

A. A. P. *PR6617B*

MASTER LOG
NORTHERN TERRITORY
GEOLOGICAL SURVEY LOG No. **1**

WELL: KULSHILL n° 2

PERMIT: **OP 2** STATE: **NORTHERN-TERRITORY**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K.J. CREEVEY**

DATE: **29-6-1966** SCALE: **1" = 50'** DEPTH: **0 - 500**

D R I L L I N G & M U D

NB New Bit
RRB Rerun Bit
C Conventional Bit
J Jet Bit
DB Diamond Bit
TB Turbo Bit
CB Core Bit
DCB Diamond Core Bit

W Weight on bit in tons
r.p.m. Rotation
FR Flow Rate
S Salinity
FC Filter Cake
Rmf. Mud Filtrate Resistivity

L I T H O L O G I C A L

Sandstone, fine
Sandstone, medium argillaceous
Sandstone, coarse, ferruginous.
Clay, silty or sandy
Shaly Siltstone
Sandy argillaceous siltstone
Coal beds and interbeds

Mica
Gypsum
Feldspar
Pyrite
Glauconite

E N G I N E E R I N G

Location: Lat. 14° 24' 09" S Long. 129° 32' 39" E
Elevation: Reference: 147' Ground: 131'
Date spudded: 26-6-1966
Hole size: 17 1/2" Ins. From 16' To 430'
12 1/4 " " 430' "

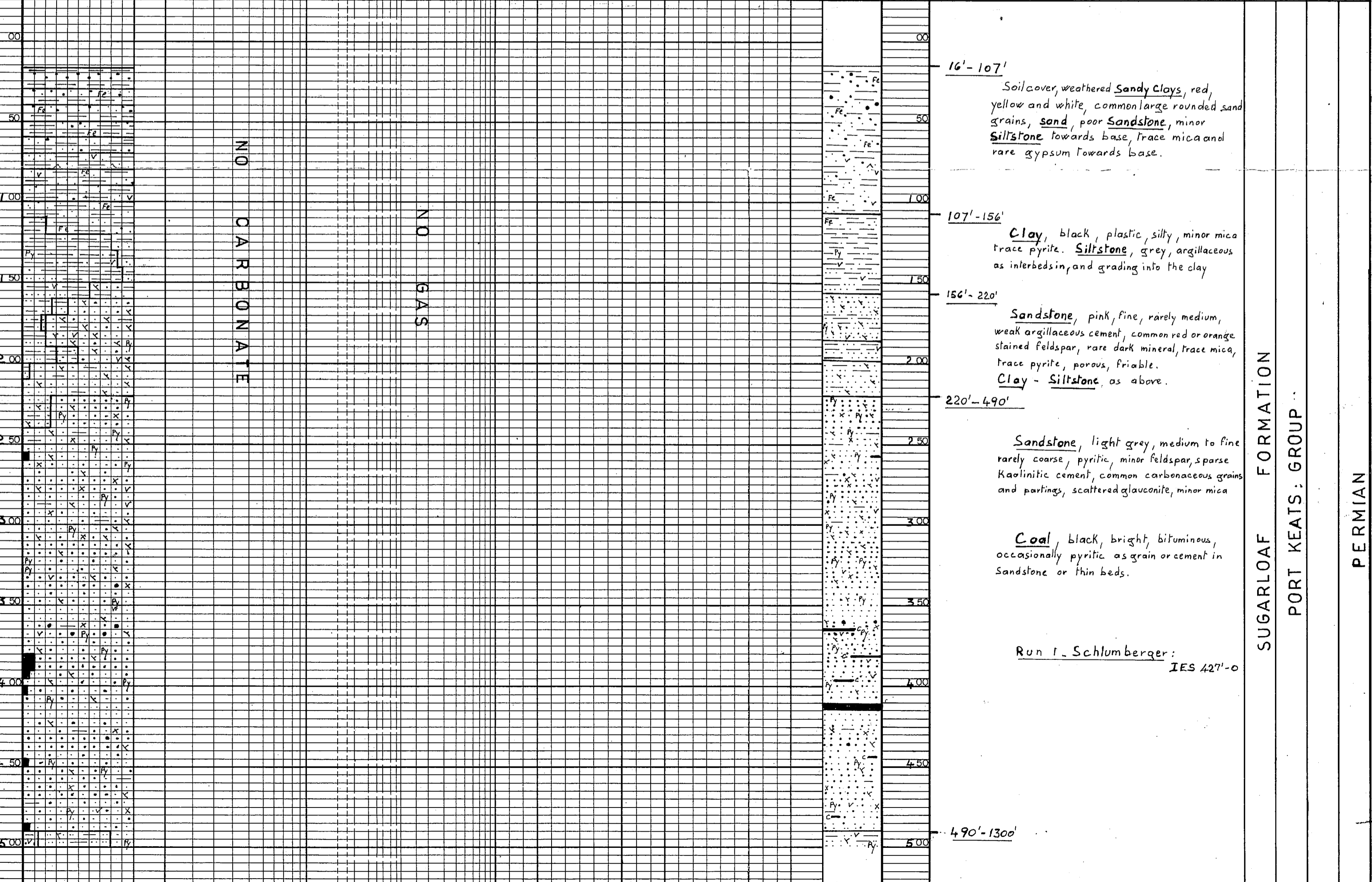
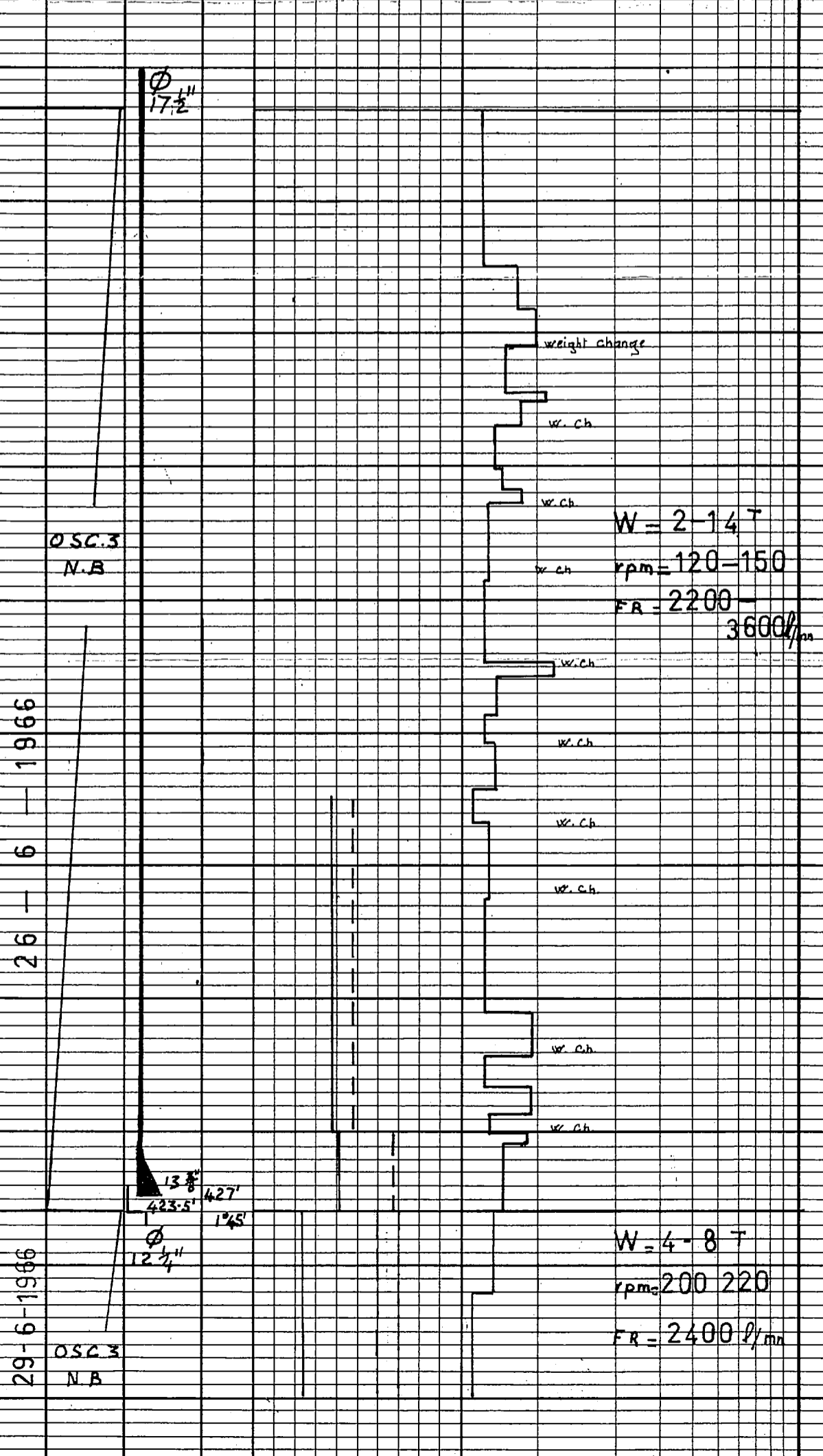
Casing: 13 3/8 Ins. Depth 423.5' Cement'd to

