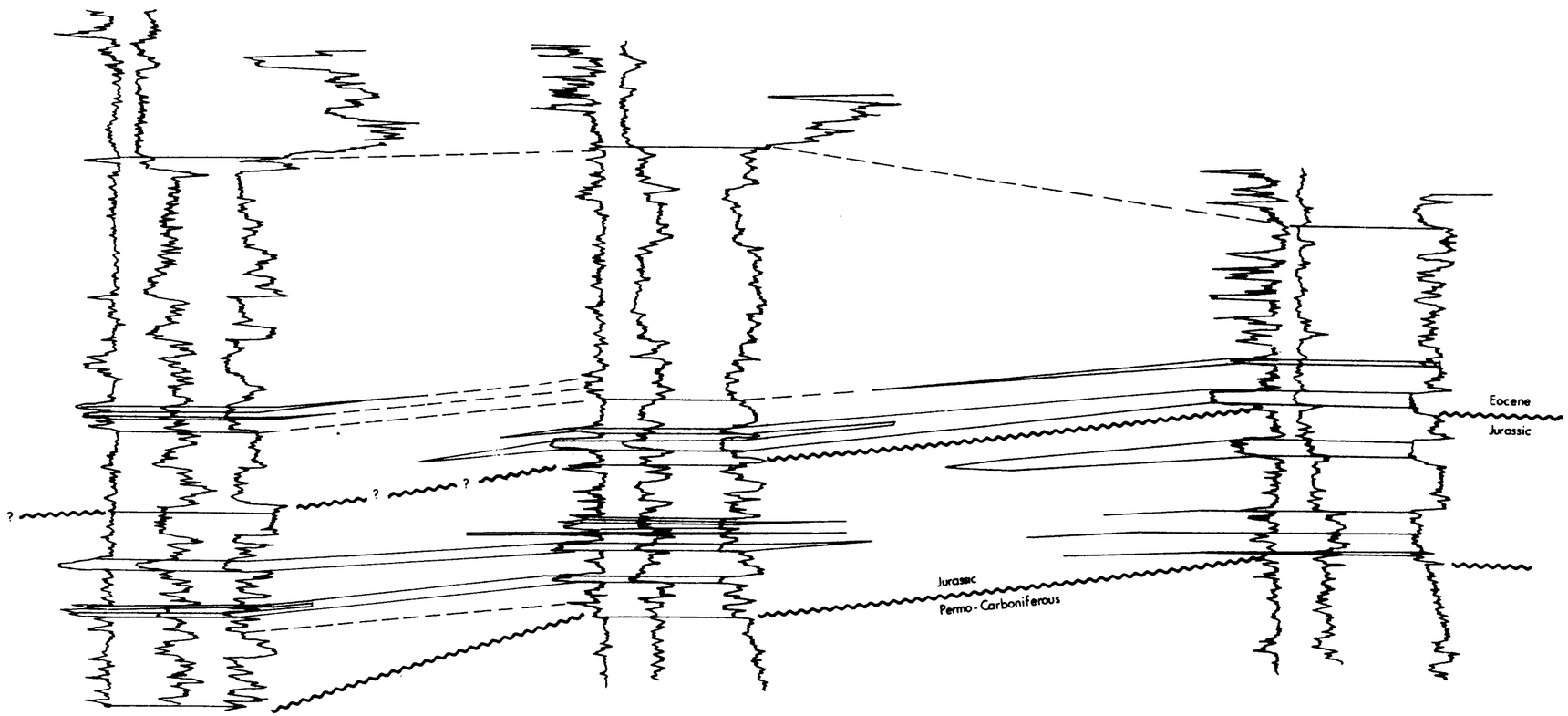
81 LRM 59

80 LRM 31

R

80 LRM 30

NORTH



REFERENCE

Interpreted Geophysical Correlation

Unconformity

Coal/Lignite

M.S.L. Long Spaced Density Gamma Neutron

1 0·5 0 0·5 1 1·5 Kms

Horizontal Scale 1:20000
Vertical Scale 1:1000
$\frac{V}{H}$ = 20

POLDA BASIN

TUCKEY E L 687, SHERINGA E L 688, McLACHLAN E L 670

SECTION R-S

LOOKING WEST

KIMBA SI 53-7

M J F

MARCH 1982

REPORT 10307

PLAN No. SAa 1358

4659-7

W

U

80 LRM 38

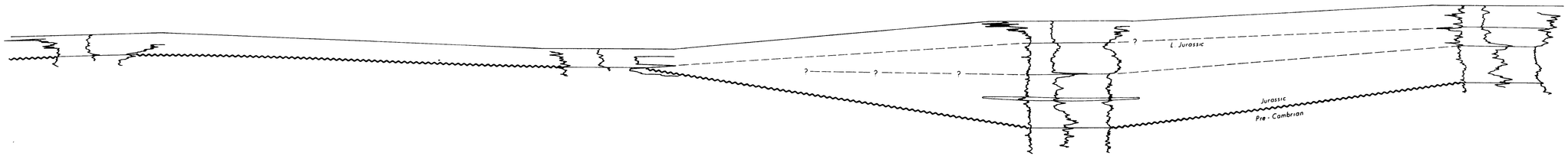
80 LRM 36

80 LRM 35

T

80 LRM 32

E



40m above M.S.L.

Mean Sea Level

REFERENCE

- Interpreted Geophysical Correlation
- Unconformity
- Coal / Lignite

SCALE

KILOMETRES 1 0 1 2 3 4 5 KILOMETRES

HORIZONTAL SCALE : 1:50,000

VERTICAL SCALE : 1:1,000

$\frac{V}{H} = 50$

C R A EXPLORATION PTY LIMITED

POLDA BASIN

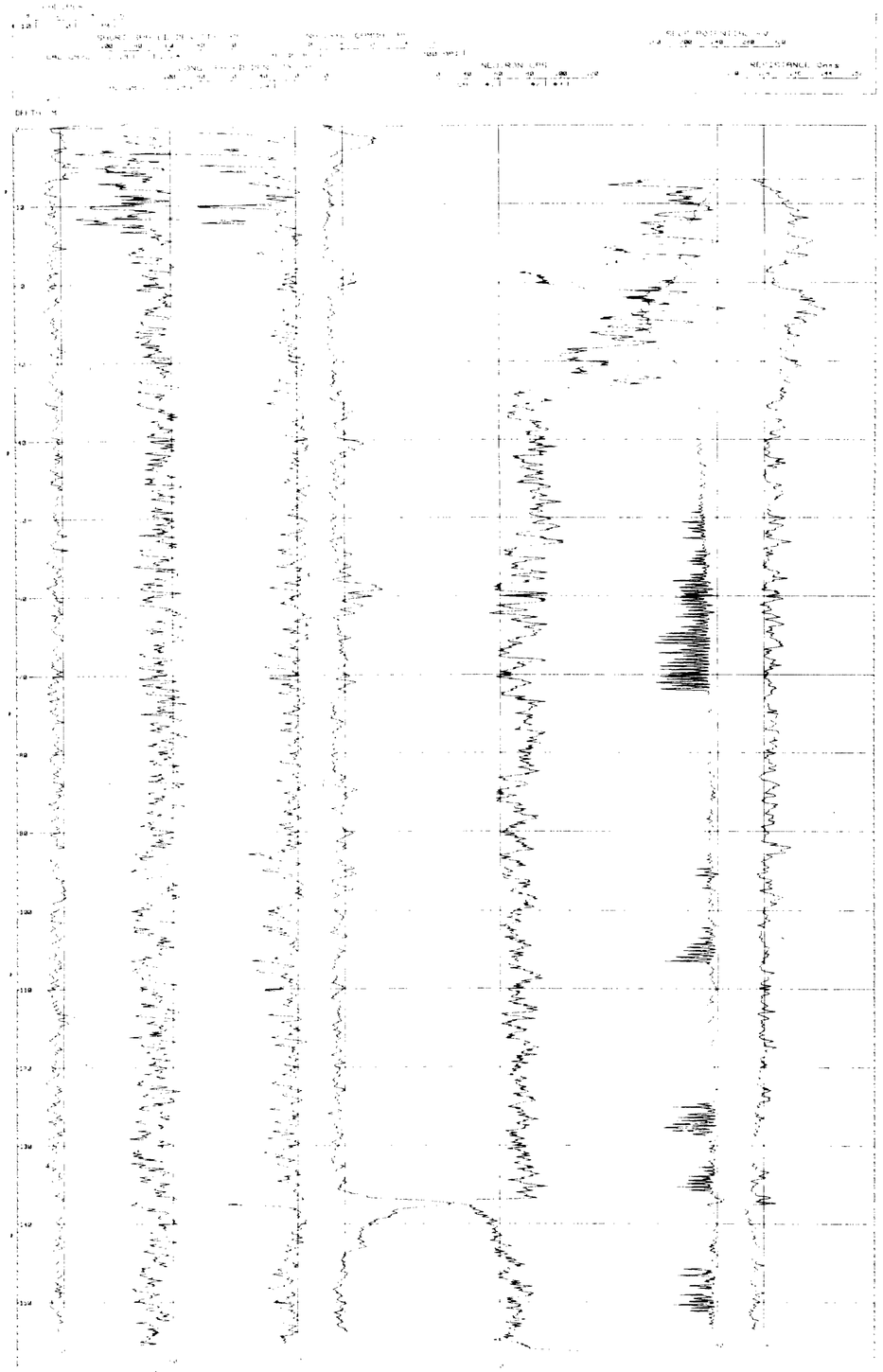
TUCKEY E.L. 687, SHERINGA E.L. 688, McLACHLAN E.L. 670

SECTION T - U

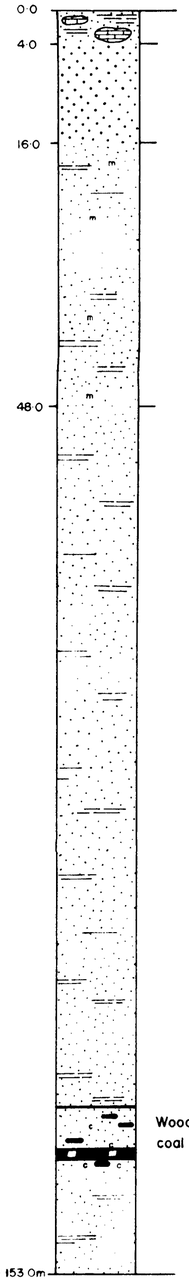
LOOKING NORTH

REF. KIMBA SI53-7	
SCALE	
AUTHOR M. J. F.	REPORT 10307
DATE MARCH 1982	PLAN No SAa 1356

4659-8



80 LRM 11

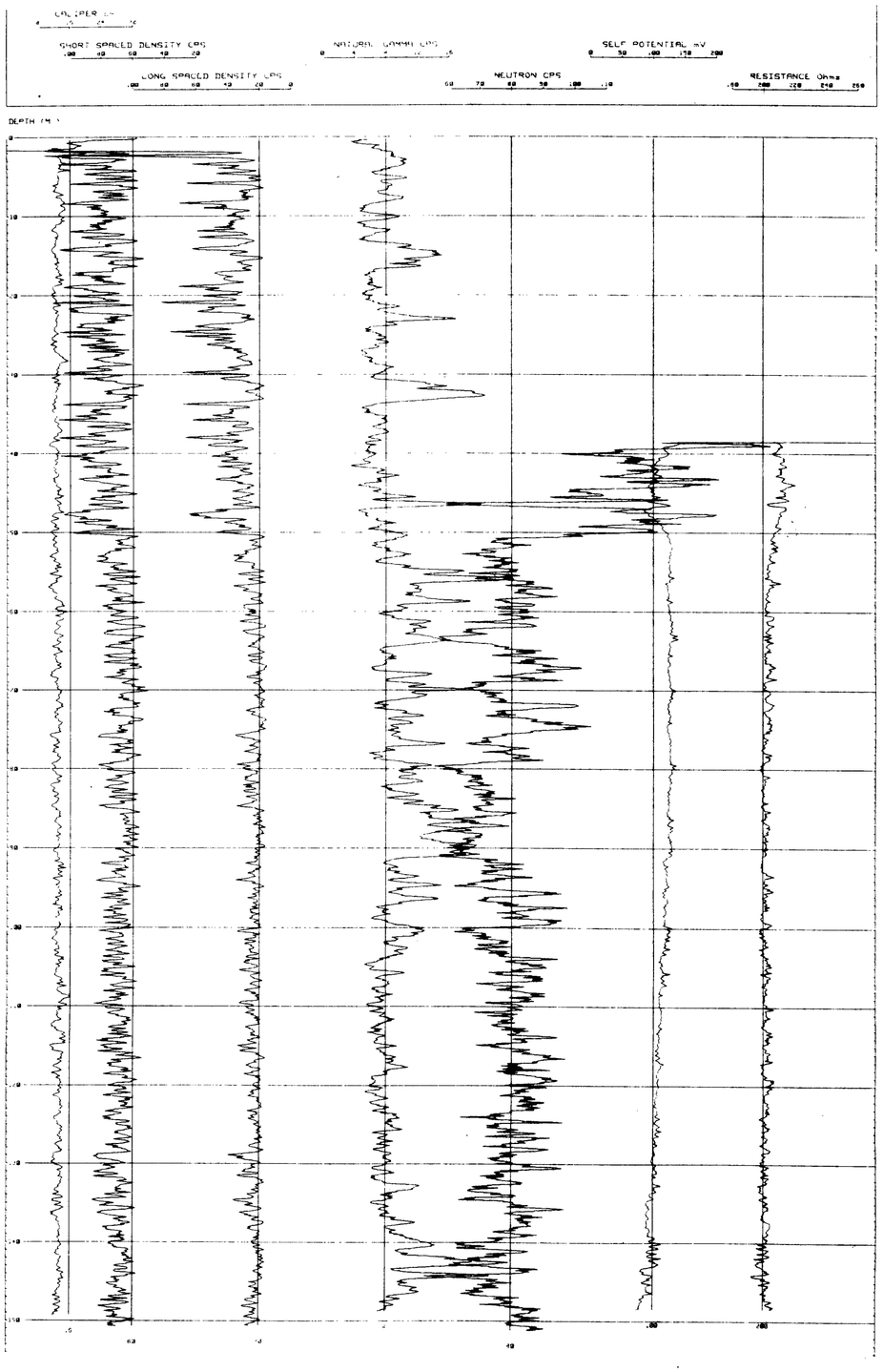


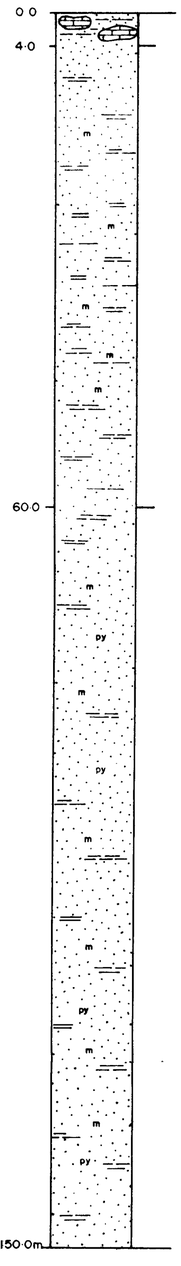
Woody lignitic and vitreous black coal fragments to 40%

Refer to Plan N° SAa 600 for Legend

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 11		
SHEET REF KIMBA SI53-7		
Geol: M.F.	Date: Oct. 1980	Report N° 1030
Drawn: A.E.Y.	Scale: 1:500	Plan N° SAa60

4653-9





Refer to Plan N° SAa 600 for Legend

4653-10

C.R.A. EXPLORATION PTY. LTD.

