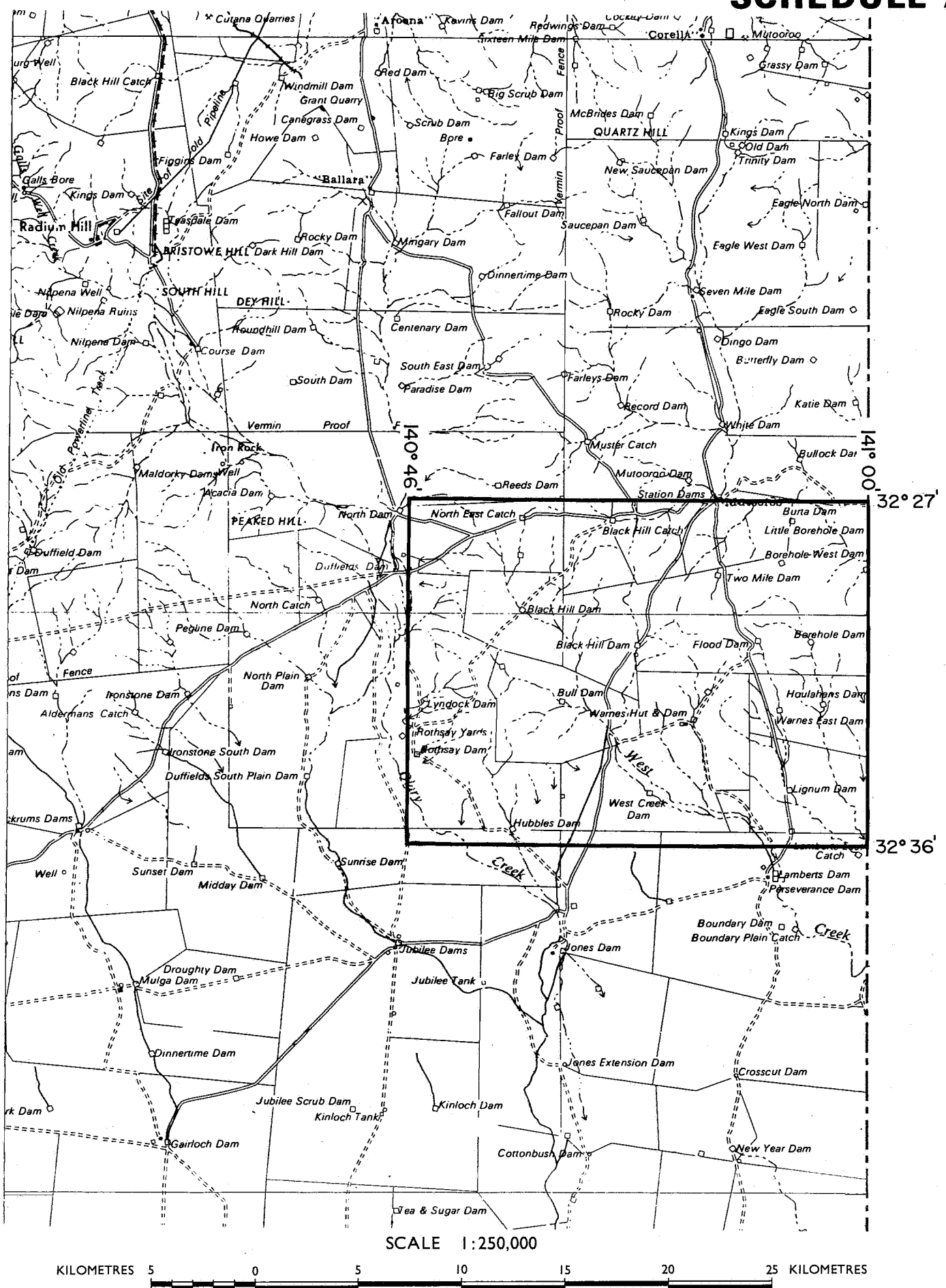


SCHEDULE A



APPLICANT: MARATHON PETROLEUM AUSTRALIA LTD.

DM: 403/79

AREA: 365

EXPIRED

square kilometres

1:250 000 PLANS: OLARY

LOCALITY: MUTOOROO AREA - Approx. 60km S.E. of Olary.

DATE GRANTED: 13.11.79

DATE EXPIRED: 12.11.86

EL No: 557

Duplicate

TECHNICAL REPORT
EXPLORATION LICENCE 557 (WEST CREEK)
FOR PERIOD 13 NOVEMBER 1979 TO 12 NOVEMBER 1980

by
G.K. Ellis and J. Yeaton



MARCH 1981

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1.0 INTRODUCTION

Exploration Licence 557 (West Creek) was granted to Marathon Petroleum Australia, Ltd. on 13th November, 1979. Exploration Licence 557 covers an area of 365 square kilometres on Mutooroo Station, 80 kilometres south of Cockburn, South Australia.

Exploration on E.L. 557 during 1980 consisted of a 12 hole, 1337 metre open-hole drilling programme carried out from the 25th to the 29th June, 1980 (figure 1). The main aim of the programme was to evaluate the favourable sand units which are known to exist in the area as possible hosts for sandstone type uranium deposits.

2.0 OPERATIONS

2.1 Drilling

The open-hole drilling programmes were carried out by Thompson Drilling Company of Adelaide, South Australia using a Mayhew 1000 rotary drilling rig.

2.2 Logging

The wireline logging was undertaken by Geoscience Associates (Australia) Pty. Ltd. of Kilkenny, South Australia who ran a composite probe for gamma ray S.P. and resistivity. Reduced analog records are included in Appendix 1.

2.3 Supervision

On site supervision for the drilling programmes was provided by G.K. Ellis, Project Geologist of Marathon Petroleum Australia, Ltd.

2.4 Surveying

All drillholes were surveyed by licenced surveyor, P.B. Simmons of Adelaide, South Australia for elevations above mean sea level.

2.5 Analytical Work

Cuttings from selected drillholes were analysed by AMDEL of Adelaide, South Australia for U_3O_8 , ThO_2 , Cu, Pb, Zn, Se, Mo, V, As, Ag and Au.

3.0 PREVIOUS WORK

Exploration work for sandstone-type uranium deposits has been carried out by Tricentrol Australia Ltd. on their EL 121 (Middleton, 1975) which covered much the same area as EL 557. Eleven holes were drilled during the time they held the Licence for a total of 1208 metres. In the course of the drilling, Tricentrol delineated a channel system trending south-west, roughly paralleling the Anabama-Redan Fault.