D R I L L I N G D A T A

DATE	BIT TYPE, SIZE, REMARKS	CASING, HOLE SIZE, PLUGS & PERF.	DEVIATION	MUD		DRILLING RATE	
				Volume loss gain	min/ft		
				Weight			
				Viscosity			
				Filter loss			

G E O L O G I C A L D A T A

CUTTINGS LOG	CORES	CUTTINGS ANALYSIS			HYDROCARBON OCCURENCES			FOSSILS & DIPS	DETAILED LITHOLOGY	DEPTH	LITHOLOGY, TESTS, REMARKS		STRATIGRAPHY	
		%	DEPTH RECOV. TESTS	Calcimetry Dolomimetry	SAND RATIO	IN MUD	IN CUTTINGS				IN CORES	FORMATION	AGE	



A. A. P. PR6617B
MASTER LOG
 WELL: **KULSHILL n° 2**
 PERMIT: **OP 2**
 MUD LOGGING COMPANY: **GEOSERVICES**
 DATE: **29-6-1966** SCALE: **1" = 50'**
 STATE: **NORTHERN TERRITORY**
 WELL SITE GEOLOGIST: **K.J. CREEVEY**
 LOG No. **2**
 DEPTH: **500'-1000'**

D R I L L I N G & M U D

New Bit
 RRB Rerun Bit
 C Conventional Bit
 J Jet Bit
 DB Diamond Bit
 TB Turbo Bit
 CB Core Bit
 DCB Diamond Core Bit

W Weight on bit in tons
 r.p.m. Rotation
 FR Flow Rate
 S Salinity
 F.C. Filter Cake
 Rmf. Mud Filtrate Resistivity

L I T H O L O G I C A L

Sandstone fine.
 Sandstone medium argillaceous
 Sandstone coarse
 Clay-Shale, sandy or silty.
 Shaly Siltstone
 Sandy argillaceous siltstone.
 Coal and Carbonaceous Shale beds and interbeds.

mica
 Feldspar
 Pyrite
 Glauconite
 Ferruginous concretions and hard ground levels.

E N G I N E E R I N G

Location: Lat 14° 24' 09" S Long. 129° 32' 39" E
 Elevation: Reference 147' Ground 131'
 Date spudded: 26-6-1966
 Hole size: 17 1/2" Ins. From 16' To 430'
 12 1/4 " " 430' "
 Casing: 13 3/8 Ins. Depth 423.5' Cement'd to

D R I L L I N G D A T A

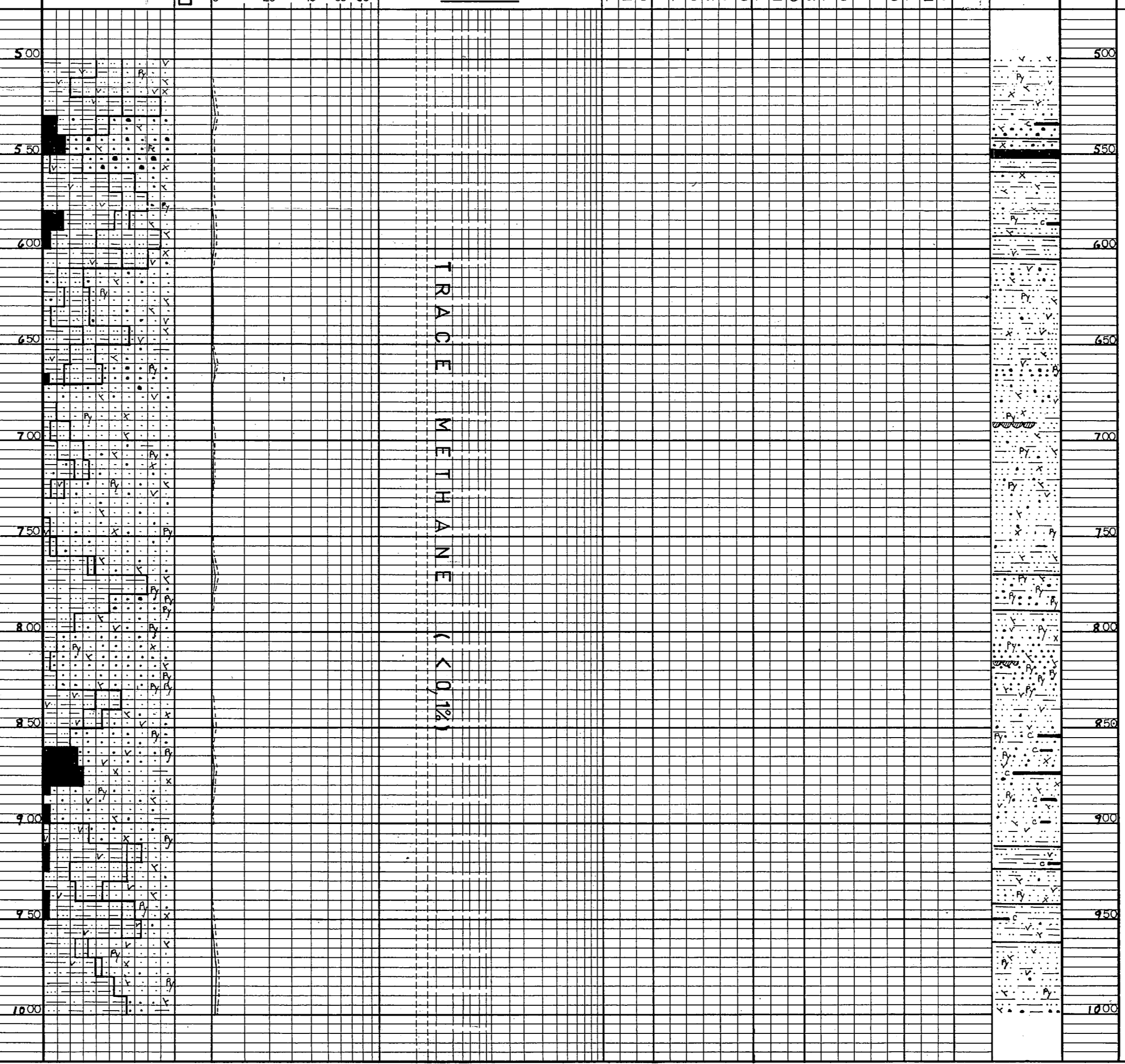
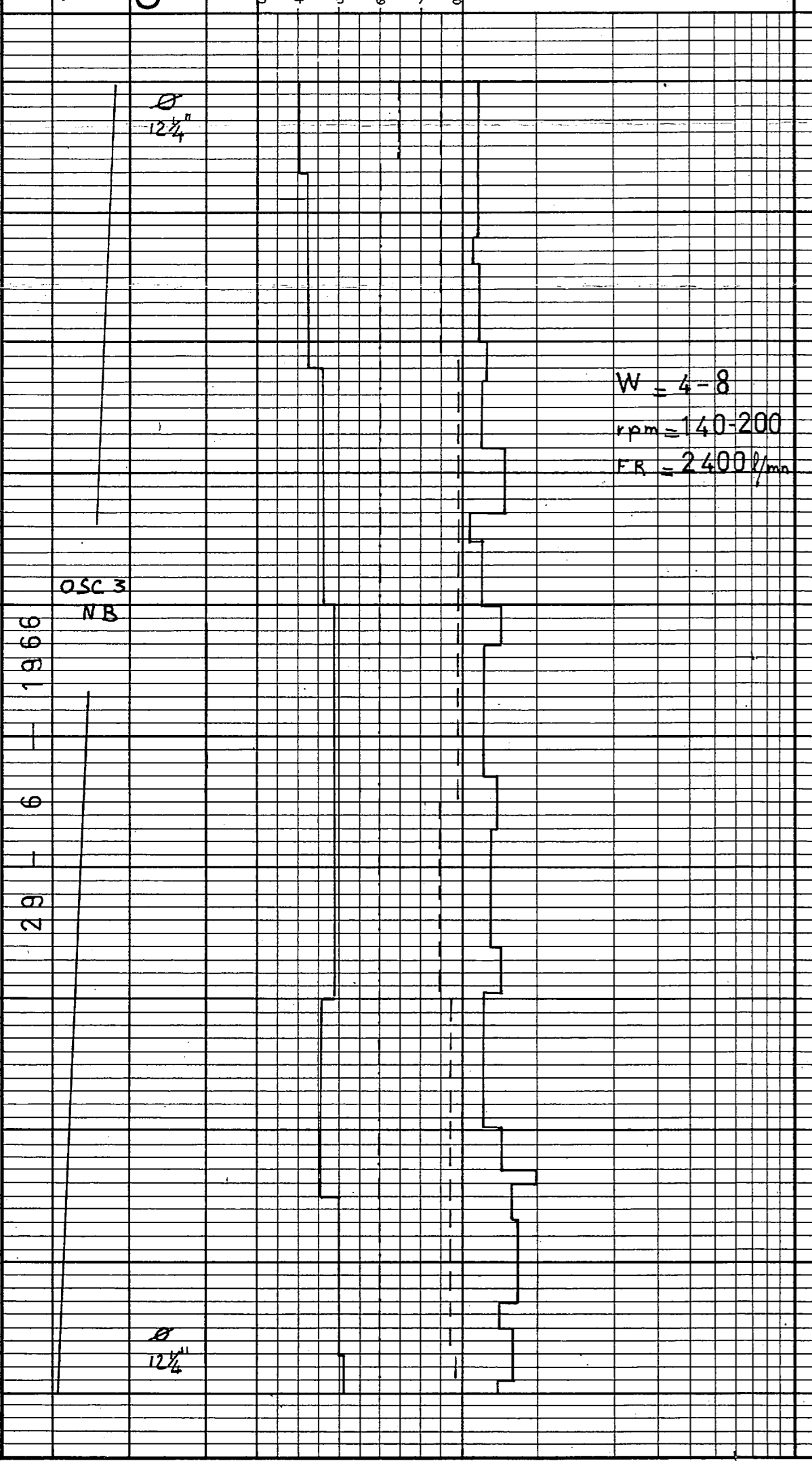
DATE: _____
 BIT TYPE, SIZE, REMARKS: _____
 CASING, HOLE SIZE, PLUGS & PERF.: _____
 DEVIATION: _____
 MUD: Volume loss gain, Weight, Viscosity, Filter loss
 DRILLING RATE: min/ft