POLDA BASIN

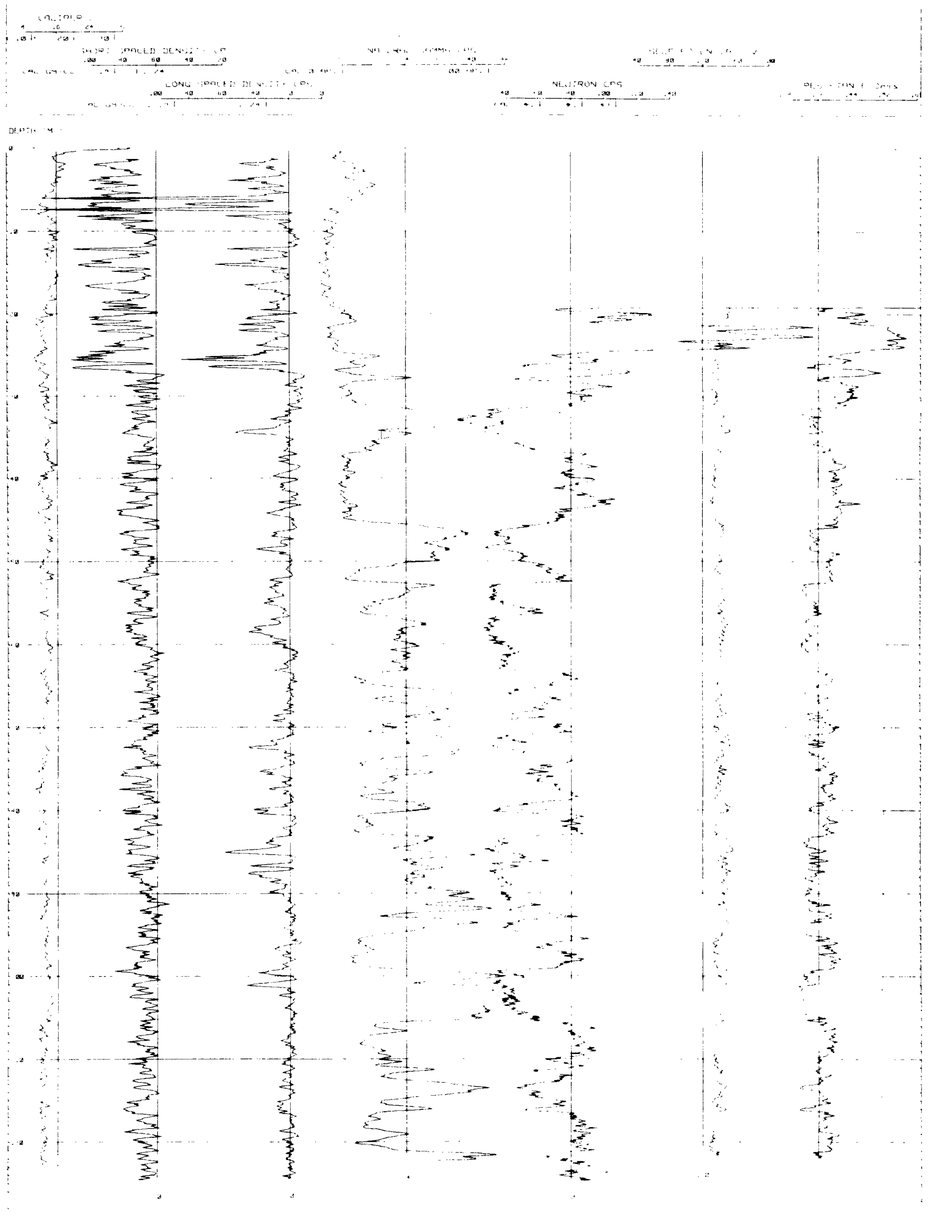
1980 DRILLING PROGRAM

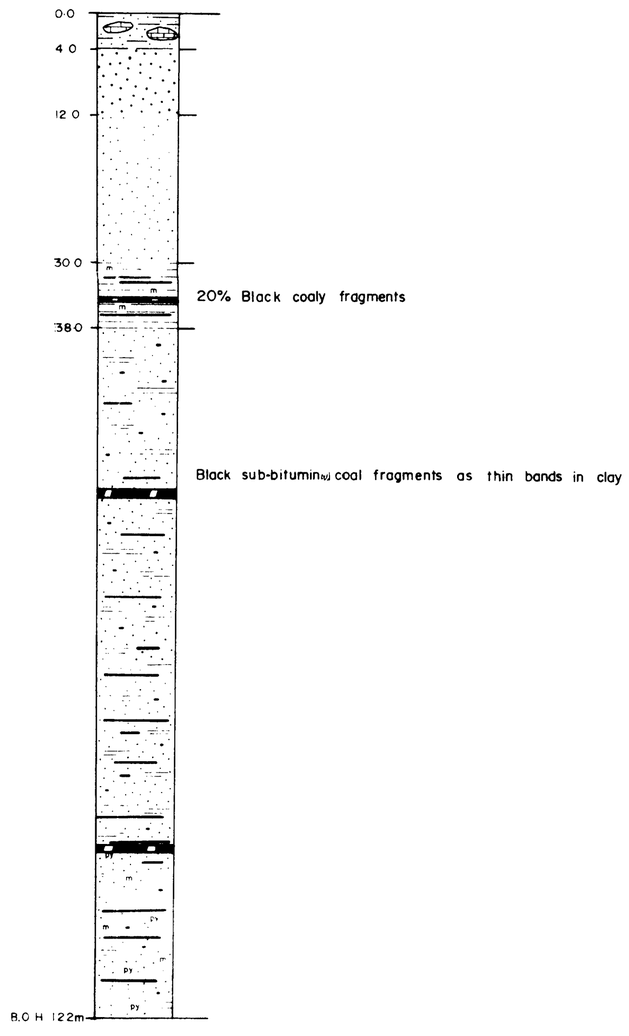
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

HOLE 80 LRM 12

SHEET REF: KIMBA SI53-7

Geol: M.F.	Date: Oct 1980	Report N° 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N° SAa601/12





Refer to Plan N° SAa 600 for Legend.

4652-11

C.R.A. EXPLORATION PTY. LTD.

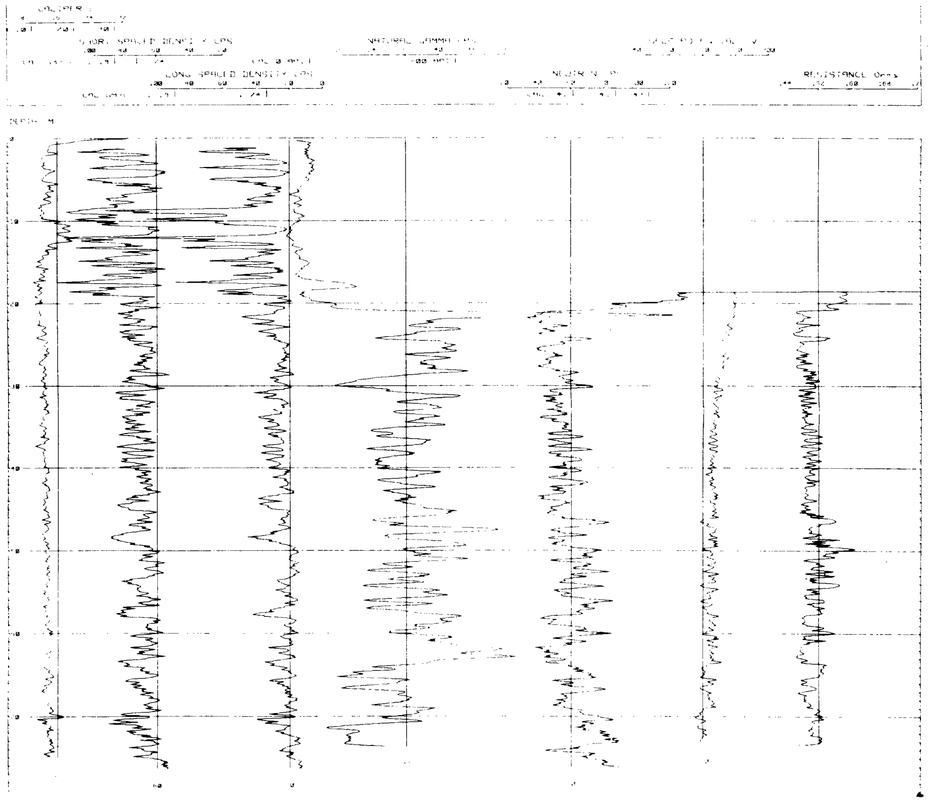
POLDA BASIN

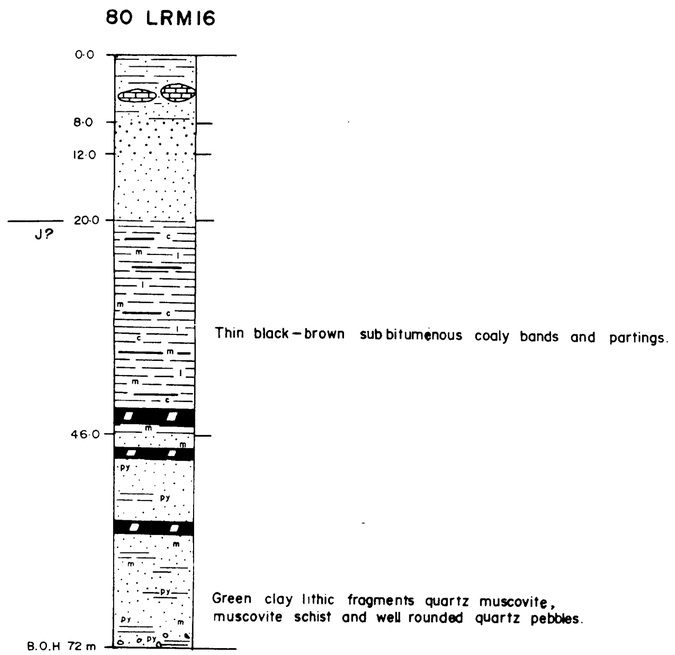
1980 DRILLING PROGRAM
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

