ORIGIN ENERGY RESOURCES LIMITED

PETERBOROUGH 1/1ST1
WELL COMPLETION REPORT

PEP 154 - VICTORIA

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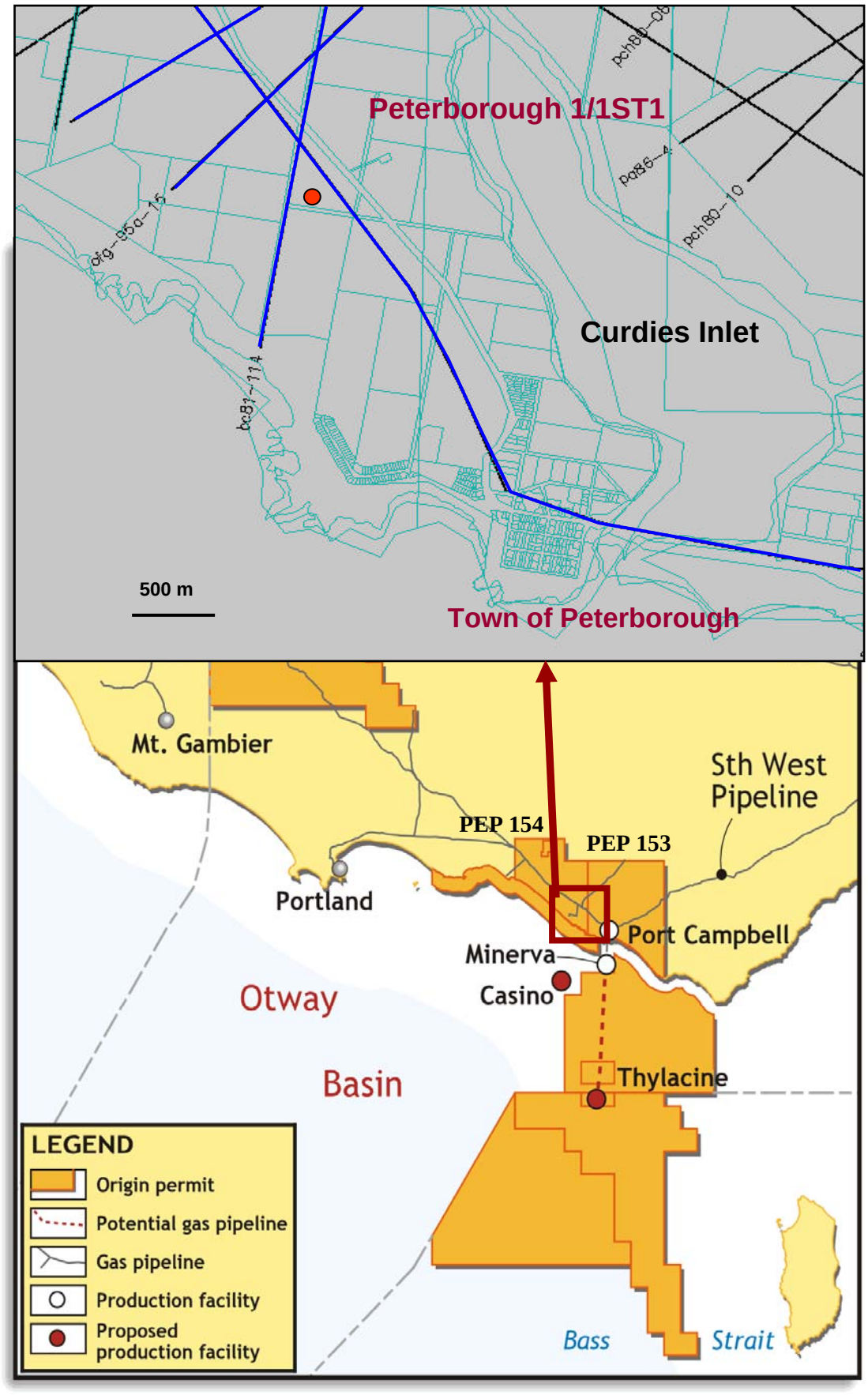
FIGURE 1 - LOCATION MAP



GENERAL DATA

Location:	Latitude:	38°35'11.98"S
	Longitude:	142°51'34.06"E
	Station:	~50m E of SP 115
	Line:	Bc81-114
Elevation:	GL:	9.7 metres
	RT:	15.0 metres
Map:		
Grid: (MGA94)	Easting:	0 661 953.00
	Northing:	5 727 451.00
Date Spudded:	16/08/2005	2030 hours
Date Kicked Off	26/08/2005	2030 hours
Reached TD	06/09/2005	2030 hours
Peterborough 1	24/08/2005	2300 hours
Peterborough 1ST1	06/09/2005	2030 hours
Date rig released:	10/09/2005	0900 hours
Type Structure:	Horst with dip closure	

Status:	P & A	
Rig:	Century	Rig 7
Total Depth:	Driller:	2070.0m
	Logger:	2052.5m
Plugs:	1999.0m	
	1782.0m	
	1221.0m	
	1061.0m	
	527.0m	
Casing :	Size	Shoe
Casing :	Size	Shoe
(a) Surface	245 mm	495.6m

STRATIGRAPHIC UNITS PENETRATED

AGE	FORMATION	Depth (mRT)	Depth (mSS)	Thickness (m)
M.-L. Miocene	Port Campbell Limestone	5.3	9.7 (GL)	157.8
E.-M. Miocene	Gellibrand Marl	163.1	-148.1	378.7
L. Oligocene	Clifton Formation	541.8	-526.8	19.4
L. Eocene	Narrawaturk Marl	561.2	-546.2	117.8
M.-L. Eocene	Mepunga Formation	679.0	-664.0	53.4
E. Eocene	Dilwyn Formation	732.4	-717.4	218.9
L. Paleocene	Pember Mudstone	951.3	-936.3	86.8
E. Paleocene	Pebble Point Formation	1038.1	-1023.1	117.0
L. Cretaceous	Massacre Shale	*1155.1*	*-1140.1*	34.8
L. Cretaceous	Paaratte Formation	1189.9	-1174.9	468.3
L. Cretaceous	fault zone, fault intersection	1658.2	-1643.7	treated as point
L. Cretaceous	Skull Creek Mudstone	*1658.2*	*-1643.7*	96.5
L. Cretaceous	Nullawarre Greensand	1754.7	-1739.7	16.7
L. Cretaceous	Belfast Mudstone	1771.4	-1756.4	192.3
L. Cretaceous	Flaxmans Formation	*1963.7*	*-1948.7*	16.2
L. Cretaceous	Waarre Formation	1979.9	-1964.9	80.9
E. Cretaceous	Eumeralla Formation	2060.8	-2045.8	9.2
	Total Depth (CDL 7)	*2070.0*	*2055.0*	

WIRELINE LOGS

Type Log	Run	Interval	Max Temp Recorded
Suite 1 (KCL/PHPA mud @ 2070m)			
MLE-MMR-MSS-MCG-GR-CAL	1	TD to surface	74˚C
MDN-MPD-MCG-CAL	2	TD to 1750m	74˚C

FORMATION TESTS

No	Interval / Formation (m)	Periods (mins)	EMP IP/FP (psi)	EMP FSIP (psi)	Fluid to surface (mins)	Surface Press. (max) (psi)	TC mm	Rev Out	Result
	None								

FULL HOLE CORES

No.	Interval	Formation	Cut (m)	Rec.(m)
	None			

PERFORATIONS

Interval (mGL)	Formation	Shots / ft.
None		

LOG INTERPRETATION

Formation	Interval	*Cat.	Sand (m)	**Pay (m)	Ave Ø (%)	Ave Sw (%)
Waarre	1981 to 2017 mRT		1.9	0	12.8	100

SIDEWALL CORES

Depth (m)	Lithology - (Recovered-cm)
None	

Depth (m)	Lithology - (Recovered-cm)

SUMMARY:
Peterborough 1 was drilled as a vertical gas exploration well in the south eastern corner of PEP 154 approximately 2.5 kilometres northwest of the coastal town of Peterborough, Victoria. Primary target was the Waarre Formation which is the productive sandstone reservoir unit in the Port Campbell Embayment.

Peterborough 1 was spudded on 16 August 2005. A 311mm (12¼") surface hole was drilled to 499.0mRT and 245mm (9⅝") surface casing was set at 495.6m. A 216mm (8½") hole was then mud drilled to 1228.0mRT, when the deviation surveys indicated a well deviation of up to 8 degrees. An attempt was made to steer the well to vertical using a downhole motor and MWD tools. However, being unable to move the drill string without rotation at 1389mRT, it was decided to pull out of hole, plug back to 1595mRT and side track the 8 ½" main hole.

Kick-off and drilling of the sidetrack (Peterborough 1ST1) commenced on 26 August 2005. Using the Schlumberger DH motor and MWD tools, an 8½" main hole was drilled to 1604mRT. The string was POOH where the MWD tools were dropped and the Smith M90 was rerun to 1988mRT. While drilling the 8 ½" main hole, slow drilling was encountered at 1979mRT to 2028mRT. With the drill rate considerably less than 0.5 m/hr the bit was changed. The new bit drill rate was also slow with 0.5 m/hr but picked up after 2028mRT, and later slowed again from 2040mRT through to total depth at 2070mRT.

Total Depth was reached at 20:30hrs on 6 September 2005. Precision Wireline conducted two runs of logs (Run 1: MLE-MMR-MSS-MCG-GR-CAL, and Run 2: MDN-MPD-MCG-CAL).

No gas shows were observed on penetration and the initial log interpretation confirmed the presence of an unusually tight and quartz cemented, non porous Waarre C unit. Wireline log interpretation resulted in zero net pay and the well was plugged and abandoned. The rig released on 10 September 2005.

Wellsite Geologists: J Hobday **Card Prepared by:** J Hobday **Date:** 10/05

1. GENERAL DATA

Well Name:	Peterborough 1 / Peterborough 1ST1	
Surface Location:	Latitude:	38° 35' 11.98"S
(GDA 94)	Longitude:	142° 51' 34.06"E
(MGA 94 Zone 54)	Easting:	661953.0
	Northing:	5727451.0
Elevations:	GL:	9.7 m AHD
	RT:	15.0 m AHD (Century Rig-7)
Petroleum Tenement:	PEP 154	
Permit Operator:	ORIGIN ENERGY RESOURCES LIMITED	
Other Participants:	Beach Petroleum Limited	
Total Depth (TD):	Driller:	2070.0 metres
	Logger:	2066.0 metres
Status:	Plugged and Abandoned	

2. DRILLING DATA

Date Drilling Commenced:	20:30 hours, 16 August 2005
Date Drilling Completed:	23:00 hours, 24 August 2005
Date Sidetrack Commenced:	20:30 hours, 26 August 2005
Date Drilling Completed:	20:30 hours, 6 September 2005
Date Rig Released:	09:00 hours, 10 September 2005

TABLE 1 – DRILLING CONTRACTORS AND RIGS

Surface Hole

Drilling Contractor:	Century Drilling Limited
Drilling Rig:	Ideco 7585

Production Hole

Drilling Contractor:	Century Drilling Limited
Drilling Rig:	Ideco 7585

Casing Rig

Service Rig Contractor:	Century Drilling Limited
Service Rig:	Ideco 7585

3. DRILLING SUMMARY

(a) Operations Summary

Below is the operations summary for Peterborough 1. It has been compiled from the tour sheets and daily drilling reports. Seton Porter, Chris Dann & Bryan Webb provided onsite drilling supervision for Origin Energy Resources Limited. Further details are provided in the time/depth-curve and the time analysis chart in Appendix 9.

Peterborough 1 was spudded at 20:30 hours 16 August 2005. The 311 mm (12 ¼") surface hole was drilled to 499.0 m using Century Rig-7. The hole was circulated clean prior to pulling out and running surface casing. A total of 41 joints of 245 mm (9⅝") K-55 casing were run and set at 495.6 m. The casing was cemented to surface with 15.8 ppg Class G cement.

After drilling out cement the production hole was drilled by Century Rig-7. The 216mm (8 ½") hole was drilled with a Smith M90 drill bit to 1228m when the Anderdrift tool gave a 5°+ reading. A Totco was run and it read 8°+. The hole was then circulated clean and was pulled up to what was believed to be a previous known 0° reading at 1104mRT. The Anderdrift tool indicated 5°+. It was then decided to pull out of hole while taking Anderdrift surveys at 1052mRT (3.5°), 1041mRT (2.5°), 1032mRT (1°) and 1023mRT (0°). The bit was brought to surface to test the power drive on surface. A Gyro survey tool was brought to site and run while running in hole; 1050mRT (5.62°), 1075mRT (8.85°), 1100mRT (11.94°), 1125mRT (15.28°), 1175mRT (20.87°), and 1200mRT (23.52°).

After running the GYRO survey it was attempted to steer back the well to vertical using a downhole motor and MWD tools. However, being unable to move the drill string without rotation at 1389mRT, it was decided to pull out of hole, plug back to 1595mRT and side track the 8 ½" main hole. Kick-off and drilling commenced at Peterborough 1ST1 on the 26 August 2005. Using the Schlumberger downhole motor and MWD tools an 8½" main hole was drilled to 1604mRT. The string was POOH where the MWD tools were dropped and the Smith M90 was rerun to 1988mRT. While drilling the 8 ½" main hole slow drilling was encountered at 1979mRT to 2028mRT. With the drill rate considerably less than 0.5 m/hr a bit change was done. The new bit drill rate was also slow with 0.5 m/hr but picked up after 2028mRT, and later slowed again from 2040mRT through to total depth at 2070mRT.

Total depth was reached at 20:30hrs on 6 September 2005. Precision Wireline conducted two runs of logs (Run 1: MLE-MMR-MSS-MCG-GR-CAL, and Run 2: MDN-MPD-MCG-CAL), after Run 1 was completed the calliper tool deemed the hole condition good to run a nuclear suite, so a second run was conducted.

Following the initial log interpretation the well was plugged and abandoned as the Waarre C unit was found to be tightly cemented and no gas pay was identified in the expected reservoir section. The quartz cemented sandstones encountered in the Waarre

Formation are related to the extremely slow drilling rates through the reservoir. Halliburton was rigged up and 5 plugs were set before the rig released on 10 September 2005.

TABLE 2 - HOLE SIZES AND DEPTHS

Surface Hole	
Size	311 mm (12¼")
Interval	0 m – 499.0 m
Casing	245 mm (9⅝")
Depth	495.6 m
Production Hole	
Size	216 mm (8½")
Interval	499.0 m –2070.0 m (TD)
Casing	NA
Depth	NA

TABLE 3 - CASING AND CEMENTING SUMMARY

Surface		
Size	-	9⅝" / 245 mm
Weight	-	36 lb/ft
Grade	-	K-55
Shoe Setting Depth	-	495.6 m
Quantity of Cement	-	410 sacks Class G lead and 295 sacks Class G tail slurry
Interval Cemented	-	To surface
Production		
No production casing was set in Peterborough 1ST1		

TABLE 4 - SUMMARY OF MUD SYSTEM

a.	Spud – 499m	Fluid	PHGel Mud
		Additives	Trugel 13A, Caustic Soda (Dry), Soda Ash, Kwik Seal Fine, Potassium Chloride, Kwik Seal Medium.
b.	499m – 2070m	Fluid	KCl / PHPA / Polymer
		Additives	Soda Ash, Caustic Soda (Dry), Trugel 13A, Potassium Chloride, Glute 25, Polypluss Powder, Duotec, Polypas UL, M-I BARite, OS-1, Citric Acid, Potassium Bicarbonate, M-I BAR, Defoam A, Mix II Medium

TABLE 5 - PLUG AND CEMENTING SUMMARY

No.	Set at	To	Bbls used	Weight	Class
1	1999.0	1939.0	18.5	15.8	G
2	1782.0	1720.0	16.4	15.8	G
3	1221.0	1160.0	20.5	15.8	G
4	1061.0	1000.0	26.7	15.8	G
5	527.0	465.0	21.5	15.8	G

(b) Hole Deviation

Peterborough 1 was planned as a vertical well but a sidetrack of Peterborough 1 became necessary due to a strong deviation from vertical. The Anadrill Schlumberger deviation data for Peterborough 1/1ST1 which are contained in Appendix 8 indicate that Peterborough 1/1ST1 can be considered as a near vertical well.

(c) Lost Time

A time breakdown is included in Appendix 9.

4. LOGGING AND TESTING

(a) Mudlogging

Geoservices Overseas Oilfield Services SA provided mudlogging services. Cuttings gas was monitored from spud to total depth. A mudlog recording lithology, penetration rate, mud gas and other data was prepared and is enclosed in Appendix 4.

Ditch Cutting Samples
10m cutting samples were collected from surface casing shoe to 500m, 5m samples from 500m to 1800m, and 3m samples from 1800m to total depth. The cuttings samples and sets were:

TABLE 6 - CUTTING SAMPLES

Set	Size	No	Type	In	For
A	500 g	1	Unwashed & air dried	Cloth bag	Origin
B & C	250 g	2	Washed & air dried	Minigrip bag	MPD & DPI
D	100 g	1	Washed & air dried	Minigrip bag	Origin
E		2	Washed	Samplex tray	Origin

(b) Coring

None

(c) Sidewall Cores

None

(d) Testing

None

(e) Wireline Logging

Wireline logs were run by Precision Wireline Services.

TABLE 7 - ELECTRIC LOG SUMMARY

Type Log	Run	Interval	Max Temp Recorded
Suite 1 (KCL/PHPA mud @ 2070m)			
MLE-MMR-MSS-MCG-GR-CAL	1	TD to surface	74°C
MDN-MPD-MCG-CAL	2	TD to 1750m	74°C

(f) Velocity Survey

No checkshot survey was conducted for Peterborough 1.

5. PRE-DRILLING SUMMARY

Peterborough 1 was proposed as a vertical gas exploration well targeting the Waarre Formation which is the productive sandstone reservoir unit in the Port Campbell Embayment. All previous gas discoveries in the Port Campbell Embayment lie within a maximum radial distance of 16 kilometres from the proposed Peterborough 1 well location. The Peterborough prospect was interpreted to represent a structural horst situated on the high side of two intersecting faults with dip closure in the remaining direction of a roughly triangular shaped closure. The main technical justification for Peterborough 1 resulted from the presence of gas in the adjacent analogue structures.

Although Peterborough 1 is located in the proven hydrocarbon system of the Port Campbell Embayment there are significant risks associated with the prospect related to the mapping of faults. Peterborough is situated outside the existing 3D seismic coverage and is only partially covered by the existing 2D seismic grid. The current mapping demonstrates the presence of a larger structural high based on the onshore 2D-seismic lines and the offshore Antares 3D in Vic/P 37. A two kilometre data gap separates the onshore 2D and onshore 3D seismic surveys. Due to the limited seismic coverage over Peterborough, the preferred juxtaposition of Waarre Formation and Belfast Mudstone cannot be demonstrated for the entire length of the prospect bounding faults.

Despite the limited seismic coverage of the Peterborough structure the existing 2D data exhibit strong amplitudes at Waarre level. Amplitude anomalies and AVO responses commonly indicate the presence of gas in the onshore 3D seismic data. Enhanced amplitudes on 2D seismic appear to also coincide with existing gas accumulations. The risk and uncertainty in the structural mapping and the extrapolation of faults are outweighed by the potential size of the Peterborough prospect.

6. DRILLING RATIONALE

(a) Regional Geology

The development of the Otway Basin was initiated during the Late Jurassic to Early Cretaceous as an extensive rift-valley system. The early rift related sediments comprise a monotonous series of non-marine, mainly fluviatile with minor lacustrine sandstone, siltstone and mudstone deposits. These sediments record a large influx of volcanic material and now form the lowermost Otway Group including the early half graben fills of the Crayfish Group and the overlying Eumeralla Formation.

The top of the Otway Group is marked by a regional unconformity surface and significant amounts of uplift and erosion of Otway Group sediments (mainly Eumeralla Formation) has occurred along the former basin margins prior to the deposition of the Sherbrook Group which records the onset of renewed basin-wide subsidence during Cenomanian times. On seismic data the contact between the Eumeralla Formation and the overlying

Waarre Formation may be seen as a true angular unconformity but more often appears to be conformable.

The Sherbrook Group was deposited as a restricted marine transgressive/regressive cycle over portions of the former rift valleys. The Waarre Formation forms the basal unit of the Sherbrook Group and represents a marginal-marine environment that included beaches, barrier islands, lagoonal swamps and tidal inlets. The overlying Belfast Mudstone is related to a prodeltaic environment and is mainly characterised by pyritic and to a minor extent glauconitic claystone. The Belfast Mudstone constitutes the main regional seal for the underlying prospective Waarre Formation.

Towards the basin margin the Belfast Mudstone thins considerably and grades into siltstone and localized sandstone. Moreover, a clear distinction between the Belfast Mudstone and the overlying Nullawarre Greensands as well as the Skull Creek Mudstone is not always possible on seismic data and a transitional relationship for all three units at least in parts of the Port Campbell Embayment appears to be most likely. The overlying upper Sherbrook Group is a sand dominated sequence of which the Paaratte Formation is interpreted to represent the “Lower Delta Plain” overlain by the “Upper Delta Plain” Timboon Sandstone Member. The entire Paaratte Formation is believed to form a thick regressive sequence.

The Lower Tertiary Wangerrip Group preserves a second major transgressive/ regressive cycle in the Otway Basin. The transgressive Pebble Point Formation includes potential reservoir sands at the base of the Tertiary which is then overlain by the prodeltaic Pember Mudstone. The Pember Mudstone could act as seal for the underlying clean sandstones within the Pebble Point Formation. The overlying Dilwyn Formation becomes increasingly arenaceous towards the top of the sequence.

Finally the upper Tertiary units of the Otway Basin are characterized by open marine deposits of the Nirranda and Heytesbury Groups. The associated lithologies display an increasingly carbonate-rich nature, reflecting the ongoing separation between Australia and Antarctica.

A simplified stratigraphic overview for PEP 154 is included in Figure 2.

The depositional sequences outlined above were controlled and accompanied by a complex sequence of structural events. The large-scale basin development can be reasonably well explained using observed lithologies, interpreted depositional environments and thickness variations across the entire Otway Basin. In contrast the early tectonic evolution of individual sub-basins is less well established due to poor seismic imaging of basement structures.

The complex fault framework observable today and the related hydrocarbon traps within the Port Campbell Embayment resulted from the reactivation of Late Jurassic and Early Cretaceous rift structures and basement faults during the Late Cretaceous and Tertiary basin development. Renewed tectonic activity started during the deposition of the Belfast Mudstone which appeared to have in-filled the newly forming accommodation space associated with extensional and/or trans-tensional fault movement. Local erosion and re-deposition of basal Sherbrook Group sediments (Waarre Formation) prior to the deposition of the Belfast Mudstone is suggested from individual seismic lines but has not been mapped and proven on a more regional scale.

(b) Previous Discoveries

The Port Campbell Embayment represents a proven hydrocarbon province with a total of 12 commercial gas discoveries and related production licences located in PEP 154 and surrounding permits (Table 8). Gas production commenced with the North Paaratte Field in 1986, however, most fields are either depleted or close to depletion.

TABLE 8 - GAS DISCOVERIES IN THE PORT CAMPBELL EMBAYMENT

Onshore / Port Campbell Gas Field (> 4 BCF only)	Discovery	OGIP (original gas in place) [BCF]
North Paaratte	1979	15.8
Wallaby Creek	1981	17.8
Iona	1988	27.0
Mylor	1996	13
Fenton Creek	1997	7.5
Penryn	2000	6.0
MacIntee	2001	22.8
Tregony	2001	11.0
Croft	2002	8.7
Seamer	2002	4.5
Naylor	2003	8.7

(c) Prospect Description

Peterborough was interpreted to represent a high side fault block situated at the intersection of two faults (Figure 3). Due to the incomplete seismic coverage across the structure, the detailed outline of the closure area as well as the geometry of the prospect bounding faults was unknown. The existence of the structure was however suggested by several 2D seismic dip lines which demonstrate a large downward displacement of Waarre section towards the north and a somewhat smaller downward displacement towards the south (Figure 3). Fault closure is required to exist across the

Peterborough South Fault and the Peterborough North Fault. Dip closure is expected to exist towards the east. Figure 4 illustrates the existing seismic coverage on which the interpretation and mapping of the Peterborough Prospect was based. The uncertainties related to the extrapolation of faults are captured in Figure 5 which indicates several possible fault trends and resulting structural interpretations.

(d) Reservoir and Seal

The Late Cretaceous Waarre Formation is the main sandstone reservoir unit in the Port Campbell Embayment. It unconformably overlies the Early Cretaceous Eumeralla Formation and is either overlain by the Flaxmans Formation or by the Belfast Mudstone, the principal top seal. The transition from Waarre to Flaxmans to Belfast Formations represents the incursion of marine conditions into the Port Campbell Embayment. The Waarre Formation in the past has been subdivided into several units, Waarre A to D respectively (Buffin, 1989). This has been achieved on the basis of recognized facies types and associated sandstone petrology. However, the identification of these units in well logs and the resulting lateral extrapolation of facies belts are quite speculative. A general practice appears to have been to assign the cleanest of all sandstone layers present in a given well section as the Waarre C. Based on the position of the defined "Waarre C", the remaining Waarre units were either declared to be present or absent in the given well. Similarly no clear distinction exists for the upper Waarre D unit and the Flaxmans Formation and both names have been used in the past. Despite the apparent confusion associated with the subdivision of the basal Sherbrook Group section the overall concept of regionally distributed high quality Waarre reservoir sandstone is generally valid and has been proven for the Port Campbell embayment by the existing wells and gas fields. The lateral continuity of a high net-to-gross sandstone unit above the Eumeralla Formation is also demonstrated by the general occurrence of a higher amplitude package on seismic data. As a matter of fact a seismic pick for the near top Eumeralla Formation can only be assigned where the basal Sherbrook Group section is characterized by the apparent amplitude brightening of the Waarre unless a true angular unconformity is present.

In addition to this, increased amplitudes on high side fault blocks appear to coincide with the presence of gas. This correlation is substantiated by the previous gas discoveries. It was this diagnostic feature which led to the recognition of the Peterborough prospect.

The Waarre and the "Waarre C" in particular in the nearby gas fields has been described as an excellent reservoir with porosity values over 20 % and measured permeability values exceeding 1 Darcy. In the reserve estimate for Peterborough a mean porosity between 12 and 16 % has been combined with a net-to-gross ratio between 35 and 65 % which reflects the observed variation of net pay in the neighbouring gas wells. The sandstone packages are from 3 to 15m thick and are generally blocky in shape in the GR log curve. The basal Waarre is interpreted to be shallow marine to marginal marine. After the transgression in

the lower part of the Waarre, the formation became more regressive, depositing the best reservoir sands in the lower coastal and delta areas.

Whereas the Belfast Mudstone constitutes a proven top seal it also represents the preferred lateral fault juxtaposition seal. Generally this condition will be satisfied for high side fault blocks unless the fault displacement exceeds the thickness of the Belfast Mudstone. With increased fault displacement a critical juxtaposition situation could occur between Waarre Formation in the footwall block and the Nullawarre Greensands above the Belfast Mudstone in the hanging wall. Since Belfast Mudstone, Nulawarre Greensands and Skull Creek Mudstone appear to grade into each other, it is often difficult to prognose the juxtaposition potential of the Belfast Mudstone, especially, where the prospect closure is not fully covered by the existing seismic data. The distinction between Nullawarre Sandstone and Belfast Mudstone in the seismic data is not well resolved. The lack of adequate lateral fault juxtaposition seal was identified as one of the key risks for Peterborough.

(e) Source and Migration

Coals within the Early Cretaceous Eumeralla Formation are interpreted as the main source interval underlying the Late Cretaceous Waarre Formation. In contrast the presence of early rift related Crayfish Group sediments - which could contain fluvial-lacustrine shales of the Casterton Formation and/or overlying Sawpit- or Pretty Hill Formation equivalents - is largely unknown. Moreover, the actual thickness distribution for the Eumeralla Formation and the related basement/cover rift geometry and presence of buried, early rift segments remain unresolved in the existing seismic data. This is different from the Tyrendarra Embayment towards the west where a complex framework of Crayfish Group halfgrabens and overlying Eumeralla Formation is clearly documented by the available seismic data. Burial and maturation studies from this area have indicated a two stage hydrocarbon generation history with expulsion from deeply buried Crayfish Group sediments towards the end of the Early Cretaceous followed by expulsion from the Eumeralla Formation where it underwent sufficient burial during the Tertiary.

In the Port Campbell Embayment the top of the Eumeralla Formation below the Waarre Formation is immature to early mature for oil. This suggests that the existing gas fields have been charged from deeply buried Eumeralla source intervals and that gas had migrated upward along deep seated, pre-existing and/or re-activated fault systems. Again a Crayfish Group source cannot be excluded. The exact timing of expulsion and gas charge is largely unknown and strongly depends on the top Eumeralla maturation profile and variable depth to the relevant source intervals.

(f) CO_2 Issues

The presence of $C0_2$ is a known risk and manifested by the discoveries of the Buttress and Boggy Creek $C0_2$ accumulations. There is no doubt that $C0_2$ flushing or contamination is related to subsurface magmatic intrusions and migration of $C0_2$ along fault surface that could have dilated during the emplacement of magmatic dikes. However, the occurrence of $C0_2$ in direct proximity to $C0_2$–free gas fields indicates the unpredictable nature of $C0_2$ distribution in the area. The risk of finding $C0_2$ is generally accounted for under charge risk or built into the volumetrics. At Peterborough the risk of finding significant amounts of $C0_2$ was estimated to be 20 percent based on the occurrence and distribution of $C0_2$ accumulations in the Port Campbell Embayment.

(g) Key Risks

The key risks for Peterborough were seen in the uncertainties of the structural model and the sealing capacity of the prospect bounding faults. Although fault seal appears to be less critical in the neighbouring fault blocks, Peterborough relies on at least two intersecting fault planes. No seismic data exist over the critical fault intersections. In addition to that some risk must be attributed to trap breaching due to late-stage fault reactivation. Fault breaching may have occurred at Melba 1 where log data point towards the presence of residual gas.

On the other hand the nearby gas fields suggest only minor risks for the preservation of reservoir, the absence of source and insufficient charge. The risk of CO_2 contamination has been discussed above.