G E O L O G I C A L

CUTTINGS LOG: %
 CUTTINGS ANALYSIS: Calcimetry, Dolomimetry, Sand Ratio
 HYDROCARBON OCCURENCES: IN MUD (GAS, CHROMATOLOG %, Methane, Ethane, Propane, GDI TOTAL GAS %), IN CUTTINGS (OIL, CCL4, LIVE), IN CORES (OIL, CCL4, LIVE)
 FOSSILS & DIPS: _____
 DETAILED LITHOLOGY: _____

D A T A

LITHOLOGY, TESTS, REMARKS
 STRATIGRAPHY: FORMATION, AGE



LITHOLOGY, TESTS, REMARKS

500 - 550' **Sandstone** light grey, fine, occasionally medium and coarse, grains sub round and sub spherical, weak cement, siliceous and argillaceous, commonly carbonaceous, minor feldspar glauconite and mica, orange and light grey grains throughout series, minor darker heavy minerals, friable, porous.

550 - 700' **Siltstone - Clay - Shale**, grey to dark grey, often plastic, occasionally sandy, carbonaceous weakly micaceous, weakly pyritic, as fine generally millimetric interbeds with the sandstone and lighter siltstone.

700 - 800' **Siltstone**, light grey, weakly argillaceous, fine version of sandstone above.

800 - 850' **Coal and Carbonaceous Shale**, black, as common lenses and thin interbeds throughout sandstone.

850 - 900' Few red ferruginous sandy and concretionary levels, generally associated with coal beds.

STRATIGRAPHY
 SUGARLOAF FORMATION
 PORT KEATS GROUP
 PERMIAN

A. A. P. PR66/7B

MASTER LOG
NORTHERN TERRITORY
GEOLOGICAL SURVEY

WELL: **KULSHILL n° 2** No. **3**

PERMIT: **0.P 2** STATE: **NORTHERN TERRITORY**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K.J. CREEVEY**

DATE: **29 / 30-6-1966.** SCALE: **1" = 50'** DEPTH: **1000 - 1500**

L E M U D

NB New Bit W Weight on bit in tons
RRB Rerun Bit r.p.m. Rotation
C Conventional Bit FR Flow Rate
J Jet Bit
DB Diamond Bit S Salinity
TB Turbo Bit FC Filter Cake
CB Core Bit Rmf. Mud Filtrate Resistivity
DCB Diamond Core Bit

G E N D

L I T H O L O G I C A L

Sandstone, fine
Sandstone, medium argillaceous
Sandstone, coarse, ferruginous
Sandy or silty clay calcareous
Clay - Shale sandy
Shaly siltstone
Siltstone argillaceous, sandy
Coal and coaly shale beds

Mica
Feldspar
Pyrite
Glauconite
Ferruginous and hard ground levels
Plant remains

E N G I N E E R I N G

Location: Lat. 14° 24' 09" S Long. 129° 32' 39" E
Elevation: Reference 147' Ground 131'
Date spudded: 26-6-1966
Hole size: 17 1/2" Ins. From 16' To 430'
12 1/4" " " 430' "

Casing: 13 7/8 Ins. Depth 423.5' Cement'd to

DRILLING DATA

DATE	BIT TYPE, SIZE, REMARKS, CASING, HOLE SIZE, PLUGS & PERF.	MUD	DRILLING RATE	DEPTH
29-6-1966	12 1/4"			
30-6-1966	13 3/4"			
30-6-1966	12 1/4"			

G E O L O G I C A L

DEPTH	CUTTINGS LOG	CUTTINGS ANALYSIS	HYDROCARBON		OCCURENCES				FOSSILS & DIPS	DETAILED LITHOLOGY	DEPTH
			IN MUD		IN CUTTINGS		IN CORES				
			GAS		OIL		OIL				
			CHROMATOLOG %		OIL		OIL				
1000											
1050											
1100											
1150											
1200											
1250											
1300											
1350											
1400											
1450											
1500											

D A T A

LITHOLOGY, TESTS, REMARKS	STRATIGRAPHY
Sandstone: as above, largely medium to coarse, badly sorted with grains to 3mm weakly calcareous at base	SUGARLOAF FORMATION PORT KEATS GROUP PERMIAN
Siltstone - Clay - Shale: as above as thin partings and rare interbeds, possible plant remains towards base.	
Siltstone - light grey argillaceous as above, as rare thin beds.	
Coal: slightly shaly, as thin interbeds, thick bed at base, commonly associated with ferruginous concretions and sandy ferruginous levels	
1300' 1570'	
Sandstone, as above fine to extremely coarse, minor kaolinitic cement, weakly calcareous at top minor pyritic, feldspar, mica rare glauconite.	
Sandy Clay, light grey to white rarely calcareous, as interbeds, and grades into sandstone above.	
Siltstone Clay Shale as above common interbeds.	
Siltstone as above, common interbeds	
Coal, shaly, as rare thin beds common ferruginous concretions and hard ground levels.	