HOLE 80 LRM 15

SHEET REF: KIMBA S153-7

Geol.: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/15

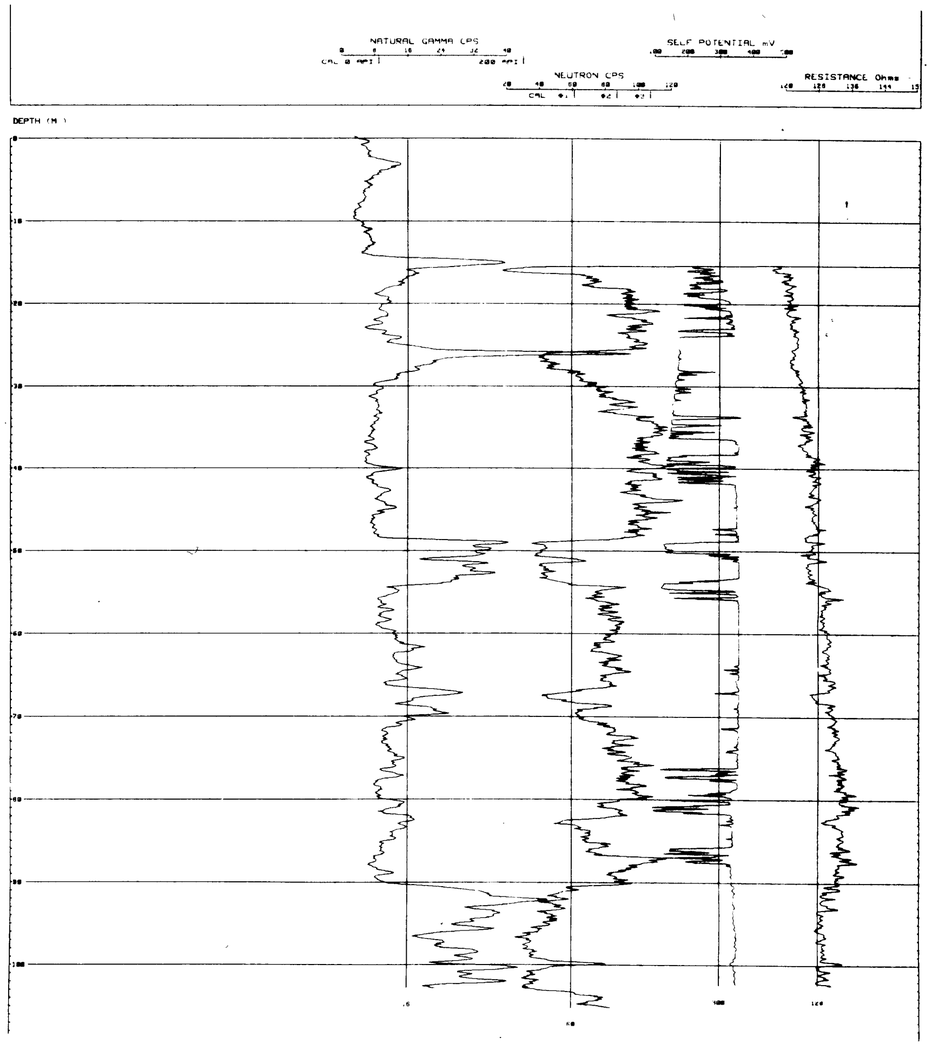




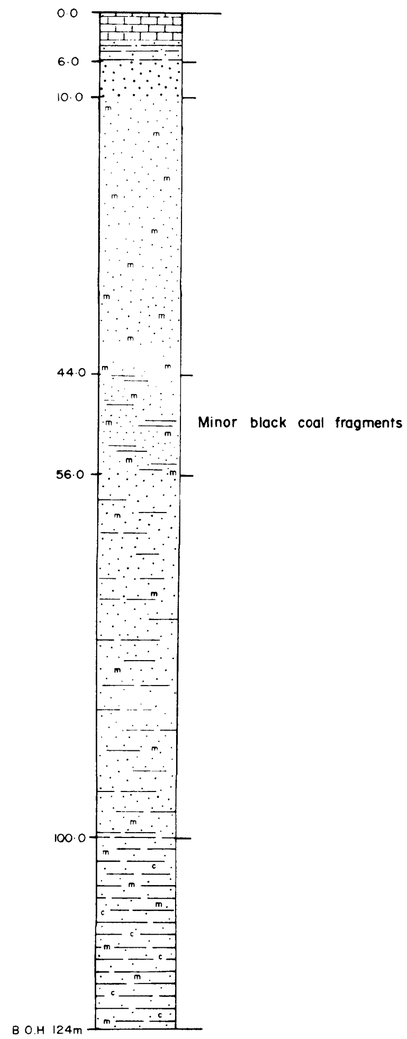
Refer to Plan N°: SAa 600 for Legend

4659-12

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION HOLE 80 LRM 16 Sheet Ref Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/16



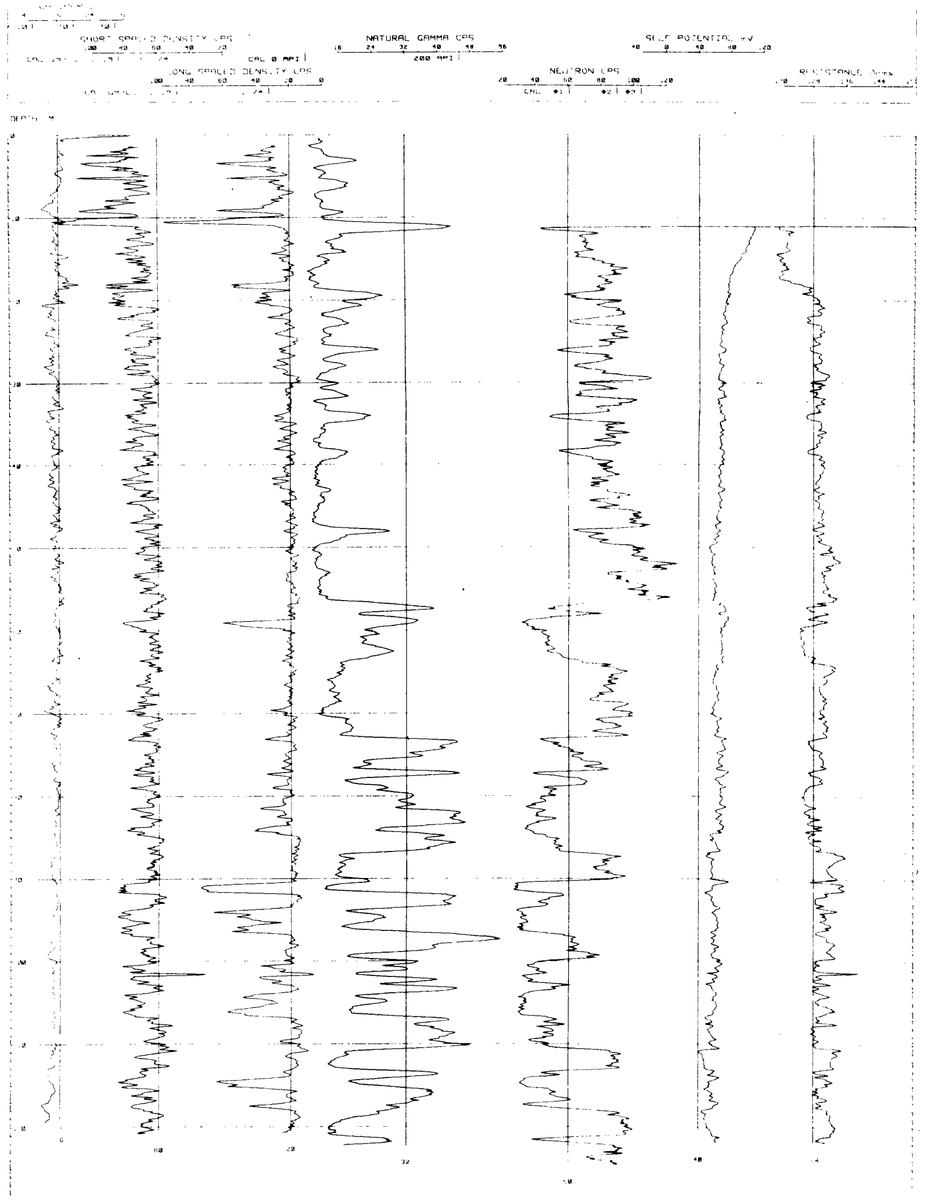
80 LRM 17

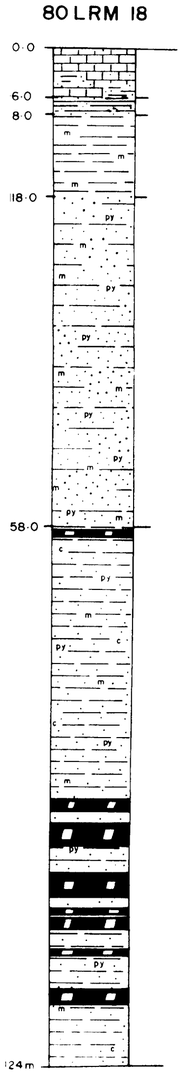


Refer to Plan N°: SAa 600 for Legend.

4659-13

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM		
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 17		
Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/17

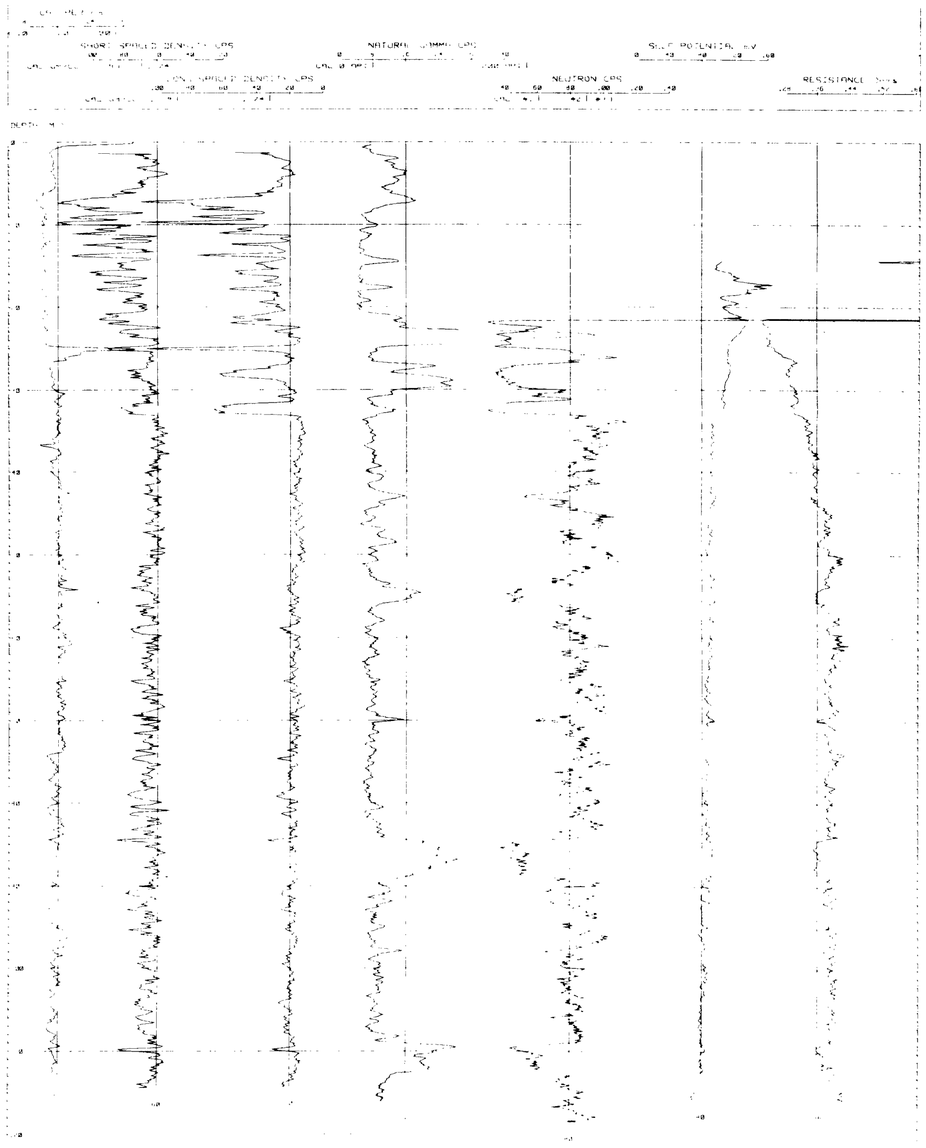


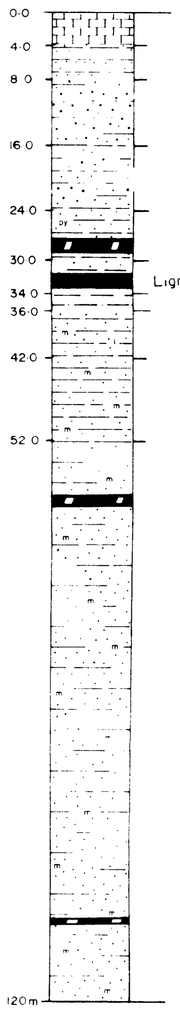


Refer to Plan N°: SAa 600 for Legend.

4659-14

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 18		
Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/18





Refer to Plan N°: SA a 600 for Legend

4659-15

C.R.A. EXPLORATION PTY. LTD.