FIGURE 2 - STRATIGRAPHIC OVERVIEW

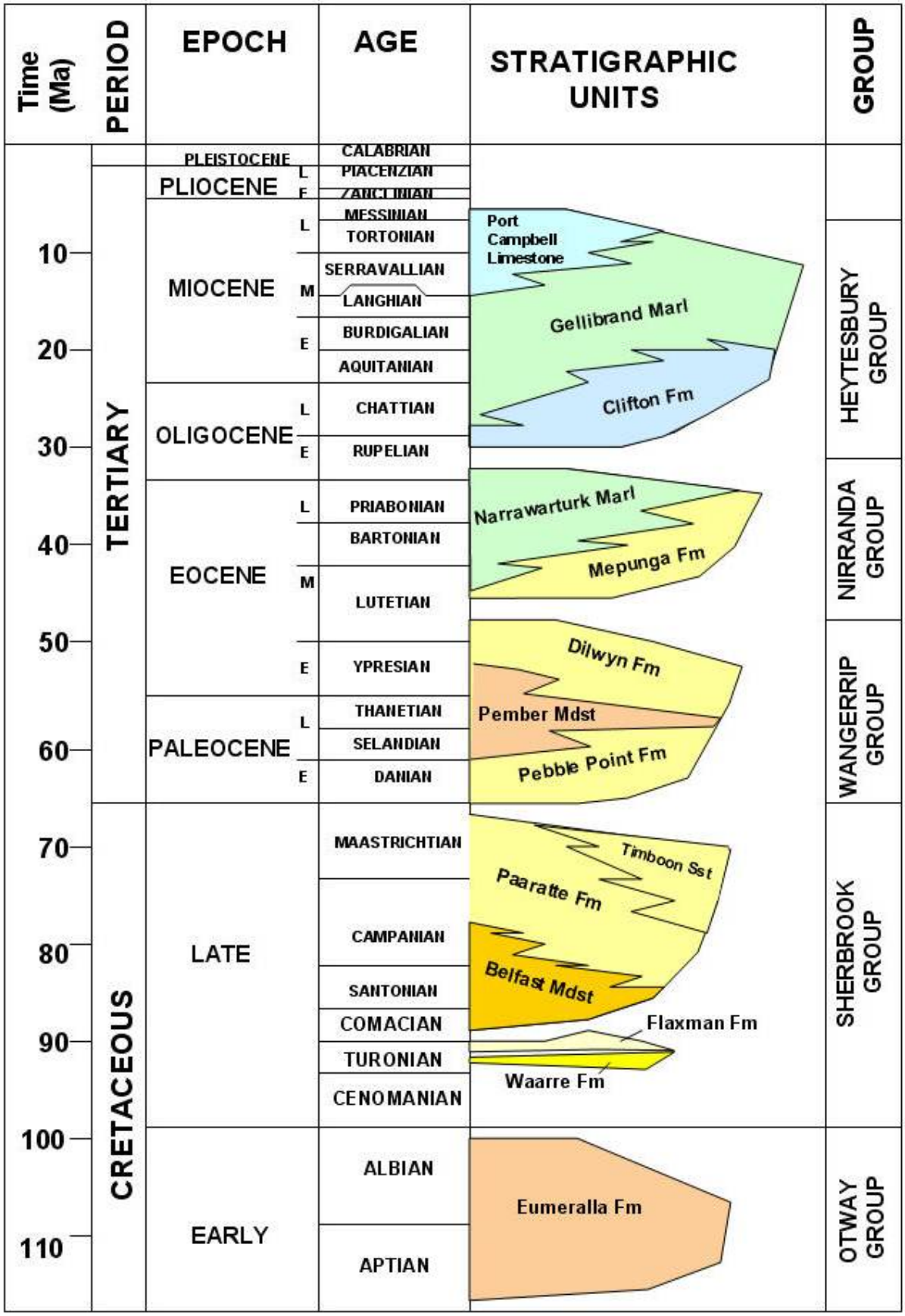


FIGURE 3 - PROSPECT OVERVIEW

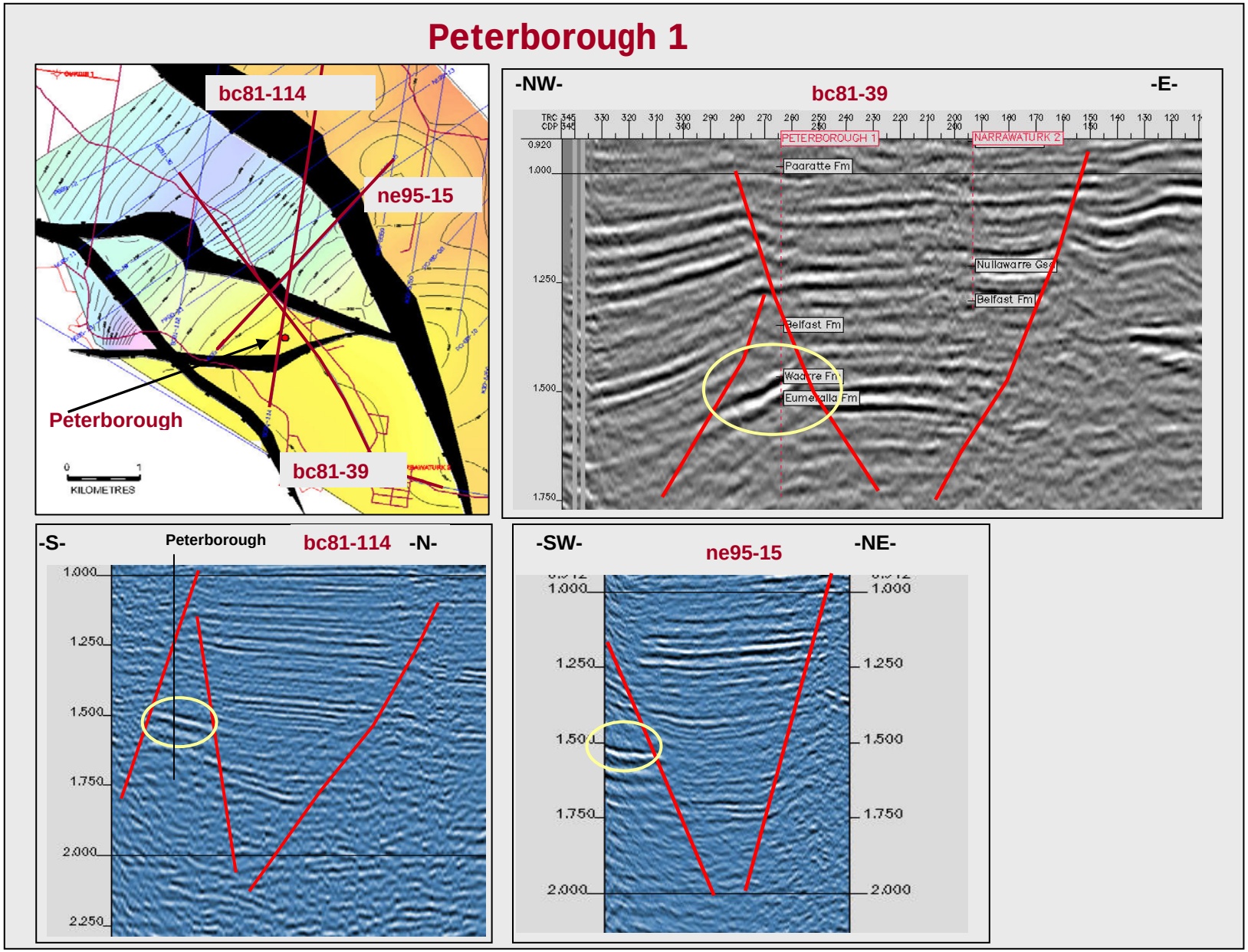


FIGURE 4 - SEISMIC COVERAGE

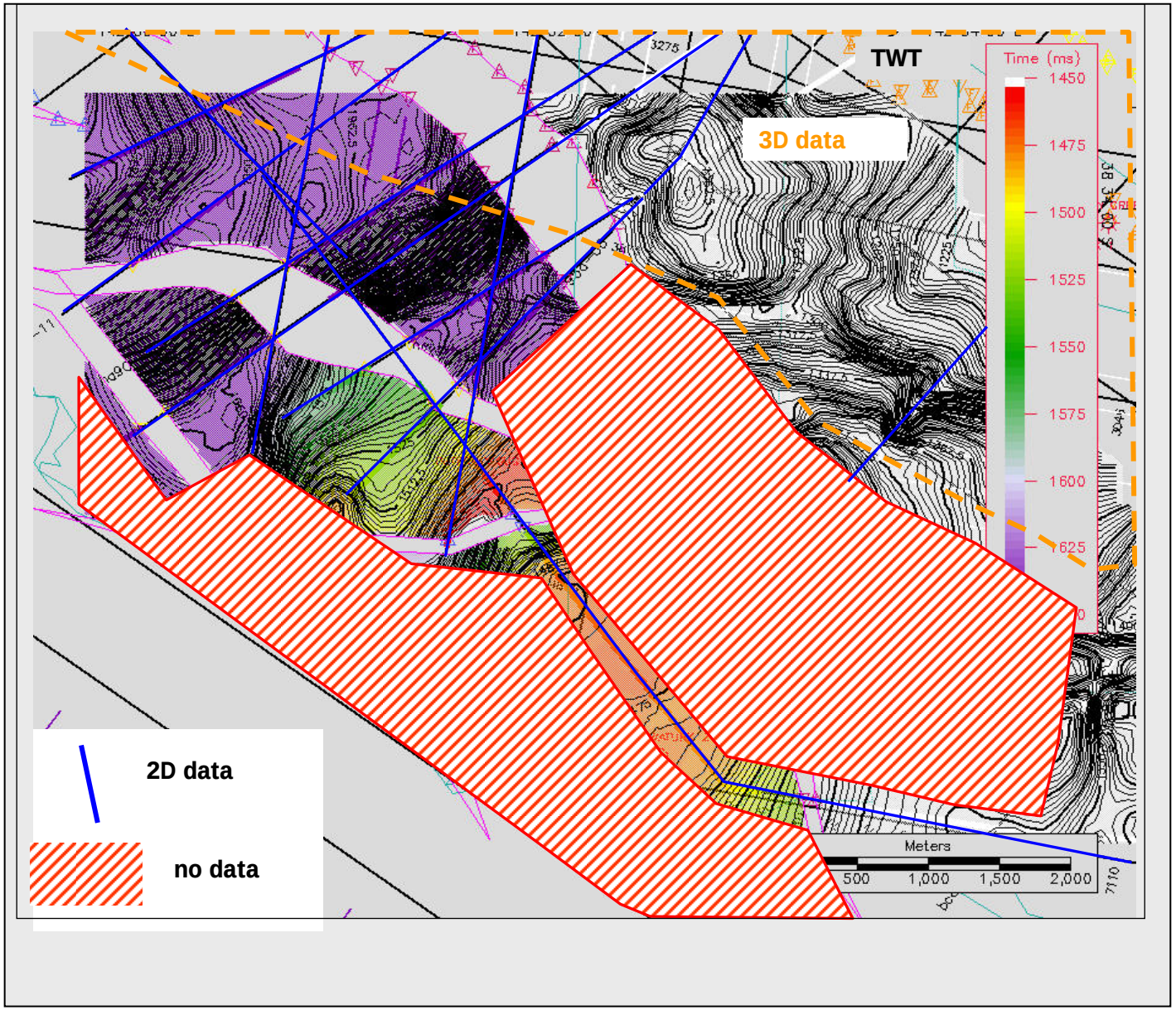
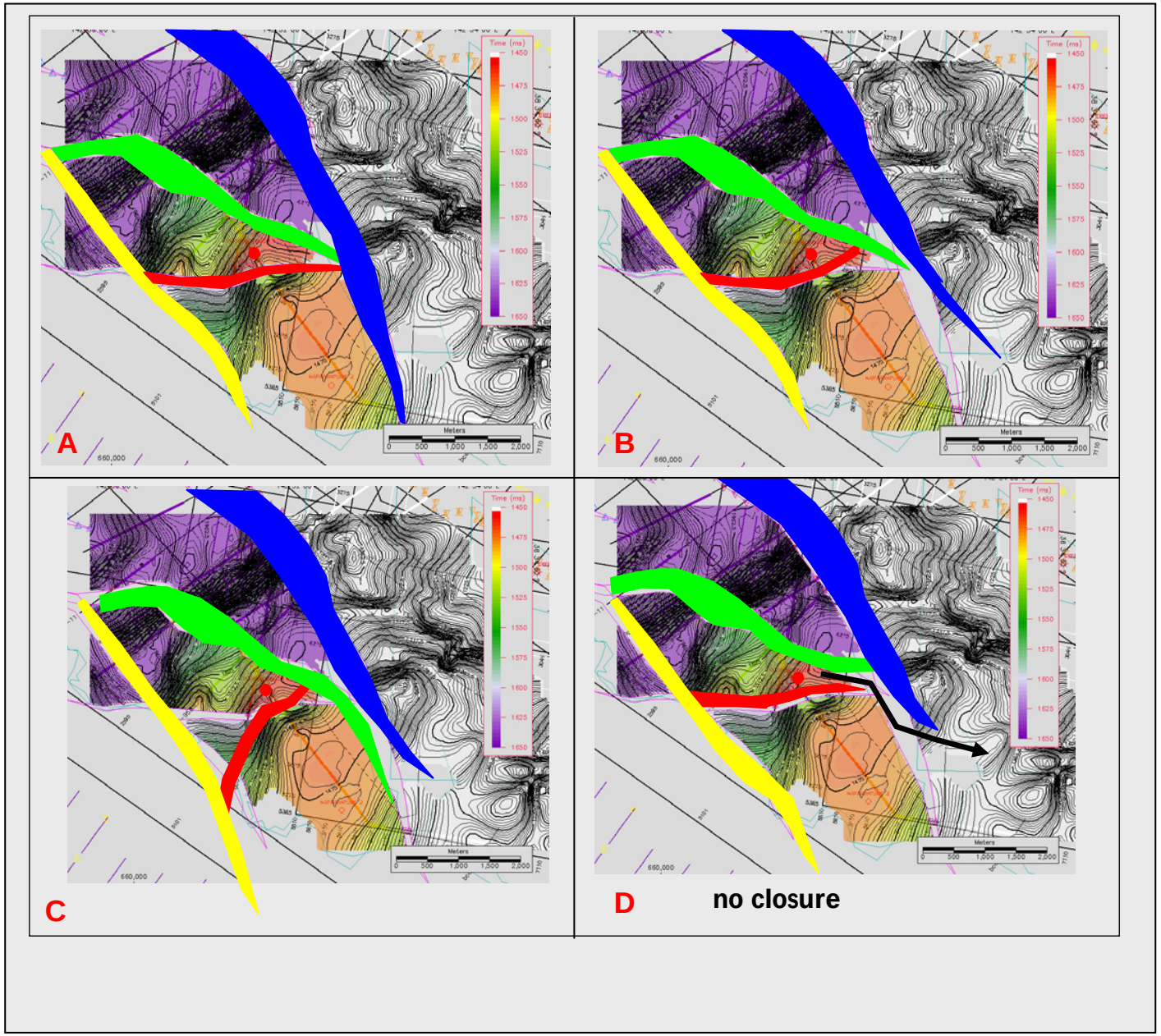


FIGURE 5 - STRUCTURAL UNCERTAINTY



7. RESULTS OF DRILLING

(a) Stratigraphy

The following table lists the formations intersected in Peterborough 1/1ST1, together with sub-sea elevations and thicknesses.

TABLE 9 - FORMATIONS INTERSECTED IN PETERBOROUGH 1/1ST1

AGE	FORMATION	Depth (mRT)	Elevation	Thickness (m)
M.-L. Miocene	Port Campbell Limestone	5.3	9.7 (GL)	157.8
E.-M. Miocene	Gellibrand Marl	163.1	-148.1	378.7
L. Oligocene	Clifton Formation	541.8	-526.8	19.4
L. Eocene	Narrawaturk Marl	561.2	-546.2	117.8
M.-L. Eocene	Mepunga Formation	679.0	-664.0	53.4
E. Eocene	Dilwyn Formation	732.4	-717.4	218.9
L. Paleocene	Pember Mudstone	951.3	-936.3	86.8
E. Paleocene	Pebble Point Formation	1038.1	-1023.1	117.0
L. Cretaceous	Massacre Shale	1155.1	-1140.1	34.8
L. Cretaceous	Paaratte Formation	1189.9	-1174.9	468.3
L. Cretaceous	fault zone, fault intersection	1658.2	-1643.2	treated as point
L. Cretaceous	Skull Creek Mudstone	1658.2	-1643.2	96.5
L. Cretaceous	Nullawarre Greensand	1754.7	-1739.7	16.7
L. Cretaceous	Belfast Mudstone	1771.4	-1756.4	192.3
L. Cretaceous	Flaxmans Formation	1963.7	-1948.7	16.2
L. Cretaceous	Waarre Formation	1979.9	-1964.9	80.9
E. Cretaceous	Eumeralla Formation	2060.8	-2045.8	9.2
	Total Depth (CDL 7)	2070.0	-2055.0	

Samples were collected, washed and described at 10m intervals from the surface to 500m, 5m intervals from 500m to 1800m and 3m intervals from 1800m to total depth at 2070m.

A summary of the stratigraphic section encountered in Peterborough 1/ST1 is described below. All depth values are Logger's Depth. The detailed cuttings descriptions are listed in Appendix 6.

PORT CAMPBELL LIMESTONE	
5.3 – 163.1	Thickness: 157.8m
5.3 – 163.1	LIMESTONE, off white to tan, pale brown, greyish brown, very pale yellow in part, sparitic to occasionally micritic, fossiliferous, rare to trace nodular pyrite, microcrystalline to crystalline, occasionally glauconite, friable to moderately hard.
GELLIBRAND MARL	
163.1 – 541.8	Thickness:378.7m
163.1 – 541.8	Massive MARL with minor LIMESTONE interbeds MARL, pale to medium greenish grey, [; to medium greyish brown, argillaceous, moderately to very calcareous, minor brownish orange fossiliferous LIMESTONE fragments, occasionally very fine carbonaceous specks, minor pyrite nodules, soft to firm, commonly dispersive, sub-blocky to sub-fissile, dominantly amorphous. LIMESTONE, off white to predominantly brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to hard.
CLITON FORMATION	
541.8 – 561.2	Thickness: 19.4m
541.8 – 561.2	Interbedded SILTSTONE, MARL, LIMESTONE, and trace SANDSTONE. SILTSTONE, moderately reddish brown, orange brown, minor brownish grey, argillaceous, calcareous, grading to CLAYSTONE in part, abundant Fe staining, dispersive to soft, minor firm, blocky to sub-blocky, amorphous. MARL, greenish grey to predominantly dark greyish green, dark grey, argillaceous, calcareous, minor pale brownish orange fossiliferous fragments, soft to firm, sub-blocky to sub-fissile, amorphous in part. LIMESTONE, off white to predominantly brownish orange, argillaceous, fossiliferous, microcrystalline to crystalline, moderately hard to occasionally hard. SANDSTONE, dominantly reddish orange, minor orange grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orange to red argillaceous matrix, commonly Fe staining, commonly fossiliferous and shell fragments, loose, unconsolidated, friable to occasionally moderately hard, poor porosity, no fluorescence.
NARRAWATURK MARL	
561.2 – 679.0	Thickness: 117.8m
561.2 – 679.0	MARL with minor SILTSTONE, LIMESTONE and SANDSTONE. MARL, brownish grey to minor brownish black, very argillaceous, calcareous, minor to locally commonly glauconite grains, occasionally pyrite nodules and fossiliferous fragments, dispersive in part, sub-blocky to amorphous. SILTSTONE, orange brown, reddish brown, argillaceous, commonly grading to CLAYSTONE, slightly arenaceous in part, calcareous, commonly Fe staining, soft to predominantly firm, dispersive in part, sub-blocky to sub-fissile, amorphous in part. LIMESTONE, orange brown, reddish brown, lutitic, argillaceous, microcrystalline to crystalline, Fe staining, soft to firm, moderately hard to hard in part. SANDSTONE, dominantly reddish orange, minor orange grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orange red argillaceous matrix, commonly Fe staining, commonly fossiliferous and shell fragments, loose, unconsolidated, friable to occasionally moderately hard aggregates, poor visual and inferred porosity, no

	fluorescence.
MEPUNGA FORMATION	
679.0 – 732.4	Thickness: 53.4m
679.0 – 732.4	SANDSTONE with SILTSTONE, MARL interbeds. SANDSTONE, translucent yellow, minor clear to frosted, coarse to very coarse, moderately sorted, sub-rounded to round, occasionally sub-angular to angular very coarse fractured grains, weak siliceous cement, no visual matrix, clean, unconsolidated, loose, good inferred porosity, no fluorescence. SILTSTONE, off white to white, very argillaceous, grading to CLAYSTONE in part, calcareous, very soft to dispersive, sub-blocky to predominantly amorphous. MARL, off white to brownish grey, argillaceous, calcareous, commonly to occasionally glauconite grains, minor pyrite nodules, soft to dispersive, sub-blocky to amorphous.
DILWYN FORMATION	
732.4 – 951.3	Thickness: 218.9m
732.4 – 951.3	SANDSTONE with Interbedded SILTSTONE. SANDSTONE, translucent to clear, opaque pale brown, frosted, fine to very coarse, dominantly medium to coarse, moderately sorted, sub-rounded to sub-angular, round very coarse grains, weak to moderately calcareous cement, rare brown argillaceous matrix, locally commonly pyrite nodules, loose and clean, minor unconsolidated, fair to good inferred porosity, no fluorescence. SILTSTONE, medium to dark brown, greyish brown, pale to medium grey, argillaceous, trace arenaceous, occasionally pyrite nodules, trace black lithics, soft to dispersive, locally firm, sub-blocky to amorphous.
PEMBER MUDSTONE	
951.3 – 1038.1	Thickness: 86.8m
951.3 – 1038.1	Massive SILTSTONE with minor SANDSTONE interbeds. SILTSTONE, predominantly brownish grey, minor off white to pale brown, argillaceous, grading to CLAYSTONE in part, calcareous, occasional fossiliferous fragments, occasional pyrite nodules and glauconite grains, soft to dispersive, sub-blocky to amorphous. SANDSTONE, clear to translucent, very fine to fine, occasional medium, rare coarse grains, moderately sorted, predominantly sub-angular, weak calcareous cement, occasional off white argillaceous matrix, generally loose and clean, occasional friable aggregates, poor visual and inferred porosity, no fluorescence.
PEBBLE POINT FORMATION	
1038.1 – 1155.1	Thickness: 117.1m
1038.1 – 1155.1	SANDSTONE with interbedded SILTSTONE. SANDSTONE, yellowish brown to dark yellowish brown, trans yellowish brown, minor to locally commonly clear to translucent, frosted in part, predominantly medium to coarse, minor fine and very coarse grains, poor to locally moderately well sorted, sub-rounded to round, sub-angular in part, weak siliceous cement, minor yellow brown to brown argillaceous matrix, dominantly loose, friable in part, unconsolidated, fair visual and inferred porosity, no fluorescence. SILTSTONE, dark greenish grey, brownish grey, dark yellowish brown, argillaceous, grading to CLAYSTONE, slightly calcareous, commonly Fe staining, minor glauconite, soft to dispersive, sub-blocky to amorphous.
MASSACRE SHALE	
1155.1 – 1189.9	Thickness: 34.8m
1155.1 – 1180.0	SILTSTONE with Interbedded SANDSTONE.

	SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE, calcareous, occasionally carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) off white, argillaceous, grading to CLAYSTONE, non-calcareous, soft to dispersive. SANDSTONE, translucent, very pale brown, predominantly medium, occasionally coarse grains, moderately sorted, sub-angular to sub-rounded, weak tr calcareous cement, trace brown argillaceous matrix, occasionally disseminated pyrite, rare green lithics, loose, unconsolidated, good porosity, no fluorescence.
1180.0 – 1189.9	SILTSTONE, medium to dark brown, brown to black, argillaceous, grading to CLAYSTONE in part, commonly green lithics, trace disseminated pyrite, soft to dispersive, sub-blocky to amorphous.
PAARATTE FORMATION	
1189.9 – 1658.2	Thickness: 468.3m
1190.7 – 1211.0	Dominantly SILTSTONE with SANDSTONE interbeds. SILTSTONE, medium to dark grey, olive grey, medium brown in part, argillaceous, locally calcareous, trace glauconite, pyrite, minor carbonaceous specks and flakes, soft to dispersive, firm, sub-blocky to amorphous. SANDSTONE, translucent to clear, off white, pale yellow brown, very fine to medium, dominantly fine, moderately sorted, sub-angular to sub-rounded, trace angular, trace siliceous cement, commonly pyrite nodules, trace fossiliferous fragments, generally loose and clean, occasionally very hard aggregates, fair to good inferred and nil to tight visual porosity, no fluorescence.
1211.0 – 1350.0	Predominantly SANDSTONE with SILTSTONE interbeds. SANDSTONE, translucent to clear, opaque, rare pale yellow, fine to coarse, dominantly medium, sub-angular to sub-rounded, trace weak siliceous cement, rare light grey to pale brown argillaceous matrix, commonly pyrite nodules, occasionally very coarse round quartz grains, generally loose and clean, rare friable aggregates, poor visual and fair to good inferred porosity, no fluorescence. SILTSTONE, light to medium grey, dark greyish brown, grey to green, argillaceous, trace glauconite, pyrite nodules, soft to firm in part, dispersive in part, sub-blocky to amorphous.
1350.0 – 1570.0	Predominantly SILTSTONE with SANDSTONE interbeds. SILTSTONE, predominantly olive grey, minor brownish grey, occasionally off white to white, argillaceous, commonly grading to CLAYSTONE in part, minor calcareous fragments, occasionally carbonaceous inclusions, soft to dispersive, soft to dispersive, sub-blocky to amorphous. SANDSTONE, clear to translucent, minor frosted, rare translucent yellowish brown grains, fine to very coarse, very poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasionally strong pyrite cement, minor pyrite nodules, generally loose and clean, occasionally moderately hard to very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence.
1570.0 – 1608.0	Predominantly SANDSTONE with SILTSTONE interbeds and trace COALS. SANDSTONE, clear to translucent, frosted in part, occasionally translucent grey, fine to very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, trace strong pyrite cement, minor calcareous fragments, moderately pyrite nodules, unconsolidated and predominantly clean, trace very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, predominantly brownish grey, minor brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous fragments, minor to locally commonly carbonaceous material, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous. COAL, (Tr) black, dull to sub-vitreous, argillaceous, moderately hard to

	brittle, sub-blocky to sub-fissile, uneven to minor sub-conchoidal.
1608.0 – 1614.0	Predominantly SANDSTONE with interbedded SILTSTONE. SANDSTONE, off white to pale brown, clear to translucent, very fine to minor fine, sub-angular, well sorted, moderately strong to strong calcareous cement, commonly off white to white argillaceous matrix, minor carbonaceous inclusions, occasionally disseminated pyrite, moderately hard to hard aggregates, very poor to tight visual porosity, fluorescence. SILTSTONE, brownish grey to olive grey, very light grey to light olive grey, minor brownish black, predominantly argillaceous, grading to CLAYSTONE, occasionally arenaceous calcareous in part, minor to locally commonly carbonaceous material, grading to silty COAL, occasionally glauconite grains, soft to generally dispersive, occasionally firm, sub-blocky to amorphous. **FLUORESCENCE, 20-30%, moderately bright to bright pale greenish yellow, patchy to even in part, slow to very slow blooming dull pale yellow crush cut, thin very dull ring residue.**
1614.0 – 1658.2	SANDSTONE, translucent to clear, off white to very pale grey, very fine to fine, well sorted, sub-angular to sub-rounded, trace locally calcareous cement, commonly white to off white argillaceous matrix, occasionally glauconite, commonly carbonaceous specks and flakes, trace disseminated pyrite, friable to moderately hard, tight visual porosity, no fluorescence. SILTSTONE, light to medium grey, trace medium brown, dominantly argillaceous, commonly locally arenaceous, commonly carbonaceous specks, occasionally black and green lithics, soft to dispersive, amorphous in part, dominantly sub-blocky to blocky, amorphous in part.
SKULL CREEK MUDSTONE	
1658.2 – 1754.7	Thickness: 96.5m
1658.2 – 1755.7	Predominantly SILTSTONE with SANDSTONE interbeds and minor LIMESTONE. SANDSTONE, medium light grey to medium grey, grading to brownish grey in part, predominantly clear, very fine grading to SILTSTONE in part, moderately well sorted, sub-angular to sub-rounded, weak to occasional strong calcareous and siliceous cement, common white argillaceous matrix, grading to brownish grey silty matrix in part, minor pyrite nodules, occasional carbonaceous specks and material, minor glauconite, fair to occasional moderately hard, very poor visual and poor inferred porosity, n/f SILTSTONE, dark grey to brownish grey, predominantly arenaceous, minor argillaceous, common disseminated carbonaceous material, minor off white lithics and trace glauconite grains, occasional pyrite nodules, firm to occasional moderately hard, sub-blocky to sub-fissile. LIMESTONE, dark yellowish brown to brownish orange, off white in part, micritic to lutitic, argillaceous, microcrystalline to crystalline.
NULLAWARRE GREENSANDS	
1755.7 – 1771.4	Thickness: 16.7m
1755.7 – 1771.4	Interbedded SANDSTONE and SILTSTONE with trace LIMESTONE. SANDSTONE, medium light grey to medium grey, clear to translucent, minor frosted, 90% very fine to very coarse loose grains, 10% very fine to fine aggregates, very poor sorted, sub-angular to sub-rounded, occasional angular, weak to occasional moderately strong calcareous and siliceous cement, minor white argillaceous matrix, minor carbonaceous specks, occasional to localized common pale green lithics, friable to moderately hard aggregates, predominantly loose, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, brownish black to olive black, argillaceous, grading to arenaceous in part,, common carbonaceous

	material, minor off white lithics, occasional glauconite grains, soft to moderately hard, generally firm, sub-blocky to sub-fissile. LIMESTONE, brownish orange to brownish grey, micro-sparitic, generally argillaceous, minor interbedded quartz grains, crystalline to microcrystalline, moderately hard to hard.
BELFAST MUDSTONE	
1771.4 – 1963.7	Thickness: 192.3m
1771.4 – 1920.0	Massive SILTSTONE with minor SANDSTONE interbeds. SANDSTONE, clear to minor translucent, very fine to fine, moderately sorted, sub-angular to minor sub-rounded, weak siliceous cement, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE, slightly calcareous, minor very fine carbonaceous specks, pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous.
1920.0 – 1963.7	Massive SILTSTONE with minor SANDSTONE interbeds. SANDSTONE, clear to minor translucent, very fine to fine, moderately sorted, sub-angular to minor sub-rounded, weak siliceous cement, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE, slightly calcareous, minor very fine carbonaceous specks, pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous.
FLAXMANS FORMATION	
1963.7 – 1979.9	Thickness: 16.2m
1963.7 – 1979.9	SANDSTONE with SILTSTONE interbeds. SANDSTONE, translucent, opaque yellow to yellowish brown, frosted, white to off white, clear, pale grey in part, fine to very coarse, dominantly coarse, very poor sorted, sub-angular to sub-rounded, minor angular, occasional rounded grains, localized strong calcareous and moderately siliceous cement, white to off white argillaceous matrix, pyrite nodules, localized common fine glauconite grains, dominantly loose, unconsolidated, poor to localized fair porosity, no fluorescence. SILTSTONE, light to medium grey, pale greyish brown, off white to pale brown, predominantly argillaceous, common arenaceous, occasional glauconite grains and disseminated material, minor disseminated pyrite, minor micromicaceous, dispersive to moderately hard, predominantly soft to firm, sub-blocky to sub-fissile in part, minor to localized common amorphous.
WARRE FORMATION	
1979.9 – 2060.8	Thickness: 80.9m
1979.9 – 1988.0	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, translucent, frosted, opaque pale grey to white, opaque yellow to yellowish brown, clear, very fine to very coarse, very poor sorted, sub-angular to sub-rounded very fine to medium grains and sub-angular to angular coarse to very coarse grains, moderately to localized strong calcareous and siliceous cement, trace to minor pyrite cement, white to pale grey argillaceous matrix and trace brownish grey silty matrix in part, common to localized abundant pyrite nodules, minor fine glauconite grains and disseminated material, predominantly loose, unconsolidated, poor to fair porosity, no fluorescence. SILTSTONE, medium to dark grey, greyish black, trace pale brown, argillaceous, siliceous, common to abundant disseminated pyrite, common glauconite, dominantly hard to very hard, minor soft to firm, sub-blocky to blocky, sub-fissile in part.
1988.0 – 2027.5	Interbedded SANDSTONE and SILTSTONE.

	SANDSTONE, clear, minor translucent, minor frosted, trace pale grey, dominantly coarse very coarse, minor fine to medium, very poor sorted, 90% angular coarse to very coarse fractured grains, 10% sub-angular to trace sub-rounded fine to medium grains, strong siliceous and pyrite cement, white siliceous and occasional pyrite matrix, rare pale brown to grey argillaceous matrix, abundant disseminated and nodular pyrite, very common very coarse angular fractured quartz fragments, trace glauconite grains, unconsolidated to broken, trace to localized minor to hard to very hard aggregates, poor inferred and nil to very tight visual pot, no fluorescence. SILTSTONE, medium to dark grey, medium to dark greyish brown, predominantly argillaceous, arenaceous in part, calcareous, common glauconite, common pyrite, minor micromicaceous, soft to firm, moderately hard in part, predominantly sub-blocky, sub-fissile in part, localized blocky to amorphous.
2027.5 – 2060.8	SANDSTONE with SILTSTONE interbeds. SANDSTONE, clear to translucent, minor opaque pale grey, trace yellowish grey, very fine to medium, predominantly fine, moderately to localized well sorted, sub-rounded to sub-angular, trace calcareous and weak siliceous cement, off white minor pale grey argillaceous/clay matrix, trace pyrite nodules, minor carbonaceous material, black lithics, loose, minor to trace friable aggregates, poor inferred and visual porosity, no fluorescence. SILTSTONE, pale grey, medium to dark grey, argillaceous, common grading to CLAYSTONE, minor carbonaceous material, trace micromicaceous, firm in part, soft to dispersive, sub-blocky, blocky to amorphous.
EUMERALLA FORMATION	
2060.8 – (2070.0)	Thickness: 9.2+m
2060.8 – (2070.0)	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, pale grey to off white, milky white, translucent to clear, minor pale green at depths, very fine to medium, dominantly fine, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, increasing calcareous cement, common to abundant white to off white argillaceous matrix, disseminated pyrite, carbonaceous specks and inclusions, trace black and green lithics, dominantly friable to occasional mod hard aggregates, common loose grains, poor visual and poor to fair inferred porosity, no fluorescence. SILTSTONE, very pale grey to greenish grey, light to medium grey, brownish grey, occasional dark grey, common grading to CLAYSTONE, common calcareous, trace arenaceous, occasional carbonaceous specks, soft to localized firm, minor moderately hard, sub-blocky, blocky to predominantly amorphous.
TOTAL DEPTH	
Driller:	2070.0m
Logger:	2052.55m (Extrapolated log depth)

(b) Stratigraphic Prognosis

The depth prognosis for Peterborough 1 was based on a simple time-depth function which is related to the available check shot data from Croft 1. Although Croft 1 is not the closest of the nearby wells, the well trajectory and depth to the Waarre Formation at Peterborough 1 are most similar to Croft 1.

Actual versus predicted formation tops for Peterborough 1/1ST1 are tabled below:

TABLE 10 - ACTUAL VERSUS PREDICTED DEPTH AND THICKNESSES

Formation	Depth (mSS) prognosed	Depth (mKB) prognosed	Depth (mKB) actual	Depth (mSS) actual	Diff.
Port Campbell Limestone	9.7 (GL)	5.3	5.3	9.7	NA
Gellibrand Marl	-101	116	163.1	-148.1	47.1 L *
Clifton Fm	-516	531	541.8	-526.8	10.8 L
Narrawaturk Marl	-532	547	561.2	-546.2	14.2 L
Mepunga Fm	-666	681	679	-664	2.0 H
Dilwyn Fm	-718	733	732.4	-717.4	0.6 H
Pember Mudstone	-975	990	951.3	-936.3	38.7 H
Pebble Point Fm	-1024	1039	1038.1	-1023.1	0.9 H
Massacre Shale	**--------**	**--------**	**1155.1**	**-1140.1**	**NA ****
Paaratte Fm	-1141	**1156**	1189.9	-1174.9	33.9 L **(0)**
fault zone, fault intersection	-1638 to -1678	1653 to 1693	1658.2	-1643.7	5.7 L ***
Skull Creek Mudstone	**NA**	**NA**	**1658.2**	**-1643.2**	**NA ******
Nullawarre Greensand	-1678	1693	1754.7	-1739.7	61.7 L
Belfast Mudstone	-1719	1734	1771.4	-1756.4	37.4 L
Flaxmans	**---------**	**--------**	**1963.7**	**-1948.7**	**NA *******
Waarre C	-1925	1940	1979.9	-1964.9	39.9 L
Waarre B	NA	NA	2015.1	-2000.1	NA
Waarre A	NA	NA	2029.1	-2014.1	NA
Eumeralla Fm	-2016	2031	2060.8	-2045.8	29.8 L
TD	-2056	2071	2070	-2055	

Comments:

* The contact between the Port Campbell Limestone and the Gellibrand Marl appears to be transitional over the interval 120.0 to 150.0 mKB. The original well site pick was based on the first occurrence of marl whereas the stratigraphic log pick favoured here is using a prominent break and change in the gamma ray response. Seismically the pick is not being resolved.

** The Massacre Shale was not included in the prognosis and the seismic top for the Paaratte Formation appears to have included the overlying Massacre Shale.

*** The exact position of the top and thickness of the fault zone is uncertain.

**** The shale dominated interval below the fault zone at 1658.2 mKB is interpreted to contain a thin Nullawarre Greensand at 1754.7 mKB which in turn indicates the presence of the Skull Creek Mudstone below the main fault zone.

***** A thin Flaxman Fm. interval is interpreted to overly the Waarre Formation.

(c) Hydrocarbon Summary

No gas shows were present in Peterborough 1/ST1 until 1600mRT. From that point a backgound gas was seen at 20 to 40 units until 1926mRT, where the gas decreased to a level of 10 units all the way to TD (2070mRT). Fluorescence was noted in one sample from 1608.0 – 1614.0mRT. With 20 - 30%, moderately bright to bright pale greenish yellow, patchy to even in part, slow to very slow blooming dull pale yellow crush cut,

thin very dull ring residue, it quickly depleted and no further fluorescence was noted for the rest of the well.

8. SUMMARY AND CONCLUSIONS

Peterborough 1 was targeting the Waarre Formation which represents the principle reservoir in the Port Campbell Embayment. Instead of finding the expected porous sandstone unit the well penetrated a very hard and tight sandstone interval at target depth. The tight sandstone interval is interpreted to represent the Waarre C. No gas shows were noticed during drilling through the Waarre Formation. The apparent problems experienced while drilling through the expected reservoir section and the log data indicate that the Waarre Formation underwent a pervasive quartz cementation of the primarily existing porosity. In this perspective the Waarre Formation may be considered as an extremely hard, non porous and non conductive quartzite at this particular location. The well result thus adds a previously unknown reservoir risk to the Late Cretaceous Waarre Formation in the Port Campbell Embayment.

The encountered Waarre quartzite is associated with a strong velocity anomaly which in turn is responsible for the observed acoustic impedance contrast and pronounced amplitude anomaly as seen on the existing 2D seismic lines. The extent of the observable amplitude anomaly is now believed to image the areal extent of the apparent quartz cementation associated with Waarre C unit. It is however unknown why the apparent amplitude response and related quartz cementation appear to be restricted to the main structural horst block with an observed dimming of amplitudes in the down-dip direction.

The main drilling rationale for Peterborough 1 resulted from the presence of a strong amplitude anomaly associated with the existing 2D seismic data over the identified Peterborough structural horst. Amplitude anomalies and AVO responses commonly indicate the presence of gas in the onshore 3D seismic data. Enhanced amplitudes on 2D seismic often coincide with existing gas accumulations elsewhere. On the other hand the inferred structural closure at the Peterborough location was only vaguely defined by the existing seismic grid. Despite the absence of suitable reservoir at Peterborough 1 the validity of the tested structure remains speculative.

Peterborough 1 has demonstrated that strong amplitudes associated with the Waarre Formation could also relate to pronounced lithological or secondary changes such as a pervasive quartz cementation. The cause of this cementation may be a local geological phenomena since it appears to be absent in most but all of the existing Waarre penetrations of the region. Nevertheless the results should be incorporated in future AVO work and related lithological models and the resulting assumptions about fluid contents.

9. REFERENCES

1 ORIGIN ENERGY LIMITED: PEP 154 PETERBOROUGH 01 Well Proposal, unpublished document December 2004

2 ORIGIN ENERGY LIMITED: PEP 154 PETERBOROUGH 01 Drilling Programme, unpublished document March 2005

APPENDIX 1

DAILY DRILLING REPORTS

DAILY DRILLING REPORT

16/08/05

REPORT # 01

WELL	**Peterborough 01**	**24:00 DEPTH**	**53m**	**24 HR PROG**	**53m**	**CUM. COSTS**	**$658,761**
RIG	Century Resources Ltd # 7	**FORMATION**	Limestone	**PTD**	2075m	**DAILY COSTS**	$658,760.79
OP's TO 06:00	Drill 12 1/4" hole from 53m to 145m survey @105m 1/2deg, no losses						
REMARKS:	Complete pre spud meeting with all crews.					**PERSONNEL ON SITE:**	**38**
LAST CASING	20 "	**SET AT**	10.5m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	
AFD's: 19	**SAFETY**	1. M/up BHA, Slips trips,falls, safe rotary table op's, Forklift safety.				**WEATHER AM**	O/cast & cool
		2. Safe use of rig tongs. Driving around the lease, uneven surfaces/ speed etc				**PM**	Fine

BIT INFORMATION			
WOB(kLb)	1-5	**JET V(fps)**	330
RPM	80-120	**H S I**	2.57
BIT NUMBER		**1**	**A**
Size (in)		12.25	
Make		Varel	
Type		CH1GMS	
IADC Code		117	
Serial Number		198598	
T.F.A.(")		0.589	
Depth In (m)		16	
Depth Out (m)		IN	16
Total Meters		37	16
Hours		3.5	
ROP		10.6	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	606
AV - DP (fpm)	114
AV - DC (fpm)	134
SPP (psi)	1250
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	100	**RATE**	100
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS
1/2° at 105m

BHA # 1	
TOOL	**LENGTH**
Bit	0.32
Bit Sub	0.94
Drill collars x 2	18.43
X/O	0.79
Stab	1.42
X/O	0.77
Drill Collar x 14	27.65
Hwdp x 4	
BHA LENGTH (m)	50.32
BHA WEIGHT(kLb)	13.3
STRING WT (kLb)	13.4
HOOK LOAD (kLb)	30.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	1.0
DRAG DOWN (kLb)	1.0
TORQUE ON (Amps/Rel.)	2000
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	33800 Litres
DAILY USAGE	1600 Litres
CUM. FUEL USED	1600 Litres
CUM. MUD MIXED	330 Bbls
CUM. MUD LOSSES	
CUM. GEL	4800 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2300
Depth (m)	50
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.80
ECD (ppg)	
Viscosity (sec)	42
PV / YP (cp/lb)	
Gells (s/m)	
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	
Sand (% Vol)	
MBT	
pH (strip)	9.5
Chlorides (mg/l)	
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	184

CHEMICAL USAGE	
Caustic Soda	2
Soda Ash	3
Trugel 13A	192

OPERATION	**HRS**	**CUM**
Casing		
Cementing		
Circ & Condition		
Coring		
D/O Cement		
Drilling	3.5	3.5
Handle BHA		
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs		
Rig Move	20.5	20.5
Rig Service		
Safety		
Survey		
Tight hole / Fishing		
Tripping		
Wait on Cement		
Wash / Ream		
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	24.0

DAILY MUD COSTS	$1,720.79
CUM. MUD COSTS	**$1,720.79**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
	11:30	Rig up, await Century response to OES & HSE issues
11:30	12:00	Pre-spud meeting with all crew, Origin DSV's, service hands, Dave Jones & Ian Cook
12:00	13:00	Pick up DC & rig to spud. Authority from Origin to spud at 13:00 hrs
13:00	14:30	Rig to spud, float found to be damaged. Attempt to fix, no go. Go ahead from Origin to run without float
14:30	15:00	Made up bit, start circulating, flow lines leaking - fix
15:00	20:30	Flo-Sho not working, work on that
20:30	0:00	Spud in at 20:30 hrs & drill 12 1/4" hole from 16m to 53m, no losses to report.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J.Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

17/08/05

REPORT # 02

WELL	**Peterborough 01**	**24:00 DEPTH**	**499m**	**24 HR PROG**	**446m**	**CUM. COSTS**	**$707,279**
RIG	Century Resources Ltd # 7	**FORMATION**	Gellibrand Marl	**PTD**	2075m	**DAILY COSTS**	$48,513.46

OP's TO 06:00 Continue to clean hole. Wiper trip from 499m to 21m, hole good, RIH to TD, circulate clean. Run survey.

REMARKS: TD @ 499m reached at 23:30hrs. Circ hole clean for wiper trip. **PERSONNEL ON SITE:** **38**

LAST CASING	20 "	**SET AT**	10.5m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	

AFD's: 20	**SAFETY**	1. Running wire line surveys, Mouse hole connections,slips/trips/falls	**WEATHER AM** O/cast & cool
		2. Correct selection and use of slips, Correct manual handling techniques	**PM** Fine

BIT INFORMATION			
WOB(kLb)	8-20	**JET V(fps)**	330
RPM	120	**H S I**	2.59
BIT NUMBER		**1**	
Size (in)		12.25	
Make		Varel	
Type		CH1GMS	
IADC Code		117	
Serial Number		198598	
T.F.A.(")		0.589	
Depth In (m)		16	
Depth Out (m)		IN	
Total Meters		483	
Hours		24	
ROP		20.1	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	606
AV - DP (fpm)	114
AV - DC (fpm)	134
SPP (psi)	1600
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	100	**RATE**	100
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS
1/2° at 245m
1/2° at 394m

BHA # 1	
TOOL	**LENGTH**
Bit	0.32
Bit Sub	0.94
Drill collars x 2	18.43
X/O	0.79
Stab	1.42
X/O	0.77
Drill Collar x 14	27.65
Hwdp x 4	37.36
BHA LENGTH (m)	87.68
BHA WEIGHT(kLb)	16.9
STRING WT (kLb)	38.9
HOOK LOAD (kLb)	65.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	1.0
DRAG DOWN (kLb)	1.0
TORQUE ON (Amps/Rel.)	2000
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	30400 Litres
DAILY USAGE	3400 Litres
CUM. FUEL USED	5000 Litres
CUM. MUD MIXED	330 Bbls
CUM. MUD LOSSES	159 Bbls
CUM. GEL	5075 kg
CUM. BARITES	

MUD PROPERTIES	
Time	22:30
Depth (m)	474
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.88
ECD (ppg)	
Viscosity (sec)	41
PV / YP (cp/lb)	6 / 33
Gells (s/m)	
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	
Sand (% Vol)	
MBT	
pH (strip)	9.2
Chlorides (mg/l)	
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	567

CHEMICAL USAGE	
Kwikseal F	14
Kwikseal M	9
Trugel 13A	11
Pot chloride	140

OPERATION	**HRS**	**CUM**
Casing		
Cementing		
Circ & Condition	1.0	1.0
Coring		
D/O Cement		
Drilling	20.5	24.0
Handle BHA		
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs		
Rig Move		20.5
Rig Service	1.0	1.0
Safety		
Survey	1.5	1.5
Tight hole / Fishing		
Tripping		
Wait on Cement		
Wash / Ream		
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	48.0

DAILY MUD COSTS	$3,713.46
CUM. MUD COSTS	**$5,439.17**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:00	Continue to drill 12 1/4" hole from 53m to 80m, circulate clean for deviation survey.
2:00	3:00	Repair swivel packing on kelly.
3:00	4:30	Continue to drill 12 1/4" hole from 80m to 117m, circulate clean for deviation survey.
4:30	5:00	Circulate and take totco deviation check survey. 1/2deg@ 105m
5:00	12:30	Continue to drill 12 1/4" hole from 117m to 266m, no losses to report.
12:30	13:00	Circulate and take totco deviation check survey. 1/2deg@ 254m
13:00	18:00	Continue to drill 12 1/4" hole from 266m to 406m, no losses to report
18:00	18:30	Circulate and take totco deviation check survey 1/2deg @394m
18:30	20:00	Continue to drill 12 1/4" hole from 406m to 446m
20:00	20:30	Condition mud and clean out flow line and possum belly
20:30	23:30	Continue to drill 12 1/4" hole from 446m to 499m
23:30	0:00	Circulate and condition hole for wiper trip.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J.Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

18/08/05

REPORT # 03

WELL	**Peterborough 01**	**24:00 DEPTH**	**499m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$1,411,229**
RIG	Century Resources Ltd # 7	**FORMATION**	Gellibrand Marl	**PTD**	2075m	**DAILY COSTS**	$703,950.00

OP's TO 06:00 Displace cmt, Bump plug, test casing 2500psi. Remove conductor, wait on cement.