A. A. P. PROB 178

MASTER LOG

WELL: NORTHERN TERRITORY GEOLOGICAL SURVEY **KULSHILL n° 2** LOG No. **4**

PERMIT: **OP 2** STATE: NORTHERN TERRITORY

MUD LOGGING COMPANY: GEOSERVICES WELL SITE GEOLOGIST: K. J. CREEVEY

DATE: 1-7-1966 SCALE: 1"=50' DEPTH: 1500-2000

L E G E N D

D R I L L I N G & M U D

NB New Bit W Weight on bit in tons
 RRB Rerun Bit r.p.m. Rotation
 C Conventional Bit FR Flow Rate
 J Jet Bit
 DB Diamond Bit S Salinity
 TB Turbo Bit FC Filter Cake
 CB Core Bit Rmf. Mud Filtrate Resistivity
 DCB Diamond Core Bit

G L I T H O L O G I C A L

Sandstone fine
 Sandstone medium argillaceous
 Sandstone coarse
 Clay-Shale, sandy or silty
 Shaly Siltstone
 Shaly argillaceous Siltstone
 Coal carbonaceous shale beds, and interbeds.

Mica
 Feldspar
 Pyrite
 Glauconite
 Ferruginous concretions and hard ground levels

Location: Lat. 14° 24' 09" S Long. 129° 32' 39" E
 Elevation: Reference 147' Ground 131'
 Date spudded: 26-6-1966
 Hole size: 17 1/2" Ins. From 16' To 430'
 12 1/4" " " 430' "
 Casing: 13 3/8" Ins. Depth 423.5' Cement'd to

D R I L L I N G D A T A

DATE: 30-6-1966

BIT TYPE, SIZE REMARKS: 12 1/4"

CASING, HOLE SIZE PLUGS & PERF. DEVIATION

MUD: Volume loss gain, Weight, Viscosity, Filter loss

DRILLING RATE: min/ft

G E O L O G I C A L D A T A

CUTTINGS LOG: %

CUTTINGS ANALYSIS: Calcimetry, Dolomimetry, Sand Ratio

HYDROCARBON OCCURENCES: IN MUD (GAS, OIL), IN CUTTINGS (OIL), IN CORE'S (OIL)

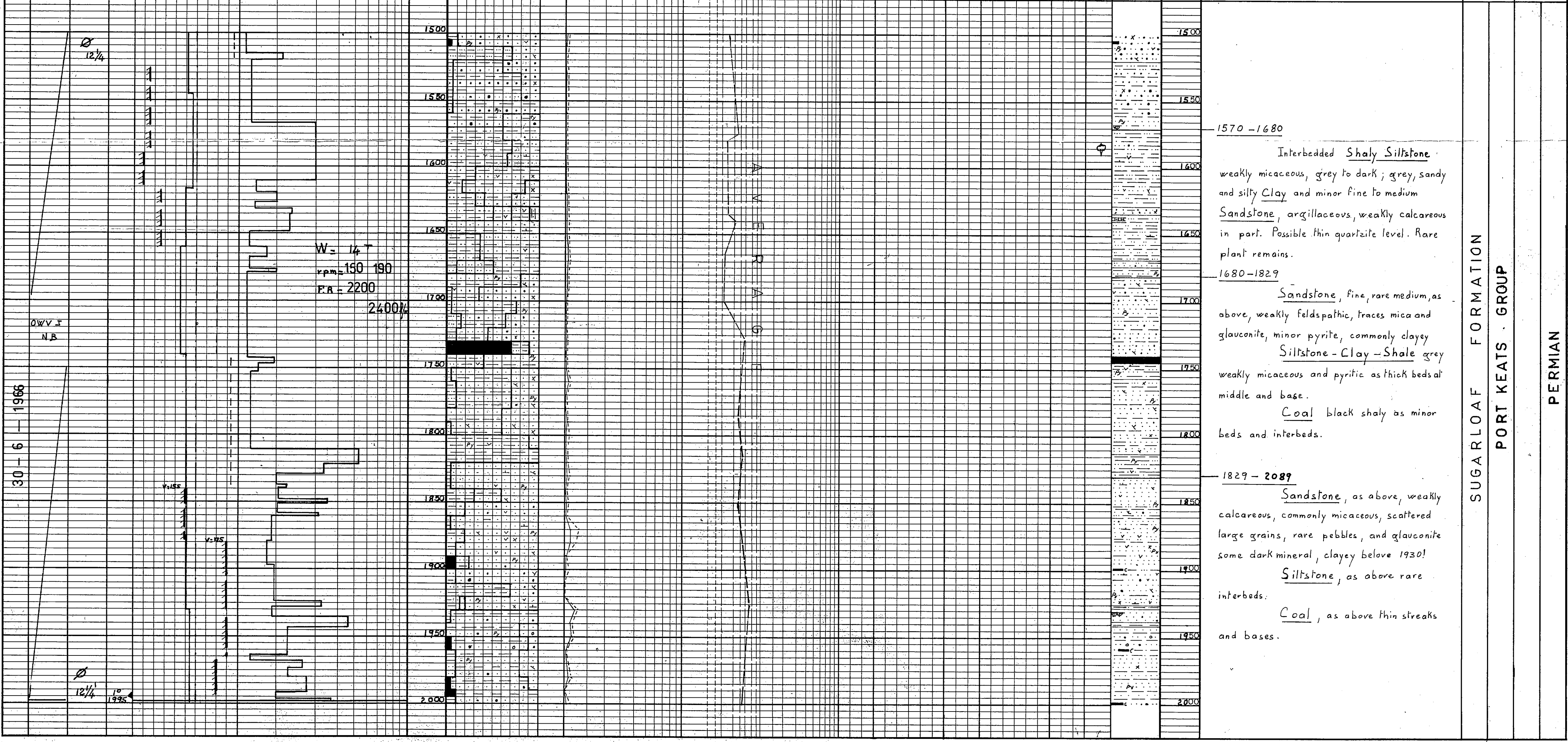
FOSSILS & DIPS

DETAILED LITHOLOGY

DEPTH

LITHOLOGY, TESTS, REMARKS

STRATIGRAPHY: FORMATION, AGE



A. A. P.

MASTER LOG
NORTHERN TERRITORY
GEOLOGICAL SURVEY

PR66/18
LOG No. **5**

WELL: **KULSHILL n°2**

PERMIT: **OP 2** STATE: **NORTHERN TERRITORY**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K.J. CREEVEY**

DATE: **2-7-1966** SCALE: **2000 - 2500**

D R I L L I N G & M U D

NB New Bit
RRB Rerun Bit
C Conventional Bit
J Jet Bit
DB Diamond Bit
TB Turbo Bit
CB Core Bit
DCB Diamond Core Bit

W Weight on bit in tons
r.p.m. Rotation
FR Flow Rate
S Salinity
FC Filter Cake
Rmf. Mud Filtrate Resistivity

L I T H O L O G I C A L

Sandstone, fine.
Sandstone, medium argillaceous.
Sandstone, coarse.
Clay, silty or sandy.
Shaly Siltstone.
Sandy argillaceous siltstone.
Coal beds and interbeds.
Tillite

Mica
Feldspar
Pyrite
Glauconite
Ferruginous cones of hard ground levels

E N G I N E E R I N G

Location: Lat. 14° 24' 09" S Long. 129° 32' 39" E
Elevation: Reference: 147' Ground: 131'
Date spudded: 26-6-1966
Hole size: 17 1/2" Ins. From 16' To 430'
12 1/4" " 430' "

Casing: 13 3/8 Ins. Depth 423.5' Cement'd to

D R I L L I N G D A T A

DATE	BIT TYPE, SIZE, REMARKS	CASING, HOLE SIZE, PLUGS & PERF.	DEVIATION	MUD		DRILLING RATE (min/ft)
				Volume loss gain	Weight	
				0 10 20 30 40 50 60 70 80	0 10 20 30 40 50 60 70 80	
				3 4 5 6 7 8	4 6 8 1	2 3 4 5 6 7 8 9