POLDA BASIN

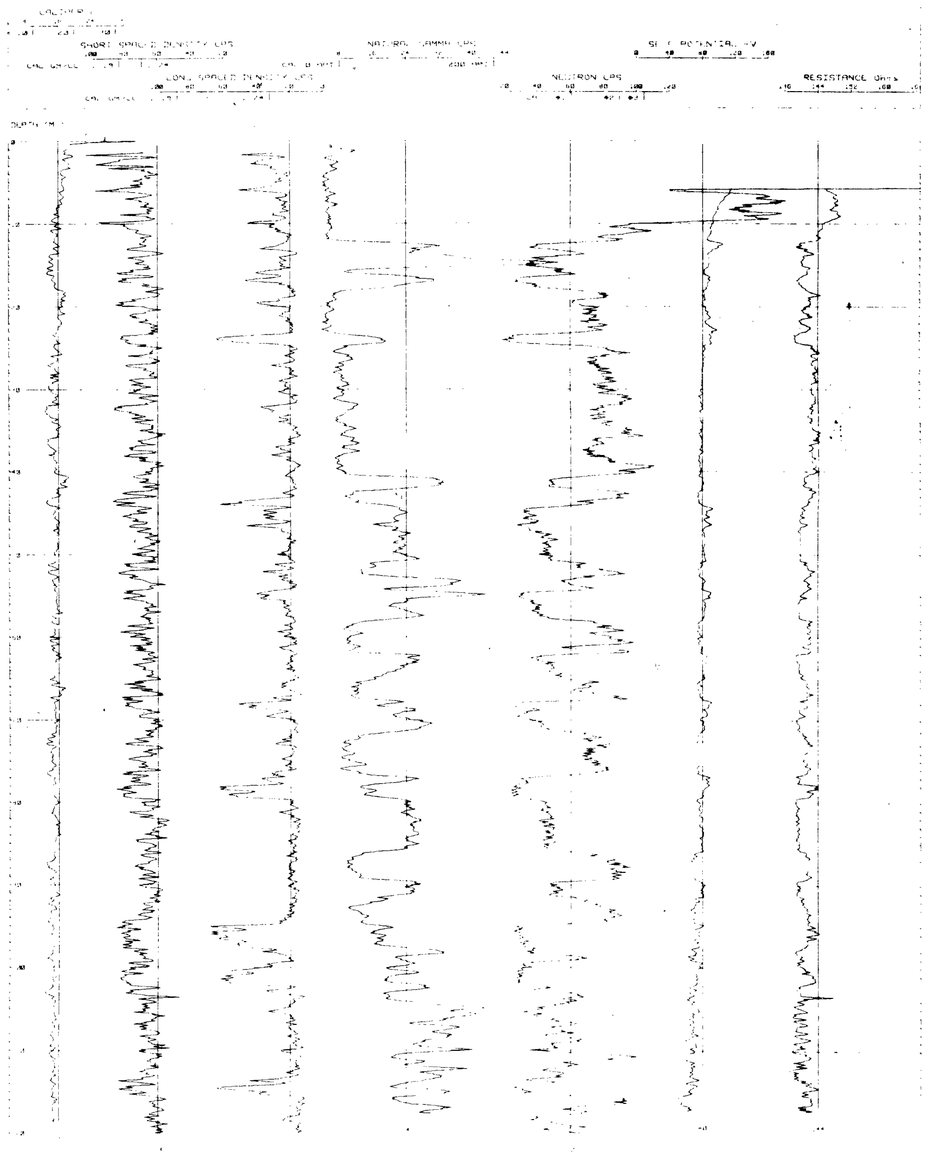
1980 DRILLING PROGRAM

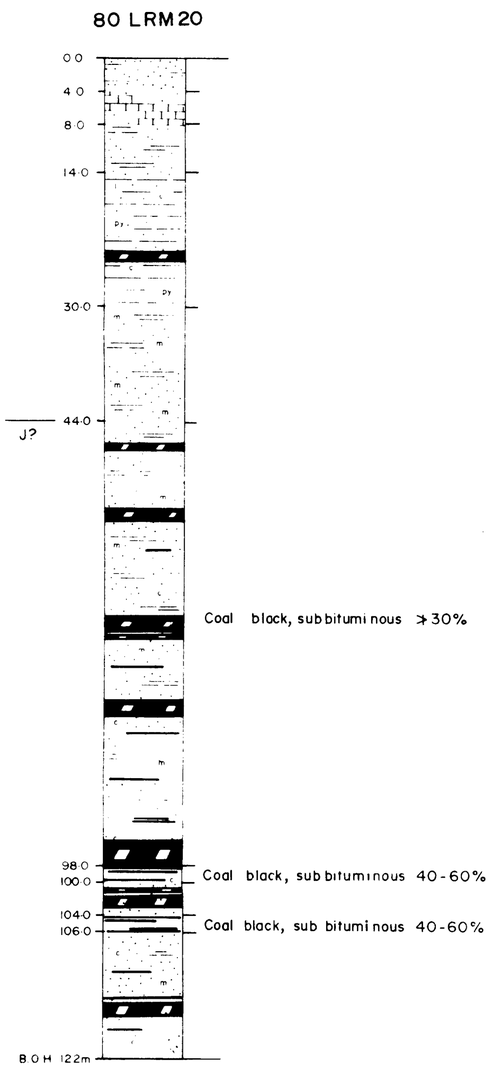
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

HOLE 80 LRM 19

Sheet Ref : Kimba SI53-7

Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/19

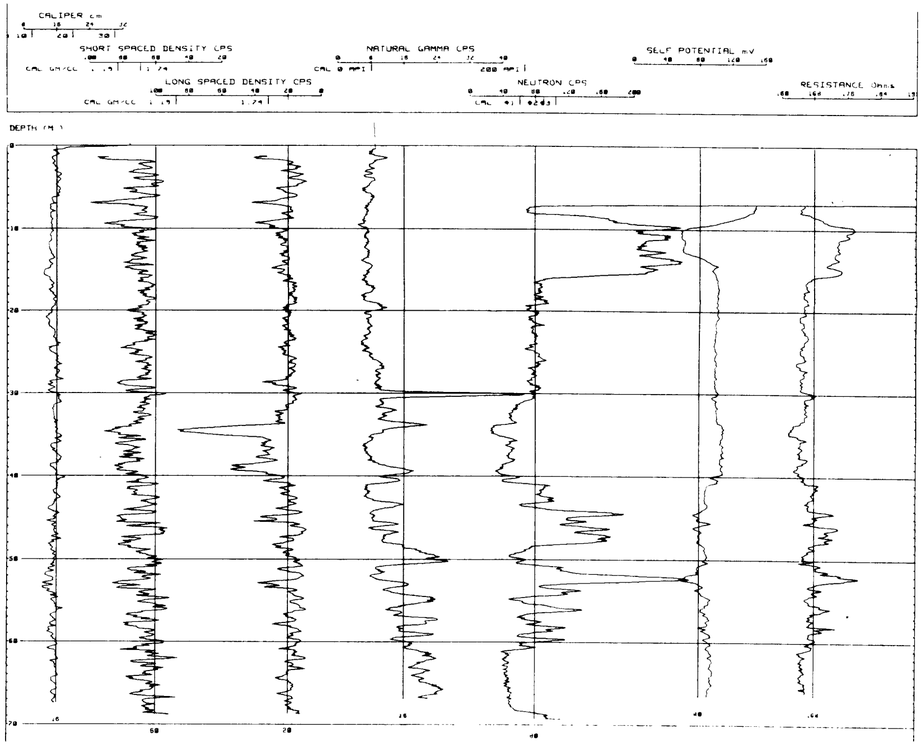


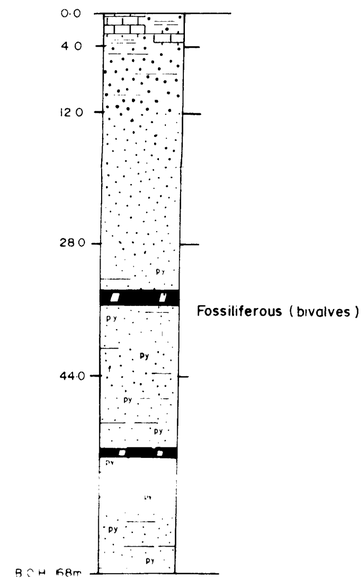


Refer to Plan N°: SAa 600 for Legend.

4659-16

C.R.A. EXPLORATION PTY. LTD		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 20 Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/20

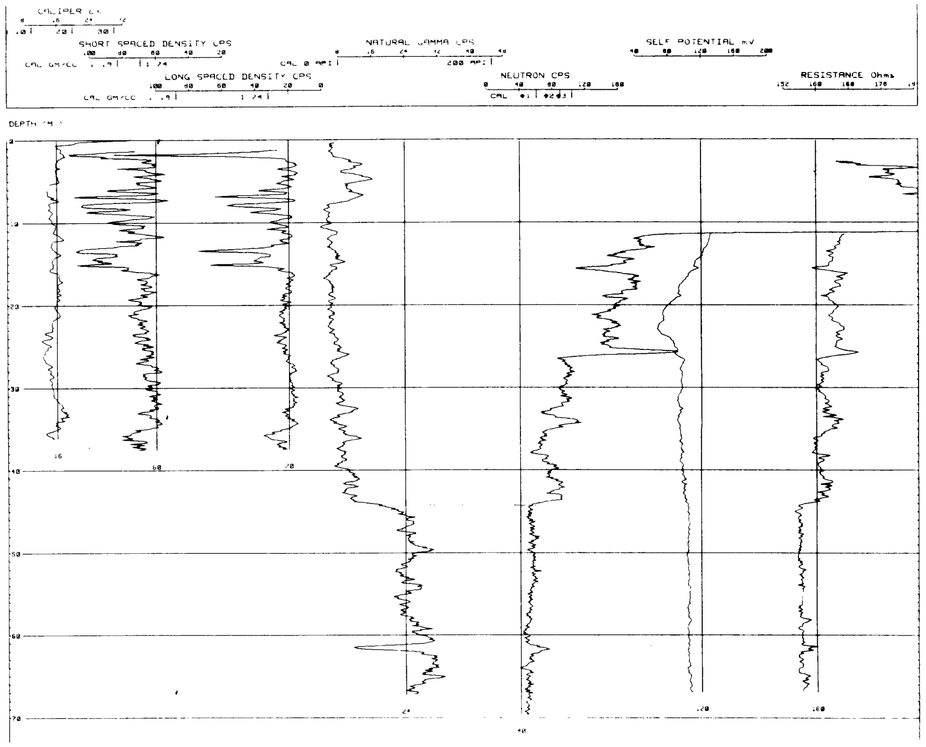


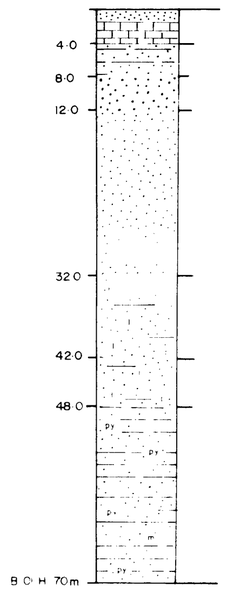


Refer to Plan N°: SAa 600 for Legend.

4659-17

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION HOLE 80 LRM 21 Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/21





Refer to Plan N°: SAa 600 for Legend.

4659-18

C.R.A. EXPLORATION PTY. LTD.

POLDA BASIN

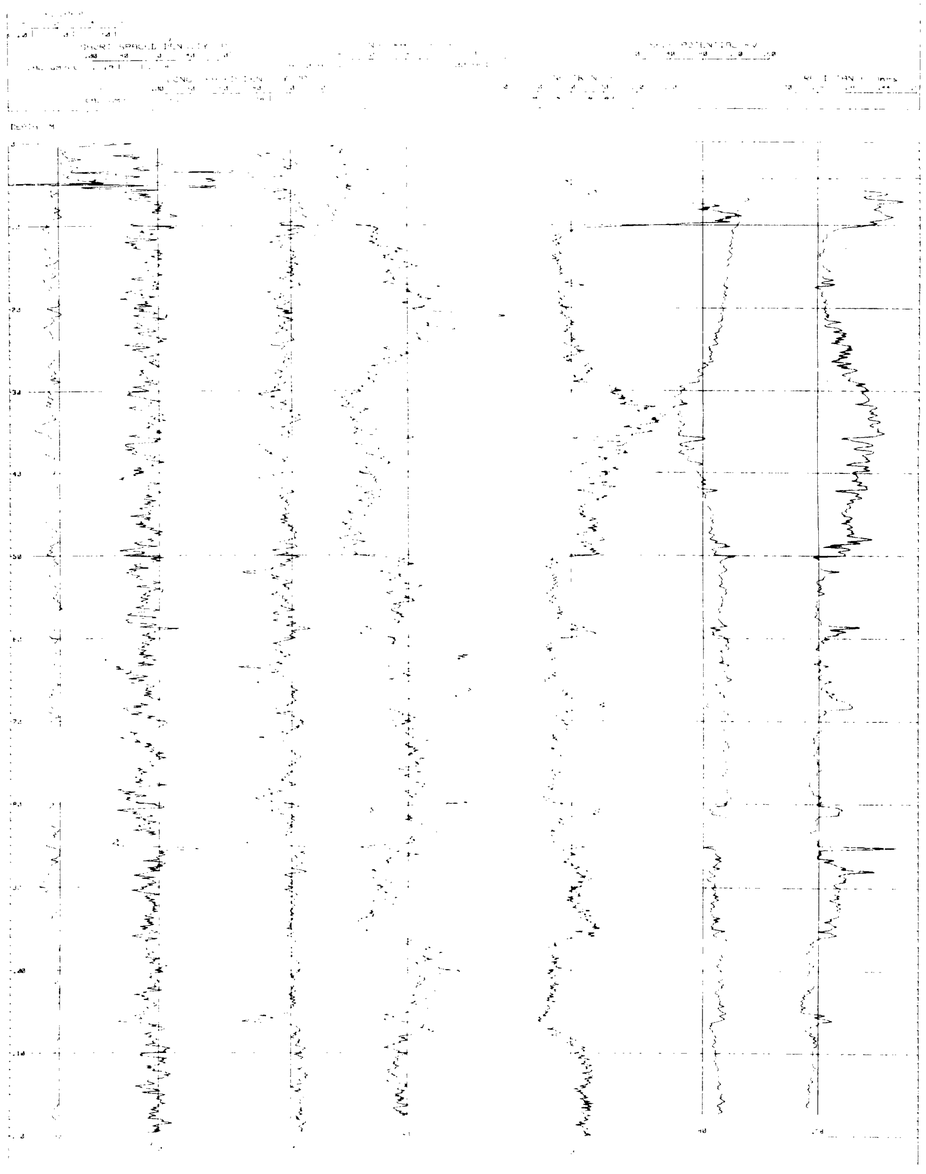
1980 DRILLING PROGRAM

GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

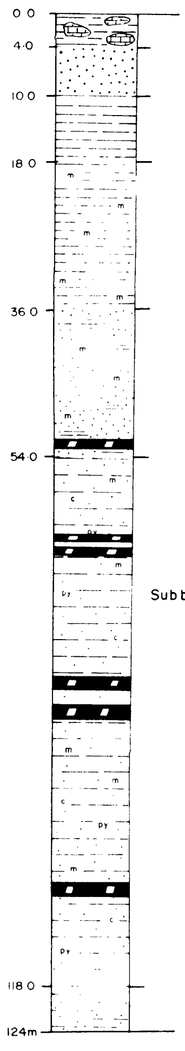
HOLE 80 LRM 22

Sheet Ref: Kimba SI53-7

Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/22



80 LRM 23



Subbituminous coal fragments < 2%

Refer to Plan N°: SAa 600 for Legend.

