Schlumberger

Company: **ESSO Australia Pty Ltd**

12.25 In. Section

Well: **SNA A19A**

Field: **SNAPPER**

Rig: **ISDL 175** State: **Victoria**

Rig: ISDL 175 Field: SNAPPER Location: Bass Strait Well: SNA A19A Company: ESSO Australia Pty Ltd

Gamma Ray Service
1:500 True Vertical Depth
Real Time Log

Location

		Elevation		
Total depth:	4031.0 m		K.B.	Top Drive
Spud date:	27−Mar−08		G.L.	−55.0 m
Runs:	1 To 2		D.F.	41.7 m

Permanent datum:	Mean Sea Level	Elev.:	0.0 m
Log measured from:	Drill Floor	41.7 m	above Perm. datum
Depth reference:	Driller's Depth		

Service Order no.	X = E 589,787.584 m	Longitude	Latitude
07ASQ0023	Y = N 5,772,180.379 m	E 148° 1' 31.298"	S 38° 11' 37.84"

Depth logged:	817.2 m To 4018.6 m	Mag decl: 13.01 deg.	Other services:
Date logged:	01−Apr−08 To 07−Apr−08	Mag dip: −68.71 deg.	See Remarks

Bore hole record

Hole size	from	to
12.25 in.	817.2 m	4031.0 m

Casing record

Size	Density	from	to
13.38 in.	54.5 lb/ft	27.1 m	817.2 m

Mud record

Type	from	to
Accolade SBM	817.2 m	4031.0 m

Borehole deviation record

Min	Max	from	to
47.67 deg.	81.26 deg.	817.2 m	4031.0 m

Surface equipment

Unit	ESSO Office Unit
Depth system	PDA/CLT

Software record

IDEAL Wis	ID13_0c_06		
HSPM	13_0c_03		
LWD	N/A		
MWD	8.0C04		

Bit Run Summary

Run number		1	2
Bit size	in	12.25	12.25
Bit start depth	m	756.0	888.0
Bit end depth	m	888.0	4031.0
Top interval logged	m	817.2	875.6
Bottom interval logged	m	875.6	4018.6
Begin log: time		00:15	03:23
Begin log: date		01−Apr−08	02−Apr−08
End log: time		10:57	07:38
End log: date		01−Apr−08	07−Apr−08
Mud data			
Depth	m	888.0	4031.0
Type		Accolade SBM	Accolade SBM
Mud weight	ppg	11.0	11.3
Solids	%	13.9	17.1
Chlorides	mg/l	47,200	42,100
Rm	ohm.m@°C	N/A	N/A
Rmf	ohm.m@°C	N/A	N/A
Rmc	ohm.m@°C	N/A	N/A

Potassium	%	0	0								
Environmental data											
GR											
Mud weight	ppg	11.0	11.3								
Bit size	in	12.25	12.25								
Resistivity											
Neutron porosity											
Hole Size	in	12.25	12.25								
Mud weight	ppg	11.0	11.3								
Temperature	°C	N/A	N/A								
Mud salinity	ppb	N/A	N/A								
Formation salinity	ppb	N/A	N/A								
Recording rate 1	SEC	N/A	N/A								
Recording rate 2	SEC	N/A	N/A								
Filtering GR		3 pts.	3 pts.								
Filtering density		N/A	N/A								
Filtering Neutron		N/A	N/A								
Company representative		R. C. Moore	G. Doty								
Anadrill personnel		J. Ikeda	M. Sihite								

OTHER SERVICES FOR RUN1	OTHER SERVICES FOR RUN2	
Directional Drilling Directional Surveys Annular Pressure & Temperature	Directional Drilling Directional Surveys Annular Pressure & Temperature	

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2	
Depth is referenced to Driller's Depth. All data presented is real time. Gamma ray is corrected for mud weight, tool size and bit size. Gamma ray gaps present due to bad signal while downlinking on bottom to PD Xceed* POOH to change bit to PDC and insert two roller reamers into BHA.	Depth is referenced to Driller's Depth. All data presented is real time. Gamma ray is corrected for mud weight, tool size and bit size. Gamma ray gaps present due to bad signal while downlinking on bottom to PD Xceed* POOH due to reaching section TD SNA A19A	

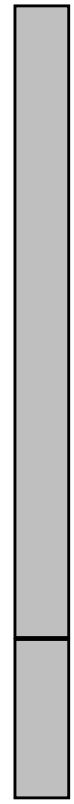
EQUIPMENT DESCRIPTION

RUN1	RUN2	
DOWNHOLE EQUIPMENT	DOWNHOLE EQUIPMENT	

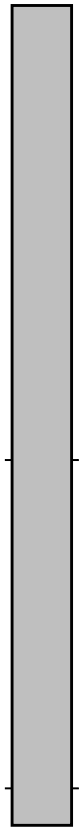
DOWNHOLE EQUIPMENT

PowerPulse* 17.36
MDC: VE14
MEC: 1620
MDI: 1297
MGR: 091
DHS: 8.0C04

D&I 13.04
GR 12.39
APWD 9.78



900−PowerDrive Xceed* 9.00
S/N: CRS−069
BladeOD 12.13



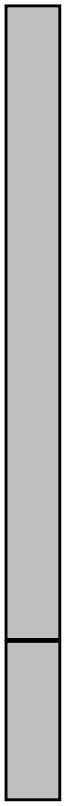
12−1/4" Reed−Hyc Milled Bit 0.00 0.34
S/N: CP2616