REMARKS: No losses, good cmt to surface after 261bbls, 216bbls theoretical **PERSONNEL ON SITE:** 32

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	

AFD's: 21	**SAFETY**	1. Casing operations	**WEATHER AM**	O/cast & rain
		2. Casing operations	**PM**	O/cast

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	330
RPM	120	**H S I**	2.57
BIT NUMBER		**1**	
Size (in)		12.25	
Make		Varel	
Type		CH1GMS	
IADC Code		117	
Serial Number		198598	
T.F.A.(")		0.589	
Depth In (m)		16	
Depth Out (m)		499	
Total Meters		483	
Hours		24	
ROP		20.1	
Condition Out		1 2 WT A E I NO TD	

FLOW DATA	
CIRC. RATE (gpm)	606
AV - DP (fpm)	114
AV - DC (fpm)	134
SPP (psi)	1600
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	100	**RATE**	100
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS
1° at 489m

BHA # 1	
TOOL	**LENGTH**
Bit	0.32
Bit Sub	0.94
Drill collars x 2	18.43
X/O	0.79
Stab	1.42
X/O	0.77
Drill Collar x 14	128.83
Hwdp x 4	37.36
BHA LENGTH (m)	188.86
BHA WEIGHT(kLb)	40.5
STRING WT (kLb)	57.1
HOOK LOAD (kLb)	65.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	2.0
DRAG DOWN (kLb)	5.0
TORQUE ON (Amps/Rel.)	2000
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	27200 Litres
DAILY USAGE	3200 Litres
CUM. FUEL USED	8200 Litres
CUM. MUD MIXED	330 Bbls
CUM. MUD LOSSES	741 Bbls
CUM. GEL	5075 kg
CUM. BARITES	

MUD PROPERTIES	
Time	14:00
Depth (m)	499
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.80
ECD (ppg)	
Viscosity (sec)	39
PV / YP (cp/lb)	
Gells (s/m)	
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	
Sand (% Vol)	
MBT	
pH (strip)	8.8
Chlorides (mg/l)	
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	227

CHEMICAL USAGE	

OPERATION	**HRS**	**CUM**
Casing	9.0	9.0
Cementing	1.0	1.0
Circ & Condition	2.0	3.0
Coring		
D/O Cement		
Drilling		24.0
Handle BHA		
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs	3.0	3.0
Rig Move		20.5
Rig Service		1.0
Safety		
Survey	0.5	2.0
Tight hole / Fishing		
Tripping	8.5	8.5
Wait on Cement		
Wash / Ream		
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	72.0

DAILY MUD COSTS	
CUM. MUD COSTS	**$5,439.17**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	Circulate and condition hole for wiper trip.
1:00	1:30	Install bails and elevators while flow checking
1:30	4:30	Wiper trip from 499m to 21m, hole in good condition.
4:30	6:30	Run in hole from 21m to 499m
6:30	7:30	Circulate hole clean
7:30	8:00	Wireline survey at 489m, 1 degree
8:00	11:00	Hoist to run casing
11:00	13:00	Rig to run casing
13:00	16:00	Work on hydraulics. After work on hydraulics bank during rig move, power tong will not run. Use alternate circuit
16:00	17:00	Rig up casing stabbing board
17:00	22:30	Run 9 5/8" casing to a shoe depth of 495.55m. Wash last 5m to setting depth.
22:30	23:00	Circulate casing volume and hole clean.
23:00	23:30	Rig up Haliburton cement head. Pump 10bbls of spacer, test lines to 3500psi, Pump remaining 10bbls of spacer
23:30	0:00	Mix and pump 132bbls of 13.2ppg lead slurry & 61bbls of 15.8ppg tail. Displace

SUPERVISOR:	S.Porter / B. Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

19/08/05

REPORT # 04

WELL	**Peterborough 01**	**24:00 DEPTH**	**499m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$1,514,330**
RIG	Century Resources Ltd # 7	**FORMATION**	Gellibrand Marl	**PTD**	2075m	**DAILY COSTS**	$103,101.15
OP's TO 06:00	Complete testing of BOP's, install wear bushing. Press test surface equip. Install flow line. Make up 8-1/2" BHA						
REMARKS:	Prepare 8 1/2" bha, build Kcl Polynmer mud.					**PERSONNEL ON SITE:**	**34**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**		**MAASP**		**BOP TEST**	19/08/05	**TEST DUE**	09/09/05
AFD's: 22	**SAFETY**	1. Nippling up Bops and cellar work.				**WEATHER AM**	Overcast
		2. Pressure testing Bops and surface equipment.				**PM**	Overcast

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER		**1**	
Size (in)		12.25	
Make		Varel	
Type		CH1GMS	
IADC Code		117	
Serial Number		198598	
T.F.A.(")		0.589	
Depth In (m)		16	
Depth Out (m)		499	
Total Meters		483	
Hours		24	
ROP		20.1	
Condition Out		1 2 WT A E I NO TD	

FLOW DATA	
CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE		**RATE**	
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS	

TOOL	**LENGTH**
BHA LENGTH (m)	
BHA WEIGHT(kLb)	
STRING WT (kLb)	
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	25800 Litres
DAILY USAGE	1400 Litres
CUM. FUEL USED	9600 Litres
CUM. MUD MIXED	850 Bbls
CUM. MUD LOSSES	741 Bbls
CUM. GEL	5775 kg
CUM. BARITES	

MUD PROPERTIES	
Time	
Depth (m)	
Temp (° C)	
Mud Type	KCL/Polymer
Density (ppg)	
ECD (ppg)	
Viscosity (sec)	
PV / YP (cp/lb)	
Gells (s/m)	
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	
Sand (% Vol)	
MBT	
pH (strip)	
Chlorides (mg/l)	
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Caustic Soda	1
Duo-Tec	6
Glute 25	2
Polypac UL	10
Trugel 13A	28
Soda Ash	3
Pot chloride	126
Polyplus	6

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing	1.0	2.0
Circ & Condition		3.0
Coring		
D/O Cement		
Drilling		24.0
Handle BHA		
LOT / FIT		
N/U & Test BOP's	15.0	15.0
P & A		
Repairs		3.0
Rig Move		20.5
Rig Service		1.0
Safety		
Survey		2.0
Tight hole / Fishing		
Tripping		8.5
Wait on Cement	5.0	5.0
Wash / Ream		
Well Control		
Well Test		
Wellhead	3.0	3.0
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	96.0

DAILY MUD COSTS	$6,568.15
CUM. MUD COSTS	**$12,007.32**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	Displace with 127 bbls of water, bump plug to 3000psi. Floats held OK for 15 minutes.
1:00	6:00	Wait on cement
6:00	9:00	Slack off & remove Landing Joint & conductor riser.
9:00	10:00	P/up and install Braden head, rig down torque tool and casing tong.
10:00	16:00	Nipple up Bops and control lines
16:00	17:00	Flush Koomey and function all well control equipment. Complete accumulator test.
17:00	18:00	Flush Choke and Kill and rig up to pressure test.
18:00	19:00	Pressure test Blind rams and casing to 250/2500psi, 15/15min,
19:00	22:00	Pick up and make up Bop test plug onto drill pipe. Test pipe rams and kill valves 250/2500psi 15/15min
22:00	0:00	Test annular to 250/1500psi 5/5min. Problems getting test. Function several times to improve elastimers, clean drill pipe surface.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

20/08/05

REPORT # 05

WELL	**Peterborough 01**	**24:00 DEPTH**	**704m**	**24 HR PROG**	**205m**	**CUM. COSTS**	**$1,587,988**
RIG	Century Resources Ltd # 7	**FORMATION**	Mepunga	**PTD**	2075m	**DAILY COSTS**	$73,657.85
OP's TO 06:00	Continue to drill 8 1/2" hole from 704m to 853m						
REMARKS:	FIT 700psi, 16.8ppg EMW. Drill ahead to 704m midnight depth.					**PERSONNEL ON SITE:**	**33**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**694psi**
		BOP TEST	19/08/05	**TEST DUE**	09/09/05		
AFD's: 23	**SAFETY**	1. Nipple up Bops and pressure testing. Working at heights, JSA's.				**WEATHER AM**	Overcast
		2. Working at heights. Ask questions if unsure. Pre plan .				**PM**	Overcast

BIT INFORMATION			
WOB(kLb)	0-8	**JET V(fps)**	256
RPM	80-130	**H S I**	3.21
BIT NUMBER		**2**	
Size (in)		8.5	
Make		Smith	
Type		M 90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.773	
Depth In (m)		499	
Depth Out (m)		IN	
Total Meters		205	
Hours		11	
ROP		18.6	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	618
AV - DP (fpm)	291
AV - DC (fpm)	456
SPP (psi)	1250
SPP (calculated)	1060

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	102	**RATE**	102
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 200 @ 60		SCR: 200 @ 60	

SURVEYS	
0° at 505m	0° at 685m
2° at 657m	0° at 694m
2° at 666m	

BHA # 2	
TOOL	**LENGTH**
PDC Bit	0.30
PowerDrive 675	4.00
Float Sub	0.48
8-1/4" String Stab	1.81
x/o	0.51
Anderdrift	3.00
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	204.49
BHA WEIGHT(kLb)	43.9
STRING WT (kLb)	70.7
HOOK LOAD (kLb)	85.0
WT BELOW JARS (kLb)	33.5
DRAG UP (kLb)	2.0
DRAG DOWN (kLb)	2.0
TORQUE ON (Amps/Rel.)	2000
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	23500 Litres
DAILY USAGE	2300 Litres
CUM. FUEL USED	11900 Litres
CUM. MUD MIXED	971 Bbls
CUM. MUD LOSSES	877 Bbls
CUM. GEL	5775 kg
CUM. BARITES	

MUD PROPERTIES	
Time	22:00
Depth (m)	685
Temp (° C)	35
Mud Type	KCL/Poly/Phpa
Density (ppg)	8.60
ECD (ppg)	9.04
Viscosity (sec)	51
PV / YP (cp/lb)	12 / 17
Gells (s/m)	5 / 7
API Filt. (cc)	9
Cake (/32")	1
Solids (% Vol)	0.2
Sand (% Vol)	
MBT	
pH (strip)	9.5
Chlorides (mg/l)	20000
KCL (%)	4.5
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	480

CHEMICAL USAGE	
Duo-Tec	7
Polypac UL	4
Sod Sulphite	2
Pot chloride	42
Polyplus	4

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		2.0
Circ & Condition		3.0
Coring		
D/O Cement	1.5	1.5
Drilling	11.0	35.0
Handle BHA	2.5	2.5
LOT / FIT	1.0	1.0
N/U & Test BOP's	4.0	19.0
P & A		
Repairs		3.0
Rig Move		20.5
Rig Service		1.0
Safety		
Survey		2.0
Tight hole / Fishing		
Tripping	2.5	11.0
Wait on Cement		5.0
Wash / Ream		
Well Control		
Well Test		
Wellhead	1.5	4.5
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	120.0

DAILY MUD COSTS	$3,832.85
CUM. MUD COSTS	**$15,840.17**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	4:00	Complete Bop testing. Test Choke and kill manifold, Test Surface equip>kelly, stab valves, standpipe, mud pump isolation valves.
4:00	5:30	Install wear bushing and lay out test plug/ running tool.
5:30	8:00	Make up 8 1/2" BHA and test Power drive. Cont with BHA picking up Anderdrift and drilling jars.
8:00	10:30	RIH and tag cmt top at 477m
10:30	12:00	Drill cement float and shoe equipment and clean out rat hole to 499m, make 3 m of new hole to 502m.
12:00	13:00	Circulate hole clean and perform an FIT. 700psi 16.8 EMW
13:00	0:00	Drill 8 1/2" hole from 502m to 704m, take Anderdrift surveys to check inclination

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

21/08/05

REPORT # 06

WELL	**Peterborough 01**	**24:00 DEPTH**	**1172m**	**24 HR PROG**	**468m**	**CUM. COSTS**	**$1,706,224**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$117,166.09

OP's TO 06:00 8 1/2" hole to 1228m , take totco @1219/1228m check Anderdrift reading, 2 x 8+deg, Trip back to straight hole.

REMARKS: Drill 8 1/2" hole from 704m to 1172m. **PERSONNEL ON SITE:** 32

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**668psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 24

SAFETY 1. Weekly SM. Discuss repairs on rig. Discuss planning

2. Weekly safety meeting, discussed items requiring attention, or have been repaired.

WEATHER AM Overcast

PM Overcast

BIT INFORMATION			
WOB(kLb)	5-15	**JET V(fps)**	229
RPM	100	**H S I**	2.36
BIT NUMBER		**2**	
Size (in)		8.5	
Make		Smith	
Type		M 90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.773	
Depth In (m)		499	
Depth Out (m)		IN	
Total Meters		673	
Hours		34	
ROP		19.8	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	551
AV - DP (fpm)	260
AV - DC (fpm)	407
SPP (psi)	1400
SPP (calculated)	1130

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	91	**RATE**	91
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 320 @ 60		SCR: 500 @ 90	

SURVEYS	
0° at 806m	0° at 1043m
0° at 891m	0° at 1088m
0° at 947m	

BHA # 2	
TOOL	**LENGTH**
PDC Bit	0.30
PowerDrive 675	4.00
Float Sub	0.48
8-1/4" String Stab	1.81
x/o	0.51
Anderdrift	3.00
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	204.49
BHA WEIGHT(kLb)	43.7
STRING WT (kLb)	95.4
HOOK LOAD (kLb)	105.0
WT BELOW JARS (kLb)	33.3
DRAG UP (kLb)	5.0
DRAG DOWN (kLb)	5.0
TORQUE ON (Amps/Rel.)	0-15
TORQUE OFF (Amps/Rel.)	0-10

ENVIRONMENTAL DATA	
FUEL ON SITE	19000 Litres
DAILY USAGE	4500 Litres
CUM. FUEL USED	16400 Litres
CUM. MUD MIXED	1350 Bbls
CUM. MUD LOSSES	1171 Bbls
CUM. GEL	5775 kg
CUM. BARITES	

MUD PROPERTIES	
Time	22:30
Depth (m)	1149
Temp (° C)	41
Mud Type	KCL/Poly/Phpa
Density (ppg)	8.90
ECD (ppg)	9.38
Viscosity (sec)	53
PV / YP (cp/lb)	15 / 23
Gells (s/m)	6 / 8
API Filt. (cc)	6.6
Cake (/32")	1
Solids (% Vol)	8
Sand (% Vol)	2
MBT	6.25
pH (strip)	9.5
Chlorides (mg/l)	20000
KCL (%)	4.5
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	579

CHEMICAL USAGE	
Caustic Soda	2
Duo-Tec	10
Polypac UL	14
Soda Ash	3
Pot chloride	126
Polyplus	12

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		2.0
Circ & Condition		3.0
Coring		
D/O Cement		1.5
Drilling	23.0	58.0
Handle BHA		2.5
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	3.5
Rig Move		20.5
Rig Service	0.5	1.5
Safety		
Survey		2.0
Tight hole / Fishing		
Tripping		11.0
Wait on Cement		5.0
Wash / Ream		
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	144.0

DAILY MUD COSTS	$8,571.09
CUM. MUD COSTS	**$24,411.26**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	11:00	Continue to drill from 704m to 966m, take Anderdrift surveys @ 713m, 769m, 806m, 844m, 891m, 947m, all zero
11:00	11:30	Rig service
11:30	19:30	Continue to drill from 966m to 1116m, take Anderdrift surveys @1043m 1088m , all zero
19:30	20:00	Change out swabs on #1 mud pump.
20:00	0:00	Continue to drill 8 1/2" hole from 1116m to 1172m.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

22/08/05

REPORT # 07

WELL	**Peterborough 01**	**24:00 DEPTH**	**1228m**	**24 HR PROG**	**56m**	**CUM. COSTS**	**$1,770,646**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$64,421.88
OP's TO 06:00	Commence Gyro surveys. Work pipe every 15mins.POOH and prepare for directional BHA , 6am depth 685m						
REMARKS:	Gyro confirms well has deviated off the original well plan.					**PERSONNEL ON SITE:**	**33**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**668psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 25	**SAFETY**	1. Wearing of harness's while working at heights. Ask when not sure.				**WEATHER AM**	Overcast
		2. Permit to works system. When are they required				**PM**	Overcast

BIT INFORMATION

WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER		**2**	
Size (in)		8.5	
Make		Smith	
Type		M 90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.773	
Depth In (m)		499	
Depth Out (m)		1228	
Total Meters		729	
Hours		36.5	
ROP		20.0	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	1500
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE		**RATE**	
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS

5.62° at 1050m	15.28° at 1125m
8.85° at 1075m	20.87° at 1175m
11.94° at 1100m	23.52° at 1200m

BHA # 3

TOOL	LENGTH
PDC Bit	0.30
PowerDrive 675	4.00
8-1/4" String Stab	1.81
Float Sub	0.48
x/o	0.51
Anderdrift	3.00
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	204.49
BHA WEIGHT(kLb)	43.7
STRING WT (kLb)	98.4
HOOK LOAD (kLb)	107.0
WT BELOW JARS (kLb)	33.3
DRAG UP (kLb)	110.0
DRAG DOWN (kLb)	120.0
TORQUE ON (Amps/Rel.)	0-10
TORQUE OFF (Amps/Rel.)	0-10

ENVIRONMENTAL DATA

FUEL ON SITE	16000 Litres
DAILY USAGE	3000 Litres
CUM. FUEL USED	19400 Litres
CUM. MUD MIXED	1526 Bbls
CUM. MUD LOSSES	1319 Bbls
CUM. GEL	5775 kg
CUM. BARITES	1000 kg

MUD PROPERTIES

Time	13:00
Depth (m)	1228
Temp (° C)	n/a
Mud Type	KCL/Poly/Phpa
Density (ppg)	8.90
ECD (ppg)	
Viscosity (sec)	50
PV / YP (cp/lb)	14 / 23
Gells (s/m)	6 / 8
API Filt. (cc)	6.4
Cake (/32")	1
Solids (% Vol)	8
Sand (% Vol)	0.5
MBT	6.25
pH (strip)	9.5
Chlorides (mg/l)	20000
KCL (%)	4.5
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	566

CHEMICAL USAGE

Barite	40
Duo-Tec	3
Polypac UL	5
Soda Ash	3
Pot chloride	40
Polyplus	2

OPERATION

OPERATION	HRS	CUM
Casing		9.0
Cementing		2.0
Circ & Condition	2.0	5.0
Coring		
D/O Cement		1.5
Drilling	2.5	60.5
Handle BHA	2.0	4.5
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		3.5
Rig Move		20.5
Rig Service	0.5	2.0
Safety		
Survey	8.0	10.0
Tight hole / Fishing		
Tripping	8.5	19.5
Wait on Cement		5.0
Wash / Ream	0.5	0.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		
TOTALS	24.0	168.0

DAILY MUD COSTS	$2,826.88
CUM. MUD COSTS	**$27,238.14**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:00	Continue to drill 8 1/2" hole from 1172m to 1219m
2:00	2:30	Take Totco deviation check survey due to check Anderdrift 5+ deg reading. Totco reading 8+deg
2:30	3:00	Drill from 1219m to 1228m with 0-2klbs WOB, 120rpm while changing spear on totco survey barrel.
3:00	3:30	Take deviation survey at 1228m, Reading of 8+ deg
3:30	4:30	Cicrculate hole clean for wiper trip back to known 0 deg survey
4:30	5:30	POOH from 1228m to 1104m, some stabilizer spiraling noted on the drill string, 10k max over pull.Anderdrift still indicating 5+ deg
5:30	7:00	Pooh and take Anderdrift surveys @1052m 3.5deg, 1041m 2.5deg, 1032m 1deg, 1023m 0deg,
7:00	11:00	POOH from 1041m to surface
11:00	12:00	Lay out anderdrift and float sub, test Power drive, install restrictor in Power drive bias unit.
12:00	13:00	Make up BHA, move float sub above stabilizer to reduce distance from bit to stab.
13:00	15:30	RIH to 9 5/8" casing shoe @495m
15:30	16:00	Slip 33' of drilling line
16:00	17:00	RIH to 672m, take Anderdrift survey 2.5deg, take totco survey 4.5deg
17:00	18:00	RIH to 794m, take Anderdrift survey 0deg, take totco survey .25 & .75deg (2 punches)
18:00	19:30	RIH to 1000m, take Anderdrift survey 1deg, take totco survey 1 & 3 deg (2 punches)
19:30	20:30	RIH to 1057m, take Anderdrift survey 5+ deg, take totco survey 6 & 9deg (2 punches), take anderdrift 3 times to check.
20:30	21:30	RIH to 1114m, take Anderdrift survey 5+deg, take totco survey 9 deg.
21:30	22:30	RIH to 1197m and take 20k drag, wash from 1197m to bottom. No torque or weight taken to wash down.
22:30	23:00	wash from 1197m to bottom @1228m. No torque or weight taken to wash down.
23:00	0:00	Circulate bottoms up and hole cleaan in preperation for Gyro survey.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

23/08/05

REPORT # 08

WELL	**Peterborough 01**	**24:00 DEPTH**	**1228m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$1,844,726**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$74,080.20
OP's TO 06:00	RIH with motor BHA. Take wt @1208m Wash to 1228m, drill/ slide from 1228m to 1267m						
REMARKS:	Pumped out 50,000litres of sump water to treatment part.					**PERSONNEL ON SITE:**	**35**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**668psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 26	**SAFETY**	1. Running Gyro on rig wire line unit. 2. Step back, think about tasks, JSA's.				**WEATHER AM** **PM**	Overcast Overcast

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER		**2**	
Size (in)		8.5	
Make		Smith	
Type		M 90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.773	
Depth In (m)		499	
Depth Out (m)		1228	
Total Meters		729	
Hours		36.5	
ROP		20.0	
Condition Out		3 1 WT N X I NO BHA	
FLOW DATA			
CIRC. RATE (gpm)			
AV - DP (fpm)			
AV - DC (fpm)			
SPP (psi)			
SPP (calculated)			
PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE		**RATE**	
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SURVEYS			

BHA # 3	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.15°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.4
STRING WT (kLb)	101.0
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	37.1
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	
ENVIRONMENTAL DATA	
FUEL ON SITE	36600 Litres
DAILY USAGE	1700 Litres
CUM. FUEL USED	21100 Litres
CUM. MUD MIXED	1526 Bbls
CUM. MUD LOSSES	1412 Bbls
CUM. GEL	5775 kg
CUM. BARITES	1750 kg

MUD PROPERTIES	
Time	17:00
Depth (m)	1228
Temp (° C)	n/a
Mud Type	KCL/Poly/Phpa
Density (ppg)	8.90
ECD (ppg)	
Viscosity (sec)	56
PV / YP (cp/lb)	15 / 22
Gells (s/m)	6 / 8
API Filt. (cc)	6.5
Cake (/32")	1
Solids (% Vol)	7
Sand (% Vol)	0.5
MBT	6.5
pH (strip)	9.5
Chlorides (mg/l)	21000
KCL (%)	4.5
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	433
CHEMICAL USAGE	
Barite	30

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		2.0
Circ & Condition	1.0	6.0
Coring		
D/O Cement		1.5
Drilling		60.5
Handle BHA	5.5	10.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		3.5
Rig Move		20.5
Rig Service		2.0
Safety		
Survey	3.0	13.0
Tight hole / Fishing		
Tripping	7.5	27.0
Wait on Cement		5.0
Wash / Ream		0.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other	7.0	7.0
TOTALS	24.0	192.0

DAILY MUD COSTS	$235.20
CUM. MUD COSTS	**$27,473.34**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	3:00	Run Gyro survey at 25m intervals from 1200m to surface
3:00	4:00	Circulate hole clean
4:00	8:00	POOH from 1219m to surface
8:00	9:00	Lay out PowerDrive & Anderdrift
9:00	16:00	Wait on DH Motor and MWD tools
16:00	17:00	Prepare DH Motor & rig up MWD equipment
17:00	18:00	Make up DH Motor and bit
18:00	19:30	Wait on slim pulse preperation
19:30	20:30	Pick up and shallow test Slim pulse and Motor assembly, all ok.
20:30	0:00	Pick up remaining BHA and RIH to shoe @ 495m, Fill pipe and break circulation, Continue to RIH 4 1/2" drill pipe

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

24/08/05

REPORT # 09

WELL	**Peterborough 01**	**24:00 DEPTH**	**1389m**	**24 HR PROG**	**161m**	**CUM. COSTS**	**$1,954,598**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$109,871.87

OP's TO 06:00 Work from 1389m to 1360m, rih excessive drag and tight hole @1379m, Pump out to 1339m. 80k overpull. POOH

REMARKS: Incr- Drag and well stability problems caused the need for a premature check trip to **PERSONNEL ON SITE:** **35**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 27

SAFETY
1. PPE. Last shift before crew change. Pay attention
2. Forklift safety, drilling ahead.

WEATHER AM Overcast
PM Overcast

BIT INFORMATION

WOB(kLb)	0-30	**JET V(fps)**	208
RPM	0-75	**H S I**	1.80
BIT NUMBER		**3**	
Size (in)		8.5	
Make		Smith	
Type		MF04VCPS	
IADC Code		417X	
Serial Number		MR4667	
T.F.A.(")		0.746	
Depth In (m)		1228	
Depth Out (m)		IN	
Total Meters		161	
Hours		14	
ROP		11.5	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	484
AV - DP (fpm)	228
AV - DC (fpm)	358
SPP (psi)	1400
SPP (calculated)	1560

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	80	**RATE**	80
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS

27.08° at 1223m	17.63° at 1345m
22.21° at 1270m	15.83° at 1355m
18.37° at 1326m	13.54° at 1364m

BHA # 3

TOOL	LENGTH
Rock Bit	0.25
A675M7850XP, 1.15°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	108.9
HOOK LOAD (kLb)	120.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	20-100
DRAG DOWN (kLb)	20-70
TORQUE ON (Amps/Rel.)	0-10
TORQUE OFF (Amps/Rel.)	0-5

ENVIRONMENTAL DATA

FUEL ON SITE	32400 Litres
DAILY USAGE	4200 Litres
CUM. FUEL USED	25300 Litres
CUM. MUD MIXED	1773 Bbls
CUM. MUD LOSSES	1552 Bbls
CUM. GEL	5775 kg
CUM. BARITES	6000 kg

MUD PROPERTIES

Time	23:00
Depth (m)	1389
Temp (° C)	43
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.97
Viscosity (sec)	53
PV / YP (cp/lb)	21 / 29
Gells (s/m)	7 / 9
API Filt. (cc)	6.5
Cake (/32")	1
Solids (% Vol)	6.5
Sand (% Vol)	0.75
MBT	6.25
pH (strip)	9.5
Chlorides (mg/l)	21000
KCL (%)	4
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	600

CHEMICAL USAGE

Barite	170
Caustic Soda	2
Duo-Tec	4
Mix II M	40
Polypac UL	9
Soda Ash	4
Pot chloride	94
Polyplus	9
OS-1	2

OPERATION

OPERATION	HRS	CUM
Casing		9.0
Cementing		2.0
Circ & Condition	2.0	8.0
Coring		
D/O Cement		1.5
Drilling	14.0	74.5
Handle BHA		10.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	4.0
Rig Move		20.5
Rig Service		2.0
Safety		
Survey		13.0
Tight hole / Fishing		
Tripping	2.5	29.5
Wait on Cement		5.0
Wash / Ream	5.0	5.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	216.0

DAILY MUD COSTS	$8,346.87
CUM. MUD COSTS	**$35,820.21**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:30	Continue to RIIH directional BHA on drill pipe to 1208m, Take 30k weight
2:30	3:00	Wash from 1208m to TD @1228m. Washed to bottom without any weight and sligth rotation, zero torque
3:00	9:00	Directional drill 8 1/2" hole with down hole motor from 1228m to 1342m.
9:00	9:30	Repair cracked shaker bed
9:30	16:30	Drill directional hole from 1342m to 1382m, overpull noted at connection of 70klbs, circulate clean
16:30	17:30	Pump out of hole from 1382m to 1301m laying down singles
17:30	18:30	Wash/ream from 1301m to 1370m, excess drag and overpull at slip time noted. String weight 120k, up 165-220k, dn 100-60k
18:30	20:30	Circ btms up,check for cavings/ signs of formation problems,none. Work pipe f/1358m t/1370m while weighing up F/ 9.1>9.3
20:30	21:30	Pump out 2 singles to 1340m due to hole deteriorating. Following slip time string is stuck until string rotated with slips.
21:30	23:00	RIH F/1340 to 1377m, drag down 20k, drag up 60k. Wash from 1377m to 1382m
23:00	0:00	Drill F/1382m to 1389m, attempt to slide, will not. Jar pipe free, rotary drill to 1389m. String unable to travel up with out rotation

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

25/08/05

REPORT # 10

WELL	**Peterborough 01**	**24:00 DEPTH**	**1389m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$2,043,522**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$88,923.63
OP's TO 06:00	POOH from 925m to tbg, lay out 2 7/8" tbg. Wait on cement.						
REMARKS:	7" casing arrived from Roma, Pump out more fluid from sump for disposal					**PERSONNEL ON SITE:**	**37**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 28	**SAFETY**	1. Mixing chemicals at hopper. If unsure ask someone who knows				**WEATHER AM**	Fine
		2. Cementing operations				**PM**	Fine

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	193
RPM		**H S I**	1.43
BIT NUMBER		**3**	
Size (in)		8.5	
Make		Smith	
Type		MF04VCPS	
IADC Code		417X	
Serial Number		MR4667	
T.F.A.(")		0.746	
Depth In (m)		1389	
Depth Out (m)		1389	
Total Meters			
Hours		14	
ROP			
Condition Out		1 1 NO A E I ER HP	

FLOW DATA	
CIRC. RATE (gpm)	448
AV - DP (fpm)	211
AV - DC (fpm)	331
SPP (psi)	1700
SPP (calculated)	1400

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	68	**RATE**	80
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS	

BHA # 3	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.15°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	108.9
HOOK LOAD (kLb)	120.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	29400 Litres
DAILY USAGE	3000 Litres
CUM. FUEL USED	28300 Litres
CUM. MUD MIXED	1799 Bbls
CUM. MUD LOSSES	1639 Bbls
CUM. GEL	5775 kg
CUM. BARITES	7625 kg

MUD PROPERTIES	
Time	8:00
Depth (m)	1389
Temp (° C)	52
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.91
Viscosity (sec)	52
PV / YP (cp/lb)	19 / 27
Gells (s/m)	7 / 9
API Filt. (cc)	6.4
Cake (/32")	1
Solids (% Vol)	6.5
Sand (% Vol)	0.75
MBT	6.25
pH (strip)	9.5
Chlorides (mg/l)	18000
KCL (%)	4
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	508

CHEMICAL USAGE	
Barite	65
Duo-Tec	1
Glute 25	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing	3.0	5.0
Circ & Condition	2.5	10.5
Coring		
D/O Cement		1.5
Drilling		74.5
Handle BHA	4.5	14.5
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		4.0
Rig Move		20.5
Rig Service		2.0
Safety		
Survey		13.0
Tight hole / Fishing	3.0	3.0
Tripping	11.0	40.5
Wait on Cement		5.0
Wash / Ream		5.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	240.0

DAILY MUD COSTS	$883.63
CUM. MUD COSTS	**$36,703.84**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:00	Pump out from 1389 to 1360m. RIH to 1379m, attempt to slide, hole tight. Pump out to 1339m
2:00	3:00	Pump out from 1339 to 1301m, hole tight
3:00	8:00	Hoist to prepare to plug back
8:00	9:00	Recover SlimPulse instrument & rack back DH Motor & MWD
9:00	12:30	Prepare 2-7/8" tubing stinger & tools
12:30	17:30	Run in hole to run isolation & kick-off plugs
17:30	19:30	Circulate hole clean and prepare Hi Vis pill for spotting. Place 20m hi vis pill.
19:30	20:00	POOH from 1203m to 1180m, rig up for cement ops.
20:00	20:30	Mix and Pump isolation plug #1, 17bbls of 15.6ppg slurry, displace and balance with Haliburton
20:30	21:30	POOH from 1180m to 1045m
21:30	22:00	Circulate btms up, no cement contamination.
22:00	23:30	POOH to 1025m, pump spacer, test lines, mix and pump 28bbls of 16.3-4ppg slurry, displace and balance with Halliburton
23:30	0:00	POOH from 1025m to 925m, reverse out and check for cement, no slury noted at shakers

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

26/08/05

REPORT # 11

WELL	**Peterborough 01**	**24:00 DEPTH**	**958m**	**24 HR PROG**	**13m**	**CUM. COSTS**	**$2,116,732**
RIG	Century Resources Ltd # 7	**FORMATION**	Dilwyn Fm	**PTD**	2075m	**DAILY COSTS**	$73,101.54

OP's TO 06:00 Directional drill 8 1/2" hole from 958m to 980m, 60% Silt 40% cement.

REMARKS: Time drill kick off, monitor cmt/formation %, slide 18m, rotate 9m, slide 8m **PERSONNEL ON SITE:** **39**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 29

SAFETY
1. Discuss BOP drills, & day's operations
2. Handling cement stinger

WEATHER AM Fine
PM Fine

BIT INFORMATION

WOB(kLb)	0-3	**JET V(fps)**	172
RPM		**H S I**	1.01
BIT NUMBER		**4**	
Size (in)		8.5	
Make		Smith	
Type		MF05TCPS	
IADC Code		427X	
Serial Number		MR5354	
T.F.A.(")		0.746	
Depth In (m)		945	
Depth Out (m)		IN	
Total Meters		13	
Hours		42.5	
ROP		0.3	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	400
AV - DP (fpm)	188
AV - DC (fpm)	295
SPP (psi)	900
SPP (calculated)	1080

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	66	**RATE**	66
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS

0.96° at 951.58m	
1.76° at 960.94m	

BHA # 4

TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	86.0
HOOK LOAD (kLb)	100.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	sliding
TORQUE OFF (Amps/Rel.)	sliding

ENVIRONMENTAL DATA

FUEL ON SITE	26700 Litres
DAILY USAGE	2700 Litres
CUM. FUEL USED	31000 Litres
CUM. MUD MIXED	1848 Bbls
CUM. MUD LOSSES	1736 Bbls
CUM. GEL	5775 kg
CUM. BARITES	7625 kg

MUD PROPERTIES

Time	22:00
Depth (m)	958
Temp (° C)	35
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.90
Viscosity (sec)	54
PV / YP (cp/lb)	17 / 30
Gells (s/m)	6 / 9
API Filt. (cc)	6.6
Cake (/32")	1
Solids (% Vol)	6.5
Sand (% Vol)	1
MBT	6.25
pH (strip)	10
Chlorides (mg/l)	17000
KCL (%)	3.5
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	481

CHEMICAL USAGE

Citric Acid	5
Defoam	1
Polypac UL	2
Polyplus	2
OS-1	2

OPERATION

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing	0.5	5.5
Circ & Condition		10.5
Coring		
D/O Cement		1.5
Drilling	3.0	77.5
Handle BHA	3.5	18.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	4.5
Rig Move		20.5
Rig Service		2.0
Safety		
Survey		13.0
Tight hole / Fishing		3.0
Tripping	8.5	49.0
Wait on Cement	6.5	11.5
Wash / Ream	1.0	6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline	0.5	0.5
Other		7.0
TOTALS	24.0	264.0

DAILY MUD COSTS	$736.54
CUM. MUD COSTS	**$37,548.74**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	Pump weight slug & lay out circulating head
0:30	2:00	POOH 4 1/2 drill pipe
2:00	4:00	Lay down 2 7/8" cement stinger
4:00	4:30	Rig down tubing tools
4:30	5:00	Slip 33' of drilling line
5:00	11:30	Wait on cement, rig service
11:30	13:00	Make up bit & change bent sub to 1.5 deg, shallow test Slim pulse and motor ok
13:00	15:30	RIH 15 stands of drill pipe
15:30	16:30	Lay out 30 singles of drill pipe
16:30	18:30	RIH to 903m, formation a little ratty, 10- 15k drag.
18:30	19:30	Lay out 16 singles of drill pipe to have a clean derrick for drilling ahead.
19:30	20:30	Wash from 899m to 944m. Firm cement at 944m, 10k with 300gpm. Orientate tool face
20:30	23:30	Commence time drilling/sliding from 944m to 958m as per directional plan. Monitor cement/formation percentages
23:30	0:00	Rig lost air and subsequently clutches, rotary, mud pumps, then power to shakers and partial black out.