Low grade uranium mineralisation was found in Miocene sand sequences. The low grade and lack of continuity of the mineralisation led Tricentrol to make the decision to cease exploration activities and relinquish their Exploration Licence.

4.0 GEOLOGICAL SETTING

E.L. 557 is located in the northern part of the Murray Basin, adjacent to the crystalline highlands of the Olary Range, just south of the Radium Hill area. Pleistocene to recent alluvium covers most of the area, masking the Pliocene and other sediments which were derived from the adjacent highlands. The Anabama-Redan Fault, a major south-west trending structure is thought to have influenced channel development in the area, this was borne out in part by the results of the drilling done by Tricentrol (Middleton, 1975).

5.0 STRATIGRAPHY

5.1 Proterozoic

Proterozoic rocks, which comprise the basement rocks on E.L. 557 are low grade metamorphics, usually phyllites and micaceous schists. These rocks are Adelaidean in age (Middleton, 1975) and may be equivalent to the Yudnamutana Sub-Group and or Burn Group rocks which outcrop in the central and northern part of E.L. 557. In the the drilled section the Proterozoic is normally weathered and consists of a sticky grey-green micaceous clay.

5.2 Tertiary/Quaternary

The Tertiary stratigraphy has been divided into unofficial units based mainly on their lithology and geophysical log characteristics. Relative ages are applied to these units based mainly on a correlation of the glauconitic marl established by Tricentrol during the course of their exploration programme in the area (Middleton, 1975). Here again the ages are are unofficial with no positive age or stratigraphic correlation being established as yet.

Miocene (?)

Resting unconformably on the Proterozoic is a section of marine glauconitic marl, which grades in places to a marl-cemented glauconitic quartz sand. The marl is green to greenish gray in colour and contains abundant shell fragments.

The marl is present in most places south of the Anabama-Redan Fault, while north of the Fault the unit pinches to a thin wedge and then disappears completely. As this unit wedges out the lithology changes from the typical gray-green marl to a quartz rich sand with marl-cement, the quartz grains being highly polished, suggesting perhaps some reworking of the unit or longshore transport. A dark gray to gray-green pyritic clay overlies the marl in most places, the clay most likely representing a regression following deposition of the marine sequence.

Present above the marl is a section of Miocene sand that is most probably fluvial in origin. This quartzose sand is yellow to light gray in colour, medium to coarse grained, sub-rounded to rounded in nature and moderately to poorly sorted. Pyrite is a common constituent of the sand, in places pyrite is found encrusting sand grains. Carbonaceous matter in the form of humic coatings on sand grains is also very common throughout the Miocene section. The Miocene sand is present in nearly all of the holes drilled in the area.

Pliocene (?)

The Pliocene section, which consists of thickly bedded sands in the lower part and a monotonous section of clays and thin sands in the upper, comprises the majority of the stratigraphic section found on E.L. 557.

The Pliocene sands rest directly on the Miocene sands in some of the drillholes, and in others are separated by a thin gray-green clay layer. The Pliocene sands are lithologically similar to the underlying Miocene; light yellow to light gray in colour, coarse to very coarse, sub-rounded to rounded moderately well sorted quartz sands. Unlike the underlying Miocene however, pyrite is not nearly so common, appearing only in a few of the drillholes.

Pleistocene/Recent:

Overlying the upper Pliocene clays and sands are red sands and sand and gravel (deposits that are likely to be Pleistocene to Recent in age. Some calcrete deposits are also present in the area covered by E.L. 557.

6.0 MINERALISATION

Mineralisation was previously intersected in the main Miocene channel sand sequence south of the Anabama-Redan Fault in the drilling programme conducted by Tricentrol. Marathon's efforts to date have confirmed the presence of this mineralisation and in the course of close spaced drilling programmes have located similar mineralisation to that discovered previously. Best intercept to date in the channel sequence is 0.7 m of .073% eU_3O_8 at 102.2m. The mineralisation is generally associated with reduced pyritic clay zones adjacent to the Miocene sand section. At this time, the significance of the mineralisation has not been determined.