G E O L O G I C A L D A T A

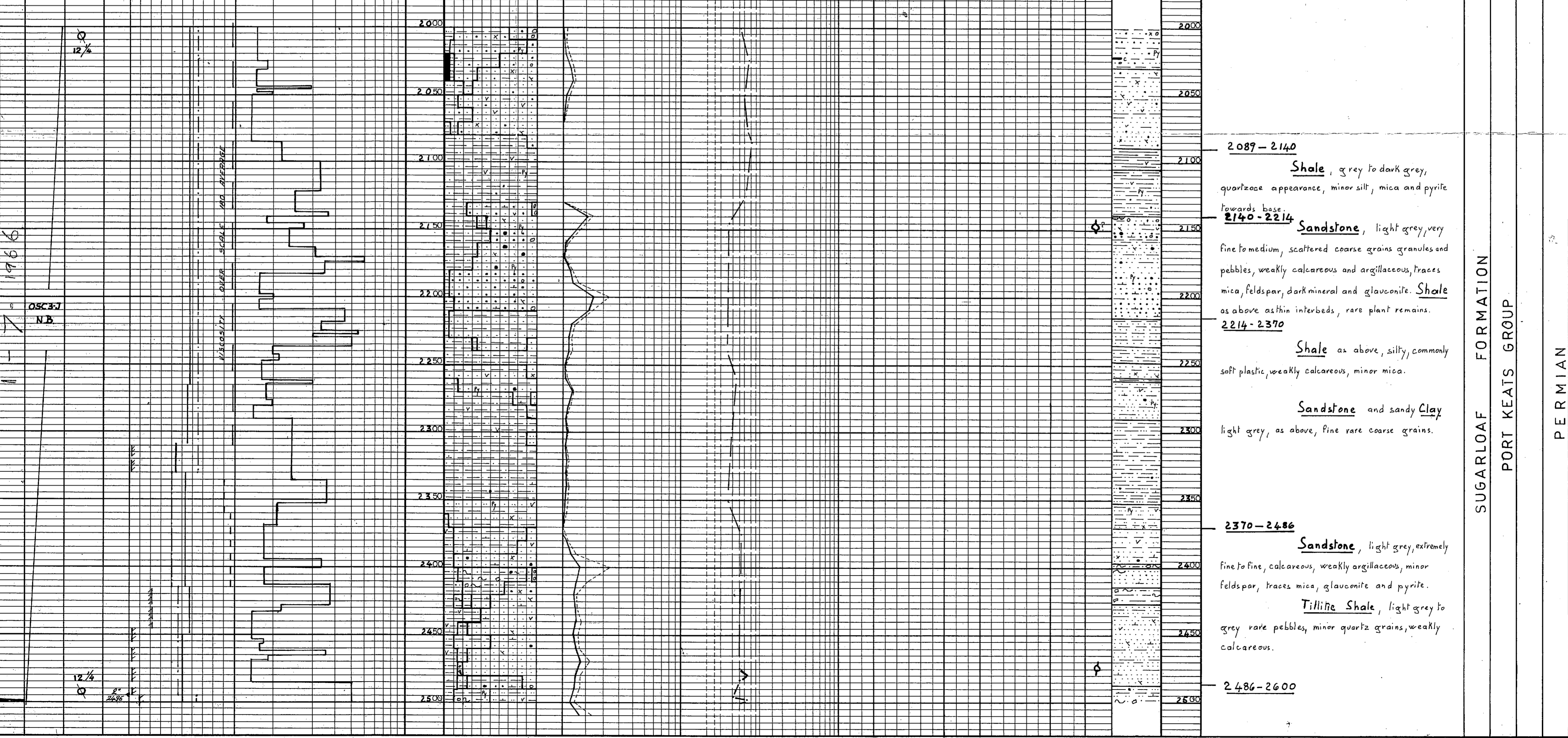
DEPTH	CUTTINGS LOG (%)	CUTTINGS ANALYSIS (Calcimetry, Dolomimetry, Sand Ratio)	HYDROCARBON OCCURENCES		FOSSILS & DIPS
			IN MUD	IN CUTTINGS	
			GAS (Methane, Ethane, Propane)	OIL (CCL4, LIVE)	

L I T H O L O G Y, T E S T S, R E M A R K S

S T R A T I G R A P H Y

FORMATION: **SUGARLOAF PORT KEATS GROUP**

AGE: **PERMIAN**



MASTER LOG
NORTHERN TERRITORY GEOLOGICAL SURVEY
KULSHILL n 2
 LOG No. **6**
 PERMIT: **OP 2** STATE: Northern Territory
 MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K. J. CREEVEY**
 DATE: 6-7-1966 SCALE: 1"=50' DEPTH: 2500'-3000'

D R I L L I N G & M U D

NB New Bit W Weight on bit in tons
 RRB Rerun Bit r.p.m. Rotation
 C Conventional Bit FR Flow Rate
 J Jet Bit
 DB Diamond Bit S Salinity
 TB Turbo Bit FC Filter Cake
 CB Core Bit Rmf. Mud Filtrate Resistivity
 DCB Diamond Core Bit

L I T H O L O G I C A L

Sandstone, fine, weakly calcareous
 Sandstone, medium, weakly argillaceous
 Sandstone, coarse.
 Granules and pebbles
 Siltstone weakly argillaceous
 Shaly Siltstone
 Clay-Shale silty or sandy
 Tillite

Sandy limestone bed
 Feldspar
 Pyrite
 Glauconite
 Mica
 Plant remains

E N G I N E E R I N G

Location: Lat 14° 24' 09" S Long 129° 32' 39" E
 Elevation: Reference 147' Ground 131'
 Date spudded: 26-6-1966
 Hole size 17 1/2" Ins. From 16' To 430'
 12 1/4 " " 430' " 2510'
 8 3/4 " 2510 "
 Casing: 13 7/8 Ins Depth 423.5' Cem't'd to 2510'
 9 5/8 " 2510 1400'

D R I L L I N G D A T A

DATE: 27-1966
 BIT TYPE, SIZE, REMARKS, CASING HOLE SIZE, PLUGS & PERF., DEVIATION
 MUD: Volume loss gain, Weight, Viscosity, Filter loss
 DRILLING RATE: min/ft

G E O L O G I C A L D A T A

CUTTINGS LOG, CUTTINGS ANALYSIS (Calcimetry, Dolomimetry, Sand Ratio), HYDROCARBON OCCURENCES (GAS, OIL), PLUGS & DIPS

L I T H O L O G Y, T E S T S, R E M A R K S
S T R A T I G R A P H Y
 FORMATION, AGE

DATE	BIT TYPE, SIZE, REMARKS, CASING HOLE SIZE, PLUGS & PERF., DEVIATION	MUD	DRILLING RATE	DEPTH	CUTTINGS LOG	CUTTINGS ANALYSIS	HYDROCARBON OCCURENCES				PLUGS & DIPS	DETAILED LITHOLOGY	DEPTH	LITHOLOGY, TESTS, REMARKS	STRATIGRAPHY	
							IN MUD		IN CUTTINGS						IN CORES	
27-1966	NB, 2 3/4"	W=7-12, rpm=90-100, FR=200-1700	min/ft	2500								2500	Shale and Silty-Shale, grey, tillitic in part with sand grains and small pebbles.	SUGARLOAF FORMATION	PORT-KEATS GROUP	PERMIAN
	OSC I NB			2550								2550	Siltstone, light grey to white weakly argillaceous, occasionally feldspathic as fine interbeds with shale and sandstone.			
	OSC I NB			2600								2600	Sandstone, white-pure, fine, traces feldspar, glauconite, pyrite, as minor interbeds. 2600-3145			
				2650								2650	Sandstone, as above, medium to coarse in parts, coarser towards base with common quartz granules and small pebbles, rare lithic granules and pebbles, weakly calcareous, occasionally argillaceous, porous, friable, some feldspar, traces mica, grey mineral, glauconite, pyrite, dark mineral.			
				2700								2700	Siltstone as above.			
				2750								2750	Sandy-Clay, white to light grey,			
				2800								2800	Shale and Silty-Shale weakly micaceous, scattered plant remains, occasionally pyritic as thin interbeds.			
				2850								2850	Tillite grey, shaly, sandy, occasional small pebbles as thin beds.			
				2900								2900				
				2950								2950				
6-7-1966	NB, 2 3/4"	W=5-8, rpm=90-100, FR=1500		3000								3000				