SUPERVISOR:	S.Porter / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

27/08/05

REPORT # 12

WELL	**Peterborough 01**	**24:00 DEPTH**	**1136m**	**24 HR PROG**	**178m**	**CUM. COSTS**	**$2,185,125**
RIG	Century Resources Ltd # 7	**FORMATION**	Pember Mudstone	**PTD**	2075m	**DAILY COSTS**	$68,392.89
OP's TO 06:00	Continue to Slide/Rotate from 1136m to 1211m						
REMARKS:	Weekly safety meetings, Fire drill (26th).					**PERSONNEL ON SITE:**	**37**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**
		BOP TEST	19/08/05	**TEST DUE**	09/09/05		
AFD's: 30	**SAFETY**	1. Working as a team , helping new hands. Follow S.O.P's				**WEATHER AM**	Clear/cold
		2. General guide lines for body placement.				**PM**	Clear/cold

BIT INFORMATION

WOB(kLb)	0-10	**JET V(fps)**	232
RPM	0-90	**H S I**	2.48
BIT NUMBER		**4**	
Size (in)		8.5	
Make		Smith	
Type		MF05TCPS	
IADC Code		427X	
Serial Number		MR5354	
T.F.A.(")		0.746	
Depth In (m)		945	
Depth Out (m)		IN	
Total Meters		191	
Hours		66.5	
ROP		2.9	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	539
AV - DP (fpm)	254
AV - DC (fpm)	398
SPP (psi)	1575
SPP (calculated)	1600

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	89	**RATE**	89
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 420 @ 70		SCR: 700 @ 100	

SURVEYS

3.65° at 989.01m	2.14° at 1073.27m
9.37° at 1026.13m	2.15° at 1110.79m
3.72° at 1054.52m	2.29° at 1138.91m

BHA # 4

TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	95.4
HOOK LOAD (kLb)	115.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	5.0
DRAG DOWN (kLb)	5.0
TORQUE ON (Amps/Rel.)	0-7
TORQUE OFF (Amps/Rel.)	0-5

ENVIRONMENTAL DATA

FUEL ON SITE	23600 Litres
DAILY USAGE	3100 Litres
CUM. FUEL USED	34100 Litres
CUM. MUD MIXED	2088 Bbls
CUM. MUD LOSSES	1911 Bbls
CUM. GEL	5775 kg
CUM. BARITES	9625 kg

MUD PROPERTIES

Time	23:30
Depth (m)	1136
Temp (° C)	39
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.91
Viscosity (sec)	55
PV / YP (cp/lb)	19 / 26
Gells (s/m)	5 / 8
API Filt. (cc)	6.2
Cake (/32")	1
Solids (% Vol)	4.5
Sand (% Vol)	1
MBT	7.5
pH (strip)	9
Chlorides (mg/l)	19000
KCL (%)	3.5
PHPA (ppb)	1.3
ALC - 50 (K)	
Circ. Vol. (Bbl)	555

CHEMICAL USAGE

Barite	80
Citric Acid	6
Defoam	3
Duo-Tec	5
Polypac UL	8
Sod Bicarb	8
Pot chloride	30
Polyplus	6
OS-1	2

OPERATION

	HRS	CUM
Casing		9.0
Cementing		5.5
Circ & Condition		10.5
Coring		
D/O Cement		1.5
Drilling	24.0	101.5
Handle BHA		18.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		4.5
Rig Move		20.5
Rig Service		2.5
Safety		
Survey		13.0
Tight hole / Fishing		3.0
Tripping		49.0
Wait on Cement		11.5
Wash / Ream		6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	288.0

DAILY MUD COSTS	$4,921.89
CUM. MUD COSTS	**$42,470.63**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:00	Directional drill 8 1/2" hole from 958m to 1136m.Rotate/slide as required. 100% formation.

SUPERVISOR:	C.Dann / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

28/08/05

REPORT # 13

WELL	**Peterborough 01**	**24:00 DEPTH**	**1473m**	**24 HR PROG**	**337m**	**CUM. COSTS**	**$2,254,228**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$69,103.52
OP's TO 06:00	Drill 8 1/2" hole from 1473m to 1530m						
REMARKS:	Haliburton off location.					**PERSONNEL ON SITE:**	**37**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 31	**SAFETY**	1. Weekly safety meeting				**WEATHER AM**	Clear/cold
		2. Weekly safety meeting				**PM**	Clear/cold

BIT INFORMATION

WOB(kLb)	5-20	**JET V(fps)**	225
RPM	0-100	**H S I**	2.28
BIT NUMBER		**4**	
Size (in)		8.5	
Make		Smith	
Type		MF05TCPS	
IADC Code		427X	
Serial Number		MR5354	
T.F.A.(")		0.746	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		528	
Hours		50	
ROP		10.6	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	524
AV - DP (fpm)	247
AV - DC (fpm)	387
SPP (psi)	1950
SPP (calculated)	1730

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	86	**RATE**	87
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 420 @ 70		SCR: 700 @ 100	

SURVEYS

0.12° at 1297m	0.25° at 1410m
0.19° at 1326m	0.32° at 1438m
0.17° at 1354m	0.29° at 1466m

BHA # 4

TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	113.3
HOOK LOAD (kLb)	120.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	8-12
DRAG DOWN (kLb)	5-10
TORQUE ON (Amps/Rel.)	10-20
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA

FUEL ON SITE	18700 Litres
DAILY USAGE	4900 Litres
CUM. FUEL USED	39000 Litres
CUM. MUD MIXED	2338 Bbls
CUM. MUD LOSSES	2071 Bbls
CUM. GEL	5775 kg
CUM. BARITES	9625 kg

MUD PROPERTIES

Time	23:00
Depth (m)	1462
Temp (° C)	41
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.95
Viscosity (sec)	54
PV / YP (cp/lb)	20 / 29
Gells (s/m)	6 / 10
API Filt. (cc)	6.5
Cake (/32")	1
Solids (% Vol)	6.7
Sand (% Vol)	0.75
MBT	7.5
pH (strip)	9
Chlorides (mg/l)	19000
KCL (%)	3.5
PHPA (ppb)	1.3
ALC - 50 (K)	
Circ. Vol. (Bbl)	654

CHEMICAL USAGE

Caustic Soda	1
Duo-Tec	5
Polypac UL	10
Soda Ash	5
Pot chloride	80
Polyplus	10
OS-1	1

OPERATION

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition		10.5
Coring		
D/O Cement		1.5
Drilling	23.0	124.5
Handle BHA		18.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	5.0
Rig Move		20.5
Rig Service	0.5	3.0
Safety		
Survey		13.0
Tight hole / Fishing		3.0
Tripping		49.0
Wait on Cement		11.5
Wash / Ream		6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	312.0

DAILY MUD COSTS	$5,632.52
CUM. MUD COSTS	**$48,103.15**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	6:00	Continue to drill 8 1/2" hole from 1136m to 1220m
6:00	6:30	Change out swab on #2 mud pump
6:30	8:00	Continue to drll 8 1/2" hole from 1220m to 1239m
8:00	8:30	Change out wash pipe on Kelly.
8:30	0:00	Continue to drill 8 1/2" hole from 1239m to 1473m

SUPERVISOR:	C.Dann / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

29/08/05

REPORT # 14

WELL	**Peterborough 01**	**24:00 DEPTH**	**1613m**	**24 HR PROG**	**140m**	**CUM. COSTS**	**$2,324,154**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$69,925.93

OP's TO 06:00 Work tight hole from 1351m to 1011m, max overpull 90klbs, POOH 1011m to 983m, 20-30k

REMARKS: Tight hole from 1568m to 1351m **PERSONNEL ON SITE:** 35

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 32 **SAFETY** 1. Discussed recent ODE rig 16 incidents — **WEATHER AM** Clear/cold

2. Discussed recent ODE rig 16 incidents — **PM** Clear/cold

BIT INFORMATION

WOB(kLb)	15-30	**JET V(fps)**	225
RPM	60-100	**H S I**	2.28
BIT NUMBER		**4**	
Size (in)		8.5	
Make		Smith	
Type		MF05TCPS	
IADC Code		427X	
Serial Number		MR5354	
T.F.A.(")		0.746	
Depth In (m)		945	
Depth Out (m)		IN	
Total Meters		668	
Hours		67	
ROP		10.0	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	524
AV - DP (fpm)	247
AV - DC (fpm)	387
SPP (psi)	2000
SPP (calculated)	1810

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	86	**RATE**	87
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 540 @ 70		SCR: 820 @ 100	

SURVEYS

	0.35° at 1523m
0.29° at 1466m	0.50° at 1551m
0.19° at 1495m	0.38° at 1579m

BHA # 4

TOOL	LENGTH
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	120.8
HOOK LOAD (kLb)	140.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	80.0
DRAG DOWN (kLb)	70.0
TORQUE ON (Amps/Rel.)	10-20
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA

FUEL ON SITE	12600 Litres
DAILY USAGE	6100 Litres
CUM. FUEL USED	45100 Litres
CUM. MUD MIXED	2573 Bbls
CUM. MUD LOSSES	2271 Bbls
CUM. GEL	5775 kg
CUM. BARITES	10625 kg

MUD PROPERTIES

Time	2300
Depth (m)	1613
Temp (° C)	44
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.86
Viscosity (sec)	51
PV / YP (cp/lb)	20 / 21
Gells (s/m)	6 / 12
API Filt. (cc)	6.2
Cake (/32")	1
Solids (% Vol)	5.8
Sand (% Vol)	0.5
MBT	7.5
pH (strip)	9.5
Chlorides (mg/l)	22000
KCL (%)	3.8
PHPA (ppb)	1.3
ALC - 50 (K)	
Circ. Vol. (Bbl)	643

CHEMICAL USAGE

Barite	40
Caustic Soda	1
Duo-Tec	5
Glute 25	2
Polypac UL	8
Soda Ash	8
Pot chloride	150
Polyplus	8
OS-1	1

OPERATION

	HRS	CUM
Casing		9.0
Cementing		5.5
Circ & Condition	0.5	11.0
Coring		
D/O Cement		1.5
Drilling	17.0	141.5
Handle BHA		18.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		5.0
Rig Move		20.5
Rig Service	0.5	3.5
Safety		
Survey		13.0
Tight hole / Fishing	5.5	8.5
Tripping	0.5	49.5
Wait on Cement		11.5
Wash / Ream		6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	336.0

DAILY MUD COSTS	$6,954.93
CUM. MUD COSTS	**$55,058.08**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	9:30	Continue to drill 8 1/2" hole from 1473m to 1558m
9:30	10:00	Service kelly and wash pipe etc
10:00	17:30	Continue to drill 8 1/2" hole from 1558m to 1613m, decision made to POOH for Bit/BHA change
17:30	18:00	Circulate hole clean, monitor shakers for cuttings.work pipe from 1613m to 1604m while circulating clean.
18:00	18:30	Flow check well and Pump slug. POOH from 1604m to 1568m 20-30k overpull. Hole taking correct fluid
18:30	0:00	Work tight hole from 1568m to 1351m. Pump out 28 singles, string weight 130klbs, max overpull 90klbs, no sign of packing off
		Pump out singles and ream as required. Stabilizer spiraling, jars not required to free pipe down.
		No torque higher than off bottom torque while drilling.
		No sign of packing off, Obstrcutions not at regular intervals to indicate key seating.
		Once hole has been wiped once it will pass pipe easily with minimal overpull.
		Work and condition hole as required.

SUPERVISOR:	C.Dann / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

30/08/05

REPORT # 15

WELL	**Peterborough 01**	**24:00 DEPTH**	**1613m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$2,388,104**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$63,949.96

OP's TO 06:00 Continue to RIH stands from from 683m to1173m, wash to 6am bit depth 1295, stab depth 630m

REMARKS: Rig black out during horozontal rain storm, 3rd time. **PERSONNEL ON SITE:** **35**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 33 **SAFETY** 1. Working tight hole, slips trips and falls; 2. Working tight hole, slips trips and falls

WEATHER AM Clear/cold **PM** Clear/cold

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	232
RPM	100	**H S I**	2.48
BIT NUMBER		**4**	
Size (in)		8.5	
Make		Smith	
Type		MF05TCPS	
IADC Code		427X	
Serial Number		MR5354	
T.F.A.(")		0.746	
Depth In (m)		945	
Depth Out (m)		IN	
Total Meters		668.1	
Hours		106.5	
ROP		6.3	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	539
AV - DP (fpm)	254
AV - DC (fpm)	398
SPP (psi)	1400
SPP (calculated)	1850

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	89	**RATE**	89
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS	

BHA # 4	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	120.8
HOOK LOAD (kLb)	90.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	50.0
DRAG DOWN (kLb)	50.0
TORQUE ON (Amps/Rel.)	5-10
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA	
FUEL ON SITE	26300 Litres
DAILY USAGE	2500 Litres
CUM. FUEL USED	47600 Litres
CUM. MUD MIXED	2683 Bbls
CUM. MUD LOSSES	2384 Bbls
CUM. GEL	5775 kg
CUM. BARITES	11375 kg

MUD PROPERTIES	
Time	2300
Depth (m)	1613
Temp (° C)	
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.76
Viscosity (sec)	52
PV / YP (cp/lb)	20 / 20
Gells (s/m)	4 / 12
API Filt. (cc)	5
Cake (/32")	2
Solids (% Vol)	6.5
Sand (% Vol)	0.5
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	26000
KCL (%)	4.7
PHPA (ppb)	1.3
ALC - 50 (K)	
Circ. Vol. (Bbl)	485

CHEMICAL USAGE	
Barite	30
Polypac UL	9
Soda Ash	4
Pot chloride	50
Polyplus	4
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition		11.0
Coring		
D/O Cement		1.5
Drilling		141.5
Handle BHA		18.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	5.5
Rig Move		20.5
Rig Service		3.5
Safety		
Survey		13.0
Tight hole / Fishing	23.5	32.0
Tripping		49.5
Wait on Cement		11.5
Wash / Ream		6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	360.0

DAILY MUD COSTS	$2,978.96
CUM. MUD COSTS	**$58,037.04**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	POOH from 1351m to 1239m on the elevators
1:00	1:30	Circculate 10mins, slug pipe, flow check, rack kelly
1:30	2:30	POOH from 1239m to 1088m. @1088m excessive overpull. 60k over string weight.
2:30	3:00	Pick up Kelly and ciculate btms up to check for any indications of hole cave in's etc
3:00	18:00	POOH 1088m to 1011m, pump from 1011m to 683m, Work tight spots/ream as required. Limit overpull as string lightens to 60klbs
18:00	19:00	RIH 3 singles and and ream/ condition hole due to unpassable point at 683m, lay singles back out
19:00	22:00	Work and ream from 683m to 659m, Jar down to free drill string
22:00	22:30	RIH single and work string/ ream and pump to try and clean up.
22:30	23:00	Black out on rig, power still avaliable for driller but zero lighting
23:00	0:00	Make up string stabilizer to string at 665m bit depth, and rih to 683m. Stab placed in string to ream out formation @.659m
		At 659m string became difficult to move for 30mins. After jarring down it was apparent that the avaliable string weight was making
		it very difficult to slump the pipe free when pulled tight.
		Worked single and string for extended period to check for any change in obstruction position or the ability to pull through it.
		No change.
		Contact town to discuss options, agreed to run string stabilizer as a reamer to condition hole for trip out.

SUPERVISOR:	C.Dann / B.Webb	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

31/08/05

REPORT # 16

WELL	**Peterborough 01**	**24:00 DEPTH**	**1613m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$2,449,275**
RIG	Century Resources Ltd # 7	**FORMATION**	Paaratte	**PTD**	2075m	**DAILY COSTS**	$61,171.00

OP's TO 06:00 Cont to RIH from 892m to 1595m. Drill ahead from (1595m to 1614m) corrected depth.

REMARKS: Bit #4 graded 4/3/BT/4/4/SD/ HR-BHA, Bit necked. **PERSONNEL ON SITE:** **36**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**634psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 34

SAFETY 1. Short change, communication, PPE
2. Safe working Practices, Take care during inclimate weather

WEATHER AM Clear/cold
PM Clear/cold

BIT INFORMATION

WOB(kLb)		**JET V(fps)**	213
RPM	100	**H S I**	
BIT NUMBER		**2RR1**	
Size (in)		8.5	
Make		Smith	
Type		M90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.813	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		1613	
Hours			
ROP			
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	539
AV - DP (fpm)	254
AV - DC (fpm)	398
SPP (psi)	1400
SPP (calculated)	1790

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	89	**RATE**	89
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS

BHA # 4

TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	47.1
STRING WT (kLb)	120.8
HOOK LOAD (kLb)	120.0
WT BELOW JARS (kLb)	36.8
DRAG UP (kLb)	5-10
DRAG DOWN (kLb)	5-10
TORQUE ON (Amps/Rel.)	5-10
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA

FUEL ON SITE	22700 Litres
DAILY USAGE	3600 Litres
CUM. FUEL USED	51200 Litres
CUM. MUD MIXED	2683 Bbls
CUM. MUD LOSSES	2384 Bbls
CUM. GEL	5775 kg
CUM. BARITES	11375 kg

MUD PROPERTIES

Time	2300
Depth (m)	1613
Temp (° C)	
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.30
ECD (ppg)	9.79
Viscosity (sec)	51
PV / YP (cp/lb)	20 / 19
Gells (s/m)	6 / 14
API Filt. (cc)	5
Cake (/32")	2
Solids (% Vol)	6.5
Sand (% Vol)	0.5
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	26000
KCL (%)	4.7
PHPA (ppb)	1.3
ALC - 50 (K)	
Circ. Vol. (Bbl)	498

CHEMICAL USAGE

OPERATION

	HRS	CUM
Casing		9.0
Cementing		5.5
Circ & Condition		11.0
Coring		
D/O Cement		1.5
Drilling		141.5
Handle BHA	2.0	20.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		5.5
Rig Move		20.5
Rig Service	1.0	4.5
Safety		
Survey		13.0
Tight hole / Fishing	8.0	40.0
Tripping	13.0	62.5
Wait on Cement		11.5
Wash / Ream		6.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	384.0

DAILY MUD COSTS	
CUM. MUD COSTS	**$58,037.04**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	Wash and ream 695-723m, no torque and washed easily with 400gpm, zero WOB
1:00	3:00	RIH from derrick 723m to 1126m, hole in good condition and no stabilizer spiraling observed, hole displacing correct fluid.
3:00	6:00	Once string stabilizer in open hole commence washing from 1126m to 1285m
6:00	7:00	Ream 1285m to 1286m with 20-30klbs to work through 1st time, after reaming it was passed with out pumps ok.
7:00	8:00	Wash and ream from 1286m to 1332m bit depth, 620m to 667m stab depth
8:00	16:00	Flow check well, pump slug, flow check, POOH from 1332m to surface. @768m bit depth 20-25klbs overpull, worked through ok.
16:00	17:00	Slip and cut drilling line
17:00	19:00	make up re-run M90 PDC , Service slim pulse, change batteries. Install in BHA. Shallow test motor and pulse ok.
19:00	22:30	RIH bha to shoe@495m
22:30	23:00	Break circulation and change out saver sub
23:00	0:00	Continue to RIH to 892m

SUPERVISOR:	Dann / Webb/Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

01/09/05

REPORT # 17

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**1867m**	**24 HR PROG**	**272m**	**CUM. COSTS**	**$2,515,067**
RIG	Century Resources Ltd # 7	**FORMATION**	Belfast Mudstone	**PTD**	2075m	**DAILY COSTS**	$65,791.98

OP's TO 06:00 Drill from 1867m to 1923m - circulate for wiper trip

REMARKS: Directional drill 5.2% slide & 94.8% rotate **PERSONNEL ON SITE:** **36**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**617psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 35

SAFETY 1. Inspect d/line, brake, linkages, koomey and choke setup.
2. Clean and inspect casing. Working in wet conditions, Inspections.

WEATHER AM Showers/cold
PM Clear/cold

BIT INFORMATION			
WOB(kLb)	10-15	**JET V(fps)**	203
RPM	100	**H S I**	1.86
BIT NUMBER		**2RR1**	
Size (in)		8.5	
Make		Smith	
Type		M90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.813	
Depth In (m)		1595	
Depth Out (m)		IN	
Total Meters		272	
Hours		19	
ROP		14.3	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	515
AV - DP (fpm)	243
AV - DC (fpm)	380
SPP (psi)	2000
SPP (calculated)	1820

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	85	**RATE**	85
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 500 @ 60		SCR: 600 @ 70	

SURVEYS	
0.72° at 1589m	2.19° at 1758m
0.89° at 1645m	2.34° at 1823m
1.51° at 1710m	3.63° at 1879m

BHA # 4	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	46.9
STRING WT (kLb)	133.7
HOOK LOAD (kLb)	148.0
WT BELOW JARS (kLb)	36.7
DRAG UP (kLb)	7.0
DRAG DOWN (kLb)	8.0
TORQUE ON (Amps/Rel.)	7
TORQUE OFF (Amps/Rel.)	0-7

ENVIRONMENTAL DATA	
FUEL ON SITE	19500 Litres
DAILY USAGE	3200 Litres
CUM. FUEL USED	54400 Litres
CUM. MUD MIXED	2874 Bbls
CUM. MUD LOSSES	2541 Bbls
CUM. GEL	5775 kg
CUM. BARITES	11375 kg

MUD PROPERTIES	
Time	2300
Depth (m)	1860
Temp (° C)	49
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.50
ECD (ppg)	9.96
Viscosity (sec)	45
PV / YP (cp/lb)	19 / 18
Gells (s/m)	6 / 11
API Filt. (cc)	5.4
Cake (/32")	2
Solids (% Vol)	7.5
Sand (% Vol)	0.5
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	26000
KCL (%)	4
PHPA (ppb)	1.5
ALC - 50 (K)	
Circ. Vol. (Bbl)	772

CHEMICAL USAGE	
Caustic Soda	1
Glute 25	1
Polypac UL	6
Soda Ash	10
Pot chloride	92
Polyplus	6
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition		11.0
Coring		
D/O Cement		1.5
Drilling	19.0	160.5
Handle BHA		20.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	0.5	6.0
Rig Move		20.5
Rig Service		4.5
Safety		
Survey		13.0
Tight hole / Fishing		40.0
Tripping	3.0	65.5
Wait on Cement		11.5
Wash / Ream	1.5	8.0
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		
Wireline		
Other		7.0
TOTALS	24.0	408.0

DAILY MUD COSTS	$3,620.98
CUM. MUD COSTS	**$61,658.02**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	3:00	Tagged at 1549.5m (corrected depth - Current TD adjusted from 1613m to 1595m).
3:00	4:30	Wash down four joints to 1595m.
4:30	16:30	Directional drill ahead from 1595m to 1773m.
16:30	17:00	Circulate while repairs are made to mud pump 2. (Change out swab)
17:00	0:00	Continue to directional drill 8 1/2" hole from 1773m to 1867m.

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

02/09/05

REPORT # 18

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**1985m**	**24 HR PROG**	**118m**	**CUM. COSTS**	**$2,580,090**
RIG	Century Resources Ltd # 7	**FORMATION**	Waarre	**PTD**	2075m	**DAILY COSTS**	$65,022.63
OP's TO 06:00	Drill to 1988m, Circulate, Pull out for bit change						
REMARKS:	Directional drill 7.5% slide & 92.5% rotate					**PERSONNEL ON SITE:**	**36**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**617psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 36	**SAFETY**	1. Well monioting & drilling gas zones				**WEATHER AM**	Fine / Cool
		2. Well monioting & drilling gas zones				**PM**	Fine / Cool

BIT INFORMATION			
WOB(kLb)	10-15	**JET V(fps)**	203
RPM		**H S I**	1.86
BIT NUMBER		**2RR1**	
Size (in)		8.5	
Make		Smith	
Type		M90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.813	
Depth In (m)		1595	
Depth Out (m)		IN	
Total Meters		390	
Hours		36	
ROP		10.8	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	515
AV - DP (fpm)	243
AV - DC (fpm)	380
SPP (psi)	2000
SPP (calculated)	1820

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	85	**RATE**	85
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 600 @ 70		SCR: 880 @ 100	

SURVEYS	
	3.36° at 1964m
3.42° at 1908m	3.74° at 1972m
3.85° at 1936m	4.40° at 1988m

BHA # 4	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	46.9
STRING WT (kLb)	140.0
HOOK LOAD (kLb)	160.0
WT BELOW JARS (kLb)	36.7
DRAG UP (kLb)	5-10
DRAG DOWN (kLb)	5-10
TORQUE ON (Amps/Rel.)	5-10
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA	
FUEL ON SITE	14000 Litres
DAILY USAGE	5500 Litres
CUM. FUEL USED	59900 Litres
CUM. MUD MIXED	3054 Bbls
CUM. MUD LOSSES	2704 Bbls
CUM. GEL	5775 kg
CUM. BARITES	12375 kg

MUD PROPERTIES	
Time	
Depth (m)	1985
Temp (° C)	52
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.50
ECD (ppg)	9.93
Viscosity (sec)	45
PV / YP (cp/lb)	17 / 18
Gells (s/m)	5 / 10
API Filt. (cc)	5
Cake (/32")	1
Solids (% Vol)	7.5
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	30000
KCL (%)	4
PHPA (ppb)	1.5
ALC - 50 (K)	
Circ. Vol. (Bbl)	774

CHEMICAL USAGE	
Barite	40
Caustic Soda	1
Glute 25	1
Polypac UL	8
Soda Ash	3
Pot chloride	90
Polyplus	6
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition	2.0	13.0
Coring		
D/O Cement		1.5
Drilling	17.0	177.5
Handle BHA		20.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	1.5	7.5
Rig Move		20.5
Rig Service	0.5	5.0
Safety		
Survey		13.0
Tight hole / Fishing		40.0
Tripping		65.5
Wait on Cement		11.5
Wash / Ream		8.0
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip	3.0	3.0
Wireline		
Other		7.0
TOTALS	24.0	432.0

DAILY MUD COSTS	$4,051.63
CUM. MUD COSTS	**$65,709.65**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	5:00	Continue to directional drill 8 1/2" hole from 1867m to 1923m
5:00	6:00	Circulate sample and lag check - flow check well & spot slug
6:00	8:00	Wiper trip to 1732m - hole good
8:00	9:30	Rig repair - hydraulic leak (circulate & rotate pipe)
9:30	10:00	Rig Service
10:00	11:00	RIH from 1714m to 1911m - break circulation & conduct SCR
11:00	14:30	Continue to directional drill 8 1/2" hole from 1923m to 1940m
14:30	19:00	Control drill from 1940m to 1975m
19:00	20:00	Circulate sample & flow check
20:00	0:00	Drill from 1975m to 1985m

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

03/09/05

REPORT # 19

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**1988m**	**24 HR PROG**	**3m**	**CUM. COSTS**	**$2,642,616**
RIG	Century Resources Ltd # 7	**FORMATION**	Waarre	**PTD**	2075m	**DAILY COSTS**	$62,526.14
OP's TO 06:00	Cont POOH. Rack back BHA and break out & lay down directional assembly.						
REMARKS:	Slow ROP. POOH for bit change at 1988m. Slow trip out with tight hole					**PERSONNEL ON SITE:**	**36**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**609psi**
		BOP TEST	19/08/05	**TEST DUE**	09/09/05		
AFD's: 37	**SAFETY**	1. IADC Safety Alerts 35-2005, 36-2005 & 37-2005				**WEATHER AM**	Fine / Cool
		2. IADC Safety Alerts 35-2005, 36-2005 & 37-2005				**PM**	Fine / Cool

BIT INFORMATION			
WOB(kLb)	15-25	**JET V(fps)**	203
RPM		**H S I**	1.88
BIT NUMBER		**2RR1**	
Size (in)		8.5	
Make		Smith	
Type		M90	
IADC Code		M223	
Serial Number		JT6937	
T.F.A.(")		0.813	
Depth In (m)		1595	
Depth Out (m)		1988	
Total Meters		393	
Hours		40.5	
ROP		9.7	
Condition Out		5 7 BT A X 4 RG PR	

FLOW DATA	
CIRC. RATE (gpm)	515
AV - DP (fpm)	243
AV - DC (fpm)	380
SPP (psi)	2050
SPP (calculated)	1860

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	85	**RATE**	85
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 600 @ 70		SCR: 880 @ 100	

SURVEYS		

BHA # 4	
TOOL	**LENGTH**
Rock Bit	0.25
A675M7850XP, 1.5°	7.65
Float Sub	0.48
8-1/4" String Stab	1.81
SlimPulse	9.81
6-3/4" NMDC	9.48
x/o	0.51
14 x 6-1/2" DC's	129.00
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	224.38
BHA WEIGHT(kLb)	46.8
STRING WT (kLb)	139.9
HOOK LOAD (kLb)	160.0
WT BELOW JARS (kLb)	36.6
DRAG UP (kLb)	5-10
DRAG DOWN (kLb)	5-10
TORQUE ON (Amps/Rel.)	5-10
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA	
FUEL ON SITE	31900 Litres
DAILY USAGE	4100 Litres
CUM. FUEL USED	64000 Litres
CUM. MUD MIXED	3109 Bbls
CUM. MUD LOSSES	2774 Bbls
CUM. GEL	5775 kg
CUM. BARITES	14250 kg

MUD PROPERTIES	
Time	23:00
Depth (m)	1988
Temp (° C)	
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.60
ECD (ppg)	10.06
Viscosity (sec)	48
PV / YP (cp/lb)	18 / 18
Gells (s/m)	6 / 12
API Filt. (cc)	5
Cake (/32")	1
Solids (% Vol)	8
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	30000
KCL (%)	4
PHPA (ppb)	1.5
ALC - 50 (K)	
Circ. Vol. (Bbl)	485

CHEMICAL USAGE	
Barite	75
Glute 25	1
Polypac UL	2
Sod Bicarb	1
Soda Ash	2
Pot chloride	20
Polyplus	1
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition	1.5	14.5
Coring		
D/O Cement		1.5
Drilling	4.5	182.0
Handle BHA		20.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	1.0	8.5
Rig Move		20.5
Rig Service		5.0
Safety		
Survey		13.0
Tight hole / Fishing		40.0
Tripping	17.0	82.5
Wait on Cement		11.5
Wash / Ream		8.0
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		3.0
Wireline		
Other		7.0
TOTALS	24.0	456.0

DAILY MUD COSTS	$1,555.14
CUM. MUD COSTS	**$67,264.79**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	4:30	Drill from 1985m to 1988m
4:30	5:00	Circulate, flow check & spot slug
5:00	15:00	Pull out of hole for bit & BHA change - Tight hole 20 - 70k overpull from 1668m to 1490m and from 1218m to 1171m.
15:00	16:00	Rig repair - drum clutch relay valve
16:00	18:00	Pull out of hole from 1142m for bit & BHA change - Tight hole 20 - 70k overpull from 1087m to 1049m.
18:00	19:00	P/up kelly & break circulation at 1049m - rotate, reciprocate & circulate drill string
19:00	0:00	Pull out of hole from 1049m for bit & BHA change - Tight hole 20 - 70k overpull from 1049m to 993m.

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

04/09/05

REPORT # 20

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**1993m**	**24 HR PROG**	**5m**	**CUM. COSTS**	**$2,716,191**
RIG	Century Resources Ltd # 7	**FORMATION**	Waarre	**PTD**	2075m	**DAILY COSTS**	$73,575.12

OP's TO 06:00 Drilling 8 1/2" hole from 1993m to 2003m.

REMARKS: Cont POOH for BHA & bit. No tight hole from 993m to surface. RIH. **PERSONNEL ON SITE:** **33**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**609psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 38

SAFETY
1. Safety meeting held on daily opps and POOH
2. Weekly meeting. Inspection of d/man, d/line, brakes, koomey and choke setup.

WEATHER AM Fine / Cool
PM Cool / Cloudy

BIT INFORMATION

WOB(kLb)	20-25	**JET V(fps)**	310
RPM	70-80	**H S I**	3.70
BIT NUMBER		**5**	
Size (in)		8.5	
Make		Hughes	
Type		GT-90	
IADC Code		437	
Serial Number		6006566	
T.F.A.(")		0.451	
Depth In (m)		1988	
Depth Out (m)		IN	
Total Meters		5	
Hours		5	
ROP		1.0	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	436
AV - DP (fpm)	205
AV - DC (fpm)	322
SPP (psi)	1800
SPP (calculated)	1700

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	72	**RATE**	72
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 520 @ 60		SCR: 620 @ 70	

SURVEYS

BHA # 6

TOOL	**LENGTH**
Rock Bit	0.25
Float Sub	0.89
2 x 6-1/4" DC's	18.42
8-1/2" String Stab	1.37
12 x 6-1/4" DC's	110.57
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	196.89
BHA WEIGHT(kLb)	41.0
STRING WT (kLb)	135.7
HOOK LOAD (kLb)	158.0
WT BELOW JARS (kLb)	30.7
DRAG UP (kLb)	10.0
DRAG DOWN (kLb)	10.0
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA

FUEL ON SITE	29600 Litres
DAILY USAGE	2300 Litres
CUM. FUEL USED	66300 Litres
CUM. MUD MIXED	3164 Bbls
CUM. MUD LOSSES	2844 Bbls
CUM. GEL	5775 kg
CUM. BARITES	14250 kg

MUD PROPERTIES

Time	23:00
Depth (m)	1993
Temp (° C)	48
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.60
ECD (ppg)	10.06
Viscosity (sec)	46
PV / YP (cp/lb)	17 / 19
Gells (s/m)	6 / 14
API Filt. (cc)	4.8
Cake (/32")	1
Solids (% Vol)	8
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.3
Chlorides (mg/l)	30000
KCL (%)	4
PHPA (ppb)	1.5
ALC - 50 (K)	
Circ. Vol. (Bbl)	768

CHEMICAL USAGE

Caustic Soda	1
Glute 25	1
Polypac UL	2
Sod Bicarb	1
Polyplus	1
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition	1.0	15.5
Coring		
D/O Cement		1.5
Drilling	5.0	187.0
Handle BHA	2.0	22.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		8.5
Rig Move		20.5
Rig Service	0.5	5.5
Safety	0.5	0.5
Survey		13.0
Tight hole / Fishing		40.0
Tripping	13.0	95.5
Wait on Cement		11.5
Wash / Ream	1.5	9.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		3.0
Wireline		
Other	0.5	7.5
TOTALS	24.0	480.0

DAILY MUD COSTS	$604.12
CUM. MUD COSTS	**$67,868.91**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	5:30	Pull out of hole from 993m for bit & BHA change
5:30	7:30	Break out & lay down Schlumberger directional tools
7:30	8:00	Clean rig floor & TBT
8:00	10:00	Make up new BHA & RIH to 440m
10:00	10:30	Pick up kelly & break circulation
10:30	11:00	Rig Service
11:00	11:30	Slip 33' of drilling line
11:30	13:00	RIH to 1106m
13:00	13:30	Pick up kelly & break circulation
13:30	15:00	RIH to 1434m
15:00	15:30	Break circulation
15:30	17:30	Cont to RIH from 1434m to 1931m
17:30	19:00	Pick up kelly. Wash and ream from 1931m to 1988m
19:00	0:00	Drill ahead from 1988m to 1993m

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

05/09/05

REPORT # 21

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2023m**	**24 HR PROG**	**30m**	**CUM. COSTS**	**$2,764,743**
RIG	Century Resources Ltd # 7	**FORMATION**	Waarre	**PTD**	2075m	**DAILY COSTS**	$48,552.21

OP's TO 06:00 Drilling 8 1/2" hole from 2023m to 2040m

REMARKS: Slow drilling. Power outage @ 6:00hrs **PERSONNEL ON SITE:** **33**

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**617psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 39

SAFETY 1. Picking up kelly. Inspections. Koomey pressure

2. General housekeeping. Inspections and koomey pressure

WEATHER AM Fine / Cool

PM Fine / Cool

BIT INFORMATION			
WOB(kLb)	10-35	**JET V(fps)**	310
RPM	65-70	**H S I**	3.66
BIT NUMBER		**5**	
Size (in)		8.5	
Make		Hughes	
Type		GT-90	
IADC Code		437	
Serial Number		6006566	
T.F.A.(")		0.451	
Depth In (m)		1988	
Depth Out (m)		IN	
Total Meters		35	
Hours		27	
ROP		1.3	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	436
AV - DP (fpm)	205
AV - DC (fpm)	322
SPP (psi)	1800
SPP (calculated)	1680

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	72	**RATE**	72
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 480 @ 60		SCR: 600 @ 70	

SURVEYS	
5.25° at 2005m	

BHA # 6	
TOOL	**LENGTH**
Rock Bit	0.25
Float Sub	0.89
2 x 6-1/4" DC's	18.42
8-1/2" String Stab	1.37
12 x 6-1/4" DC's	110.57
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	196.89
BHA WEIGHT(kLb)	41.0
STRING WT (kLb)	137.6
HOOK LOAD (kLb)	165.0
WT BELOW JARS (kLb)	30.8
DRAG UP (kLb)	10.0
DRAG DOWN (kLb)	10.0
TORQUE ON (Amps/Rel.)	15-20
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA	
FUEL ON SITE	24800 Litres
DAILY USAGE	4800 Litres
CUM. FUEL USED	71100 Litres
CUM. MUD MIXED	3342 Bbls
CUM. MUD LOSSES	3024 Bbls
CUM. GEL	5800 kg
CUM. BARITES	14250 kg

MUD PROPERTIES	
Time	23:00
Depth (m)	2022
Temp (° C)	53
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.50
ECD (ppg)	9.91
Viscosity (sec)	47
PV / YP (cp/lb)	17 / 20
Gells (s/m)	4 / 8
API Filt. (cc)	4.5
Cake (/32")	1
Solids (% Vol)	7.5
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	31000
KCL (%)	4
PHPA (ppb)	1.6
ALC - 50 (K)	
Circ. Vol. (Bbl)	796

CHEMICAL USAGE	
Caustic Soda	1
Duo-Tec	2
KCL	10
Polypac UL	8
Sod Bicarb	5
Trugel 13A	1
Polyplus	4
OS-1	1

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition		15.5
Coring		
D/O Cement		1.5
Drilling	22.0	209.0
Handle BHA		22.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs	1.0	9.5
Rig Move		20.5
Rig Service	0.5	6.0
Safety		0.5
Survey	0.5	13.5
Tight hole / Fishing		40.0
Tripping		95.5
Wait on Cement		11.5
Wash / Ream		9.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		3.0
Wireline		
Other		7.5
TOTALS	24.0	504.0

DAILY MUD COSTS	$2,487.21
CUM. MUD COSTS	**$70,356.12**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	6:00	Continue to drill 8 1/2" hole from 1993m to 2000m
6:00	7:00	Power failure. Change generator and rectify problem
7:00	18:30	Continue to drill 8 1/2" hole from 2000m to 2017m
18:30	19:00	Rig Service
19:00	19:30	Circulate and run wireline survey at 2005m
19:30	0:00	Continue to drill 8 1/2" hole from 2017m to 2023m

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

06/09/05

REPORT # 22

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2070m**	**24 HR PROG**	**47m**	**CUM. COSTS**	**$2,812,234**
RIG	Century Resources Ltd # 7	**FORMATION**	Eumeralla	**PTD**	2075m	**DAILY COSTS**	$47,490.65

OP's TO 06:00 Trip out of hole for logging

REMARKS: Total depth of 2070m reached at 20:30 hrs **PERSONNEL ON SITE:** 32

LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**617psi**	**BOP TEST**	19/08/05	**TEST DUE**	09/09/05

AFD's: 40

SAFETY 1. Toolbox meeting (running survey). Inspections

2. Loading and unloading using loader. Inspections. Koomey pressure

WEATHER AM Fine / Cool

PM Fine / Cool

BIT INFORMATION

WOB(kLb)	20-30	**JET V(fps)**	310
RPM	85	**H S I**	3.66
BIT NUMBER		**5**	
Size (in)		8.5	
Make		Hughes	
Type		GT-90	
IADC Code		437	
Serial Number		6006566	
T.F.A.(")		0.451	
Depth In (m)		1988	
Depth Out (m)		IN	
Total Meters		82	
Hours		47	
ROP		1.7	
Condition Out			

FLOW DATA

CIRC. RATE (gpm)	436
AV - DP (fpm)	205
AV - DC (fpm)	322
SPP (psi)	1800
SPP (calculated)	1640

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE	72	**RATE**	72
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"
SCR: 440 @ 60		SCR: 550 @ 70	