4659-19

C.R.A. EXPLORATION PTY. LTD.

POLDA BASIN

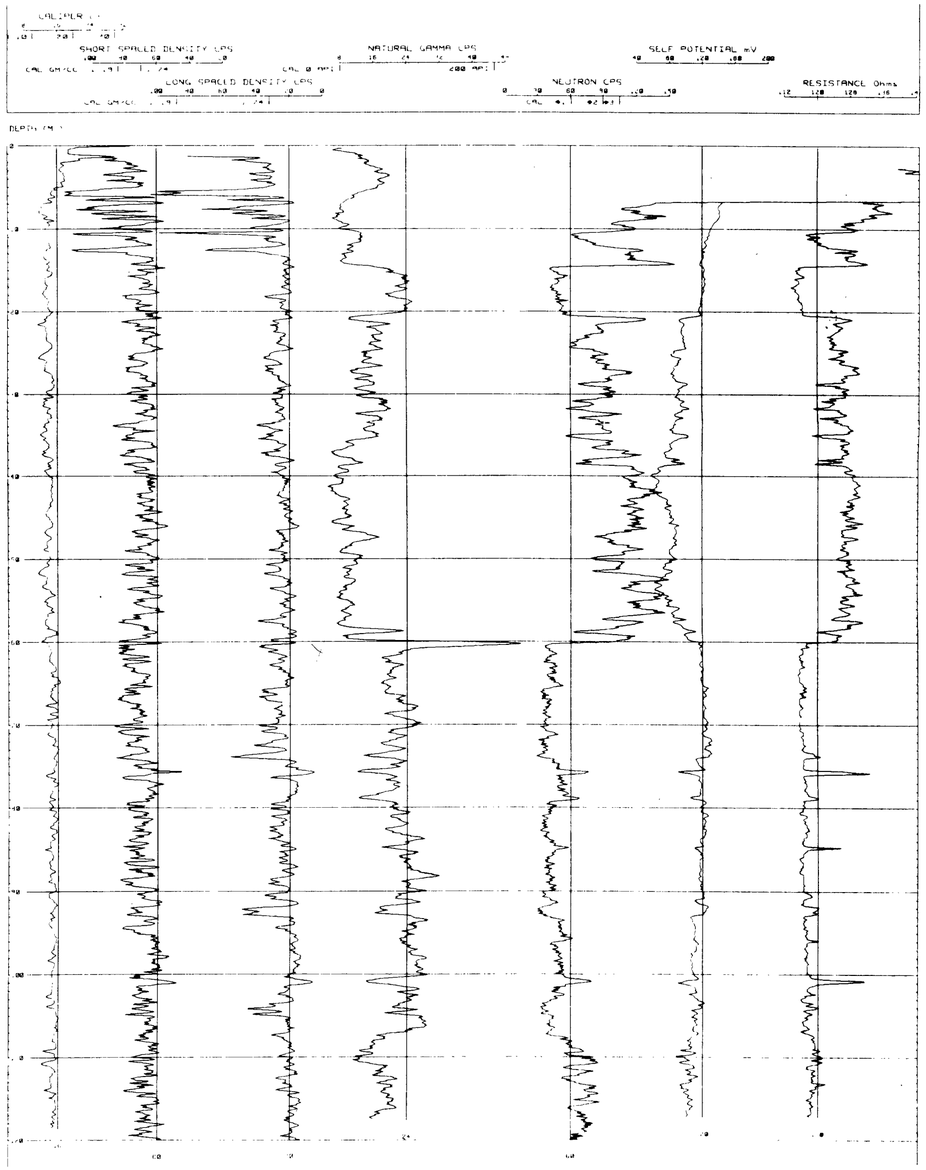
1980 DRILLING PROGRAM

GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

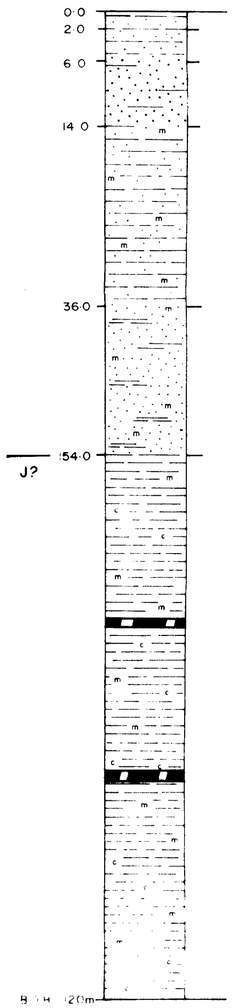
HOLE 80 LRM 23

Sheet Ref: Kimba SI53-7

Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/23



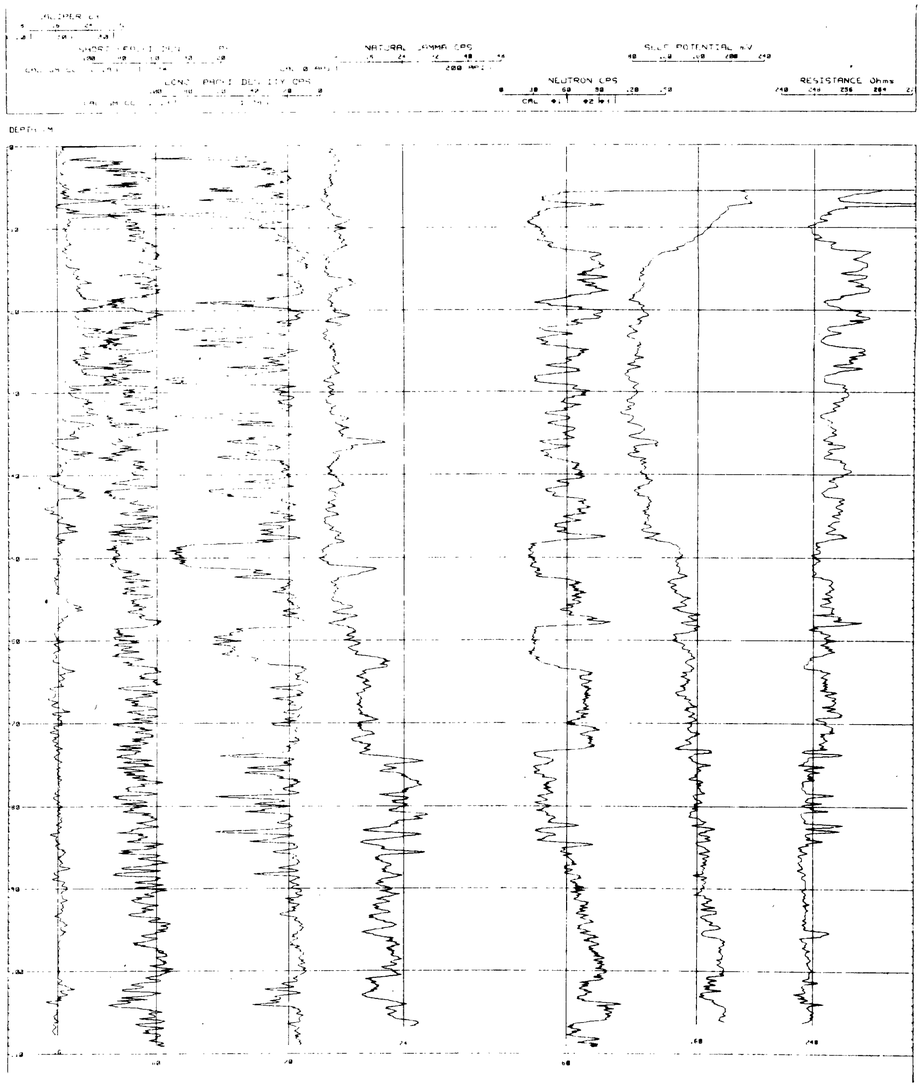
80 LRM 24



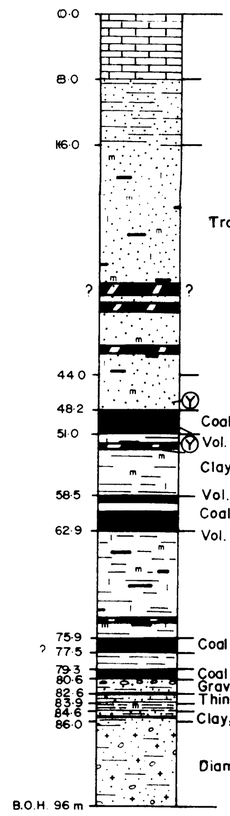
Refer to Plan N°: SAa 600 for Legend.

4659-20

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 24		
Sheet Ref: Kimba SI53-7		
Geol.: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/24



COMPOSITE LOG OF
80 LRM 30c
AND
80 LRM 30



Trace lignitic sand and coal fragments.

Coal black brown subbituminous, abundant woody fragments
Vol. matter 45·84 %, Fixed Carbon 39·91 %, Ash 14·25 %

Clay light grey brown micaceous lignitic with thin coal partings

Vol. matter 39·19 %, Fixed Carbon 18·61 %, Ash 45·20 %
Coal black brown hard blocky
Vol. matter 43·03 %, Fixed Carbon 22·11 %, Ash 34·86 %

Coal black brown blocky ?
Coal sub bituminous crumbly
Gravel
Thinly laminated coal
Clay, coal and sand

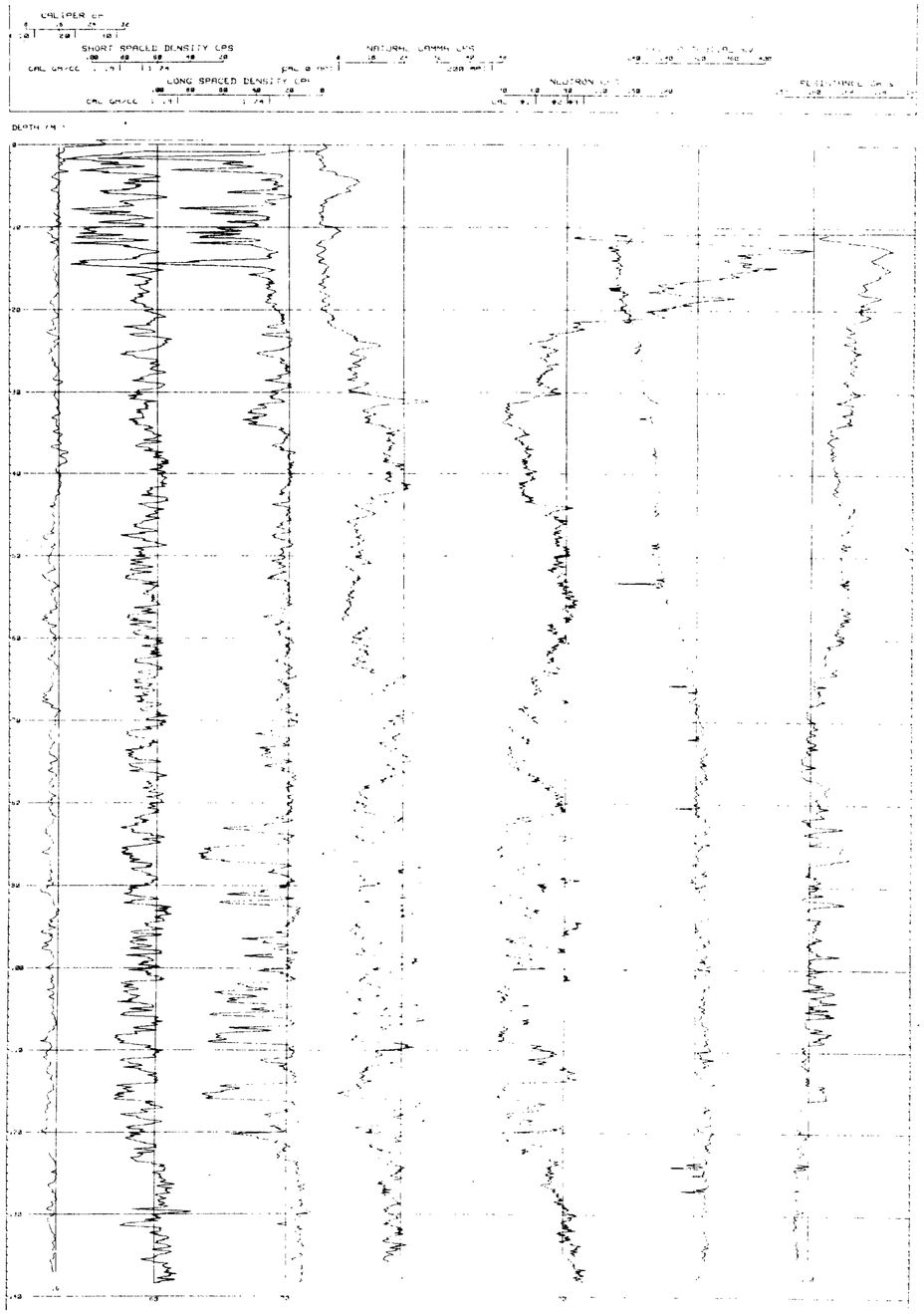
Diamictite, clay light green with large weathered granite fragments

– 46·93	Eocene	
– 50·05	Eocene	
– 52	Jurassic	
– 58·50	Jurassic	
– 62·40	Jurassic	
62·80	Jurassic	