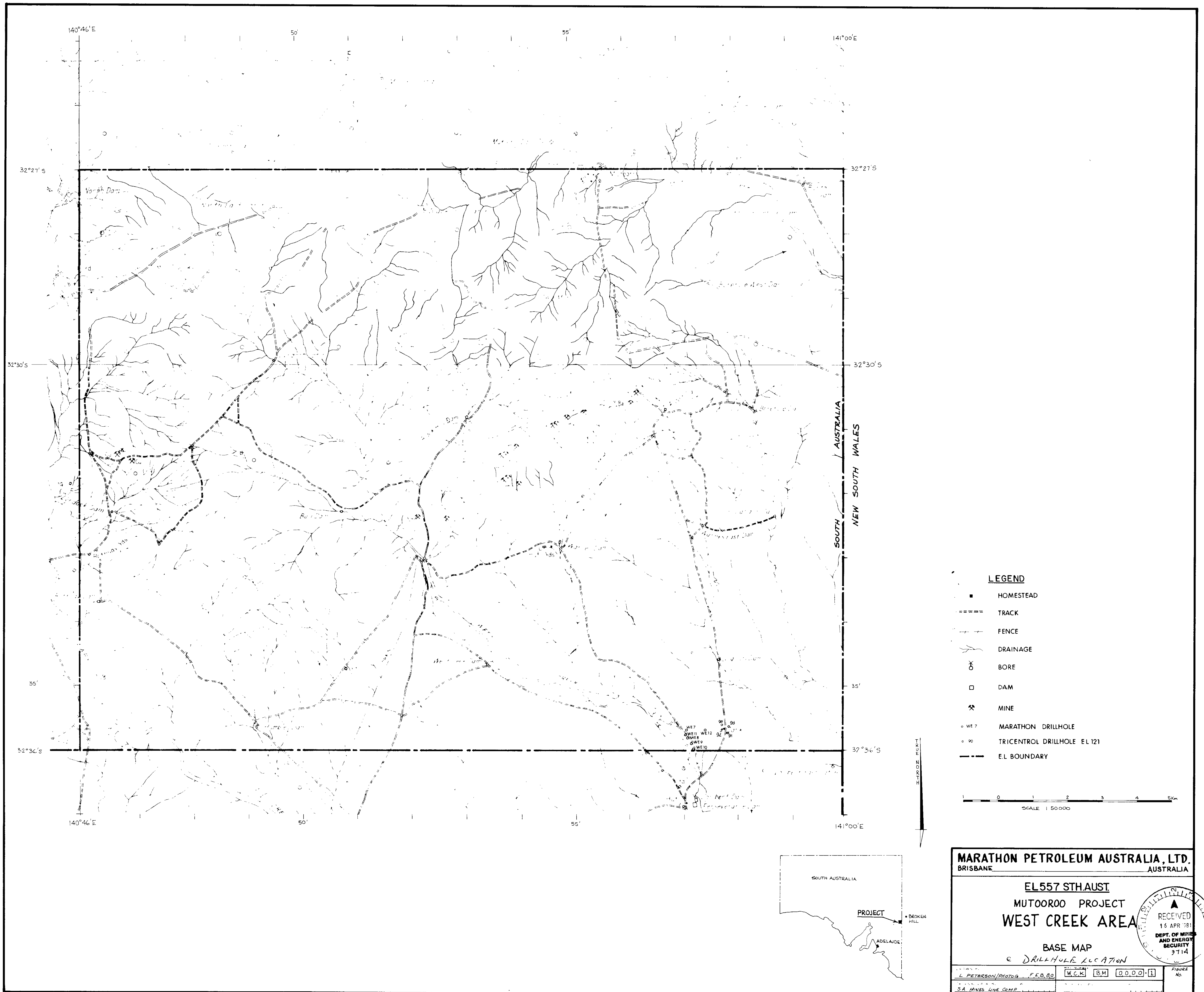
7.0 CONTINUING WORK

Work is continuing on E.L. 557; at the present time the results are still inconclusive and further evaluation will need to be done to determine the possibility for the area to contain a sandstone-type uranium deposit of sufficient size and shallow enough depth to be economically feasible.

8.0 REFERENCES

Middleton, T.W., 1975

Relinquishment report, E.L. 122
(Lignum Dam) Tricentrol Australia Ltd.
Department of Mines, Open File Report
Eh 2391.



APPENDIX I

COMPOSITE LOGS OF DRILLHOLES

PROJECT WEST CREEK HOLE SIZE 4 3/8" ☐ AIR ☒ WATER HOLE No. WE 1
 ELEVATION 135.2m LOCATION 501 SW of M766 (toward 11797) LOGGED BY G. KELLS DATE 25/6/80
 MAP _____ SCALE _____ T.D. _____ P.D. 118.0m

GEOPHYSICAL LOG	DEPTH M	STRIP LOG	LITHOLOGY LOG
	0-5.0	"	SANDY SILT red-bm, strong red-bm haematite mottling
	5.0	"	SAND GRAVEL, red-bm-orange, submd, poor sorting, v. clay, strong orange limonite staining on most grains
	10	"	clayey in pt
	17.0	"	SAND orange, ag, submd, faint to good sorting, strong orange limonite staining on most grains
	22.0	"	CLAY red-bm, silty, strong red haematite mottling
	30	"	CLAY lt-gy with mod yellow ^{limonite} and red haematite mottling
	39.0	"	CLAY lt-gy-lt-gy-bm, weak to mod red haematite mottling
	50.0	"	CLAY med-dk gy, weak red haematite mottling at top
	55.0	"	CLAY lt-gy, silty, sl sandy in pt
	60	"	
	70	"	SAND pale yellow, ag, submd, fair sorting, v. clay, weak to mod orange limonite staining on 10% grains, weak to mod yellow limonite staining on remainder
	72.0	"	CLAY lt-med gy, weak yellow limonite mottling in pt
	80	"	
	90	"	
	100	"	SAND pale orange, ag-v. ag -16mm, submd-m, poor sorting, mod orange limonite staining on 50% grains, mod yellow limonite staining on remainder, abundant p. to greenish yellow, dk. to antedent, 10-15% grains have unoxidized appearance and are encrusted by pyrite to black cherty fragments
	110	"	pyrite abundant at 100-105m grains -> 80% is massive but 20% is cementing qtz grains
	110.0	"	GRAUONITIC MARL pale green-grey green, v. clayey
	117.0	"	QUARTZITE med-gy, fine to hard.
	120	"	
	120	"	

PROJECT WEST CREEK HOLE SIZE 4 1/2" ☐ AIR ☒ WATER HOLE No. WEZ
ELEVATION 1341m LOCATION 100m SE of MT86 (toward MT9) LOGGED BY GRUBB DATE 7/1/92
MAP _____ SCALE _____ T.O. _____ P.D. 118.0m

GEOPHYSICAL LOG		DEPTH M	STRIP LOG	LITHOLOGY LOG
				0.0 SILTY CLAY (ST. CLAY) red brn. strong red haematite mottling
				3.0 CLAY red brn. strong red haematite mottling, silty
				20.0 SAND/GRAVEL veg - 14mm, subv, poor sorting strong orange limonite staining on most grains
				24.0 CLAY red brn. strong red haematite mottling
				39.0 CLAY lt gy with med red haematite and yellow limonite mottling, silty
				50.0 CLAY med - dk gy fl carbonaceous?
				57.0 CLAY lt gy brn with med yellow limonite mottling
				83.0 SAND orange, cg-veg - 13mm, med, poor sorting, med orange limonite staining on 80% of grains, med yellow limonite staining on remainder, common brn limonite coated qtz grains, and solid limonite
				93.0 CLAY med - dk gy
				105.0 SAND pale orange, cg-veg, med fair - poor sorting, med strong orange limonite staining on 20% of grains, med to med weak yellow limonite staining on remainder, common greenish gy pyrite dull anhedral - clay interbedded iron oxide neutral appearance
				111.0 CLAY dk gy, silty
				112.0 GLAUCONITIC MARL pale-green, v clayey
				114.0 CLAY pale green gy - green, silty, weathered basement? the colour of glauconitic sand at underlying CLAY v similar

PROJECT WEST CREEK HOLE SIZE 4 3/4" ☐ AIR ☒ WATER HOLE No. WE3
 ELEVATION 135.0m LOCATION 50m NW of N1T86 (toward N1T90) LOGGED BY G. KELLS DATE 24.11.91
 MAP _____ SCALE _____ T.D. _____ P.D. 106.6m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG

Upper part of section as for WE1

51.0 CLAY lt-med gy, weak to mod. rd. haematite mottling

60.0 CLAY lt gy - lt gy bn, sticky, soft. (cream to white in col)

68.0 CLAY lt gy - lt gy bn, mod. yellow limonite mottling
silty, soft, sticky.

93.0 CLAY med gy, silty

96.0 SAND pale yellow, fgy, subord med, fair good sorting
weak to mod orange limonite staining on 100 grains, remainder
are neutral in appearance

Sample from 96.0 not necessarily representative
due to bad loss circulation.