SURVEYS

3° at 2033m	
3..5° at 2062m	

BHA # 6

TOOL	LENGTH
Rock Bit	0.25
Float Sub	0.89
2 x 6-1/4" DC's	18.42
8-1/2" String Stab	1.37
12 x 6-1/4" DC's	110.57
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	196.89
BHA WEIGHT(kLb)	41.0
STRING WT (kLb)	140.0
HOOK LOAD (kLb)	160.0
WT BELOW JARS (kLb)	30.8
DRAG UP (kLb)	10.0
DRAG DOWN (kLb)	10.0
TORQUE ON (Amps/Rel.)	15-20
TORQUE OFF (Amps/Rel.)	5-10

ENVIRONMENTAL DATA

FUEL ON SITE	20000 Litres
DAILY USAGE	4800 Litres
CUM. FUEL USED	75900 Litres
CUM. MUD MIXED	3487 Bbls
CUM. MUD LOSSES	3124 Bbls
CUM. GEL	5800 kg
CUM. BARITES	15000 kg

MUD PROPERTIES

Time	21:30
Depth (m)	2070
Temp (° C)	53
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.50
ECD (ppg)	9.86
Viscosity (sec)	43
PV / YP (cp/lb)	15 / 20
Gells (s/m)	3 / 7
API Filt. (cc)	4.4
Cake (/32")	1
Solids (% Vol)	7.5
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	32000
KCL (%)	4
PHPA (ppb)	1.5
ALC - 50 (K)	
Circ. Vol. (Bbl)	796

CHEMICAL USAGE

Barite	30
Caustic Soda	1
Duo-Tec	1
Glute 25	1
KCL	30
Polypac UL	6
Soda Ash	3
Polyplus	3

OPERATION

OPERATION	HRS	CUM
Casing		9.0
Cementing		5.5
Circ & Condition	1.0	16.5
Coring		
D/O Cement		1.5
Drilling	20.0	229.0
Handle BHA		22.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		9.5
Rig Move		20.5
Rig Service		6.0
Safety		0.5
Survey	1.0	14.5
Tight hole / Fishing		40.0
Tripping		95.5
Wait on Cement		11.5
Wash / Ream		9.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip	2.0	5.0
Wireline		
Other		7.5
TOTALS	24.0	528.0

DAILY MUD COSTS	$2,425.65
CUM. MUD COSTS	**$72,781.77**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	8:30	Drill ahead from 2023m to 2045m
8:30	9:00	Circulate and run wireline survey at 2033m (3 deg)
9:00	20:30	Drill ahead from 2045m to 2070m TD - flow check drilling break @ 2056m
20:30	21:30	Circulate bottoms up 1.5 times and flow check
21:30	22:00	Run wireline survey at 2062m (3 1/2 deg)
22:00	23:30	Flow check and pump pill. POOH for 10 stand wiper trip from 2070m to 1886m
23:30	0:00	RIH from 1886m to 2070m. Pick up kelly

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

07/09/05

REPORT # 23

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2070m**	**24 HR PROG**	**0m**	**CUM. COSTS**	**$2,860,025**
RIG	Century Resources Ltd # 7	**FORMATION**	Eumeralla	**PTD**	2075m	**DAILY COSTS**	$47,790.90
OP's TO 06:00	Finish logging at 5:00 hrs. Rig down						
REMARKS:	Tight hole encountered. Maximum overpull 60k					**PERSONNEL ON SITE:**	**36**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	**617psi**
BOP TEST	19/08/05	**TEST DUE**	09/09/05				
AFD's: 41	**SAFETY**	1. Inspections and Koomey pressures				**WEATHER AM**	Fine / Cool
		2. Running wireline logs. Inspections and koomey pressures				**PM**	Fine / Cool

BIT INFORMATION

WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER		**5**	
Size (in)		8.5	
Make		Hughes	
Type		GT-90	
IADC Code		437	
Serial Number		6006566	
T.F.A.(")		0.451	
Depth In (m)		1988	
Depth Out (m)		2070.1	
Total Meters		82.1	
Hours		47	
ROP		1.7	
Condition Out		3 7 CT G E 2 WT TD	

FLOW DATA

CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	
SPP (calculated)	

PUMP #1		**PUMP #2**	
8-P-80		**8-P-80**	
RATE		**RATE**	
LINER	6.0"	**LINER**	6.0"
STROKE	8.5"	**STROKE**	8.5"

SURVEYS

BHA # 6

TOOL	**LENGTH**
Rock Bit	0.25
Float Sub	0.89
2 x 6-1/4" DC's	18.42
8-1/2" String Stab	1.37
12 x 6-1/4" DC's	110.57
Drilling Jars	9.77
2 x 6-1/2" DC's	18.26
4 x 4-1/2" HWDP	37.36
BHA LENGTH (m)	196.89
BHA WEIGHT(kLb)	41.0
STRING WT (kLb)	140.1
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	30.8
DRAG UP (kLb)	5-60
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA

FUEL ON SITE	17100 Litres
DAILY USAGE	2900 Litres
CUM. FUEL USED	78800 Litres
CUM. MUD MIXED	3487 Bbls
CUM. MUD LOSSES	3144 Bbls
CUM. GEL	7200 kg
CUM. BARITES	17000 kg

MUD PROPERTIES

Time	23:00
Depth (m)	2070
Temp (° C)	49
Mud Type	KCL/Poly/Phpa
Density (ppg)	9.50
ECD (ppg)	
Viscosity (sec)	46
PV / YP (cp/lb)	17 / 20
Gells (s/m)	3 / 7
API Filt. (cc)	4.5
Cake (/32")	1
Solids (% Vol)	7.5
Sand (% Vol)	0.3
MBT	10
pH (strip)	9.5
Chlorides (mg/l)	31000
KCL (%)	4
PHPA (ppb)	1.6
ALC - 50 (K)	
Circ. Vol. (Bbl)	782

CHEMICAL USAGE

Barite	80
Polypac UL	1
Trugel 13A	56

OPERATION

OPERATION	**HRS**	**CUM**
Casing		9.0
Cementing		5.5
Circ & Condition	1.0	17.5
Coring		
D/O Cement		1.5
Drilling		229.0
Handle BHA		22.0
LOT / FIT		1.0
N/U & Test BOP's		19.0
P & A		
Repairs		9.5
Rig Move		20.5
Rig Service		6.0
Safety	0.5	1.0
Survey		14.5
Tight hole / Fishing		40.0
Tripping	13.5	109.0
Wait on Cement		11.5
Wash / Ream		9.5
Well Control		
Well Test		
Wellhead		4.5
Wiper Trip		5.0
Wireline	9.0	9.0
Other		7.5
TOTALS	24.0	552.0

DAILY MUD COSTS	$1,225.90
CUM. MUD COSTS	**$74,007.67**
AFE COST - C&S	$2,687,024
AFE COST - P&A	$2,475,824
AFE COST - C&C	

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	Circulate bottoms up 1.5 times and flow check
1:00	12:00	Trip out of hole to log with Precision - hole sections with overpull worked clear to maximum 5k drag by reciprocating pipe
12:00	14:30	Continue to POOH. Flow check at shoe. Lay out bit and bit sub
14:30	15:00	Pre job safety meeting. Rig up to run wireline
15:00	23:30	Run wireline logging tools. Logging tools included mle-mmr-mss-mcg-gr-cal
23:30	0:00	Logging tools at surface

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	J. Hobday	**MUD CO:**	M-I

DAILY DRILLING REPORT

08/09/05

REPORT # 24

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2070m**	**24 HR PROG**		**CUM. COSTS**	**$2,982,065**
RIG	Century Resources Ltd # 7	**FORMATION**	Eumeralla	**PTD**	2075m	**DAILY COSTS**	$122,040.00
OP's TO 06:00	Spotted and displaced cement plugs 2,3,4 and 5						
REMARKS:	Logging programme completed. Rig up Halliburton for P&A programme					**PERSONNEL ON SITE:**	**32**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**		**BOP TEST**	19/08/05	**TEST DUE**	09/09/05
AFD's: 42	**SAFETY**	1. Running wireline logs. Inspections. Koomey pressures				**WEATHER AM**	Fine / Cool
		2. RIH drill pipe. Inpsections. Koomey pressures. Handover to Halliburton				**PM**	Fine / Cool

| **BIT INFORMATION** | | | | | | |

DAILY DRILLING REPORT

09/09/05

REPORT # 25

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2070m**	**24 HR PROG**		**CUM. COSTS**	**$3,029,660**
RIG	Century Resources Ltd # 7	**FORMATION**	Eumeralla	**PTD**	2075m	**DAILY COSTS**	$45,095.00
OP's TO 06:00	Continue to layout drill pipe, flush BOP and lines with water, rig down BOP						
REMARKS:	Tagged plug 5 @ 470m with 10klbs					**PERSONNEL ON SITE:**	**28**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**		**BOP TEST**	19/08/05	**TEST DUE**	**DUE**
AFD's: 43	**SAFETY**	1. Laying out drill pipe. Inspections and koomey pressures				**WEATHER AM**	Overcast / Cool
		2. Laying out sideways. Inspections and koomey pressures				**PM**	Overcast / Cool

BIT INFORMATION						**MUD PROPERTIES**	**OPERATION**	**HRS**	**CUM**
WOB(kLb)		**JET V(fps)**		**TOOL**	**LENGTH**	Time	Casing		9.0
RPM		**H S I**				Depth (m)	Cementing		5.5
BIT NUMBER						Temp (° C)	Circ & Condition		17.5
Size (in)						Mud Type	Coring		
Make						Density (ppg)	D/O Cement		1.5
Type						ECD (ppg)	Drilling		229.0
IADC Code						Viscosity (sec)	Handle BHA		26.5
Serial Number						PV / YP (cp/lb)	LOT / FIT		1.0
T.F.A.(")						Gells (s/m)	N/U & Test BOP's		19.0
Depth In (m)						API Filt. (cc)	P & A	24.0	37.5
Depth Out (m)						Cake (/32")	Repairs		9.5
Total Meters						Solids (% Vol)	Rig Move		20.5
Hours						Sand (% Vol)	Rig Service		6.0
ROP						MBT	Safety		1.0
Condition Out				**BHA LENGTH (m)**		pH (strip)	Survey		14.5
FLOW DATA				**BHA WEIGHT(kLb)**		Chlorides (mg/l)	Tight hole / Fishing		40.0
CIRC. RATE (gpm)				**STRING WT (kLb)**		KCL (%)	Tripping		109.0
AV - DP (fpm)				**HOOK LOAD (kLb)**		PHPA (ppb)	Wait on Cement		11.5
AV - DC (fpm)				**WT BELOW JARS (kLb)**		ALC - 50 (K)	Wash / Ream		9.5
SPP (psi)				**DRAG UP (kLb)**		Circ. Vol. (Bbl)	Well Control		
SPP (calculated)				**DRAG DOWN (kLb)**		**CHEMICAL USAGE**	Well Test		
PUMP #1		**PUMP #2**		**TORQUE ON (Amps/Rel.)**			Wellhead		4.5
8-P-80		**8-P-80**		**TORQUE OFF (Amps/Rel.)**			Wiper Trip		5.0
RATE		**RATE**		**ENVIRONMENTAL DATA**			Wireline		14.5
LINER	6.0"	**LINER**	6.0"	FUEL ON SITE	13600 Litres		Other		8.0
STROKE	8.5"	**STROKE**	8.5"	DAILY USAGE	2400 Litres		**TOTALS**	24.0	600.0
				CUM. FUEL USED	82300 Litres		DAILY MUD COSTS		
SURVEYS				CUM. MUD MIXED	3487 Bbls		CUM. MUD COSTS		**$74,007.67**
				CUM. MUD LOSSES	3144 Bbls		**AFE COST - C&S**		$2,687,024
				CUM. GEL	7200 kg		**AFE COST - P&A**		$2,475,824
				CUM. BARITES	17000 kg		**AFE COST - C&C**		

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	POOH F/ 1999m to 1905m. Break circ and cont POOH F/ 1905m to 1782m
0:30	1:00	M/U Halliburton, mix, pump and displace plug at 1,782m (16.4bbls 15.8ppg Class G - 1,782m to 1,720m)
1:00	2:00	POOH F/ 1782m to 1689m. Break circ and cont POOH F/ 1689m to 1221m
2:00	2:30	M/U Halliburton, mix, pump and displace plug at 1,221m (20.5bbls 15.8ppg Class G - 1,221m to 1,160m)
2:30	3:00	POOH F/ 1221m to 1127m. Break circ and cont POOH F/ 1127m to 1061m
3:00	4:00	M/U Halliburton, mix, pump and displace plug at 1,061m (26.7bbls 15.8ppg Class G - 1,061m to 1,000m)
4:00	5:30	POOH F/ 1061m to 968m. Break circ and cont POOH F/ 968m to 527m
5:30	6:00	M/U Halliburton, mix, pump and displace plug at 527m (21.5bbls 15.8ppg Class G - 527m to 465m)
6:00	12:00	POOH F/ 527m to 434m. Break circ and lay out 91 joints of excess drill pipe from hole and derrick
12:00	18:30	RIH and layout excess drill pipe from derrick. Tag cement (plug #5) at 470m with 10klbs
18:30	21:30	Continue to RIH and layout remaining drill pipe from derrick
21:30	23:00	Pick up kelly and flush. Break down kelly components
23:00	0:00	Continue to lay out drill pipe.

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	**MUD CO:**	M-I

DAILY DRILLING REPORT

10/09/05

REPORT # 26

WELL	**Peterborough 01ST1**	**24:00 DEPTH**	**2070m**	**24 HR PROG**		**CUM. COSTS**	**$3,049,465**
RIG	Century Resources Ltd # 7	**FORMATION**		**PTD**	2075m	**DAILY COSTS**	$19,805.42
OP's TO 06:00	Rig down						
REMARKS:	Rig release at 9:00 hrs					**PERSONNEL ON SITE:**	**28**
LAST CASING	9 5/8"	**SET AT**	495.6m	**LOT**	16.8ppg	**MAASP**	
BOP TEST	19/08/05	**TEST DUE**	**DUE**				
AFD's: 44	**SAFETY**	1. Rig 11 battery incident				**WEATHER AM**	Cool / Showers
		2. Rig 11 battery incident				**PM**	Cool / Showers

BIT INFORMATION						**MUD PROPERTIES**	**OPERATION**	**HRS**	**CUM**
WOB(kLb)		**JET V(fps)**		**TOOL**	**LENGTH**	Time	Casing		9.0
RPM		**H S I**				Depth (m)	Cementing		5.5
BIT NUMBER						Temp (° C)	Circ & Condition		17.5
Size (in)						Mud Type	Coring		
Make						Density (ppg)	D/O Cement		1.5
Type						ECD (ppg)	Drilling		229.0
IADC Code						Viscosity (sec)	Handle BHA		26.5
Serial Number						PV / YP (cp/lb)	LOT / FIT		1.0
T.F.A.(")						Gells (s/m)	N/U & Test BOP's		19.0
Depth In (m)						API Filt. (cc)	P & A	9.0	46.5
Depth Out (m)						Cake (/32")	Repairs		9.5
Total Meters						Solids (% Vol)	Rig Move		20.5
Hours						Sand (% Vol)	Rig Service		6.0
ROP						MBT	Safety		1.0
Condition Out				**BHA LENGTH (m)**		pH (strip)	Survey		14.5
FLOW DATA				**BHA WEIGHT(kLb)**		Chlorides (mg/l)	Tight hole / Fishing		40.0
CIRC. RATE (gpm)				**STRING WT (kLb)**		KCL (%)	Tripping		109.0
AV - DP (fpm)				**HOOK LOAD (kLb)**		PHPA (ppb)	Wait on Cement		11.5
AV - DC (fpm)				**WT BELOW JARS (kLb)**		ALC - 50 (K)	Wash / Ream		9.5
SPP (psi)				**DRAG UP (kLb)**		Circ. Vol. (Bbl)	Well Control		
SPP (calculated)				**DRAG DOWN (kLb)**		**CHEMICAL USAGE**	Well Test		
PUMP #1		**PUMP #2**		**TORQUE ON (Amps/Rel.)**			Wellhead		4.5
8-P-80		**8-P-80**		**TORQUE OFF (Amps/Rel.)**			Wiper Trip		5.0
RATE		**RATE**		**ENVIRONMENTAL DATA**			Wireline		14.5
LINER	6.0"	**LINER**	6.0"	FUEL ON SITE	12900 Litres		Other		8.0
STROKE	8.5"	**STROKE**	8.5"	DAILY USAGE	700 Litres		**TOTALS**	9.0	609.0
				CUM. FUEL USED	83000 Litres		DAILY MUD COSTS		
SURVEYS				CUM. MUD MIXED	3487 Bbls		CUM. MUD COSTS		**$74,007.67**
				CUM. MUD LOSSES	3144 Bbls		**AFE COST - C&S**		$2,687,024
				CUM. GEL	7200 kg		**AFE COST - P&A**		$2,475,824
				CUM. BARITES	17000 kg		**AFE COST - C&C**		

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:00	Continue to lay out drill pipe (28 joints)
1:00	2:00	Flush BOP and Choke manifold. Clean floor and layout excess drilling equipment from floor
2:00	3:30	Lay out kelly and kelly sub
3:30	4:30	Layout bell nipple and flow line
4:30	8:30	Nipple down BOP and choke line manifold
8:30	9:00	Remove A section from 9 5/8" casing. Rig released at 09:00 hours

SUPERVISOR:	C Dann / Q Cahill	**GEOLOGIST:**	**MUD CO:**	M-I

APPENDIX 2

DAILY GEOLOGICAL REPORTS

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	1	**DAYS FROM SPUD:**	1	**DATE:**	16/08/05
0000hrs Depth:	**53**	**Last Depth:**	**0**	**24 HR PROGRESS:**	**53**	**PTD:**	**2075.0mRT**
0600 OPS:	17/04/05 – 145m – Drilling ahead 12 ¼" top hole in the Gellibrand Marl.						
REMARKS:	Peterborough-1 spudded Tuesday the 16th of August, 2005 at 2030hrs.						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	243.2	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	103.7	119.3	-101.0	2.7	L			
Clifton Formation			534.3	-516.0					
Narrawaturk Marl			550.3	-532.0					
Mepunga Formation			684.3	-666.0					
Dilwyn Formation			736.3	-718.0					
Pember Mudstone			993.3	-975.0					
Pebble Point Formation			1042.3	-1024.0					
Paaratte Formation			1159.3	-1141.0					
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mustone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
5.3	-	122.0	0.3-6.3 **(1.4)**	Massive LIMESTONE LIMESTONE, off white to tan, pale brown, grayish brown, very pale yellow in part, sparitic to occasional micritic, fossiliferous, rare to trace nodular pyrite, microcrystalline to crystalline, occasional glauconite, friable to moderately hard.

Gas	**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

Interval			ROP (ave)	Lithology Description										
122.0	-	(154.0)	0.3-2.1 **(1.0)**	Massive MARL with minor LIMESTONE interbeds MARL, pale to medium grey, off white, very calcareous, shell and fossiliferous fragments, firm to soft in part, moderately hard to hard in part, sub-blocky to blocky. LIMESTONE, dominantly off white, very pale grey, sparitic, micritic in part, common fossiliferous and shell fragments, rare microcrystalline, moderately hard to very hard in part.										
Gas			**Units:**	Nil	**Composition (%):**	-	**/**	-	**/**	-	**/**	-	**/**	-
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	2	**DAYS FROM SPUD:**	2	**DATE:**	17/08/05
0000hrs Depth:	**499**	**Last Depth:**	**53**	**24 HR PROGRESS:**	**446**	**PTD:**	**2075.0mRT**
0600 OPS:	18/04/05 – 499m – Finish wiper trip, circulate hole clean.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	243.2	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	103.7	119.3	-101.0	2.7	L			
Clifton Formation			534.3	-516.0					
Narrawaturk Marl			550.3	-532.0					
Mepunga Formation			684.3	-666.0					
Dilwyn Formation			736.3	-718.0					
Pember Mudstone			993.3	-975.0					
Pebble Point Formation			1042.3	-1024.0					
Paaratte Formation			1159.3	-1141.0					
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mustone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
145.0	-	499.0	0.6-3.0 **(1.2)**	Massive MARL with very minor LIMESTONE interbeds MARL. Pale to medium greenish grey, pale to medium grayish brown, argillaceous, moderately to very calcareous, minor brownish orange fossiliferous LIMESTONE fragments, occasional very fine carbonaceous specks, slightly pyrite nodules, soft to firm, common dispersive, sub-blocky to sub-fissile, dominantly amorphous. LIMESTONE, off white to predominantly brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to occasional hard.

Gas	**Units:**	Nil	**Composition (%):**	- / - / - / - / -
Show Details / %CO2	Nil			

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	3	**DAYS FROM SPUD:**	3	**DATE:**	18/08/05
0000hrs Depth:	**499**	**Last Depth:**	**499**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	19/04/05 – 499m – WOC, nipple up BOP						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	243.2	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	103.7	119.3	-101.0	2.7	L			
Clifton Formation			534.3	-516.0					
Narrawaturk Marl			550.3	-532.0					
Mepunga Formation			684.3	-666.0					
Dilwyn Formation			736.3	-718.0					
Pember Mudstone			993.3	-975.0					
Pebble Point Formation			1042.3	-1024.0					
Paaratte Formation			1159.3	-1141.0					
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudtone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	4	**DAYS FROM SPUD:**	4	**DATE:**	19/08/05
0000hrs Depth:	**499**	**Last Depth:**	**499**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	20/08/049m – Making up BHA to RIH to drill 8½" main hole.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	243.2	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	103.7	119.3	-101.0	2.7	L			
Clifton Formation			534.3	-516.0					
Narrawaturk Marl			550.3	-532.0					
Mepunga Formation			684.3	-666.0					
Dilwyn Formation			736.3	-718.0					
Pember Mudstone			993.3	-975.0					
Pebble Point Formation			1042.3	-1024.0					
Paaratte Formation			1159.3	-1141.0					
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	5	**DAYS FROM SPUD:**	5	**DATE:**	20/08/05
0000hrs Depth:	**704**	**Last Depth:**	**499**	**24 HR PROGRESS:**	**205**	**PTD:**	**2075.0mRT**
0600 OPS:	21/08/05 – 853m – drilling 8 ½" main hole in the Dilwyn Formation.						
REMARKS:	FIT 16.8 EMW						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone			993.3	-975.0					
Pebble Point Formation			1042.3	-1024.0					
Paaratte Formation			1159.3	-1141.0					
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
499.0	-	539.0	0.6-3.0 **(1.2)**	Massive MARL with very minor LIMESTONE interbeds MARL. Pale to medium greenish grey, pale to medium grayish brown, argillaceous, moderately to very calcareous, minor brownish orange fossiliferous LIMESTONE fragments, occasional very fine carbonaceous specks, slightly pyrite nodules, soft to firm, common dispersive, sub-blocky to sub-fissile, dominantly amorphous. LIMESTONE, off white to predominantly brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to occasional hard.

Gas	**Units:**	Nil	**Composition (%):**	- / - / - / - / -
Show Details / %CO2	Nil			

Interval			ROP (ave)	Lithology Description
539.0	-	555.0	1.8-4.1 **(2.6)**	Interbedded SILTSTONE, MARL, LIMESTONE and trace SANDSTONE. SANDSTONE, dominantly reddish orange, minor orangish grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orange to red argillaceous matrix, common Fe staining, common fossiliferous and shell fragments, loose, unconsolidated, friable to occasional moderately hard, poor porosity, no fluorescence. SILTSTONE, moderately reddish brown, orangish brown, minor brownish grey, argillaceous, calcareous, grading to CLAYSTONE in part, abundant Fe staining, dispersive to soft, minor firm, blocky to sub-blocky, amorphous. MARL, greenish grey to predominantly dark grayish green, dark grey, argillaceous, calcareous, minor pale brownish orange fossiliferous fragments, soft to firm, sub-blocky to sub-fissile, amorphous in part. LIMESTONE, off white to predominantly brownish orange, argillaceous, fossiliferous, microcrystalline to crystalline, moderately hard to occasional hard.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

555.0	-	679.0	0.6-7.2 **(1.3)**	MARL with minor SILTSTONE, LIMESTONE and SANDSTONE. SANDSTONE, dominantly reddish orange, minor orange grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orangish red argillaceous matrix, common Fe staining, common fossiliferous and shell fragments, loose, unconsolidated, friable to occasional moderately hard aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, orangish brown, reddish brown, argillaceous, common grading to CLAYSTONE, slightly arenaceous in part, calcareous common Fe staining, soft to predominantly firm, dispersive in part, sub-blocky to sub-fissile, amorphous in part. MARL, brownish grey to minor brownish black, very argillaceous, calcareous, minor to localized common glauconite grains, occasional pyrite nodules and fossiliferous fragments, soft to dispersive, sub-blocky to amorphous. LIMESTONE, orangish brown, reddish brown, lutitic, argillaceous, microcrystalline to crystalline, Fe staining, soft to firm, moderately hard to hard in part.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

679.0	-	734.0	0.4-10.2 **(1.2)**	SANDSTONE with SILTSTONE and MARL interbeds SANDSTONE, translucent yellow, minor clear to frosted, coarse to very coarse, moderately sorted, sub-rounded to rounded, occasional sub-angular to angular very coarse fractured grains, weak siliceous cement, no visual matrix, clean and unconsolidated, loose, good inferred porosity, no fluorescence. SILTSTONE, off white to white, very argillaceous, grading to CLAYSTONE, calcareous, very soft to dispersive, sub-blocky to predominantly amorphous. MARL, off white to brownish grey, argillaceous, calcareous, common to occasional glauconite grains, minor pyrite nodules, soft to dispersive, sub-blocky to amorphous.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-

Show Details / %CO2	Nil

Interval			**ROP (ave)**	**Lithology Description**										
734.0	-	(853.0)	0.2-11.0 **(0.9)**	SANDSTONE with Interbedded SILTSTONE. SANDSTONE, translucent to clear, opaque pale brown, frosted, fine to very coarse, dominantly medium to minor coarse, moderately well sorted, sub-rounded to sub-angular, rounded very coarse grains, weak to moderately calcareous cement, rare brown argillaceous matrix, localized common pyrite nodules, loose and clean, minor unconsolidated, fair to good inferred porosity, no fluorescence. SILTSTONE, medium to dark brown, grayish brown, pale to medium grey, argillaceous, trace arenaceous, occasional pyrite nodules, trace black lithics, soft to dispersive, localized firm, sub-blocky to amorphous.										
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	6	**DAYS FROM SPUD:**	6	**DATE:**	21/08/05
0000hrs Depth:	**1172**	**Last Depth:**	**704**	**24 HR PROGRESS:**	**468**	**PTD:**	**2075.0mRT**
0600 OPS:	22/08/05 –1228m – In the Paaratte Formation. Check surveys, POOH to evaluate tools and surveys						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone	975.0	-956.7	993.3	-975.0	18.3	H			
Pebble Point Formation	1036.0	-1017.7	1042.3	-1024.0	6.3	H			
Paaratte Formation	1150.0	-1131.7	1159.3	-1141.0	9.3	H			
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
734.0	-	975.0	0.2-28.4 **(1.1)**	SANDSTONE with Interbedded SILTSTONE. SANDSTONE, translucent to clear, opaque pale brown, frosted, fine to very coarse, dominantly medium to minor coarse, moderately well sorted, sub-rounded to sub-angular, rounded very coarse grains, weak to moderately calcareous cement, rare brown argillaceous matrix, localized common pyrite nodules, loose and clean, minor unconsolidated, fair to good inferred porosity, no fluorescence. SILTSTONE, medium to dark brown, grayish brown, pale to medium grey, argillaceous, trace arenaceous, occasional pyrite nodules, trace black lithics, soft to dispersive, localized firm, sub-blocky to amorphous.

Gas	**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

Interval			ROP (ave)	Lithology Description
975.0	-	1036.0	0.6-10.9 **(1.5)**	Massive SILTSTONE with minor interbedded SANDSTONE. SANDSTONE, clear to translucent, occasional frosted, very fine to very coarse, generally fine to coarse, very poor sorted, sub-rounded to rounded, weak siliceous cement, occasional mica flecks, loose and clean, ft to good porosity, no fluorescence. SILTSTONE, brownish grey, minor dusky brown, argillaceous, grading to CLAYSTONE, minor calcareous fragments, occasional pyrite nodules, occasional glauconite grains, soft to firm, predominantly dispersive, sub-blocky to amorphous.

Gas	Units:	Nil	Composition (%):	- / - / - / - / -
Show Details / %CO2	Nil			

1036.0	-	1150.0	0.6-8.4 **(1.6)**	SANDSTONE with interbedded SILTSTONE. SANDSTONE, yellowish brown to dark yellowish brown, translucent yellowish brown, minor to localized common clear to translucent, frosted in part, predominantly medium to coarse, minor fine and very coarse grains, poor to localized moderately well sorted, sub-rounded to rounded, sub-angular in part, weak siliceous cement, minor yellowish brown to brown argillaceous matrix, dominantly loose, friable in part, unconsolidated, fair visual and inferred porosity, no fluorescence. SILTSTONE, dark greenish grey, brownish grey, dh yellowish brown, argillaceous, grading to CLAYSTONE, slightly calcareous, common Fe staining, minor glauconite, soft to dispersive, sub-blocky to amorphous.

Gas	Units:	Nil	Composition (%):	- / - / - / - / -
Show Details / %CO2	Nil			

1150	-	(1228.0)	0.5-5.6 **(1.5)**	SILTSTONE, with interbedded SANDSTONE. SANDSTONE, translucent, very pale brown, predominantly medium, occasional coarse grains, moderately sorted, sub-angular to sub-rounded, trace weak calcareous cement, trace brown argillaceous matrix, occasional disseminated pyrite, rare green lithics, loose, unconsolidated, good porosity, no fluorescence. SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE, calcareous, occasional carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) off white argillaceous, grading to CLAYSTONE, non-calcareous, soft to dispersive.

Gas	Units:	Nil	Composition (%):	- / - / - / - / -
Show Details / %CO2	Nil			

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	7	**DAYS FROM SPUD:**	7	**DATE:**	22/08/05
0000hrs Depth:	**1228**	**Last Depth:**	**1172**	**24 HR PROGRESS:**	**56**	**PTD:**	**2075.0mRT**
0600 OPS:	23/08/05 –1228m – In the Paaratte Formation. POOH after survey checks (25°).						
REMARKS:	Gas calibrations rechecked-OK. Gas injections at possum belly check-OK. Flow lines checked for leaks-None. All equipment are working and indicating correctly. At present no gas in Peterborough-1.						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone	975.0	-956.7	993.3	-975.0	18.3	H			
Pebble Point Formation	1036.0	-1017.7	1042.3	-1024.0	6.3	H			
Paaratte Formation	1150.0	-1131.7	1159.3	-1141.0	9.3	H			
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1150	-	(1228.0)	0.5-5.6 **(1.5)**	SILTSTONE, with interbedded SANDSTONE. SANDSTONE, translucent, very pale brown, predominantly medium, occasional coarse grains, moderately sorted, sub-angular to sub-rounded, trace weak calcareous cement, trace brown argillaceous matrix, occasional disseminated pyrite, rare green lithics, loose, unconsolidated, good porosity, no fluorescence. SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE, calcareous, occasional carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) off white argillaceous, grading to CLAYSTONE, non-calcareous, soft to dispersive.

Gas	**Units:**	Nil	**Composition (%):**	- / - / - / - / -
Show Details / %CO2	Nil			

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	8	**DAYS FROM SPUD:**	8	**DATE:**	23/08/05
0000hrs Depth:	**1228**	**Last Depth:**	**1228**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	24/08/05 –1267m – Drilling ahead 8 ½" main hole in the Paarratte Formation with DHM and MWD tools.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**			**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone	975.0	-956.7	993.3	-975.0	18.3	H			
Pebble Point Formation	1036.0	-1017.7	1042.3	-1024.0	6.3	H			
Paaratte Formation	1150.0	-1131.7	1159.3	-1141.0	9.3	H			
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1150	-	(1267.0)	0.5-6.5 **(1.6)**	SILTSTONE, with interbedded SANDSTONE. SANDSTONE, translucent, very pale brown, predominantly medium, occasional coarse grains, moderately sorted, sub-angular to sub-rounded, trace weak calcareous cement, trace brown argillaceous matrix, occasional disseminated pyrite, rare green lithics, loose, unconsolidated, good porosity, no fluorescence. SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE, calcareous, occasional carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) off white argillaceous, grading to CLAYSTONE, non-calcareous, soft to dispersive.

Gas	**Units:**	Nil	**Composition (%):**	- / - / - / - / -
Show Details / %CO2	Nil			

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	9	**DAYS FROM SPUD:**	9	**DATE:**	24/08/05
0000hrs Depth:	**1389**	**Last Depth:**	**1228**	**24 HR PROGRESS:**	**161**	**PTD:**	**2075.0mRT**
0600 OPS:	25/08/05 –1387m – In the Paaratte Formation. POOH.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**		495.6	**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone	975.0	-956.7	993.3	-975.0	18.3	H			
Pebble Point Formation	1036.0	-1017.7	1042.3	-1024.0	6.3	H			
Paaratte Formation	1150.0	-1131.7	1159.3	-1141.0	9.3	H			
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1150	-	(1228.0)	0.5-5.6 **(1.5)**	SILTSTONE, with interbedded SANDSTONE. SANDSTONE, translucent, very pale brown, predominantly medium, occasional coarse grains, moderately sorted, sub-angular to sub-rounded, trace weak calcareous cement, trace brown argillaceous matrix, occasional disseminated pyrite, rare green lithics, loose, unconsolidated, good porosity, no fluorescence. SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE, calcareous, occasional carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) off white argillaceous, grading to CLAYSTONE, non-calcareous, soft to dispersive.

Gas	**Units:**	Nil	**Composition (%):**	- / - / - / - / -
Show Details / %CO2	Nil			

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1	**REPORT No.:**	10	**DAYS FROM SPUD:**	10	**DATE:**	25/08/05
0000hrs Depth:	**1389**	**Last Depth:**	**1389**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	26/08/05 –1389m – In the Paaratte Formation. WOC. Rig maintenance and general housekeeping.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1943.3 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'12.30"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'33.30"	**G.L. =**	13.00	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 935.0	**R.T. =**	18.30	**Metres ASL**
Rig	Century Rig 7	**Surface N (MGA94):**	5 727 435.0			
Nearby Wells / Facilities are			**244mm Casing Shoe =**		495.6	**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	13.0	5.3	13.0	-	-		0.3	L
Gellibrand Marl	122.0	-103.7	119.3	-101.0	2.7	L			
Clifton Formation	539.0	-520.7	534.3	-516.0	4.7	L			
Narrawaturk Marl	555.0	-536.7	550.3	-532.0	4.7	L			
Mepunga Formation	679.0	-660.7	684.3	-666.0	5.3	H			
Dilwyn Formation	734.0	-715.7	736.3	-718.0	2.3	H			
Pember Mudstone	975.0	-956.7	993.3	-975.0	18.3	H			
Pebble Point Formation	1036.0	-1017.7	1042.3	-1024.0	6.3	H			
Paaratte Formation	1150.0	-1131.7	1159.3	-1141.0	9.3	H			
Fault zone,			1656.3	-1638.0					
fault intersection			1696.3	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1696.3	-1678.0					
Belfast Mudstone			1737.3	-1719.0					
Waarre Formation (undifferentiated)			1943.3	-1925.0					
Eumeralla Formation			2034.3	-2016.0					
TD CDL-7			**2075.0**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**										
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	11	**DAYS FROM SPUD:**	11	**DATE:**	26/08/05
0000hrs Depth:	**958**	**Last Depth:**	**945**	**24 HR PROGRESS:**	**13**	**PTD:**	**2075.0mRT**

0600 OPS: 27/08/05 –980m –Drilling ahead 8½" sidetrack main hole in the Pember Formation? Formation top unconfirmed due to percentages of cement to formation, 90:10. More information needed for proper confirmation.

REMARKS: Top of plug ~945.0m, kick off point.

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are			**244mm Casing Shoe =**		495.6	**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	(975.0)	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	(1036.0)	-1021.0	1039.0	-1024.0	3.0	H			
Paaratte Formation	(1150.0)	-1135.0	1156.0	-1141.0	6.0	H			
Fault zone,			1653.0	-1638.0					
fault intersection			1693.0	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1693.0	-1678.0					
Belfast Mudstone			1734.0	-1719.0					
Waarre Formation (undifferentiated)			1940.0	-1925.0					
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
945.0	-	(980.0)		Cement with trace formation sample. Cement, 90+% SILTSTONE/SANDSTONE, too small to measure.

Gas	**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	12	**DAYS FROM SPUD:**	12	**DATE:**	27/08/05
0000hrs Depth:	**1136**	**Last Depth:**	**958**	**24 HR PROGRESS:**	**178**	**PTD:**	**2075.0mRT**
0600 OPS:	28/08/05 –1130m –Drilling ahead 8½" sidetrack main hole in the Paaratte Formation.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1036.0	-1021.0	1039.0	-1024.0	3.0	H			
	(1058.0)	(-1143.0)			(19.0)	L			
Paaratte Formation	1150.0	-1135.0	1156.0	-1141.0	6.0	H			
	(1176.0)	(-1161.0)			(19.0)	L			
Fault zone,			1653.0	-1638.0					
fault intersection			1693.0	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1693.0	-1678.0					
Belfast Mudstone			1734.0	-1719.0					
Waarre Formation (undifferentiated)			1940.0	-1925.0					
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

(Depths) – Denote the new formation depths in Peterborough-1ST1, but are unreliable due to the possibility of miss counted pipe tally. Confirmation will commence at the next wiper trip (to HWDP) to ensure the proper depths, as per Chris Dann & Bryan Webb.