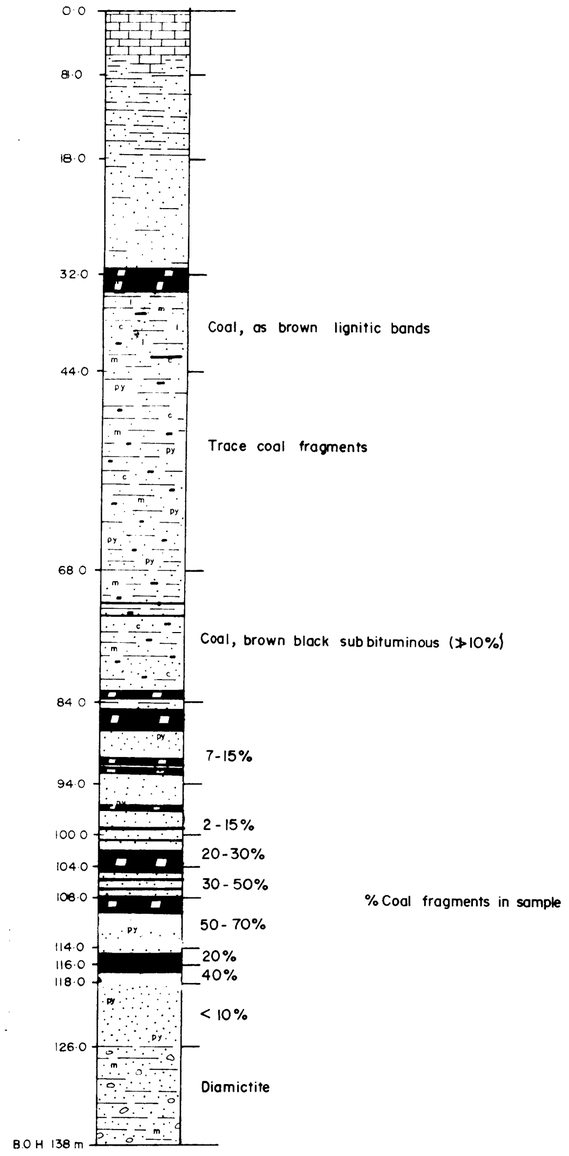
Refer to Plan N°: SAa 600 for Legend.
Analyses - moisture free basis
Vol. matter - Volatile Matter

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM		
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 30		
Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/30

4659-21



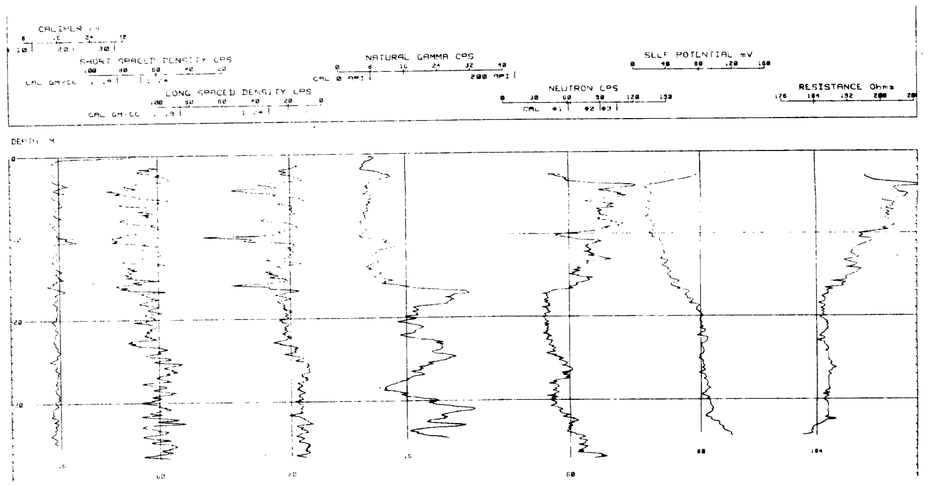
80 LRM 31



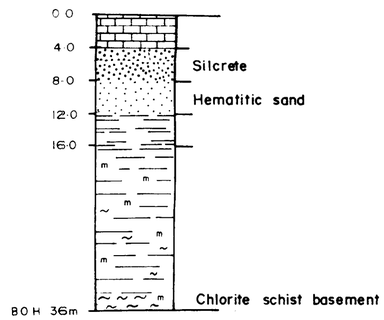
Refer to Plan N°: SAa 600 for Legend.

4659-22

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN 1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION HOLE 80 LRM 31 Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°SAa601/31



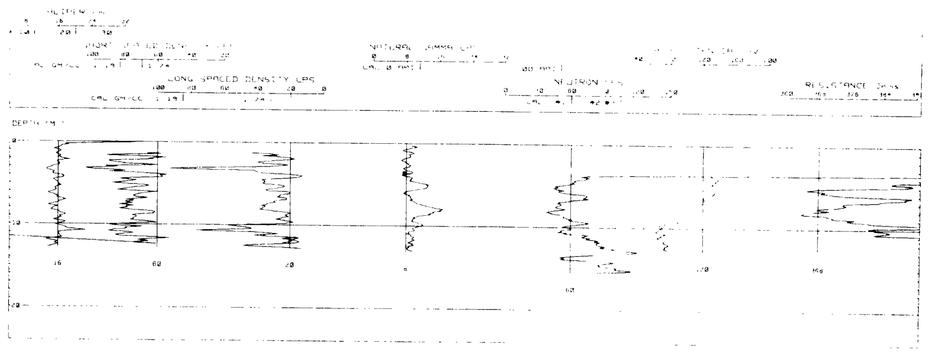
80 LRM 32



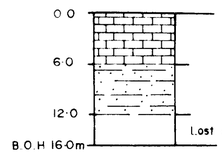
Refer to Plan N°: SA a 600 for Legend

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION HOLE 80 LRM 32 SHEET REF: KIMBA SI53-7		
Geol.: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/32

4659-23



80 LRM 34

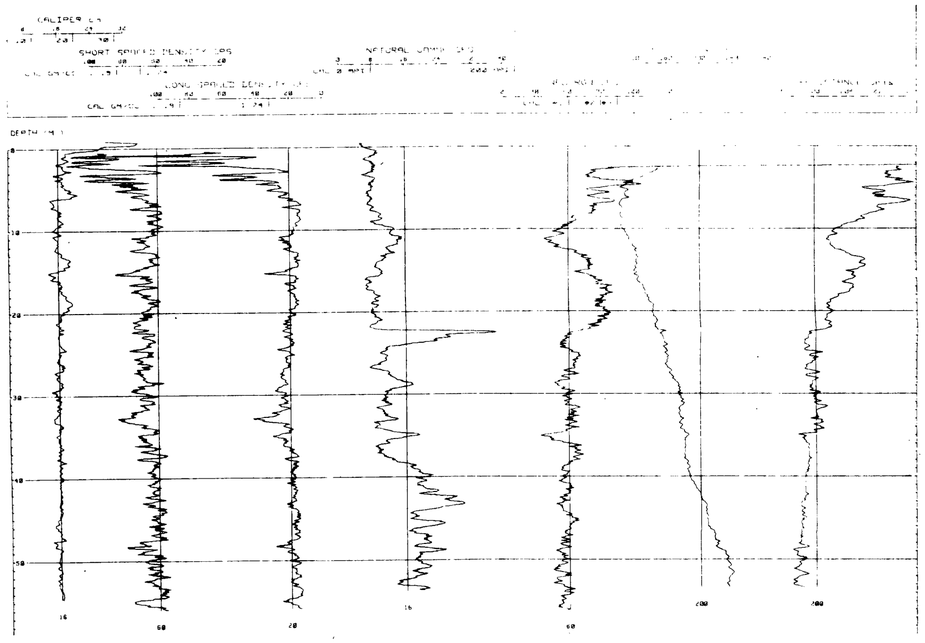


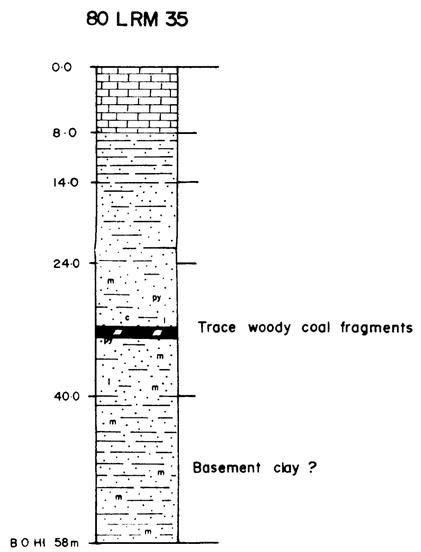
Lost circulation. No sample returned.

Refer to Plan N°: SAa 600 for Legend.

4659-24

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 34		
SHEET REF: KIMBA SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/34

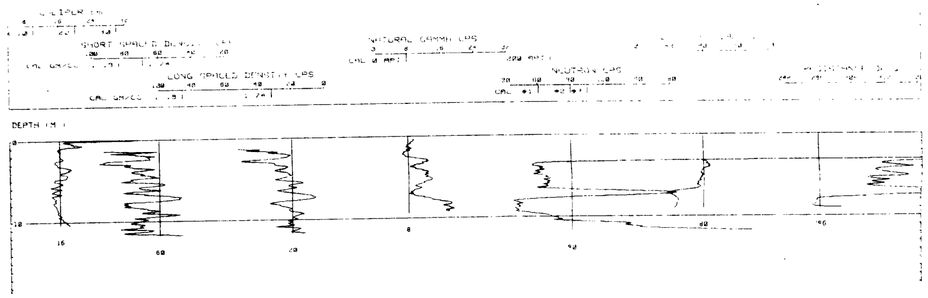


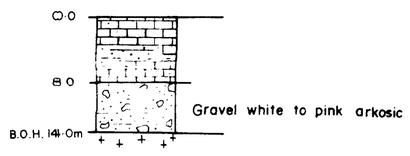


Refer to Plan N°: SAa 600 for Legend.

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 35		
Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa 601/35

4659-25

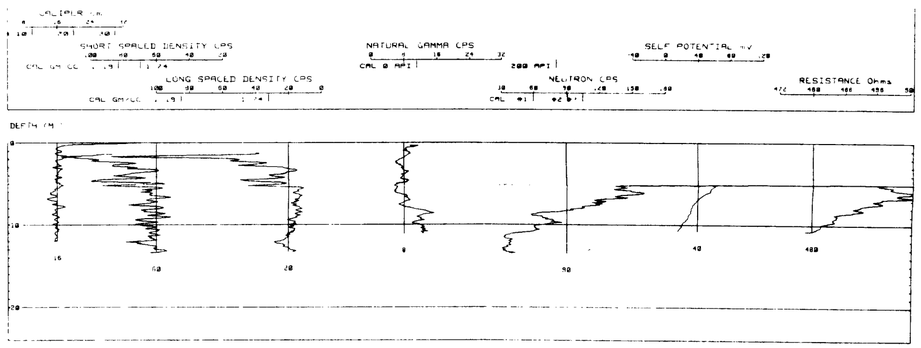




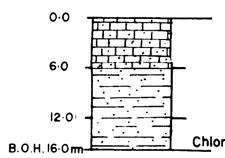
Refer to Plan N°: SAa 600 for Legend

4659-26

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN 1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION HOLE 80 LRM 36 SHEET REF: KIMBA SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/36



80 LRM 38

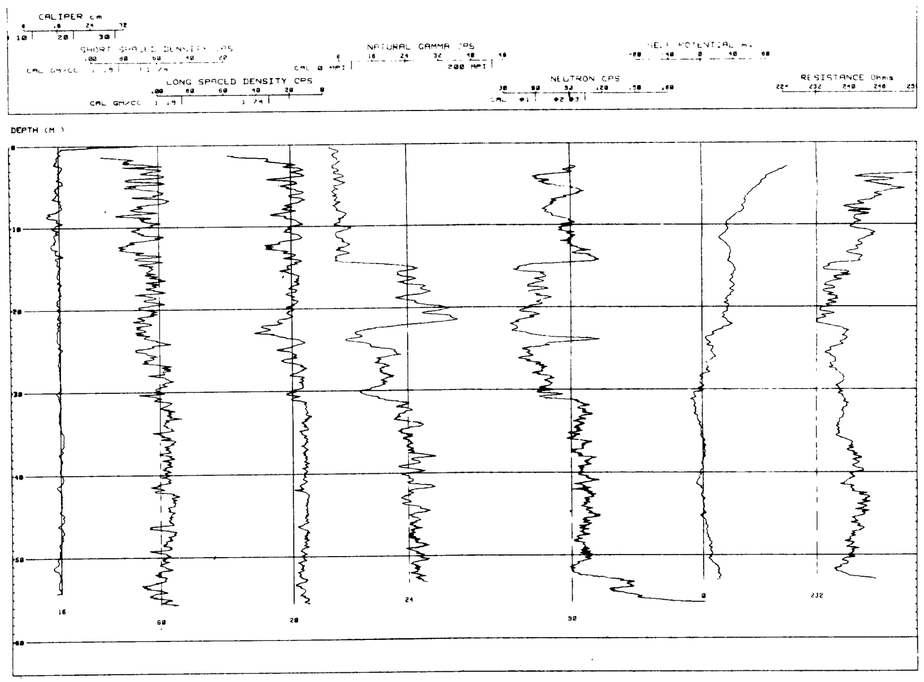


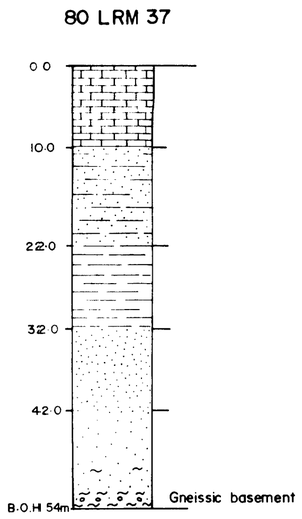
Chlorite and granular quartz feldspar fragments (basement)

Refer to Plan N°: SAa 600 for Legend.