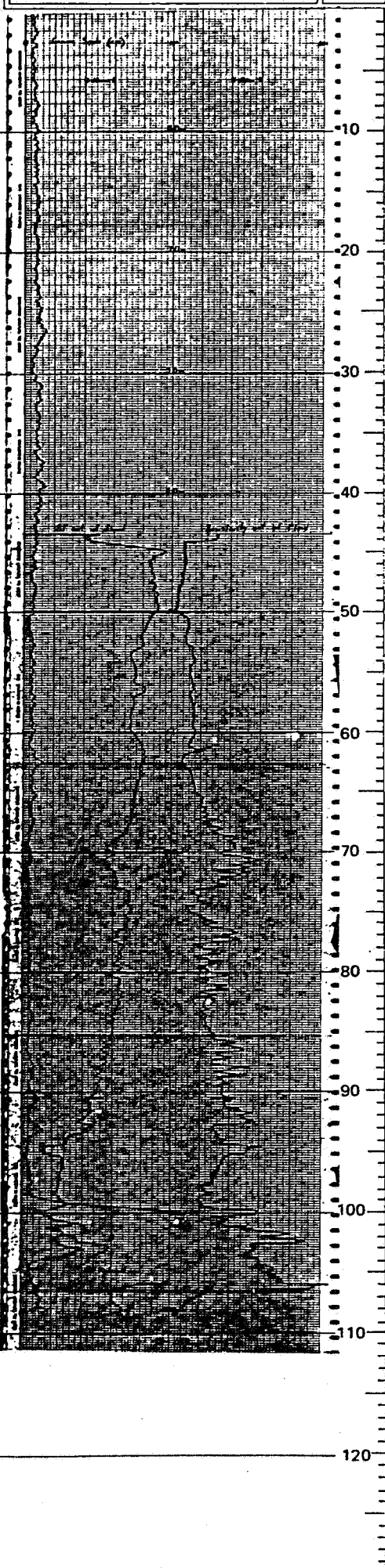
T.D.

PROJECT WEST CREEK HOLE SIZE 4 3/4" ☐ AIR ☒ WATER HOLE No. WEA
 ELEVATION 135.2 LOCATION 50m SW of WE 1 (toward 11792) LOGGED BY P. J. Ellis DATE 20/1/80
 MAP _____ SCALE _____ T.D. _____ P.D. 116.0m

GEOPHYSICAL LOG	DEPTH M	STRIP LOG	LITHOLOGY LOG
			Upper part of section as for WC1
			70.0 SAND lt gy - pale yellow, fg, submd - md, fair good sort, mod orange limonite staining on 20% grains, mod yellow line staining on remainder
			84.0 CLAY lt gy - lt gy brn, bands of clay with strong yellow limonite mottling interbedded.
			88.0 SAND lt gy - pale yellow, veg, submd - md, poor sorting, mod - orange limonite staining on 5-10% grains
			mod brn patchy and stringy humic staining on 10% grains, remainder neutral.
			95.0-96.0 CLAY lt gy - lt gy brn, silty, shaly
			96.0 SAND lt gy - pale yellow, cg - veg, md, fair sorting, weak to mod orange limonite staining on 20% grains, weak yellow limonite staining on remainder
			99.0-103.0 CLAY lt gy - lt gy brn, grading to mod gy, sandy
			106.0 SAND, orange, cg - veg, submd - md, poor sorting, weak to mod orange limonite staining on 40% grains, weak yellow limonite staining on remainder about pyrite, greenish grey, anhedrol (flat tabular pieces), unoxidized quartzite pyrite, common pieces of brn limonite.
			veg - 14mm, md, unoxidized appearance at base
			114.0 METAMORPHIC md green, foliated, firm hand.

PROJECT WEST CREEK HOLE SIZE 2 1/2" ☐ AIR ☒ WATER HOLE No. WE5
ELEVATION 134.8m LOCATION 50m NE of MTE (band 0793) LOGGED BY G.R. 1111 DATE 2/1/82
MAP _____ SCALE _____ T.D. _____ P.D. 103.0m

GEOPHYSICAL LOG	DEPTH M	STRIP LOG	LITHOLOGY LOG
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Upper bed of section as for WE1 and WE2

from 72m samples not reliable indication of
formation being drilled - bad lost circulation
problems

T.D.

PROJECT WEST CREEK HOLE SIZE 1 1/2" ☐ AIR ☒ WATER HOLE No. WEB
 ELEVATION 135.4 m LOCATION 50m SW of M792 LOGGED BY S. J. J. DATE 1/10/01
 MAP _____ SCALE _____ T.D. _____ P.D. 110.0m