Interval			ROP (ave)	Lithology Description										
958.0	-	1058.0	1.1-62.7 **(7.7)**	SILTSTONE with interbedded SANDSTONE. SANDSTONE, clear to translucent, very fine to fine, occasional medium, rare coarse grains, moderately sorted, predominantly sub-angular, weak calcareous cement, occasional off white argillaceous matrix, generally loose and clean, occasional friable aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, predominantly brownish grey, minor off white to pale brown, argillaceous, grading to CLAYSTONE in part, calcareous, occasional fossiliferous fragments, occasional pyrite nodules and glauconite grains, soft to dispersive, sub-blocky to amorphous.									
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

1158.0	-	1172.0	0.5-7.0 **(1.0)**	SANDSTONE with SILTSTONE interbeds SANDSTONE, medium to dark yellowish brown, translucent yellowish brown, minor translucent to frosted, fine to very coarse, generally medium to coarse, poor sorted, sub-angular to sub-rounded, occasional rounded, weak siliceous cement, minor yellowish brown argillaceous matrix, friable to loose, fair to good visual and inferred porosity. SILTSTONE, olive black to greenish black, yellowish brown to moderately brown, argillaceous, grading to CLAYSTONE in part, calcareous in part, common Fe staining, occasional pyrite nodules, soft to firm, occasional dispersive, sub-blocky to sub-fissile.									
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

1172.0	-	1211.0	1.0-33..2 **(4.4)**	Dominantly SILTSTONE with SANDSTONE interbeds. SANDSTONE, translucent to clear, off white, pale yellow brown, very fine to medium, dominantly fine, nod sorted, sub-angular to sub-rounded, trace angular, trace siliceous cement, common pyrite nodules, trace fossiliferous fragments, generally clean and loose, occasional very hard aggregates, fair to good inferred and nil to tight visual porosity, no fluorescence. SILTSTONE, medium to dark grey, olive grey, medium brown in part, argillaceous, localized calcareous, trace glauconite, pyrite, minor carbonaceous specks and flecks, soft to dispersive, firm, sub-blocky to smor.									
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	13	**DAYS FROM SPUD:**	13	**DATE:**	28/08/05
0000hrs Depth:	**1473**	**Last Depth:**	**1136**	**24 HR PROGRESS:**	**337**	**PTD:**	**2075.0mRT**
0600 OPS:	29/08/05 –1530m –Drilling ahead 8½" sidetrack main hole in the Paaratte Formation.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H
Pebble Point Formation	1036.0	-1021.0	1039.0	-1024.0	3.0	H
	(1058.0)	(-1143.0)			(19.0)	L
Paaratte Formation	1150.0	-1135.0	1156.0	-1141.0	6.0	H
	(1176.0)	(-1161.0)			(19.0)	L
Fault zone,			1653.0	-1638.0		
fault intersection			1693.0	-1678.0		
Skull Creek Mudstone			NA	NA		
Nullawarre Green			1693.0	-1678.0		
Belfast Mudstone			1734.0	-1719.0		
Waarre Formation (undifferentiated)			1940.0	-1925.0		
Eumeralla Formation			2031.0	-2016.0		
TD CDL-7			**2071.7**	**-2056.7**		

Sub-Sea Depth Comparisons	Diff	H/L

Tops are wellsite picks

(Depths) – Denote the new formation depths in Peterborough-1ST1, but are unreliable due to the possibility of miss counted pipe tally. Confirmation will commence at the next wiper trip (to HWDP) to ensure the proper depths, as per Chris Dann & Bryan Webb.

Interval			ROP (ave)	Lithology Description
1172.0	-	1211.0	1.0-33..2 **(4.4)**	Dominantly SILTSTONE with SANDSTONE interbeds. SANDSTONE, translucent to clear, off white, pale yellow brown, very fine to medium, dominantly fine, nod sorted, sub-angular to sub-rounded, trace angular, trace siliceous cement, common pyrite nodules, trace fossiliferous fragments, generally clean and loose, occasional very hard aggregates, fair to good inferred and nil to tight visual porosity, no fluorescence. SILTSTONE, medium to dark grey, olive grey, medium brown in part, argillaceous, localized calcareous, trace glauconite, pyrite, minor carbonaceous specks and flecks, soft to dispersive, firm, sub-blocky to amorphous.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

1211.0	-	1350.0	0.6-10.0 **(1.2)**	Predominantly SANDSTONE with SILTSTONE interbeds SANDSTONE, translucent to clear, opaque, rare pale yellow, fine to coarse, dominantly medium, sub-angular to sub-rounded, trace weak siliceous cement, rare light grey to pale brown argillaceous, matrix, common pyrite nodules, occasional very coarse rounded quartz grains, generally loose and clean, rare friable aggregates, poor visual and fair to good inferred porosity, no fluorescence. SILTSTONE, light to medium gym dark grayish brown, grey to green, argillaceous, trace glauconite, pyrite nodules, soft to firm in part, dispersive in part. Sub-blocky to amorphous.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

1350	-	(1530.0)	1.0-34.0 **(3.5)**	Predominantly SILTSTONE with SANDSTONE interbeds SANDSTONE, clear to translucent, minor frosted, rare translucent yellowish brown grains, fine to very coarse, very poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasional strong pyrite cement, minor pyrite nodules, generally loose and clean, occasional moderately hard to very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, predominantly olive grey, minor brownish grey, occasional off white to white, argillaceous, common grading to CLAYSTONE in part, minor calcareous fragments, occasional carbonaceous inclusions, soft to dispersive, sub-blocky to smor.

Gas	Units:	Nil	Composition (%):	-	/	-	/	-	/	-	/	-
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
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WELL:	Peterborough-1ST1	**REPORT No.:**	14	**DAYS FROM SPUD:**	14	**DATE:**	29/08/05
0000hrs Depth:	**1613**	**Last Depth:**	**1473**	**24 HR PROGRESS:**	**141**	**PTD:**	**2075.0mRT**
0600 OPS:	30/08/05 –1613m –Continue POH for bit change. Working pipe through some of the new holw.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1036.0	-1021.0	1039.0	-1024.0	3.0	H			
	(1058.0)	(-1143.0)			(19.0)	L			
Paaratte Formation	1150.0	-1135.0	1156.0	-1141.0	6.0	H			
	(1176.0)	(-1161.0)			(19.0)	L			
Fault zone,			1653.0	-1638.0					
fault intersection			1693.0	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1693.0	-1678.0					
Belfast Mudstone			1734.0	-1719.0					
Waarre Formation (undifferentiated)			1940.0	-1925.0					
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

(Depths) – Denote the new formation depths in Peterborough-1ST1, but are unreliable due to the possibility of miss counted pipe tally. Confirmation will commence at the next wiper trip (to HWDP) to ensure the proper depths, as per Chris Dann & Bryan Webb.

Interval			ROP (ave)	Lithology Description										
1350	-	1570.0	1.0-34.0 **(4.2)**	Predominantly SILTSTONE with SANDSTONE interbeds SANDSTONE, clear to translucent, minor frosted, rare translucent yellowish brown grains, fine to very coarse, very poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasional strong pyrite cement, minor pyrite nodules, generally loose and clean, occasional moderately hard to very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, predominantly olive grey, minor brownish grey, occasional off white to white, argillaceous, common grading to CLAYSTONE in part, minor calcareous fragments, occasional carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.										
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

1570.0	-	1608.0	1.4-26.8 **(5.3)**	Predominantly SANDSTONE with SILTSTONE interbeds and traces of COAL. SANDSTONE, clear to translucent, frosted in part, occasionally translucent grey, fine to very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, trace strong pyrite cement, minor calcareous fragments, moderately pyrite nodules, unconsolidated and predominantly clean, trace very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, predominantly brownish grey, minor brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous fragments, minor to locally commonly carbonaceous material, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous. COAL, (Tr) black, dull to sub-vitreous, argillaceous, moderately hard to brittle, sub-blocky to sub-fissile, uneven to minor sub-conchoidal.										
Gas			**Units:**	Nil	**Composition (%):**	-	/	-	/	-	/	-	/	-
Show Details / %CO2			Nil											

1608	-	(1613.0)	2.4-36.8 **(10.4)**	Predominantly SANDSTONE with interbedded SILTSTONE. SANDSTONE, off white to pale brown, clear to translucent, very fine to minor fine, sub-angular, well sorted, moderately strong to strong calcareous cement, commonly off white to white argillaceous matrix, minor carbonaceous inclusions, occasionally disseminated pyrite, moderately hard to hard aggregates, very poor to tight visual porosity, fluorescence. SILTSTONE, brownish grey to olive grey, very light grey to light olive grey, minor brownish black, predominantly argillaceous, grading to CLAYSTONE, occasionally arenaceous calcareous in part, minor to locally commonly carbonaceous material, grading to silty COAL, occasionally glauconite grains, soft to generally dispersive, occasionally firm, sub-blocky to amorphous.										
Gas			**Units:**	<1	**Composition (%):**	100	/	0	/	0	/	0	/	0
Show Details / %CO2			**FLUORESCENCE, 20-30%, moderately bright to bright pale greenish yellow, patchy to even in part, slow to very slow blooming dull pale yellow crush cut, thin very dull ring residue.**											

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ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	15	**DAYS FROM SPUD:**	15	**DATE:**	30/08/05
0000hrs Depth:	**1613**	**Last Depth:**	**1613**	**24 HR PROGRESS:**	**x**	**PTD:**	**2075.0mRT**
0600 OPS:	31/08/05 –1613m –RIH with string stabiliser. Working problem area.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H
Pebble Point Formation	1036.0	-1021.0	1039.0	-1024.0	3.0	H
	(1058.0)	(-1143.0)			(19.0)	L
Paaratte Formation	1150.0	-1135.0	1156.0	-1141.0	6.0	H
	(1176.0)	(-1161.0)			(19.0)	L
Fault zone,			1653.0	-1638.0		
fault intersection			1693.0	-1678.0		
Skull Creek Mudstone			NA	NA		
Nullawarre Green			1693.0	-1678.0		
Belfast Mudstone			1734.0	-1719.0		
Waarre Formation (undifferentiated)			1940.0	-1925.0		
Eumeralla Formation			2031.0	-2016.0		
TD CDL-7			**2071.7**	**-2056.7**		

Sub-Sea Depth Comparisons	Diff	H/L

Tops are wellsite picks

(Depths) – Denote the new formation depths in Peterborough-1ST1, but are unreliable due to the possibility of miss counted pipe tally. Confirmation will commence at the next wiper trip (to HWDP) to ensure the proper depths, as per Chris Dann & Bryan Webb.

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ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	16	**DAYS FROM SPUD:**	16	**DATE:**	31/08/05
0000hrs Depth:	**1613**	**Last Depth:**	**1613**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	01/09/05 –1614m –Drilling ahead with new assembly in the Paaratte Formation						
REMARKS:	Note: (depths) below have been depth corrected, and are representative of P-1ST1.						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1036.0	-1021.0	1039.0	-1024.0	3.0	H			
	(1040.0)	(-1025.0)			(1.0)	L			
Paaratte Formation	1150.0	-1135.0	1156.0	-1141.0	6.0	H			
	(1158.0)	(-1143.0)			(2.0)	L			
Fault zone,			1653.0	-1638.0					
fault intersection			1693.0	-1678.0					
Skull Creek Mudstone			NA	NA					
Nullawarre Green			1693.0	-1678.0					
Belfast Mudstone			1734.0	-1719.0					
Waarre Formation (undifferentiated)			1940.0	-1925.0					
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1590.0	-	(1614.0)	2.4-36.8 **(10.4)**	Predominantly SANDSTONE with interbedded SILTSTONE. SANDSTONE, off white to pale brown, clear to translucent, very fine to minor fine, sub-angular, well sorted, moderately strong to strong calcareous cement, commonly off white to white argillaceous matrix, minor carbonaceous inclusions, occasionally disseminated pyrite, moderately hard to hard aggregates, very poor to tight visual porosity, fluorescence. SILTSTONE, brownish grey to olive grey, very light grey to light olive grey, minor brownish black, predominantly argillaceous, grading to CLAYSTONE, occasionally arenaceous calcareous in part, minor to locally commonly carbonaceous material, grading to silty COAL, occasionally glauconite grains, soft to generally dispersive, occasionally firm, sub-blocky to amorphous.

Gas	**Units:**	< 1	**Composition (%):**	100	/	-	/	-	/	-	/	-
Show Details / %CO2	**<u>1594.0-1595.0m</u> FLUORESCENCE, 20-30%, moderately bright to bright pale greenish yellow, patchy to even in part, slow to very slow blooming dull pale yellow crush cut, thin very dull ring residue.**											

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ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	17	**DAYS FROM SPUD:**	17	**DATE:**	01/09/05
0000hrs Depth:	**1867**	**Last Depth:**	**1613**	**24 HR PROGRESS:**	**254**	**PTD:**	**2075.0mRT**
0600 OPS:	02/09/05 –1923m –Drilled to 1923m in the Belfast Mudstone, prepare for wiper trip.						
REMARKS:	Carbide lag check at 1923m – 13% O.G.						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation (undifferentiated)			1940.0	-1925.0					
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			ROP (ave)	Lithology Description
1614.0	-	1726.0	1.0-9.3 **(2.6)**	Predominantly SILTSTONE with SANDSTONE interbeds and minor LIMESTONE. SANDSTONE, medium light grey to medium grey, grading to brownish grey in part, predominantly clear, very fine grading to SILTSTONE in part, moderately well sorted, sub-angular to sub-rounded, weak to occasional strong calcareous and siliceous cement, common white argillaceous matrix, grading to brownish grey silty matrix in part, minor pyrite nodules, occasional carbonaceous specks and material, minor glauconite, fair to occasional moderately hard, very poor visual and poor inferred porosity, n/f SILTSTONE, dark gray to brownish grey, predominantly arenaceous, minor argillaceous, common disseminated carbonaceous material, minor off white lithics and trace glauconite grains, occasional pyrite nodules, firm to occasional moderately hard, sub-blocky to sub-fissile. LIMESTONE, dark yellowish brown to brownish orange, off white in part, micritic to lutitic, argillaceous, microcrystalline to crystalline,

Gas	Units:	Tr-18	Composition (%):	94	/	5	/	1	/	0	/	0
Show Details / %CO2	Nil											

1726.0	-	1774.0	0.6-4.6 **(1.4)**	Interbedded SANDSTONE and SILTSTONE w. trace LIMESTONE. SANDSTONE, medium light grey to medium grey, clear to translucent, minor frosted, 90% very fine to very coarse loose grains, 10% very fine to fine aggregates, very poor sorted, sub-angular to sub-rounded, occasional angular, weak to occasional moderately strong calcareous and siliceous cement, minor white argillaceous matrix, minor carbonaceous specks, occasional to localized common pale green lithics, friable to moderately hard aggregates, predominantly loose, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, brownish black to olive black, argillaceous, grading to arenaceous in part,, common carbonaceous material, minor off white lithics, occasional glauconite grains, soft to moderately hard, generally firm, sub-blocky to sub-fissile. LIMESTONE, brownish orange to brownish grey, micro-sparitic, generally argillaceous, minor interbedded quartz grains, crystalline to microcrystalline, moderately hard to hard.

Gas	Units:	12-34	Composition (%):	95	/	5	/	0	/	0	/	0
Show Details / %CO2	Nil											

1774.0	-	(1923.0)	0.9-29.2 **(2.1)**	Massive SILTSTONE with minor SANDSTONE interbeds. SANDSTONE, clear to minor translucent, very fine to fine, moderately sorted, sub-angular to minor sub-rounded, weak siliceous cement, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE, slightly calcareous, minor very fine carbonaceous specks, pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous.

Gas	Units:	10-52	Composition (%):	97	/	3	/	0	/	0	/	0
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	18	**DAYS FROM SPUD:**	18	**DATE:**	02/09/05
0000hrs Depth:	**1985**	**Last Depth:**	**1867**	**24 HR PROGRESS:**	**118**	**PTD:**	**2075.0mRT**
0600 OPS:	03/09/05 –1988m – Running wiper trip due to PR in the Waarre Formation						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation (undifferentiated)	1972.0	-1957.0	1940.0	-1925.0	32	L			
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			ROP (ave)	Lithology Description										
1920.0	-	1972	1.5-20.7 **(5.5)**	Massive SILTSTONE with minor SANDSTONE interbeds. SANDSTONE, clear to minor translucent, very fine to fine, moderately sorted, sub-angular to minor sub-rounded, weak siliceous cement, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE, slightly calcareous, minor very fine carbonaceous specks, pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous.										
Gas			**Units:**	2-32	**Composition (%):**	94	/	5	/	1	/	0	/	0
Show Details / %CO2			Nil											

1972.0	-	1979.0	0.8-5.4 **(3.1)**	SANDSTONE with SILTSTONE interbeds. SANDSTONE, translucent, opaque yellow to yellowish brown, frosted, white to off white, clear, pale grey in part, fine to very coarse, dominantly coarse, very poor sorted, sub-angular to sub-rounded, minor angular, occasional rounded grains, localized strong calcareous and moderately siliceous cement, white to off white argillaceous matrix, pyrite nodules, localized common fine glauconite grains, dominantly loose, unconsolidated, poor to localized fair porosity, no fluorescence. SILTSTONE, light to medium grey, pale grayish brown, off white to pale brown, predominantly argillaceous, common arenaceous, occasional glauconite grains and disseminated material, minor disseminated pyrite, minor micromicaceous, dispersive to moderately hard, predominantly soft to firm, sub-blocky to sub-fissile in part, minor to localized common amorphous.										
Gas			**Units:**	12-19	**Composition (%):**	94	/	5	/	1	/	0	/	0
Show Details / %CO2			Nil											

1979.0	-	(1988.0)	4.8-119.8 **(42.3)**	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, translucent, frosted, opaque pale grey to white, opaque yellow to yellowish brown, clear, very fine to very coarse, very poor sorted, sub-angular to sub-rounded very fine to medium grains and sub-angular to angular coarse to very coarse grains, moderately to localized strong calcareous and siliceous cement, trace to minor pyrite cement, white to pale grey argillaceous matrix and trace brownish grey silty matrix in part, common to localized abundant pyrite nodules, minor fine glauconite grains and disseminated material, predominantly loose, unconsolidated, poor to fair porosity, no fluorescence. SILTSTONE, medium to dark grey, grayish black, trace pale brown, argillaceous, siliceous, common to abundant disseminated pyrite, common glauconite, dominantly hard to very hard, minor soft to firm, sub-blocky to blocky, sub-fissile in part.										
Gas			**Units:**	1-11	**Composition (%):**	96	/	4	/	0	/	0	/	0
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	19	**DAYS FROM SPUD:**	19	**DATE:**	03/09/05
0000hrs Depth:	**1988**	**Last Depth:**	**1985**	**24 HR PROGRESS:**	**3**	**PTD:**	**2075.0mRT**
0600 OPS:	04/09/05 –1988m –						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation (undifferentiated)	1972.0	-1957.0	1940.0	-1925.0	32	L			
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1979.0	-	(1988.0)	4.8-119.8 **(42.3)**	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, translucent, frosted, opaque pale grey to white, opaque yellow to yellowish brown, clear, very fine to very coarse, very poor sorted, sub-angular to sub-rounded very fine to medium grains and sub-angular to angular coarse to very coarse grains, moderately to localized strong calcareous and siliceous cement, trace to minor pyrite cement, white to pale grey argillaceous matrix and trace brownish grey silty matrix in part, common to localized abundant pyrite nodules, minor fine glauconite grains and disseminated material, predominantly loose, unconsolidated, poor to fair porosity, no fluorescence. SILTSTONE, medium to dark grey, grayish black, trace pale brown, argillaceous, siliceous, common to abundant disseminated pyrite, common glauconite, dominantly hard to very hard, minor soft to firm, sub-blocky to blocky, sub-fissile in part.

Gas	**Units:**	1-11	**Composition (%):**	96	/	4	/	0	/	0	/	0
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	20	**DAYS FROM SPUD:**	20	**DATE:**	04/09/05
0000hrs Depth:	**1993**	**Last Depth:**	**1988**	**24 HR PROGRESS:**	**5**	**PTD:**	**2075.0mRT**
0600 OPS:	05/09/05 –2003m – Continue drilling 8 ½" main hole in the Waarre Formation. Slow drilling.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation (undifferentiated)	1972.0	-1957.0	1940.0	-1925.0	32	L			
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
1988.0	-	(2003.0)	13.2-119.8 **(44.7)**	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, clear, minor translucent, minor frosted, trace pale grey, dominantly coarse very coarse, minor fine to medium, very poor sorted, 90% angular coarse to very coarse fractured grains, 10% sub-angular to trace sub-rounded fine to medium grains, strong siliceous and pyrite cement, white siliceous and occasional pyrite matrix, rare pale brown to grey argillaceous matrix, abundant disseminated and nodular pyrite, very common very coarse angular fractured quartz fragments, trace glauconite grains, unconsolidated to broken, trace to localized minor to hard to very hard aggregates, poor inferred and nil to very tight visual pot, no fluorescence. SILTSTONE, medium to dark grey, medium to dark grayish brown, predominantly argillaceous, arenaceous in part, calcareous, common glauconite, common pyrite, minor micromicaceous, soft to firm, moderately hard in part, predominantly sub-blocky, sub-fissile in part, localized blocky to amorphous.

Gas	**Units:**	Tr - 2	**Composition (%):**	99	/	1	/	0	/	0	/	0
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	21	**DAYS FROM SPUD:**	21	**DATE:**	05/09/05
0000hrs Depth:	**2023**	**Last Depth:**	**1993**	**24 HR PROGRESS:**	**30**	**PTD:**	**2075.0mRT**
0600 OPS:	06/09/05 –2040m – Continue drilling 8 ½" main hole in the Waarre Formation.						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation (undifferentiated)	1972.0	-1957.0	1940.0	-1925.0	32	L			
Eumeralla Formation			2031.0	-2016.0					
TD CDL-7			**2071.7**	**-2056.7**					

Tops are wellsite picks

Interval			ROP (ave)	Lithology Description										
1988.0	-	2027.5	13.2-119.9 **(45.1)**	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, clear, minor translucent, minor frosted, trace pale grey, dominantly coarse very coarse, minor fine to medium, very poor sorted, 90% angular coarse to very coarse fractured grains, 10% sub-angular to trace sub-rounded fine to medium grains, strong siliceous and pyrite cement, white siliceous and occasional pyrite matrix, rare pale brown to grey argillaceous matrix, abundant disseminated and nodular pyrite, very common very coarse angular fractured quartz overgrowths fragments, trace glauconite grains, unconsolidated to broken grains, trace to localized minor to hard to very hard aggregates, poor inferred and nil to very tight visual pot, no fluorescence. SILTSTONE, medium to dark grey, medium to dark grayish brown, predominantly argillaceous, arenaceous in part, calcareous, common glauconite, common pyrite, minor micromicaceous, soft to firm, moderately hard in part, predominantly sub-blocky, sub-fissile in part, localized blocky to amorphous.									
Gas			**Units:**	Tr - 2	**Composition (%):**	99	/	1	/	0	/	0	/	0
Show Details / %CO2			Nil											

2027.5	-	(2040.0)	6.5-22.6 **(16.5)**	SANDSTONE with SILTSTONE interbeds. SANDSTONE, clear to translucent, minor opaque pale grey, trace yellowish grey, very fine to medium, predominantly fine, moderately to localized well sorted, sub-rounded to sub-angular, trace calcareous and weak siliceous cement, off white minor pale grey argillaceous/clay matrix, trace pyrite nodules, minor carbonaceous material, black lithics, loose, minor to trace friable aggregates, poor inferred and visual porosity, no fluorescence. SILTSTONE, pale grey, medium to dark grey, argillaceous, common grading to CLAYSTONE, minor carbonaceous material, trace micromicaceous, firm in part, soft to dispersive, sub-blocky, blocky to amorphous.									
Gas			**Units:**	1-4	**Composition (%):**	96	/	4	/	0	/	0	/	0
Show Details / %CO2			Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	22	**DAYS FROM SPUD:**	22	**DATE:**	06/09/05
0000hrs Depth:	**2070**	**Last Depth:**	**2023**	**24 HR PROGRESS:**	**47**	**PTD:**	**2075.0mRT**
0600 OPS:	07/09/05 –2070m – Conducted wiper trip, POOH for Precision wireline.						
REMARKS:	Peterborough-1ST1, reached a TD of 2070m at20:30hrs on the 6th of September, 2005						

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**		**Metres R.T.**
TD Reached Date:		**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are				**244mm Casing Shoe =**	495.6	**Metres R.T.**
				178mm Casing Shoe =		**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Sub-Sea Depth Comparisons	Diff	H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-			
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L			
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L			
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L			
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H			
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H			
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H			
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H			
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H			
Fault zone,	-	-	1653.0	-1638.0	-	-			
fault intersection	-	-	1693.0	-1678.0	-	-			
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA			
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L			
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L			
Waarre Formation									
Waarre 'C'	1972.0	-1957.0	1940.0	-1925.0	32	L			
Waarre 'B'	1979.0	-1964.0	-	-	-	-			
Waarre 'A'	2027.5	-2012.5	-	-	-	-			
Eumeralla Formation	2040.0	-2025.0	2031.0	-2016.0	9	L			
TD CDL-7	**2070.0**	**-2055.0**	**2071.7**	**-2056.7**	**1.7**	**H**			

Tops are wellsite picks

Interval			**ROP (ave)**	**Lithology Description**
2040.0	-	2070	5.0-48.1 **(25.8)**	Interbedded SANDSTONE and SILTSTONE. SANDSTONE, pale grey to off white, milky white, translucent to clear, minor pale green at depths, very fine to medium, dominantly fine, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, increasing calcareous cement, common to abundant white to off white argillaceous matrix, disseminated pyrite, carbonaceous specks and inclusions, trace black and green lithics, dominantly friable to occasional mod hard aggregates, common loose grains, poor visual and poor to fair inferred porosity, no fluorescence. SILTSTONE, very pale grey to greenish grey, light to medium grey, brownish grey, occasional dark grey, common grading to CLAYSTONE, common calcareous, trace arenaceous, occasional carbonaceous specks, soft to localized firm, minor moderately hard, sub-blocky, blocky to predominantly amorphous.

Gas	**Units:**	Tr - 4	**Composition (%):**	99	/	1	/	0	/	0	/	0
Show Details / %CO2	Nil											

DAILY GEOLOGICAL REPORT
ORIGIN ENERGY RESOURCES LIMITED.

WELL:	Peterborough-1ST1	**REPORT No.:**	23	**DAYS FROM SPUD:**	23	**DATE:**	07/09/05
0000hrs Depth:	**2070**	**Last Depth:**	**2070**	**24 HR PROGRESS:**	**0**	**PTD:**	**2075.0mRT**
0600 OPS:	08/09/05 –2070m – Finished Precision Wireline, begin rig-down BHA						
REMARKS:							

PRIMARY OBJECTIVES:	**Prognosed**	**SECONDARY OBJECTIVES:**	**Prognosed**
Waarre Formation	**1940.0 m R.T.**		

Spud Date:	20:30hrs 16/08/05	**Surface Latitude:**	38°35'11.98"	**T.D. =**	2070.0	**Metres R.T.**
TD Reached Date:	20:30hrs 06/09/05	**Surface Longitude:**	142°51'34.06"	**G.L. =**	9.65	**Metres ASL**
Rig release Date:		**Surface E (MGA94):**	0 661 953.0	**R.T. =**	14.95	**Metres ASL**
Rig	Century Rig-7	**Surface N (MGA94):**	5 727 451.0		(~15.00aprox.)	
Nearby Wells / Facilities are			**244mm Casing Shoe =**		495.6	**Metres R.T.**
			178mm Casing Shoe =			**Metres R.T.**

Fm. Tops (* Geophysical Picks)	Wellsite (mRT)	Wellsite (mSS)	Prognosed Depth (mRT)	Prognosed Depth (mSS)	Diff	H/L	Wireline 'Quick-look' analysis (mRT)	Wireline 'Quick-look' analysis (mSS)	Wireline 'Quick-look' analysis H/L
Port Campbell Limestone	5.3	9.7	5.3	9.7	-	-	***5.3***	9.7	0
Gellibrand Marl	122.0	-107.0	116.0	-101.0	6.0	L	***120.0***	-105.0	
Clifton Formation	539.0	-524.0	531.0	-516.0	8.0	L	***541.0***	-526.0	
Narrawaturk Marl	555.0	-540.0	547.0	-532.0	8.0	L	***561.0***	-546.0	
Mepunga Formation	679.0	-664.0	681.0	-666.0	2.0	H	***682.0***	-667.0	
Dilwyn Formation	734.0	-719.0	733.0	-718.0	1.0	H	***735.0***	-720.0	
Pember Mudstone	975.0	-960.0	990.0	-975.0	15.0	H	***981.5***	-966.5	
Pebble Point Formation	1032.0	-1017.0	1039.0	-1024.0	7.0	H	***1036.0***	-1021.0	
Paaratte Formation	1158.0	-1143.0	1156.0	-1141.0	2.0	H	***1157.0***	-1142.0	
Fault zone,	-	-	1653.0	-1638.0	-	-	***1595.0***	-1580.0	
fault intersection	-	-	1693.0	-1678.0	-	-	-	-	
Skull Creek Mudstone	NA	NA	NA	NA	NA	NA	-	-	
Nullawarre Green	1726.0	-1711.0	1693.0	-1678.0	33	L	***1724.0***	-1709.0	
Belfast Mudstone	1774.0	-1759.0	1734.0	-1719.0	40	L	***1773.0***	-1758.0	
Waarre Formation									
Waarre 'C'	1972.0	-1957.0	1940.0	-1925.0	32	L	***1973.0***	-1958.0	
Waarre 'B'	1979.0	-1964.0	-	-	-	-	***1980.0***	-1965.0	
Waarre 'A'	2027.5	-2012.5	-	-	-	-	***2029.0***	-2014.0	
Eumeralla Formation	2040.0	-2025.0	2031.0	-2016.0	9	L	***2043.0***	-2028.0	
TD CDL-7	**2070.0**	**-2055.0**	**2071.7**	**-2056.7**	**1.7**	**H**	***2052.0***	**-2037.0**	

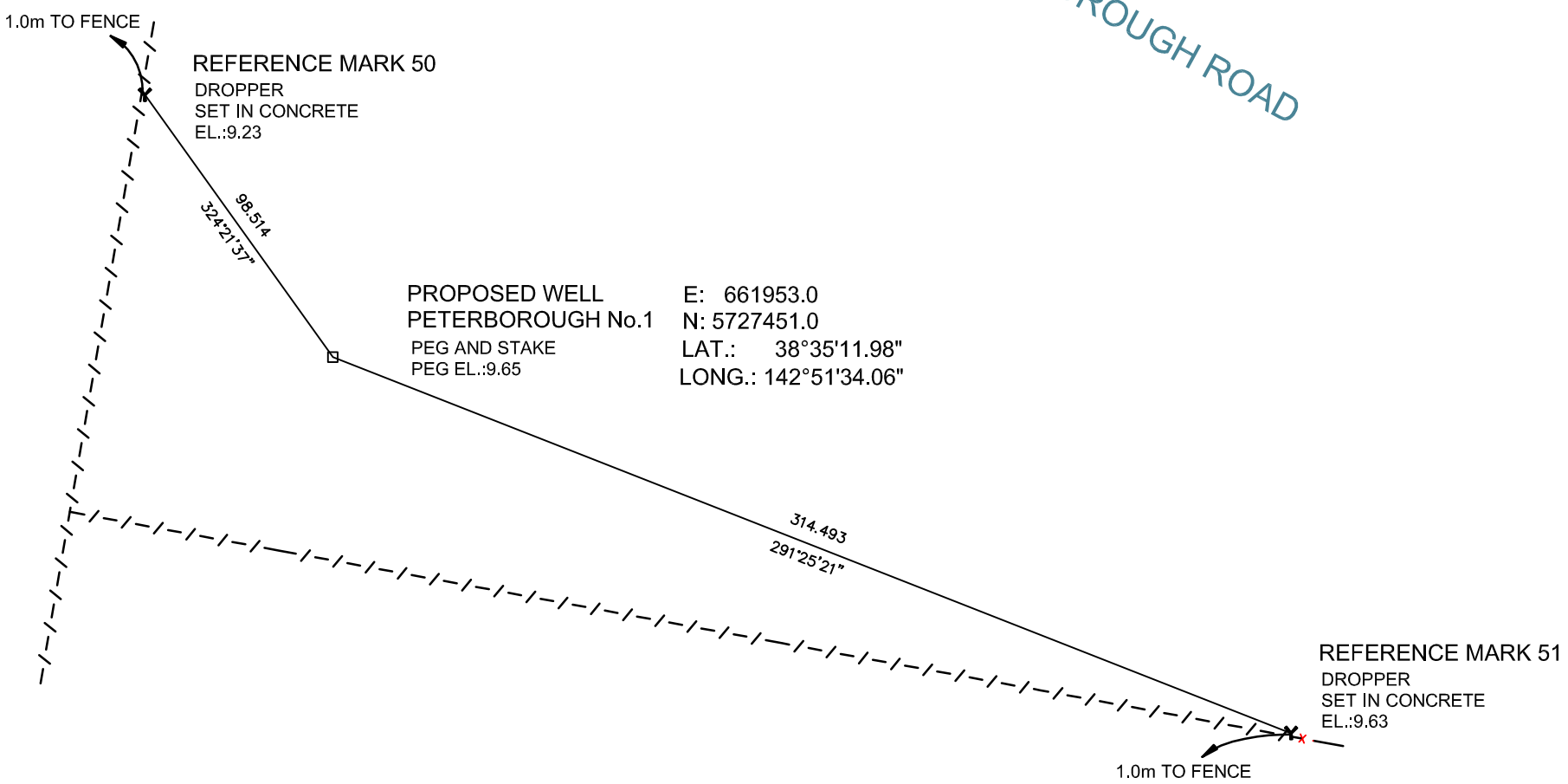
Tops are wellsite picks Tops are Using wireline for picks

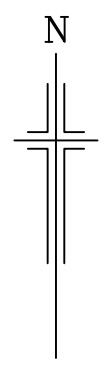
APPENDIX 3

WELL LOCATION SURVEY

ORIGINAL SHEET SIZE A3

LOCATION SURVEY
PETERBOROUGH No.1
PARISH OF NARRAWATURK





0 50 100 150 200 m

SCALE 1:2000

PLOTTED: 24/08/2005 FILE: G001905BORE–MGA–AHD·DWG

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REF: G001905.00
REV: RS 31/01/2005
CAD: G001905bore-MGA-AHD.dwg

LEGEND

- PEG
- SURVEY MARK
- FENCE
- GATE

NOTES:

COORDINATES: MGA
HEIGHT DATUM: AHD
COORDINATES BASED ON: PSM NARRAWATURK 46
HEIGHTS BASED ON: NARRAWATURK 17
FB: 514 / 85

APPENDIX 4

MUD LOG

FORMATION EVALUATION LOG
WELL : PETERBOROUGH 1ST1

Origin energy

Geoservices

COMPANY	ORIGIN ENERGY		SPUD DATE	26-08-05
RIG	CENTURY 7		TD DATE	06-09-05
AREA	PEP 154		TD DRILLER	2070m
STATE/COUNTRY	Australia		TD WIRELINE	2070m
LOCATION	38° 35' 11.98" S	142° 51' 34.06" E	LOGGED FROM	16m
GROUND LVL	9.65m		LOGGED TO	2070m
RT HEIGHT	5.3m		FINAL STATUS	P & A
DEPTH REF	ROTARY TABLE			

WELL CONFIGURATION

BIT SIZE	HOLE DEPTH (m)	CASING SIZE	CASING DEPTH (m)
311mm	499.2	245mm	495.6
216mm	2070		

LOGGING ENGINEERS

Rory McLellan
Ben Morriss
W.S.G. John Hobday

SCALE 1/ 200

SYMBOLS

- NEW BIT RUN
- NEW CORE BIT RUN
- CASING SHOE
- LINER HANGER
- MUD LOSS / MUD GAIN
- Recovered SIDEWALL CORES
- Not Recovered
- CORED INTERVAL (1)
- DST INTERVAL (1)

FLUORESCENCE
- NO SHOW
- WEAK SHOW
- FAIR SHOW
- GOOD SHOW

ABBREVIATIONS

NB NEW BIT	DS DIRECTIONAL SURVEY
NCB NEW CORE BIT	WT WIPER TRIP
RRB RE-RUN BIT	POOH PULL OUT OF HOLE
CS CASING SHOE	RIH RUN IN HOLE
SWC SIDE WALL CORE	AZI AZIMUTH
EL ELECTRIC LOG	INCL INCLINATION
WOB WEIGHT ON BIT	LCM LOST CIRCULATION MATERIAL
RPM REVOLUTIONS/MINUTE	DC DEPTH CORRECTION
SPP STAND PIPE PRESSURE	DST DRILL STEM TEST
SPM STROKES/MINUTE	RMG REAMING
CR CIRCULATED RETURNS	ML MUD LOSSES
PR POOR RETURNS	FR FLOW RATE
NR NO RETURNS	FC FLOW CHECK
TG TRIP GAS	BR BIT RUN
CG CONNECTION GAS	MMCFD Million Cubic Feet/Day
WTG WIPER TRIP GAS	U UNITS OF GAS
SG SWAB GAS	FLUOR FLUORESCENCE

MUD DATA

MW MUD WEIGHT	sg(kg/l)
MG MUD GRADIENT	KPA/mt
FV FLUID VISCOSITY	sec
PV PLASTIC VISCOSITY	Cp
YP YIELD POINT	lb/cf2
Gel GEL STRENGTH	lb/cf2
pH ACIDITY	
F FILTRATE	cm3/30
Ck CAKE THICKNESS	cm/32
S SALINITY	kg/m3
SD SAND CONTENT	%
O OIL CONTENT	%
WL WATER LOSS	cm3/30
Sol SOLIDS CONTENT	%
Cl CHLORIDES	
KCl POTASSIUM CHLORIDE	mg/l
Ca CALCIUM CONTENT	

CLAYSTONE, SILTSTONE, CONGLOMERATE, COARSE SST, MEDIUM SST, FINE SANDSTONE, VF SANDSTONE, BRECCIA, LIMESTONE, DOLOMITIC LIMEST, DOLOMITE, COAL, GYPSUM, HALITE, CEMENT, CALCARENITE, TUFF, VOLCANIC ROCK, IGNEOUS ROCK, METAMORPHICS, FERRUGINOUS, FORAMINIFERA, BRYOZOA, FELDSPAR, CALCAREOUS, DOLOMITIC, CARBONACEOUS, CHERTY, GLAUCONITE, MICACEOUS, PYRITE, BROKEN FOSSILS, MICROFOSSILS, FOSSILS, LITHICS, SIDERITE

0 ROP min/m 20
20 ROP min/m 40
0 RPM 300
0 WOB (tons) 50

DEPTH (mdRT) (m)
0
10

SIDEWALL CORES

CUTTINGS
0 % 100

LITH

OIL SHOWS
G F W

TOTAL GAS units
0 100
TOTAL GAS units
100 1100

CHROMATOLOG(ppm)
C1 iC4
C2 nC4
C3 iC5
nC5
100 1K 10K

BITS
SHOES
CORED INTERVALS
DST INTERVALS

GEOLOGICAL DESCRIPTIONS
COMMENTS

PETERBOROUGH-1 SPUDDED ON 16-08-05 @ 20:30 HRS

BIT 1: VAREL CH1GMS
SIZE: 311mm JETS: 3x16
IN: 16m OUT: 499m
RUN: 483m HRS: 10.8
COND: 1-2-WT-A-E-I-NO-TD

20

WOB 2-6 klbs
RPM 60-92
SPP 190-230 psi
FLW 252 gpm

NO GAS

LIMESTONE:off wh-tan,mnr pl orng brn,spar,foss,micrxln-xln,fri-occ mod hd.

30

LIMESTONE:pl brn-pl gry brn,occ pl orng brn,spar-occ micr,foss,rr nod pyr, micrxln-xln,fri-mod hd,occ hd.

40

LIMESTONE:pl brn-pred pl gry brn, occ tan-pl orng brn,spar-mnr micr,foss, occ glauc,fri-mod hd.

50

16-08-05

17-08-05

SURVEY @ 50m: 0.52° 177.30 Az

LIMESTONE:pl gry,off wh-v pl yel i/p,spar,loc micr,com-abdt foss, tr nod pyr,fri-mod hd.

60

LIMESTONE:v pl gry-blush gry,off wh-v pl yel,i/p,spar,loc micr, com-abdt foss,tr nod pyr, fri-mod hd.