Maximum string diameter 12.25 in.
All lengths in Meters

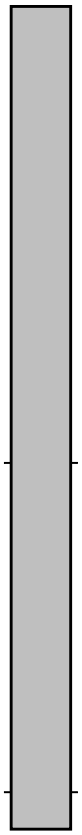
DOWNHOLE EQUIPMENT

PowerPulse* 17.32
MDC: VE14
MEC: 1620
MDI: 1297
MGR: 091
DHS: 8.0C04

D&I 13.00
GR 12.35
APWD 9.74



900−PowerDrive Xceed* 8.96
S/N : CRS−069
BladeOD 12.25

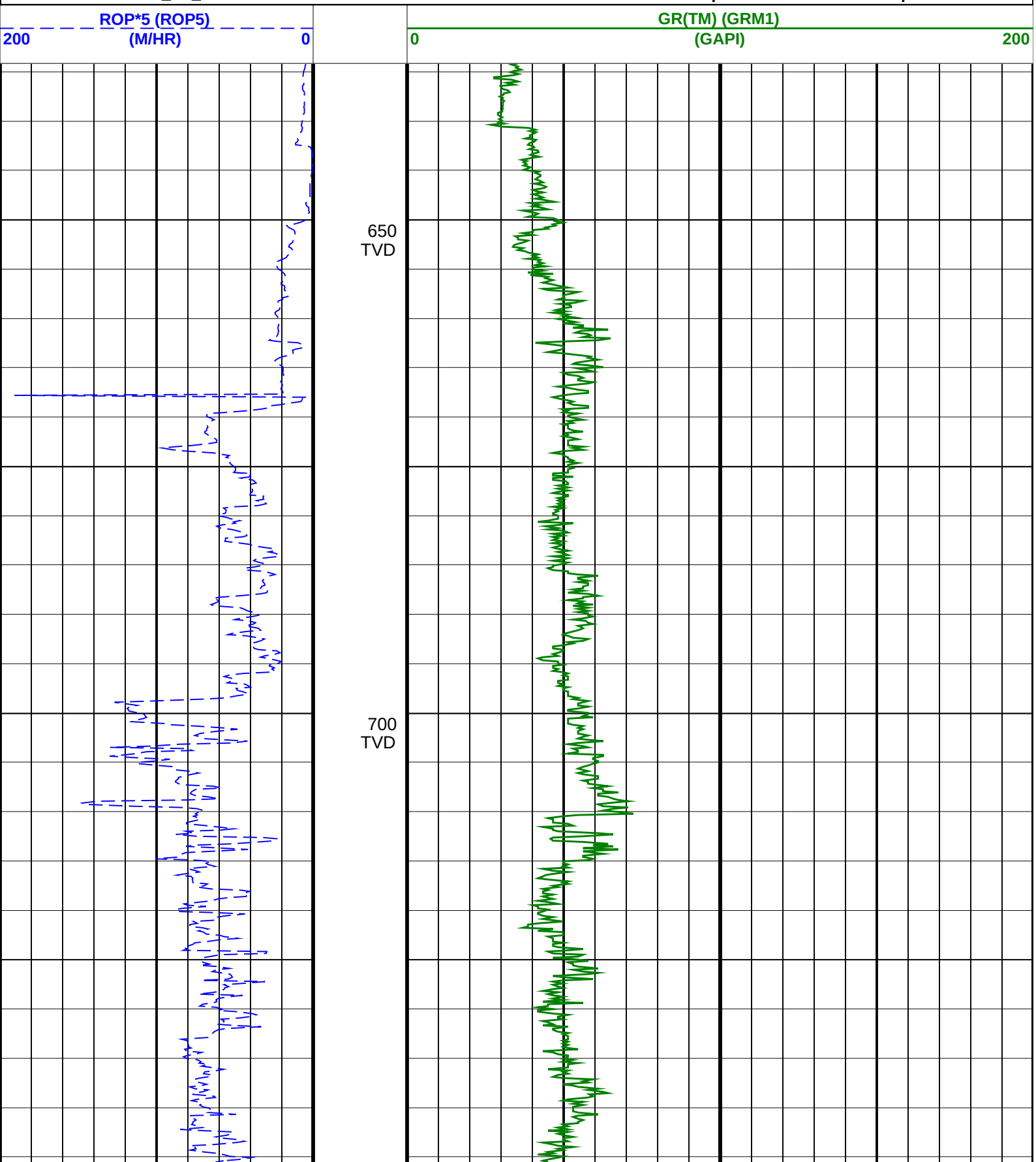


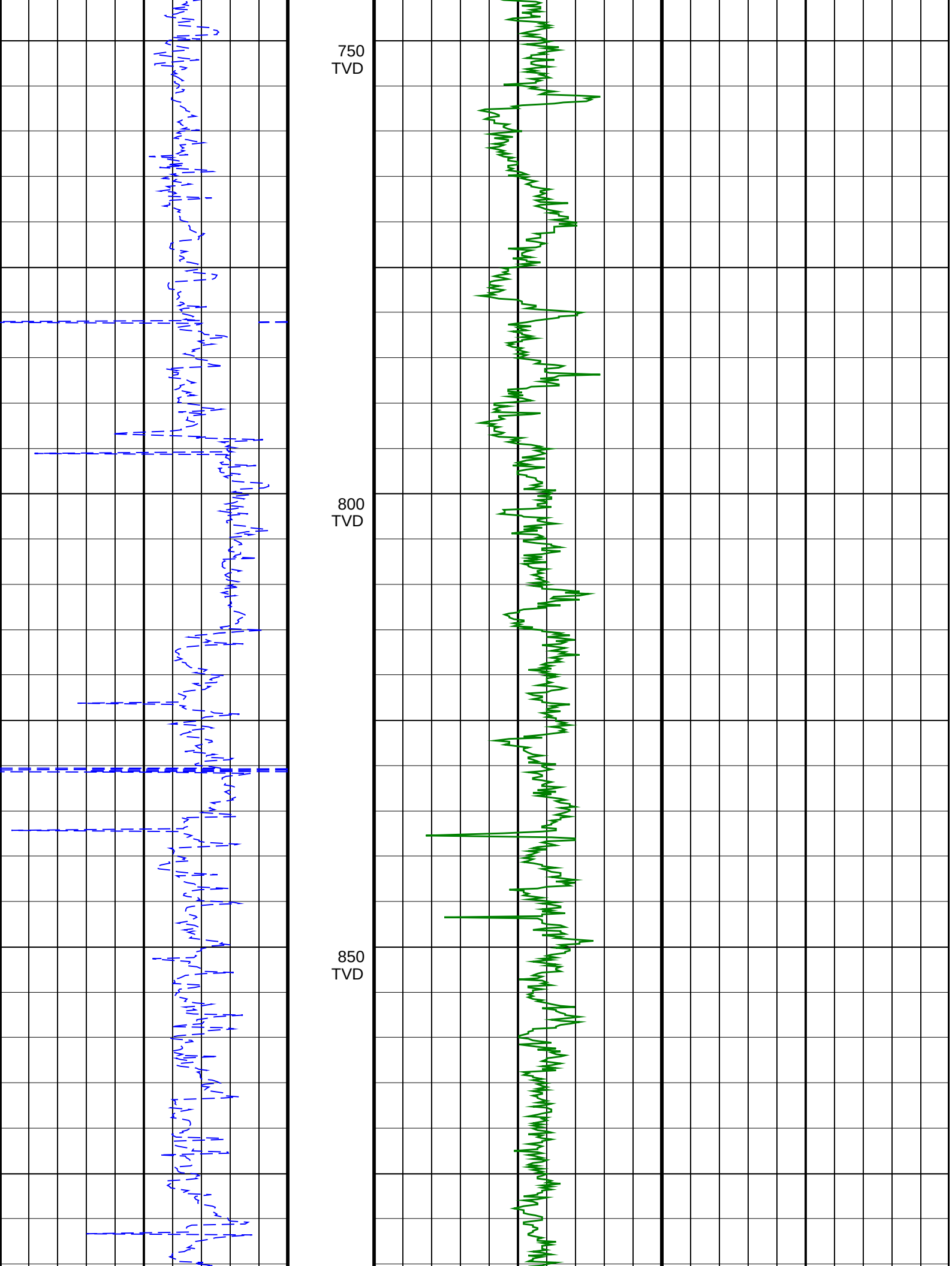
12−1/4" Reed−Hyc PDC Bit 0.00 0.30
S/N: 216501

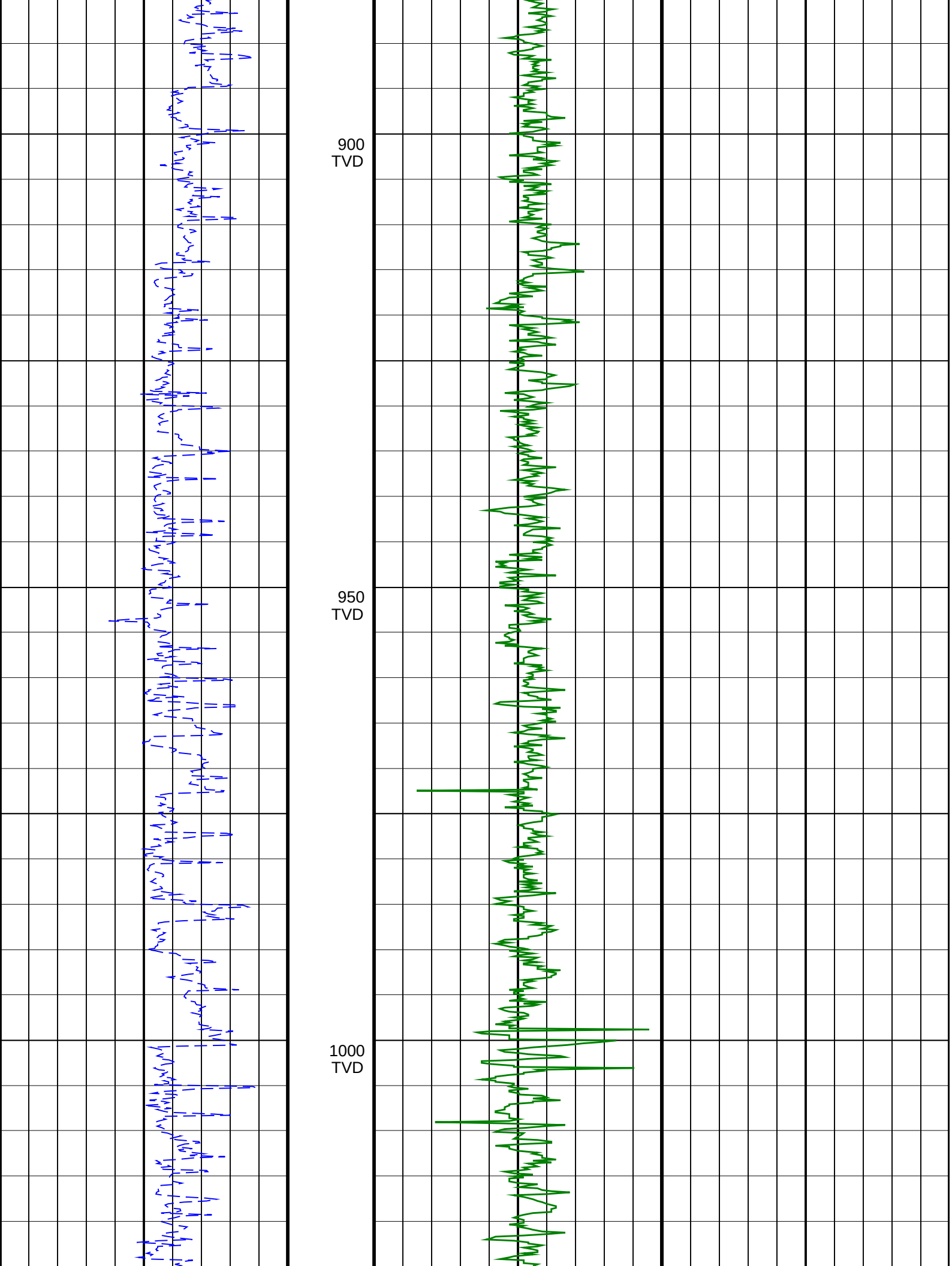
Maximum string diameter 12.25 in.
All lengths in Meters