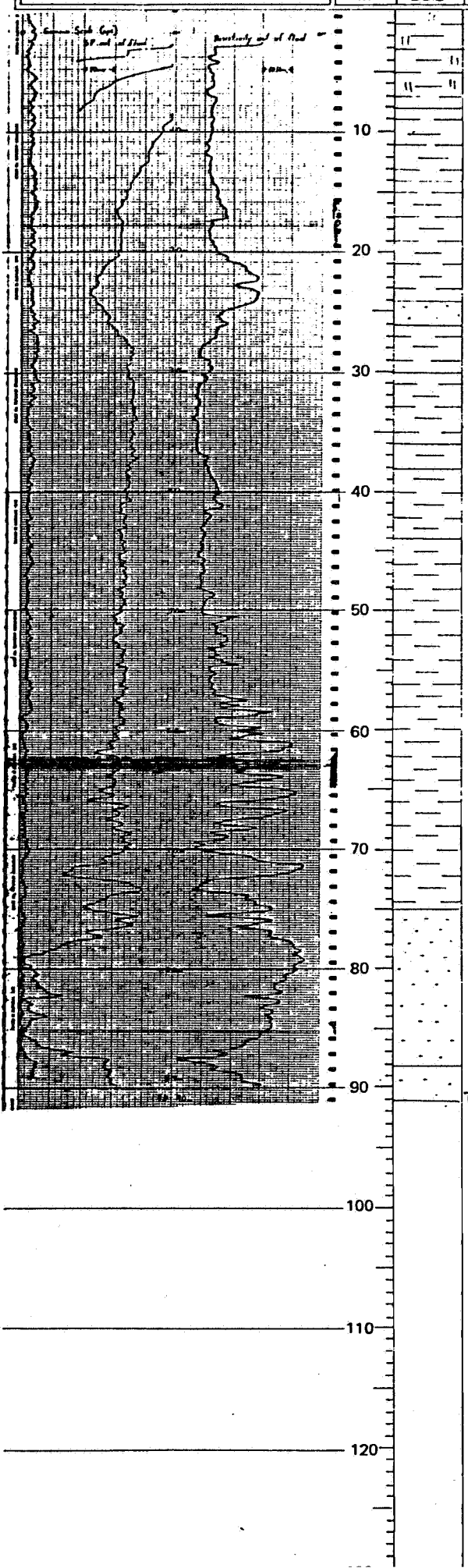
GEOPHYSICAL LOG	DEPTH M	STRIP LOG	LITHOLOGY LOG
			0.0 SILTY CLAY / siltstone, strong red haematite mottling
	10		16.0 CLAY lt. gy. br. with strong red haematite mottling
	20		
	30		
			36.0 CLAY lt. gy. br. with mod red haematite and yellow limonite mottling, silty
	40		42.0 CLAY lt. gy. - lt. gy. br. with weak to mod. red haematite and yellow limonite mottling
			52.0 CLAY med gy with weak red haematite and yellow limonite mottling
	50		
			69.0 CLAY lt med gy, weak yellow limonite mottling
	60		Samples in this interval are not very reliable because of lost circulation problems
	70		
			80.0 SAND yellow, fmg, submd. md, fair to good sorting mod orange limonite staining on 10% grains, mod yellow limonite staining on remainder
	80		v uniform section.
			cl clayey in pt
	90		93.0 SAND pale yellow, mg, submd. md, fair to good sorting weak to mod orange limonite staining on 30% grains weak to mod red haematite staining on 20% grains and weak yellow limonite staining on remainder
			v uniform section.
	100		
			111.0 SANDSTONE / SILTSTONE blue green, fissile, firm weathered at top.
	110		
	120		

PROJECT WEST CREEK HOLE SIZE 4 1/2" ☐ AIR ☒ WATER HOLE No. WE1
 ELEVATION 136.5 m LOCATION 1 km West of 11786 LOGGED BY 22/11/86 DATE 25/11/86
 MAP _____ SCALE _____ T.D. _____ P.D. 30.1 m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG



0.0 SILTY CLAY red bn, strong red hematite mottling
 8.0 CLAY lt gy bn with weak yellow limonite and red haemat mottling
 14.0 CLAY lt gy with strong red haematite mottling
 24.0-26.0 SAND red bn-orange, fg, subang-sibnd, fine to st. strong orange limonite staining on most grains
 30.0 CLAY lt gy bn, weak yellow limonite and red haematite mottling
 38.0 CLAY med-dk gy
 44.0 CLAY lt gy, silty, mod. yellow limonite mottling in pt.
 75.0 SAND pale yellow, fg-mg, submd-md, good sorting weak to mod orange limonite staining on 20% grains, mod yellow limonite staining on remainder
 cl clayey a ft
 86.0 SAND pale orange, mg, submd-md, fair to good sorting weak to mod orange limonite staining on 30% grains, weak yellow limonite staining on remainder
 91.0 MUDSTONE pale grey green, fissile, firm to hard.

T.D.

PROJECT WEST CREEK HOLE SIZE 4 3/4" ☐ AIR ☒ WATER HOLE No. WEB
 ELEVATION 136.0m LOCATION 200m so. 11.1 WE 7 (clay bank) LOGGED BY 2.1.1.1 DATE 20/1/11
 MAP SCALE T.D. P.D. 110.0m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG

0.0 SAND/GRAVEL, red-brown, med-2mm sorted, coarse
 poor sorting, strong orange limonite staining on most grains

7.0 CLAY red-bm, strong red haematite mottling, silty

18.0 CLAY lt-gy-bm, weak to mod yellow limonite and red
 haematite mottling, silty

24.0 CLAY lt-gy-bm, mod-strong red haematite mottling

46.0 CLAY lt-gy-bm, lt-gy.

51.0 CLAY med-gy with mod red haematite mottling

55.0 CLAY lt-gy, silty with beds of lt-gy but strong
 yellow limonite mottling

72.0 SAND pale orange, ag-veg, submd, fair-good sorting
 weak to mod orange limonite staining on 40% grains, mod
 limonite staining on remainder

60.0 CLAY lt-gy-bm, weak yellow limonite mottling

84.0 SAND, lt-gy-yellow, ag-veg, md, fair sorting, weak
 to mod orange limonite staining on 20% grains, remainder
 grains have weak limonite staining

96.0 SAND/GRAVEL, lt-gy, veg-14mm, md, poor sorting,
 weak to mod orange limonite staining on 20% grains, remainder has
 weak appearance

99.0 SAND pale orange, ag, md, fair to good sorting
 weak to mod orange limonite staining on 20% grains, mod
 yellow limonite staining on remainder
 weak red haematite on 10% of grains near base

105.0 CLAY lt-gy-bm, weak to mod yellow limonite mottling
 106.0 SAND pale orange, ag-veg, md, fair to good sorting
 weak to mod orange limonite staining on 20% grains, mod
 yellow limonite staining on remainder, weak red haematite
 staining on 10% grains
 common pink, greyish yellow dull-shiny, sub-red weak
 clayey bedded mottling

110.0 CLAY/GRAVEL med-dk green, veg-veg
 110.0 CLAY pale green, fair weathered basement? (cf W)

PROJECT WEST CREEK HOLE SIZE 3 1/2" ☐ AIR ☒ WATER HOLE No. WE9
 ELEVATION 135.6m LOCATION 200m S. of WE 8 (along creek) LOGGED BY B. J. Smith DATE 26 Feb 1971
 MAP _____ SCALE _____ T.D. _____ P.D. 116.0m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG

0.0 SILT/CLAY/SAND, red br., clay - 2cm, silty, sandy, poorly sorted, strong orange limonite staining on nodules

8.0 CALICHE CLAY red brown clay with iron stained br. concretions

14.0 CLAY lt. gy br., silty with mod yellow limonite mottling and weak to moderate red haematite mottling

24.0 CLAY lt. gy br. with mod - strong red haematite mottling

44.0 CLAY lt. gy - lt. gy br., silty, weak to mod yellow limonite mottling in pt.

52.0 CLAY lt. mod gy, weak to mod red haematite mottling

60.0 CLAY very pale grey, weak yellow limonite mottling in pt.

78.0 SAND pale yellow, q, mod, fair to good sorting, weak orange limonite staining on 20% grains, remainder v. uniform sand