70

WOB 3-7 klbs
RPM 100-126
SPP 1190-1215 psi
FLW 630-642 gpm

80

90

100

110

120

WOB 5-10 klbs
RPM 110-124
SPP 1310-1520 psi
FLW 622-648 gpm

130

NO GAS

0 100

100 1100

NO GAS

SURVEY @ 75m: 0.44° 145.37 Az

LIMESTONE:v pl gry-off wh,spar, loc micr,foss,fri-mod hd.

LIMESTONE:pl gry-off wh,rr dk gry,pl yel,spar,foss,tr loc xln,fri-mod hd.

LIMESTONE:pl gry-off wh,rr dk gry,pl yel,spar,foss,tr loc xln,fri-mod hd.

SURVEY @ 100m: 0.33° 132.26 Az

LIMESTONE:pl gry-off wh,loc dk gry,spar,loc micr,foss, tr loc xln,dom fri-mod hd, rr hd-v hd.

LIMESTONE:dom off wh-v pl gry, spar,micr i/p,com foss mat,rr micxln frags,mod hd-hd,fri i/p.

SURVEY @ 125m: 0.42° 160.32 Az

MARL:pl-med gry,off wh,v calc,com foss & shell frags,tr blk lith spks, mod hd-hd,blky-sbblky,amorph i/p.

140

150

160

170

180

190

0

100

100

1100

MARL:pl-med gry,off wh,v calc,com foss & shell frags,tr blk lith spks, mod hd-hd,blky-sbblky,amorph i/p.

MARL:pl gry,off wh,v calc,com foss & shell frags,tr blk lith spks,mod - hd-hd,blky-sbblky,amorph i/p.

SURVEY @ 150m: 0.32° 175.89 Az

MARL:pl gry,occ med gry-off wh, v calc,mnr-com foss & shell frags, frm-hd i/p,sft i/p,blky-sbblky, amorph i/p.

MARL:pl gry,occ med,off wh,v calc, com shell & foss frags,mnr-tr nod pyr,sft-hd,dom frm,blky-sbblky, amorph.

SURVEY @ 175m: 0.04° 198.44 Az

WOB 9-12 klbs
RPM 112-121
SPP 1020-1110 psi
FLW 576-596 gpm

NO GAS

SAMPLES NOT ABLE TO BE COLLECTED DUE TO MUD FLOW PROBLEMS LEADING TO SHAKERS WITH RETURNS

170-220m NOT COLLECTED

200

SURVEY @ 200m: 0.06° 96.37 Az

MW 1.06
FV 45
PV 6
YP 33
Gel -
WL -
pH 9.2
CL -

210

0 100

220

100 1100

WOB 4-12 klbs
RPM 110-126
SPP 788-1410 psi
FLW 342-648 gpm

NO GAS

SURVEY @ 225m: 0.25° 142.51 Az

MARL:pl gry,med gry i/p,arg,
occ loc micrxln frags,dom mod
hd-hd,disp-sft i/p,sbblky-amorph.

230

MARL:pl gry,med gry,arg,occ
micrxln LMST frags,foss mat,
tr nod pyr,mod hd-hd,loc sft,
sbblky-amorph i/p.

240

250

SURVEY @ 250m: 0.09° 271.35 Az

MARL:pl-med gry,arg,calc,com foss

260

270

WOB 4-14 klbs
RPM 126-154
SPP 1430-1520 psi
FLW 600-612 gpm

280

NO GAS

0 100

100 1100

290

300

310

320

frags,occ nod pyr,disp-frm,pred sft, sbblky-amorph.

MARL:med brnsh gry-med grysh grn, arg,calc,com foss LMST frags,tr nod pyr,sft-frm,occ disp,sbblky-sbfiss, amorph i/p.

SURVEY @ 275m: 0.07° 213.34 Az

MARL:pl-med grysh brn,pl-med grnsh gry,arg,calc,com pl brnsh orng foss frags,sft-disp,mnr frm,sbblky-amorph.

SURVEY @ 300m: 0.19° 11.65 Az

MARL:pl-med grysh brn,mnr grnsh gry, arg,calc,mnr foss LMST frags,pred sft-disp,sbblky-amorph.

WOB 10-15 klbs
RPM 114-147
SPP 1480-1520 psi
FLW 605-616 gpm

330

340

NO GAS

0 100

100 1100

350

DRILLING DATA LOST
DUE TO DAP FAILURE

360

370

WOB 9-15 klbs
RPM 114-148
SPP 1310-1510 psi
FLW 600-614 gpm

380

NO GAS

MARL:pl brn-pl grysh brn,mnr pl gry-pl grnsh gry,arg,v calc,mnr brnsh orng foss frags,sft-disp,sbblky-amorph.

SURVEY @ 325m: 0.12° 130.42 Az

MARL:pl brn-pl grysh brn,mnr pl grnsh gry,arg,calc,com off wh-pl brnsh orng foss frags,sft-disp,sbblky-amorph.

SURVEY @ 350m: 0.25° 86.36 Az

LIMESTONE:off wh-pl brnsh orng,spar, foss,micrxln-xln,mod hd-occ hd.

MARL:pred med grysh brn,mnr pl gry-pl brn,arg,calc,com foss LMST frags,disp frm,sbblky-amorph.

SURVEY @ 375m: 0.24° 76.93 Az

390

400

410

420

430

440

0

100

100

1100

WOB 8-14 klbs
RPM 113-128
SPP 1110-1550 psi
FLW 520-612 gpm

NO GAS

MARL:pl-med grysh brn,mnr off wh-pl gry,v calc,arg,com pl brnsh orng foss frags,sft-disp,sbblky-amorph.

SURVEY @ 400m: 0.27° 58.51 Az

LIMESTONE:off wh-pred brnsh orng, spar,foss,micrxln-xln,mod hd-occ hd.

SURVEY @ 425m: 0.26° 36.77 Az

MARL:pl-med grysh brn,mnr pl gry-pl grnsh gry,arg,calc,mnr foss LMST frags,sft-disp,occ frm,sbblky-amorph.

MARL:pl-med grnsh gry,pl-med grysh brn,arg,calc,mnr brnsh orng foss frags, occ vf carb spks sft-frm mnr disp sbblky

sbfiss,mnr amorph.

450

SURVEY @ 450m: 0.22° 35.71 Az

460

MARL:pl-med grnsh gry,mnr med grysh brn,arg,calc,mnr foss LMST frags,occ vf carb incl,sft-pred frm,sbblky-occ sbfiss.

MW 1.06
FV 41
PV 5
YP 31
Gel -
WL -
pH 9.0
CL -

0 100

470

100 1100

CARBIDE LAG CHECK @ 472m
THEOR. STKS : 2990
ACTUAL STKS : 3296
OPEN HOLE O/G: 10%

WOB 8-14 klbs
RPM 113-128
SPP 1110-1550 psi
FLW 520-612 gpm

NO GAS

SURVEY @ 475m: 0.25° 36.10 Az

MARL:pl-med grnsh gry,med grysh brn i/p,calc,arg occ grd to aren,occ brnsh orng foss frags,tr vf dissem carb spks, sft-frm,sbblky-sbfiss.

480

490

MARL:lt-med gry,pl grnsh gry,rr lt brn,dk gry,v calc,arg,com off wh foss frags,occ orngsh brn liths,sft-pred frm,sbblky-sbfiss.

17-08-05

9 5/8" SURFACE CASING
SET @ 495m

BIT 2 SMITH M90 PDC
SIZE: 209mm JETS: 7x12
IN: 499m OUT: 1228m
RUN: 729m HRS: 17.8
COND: 3-1-WT-N-X-I-NO-BHA

20-08-05

500

SURVEY @ 500m: 0.18° 21.88 Az

FIT @ 502m: EMW= 16.8 ppg

510

520

530

540

550

560

WOB 2-8 klbs
RPM 100-136
SPP 650-1050 psi
FLW 440-608 gpm

NO GAS

0 100

100 1100

MARL:med-dk grnsh gry,mnr pl gry, arg,v calc,oc pl brn foss frags,sft-frm, sbblky-sbfiss.

MARL:gen dk grnsh gry,arg,calc,mnr foss LMST frags,sft-frm,occ disp,sbblky-occ amorph.

SURVEY @ 525m: 0.16° 60.98 Az

MARL:pred dk grnsh gry,mnr med dk gry,arg,calc,occ pl brn-brnsh orng foss frags,tr glauc grs,sft-frm,sbblky-sbfiss.

MARL:grnsh gry-pred dk grnsh gry, mnr med dk gry,arg,calc,mnr-com pl brnsh,orng foss frags,sft-frm,sbblky-sbfiss,rr amorph.

SILTSTONE:mod rdsh brn,orngsh brn, mnr brnsh gry,arg grd to CLYST,calc, abdt Fe stng,disp-sft,mnr frm,sbblky-blky,amorph.

LIMESTONE:mod rdsh brn,orngsh brn, mnr pl gry i/p,lut,mnr-tr micrxln i/p, Fe stng,sft,mod hd-hd i/p.

MARL:med dk grnsh gry,mnr dk gry i/p, arg,v calc,abdt orngsh brn shell & foss frags,sft-frm,sbblky-sbfiss.

SURVEY @ 550m: 0.13° 45.18 Az

SANDSTONE:dom rdsh orng,mnr orng gry,tr clr-trnsl,f-med,mod pr srt,sbang-sbrnd,mnr ang grs,strg calc cmt,orngsh rd arg mtx,com Fe stng,com foss & shell frags,lse,uncons,fri-occ mod hd,pr por.

SILTSTONE:orngsh brn,rdsh brn,arg grd to CLYST,sli aren i/p,calc,com Fe stng,sft-pred frm,disp i/p,sbblky-sbfiss i/p,amorph i/p.

LIMESTONE:orngsh brn,rdsh brn,lut, arg,micrxln i/p,Fe stng,sft-frm,mod hd-hd i/p.

SILTSTONE:grysh orng,whsh orng,arg grd to CLYST,calc,sft-occ frm,disp i/p, sbblky-blky,amorph.

MARL:dk gry-brnsh gry,v arg,calc,

570

580

590

600

610

620

630

WOB 4-8 klbs
RPM 110-160
SPP 800-900 psi
FLW 493-510 gpm

WOB 4-10 klbs
RPM 110-148
SPP 720-1230 psi
FLW 442-618 gpm

NO GAS

NO GAS

0 100

100 1100

mnr glauc grs & carb incls,sft-disp, sbblky-amorph.

MARL:dk gry-brnsh gry,v arg,calc, mnr carb spks & glauc vf grs,occ nod pyr,sft-disp,sbblky-amorph.

SURVEY @ 575m: 0.09° 354.30 Az

LIMESTONE:orngsh brn,off wh,lut, arg,micrxln i/p,com Fe stng,sft-frm, occ mod hd-hd.

MARL:brnsh gry-occ dk gry,arg,tr carb spks,mnr nod pyr,sft-disp,sbblky-amorph.

MARL:brnsh gry,v arg,calc,occ vf carb incls & liths,tr nod pyr,sft-disp,sbblky-amorph.

LIMESTONE:orngsh brn-mnr off wh, lut,arg,micrxln,com Fe stng,frm-mod hd, occ hd.

SURVEY @ 600m: 0.19° 112.17 Az

MARL:brnsh gry,v arg,calc,mnr carb spks & mat,mnr nod pyr,sft-disp,sbblky-amorph.

MARL:brnsh gry,dk gry i/p,v arg,mod calc,mnr nod pyr,occ carb spks & foss frags,sft-disp,sbblky-amorph.

SANDSTONE:trnsl,yelsh orng-rdsh brn, crs-v crs,pr srt,sbrnd-rnd,ang v crs frac grs,wk sil cmt,no vis mtx,strg Fe stng, lse,fr por,no fluor.

LIMESTONE:off wh-grysh orng,lut,arg, micrxln-xln,fri-mod hd,hd i/p.

MARL:brnsh gry-brnsh blk,v arg,calc, mnr pl brn-brnsh orng foss & shell frags, occ vf carb spks,sft-disp,sbblky-amorph.

SURVEY @ 625m: 1.12° 112.17 Az

LIMESTONE:grysh rd-mod rdsh brn,mnr off wh-pl brn,lut,arg,foss i/p,micrxln-occ xln,mod hd-hd.

640

650

660

670

680

690

WOB 4-8 klbs
RPM 112-155
SPP 950-1330 psi
FLW 525-627 gpm

MW 1.03
FV 49
PV 12
YP 17
Gel 5/7/8
WL 9
pH 9.0
CL 20k

0 100

100 1100

NO GAS

MARL:gen brnsh gry,mnr dsky yelsh brn, v arg,mod calc,mnr nod pyr,occ vf calc lams,sft-disp,sbblky-amorph.

MARL:brnsh gry-occ brnsh blk,arg-v arg,calc,mnr foss LMST frags,occ nod pyr,sft-frm,sbblky-amorph.

MARL:pred brnsh gry,v arg,calc,mnr vf glauc grs,occ nod pyr,sft-disp, sbblky-amorph.

SURVEY @ 650m: 1.98° 30.91 Az

MARL:pl brnsh gry-pred brnsh gry,v arg,calc,mnr nod & dissem pyr,occ carb spks & calc frags,sft-disp,sbblky-amorph.

MARL:brnsh gry-mnr brnsh blk,v arg, calc,mnr-loc com galauc grs,occ nod pyr & foss frags,sft-disp,sbblky-amorph.

MARL:off wh-brnsh gry,arg,calc,com glauc grs,mnr nod pyr,sft-disp,sbblky-amorph.

SAMPLE UNABLE TO BE COLLECTED FROM 670m-675m DUE TO MUD LOSSES OVER THE SHAKERS

SURVEY @ 675m: 1.20° 349.83 Az

SANDSTONE:trnsl yel,mnr clr-frstd, crs-v crs,mod srt,grn sbrnd-rnd,occ sbang-ang,wk sil cmt,cln & uncons,gd inf por,no fluor.

SILTSTONE:off wh-wh,v arg grd to CLYST,calc,v sft-disp,sbblky-pred amorph.

MARL:brnsh gry,v agr,calc,mnr vf dissem carb spks,occ nod pyr,sft-disp, sbblky-sbfiss.

700

710

720

730

740

750

20-08-05

21-08-05

WOB 8-14 klbs
RPM 115-124
SPP 1390-1424 psi
FLW 615-625 gpm

0 100

100 1100

NO GAS

SANDSTONE:trnsl-lt brn,off wh, f-med,com crs,mod srt,sbang-sbrnd,com strg calc,loc wh-off wh arg mtx,com dk brn liths, occ glauc,fri,pr vis por,no fluor.

SURVEY @ 700m: 0.08° 74.39 Az

SANDSTONE:trnsl-pl brn,mnr Fe stn, f-v crs,dom crs,sbang-rnd,pr srt, mod-loc strg calc cmt,tr brn arg mtx,com liths,tr glauc,rr fri aggs, dom lse grs,pr vis por,fr inf por, no fluor.

SILTSTONE:lt-med brn,dk brn i/p, arg,calc,tr carb spks,grn liths, sft-disp,sbblky-amorph.

MARL:med gry,blush gry,dk brn i/p, arg,calc,occ foss mat,sft-frm, disp i/p,sbblky-sbfiss.

SILTSTONE:med-occ dk brn,grysh brn i/p,arg,loc strg calc,occ carb spks,tr foss frags,sft-disp,occ frm,sbblky-blky.

SURVEY @ 725m: 0.15° 168.55 Az

SANDSTONE:trnsl brn,opq brnsh yel, frstd,mnr clr,f-v crs,pred crs-v crs, sbrnd-sbang,com crs-v pr srt,dom mnr ang frac v crs grs,crs rnd grs, wk-loc mod sil cmt,tr brn arg mtx, loc com pyr nods,tr Fe stng,dom lse, uncons,pr-loc fr por,no fluor.

SILTSTONE:med-dom dk brn,grysh brn, arg,aren i/p,loc strg strg calc cmt, tr micmic,pred blky,sbblky-sbfiss i/p.

SANDSTONE:trnsl-clr,opq pl brn, frstd,mnr mlky,f-v crs,dom crs-v crs,mod wl srt,sbang-sbrnd,com rnd v crs grs,wk sil cmt,rr brn arg mtx,loc com pyr nods,lse,mnr uncons,fr por,no fluor.

SANDSTONE:trnsl-clr,opq,occ pl brn-frstd,f-v crs,dom crs-v crs,mod wl srt,sbang-sbrnd,occ rnd,wk-mod calc cmt,occ v crs grs w Fe stn,mnr-com mic flks, tr dk brn, arg mtx,dom lse-uncons,fr-gd inf por,no fluor.

SILTSTONE:med-dk brn,grysh brn i/p,arg,tr aren,occ nod pyr,tr blk lith spks,sft-disp,loc frm, sbblky-amoprh i/p.

SURVEY @ 750m: 0.18° 209.40 Az

SANDSTONE:trnsl-clr,opq,rr pl brn,mlky,f-v crs,dom crs,pr srt, sbang-sbrnd wk calc cmt mnr pl-

760

770

780

WOB 6-14 klbs
RPM 115-122
SPP 1390-1424 psi
FLW 615-620 gpm

NO GAS

0 100

100 1100

790

800

810

med brn arg mtx,com nod pyr,occ
Fe stn,rr mic,dom lse-uncons,occ
fri aggs,pr vis por,fr inf por,
fo fluor.

SILTSTONE:lt-med brn,occ dk brn,
dom arg,mnr aren,occ micmic,carb
spks,sft-disp,occ frm,sbblky,
amorph i/p.

SURVEY @ 775m: 0.14° 225.22 Az

SANDSTONE:trnl-clr,mlky-opq,pl
brn i/p,f-v crs,dom crs,sbang-
sbrnd,occ ang,wk-loc v strg calc
cmt,com off wh-pl brn arg mtx,
com nod pyr,mnr ang frac qtz grs,
lith spks,tr foss mat,dom lse,loc
fri aggs,pr vis por,fr inf por,
no fluor.

SANDSTONE:trnl-clr,mlky-opq,pl
brn i/p,f-v crs,dom crs,sbang-
sbrnd,occ ang,wk-loc v strg calc
cmt,com off wh-pl brn arg mtx,
com nod pyr,mnr ang frac qtz grs,
lith spks,tr foss mat,dom lse,loc
fri aggs,pr vis por,fr inf por,
no fluor.

SILTSTONE:med dk gry,dom arg,sli
aren i/p,com micmic,occ carb spks,
dom sft,rr loc frm, sbblky-blky,
amorph i/p.

SURVEY @ 800m: 0.18° 290.25 Az

SANDSTONE:trnsl-clr,off wh,opq,
vf-crs,dom crs,pr srt,sa-sr,
tr wk sil cmt,com pl brn arg mtx,
occ nod pyr,tr grn & blk liths,
dom cln & lse,occ fri aggs,pr vis
& inf por,no fluro.

SANDSTONE:trnsl-clr,opq,frstd,
dom med,mod wl srt,sbang-sbrnd,
tr wk calc cmt mnr sil cmt tr

820

830

840

850

860

870

WOB 10-15 klbs
RPM 110-118
SPP 1250-1330 psi
FLW 542-562 gpm

NO GAS

0 100

100 1100

WOB 12-16 klbs
RPM 104-114
SPP 1240-1280 psi
FLW 542-560 gpm

NO GAS

pl brn arg mtx,tr nod pyr,pred
cln & lse,fr-gd por,no fluor.

SURVEY @ 825m: 0.15° 57.92 Az

SANDSTONE:trnsl-clr,opq,frstd,
dom med,mod wl srt,sbang-sbrnd,
tr wk calc cmt,mnr sil cmt,tr
pl brn arg mtx,tr nod pyr,ang
frac qtz grs,pred cln & lse,
fr-gd por,no fluor.

SILTSTONE:lt-med brn,dk brn i/p,
arg,com loc aren,occ blk & pl
grn liths,sft-disp,tr loc frm,
sbblky-amorph.

SANDSTONE:trnsl-clr,opq,frstd,
f-crs,dom med,mod wl srt,sbang-
sbrnd,tr wk calc cmt,sil cmt,
pl brn arg mtx,occ orng & grn
liths,tr ang frac qtz grs,
pred cln & lse,fr por,no fluor.

SURVEY @ 850m: 0.19° 170.14 Az

SANDSTONE:trnsl-clr,opq,frstd,
f-crs,dom med,mod wl srt,sbang-
sbrnd,tr wk calc cmt,sil cmt,
pl brn arg mtx,occ orng & grn
liths,tr ang frac qtz grs,
pred cln & lse,fr por,no fluor.

SILTSTONE:lt-med brn,occ dk brn,
arg,aren i/p,com lt grn liths,
tr dk brn & blk liths,sft,sbblky-
blky.

SURVEY @ 875m: 0.20° 98.64 Az

SANDSTONE:trnsl-clr,opq-frstd,
pl yel,f-crs,dom med,sbang-sbrnd,
mnr calc cmt,tr wk sil cmt,com
lt brn arg mtx,com dissem pyr,

880

890

900

910

920

930

940

MW 1.07
FV 52
PV 11
YP 26
Gel 6/8/9
WL 7.5
pH 9.0
CL 19k

WOB 2-12 klbs
RPM 104-122
SPP 1225-1345 psi
FLW 525-572 gpm

0 100

100 1100

NO GAS

blk & grn liths,tr foss mat,pr vis & inf por,no fluor.

SANDSTONE:trnsl-clr,frstd,occ opq,vf-crs,dom med,ang-sbrnd, tr wk sil cmt,loc calc cmt,no vis mtx,occ ang frac qtz grs, gen cln & lse,fr por,no fluor.

SILTSTONE:lt-med brn,occ dk brn, arg,aren i/p,com lt grn liths, tr dk brn & blk liths,sft,sbblky-blky.

SURVEY @ 900m: 0.15° 341.54 Az

SANDSTONE:trnslt-clr,opq,frstd, f-crs,dom med-crs,ang-sbrnd,wk-loc strg calc cmt,rr loc med brn-off wh arg mtx,com blk,lt-dk grn liths,occ v crs ang frac qtz grs, dom cln & lse,fri aggs,pr vis por, fr inf por,no fluor.

SILTSTONE:lt-med brn,dk brn i/p,arg,dom loc aren,calc,occ grn liths,carb spks,sft-frm i/p, sbblky-blky.

SANDSTONE:trnsl-clr,frstd,f-crs,dom med,sbang-sbrnd,mod calc cmt,tr pl brn-off wh arg mtx,dom cln & lse,rr mic flks,fr por, no fluor.

SURVEY @ 925m: 0.15° 181.51 Az

PETERBOROUGH #1 ST1 KICKED OFF ON 26-08-05. CEMENT PLUGS SET IN PETERBOROUGH #1 DUE TO DEVIATION OF WELL

950

960

970

980

990

1000

WOB 4-21 klbs
RPM 154-233
SPP 865-1517 psi
FLW 380-579 gpm

0

100

100

1100

SLIDING
958m-967.5m

NO GAS

SLIDING
978m-982m

SLIDING
988m-996m

SURVEY @ 942m: 0.28° 276.47 Az

BIT 3RR SMITH M704VC
SIZE: 209mm JETS: 3x18
IN: 945m OUT: 1595m
RUN: 650m HRS: 18.4
COND:4-3-BT-G-4-4-SD-HA/HR

CEMENT PLUG 945m-955m

SURVEY @ 951m: 0.96° 142.84 Az

SURVEY @ 961m: 1.76° 156.29 Az

SILTSTONE:pred grysh brn,arg grd to CLYST i/p,mnr calc frags,occ nod pyr, tr glauc grs,sft-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,f-crs,occ v crs frstd grs,pr srt,sbrnd-rnd,wk sil cmt, cln & lse,fr-gd inf por,no fluor.

SURVEY @ 989m: 0.28° 276.47 Az

SILTSTONE:brnsh gry,arg grd to CLYST i/p,com calc incls,mnr nod pyr, occ glauc grs,tr foss & shell frags, sft-disp,sbblky-amorph.

MW 1.08
FV 57
PV 19
YP 28
Gel 6/8/11
WL 4.5
pH 9.5
CL 20k

WOB 10-22 klbs
RPM 152-288
SPP 1300-1630 psi
FLW 542-600 gpm

1010

1020

1030

1040

1050

1060

SLIDING
1000.5m-1005.5m

SILTSTONE:pred brnsh gry,mnr off wh-pl brn,arg grd to CLYST,calc,occ foss frags,occ nod pyr & glauc grs,sft-disp, sbblky-amorph.

SANDSTONE:clr-occ trnsl,vf-f,occ med, rr crs,mod srt,pred sbang,wk calc cmt, occ off wh arg mtx,gen cln & lse,occ fri aggs,pr vis & inf por,no fluor.

SLIDING
1014.5m-1020.5m

SILTSTONE:brnsh gry-olive blk,arg grd to CLYST,com calc incls,occ nod pyr,sft-disp,sbbky-amorph.

0 NO GAS 100

SANDSTONE:pred clr,vf-occ f,rr med-crs,mod wl srt,sbang-mnr sbrnd,wk calc cmt,occ nod pyr,cln & uncons,pr inf por, no fluor.

SURVEY @ 1026m: 9.37° 68.23 Az

100 1100

SLIDING
1033.5m-1039m

SILTSTONE:brnsh blk-olv blk,arg grd to CLYST,com calc,mnr nod pyr,tr glauc grs,sft-disp,sbblky-amorph.

SANDSTONE:clr-occ trnsl,pred vf, occ f-med,mod wl srt,sbang-mnr sbrnd, wk calc cmt,occ nod pyr,cln & lse,pr inf por,no fluor.

SLIDING
1042.5m-1047.5m

SILTSTONE:brnsh blk-olv blk,agr g/t CLYST,com calc frags,com glauc grs,sft-disp,sbblky-amorph.

SLIDING
1052m-1055m

SANDSTONE:trnsl-trnsl yelsh brn,mnr frstd,vf-v crs,pred med-crs,pr srt,ang-sbrnd,gen sbang,wk sil cmt,com Fe stng, cln & uncons,gd inf por,no fluor.

SURVEY @ 1054m: 3.72° 64.51 Az

SLIDING

SILTSTONE:dk grnsh gry-olv blk,mnr mod brn,arg grd to CLYST,glauc i/p,mnr Fe stng,sft-disp,sbblky-amorph.

1061.5m-1064.5m

1070

1080

1090

1100

1110

1120

WOB 8-16 klbs
RPM 154-284
SPP 1530-1700 psi
FLW 530-566 gpm

NO GAS

0 100

100 1100

WOB 11-17 klbs
RPM 221-255
SPP 1599-1693 psi
FLW 527-548 gpm

NO GAS

SANDSTONE:yelsh brn,trnsl yelsh brn, trnsl-clr,occ frstd,med-v crs,pr srt, sbrnd-sbang,occ ang,wk sil cmt,mnr yelsh brn arg mtx,uncons & lse,fr-gd inf por,no fluor.

SURVEY @ 1073m: 2.14° 82.47 Az

SILTSTONE:olv blk-grnsh blk,yelsh brn-mod brn,arg grd to CLYST,calc i/p, com Fe stng,occ nod pyr,sft-frm,occ disp,sbblky-sbfiss.

SANDSTONE:mod-dk yelsh brn,trnsl yelsh brn,mnr trnsl-frstd,f-v crs,gen med-crs,pr srt,sbang-sbrnd,occ rnd,wk sil cmt,mnr yelsh brn arg mtx,fri-lse, fr-gd vis & inf por,no fluor.

SILTSTONE:mod-dk yelsh brn,grnsh blk i/p,arg grd to CLYST,com Fe stng, occ calc incls,sft-disp,occ frm,sbblky-amorph.

SANDSTONE:dk yelsh brn,trnsl yelsh brn,mnr trnsl-frstd,pred med-crs,mnr f, occ v crs,mod srt,sbang-pred sbrnd,wk sil cmt,occ yelsh brn arg mtx,pred lse, pred lse,fr-gd vis & inf por,no fluor.

SILTSTONE:mod-dk yelsh brn,mnr grnsh blk,arg grd to CLYST,com Fe stng,gen sft disp,mnr mod hd-occ hd,sbblky-amorph.

SURVEY @ 1110m: 2.15° 89.89 Az

SANDSTONE:mod-dk yelsh brn,trnsl yelsh brn,clr-trnsl i/p,f-crs,rr v crs,pr srt,sbrnd-occ sbang,wk sil & occ calc cmt,mnr mod yelsh brn arg mtx,mnr glau grs,pred cln & lse,fr-gd vis & inf por, no fluor.

SILTSTONE:dk yelsh brn,dk grnsh gry-grnsh blk.arg grd to CLYST,sli calc,com Fe stng,occ glauc grs,pred sft-disp,occ mod hd,sbblky-amorph.

MW 1.08
FV 55
PV 19
YP 26
Gel 5/8/13
WL 4.5
pH 9.0
CL 19k

1130

1140

1150

1160

1170

1180

WOB 6-23 klbs
RPM 147-290
SPP 1635-1888 psi
FLW 524-582 gpm

0 100

100 1100

SLIDING
1156m-1159m

NO GAS

SLIDING
1184m-1186.5m

SANDSTONE:trnsl,yelsh brn,occ opq,med-crs,occ f,mod srt,sbang-sbrnd,wk sil cmt,tr wk calc cmt, rr off wh-pl brn arg mtx,occ mic flks,tr nod pyr,gen cln & lse,gd vis por,no fluor.

SILTSTONE:dk grysh brn,med-lt gry, yelsh gry,arg,loc calc,mnr carb spks, sft-disp,rr frm,blky-amorph.

SURVEY @ 1138m: 2.29° 087.70 Az

SANDSTONE:lt-med yelsh brn,trnsl, f-crs,dom med,sbang-sbrnd,ang i/p, wk sil cmt,tr pl brn arg mtx,occ mic flks,tr nod pyr,glauc,lse & cln,fr-gd por,no fluor.

SILTSTONE:lt-med gry,dk grnsh gry,arg,sli calc,tr carb spks, sft-disp,sbblky-amorph.

SANDSTONE:trnsl-trnsp,yel brn,Fe stng, f-crs,pred med grs,mod-wl srt,sbang-pred sbrnd,wk sil cmt,tr arg mxt,tr glauc, tr nod pyr,cln lse qtz grs,fr inf por, no fluor.

SURVEY @ 1167m: 1.35° 091.32 Az

SANDSTONE:trnsl-trnsp,yel brn, Fe stng,f-crs,pred med grs,mod-wl srt,sbang-pred sbrnd,rr pry cmt, wk sil cmt,tr arg mtx,tr nod pyr, micmic,cln lse qtz grs,fr inf por,no fluor.

SILTSTONE:med-dk gry,ovl gry, arg,grd to CLYST i/p,com pyr,tr brn & blk liths,sft-disp,sbblky-amorph.

SILTSTONE:lt-med brnsh-gry,olv-gry,arg,sli calc,tr pyr,foss mat, sft-disp,sbblky-amorph.

SURVEY @ 1185.89m: 0.65° 005.80 Az

SANDSTONE:trnsl-clr,off wh,pl yelsh brn,vf-med,dom f,mod srt, sbang-sbrnd,tr ang,tr sil cmt, com pyr cmt,tr med brn arg mtx, rr nod pyr,tr foss frags,gen cln & lse,occ v hd aggs,fr-gd inf por,nil-ti inf por,no fluor.

1190

1200

1210

1220

1230

1240

1250

WOB 9-13 klbs
RPM 242-279
SPP 1649-1922 psi
FLW 551-589 gpm

0 100

100 1100

NO GAS

SILTSTONE:med-dk gry,olv gry, med brn i/p,arg,loc calc,tr glauc, pyr,mnr carb spks & flks,sft-disp, frm i/p,sbblky-amorph.

SILTSTONE:med-dk brn,gry-brn, olv gry i/p,arg,sli calc,tr carb spks,tr glauc,sft-disp,sbblky-amorph.

SILTSTONE:med dk gry,grysh brn, arg,sli calc,grd to CLYST i/p,com pyr,tr glauc,sft-disp,loc frm,sbblky-amorph.

SURVEY @ 1213.83m: 0.73° 276.07 Az

SANDSTONE:trnsl-clr,frstd,pl yel mlky i/p,f-v crs,sbang-sbrnd,ang i/p,tr calc cmt,wk sil cmt,rr loc pl brn arg mtx,com grn,blk liths, tr glauc,occ ang frac qtz grs,tr Fe stn,pr vis por,gd inf por,no fluor.

SANDSTONE:trnsl-clr,frstd,tr pl yel,f-crs,occ v crs,dom med, mod srt,sbang-sbrnd,ang i/p,tr wk calc cmt,no vis mtx,occ blk & grn liths,tr glauc,pred cln & lse,gd inf por,no fluor.

SANDSTONE:trnsl-clr,occ frstd,rr mlky,f-v crs,dom med-crs,mod srt, sbang-sbrnd,tr wk sil cmt,gen cln & lse,gd por,no fluor.

SANDSTONE:trnsl-clr,f-crs,dom crs,tr v crs,sbang-sbrnd,tr sil cmt,occ pyr cmt,no vis mtx,com nod pyr,mic flks,gen cln & lse, gd inf por,no fluor.

SURVEY @ 1241.83m: 0.31° 226.52 Az

SILTSTONE:lt-med gry,dk grysh brn,gry-grn,arg,tr glauc,nod pyr, sft-frm i/p,disp i/p,sbblky-amorph.

1260

1270

1280

1290

1300

1310

M

M

G

WOB 13-19 klbs
RPM 273-293
SPP 1860-1893 psi
FLW 553-565 gpm

MW 1.12
FV 54
PV 20
YP 29
Gel 6/10/14
WL 6.5
pH 9.0
CL 19k

0 100

NO GAS

100 1100

SANDSTONE:trnsl-clr,opq,rr pl yel,f-crs,dom med,sbang-sbrnd,tr wk sil cmt,rr lt gry-pl brn arg mtx,com nod pyr,occ v crs rnd qtz grs,gen cln & lse,rr fri aggs,pr vis por,fr-gd inf por,no fluor.

SILTSTONE:lt-med gry,arg,tr aren,com carb spks & flks,occ pyr,sft-disp,rr loc frm,sbblky-amorph.

SANDSTONE:trnsl-clr,opq,rr pl yel,f-crs,dom med,sbang-sbrnd,tr wk sil cmt,tr lt gry-pl brn arg mtx,com nod pyr,mnr-com mic flks, gen cln & lse,fr-gd inf por,no fluor.

SURVEY @ 1270m: 0.35° 226.99 Az

SANDSTONE:trnsl-clr,opq,pl yel, f-med,com crs-v crs,mod srt,sbang-sbrnd,loc calc cmt,tr wk sil cmt, no vis mtx,gen cln & lse,fr-gd inf por,no fluor.

SANDSTONE:trnsl-clr,pl yel,f-crs,dom f-med,mod srt,sbang-sbrnd, tr sil cmt,rr loc wh-pl gry arg mtx,occ grn liths,com mic flks,tr nod pyr,carb mat,rr fri agss,gen cln & lse,pr vis por,no fluor.

SILTSTONE:brnsh gry-olv blk,arg grd to CLYST i/p,sli calc,sft-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,mnr trnsl yelsh brn,occ frstd,f-crs,occ v crs,pr srt,wk sil cmt,tr stg pyr cmt,mnr calc frags, pred cln & lse,rr strg pyr aggs,fr-gd inf por,pr vis por,no fluor.

SURVEY @ 1298m: 0.12° 3.44 Az

SANDSTONE:clr-frstd,mnr trnsl yelsh brn,f-v crs,v pr srt,wk sil cmt,mnr nod pyr,occ mica flks,pred cln & lse,fr-gd inf por,no fluor.

SILTSTONE:brnsh gry-olv gry,mnr off wh,arg com grd to CLYST,calc i/p,occ glauc grs,sft-disp,sbblky-amorph

1320

1330

1340

1350

1360

1370

WOB 10-17 klbs
RPM 248-275
SPP 1840-1890 psi
FLW 546-558 gpm

NO GAS

0 100

100 1100

WOB 10-16 klbs

glauc grs,slt-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,mnr frstd,occ trnsl yelsh brn,vf-v crs,gen med-crs,pr srt,sbang-sbrnd,wk sil cmt,occ strg pyr cmt,mnr calc frags & nod pyr,pred cln & lse,fr-gd inf por,pr vis por,no fluor.

SURVEY @ 1326m: 0.19° 297.02 Az

SILTSTONE:med dk gry-olv gry,mod brn, grnsh gry,aren-occ arg,pred sil,mod hd-hd,sbblky-sbfiss.

SANDSTONE:clr-trnsl,mnr trnsl yelsh brn,occ frstd,med-crs,mnr f & v crs,pr srt,sbang-sbrnd,wk sil cmt,mnr strg pyr cmt,occ calc frags & chert frags,pred cln & lse,fr-gd inf por,pr vis por,no fluor.

SILTSTONE:(1)med dk gry-olv gry,mod brn,grnsh gry,aren,sil grd to chert,mod hd-hd,sbblky-sbfiss.
(2)brnsh gry-olv blk,mnr off wh,arg grd to CLYST,sli calc,occ loc com carb incls, sft-disp,sbblky-amorph.

SURVEY @ 1354m: 0.17° 039.83 Az

SANDSTONE:clr-trnsl,mnr frstd,occ trnsl yelsh brn,pred vf-med,mnr crs-v crs,pr srt,sbang-sbrnd,wk sil cmt,wk calc cmt,occ mod strg pyr cmt,mnr off wh-wh arg mtx,com nod pyr,mnr biot/ mica flks,occ-loc com carb incls,occ glauc grs,com lse,fri-occ mod hd aggs, fr inf por,pr vis por,no fluor.

SILTSTONE:brnsh gry-olv gry,mnr brnsh blk,occ off wh,arg grd to CLYST,calc i/p, mnr-loc com carb incls,sft-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,mnr frstd,occ trnsl yelsh brn,pred vf-f,mnr med-crs, occ v crs,pr srt,sbang-sbrnd,wk sil cmt, mnr brnsh gry arg mtx,loc com carb incls mnr mica flks & glauc grs,occ nod pyr, com lse,fri aggs,pr vis por,fr inf por, no fluor.

RPM 245-260
SPP 1850-1900 psi
FLW 547-556 gpm

1380

1390

1400

NO GAS

0 100

100 1100

SILTSTONE:dk grnsh gry-olv gry, mnr brnsh gry,arg grd to CLYST,sli calc,mnr carb spks,occ glauc grs, sft-disp,sbblky-amorph.

SURVEY @ 1382m: 0.24° 310.38 Az

SANDSTONE:clr-trnsl,mnr frstd,occ trnsl yelsh brn,gen vf-f,mnr med-v crs, mod srt,sbang-sbrnd,wk sil cmt,com nod pyr,cln & uncons,pr-fr inf por,no fluor.

SILTSTONE:brnsh gry-olv gry,arg grd to CLYST,mnr calc frags & nod pyr,occ carb spks,sft-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,mnr frstd,rr trnsl yelsh brn,f-v crs,v pr srt.sbang-sbrnd,wk sil cmt,occ strg pyr cmt,com nod pyr,pred cln & lse,occ mod hd-hd pyr aggs,fr-gd inf por,pr vis por,no fluor.