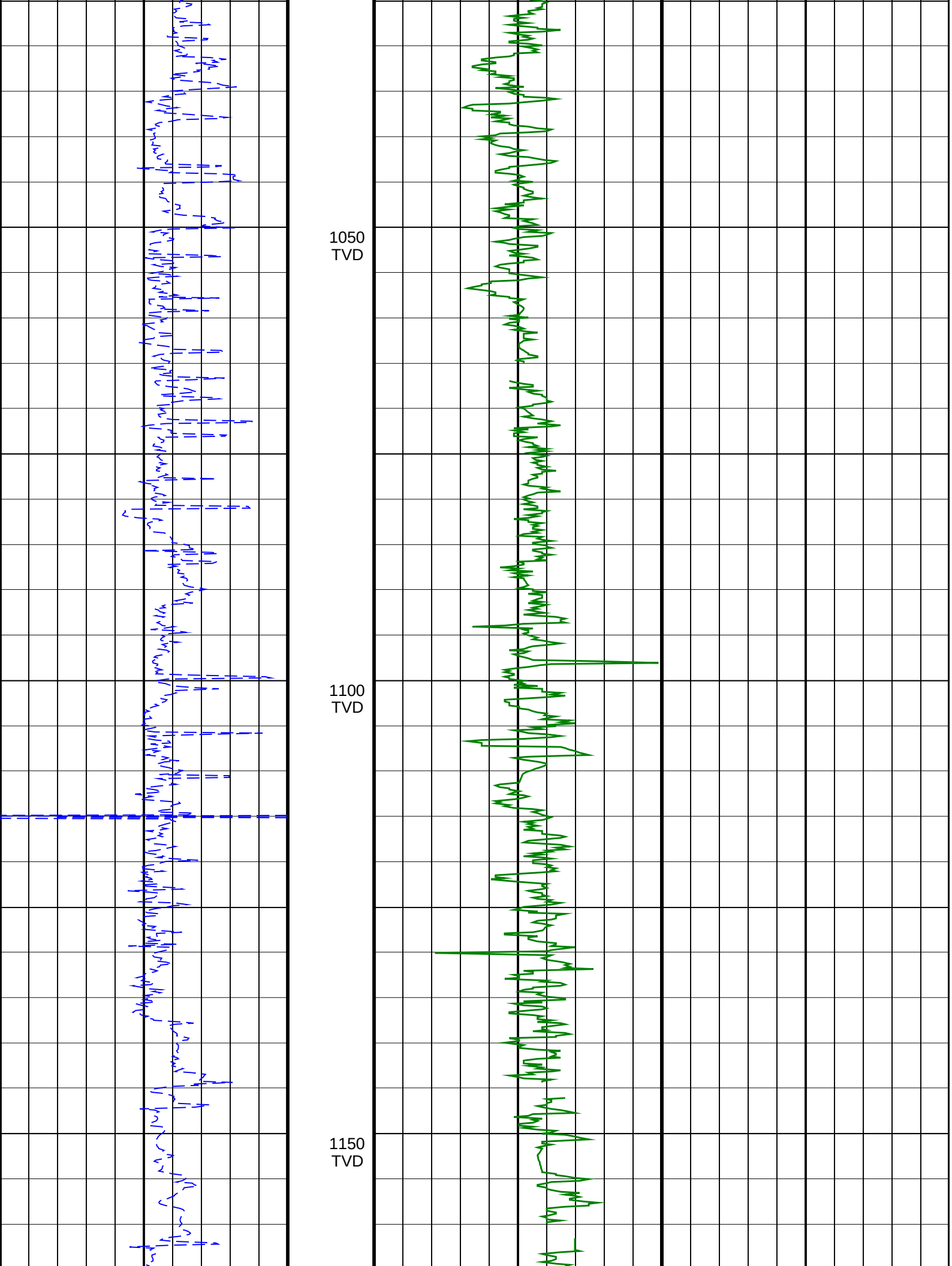
SNA A19A GR 500TVD

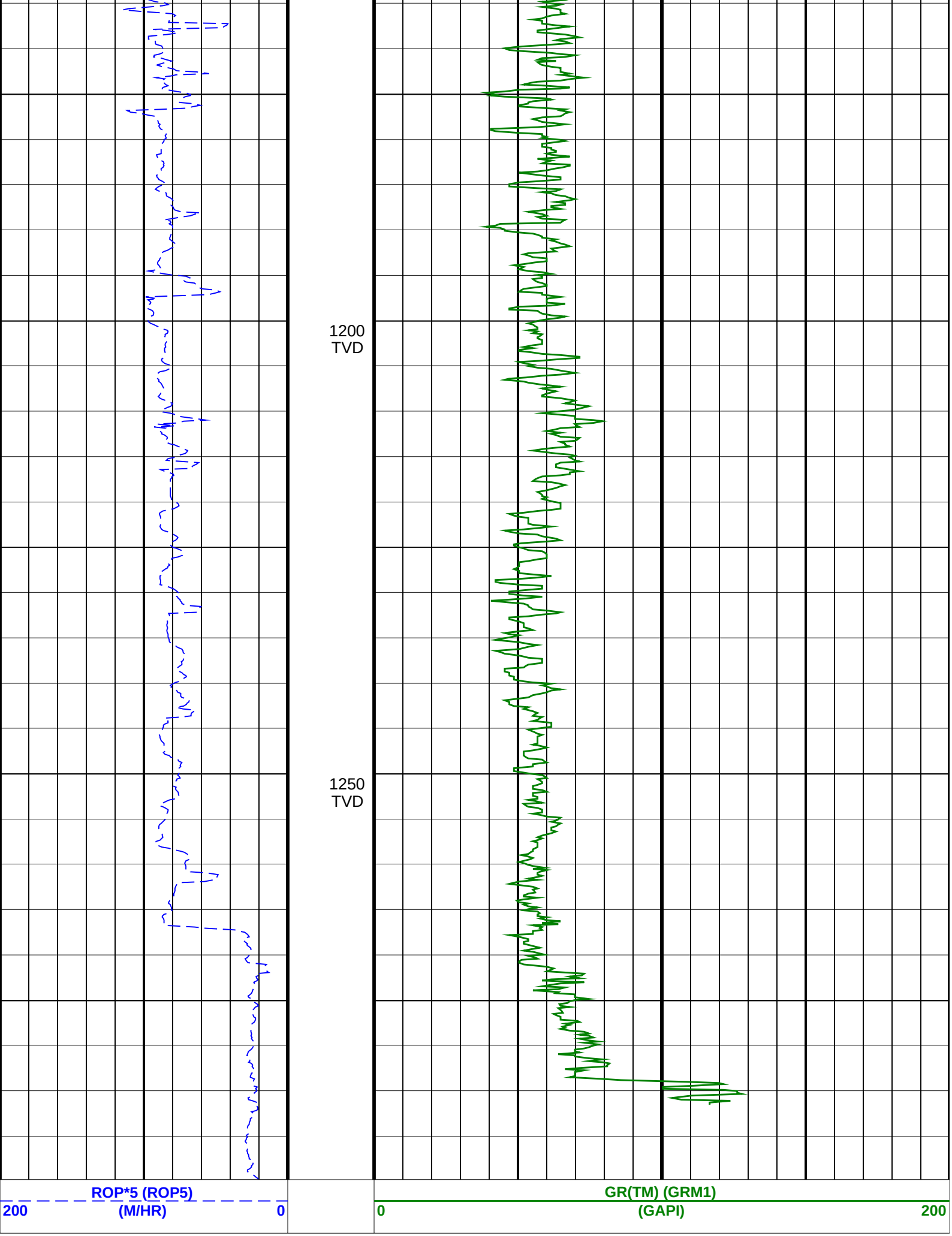
IDEAL Version: ID13_0C_08 <TVD> Vertical Scale: 1:500 Graphics File Created: 28−Apr−2008 19:05




750
TVD
800
TVD
850
TVD


900
TVD
950
TVD
1000
TVD


1050
TVD
1100
TVD
1150
TVD


1200
TVD
1250
TVD
ROP*5 (ROP5)
200
(M/HR)
0
GR(TM) (GRM1)
0
(GAPI)
200

SCHLUMBERGER

Survey report 8-Apr-2008 01:57:43

Client.....: ESSO Australia Pty Ltd.
Field.....: Snapper

Well.....: SNA-A19A
Service Order no.....: 07ASQ0023
Engineer.....: MS/JI

RIG:.....: ISDL 175
STATE:.....: Victoria

Spud date.....: 27-Mar-08
Last survey date.....: 07-Apr-08
Total accepted surveys...: 110
MD of first survey.....: 818.00 m
MD of last survey.....: 4016.94 m

----- Survey calculation methods-----
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor

----- Depth reference -----
Permanent datum.....: Mean Sea Level
Depth reference.....: Driller's Depth
GL above permanent.....: -55.00 m
KB above permanent.....: Top Drive
DF above permanent.....: 41.70 m

----- Vertical section origin-----
Latitude (+N/S-).....: -4.23 m
Departure (+E/W-).....: 0.54 m

----- Platform reference point-----
Latitude (+N/S-).....:
Departure (+E/W-).....:

Azimuth from Vsect Origin to target: 222.93 degrees

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2007
Magnetic date.....: 28-Mar-2008
Magnetic field strength..: 1197.76 HCNT
Magnetic dec (+E/W-).....: 13.01 degrees
Magnetic dip.....: -68.71 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.02 mGal
Reference H.....: 1197.76 HCNT
Reference Dip.....: -68.71 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.01 degrees
Grid convergence (+E/W-).: -0.63 degrees
Total az corr (+E/W-)....: 13.64 degrees
(Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 100f)	Srvy tool type	Tool Corr (deg)
1	818.00	65.15	237.47	0.00	641.54	385.23	-247.50	-303.54	391.65	230.81	0.00	TIP	None
2	825.33	66.85	236.89	7.33	644.52	391.72	-251.13	-309.17	398.31	230.91	7.40	MWD	None
3	844.01	67.54	235.57	18.68	651.76	408.48	-260.70	-323.48	415.46	231.13	2.28	MWD	None
4	934.88	71.97	232.69	90.87	683.20	492.08	-310.66	-392.52	500.59	231.64	1.74	MWD	None
5	964.33	73.85	231.11	29.45	691.86	519.89	-328.03	-414.67	528.73	231.65	2.50	MWD	None
6	993.65	75.70	229.32	29.32	699.56	547.95	-346.14	-436.41	557.01	231.58	2.63	MWD	None
7	1022.61	78.39	227.17	28.96	706.05	576.04	-364.93	-457.46	585.19	231.42	3.59	MWD	None
8	1051.74	79.84	224.41	29.13	711.55	604.61	-384.88	-477.96	613.66	231.16	3.22	MWD	None
9	1080.99	80.78	221.07	29.25	716.48	633.44	-406.05	-497.52	642.19	230.78	3.57	MWD	None
10	1109.77	81.26	218.53	28.78	720.97	661.82	-427.89	-515.72	670.11	230.32	2.71	MWD	None
11	1139.06	81.08	218.70	29.29	725.47	690.68	-450.50	-533.78	698.48	229.84	0.26	MWD	None
12	1168.54	81.05	219.37	29.48	730.05	719.74	-473.12	-552.12	727.11	229.41	0.69	MWD	None
13	1197.52	81.09	220.70	28.98	734.54	748.33	-495.04	-570.54	755.37	229.05	1.38	MWD	None
14	1226.81	81.27	221.45	29.29	739.04	777.26	-516.86	-589.55	784.04	228.76	0.79	MWD	None
15	1256.11	81.12	220.88	29.30	743.52	806.20	-538.66	-608.61	812.75	228.49	0.61	MWD	None
16	1286.01	81.12	220.82	29.90	748.14	835.72	-561.00	-627.94	842.04	228.22	0.06	MWD	None
17	1314.74	80.88	220.55	28.73	752.63	864.07	-582.52	-646.43	870.18	227.98	0.38	MWD	None
18	1342.72	81.14	219.97	27.98	757.00	891.68	-603.61	-664.29	897.57	227.74	0.69	MWD	None
19	1368.44	81.43	219.81	25.72	760.90	917.07	-623.12	-680.60	922.76	227.52	0.39	MWD	None
20	1401.74	81.06	220.34	33.30	765.97	949.94	-648.30	-701.79	955.41	227.27	0.59	MWD	None
21	1431.03	80.77	220.65	29.29	770.59	978.83	-670.30	-720.57	984.13	227.07	0.44	MWD	None
22	1458.21	81.01	220.57	27.18	774.90	1005.65	-690.67	-738.04	1010.80	226.90	0.28	MWD	None
23	1487.53	80.62	220.01	29.32	779.58	1034.56	-712.75	-756.75	1039.56	226.72	0.70	MWD	None
24	1517.39	80.13	220.32	29.86	784.57	1063.97	-735.25	-775.74	1068.81	226.54	0.59	MWD	None
25	1545.95	80.37	220.05	28.56	789.41	1092.08	-756.75	-793.90	1096.79	226.37	0.38	MWD	None
26	1576.23	80.43	219.86	30.28	794.46	1121.90	-779.64	-813.08	1126.47	226.20	0.20	MWD	None
27	1605.64	80.05	220.46	29.41	799.44	1150.85	-801.79	-831.77	1155.29	226.05	0.73	MWD	None
28	1634.87	80.22	220.54	29.23	804.45	1179.62	-823.68	-850.47	1183.96	225.92	0.20	MWD	None
29	1663.67	80.63	221.96	28.80	809.24	1208.01	-845.03	-869.20	1212.26	225.81	1.54	MWD	None
30	1693.30	80.54	221.29	29.63	814.09	1237.23	-866.89	-888.61	1241.42	225.71	0.69	MWD	None
31	1721.76	80.62	220.31	28.46	818.75	1265.29	-888.14	-906.96	1269.39	225.60	1.04	MWD	None
32	1750.85	80.55	220.10	29.09	823.50	1293.95	-910.06	-925.48	1297.97	225.48	0.23	MWD	None
33	1778.12	80.47	219.58	27.27	828.00	1320.81	-930.71	-942.71	1324.74	225.37	0.58	MWD	None
34	1808.70	80.28	219.55	30.58	833.11	1350.91	-953.95	-961.92	1354.74	225.24	0.19	MWD	None
35	1838.39	80.73	220.24	29.69	838.01	1380.15	-976.42	-980.70	1383.89	225.13	0.84	MWD	None