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 38 Sheet Ref: Kimba SI53-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/38

4659-27(I)

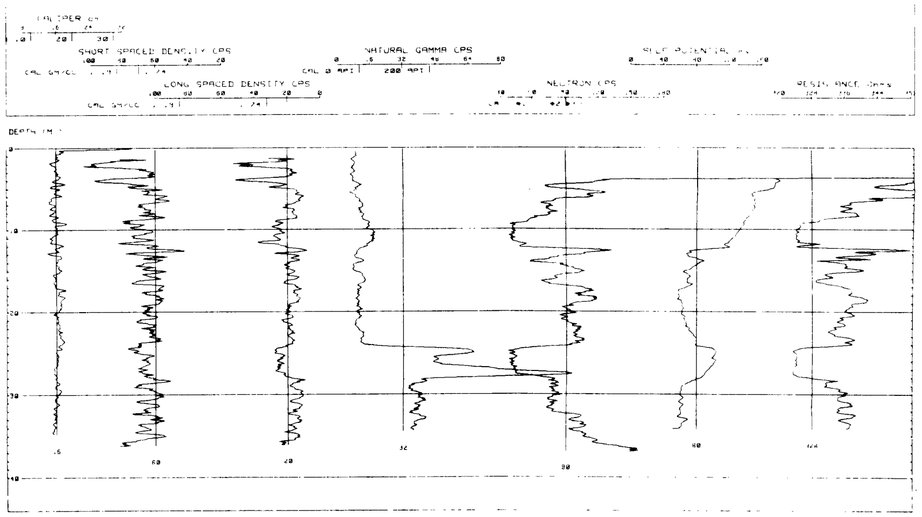




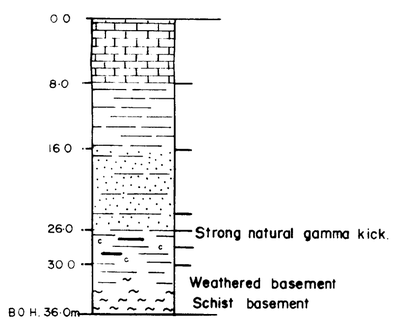
Refer to Plan N°: SAa 600 for Legend.

C.R.A. EXPLORATION PTY. LTD.		
POLDA BASIN		
1980 DRILLING PROGRAM GEOLOGICAL AND GEOPHYSICAL CROSS SECTION		
HOLE 80 LRM 37		
SHEET REF: KIMBA S153-7		
Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/37

4659-27(2)



80 LRM 39



Refer to Plan N°: SAa 600 for Legend

4659-28

C.R.A. EXPLORATION PTY. LTD.

POLDA BASIN

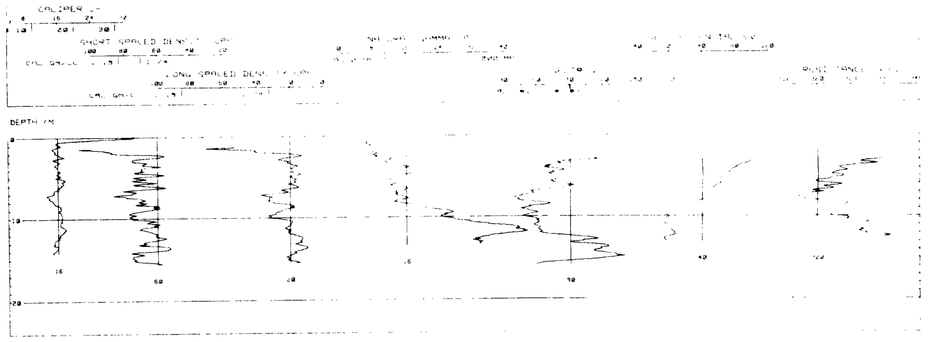
1980 DRILLING PROGRAM

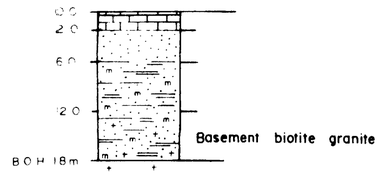
GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

HOLE 80 LRM 39

SHEET REF: KIMBA S153-7

Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn A.E.Y	Scale: 1:500	Plan N SAa601/39





Refer to Plan N°: SAa 600 for Legend.

C.R.A. EXPLORATION PTY. LTD.

A BASIN

1980 JG PROGRAM

GEOLOGICAL AND GEOPHYSICAL CROSS SECTION

HOLE 80 LRM 40

Sheet Ref: Kimba S153-7

Geol: M.F.	Date: Oct 1980	Report N°: 10307
Drawn: A.E.Y.	Scale: 1:500	Plan N°: SAa601/40

4659-29

GEOEX PTY LTD COMPUTERISED BOREHOLE LOGGING

C.R.A.E. PTY. LTD.
LOCK S A.

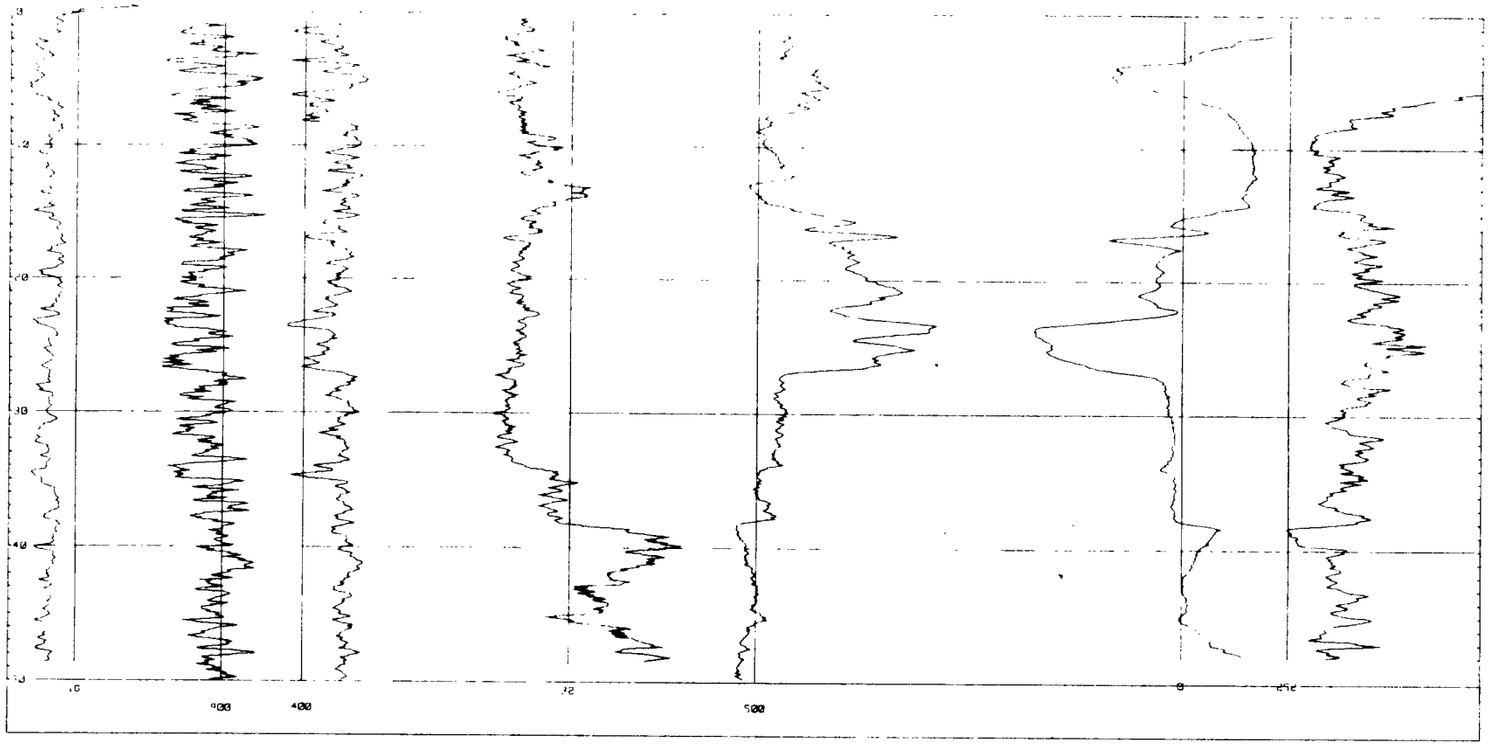
LOGGING SPEEDS
DENSITY PROBE 5 M/MIN
NEUTRON PROBE 6 M/MIN
DATUM ABOVE GROUND LEVEL .50 M
CASING DEPTH N/A m
TIME/BSL 200 mS
OPERATOR N J NEILL
DATA LOG VER 80120 11
DATA PLOT VER 80105 28

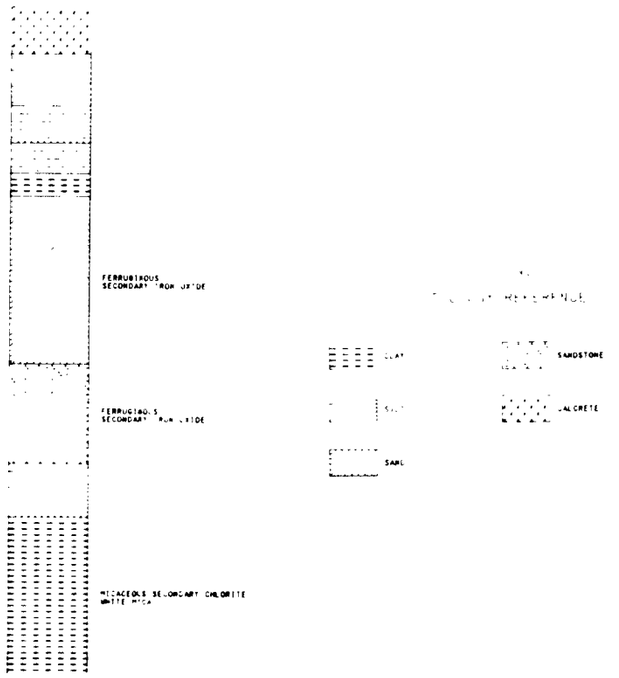
PLOTTING SCALE 1:200
PLOTTING 1 PA PER IN 5
FILTERING -
SHORT DENSITY 5
LONG DENSITY 5
CALIPER 2
NATURAL GAMMA 15
NEUTRON 5
SELF POTENTIAL 1
RESISTANCE. 5

BOREHOLE NO. 81LRM58
DEPTH LOGGED 50.05 M
DATE LOGGED 30/06/81
DATE PROCESSED 03/07/81

SHORT SPACED DENSITY CPS 1000 900 800 700 600
CAL GM/CC 1.9 2.4
CALIPER CM 8 16 24 32
50 40 30
NATURAL GAMMA CPS 0 16 32 48 64 80
0 API 100 API
LONG SPACED DENSITY CPS 600 500 400 300 200 0
NEUTRON CPS 0 500 1000 1500 2000
CAL 20%
SELF POTENTIAL mV 80 40 0 40 80
RESISTANCE Ohms 244 248 252 256 260

DEPTH M





4659-30

CRA EXPLORATION PTY LIMITED	
POLDA BASIN 1981 DRILLING PROGRAMME COMPOSITE BOREHOLE LOG **HOLE 81 LRM 58**	
REF. Kimba SI 53-7	
SCALE : 1:500	
AUTHOR : M.J.N.F.	REPORT : 10307
DATE : DECEMBER 1981	PLAN No SAa 1308

GEOEX

PTY LTD COMPUTERISED BOREHOLE LOGGING

C.R.A.E. PTY. LTD.
LOCK S.A.

LOGGING SPEED
DENSITY PROBE 5 M/MIN
NEUTRON PROBE 5 M/MIN
DATUM ABOVE GROUND LEVEL 90 M
CASING DEPTH N/A m
TIMEBASE 200 mS
OPERATOR M.O NEILL
DATA LOG VER 38012 11
DATA PLOT VER 38105 28

PLOTTING SCALE 1 200
PLOTTING 1 Point IN 1
FILTERING -
SHORT DENSITY 5
LONG DENSITY 5
CALIPER 2
NATURAL GAMMA 15
NEUTRON 5
SELF POTENTIAL 3
RESISTANCE. 5

BOREHOLE NO. 81LRM59

DEPTH LOGGED 151.52 M.
DATE LOGGED 03/07/81
DATE PROCESSED 12/07/81

SHORT SPACED DENSITY CPS
1000 900 800 700 600
GM CC 1.19 1.24

CALIPER cm
8 16 24 32
10 20 30

NATURAL GAMMA CPS
0 16 32 48 64 80 96
CAL 0 API 100 API

LONG SPACED DENSITY CPS
800 600 400 200 0
CAL GM/CC 1.19 1.24

NEUTRON CPS
160 320 480 640 800 960
CAL 26% 19% 1 9%

SELF POTENTIAL mV
-160 -120 -80 -40 0

RESISTANCE Ohms
240 244 248 252 256

DEPTH (M)

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140

MICACEOUS
SECONDARY PYRITE ... MICA
MICACEOUS
MICACEOUS
MICACEOUS
CARBONACEOUS
MICACEOUS
MICACEOUS CARBONACEOUS FLECKS
LIGNITIC
LIGNITIC
LIGNITIC
LIGNITIC
FELDSPATHIC ... PERM ...
CHARCOTITE BASEMENT

.6 900 400 48 480 80 240

SILT
SAND
CALCRETE

CRA EXPLORATION PTY LIMITED	
POLDA BASIN 1981 DRILLING PROGRAMME COMPOSITE BOREHOLE LOG HOLE 81 LRM 59	
REF Kimba SI 53-7	
SCALE 1 : 500	
AUTHOR M J F.	Report No 10307
DATE Dec. 1981	Plan No. SAa 1309

4659-31

GEOEX PTY LTD

COMPUTERISED BOREHOLE LOGGING

BOREHOLE NO. 81LRM61

C.R.A.E. PTY LTD

LOCK AREA

OPERATOR: M.O'NEILL

DATAPLOT VER. 6803.10

LOGGING SPEED. 5 M./MIN.