A. A. P.
MASTER LOG
 NORTHERN TERRITORY
 GEOLOGICAL SURVEY
KULSHILL N° 2
 PERMIT: **O.P.2** STATE: NORTHERN-TERRITORY
 MUD LOGGING COMPANY: GEOSERVICES WELL SITE GEOLOGIST: K.J.CREEVEY
 DATE: 8-7-1966 SCALE: 1"=50' DEPTH: 3000'-3500'

L E M U D
 NB New Bit W Weight on bit in tons
 RRB Rerun Bit r.p.m. Rotation
 C Conventional Bit FR Flow Rate
 J Jet Bit
 DB Diamond Bit S Salinity
 TB Turbo Bit FC Filter Cake
 CB Core Bit Rmf Mud Filtrate Resistivity
 DCB Diamond Core Bit

L I T H O L O G I C A L
 Sandstone fine silicified, calcareous
 Sandstone medium weakly argillaceous
 Sandstone, coarse
 Granules and pebbles
 Siltstone weakly argillaceous
 Shaly Siltstone
 Clay, Shale Silty or sandy
 Tillite
 Py Pyrite
 X Feldspar
 V Mica
 x Glauconite
 O Oolite

E N G I N E E R I N G
 Location: Lat 14° 24' 09" S Long 129° 32' 39" E
 Elevation: Reference 147' Ground 131'
 Date spudded 26-6-1966
 Hole size 17 1/2" Ins. From 16' To 430'
 12 1/4" " 430' " 2510'
 8 3/4" " 2510 "
 Casing 13 3/8" Ins Depth 423.5' Cem't'd to 2510'
 9 5/8" 2510' 1400'

DRILLING DATA

DATE	BIT TYPE, SIZE, REMARKS	CASING HOLE SIZE PLUGS & PERF.	DEVIATION	MUD				DRILLING RATE								DEPTH			
				Volume loss	gain	Weight	Viscosity	min/ft											
8-7-1966	OWV J NB	8 3/4"	3155' 30"					4	6	8	1	2	3	4	5	6	7	8	9
								10	20	30	40	50	60	70	80				
6-7-1966	OWV J NB		3342' 20"					10	20	30	40	50	60	70	80				
7-7-1966	OWV J NB		3476' 20"					10	20	30	40	50	60	70	80				

G E O L O G I C A L

CUTTINGS LOG	CUTTINGS ANALYSIS	HYDROCARBON OCCURENCES			PLUGS & DIPS	DETAILED LITHOLOGY	DEPTH														
		IN MUD		IN CUTTINGS				IN CORES													
		GAS		OIL				OIL													
		CHROMATOLOG %		CCL 4				LIVE													
%	Calcimetry Dolomimetry	Methane	Ethane	Propane	TRACE	FAIR	GOOD	SLIGHT TRACE	GOOD TRACE	SLIGHT SHOW	GOOD SHOW	TRACE	FAIR	GOOD	SLIGHT TRACE	GOOD TRACE	SLIGHT SHOW	GOOD SHOW	TRACE	FAIR	GOOD
	Sand Ratio	GDI TOTAL GAS %			TRACE	FAIR	GOOD	SLIGHT TRACE	GOOD TRACE	SLIGHT SHOW	GOOD SHOW	TRACE	FAIR	GOOD	SLIGHT TRACE	GOOD TRACE	SLIGHT SHOW	GOOD SHOW	TRACE	FAIR	GOOD

D A T A

LITHOLOGY, TESTS, REMARKS	STRATIGRAPHY
3145 - 3190 Sandstone, white to light grey fine to coarse, silicified, calcareous, weakly feldspathic, pebbly.	TILLITIC MEMBER PORT KEATS - GROUP UPPER CARBONIFEROUS - LOWER PERMIAN
3190 - 3515 Tillite, as above, as thin interbeds.	
Tillite, as grey shale, occasionally sandy and silty, rare granules and pebbles, rare feldspar and glauconite, weakly calcareous.	
3145 - 3190 Sandstone, white to light grey, very fine to fine, weakly to strongly calcareous, argillaceous, quartzitic in parts near top with minor fluorescence, some feldspar, traces mica, glauconite. As thin beds and grading into tillite. More common and thick toward base of sequence.	

A. A. P.

MASTER LOG

WELL: **NORTHERN TERRITORY GEOLOGICAL SURVEY KULSHILL No 2**

LOG No. **9**

PERMIT: **O.P. 2** STATE: **NORTHERN-TERRITORY**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K.J. CREEVEY**

DATE: **14-7-1966** SCALE: **1" = 50'** DEPTH: **4000' - 4500'**

D R I L L I N G & M U D

NB New Bit W Weight on bit in tons

RRB Rerun Bit r.p.m. Rotation

C Conventional Bit FR Flow Rate

J Jet Bit

DB Diamond Bit S Salinity

TB Turbo Bit FC. Filter Cake

CB Core Bit Rmf. Mud Filtrate Resistivity

DCB Diamond Core Bit

L I T H O L O G I C A L

Sandstone fine, weakly silicified

Sandstone medium, weakly calcareous, weakly argillaceous

Sandstone coarse.

Granules and pebbles

Siltstone weakly argillaceous

Shaly Siltstone

Carbonaceous Silty-Shale.

Coal

Mica

Feldspar

Pyrite

Glauconite

Plant remains.

E N G I N E E R I N G

Location Lat 14° 24' 09" S Long 129° 32' 39" E

Elevation Reference 147' Ground 131'

Date spudded: 26-6-1966

Hole size 17 1/2" Ins. From 16' To 430'

12 1/4" " 430' " 2510'

8 3/4" " 2510' "

Casing 13 3/8" Ins Depth 2510' Cement'd to 1400'

D R I L L I N G D A T A

DATE	BIT TYPE, SIZE REMARKS	CASING HOLE SIZE PLUGS & PERF.	DEVIATION	MUD		DRILLING RATE	
				Volume loss gain	min/ft		
11-7-1966	OWC-R NB	8 3/4"		W=10-12T Rpm=120 FR=1500-1700'/min	4 6 8 1	2 3 4 5 6 7 8 9	
12-7-66	OWC-R NB	8 3/4"		W=12T Rpm=110-120	10 20 30 40 50 60 80		
13-7-66	YM-J NB	8 3/4"		W=12T Rpm=110 FR=1700'/min			
1966	YM-J NB	8 3/4"		W=12T Rpm=120 FR=1600-1700'/min			
14-7-	YB7-G NB	8 3/4"		W=10-14T Rpm=100-110 FR=1600'/min			

G E O L O G I C A L D A T A

DEPTH	CUTTINGS LOG %	CORES DEPTH RECOV. TESTS	CUTTINGS ANALYSIS		HYDROCARBON OCCURENCES		PLUGS & DIPS	DETAILED LITHOLOGY		
			Calcimetry	Dolomimetry	IN MUD				IN CUTTINGS	
					GAS				OIL	
					CHROMATOLOG %				OIL	
4000										
4050										
4100										
4150										
4200										
4250										
4300										
4350										
4400										
4450										
4500										

L I T H O L O G Y, T E S T S, R E M A R K S

4012-4277

Sandstone white, very fine to medium, coarser at top and bottom, weakly to strongly silicified, rarely argillaceous, some white clay patches, minor dark mineral and mica, traces glauconite, pyrite, feldspar, orange grains.

Siltstone, white to light grey, weakly argillaceous, occasionally sandy, rare mica, pyrite common yellow-brown spherical inclusions near top, as minor interbeds and grading into sandstone.

Siltstone, dark-brown to dark grey carbonaceous, shaly, micaceous, scattered plant remains, as minor interbeds.

Shale, dark-brown, carbonaceous, silty, weakly micaceous, common plant remains.

- Test n°1:

4158 feet 35 mn.
4273

111 cub. ft @ 6.75 g/l.
I.P. 1,749 psi - EP. 1,724 psi

4277'-4317'

Siltstone, light grey, weakly argillaceous as above, sandy, minor mica.

4317'-4542'

Sandstone, white, as above, very fine, rare medium grains, occasionally calcareous, friable and porous in parts.