36	1867.48	80.18	220.10	29.09	842.83	1408.80	-998.34	-999.20	1412.48	225.02	0.59	MWD	None
37	1896.95	80.60	221.42	29.47	847.75	1437.84	-1020.35	-1018.18	1441.45	224.94	1.41	MWD	None
38	1925.66	81.03	222.12	28.71	852.34	1466.17	-1041.48	-1037.05	1469.75	224.88	0.86	MWD	None
39	1953.25	80.60	221.87	27.59	856.74	1493.41	-1061.73	-1055.28	1496.95	224.83	0.55	MWD	None
40	1983.62	80.97	221.75	30.37	861.60	1523.38	-1084.07	-1075.26	1526.89	224.77	0.39	MWD	None
41	2012.53	80.83	221.32	28.91	866.18	1551.92	-1105.44	-1094.19	1555.39	224.71	0.47	MWD	None
42	2042.33	80.77	221.97	29.80	870.94	1581.33	-1127.42	-1113.74	1584.77	224.65	0.66	MWD	None
43	2072.85	80.83	221.91	30.52	875.82	1611.45	-1149.83	-1133.87	1614.86	224.60	0.08	MWD	None
44	2101.05	80.86	222.26	28.20	880.31	1639.29	-1170.49	-1152.53	1642.68	224.56	0.37	MWD	None
45	2130.10	80.60	222.11	29.05	884.99	1667.95	-1191.74	-1171.79	1671.32	224.52	0.31	MWD_M	None
46	2158.30	80.63	221.62	28.20	889.59	1695.77	-1212.46	-1190.36	1699.12	224.47	0.52	MWD	None
47	2187.92	80.37	221.13	29.62	894.47	1724.97	-1234.38	-1209.67	1728.29	224.42	0.56	MWD	None
48	2216.87	80.19	220.82	28.95	899.36	1753.49	-1255.92	-1228.38	1756.77	224.36	0.37	MWD	None
49	2246.30	80.48	220.42	29.43	904.30	1782.48	-1277.94	-1247.26	1785.72	224.30	0.51	MWD	None
50	2275.82	80.31	220.26	29.52	909.23	1811.56	-1300.13	-1266.11	1814.76	224.24	0.24	MWD	None
51	2304.97	80.42	219.89	29.15	914.11	1840.26	-1322.12	-1284.61	1843.43	224.18	0.40	MWD	None
52	2334.71	80.48	220.07	29.74	919.04	1869.55	-1344.59	-1303.45	1872.68	224.11	0.19	MWD	None
53	2363.60	80.22	220.65	28.89	923.88	1898.00	-1366.30	-1321.89	1901.10	224.05	0.66	MWD	None
54	2391.27	80.21	220.78	27.67	928.59	1925.25	-1386.96	-1339.68	1928.32	224.01	0.14	MWD	None
55	2422.94	80.42	221.30	31.67	933.92	1956.45	-1410.51	-1360.18	1959.50	223.96	0.53	MWD	None
56	2450.47	80.72	221.00	27.53	938.43	1983.59	-1430.96	-1378.05	1986.62	223.92	0.47	MWD	None
57	2480.06	80.83	220.99	29.59	943.17	2012.79	-1453.00	-1397.21	2015.79	223.88	0.11	MWD	None
58	2510.37	80.92	220.91	30.31	947.98	2042.69	-1475.61	-1416.82	2045.68	223.84	0.12	MWD	None
59	2537.19	80.66	221.32	26.82	952.27	2069.16	-1495.55	-1434.23	2072.12	223.80	0.55	MWD	None
60	2567.88	80.16	221.91	30.69	957.38	2099.41	-1518.18	-1454.33	2102.36	223.77	0.76	MWD	None
61	2595.87	80.50	221.41	27.99	962.08	2126.99	-1538.79	-1472.67	2129.94	223.74	0.65	MWD	None
62	2624.74	80.48	222.25	28.87	966.85	2155.46	-1560.01	-1491.66	2158.39	223.72	0.87	MWD	None
63	2654.71	80.54	222.52	29.97	971.79	2185.02	-1581.84	-1511.59	2187.95	223.70	0.28	MWD	None
64	2683.77	80.72	222.05	29.06	976.53	2213.69	-1603.05	-1530.88	2216.61	223.68	0.52	MWD	None
65	2712.74	80.57	221.95	28.97	981.23	2242.27	-1624.29	-1550.00	2245.18	223.66	0.19	MWD	None
66	2742.20	80.57	220.94	29.46	986.06	2271.32	-1646.08	-1569.24	2274.22	223.63	1.03	MWD	None
67	2772.49	80.85	220.30	30.29	990.95	2301.19	-1668.77	-1588.70	2304.07	223.59	0.70	MWD	None
68	2800.58	80.76	220.32	28.09	995.44	2328.89	-1689.91	-1606.64	2331.76	223.55	0.10	MWD	None
69	2829.67	80.71	219.94	29.09	1000.12	2357.57	-1711.87	-1625.14	2360.42	223.51	0.40	MWD	None
70	2858.19	80.80	220.73	28.52	1004.71	2385.69	-1733.32	-1643.36	2388.52	223.47	0.84	MWD	None
71	2887.36	80.76	220.63	29.17	1009.38	2414.46	-1755.16	-1662.13	2417.28	223.44	0.11	MWD	None
72	2916.76	80.74	221.21	29.40	1014.11	2443.46	-1777.08	-1681.14	2446.27	223.41	0.59	MWD	None
73	2945.85	80.51	221.74	29.09	1018.84	2472.15	-1798.59	-1700.15	2474.96	223.39	0.60	MWD	None
74	2975.36	80.06	222.19	29.51	1023.82	2501.23	-1820.22	-1719.60	2504.04	223.37	0.65	MWD	None