DATUM ABOVE GROUND LEVEL 0.00 M.

WATER LEVEL. 2.7

CASING DEPTH.

TOTAL DEPTH LOGGED. 165.9 M.

DATE. 15/07/81

SHORT DENSITY CPS
1100 1000 900 800 700
CAL GM/CC 1.19 1.74

CALIPER CM.
10 15 20 30

GAMMA CPS
0 20 40 60 80 100
CAL API 0 100

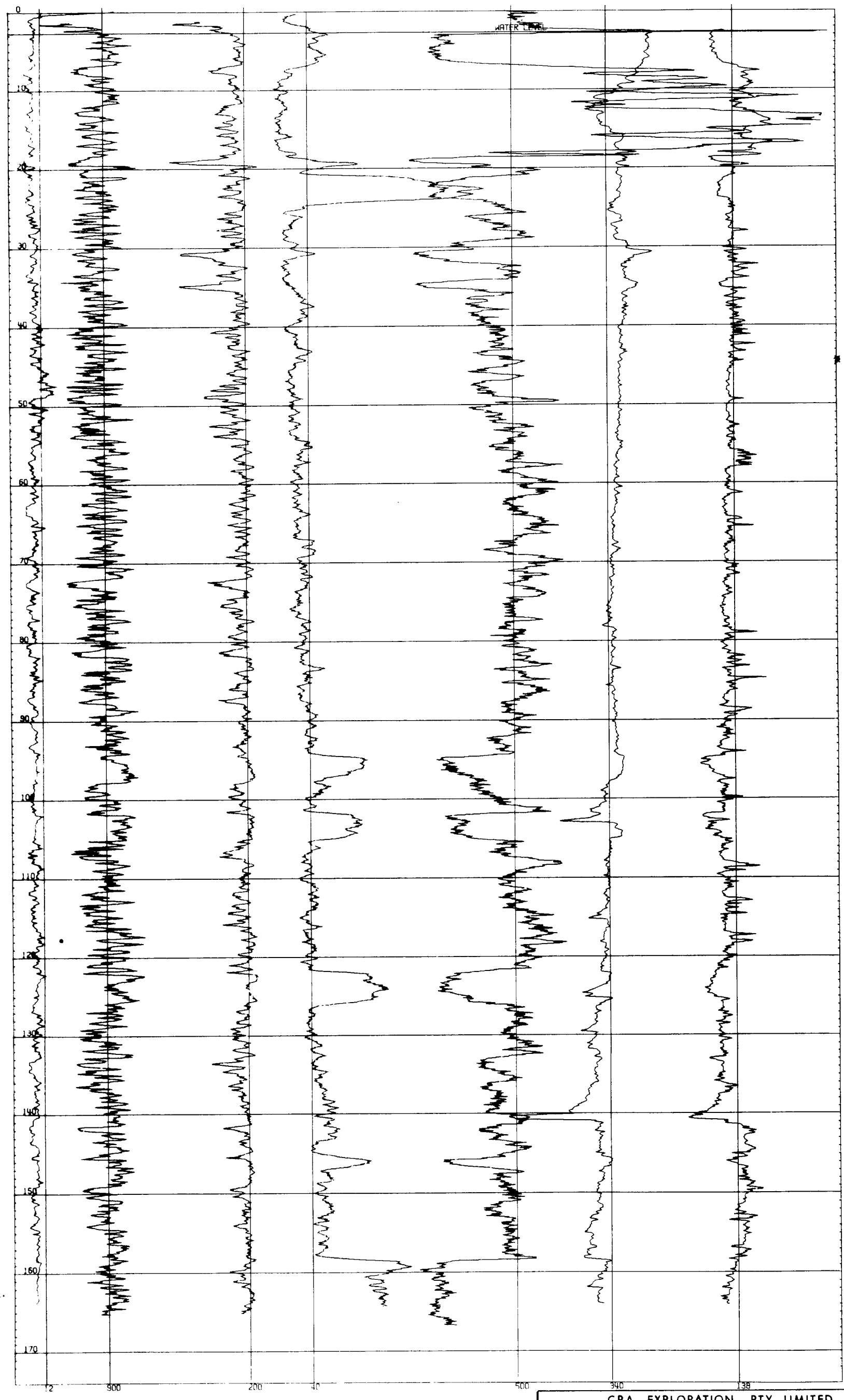
LONG DENSITY CPS
1000 800 600 400 200 0
CAL GM/CC 1.19 1.74

RESISTANCE OHMS
126 130 134 138 142 146

SELF-POTENTIAL MVOLTS
220 260 300 340 380 420

NEUTRON CPS
200 300 400 500 600 700 800 900
CAL #1 #2 #3

DEPTH (M)



MICACEOUS

MICACEOUS

MICACEOUS

MICACEOUS

MICACEOUS & LESSER BLACK MICA

FELSPATHIC MICACEOUS ACCESSORY BLACK MICA

CLAY SAND

CARB CLAY A. RICH

CRA EXPLORATION PTY. LIMITED.

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 61

REF.	Kimba SI 53-7	
SCALE	1 : 500	
AUTHOR	M. J. F.	Report No 10307
DATE	Dec. 1981	PLAN No. SAa 1311

4659-32

GEOEX PTY LTD

COMPUTERISED BOREHOLE LOGGING

BOREHOLE NO. 81LRM62

C.R.A.E. PTY LTD

LOCK AREA

OPERATOR. M.O'NEILL

DATAPLOT VER. 6803.10

LOGGING SPEED 5 M./MIN

DATUM ABOVE GROUND LEVE 0.00 M

WATER LEVEL 4.7

CASING DEPTH

TOTAL DEPTH LOGGED 200.8 M.

DATE. 15/07/81

SHORT DENSITY CPS
1100 1000 900 800 700
CAL GM/CC 1.19 1.74

CALIPER CM.
10 15 20 30

GAMMA CPS
0 20 40 60 80 100
CAL API 0 100

LONG DENSITY CPS
1000 800 600 400 200 0
CAL GM/CC 1.19 1.74

NEUTRON CPS
200 300 400 500 600 700 800 900
CAL #1 #2 #3

RESISTANCE OHMS
114 118 122 126 130 134

SELF-POTENTIAL MVOLTS
140 180 220 260 300 340

DEPTH (M)

WATER LEVEL

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

CRA EXPLORATION PTY LIMITED

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 62

REF.	Kimba SI 53-7	
SCALE	1:500	
AUTHOR	M.J.F.	REPORT No. 10307
DATE	Dec. 1981	PLAN No. SAa 1312

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GEOEX
PTY LTD

COMPUTERISED BOREHOLE LOGGING

BOREHOLE NO. 81LRM63

C.R.A.E. PTY LTD
LOCK AREA
OPERATOR: M.O'NEILL
DATAPLOT VER. 6803.10

LOGGING SPEED 5 M./MIN.
DATUM ABOVE GROUND LEVEL 0.00 M.
WATER LEVEL. 10.9
CASING DEPTH.

TOTAL DEPTH LOGGED 167.9 M.
DATE 15/07/81

SHORT DENSITY CPS
1100 1000 900 800 700
CAL GM/CC 1.19 1.74

CALIPER CM.
10 15 20 30

RESISTANCE OHMS
106 110 114 118 122 126

SELF-POTENTIAL MVOLTS
140 180 220 260 300 340

GAMMA CPS
20 40 60 80 100 120
CAL API 0. 100

DEPTH (M)

LONG DENSITY CPS
1000 800 600 400 200 0
CAL GM/CC 1.19 1.74

NEUTRON CPS
100 200 300 400 500 600 700 800
CAL #1 #2 #3

WATER LEVEL

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170

12 900 200 60 400 260 118

4659-34

CRA EXPLORATION PTY. LIMITED.

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 63

REF.	Kimba SI 53-7	
SCALE	1 : 500	
AUTHOR	M. J. F.	Report No 10307
DATE	Dec. 1981	PLAN No. SAa 1313

GEOEX PTY LTD

COMPUTERISED BOREHOLE LOGGING

BOREHOLE NO. 81LRM68

C.R.A.E. PTY LTD
LOCK AREA
OPERATOR. M.O'NEILL
DATAPLOT VER. 6803.10

LOGGING SPEED. 5 M./MIN.
DATUM ABOVE GROUND LEVEL. 0.00 M.
WATER LEVEL 0.0
CASING DEPTH.

TOTAL DEPTH LOGGED 159.1 M.
DATE: 22/07/81

SHORT DENSITY CPS
1100 1000 900 800 700
CAL GM/CC 1.19 1.74

CALIPER CM.
10 15 20 30

GAMMA CPS
20 40 60 80 100 120
CAL API 0 100

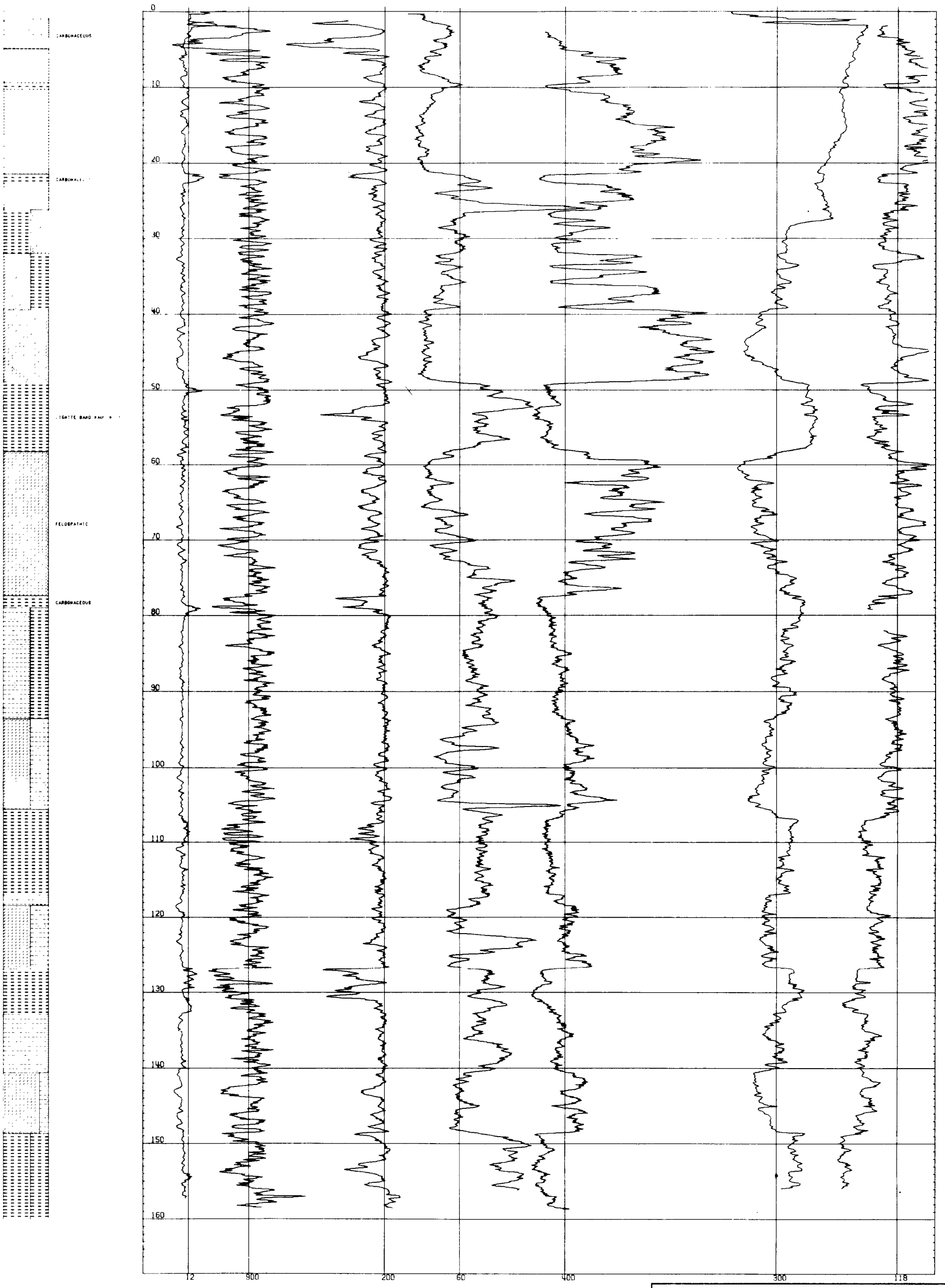
LONG DENSITY CPS
1000 800 600 400 200 0
CAL GM/CC 1.19 1.74

NEUTRON CPS
0 200 400 600 800 1000 1200
CAL #1 #2 #3

RESISTANCE OHMS
98 102 106 110 114 118

SELF-POTENTIAL MVOLTS
180 220 260 300 340 380

DEPTH (M)



LEGEND
LITHOLOGY REFERENCE

CLAY SAND
SILT SANDSTONE

NOTE: 68

4659-35

CRA EXPLORATION PTY. LIMITED.

POLDA BASIN
1981 DRILLING PROGRAMME
COMPOSITE BOREHOLE LOG
HOLE 81 LRM 68

REF.	Kimba SI 53-7		
SCALE	1:500		
AUTHOR	M. J. F.	REPORT No.	10307
DATE	Dec. 1981	PLAN No.	SAa 1318