Siltstone, light grey as above, rare interbeds.

Siltstone, dark-brown, carbonaceous as above, rare interbeds.

Shale, as above, occasionally coaly, minor interbeds.

FORMATION

AGE

BASAL QUARTZITIC PORT KEATS. GROUP UPPER CARBONIFEROUS TO PERMIAN

A. A. P.

MASTER LOG

WELL: **NORTHERN TERRITORY GEOLOGICAL SURVEY KULSHILL No 2**

LOG No. **11**

PERMIT: **O.P. 2** STATE: **Northern Territory**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K. J. CREEVEY**

DATE: **23-7-1966** SCALE: **1"=50'** DEPTH: **5000 - 5500**

D R I L L I N G & M U D

NB New Bit W Weight on bit in tons

RRB Rerun Bit r.p.m. Rotation

C Conventional Bit FR Flow Rate

J Jet Bit

DB Diamond Bit S Salinity

TB Turbo Bit FC Filter Cake

CB Core Bit Rmf. Mud Filtrate Resistivity

DCB Diamond Core Bit

L I T H O L O G I C A L

Sandstone, fine, weakly calcareous and silicified.

Argillaceous siltstone.

Shaly Siltstone.

Coquinoid Calcareous Siltstone.

Coquinoid limestone.

Shale-Clay, silty.

Plant remains.

Brachiopod fragments

Crinoid fragments

Feldspar

Mica

Glauconite

Pyrite

Oolite

Worm tracks

Fault.

Marine fossil remains

E N G I N E E R I N G

Location Lat 14° 24' 09" S Long 129° 32' 39" E

Elevation Reference 147' Ground 131'

Date spudded 26 6 1966

Hole size 17 1/2 ins From 16' To 430'

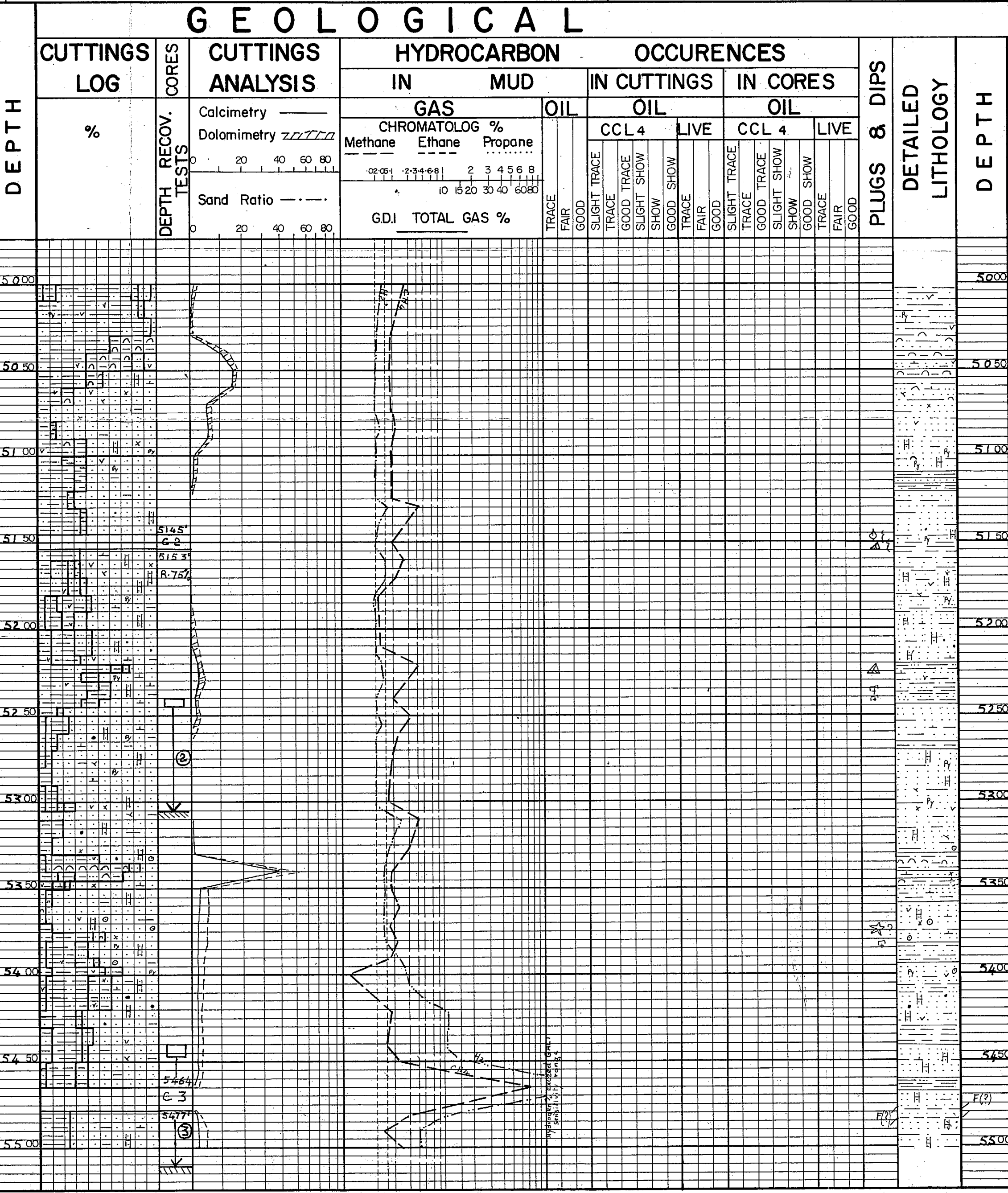
12 1/4 " 430' 2510'

8 3/4 " 2510 "

Casing 13 3/8 ins Depth 423 5' Cement'd to 2510' 1400'

D R I L L I N G D A T A

DATE	BIT TYPE, SIZE, REMARKS, CASING HOLE SIZE, PLUGS & PERF.	MUD	DRILLING RATE
18-7-1966	YVW-3 NB	W=14-15 rpm=80-110 FR=1500-1600 l/m	min/ft
19-7-1966	YVW-3 NB	W=7-14 rpm=80-110 FR=1600-1750 l/m	
20-7-66	4W4H-3 NB	W=12 rpm=70-80 FR=1500 l/m	
21-7-1966	4W4H-3 NB	W=12 rpm=60-80 FR=1500 l/m	
22-7	YB7E-3 NB	W=12 rpm=105 FR=1500 l/m	
23	VHG-3 NB	W=10 rpm=80 FR=1500 l/m	



L I T H O L O G Y, T E S T S, R E M A R K S

S T R A T I G R A P H Y

FORMATION

AGE

5048 - 5548

Sandstone, white to light grey, extremely fine to fine, may grade to siltstone, silicified, calcareous in parts, minor feldspar, traces mica, glauconite, feldspar, dark and orange mineral, pyrite, possible chlorite, scattered large secondary silica grains, few white clay patches, rarely porous and friable.

Shale, light grey to dark grey, blue grey and clayey in parts, occasionally silty micaceous, as partings and interbeds rare thick beds, scattered marine fossils, mainly crinoids, fractured in part.

Siltstone, dark grey to brown, micaceous, calcareous with common marine fossils in parts, grading to coquinoid limestone at top and near 5,340'

- Schlumberger Logs:
Run 4 IES 5471'-3,662'
Run 2 MLC 5471'-3,662'

- Test 2 5244' 22mm 3.6m³ Mud 3.8g/l 5,306' 30mm/15mm 2562 psi / 2,614 psi
9.94 g/l ?
Packer bypassed with mud from above entering tester, salinity given is maximum, mud salinity 2.3 g/l.

- Test 3 5447' 31mm 8.95m³ # 14.6 g/l 5,511' 30mm/20mm 2302 psi / 2502 psi

- Note: Complete loss of circulation at 5,452'.