96.0 SAND pale yellow to lt. gy, var - 14mm, mod, fair-poor sort, weak orange limonite staining on 20% grains, weak to mod yellow limonite staining on remainder, common dk. gy qtz grains

99.0 SAND pale yellow, q, submod - mod, fair sorting, weak to mod sparse limonite staining on 20% grains, remainder yellow limonite staining slightly finer grained with depth - mg - q.

clayey at base mod. grey
 111.0 SAND pale yellow - orange, mg, submod - mod, good sorting, strong brown haematite staining on 20% grains, mod orange limonite staining on 20% grains, mod weak yellow limonite staining common pyrite greenish yellow, ball - staining, scattered

114.0 CLAY pale grey green, silty, weathered, basins.

PROJECT WEST CREEK HOLE SIZE 4 3/4" ☐ AIR ☒ WATER HOLE No. WE10ELEVATION 135.2m LOCATION 200m South along road from WE 9 LOGGED BY G. V. 2005 DATE 2/2/05MAP _____ SCALE _____ T.D. _____ P.D. 113.0m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG

0.0 SILTY clay red brn, st sandy, silty (microscopic 12cm)
Strong red haematite mottling

14.0 Clay red brn, strong red haematite mottling

19.0 Clay lt gy brn, med-strong yellow limonite mottling
silty, st sandy

26.0 Clay lt gy brn with med-strong red haematite mottling

52.0 Clay lt-med gy, ^{pink} med red haematite mottling towards L

62.0 Clay lt gy, silty, weak yellow limonite mottling

81.0-87.0 sandy section v. ff, subnd md, good sorting
(poorly represented in samples)

90.0 Clay med-lt gy, silty

96.0 SAND lt gy-pale yellow, mg, subnd md, fair good sorting
weak to med orange limonite staining on 10% grains, weak
remnants of grains have nodule appearance105.0 SAND pale yellow, co, subnd (md-lt) fair to good
sorting, weak to med orange limonite staining on 20% grains
remnants of grains have nodule appearance
to purple yellow shing
st clayey at base

110.0 GRAUONITIC MARL green, st grabage, red, co, oxidized

115.0 Clay lt blue green, silty well sorted. Lastest

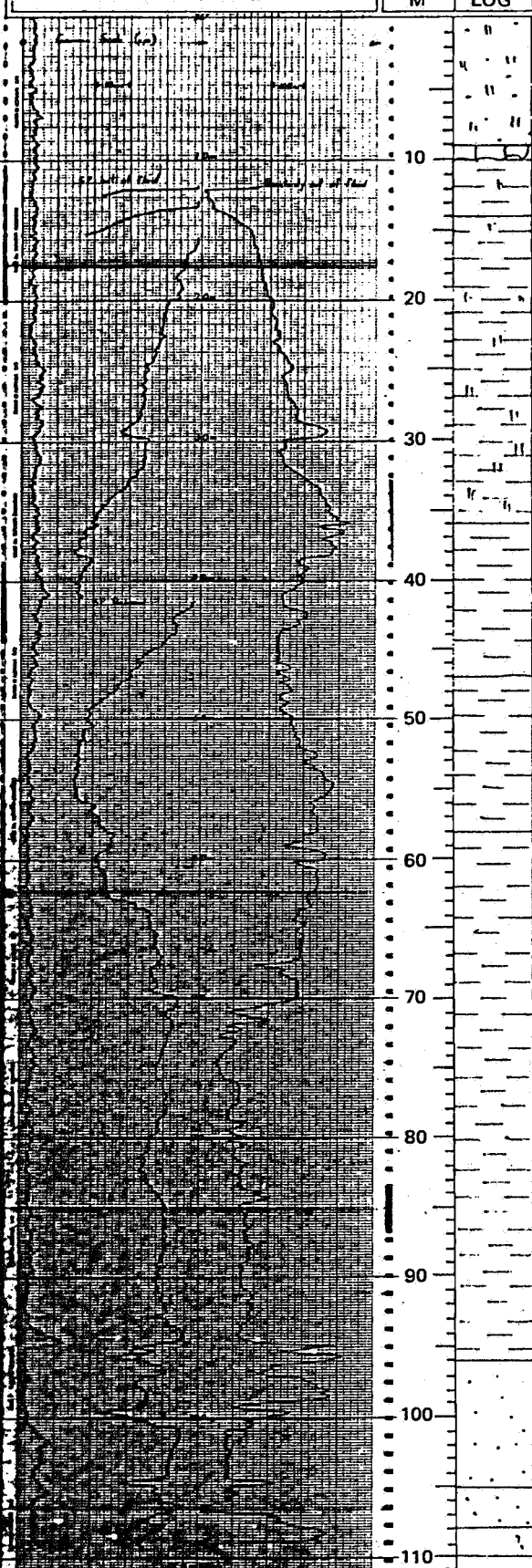
T.D.

PROJECT WEST CREEK HOLE SIZE 4 7/8 ☐ AIR ☒ WATER HOLE No. WE11
 ELEVATION 136.2m LOCATION 100m south of WE7 (along track) LOGGED BY G. K. E. W. DATE 20/1/80
 MAP _____ SCALE _____ T.D. _____ P.D. 110.6m

GEOPHYSICAL LOG

DEPTH
MSTRIP
LOG

LITHOLOGY LOG



0.0 SILT / SANDY SILT rd bn, strong red haematite mottling

9.0 CLAY rd bn, strong red haematite mottling, bands

Changeover at top of section.