75	**3003.97**	**80.15**	**221.72**	**28.61**	**1028.74**	**2529.41**	**-1841.18**	**-1738.44**	**2532.21**	**223.36**	**0.50**	**MWD**	**None**
76	3033.50	79.67	222.24	29.53	1033.91	2558.48	-1862.79	-1757.88	2561.28	223.34	0.72	MWD	None
77	3062.62	79.67	221.55	29.12	1039.14	2587.13	-1884.11	-1777.01	2589.92	223.32	0.71	MWD	None
78	3091.61	79.44	222.28	28.99	1044.39	2615.63	-1905.33	-1796.06	2618.42	223.31	0.79	MWD	None
79	3120.91	79.61	222.33	29.30	1049.72	2644.44	-1926.64	-1815.45	2647.22	223.30	0.18	MWD	None
80	3149.93	80.48	222.12	29.02	1054.74	2673.02	-1947.80	-1834.66	2675.80	223.29	0.94	MWD	None
81	3178.97	80.63	222.47	29.04	1059.50	2701.67	-1968.99	-1853.94	2704.44	223.28	0.40	MWD	None
82	3208.02	81.50	222.14	29.05	1064.01	2730.36	-1990.22	-1873.25	2733.14	223.27	0.97	MWD	None
83	3237.27	80.92	221.67	29.25	1068.48	2759.26	-2011.73	-1892.56	2762.04	223.25	0.77	MWD	None
84	3266.58	80.65	221.14	29.31	1073.18	2788.18	-2033.43	-1911.70	2790.95	223.23	0.61	MWD	None
85	3295.91	80.28	220.73	29.33	1078.03	2817.09	-2055.28	-1930.65	2819.85	223.21	0.57	MWD	None
86	3324.75	80.71	220.45	28.84	1082.80	2845.51	-2076.88	-1949.15	2848.27	223.18	0.54	MWD	None
87	3354.19	80.66	220.25	29.44	1087.56	2874.53	-2099.02	-1967.96	2877.28	223.15	0.21	MWD	None
88	3383.34	81.06	220.52	29.15	1092.19	2903.29	-2120.94	-1986.61	2906.03	223.13	0.50	MWD	None
89	3411.85	80.80	220.17	28.51	1096.69	2931.41	-2142.40	-2004.84	2934.15	223.10	0.46	MWD	None
90	3441.10	80.62	219.86	29.25	1101.41	2960.24	-2164.51	-2023.40	2962.98	223.07	0.37	MWD	None
91	3471.00	80.22	220.93	29.90	1106.39	2989.69	-2186.96	-2042.50	2992.43	223.04	1.15	MWD	None
92	3499.53	80.98	221.49	28.53	1111.04	3017.83	-2208.14	-2061.05	3020.56	223.03	1.00	MWD	None
93	3526.72	80.62	221.36	27.19	1115.39	3044.66	-2228.26	-2078.81	3047.39	223.01	0.43	MWD	None
94	3558.23	80.57	220.79	31.51	1120.54	3075.73	-2251.70	-2099.23	3078.46	222.99	0.55	MWD	None
95	3586.63	80.54	221.34	28.40	1125.20	3103.73	-2272.82	-2117.63	3106.46	222.98	0.58	MWD	None
96	3615.78	80.47	221.37	29.15	1130.01	3132.47	-2294.40	-2136.63	3135.20	222.96	0.08	MWD	None
97	3645.77	80.45	221.74	29.99	1134.98	3162.03	-2316.53	-2156.25	3164.76	222.95	0.37	MWD	None
98	3673.81	79.98	220.61	28.04	1139.75	3189.65	-2337.33	-2174.44	3192.38	222.93	1.31	MWD	None
99	3704.01	76.76	220.68	30.20	1145.83	3219.21	-2359.77	-2193.70	3221.93	222.91	3.25	MWD	None
100	3733.39	73.46	220.93	29.38	1153.38	3247.57	-2381.26	-2212.26	3250.30	222.89	3.43	MWD	None
101	3762.33	70.99	220.58	28.94	1162.22	3275.11	-2402.13	-2230.25	3277.84	222.88	2.62	MWD	None
102	3791.82	68.55	220.92	29.49	1172.41	3302.76	-2423.10	-2248.31	3305.49	222.86	2.54	MWD	None
103	3821.50	66.44	220.69	29.68	1183.77	3330.16	-2443.85	-2266.22	3332.89	222.84	2.18	MWD	None
104	3849.31	64.16	220.95	27.81	1195.39	3355.41	-2462.97	-2282.74	3358.14	222.83	2.51	MWD	None
105	3878.48	60.98	220.70	29.17	1208.83	3381.28	-2482.56	-2299.66	3384.01	222.81	3.33	MWD	None
106	3907.65	57.78	220.86	29.17	1223.68	3406.36	-2501.56	-2316.06	3409.10	222.79	3.35	MWD	None
107	3936.40	54.61	221.73	28.75	1239.68	3430.23	-2519.51	-2331.82	3432.97	222.78	3.45	MWD	None
108	3965.37	51.67	222.11	28.97	1257.05	3453.41	-2536.76	-2347.30	3456.15	222.78	3.11	MWD	None
109	3995.09	48.88	222.61	29.72	1276.05	3476.26	-2553.65	-2362.70	3479.00	222.78	2.89	MWD	None
110	4016.94	47.67	222.56	21.85	1290.59	3492.57	-2565.65	-2373.73	3495.31	222.77	1.69	MWD	None

Company:	**ESSO Australia Pty Ltd**
Well:	**SNA A19A**
Field:	**SNAPPER**
Rig:	**ISDL 175**
State:	**Victoria**

Schlumberger

12.25 In. Section

Gamma Ray Service
1:500 True Vertical Depth
Real Time Log