MILLIGAN + WALLABY FORMATION

UPPER CARBONIFEROUS

MASTER LOG
NORTHERN TERRITORY GEOLOGICAL SURVEY
KULSHILL N° 2
 PERMIT: **O.P. 2** STATE: **Northern Territory**
 MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K.J. CREEVEY**
 DATE: **28-7-1966** SCALE: **1"=50'** DEPTH: **5500'-6000'**

DRILLING & MUD

NB New Bit W Weight on bit in tons
 RRB Rerun Bit r.p.m. Rotation
 C Conventional Bit FR Flow Rate
 J Jet Bit
 DB Diamond Bit S Salinity
 TB Turbo Bit FC Filter Cake
 CB Core Bit Rmf. Mud Filtrate Resistivity
 DCB Diamond Core Bit

LITHOLOGICAL

Sandstone fine, weakly calcareous and silicified
 Sandy dolomite
 Shaly Siltstone
 Shale-Clay Silty
 Bituminous Sandstone
 Pyritic dolomitic Shale
 Argillaceous Siltstone
 Plant remains

Crinoid Fragments
 Feldspar
 Mica
 Glauconite
 Pyrite
 Oolite
 Worm tracks

ENGINEERING

Location Lat 14° 24' 09" S, Long 129° 32' 39" E
 Elevation Reference 147' Ground 131'
 Date spudded 26-6-1966
 Hole size 17 1/2" Ins From 16' To 430'
 12 1/4" " " 430' " 2510'
 8 3/4" " 2510 "
 Casing 13 3/8" Ins Depth 423.5' Cemt'd to 2510'
 9 5/8" " 2510' 1400'

DRILLING DATA

DATE	BIT TYPE, SIZE, REMARKS, CASING HOLE SIZE, PLUGS & PERF.	MUD	DRILLING RATE	DEPTH
24-7-66	NB	W=10, rpm=100, FR=1500		5500
25-7-1966	NB	W=10, rpm=90, FR=1850		5600
26-7-1966	NB	W=10-14, rpm=80, FR=1200-1350		5700
27-7-1966	NB	W=15-16, rpm=80, FR=500		5800
28-7-1966	DCB	W=15-17, rpm=80-100, FR=1200		5900
	DCB	W=7, rpm=30, FR=800		5929
	YMS	W=13-15, rpm=110-120, FR=1200		5950
	DCB	W=7.8, rpm=15, FR=920		6000

GEOLOGICAL DATA

DEPTH	CUTTINGS LOG	CUTTINGS ANALYSIS	HYDROCARBON OCCURENCES		PLUGS & DIPS	DETAILED LITHOLOGY	DEPTH
			IN MUD	IN CUTTINGS			
5500		Calcimetry Dolomimetry	GAS Methane Ethane Propane	OIL CCL4 LIVE			5500
5550							5550
5600							5600
5650							5650
5700							5700
5750							5750
5800							5800
5850							5850
5900							5900
5950							5950
6000							6000

LITHOLOGY, TESTS, REMARKS

5548-5600
 Shale, grey-black, occasionally blue-grey, weakly micaceous.
 Sandstone, light grey, extremely fine to siltstone, argillaceous, weakly calcareous, as fine interbeds.
 5600-5893
 Sandstone, white-light grey, extremely fine-fine, argillaceous in parts weakly calcareous, weakly silicified, occasionally porous and friable, accessory minerals include pyrite, feldspar, glauconite, mica and dark mineral, orange grains, few larger secondary grains.
 Shale, as above, silty in parts, as thin interbeds, rare thicker beds, occasional plant remains.
 Sandy Dolomite or Calcareous dolomitic Sandstone, grey brown-light greyish brown showing dark yellow-orange fluorescence, as thin beds below 5,750.
 5893-6335
 Shale, as above, silty, weakly micaceous, scattered worm tracks and crinoids, commonly shows turbulent bedding.
 Sandstone, see below

MILLIGAN + WALLABY FORMATION
Member 1? UPPER CARBONIFEROUS

A. A. P.

MASTER LOG

NORTHERN TERRITORY
GEOLOGICAL SURVEY

LOG No. **PR6617C**
13

WELL: **KULSHILL N° 2**

PERMIT: **O. P. 2** STATE: **Northern-Territory**

MUD LOGGING COMPANY: **GEOSERVICES** WELL SITE GEOLOGIST: **K. J. CREEVEY**

DATE: **1-8-1966** SCALE: **1"=50'** DEPTH: **6000' - 6500'**

D R I L L I N G & M U D

NB New Bit W Weight on bit in tons
RRB Rerun Bit r.p.m. Rotation
C Conventional Bit FR Flow Rate
J Jet Bit
DB Diamond Bit S Salinity
TB Turbo Bit FC Filter Cake
CB Core Bit Rmf. Mud Filtrate Resistivity
DCB Diamond Core Bit

L I T H O L O G I C A L

Bituminous Sandstone
Sandstone, fine, weakly calcareous and silicified.
Shaly Siltstone
Shale - Clay silty
Argillaceous Siltstone
Sandy dolomite
Pyritic dolomitic shale
Plant remains

Crinoid Fragments
Feldspar
Mica
Glauconite
Pyrite
Dolite
Worm tracks

E N G I N E E R I N G

Location Lat 14° 24' 09" S Long 129° 32' 39" E
Elevation Reference 147' Ground 131'
Date spudded 26-6-1966
Hole size 17 1/2" Ins. From 16' To 430'
12 1/4" " 430' " 2510'
8 3/4" " 2510 " 6437'

Casing 13 3/8" Ins. Depth 423.5' Cement'd to 2510'
9 5/8" 2510' 1400'

D R I L L I N G D A T A

DATE	BIT TYPE, SIZE, REMARKS, CASING HOLE SIZE, PLUGS & PERF.	MUD	DRILLING RATE	DEPTH
29-7-1966	Ø 8 3/4" DWC-R NB	W = 15 rpm = 100-120 FR = 1200 l/min		6000
30-7-1966	Ø 8 3/4" DWC-R NB	W = 10-12 rpm = 100 FR = 1200 l/min		6100
31-7-1966	Ø 8 3/4" SV2-R NB	W = 12 rpm = 60-120 FR = 1200 l/min		6200
1-8-1966	Ø 8 3/4" YM1 NB	W = 11-13 rpm = 90-120 FR = 1200 l/min		6300
1-8-1966	Ø 8 3/4" DWC-V-1 NB	W = 12 rpm = 120 FR = 1200 l/min		6400
	Ø 8 3/4" DCB	W = 7-8 rpm = 70-90 FR = 900		6423 6432 6437

G E O L O G I C A L D A T A

DEPTH	CUTTINGS LOG	CORES	CUTTINGS ANALYSIS	HYDROCARBON OCCURENCES			PLUGS & DIPS	DETAILED LITHOLOGY	DEPTH	LITHOLOGY, TESTS, REMARKS	STRATIGRAPHY	
				IN MUD	IN CUTTINGS	IN CORES					FORMATION	AGE
6000			Calcimetry Dolomimetry	GAS CHROMATOLOG % Methane Ethane Propane	OIL CCL 4 LIVE	OIL CCL 4 LIVE			6000	Sandstone, white to gray, extremely fine to fine, weakly calcareous and silicified, accessory feldspar mica, pyrite and glauconite, very calcareous below 6150 with rich feldspar mica carbonaceous matter and some dark mineral, poor porosity.	MILLIGAN FORMATION MEMBER 1	UPPER CARBONIFEROUS
6050								6050	Contained oil as brown to black bituminous cement, some free light brownish oil, fluorescence dark greenish yellow, poor light greenish yellow extraction with CCL4.			
6100								6100	Siltstone dark grey, shaly micaceous grading to shale.			
6150								6150	Dolomitic Sandstone, light brown as patches in sandstone.			
6200								6200	Pyritic dolomitic shale, dark brown as lenses and nodules in shale.			
6250								6250				
6300								6300				
6350								6350	6,355' - 6,432.5'			
6400								6400	Sandstone, cream-yellowish white very fine - fine, calcareous, weakly silicified, as above, occasionally friable, scattered large quartz grains.			
6450								6450	Shale as above as thin partings and interbeds.			

Test 4 6,349.1' 15 mm 0
6,432.5' 45mm/30mm 1762 psi/1337 psi

Schlumberger logs:

IES Run 5 6,437' - 5,371'
MLC Run 3 6,437' - 5,361'
GRN Run 1 6,436' - 180'
SL Run 2 6,430' - 2,501'
CDM Run 1 6,436' - 2,501'