14.0 CLAY H gy with weak yellow-limonite mottling and red haematite mottling, silty

36.0 CLAY H gy with weak yellow limonite mottling and weak red haematite mottling

47.0 CLAY med-dk gy with weak to mod red haematite mottling

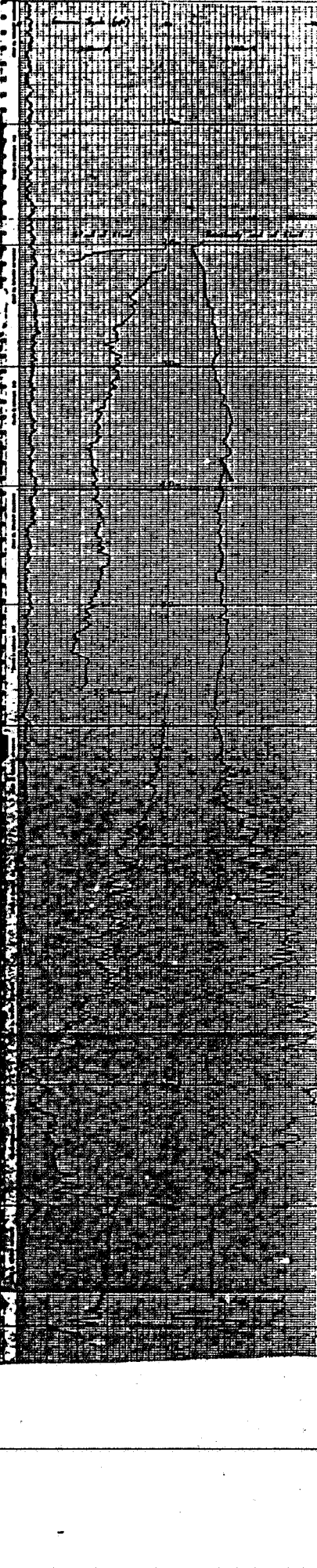
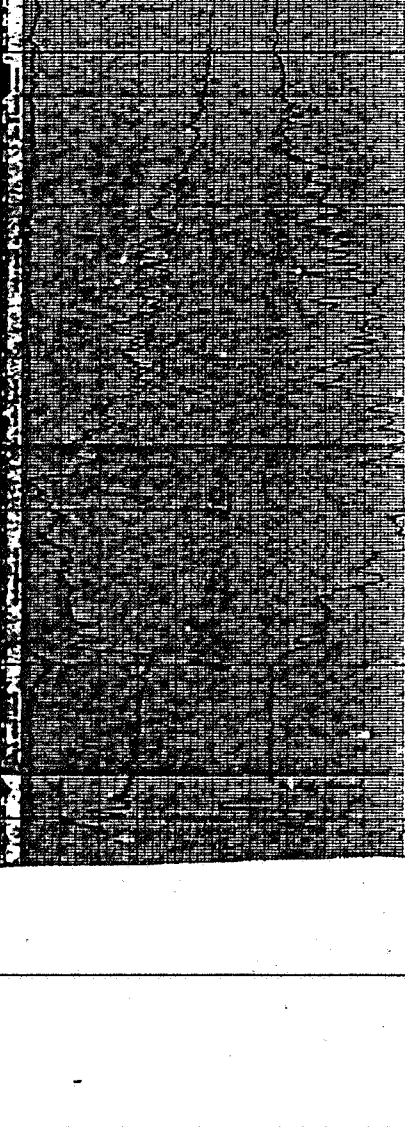
58.0 CLAY H gy with weak yellow limonite mottling

96.0 SAND
Upper part of section is poorly represented in sample due to lost circulation problems

105.0 SAND H gy - pale yellow, med, submed-md, good sorting, med red haematite staining on 10% grains, weak to mod orange limonite staining on 20% grains, weak yellow limonite staining on remainder

108.0 BASEMENT though no samples received due to lost circulation

PROJECT WEST CREEK HOLE SIZE 4 1/4" ☐ AIR ☒ WATER HOLE No. WE12
 ELEVATION 126.4m LOCATION 500m east of WE7 (in 500m W.) M166 LOGGED BY A.L.L. DATE 20/1/80
 MAP _____ SCALE _____ T.D. _____ P.D. 111.0m

GEOPHYSICAL LOG	DEPTH M	STRIP LOG	LITHOLOGY LOG
	0	"	0.0 SILTY CLAY med brn, strong red haematite mottling, silty 12 pt
	10	"	
	20	"	12.0 CLAY Hgy brn. with mod-strong red haematite mottling mod yellow limonite mottling, silty, sandy toward base
	30	"	
	40	"	
	50	"	39.0 CLAY Hgy-ltgy brn, weak to mod red haematite m.
	60	"	
	70	"	
	80	"	50.0 CLAY med gy, mod-red haematite mottling, the suggestion is that 12 pt at least red haematite concentrated in bands - strong red haematite mottling
	90	"	56.0 CLAY ltgy-pale gy - ltgy brn, silty, weak yellow limonite mottling 12 pt
	100	"	
	110	"	75.0 SAND pale yellow, med subnd-med, good sorting weak orange limonite staining on 20% grains, remainder neutral
	120	"	
	130	"	93.0 SAND pale yellow, co-veg, subnd-med, fair sorting weak to mod orange limonite staining on 20% grains, remainder neutral weak yellow limonite evident on most grains toward base
	140	"	100.0 SAND orange, co-veg, subnd-med, fair good sorting mod red haematite staining on 10% grains, weak to mod orange limonite staining on 20% grains, weak yellow limonite staining on remainder on 20% grains, weak yellow limonite to pyrite greenish yellow dull, anhedral clayey at base
	150	"	108.0 CLAY med gy, silty
	160	"	115.0 CLAY pale green weathered basement?
	170	"	

APPENDIX II

ASSAY RESULTS

ANALYTICAL RESULTS - E.L. 557 (WEST CREEK)

(results in ppm)

Drillhole	Interval (m)	Cu	Pb	Zn	Ag	Mo	V	Au	U ₃ O ₈	ThO ₂	As	Se	U ₃ O ₈ /U ₃ O ₆
WE1	104-105	20	14	42	<1	1	70	<0.05	46	10	10	7	
WE1	105-106	10	<4	40	<1	<1	50	<0.05	130	12	10	65	3.25
WE1	106-107	12	<4	32	<1	2	40	<0.05	230	6	9	34	2.30
WE1	107-108	12	<4	30	<1	2	40	<0.05	40	14	11	26	
WE1	108-109	15	<4	15	<1	1	30	<0.05	34	<4	2	8	
WE1	109-110	10	<4	15	<1	2	60	<0.05	<4	8	50	12	
WE1	110-111	10	<4	45	<1	2	210	<0.05	28	20	250	19	
WE1	111-112	8	<4	48	<1	2	130	<0.05	24	12	65	5	
WE1	117-120	8	<4	15	<1	1	50	<0.05	6	<4	60	14	
WE2	111-114	25	8	65	<1	1	60	<0.05	6	18	26	<2	
WE2	114-117	38	16	90	<1	<1	100	<0.05	<4	20	20	<2	
WE2	117-120	42	20	95	<1	<1	50	<0.05	6	34	8	<2	
WE6	111-112	28	16	70	<1	<1	70	<0.05	<4	28	28	<2	
WE7	91- 92	25	<4	50	<1	<1	40	<0.05	<4	14	14	<2	
WE8	110-111	8	<4	30	<1	2	40	<0.05	8	16	9	3	
WE8	111-112	15	4	55	<1	1	120	<0.05	4	16	42	<2	
WE9	114-117	40	14	65	<1	2	50	<0.05	4	16	19	<2	
WE9	117-120	48	26	90	<1	1	50	<0.05	4	22	50	<2	
WE10	111-114	5	<4	25	<1	<1	190	<0.05	<4	12	48	<2	
WE10	114-117	20	<4	48	<1	2	200	<0.05	8	16	48	<2	
WE10	117-120	42	10	95	<1	1	150	<0.05	4	14	26	<2	

Method C₁ B₁ C₁ C₂ C₂ C₂ C₃/1 B₁ B₁ B₁ B₁

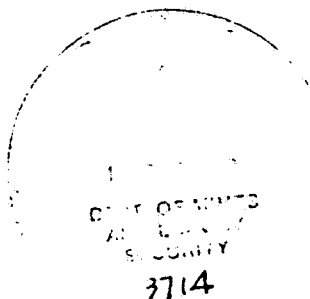
032

QUARTERLY REPORT
EXPLORATION LICENCE 557 (WEST CREEK)
FOR PERIOD 13.8.80 TO 12.11.80

Exploration Licence 557 covers an area of 365 square kilometres in the Mutooroo area, approximately 60 kilometres south-east of Olary, South Australia. The Exploration Licence was granted to Marathon Petroleum Australia, Ltd. on 13th November, 1979 for a period of one year.

No further field work was carried out during this quarter. Accurate elevations have been determined for all holes drilled in this area and results will soon be to hand. The results of the drilling programme generally are currently being compiled and evaluated and full details will be forwarded as soon as possible.

Exploration expenditure for the quarter ended 12th November, 1980 totalled \$1637.61 and a detailed Statement of Expenditure is attached.



L. Casey
Administrative Geologist

STATEMENT OF EXPENDITURE
EXPLORATION LICENCE 557 WEST CREEK
FOR THREE MONTH PERIOD TO 12.11.80

033

	\$
Salaries and Associated Costs	81.25
Business Expense	3.05
Communications Expense	76.90
Motor Vehicle Expenses	44.04
Camp Costs	293.20
Geochemical Assays	689.63
Drilling Costs	160.42
Data Processing	140.25
Administrative Services	148.87
	\$1 637.61

QUARTERLY REPORT
EXPLORATION LICENCE 557 (WEST CREEK)
FOR PERIOD 13.11.80 TO 12.2.81

034

Exploration Licence 557 covers an area of 365 square kilometres in the Mutooroo area, approximately 60 kilometres south-east of Olary, South Australia. The Exploration Licence was granted to Marathon petroleum Australia, Ltd. on 13th November, 1979 for a period of one year.

No further field work was carried out on this EL during the period.

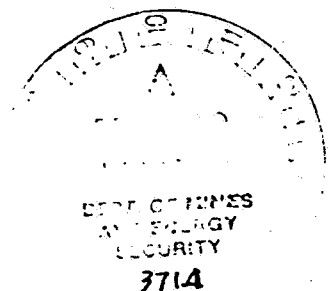
Planning for the 1981 exploration programme is currently in progress.

Exploration expenditure during the quarter ended 12th February, 1981 totalled \$591.52 and a detailed Statement of Expenditure is attached.

L. Casey

L. Casey (Miss)

Administrative Geologist



STATEMENT OF EXPENDITURE
EXPLORATION LICENCE 557 (WEST CREEK)
FOR THREE MONTH PERIOD TO 31.1.81

035

	\$
Salaries and Associated Costs	27.25
Roads and Sites	500.00
Geochemical Assays	10.50
Administrative Services	53.77
	<u>\$591.52</u>

QUARTERLY REPORT

EXPLORATION LICENCE 557 (WEST CREEK)

038

FOR PERIOD 13.2.81 TO 12.5.81

Exploration Licence 557 covers an area of 365 square kilometres in the Mutooroo area, approximately 60 kilometres south-east of Olary, South Australia. The Exploration Licence was granted to Marathon Petroleum Australia, Ltd. on 13th November, 1979 for a period of one year.

No field work was carried out on this area during the quarter.

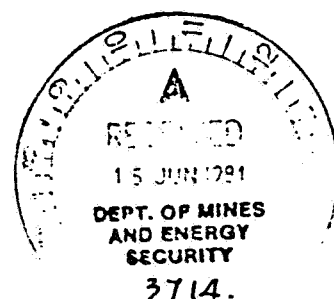
Work during the period has consisted of re-interpretation and evaluation of exploration data collected to date. The results of this study will determine the precise nature of further work to be carried out during 1981.

Exploration expenditure for the quarter ended 12th May, 1981 totalled \$1,074.66 and a detailed Statement of Expenditure is attached.

L. Casey.

L. Casey

Administrative Geologist.



STATEMENT OF EXPENDITURE

037

EXPLORATION LICENCE 557 (WEST CREEK)

FOR PERIOD 13.2.81 TO 12.5.81

Salaries & Associated Costs	\$ 36.00
Contract Services	20.62
Reproduction Expense	69.36
Freight	13.99
Geological Services	837.00
Administrative Services	97.69
	\$1074.66
	=====

QUARTERLY REPORT

038

EXPLORATION LICENCE 557 (WEST CREEK)

FOR PERIOD 13.5.81 TO 12.8.81

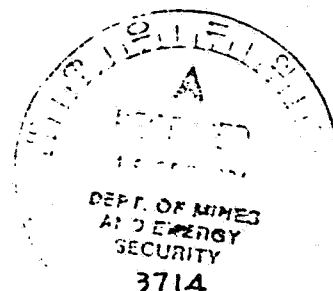
Exploration Licence 557 covers an area of 365 square kilometres in the Mutooroo area, approximately 60 kilometres southwest of Olary, South Australia. The Exploration Licence was granted to Marathon Petroleum Australia, Ltd. on 13th November, 1979 for a period of one year.

No further field work was carried out on this E.L. during the period. Evaluation of exploration to date on the area is nearing completion and a decision will soon be made as to whether further work in the area is warranted.

Exploration expenditure for the quarter ended 12th August, 1981 totalled \$1,509.20 and a detailed Statement of Expenditure is attached.

L. Casey

L. Casey
Administrative Geologist



STATEMENT OF EXPENDITURE

EXPLORATION LICENCE 557 (WEST CREEK)

FOR PERIOD 13.5.81 TO 12.8.81

023

	\$
Salaries & Associated Costs	12.00
Contract Services	10.00
Geological Services	1,350.00
Administrative Services	137.20
	1,509.20