1410

SURVEY @ 1410m: 0.25° 267.62 Az

SILTSTONE:pred olv gry,mnr brnsh gry,occ off wh-wh,arg com grd to CLYST, mnr calc frags,occ carb incls,sft-disp, sbblky-amorph.

1420

SANDSTONE:clr-mnr trnsl,occ frstd, pred vf-f,mnr med-crs,occ v crs,pr srt, sbang-sbrnd,wk sil cmt,mnr nod pyr,gen cln & uncons.fr inf por,no fluor.

WOB 13-17 klbs
RPM 208-252
SPP 1870-1930 psi
FLW 538-552 gpm

NO GAS

1430

SILTSTONE:brnsh gry-olv gry,off wh-lt brnsh gry i/p,arg com grd to CLYST, com calc frags,mnr carb incls & occ lams,sft-disp,sbblky-amorph.

SANDSTONE:clr-trnsl,rr frstd,vf-mnr f,occ med-v crs,mod srt,wk calc & sil cmt,gen sbang,mnr brnsh gry arg mtx, occ nod pyr,pred lse,pr vis & inf por, no fluor.

1440

1450

1460

MW 1.12
FV 49
PV 21
YP 25
Gel 5/9/13
WL 6.4
pH 9.0
CL 19.5k

1470

WOB 15-20 klbs
RPM 196-242
SPP 1727-1980 psi
FLW 495-547 gpm

1480

1490

0 100

100 1100

NO GAS

SURVEY @ 1439m: 0.32° 263.37 Az

SILTSTONE:brnsh gry-pred olv gry, mnr off wh-lt brnsh gry i/p,arg grd to CLYST,com calc frags,occ nod pyr & carb incls,sft-disp,sbblky-amorph

SANDSTONE:clr-occ trnsl,pred vf,mnr f-med,mod wl srt,sbang-sbrnd,wk sil cmt cln & uncons,pr inf por,no fluor.

SILTSTONE:grnsh gry-olv gry,occ off wh-lt brnsh grn,arg grd to CLYST,com calc frags,mnr vf dissem carb spks,sft-disp,sbblky-amorph.

SANDSTONE:pred clr,mnr trnsl,vf,mnr f,occ med,mod wl srt,sbang-sbrnd,wk sil cmt,occ glauc grs,cln & lse,pr inf por,no fluor.

SURVEY @ 1467m: 0.29° 185.42 Az

SILTSTONE:grnsh blk-olv blk,mnr lt brnsh gry-lt olv gry,v arg grd to CLYST, com calc frags,occ carb incls,sft-disp, sbblky-amorph.

SILTSTONE:lt-brnsh gry,lt blush lt brn,v arg,grd to CLYST,occ calc mat,carb spks & incls,sft-pred disp sbblky-amorph.

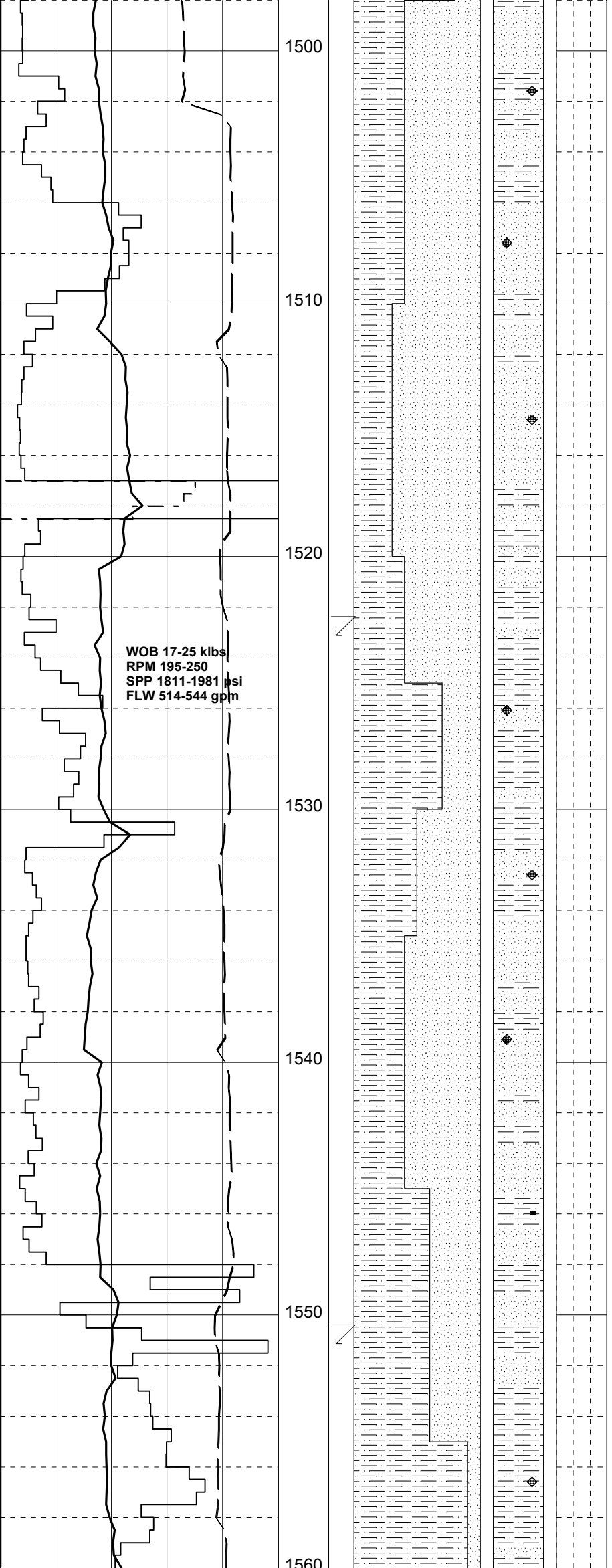
SILTSTONE:lt-med blush gry,lt-med med brn,arg,tr loc calc,grd to CLYST, com carb spks & flks,sft-disp,dom amorph,sbblky i/p.

SANDSTONE:trnsl-clr,off wh,vf-f, occ med,mod wl art,sbang-sbrnd,tr wk sil cmt,com-abdt v pl gry-off wh arg mtx,grd to SLTST,tr nod pyr, tr carb mat,fri,rr lse grs,pr vis por,no fluor.

SILTSTONE:dom lt-med blush gry, rr lt-med brn,arg,com loc aren,grd to vf SST i/p,com nod pyr,carb spks, disp-sft,loc frm,sbblky-amorph,rr blky.

SURVEY @ 1495m: 0.19° 232.70 Az

SANDSTONE:trnsl-clr,frstd,f-v crs,pred



med-crs,pr srt,ang-sbang,mnr calc cmt, wk sil cmt,arg mtx grd to slty mtx,tr nod pyr,rr carb spks,dom lse cln qtz grs,fri-mod hd aggs,pr inf & vis por, no fluro.

SILTSTONE:lt-med gry,blush gry, occ dk grnsh gry,dom arg,com loc aren,com pyr,carb spks & micrlams, dom sft-disp,occ mod hd,sbblky-amorph.

SANDSTONE:trnsl-clr,off wh-v pl gry,vf-crs,dom med,pr srt,ang-sbrnd, tr wk calc cmt,com pl gry-off wh arg mtx,com ang v crs frac qtz grs,com carb spks & frags,mnr nod pyr,fri-mod hd aggs,rr loc hd,dom lse & cln, pr vis por,fr-gd inf por,no fluor.

SURVEY @ 1523m: 0.35° 141.99 Az

SILTSTONE:lt-med gry,grysh brn i/p,dom arg,aren i/p,sli calc,sft-disp,com frm,sbblky-amorph.

SANDSTONE:trnsl-clr,frstd,mlky,vf-f,occ med-v crs,mod srt,sbang-sbrnd, wk-mod calc cmt,loc v strg sil cmt, abdt wh-pl gry arg mtx,grd to SLTST, com carb spks & frags,occ pyr,dom fri-mod hd,occ v hd aggs,rr lse grs, ti-pr vis por,fr inf por,no fluor.

SILTSTONE:pl gry,pl brn-off wh, arg,com aren,calc i/p,mnr-com carb spks & micrlams,mnr dissem pyr,sft-frm,com mod hd,sbblky-blky.

SANDSTONE:trnsl-clr,frstd,mlky, dom vf-f,rr med,mod wl srt,sbang-sbrnd,wk-mod calc cmt,occ sil cmt, abdt wh-pl gry arg mtx,grd to SLTST, com carb spks & frags,nod pyr,dom fri aggs,tr lse grs,ti-pr vis por, fr inf por,no fluor.

SURVEY @ 1551m: 0.50° 139.96 Az

SANDSTONE:clr-trnsl,vf-f,wl srt, sbrnd-sbang i/p,wk-mod strg calc cmt, com off wh-wh arg mtx,com nod pyr,tr glauc grs & carb mat,fri aggs,com lse, pr vis & inf por,no fluor.

SILTSTONE:lt-med gry,gry-brn,arg, com loc aren,com carb spks,mnr-com dissem pyr sft-disp sbblky-amorph

WOB 14-23 klbs
RPM 168-254
SPP 1950-2060 ps
FLW 512-536 gpm

MW 1.12
FV 51
PV 22
YP 21
Gel 6/12/16
WL 6.0
pH 9.3
CL 21k

1570

1580

MW 1.10
FV 51
PV 20
YP 21
Gel 5/11/17
WL 6.2
pH 9.5
CL 22k

1590

1600

1610

1620

NO GAS

0 100

100 1100

SILTSTONE:med gry,dk gry i/p,occ lt brnsh gry,arg,sli calc,occ carb spks,tr dk grn,crm liths,tr pyr, sft,frm i/p,sbblky-blky,amorph i/p.

SANDSTONE:clr-trnsl,mnr frstd,f-v crs,v pr srt,ang-sbrnd,gen sbang,wk calc cmt,com carb mat grd to COAL, mnr nod pyr,gen cln & uncons,fr-gd inf por,no fluor.

COAL:(Tr)blk,dll-sbvit,arg,mod hd-brit,sbblky-sbfiss,unevn-mnr sbconch.

SURVEY @ 1579m: 0.38° 158.39 Az

SILTSTONE:pred brnsh gry,mnr brnsh blk-olv blk,arg grd to CLYST,com calc frags,mnr-loc com carb mat,occ nod pyr, sft-disp,sbblky-amorph.

SILTSTONE:brnsh gry-olv gry,v lt gry-lt olv gry,mnr brnsh blk,pred arg grd to CLYST,occ aren,calc i/p,mnr-loc com carb mat grd to COAL,occ glauc grs,gen sft-disp,occ frm,sbblky-amorph.

SANDSTONE:off wh-pl brn,clr-occ trnsl, vf-mnr f,wl srt,sbang,mod strg-strg calc cmt,com off wh-wh arg mtx,mnr carb incl occ dissem pyr,mod hd-hd aggs,v pr-ti vis por,fluor as below.

SURVEY @ 1588m: 0.72° 131.53 Az

FLUOR: 1593m-1595m: 20-30% mod bri-bri,pl grnsh yel,ptchy,evn i/p, slw blmng,pl yel c/c,thn dll ring res

BIT 4RR SMITH M90
SIZE: 209mm JETS: 6x12,1x14
IN: 1595m OUT:1988m
RUN:393m HRS:24.5
COND:5-7-BT-A-X-4-RG-PR
BIT 28mm (1-1/8") UNDERGAUGE

SANDSTONE:trnsl-clr,off wh-wh,dom vf-f,rr crs,mod wl srt,sbang-sbrnd, com mod calc cmt,com-loc abdt wh arg mtx,v crs lse grs,occ blk liths, tr nod pyr,fri-mod hd,ti-pr vis,no fluor.

SILTSTONE:lt-med gry,brnsh gry,dom arg,aren i/p,grd to vf SST i/p,sli calc,com carb spks,tr dissem pyr,sft-frm,sbblky-blky.

SANDSTONE:trnsl,wh-off wh,dom vf-f,tr med-v crs,mod wl srt,sbang-sbrnd,loc wk-mod strg calc cmt,com pl brn-off wh arg mtx,com carb spks & flks,nod pyr,tr glauc,dom fri-mod hd,occ hd,ti vis por,no fluor.

SURVEY @ 1617m: 0.99° 176.85 Az

SILTSTONE:lt gry,med gry-brn,arg, com aren,com loc calc,occ glauc, carb spks,tr dissem pyr,sft-frm,mod hd i/p,sbblky-blky.

WOB 7-20 klbs
RPM 232-257
SPP 1893-2098 psi
FLW 524-554 gpm

1630

1640

1650

1660

1670

WOB 7-12 klbs
RPM 240-254
SPP 1890-2070 psi
FLW 510-542 gpm

1680

100% C1

0 100 / Tr 100

100 1100

96 / 4 / Tr

93 / 6 / 1

88 / 9 / 3

SADNSTONE:trnsl-clr,off wh-v pl gry,vf-f,wl srt,sbang-sbrnd,tr loc calc cmt,com wh-off wh arg mtx,occ glauc,com carb spks & flks,tr dissem pyr,fri-mod hd,ti vis por,no fluor.

SILTSTONE:lt-med gry,tr med brn, dom arg,com loc aren,com carb spks, occ blk & grn liths,sft-frm,rr disp, dom sbblky-blky,amorph i/p.

SANDSTONE:trnsl-off wh,v pl gry, vf-f,mod sil cmt,com-abdt wh-pl gry arg mtx,com carb spks & occ micrlams, tr dissem pyr,grn liths,fri-mod hd, ti vis por,no fluor.

SURVEY @ 1645m: 0.89° 161.12 Az

SILTSTONE:lt-med gry,grysh brn, dk brn i/p,aren arg i/p,grd to vf SST i/p,com carb spks,tr glauc,sft-frm,sbblky-blky.

SANDSTONE:trnsl,off wh,v pl gry-brn,vf-occ med,dom f,mod wl srt,sbang-sbrnd,tr wk calc cmt,mod sil cmt,off wh arg mtx,com carb spks & flks,nod pyr,tr ang frac qtz grs,mod hd,fri i/p,ti vis por,no fluor.

SILTSTONE:lt-med brnsh gry,arg,com aren,mnr-com carb spks & micrlams,sft-frm,com loc disp,sbblky-blky, amorph i/p.

SANDSTONE:trnsl-opq,pl gry,vf-f, occ med,mod wl srt,sbang-sbrnd,occ ang,mod sil cmt,tr pyr cmt,abdt pl gry-off wh arg mtx,com carb spks & frags,occ nod pyr,tr nod pyr,fri-mod hd,hd i/p,ti vis por,no fluor.

SURVEY @ 1673m: 1.35° 191.26 Az

SILTSTONE:lt-med gry,gry brn i/p, occ dk brn,dom aren,com arg,grd to vf SST,sli calc,com carb spks,mnr dissem pyr,frm-mod hd,sbblky,blky i/p.

SILTSTONE:lt-med gry,lt brnsh gry i/p,arg,com aren,mnr carb spks,tr glauc,sft-frm,pred sbblky, tr sbfiss.

MW 1.15
FV 46
PV 20
YP 18
Gel 7/13/21
WL 5.7
pH 9.5
CL 25k

1690

1700

1710

1720

1730

1740

WOB 8-12 klbs
RPM 230-244
SPP 2000-2110 psi
FLW 494-516 gpm

91 / 8 / 1

93 / 7 / Tr

94 / 5 / 1

0 100

100 1100

95 / 5 / Tr

96 / 4 / Tr

95 / 5 / Tr

95 / 5 / Tr

SILTSTONE:lt-pred brnsh gry,med-dk gry i/p,arg-loc com aren,mnr carb spks & micrlams,tr-mnr pyr nods,sft-disp, loc frm-mnr mod hd,sbblky-sbfiss,blky-amorph.

SANDSTONE:med lt-med gry,clr-occ trnsl,vf occ grd to aren SLTST,mod wl srt,sbang-pred sbrnd,wk calc & sil cmt, com wh arg mtx,com carb incls,mnr off wh liths,occ dissem pyr,fri-occ mod hd, v pr vis por,no fluor.

SILTSTONE:dk gry-brnsh gry,pred aren, mnr arg,com dissem carb mat,mnr off wh liths & glauc grs,occ nod pyr,frm-occ mod hd,sbblky-mnr sbfiss.

LIMESTONE:dk yelsh brn-brnsh orng, off wh i/p,micr-lut,arg,micrxln-xln, mod hd-hd.

SURVEY @ 1711m: 1.51° 182.93 Az

SANDSTONE:med lt gry-med gry,grd to brnsh gry i/p,pred clr,vf grd to aren SLTST i/p,mod wl srt,sbang-sbrnd,wk-occ mod strg calc & sil cmt,com wh arg mtx, grd to brnsh gry slty mtx i/p,mnr nod pyr,occ carb spks & glauc grs,fri-occ mod hd,v pr vis por,no fluor.

SILTSTONE:lt brnsh gry-brnsh gry, dk gry-olv blk i/p,arg grd to aren,com carb incls & micrlams,mnr dissem pyr & glauc grs,frm-mod hd,sbblky-mnr sbfiss.

SURVEY @ 1729m: 1.53° 191.11 Az

SANDSTONE:med lt gry-med gry,clr, vf occ grd to aren SLTST.mod wl srt, mod strg sil cmt,com wh arg mtx,mnr glauc grs & carb incls,fri-occ mod hd,v pr vis por,no fluor.

SILTSTONE:brnsh gry grd to olv blk, pred aren occ grd to vf SST,com carb spks & flks,occ off wh liths,sft-mod hd,gen frm,sbblky-occ sbfiss.

LIMESTONE:brnsh orng,off wh-wh,micr-

1750

1760

1770

1780

1790

1800

95 / 5 / Tr

96 / 4 / Tr

96 / 4 / Tr

0 100

96 / 4 / Tr

100 1100

96 / 4 / Tr

96 / 4 / Tr

96 / 4 / Tr

WOB 8-12 klbs
RPM 228-239
SPP 2000-2120 psi
FLW 488-512 gpm

SLIDING
1802m-1806m

lut,arg,xln-micrxln,mod hd-hd.

SANDSTONE:trnsl-frstd,clr i/p,mnr trnsl grysh orng,vf-v crs,v pr srt,ang-sbrnd,gen sbang,wk sil cmt,tr wh arg mtx,com calc frags,occ pl grn liths, pred cln & lse,fr-gd inf por,pr vis por, no fluor.

SURVEY @ 1757m: 2.19° 180.76 Az

SILTSTONE:brnsh gry-olv gry,brnsh blk-olv blk,arg grd to aren,com carb mat,mnr off wh liths,occ glauc grs,sft-mod hd,gen frm,sbblky-sbfiss.

SANDSTONE:med lt gry-med gry,clr-trnsl,mnr frstd,90% vf-v crs lse grs, 10% vf-f aggs,v pr srt,sbang-sbrnd,occ ang,wk-occ mod strg calc & sil cmt,mnr wh arg mtx,mnr carb spks,occ pl grn liths,fri-mod hd aggs,pred lse,fr-gd inf por,pr vis por,no fluor.

LIMESTONE:brnsh orng-brnsh gry,micr-spar,gen arg,mnr interbedded qtz grs, xln-micrxln,mod hd-hd.

SILTSTONE:brnsh gry-olv gry,mnr brnsh blk & olv blk,pred arg,loc com aren,com carb spks,tr micmic,pred frm-mod hd, pred frm-mod hd,loc sft-disp,sbblky-sbfiss,mnr loc amorph.

SANDSTONE:clr-trnsl,trnsl orng,crs-v crs,fr vf-f,pr srt,ang-sbrnd,tr strg sil cmt,tr off wh arg mtx,lse-uncons, fr-gd inf por,no fluor.

SILTSTONE:brnsh gry-olv gry,mnr lt brnsh gry,arg-loc mnr aren,mnr pyr,occ grn liths & carb spks,sft-disp,frm i/p, sbblky-amorph.

SURVEY @ 1796m: 2.06° 183.53 Az

SANDSTONE:clr-occ trnsl,vf-f,mod wl srt,sbang-sbrnd,wk sil cmt,cln & uncons, pr inf por,no fluor.

SILTSTONE:brnsh gry-olv gry,olv blk i/p,arg grd to CLYST,sli calc,mnr vf carb incls,tr pl grn glauc grs,pred sft-disp,mnr frm,sbblky-amorph.

1810

1820

1830

1840

1850

1860

1870

WOB 8-25 klbs
RPM 136-240
SPP 2040-2130 psi
FLW 482-505 gpm

MW 1.14
FV 45
PV 19
YP 18
Gel 6/11/19
WL 6.4
pH 9.5
CL 26k

97 / 3

97 / 3 / Tr

97 / 3 / Tr

0 100

100 1100

97 / 3 / Tr

97 / 3 / Tr

97 / 3

SLIDING
1853m-1858.5m

97 / 3 / Tr

SANDSTONE:clr-mnr trnsl,vf-f,mod srt,sbang-mnr sbrnd,wk sil cmt,cln & lse,pr inf por,no fluor.

SILTSTONE:brnsh gry-olv gry,brnsh blk-olv blk,arg grd to CLYST,com calc frags,loc com glauc grs,mnr carb incls, gen sft-disp,mnr frm,sbblky-amorph.

SURVEY @ 1823m: 2.34° 181.01 Az

LIMESTONE:grysh orng,mod yelsh brn, oc off wh,micr-lut,arg-occ aren,micrxln-xln,mod hd-hd.

SILTSTONE:brnsh gry-brnsh blk,olv gry-olv blk i/p,pred arg grd to CLYST, occ aren,mnr-loc com glauc grs,mnr nod pyr & carb spks,sft-disp,occ frm,sbblky-amorph.

SANDSTONE:clr-occ trnsl,vf-med,mod srt,sbang-sbrnd,wk sil cmt,cln & uncons, pr-fr inf por,no fluor.

SILTSTONE:brnsh gry,olv gry-olv blk, arg com grd to CLYST,com calc frags grd to LMST,mnr nod pyr & glauc grs,disp-frm gen sft,sbblky-amorph.

SURVEY @ 1851m: 2.97° 174.42 Az

SILTSTONE:brnsh gry-mnr brnsh blk, olv blk,arg grd to CLYST,occ aren,com calc frags,micmic i/p,loc com glauc grs, mnr nod pyr,pred sft-disp,mnr frm,sbblky amorph.

SILTSTONE:brnsh-gry,brnsh-blk, arg,grd to CLYST,calc i/p,occ foss frags,LMST frags,mnr-com glauc,mnr nod pyr,sft-disp,rr loc frm,dom sbblky-amorph.

WOB 8-25 klbs
RPM 135-233
SPP 2000-2072 psi
FLW 482-510 gpm

1880

1890

1900

1910

1920

WOB 8-25 klbs
RPM 140-280
SPP 1800-2140 psi
FLW 484-600 gpm

1930

MW 1.14
FV 47
PV 18

97 / 3 / Tr

97 / 3 / Tr

0 100

96 / 4 / Tr

100 SLIDING 1100
1896.5m-1899m

96 / 4 / Tr

96 / 4 / Tr

SLIDING
1908.5-1910.5m

95 / 5 / Tr

SLIDING
1916.5-1921m

94 / 5 / 1

SILTSTONE:med-dk gry,brnsh gry, gry-blk i/p,dom arg,grd to CLYST, sli calc,rr loc aren,mnr-com glauc, rr carb spks,tr nod pyr,LMST frags, sft-frm,disp i/p,sbblky,rr amorph.

SURVEY @ 1879m: 3.63° 168.09 Az

SILTSTONE:med-dk gry,brnsh gry, tr lt brn,dom arg,grd to CLYST,mnr-com glauc,tr carb spks,nod pyr,sft-frm,rr loc disp,sbblky-blky,rr loc amorph.

SILTSTONE:med-dk gry-brn,occ lt brn,gry-blk,dom arg,com loc aren,occ carb spks & frags,mnr nod pyr,glauc, tr LMST frags,sft-pred frm,sbblky-blky,sbfiss i/p.

SILTSTONE:med-dk gry,grysh brn i/p,com dk gry-blk,dom arg calc i/p, com LMST frags,mnr-com glauc,tr nod pyr,sft-pred frm,rr loc mod hd, sbblky-blky.

SURVEY @ 1907m: 3.42° 167.47 Az

SILTSTONE:med-dk gry,grysh brn i/p,dom arg,calc i/p,com LMST frags, glauc,tr dissem & nod pyr,frm-mod hd, sft i/p,sbblky-blky.

CARBIDE LAG CHECK @ 1923m
THEOR. STKS : 5710
ACTUAL STKS : 6501
OPEN HOLE O/G: 13%

10 STANDS WIPER TRIP

SILTSTONE:dk gry-grysh blk,mnr brnsh gry,arg grd to vf aren,com calc frags, com vf dissem carb spks,mnr-loc com glauc grs,mnr dissem & nod pyr,frm-occ mod hd,sbblky-sbfiss.

YP 18
Gel 5/11/17
WL 5.2
pH 9.5
CL 28k

1940

1950

1960

MW 1.14
FV 45
PV 17
YP 18
Gel 5/10/16
WL 5.0
pH 9.5
CL 30k

1970

WOB 8-15 klbs
RPM 143-247
SPP 2040-2130 psi
FLW 498-520 gpm

1980

1990

MW 1.15
FV 46
PV 17
YP 19
Gel 6/14/19
WL 4.8
pH 9.3

95 / 5 / Tr

SLIDING
1936.5-1942m

93 / 6 / 1

0

93 / 6 / 1

100

100

SLIDING
1936.5-1942m

1100

93 / 6 / 1

93 / 5 / 2

96 / 3 / 1

94 / 5 / 1

95 / 5 / Tr

95 / 5 / Tr

99 / Tr

SURVEY @ 1935m: 3.85° 176.99 Az

SILTSTONE:dk gry-grysh blk,occ brnsh gry,arg grd to aren,com calc frags,mnr-loc com carb incls,loc com glauc grs, mnr micmic & dissem pyr,frm-mod hd, sbblky-sbfiss.

SILTSTONE:dk gry-grysh blk,mnr brnsh-gry,arg grd to aren i/p,micmic i/p, com calc frags,mnr-loc com glauc grs, mnr nod pyr,disp-mod hd,gen sft-frm, sbblky-mnr sbfiss,amorph i/p

SILTSTONE:dk gry-grysh blk,brnsh gry, arg occ grd to aren,calc,com glauc grs, mnr nod pyr,disp-frm,sbblky-amorph.

SILTSTONE:(1)dk gry-grysh blk,arg grd to aren,calc,com glauc grs,mnr dissem pyr,occ carb incls,frm-occ mod hd,sbblky-sbfiss
(2)brnsh gry,arg occ grd to CLYST, calc,mnr vf incls,sft-disp,gen amorph.

SURVEY @ 1964m: 3.36° 201.21 Az

SILTSTONE:(1)lt brnsh gry-brnsh gry, v arg grd to CLYST,sli calc,sft-disp, amorph.
(2)med dk-dk gry,mnr olv blk-brnsh blk,aren grd to arg i/p,calc,com glauc grs,mnr nod & dissem pyr,frm-occ mod hd,sbblky-sbfiss.

SANDSTONE:trnsl,opq yel-yelsh brn, frstd,wh-off wh,clr,pl gry i/p,f-v crs, dom crs grs,v pr srt,sbang-sbrnd,mnr ang,occ rnd grs,loc strng calc & mod sil cmt,wh-off wh arg mtx,nod pyr,loc com f glauc grs,dom lse,uncons,pr-loc fr por,no fluor.

SILTSTONE:lt-med gry,pl grysh brn, off wh-pl brn,pred arg,com aren,occ glauc grs and mat,loc com carb spks & micrlams,mnr dissem pyr,mnr micmic, disp-mod hd,pred sft-frm,sbblky-sbfiss i/p,mnr-loc com amorph.

SANDSTONE:trnsl,frstd,opq pl gry-wh,opq yel-yelsh brn,clr,vf-v crs, v pr srt,sbang-sbrnd vf-med grs & sbang-ang crs-v crs grs,calc & strng sil cmt,wh-pl gry arg & tr brnsh gry slty mtx i/p,com nod pyr,mnr f glauc grs,pred lse,uncons,f inf por,no fluor.

SILTSTONE:med-dk gry,gry-blk, rr pl brn,sil,arg,com-abdt dissem pyr,com glauc,carb spks & frags,dom hd-v hd,tr sft-frm,sbblky-blky, sbfiss i/p.

SURVEY @ 1988m: 4.40° 199.00 Az

BIT #5 HUGHES GT-09
SIZE: 209mm JETS: 3x14
IN: 1988m OUT:2070m
RUN:82m HRS:42.8
COND:3-7-CT-G-E-2-WT-TD

SANDSTONE: trnsl,opq pl gry,opq

CL 30k

2000

MW 1.15
FV 46
PV 17
YP 19
Gel 4/9/16
WL 4.6
pH 9.3
CL 30k

2010

2020

WOB 8-33 klbs
RPM 60-102
SPP 1700-1824 psi
FLW 424-460 gpm

2030

2040

MW 1.14
FV 47
PV 17
YP 20
Gel 4/8/15
WL 4.5
pH 9.5
CL 31k

2050

99 / Tr

99 / Tr

100% C1

100% C1

0 100

100 100% C1 1100

96 / 4

96 / 4

96 / 4

96 / 4

97 / 3

yelsh brn,frstd,clr,f-crs, rr v crs ang grs,ang-sbrnd,pred sbang occ mod strng sil cmt,rr strng pyr cmt, tr-rr wh sil mtx,pyr nods,foss & shell frags,v ang qtz frc grs,lse, uncons,mnr-tr fri-mod hd agg,fr-pr inf & v pr vis por, no fluor

SILTSTONE:med-dk gry,med-dk grysh brn,pred arg,aren i/p,calc,com glauc, com pyr,mnr micmic,sft-frm,mod hd i/p, pred sbblky,sbfiss i/p,loc blky-amorph i/p.

SURVEY @ 2005m: 5.25°

SANDSTONE:trnsl,frstd,opq,clr,mnr pl gry,f-v crs,pred med-crs,sbang aggs,ang v crs frac grs,sbang-sbrnd lse grs,strg sil cmt,mnr-tr pyr cmt, wh sil & pyr mtx,mnr pl gry arg mtx, com-loc abdt pyr nods,ang frac v crs qtz grs & ovgths,tr foss & shell frags,hd-v hd aggs,tr lse,com uncons frac grs,nil vis por,v pr inf por,no fluor.

SILSTONE:lt-med gry,com dk gry, occ lt-med brnsh gry,dom arg,loc aren,calc i/p,abdt dissem pyr,com glauc,tr micmic,hd-v hd,tr sft,dom sbblky,com sbfiss.

SANDSTONE:trnsl,frstd,opq,clr,mnr pl gry,f-v crs,pred med-crs,sbang aggs,ang v crs frac grs,sbang-sbrnd lse grs,strg sil cmt,mnr-tr pyr cmt, wh sil & pyr mtx,mnr pl gry arg mtx, com-abdt pyr nods,v ang frac v crs qtz grs,tr foss & shell v hd-v hd aggs,tr lse,com uncons frac grs,nil vis por,v pr inf por,no fluor.

SILSTONE:com med-dk gry,occ lt-med brnsh gry,dom arg,loc aren, calc i/p,abdt nod pyr, tr dissem pyr, tr carb spks,frm-v hd,tr sft,dom sbblky,com sbfiss.

SANDSTONE:trnsl-clr,frstd,sli pl yel,sli yel gry,mnr-tr pl blu grn,pred med-crs,mod wl srt,20% rnd-sbrnd, crs-vcrs grs,80% sbang-ang,f-med, mod sil cmt,wh-pl brn sil & arg mtx, decr pyr nod,decr v crs qtz ovgths, uncons,lse,hd-v hd aggs,pr-loc fr inf & ti-nil por,no fluor.

SANDSTONE:clr-trnsl,opq pl gry,tr opq yelsh gry-yelsh brn,dom f-med, occ crs,mod wl-wl srt,sbrnd-sbang, mod-mod strg sil mtx,wh arg/sil cmt mnr pyr nods,lse,uncons,fri aggs, pr inf & vis por,no fluor

SURVEY @ 2033m: 3.00°

SILTSTONE:pl gry,med-dk gry,arg, com grd to CLYST,mnr carb mat,tr micmic,frm i/p,sft-disp,sbblky, blky-amorph.

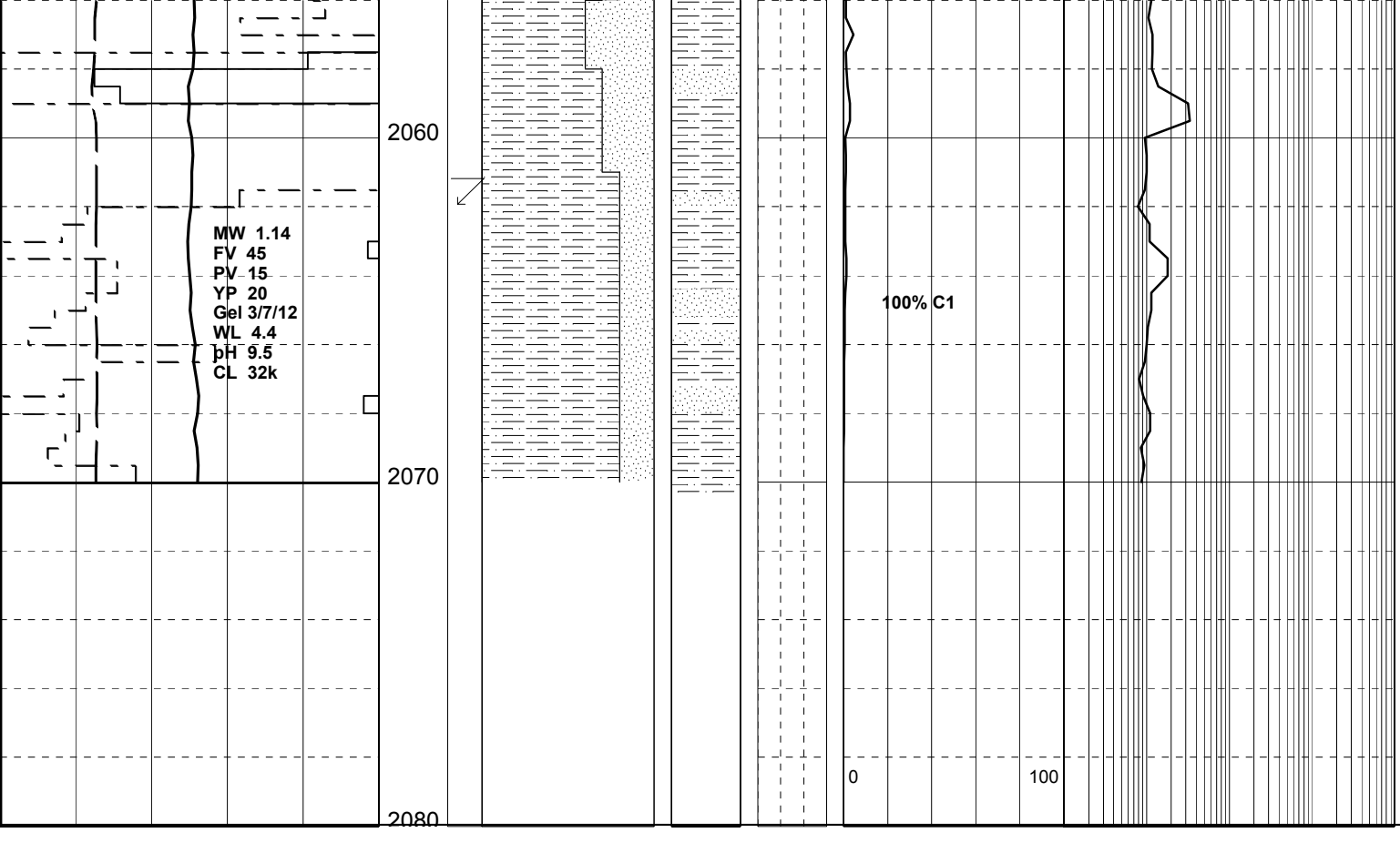
SANDSTONE:clr-trnsl,vf-med,pred f,mod srt,mod off wh-pl gry arg mtx, tr pyr nods,carb mat,blk liths,lse, mnr fri aggs,pr vis & inf por,no fluor.

SILTSTONE:med-dk gry,brnsh blk, occ lt-med brn,arg,com aren,calc, com carb spks & flks,occ dissem pyr,tr micmic,dom mod hd-hd,occ sft,sbblky,blky-amorph.

SANDSTONE:trnsl-clr,frstd-v pl gry,vf-med,dom f,sbrnd,sbang i/p, strg calc cmt,abdt off wh-v pl gry arg mtx,com nod & dissem pyr,occ carb frags & spks,dom fri aggs,com lse grs,pr vis & inf por,no fluor.

SILTSTONE:lt-med gry,brnsh gry, occ dk gry,arg,grd to CLYST i/p,com loc calc,tr aren,occ carb spks,dissem pyr,dom frm-mod hd,com loc sft,sbblky, blky-amorph i/p.

SANDSTONE:trnsl-clr,v pl gry-off wh,vf-med,dom f,mod srt,sbang-sbrnd, wk sil cmt,tr wk calc cmt,com-loc



abdt wh-oh wh arg mtx,com disseminated pyr,carb spks & incls,tr blk & grn liths,dom fri-occ mod hd aggs,pr vis por,no fluor.

SILTSTONE:pred lt olv gry-lt gy,lt grnsh gry,tr med dk gry,com mod sft-frm sbblky-blky,tr carb mat,grd to CLYST i/p.amorph,no fluor.

SURVEY @ 2062m: 3.50°

SANDSTONE:trnsl,clr,mlky,wh,pl grn, pl gry,f-med,rr crs,wl srt,sbang-sbrnd, mod-loc strng calc cmt,pl grysh grn-wh ang mtx,glauc,mnr pyr,lse & cln, pr-fr inf por,no fluor.

SILTSTONE:v pl gry-grnsh wh,mnr pl olv,rr brn,v arg,mnr pyr,mnr carb spks,disp-v sft,amorph-mnr blky.

PETERBOROUGH-1ST1 REACHED TD @ 20:30 HRS ON 06/09/2005

DRILLERS DEPTH: 2070m
LOGGERS DEPTHS: XXXXm

LOGS RUN:
RUN #1:MMR-MLE-MSS-MCG
RUN #2:MPD-MON-MCG

APPENDIX 5

WIRELINE LOGS

Reeves Compact

CEMENT LOG

1:200

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FIELD PRINT

LSD	SEC	TWP	RGE

Other Services
COMPENSATED NEUTRON — COMPENSATED SONIC
PHOTO DENSITY — MICRO-LATEROLOG

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	1			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.70	metres		
Last Reading	30.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	19.5 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MMR, MLE, MUG, MSS, MCG, MBE RAN IN COMBINATION.
4) HARDWARE: MMR: ONE 25.4MM STANDOFF
MSS: TWO 25.4MM STANDOFF
MUG: ONE 25.4MM STANDOFF
MBE: ONE 25.4MM STANDOFF
5) MPD CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY.
6) MDN CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY AND SALINITY.
7) SERVICE ORDER:2391
8) RIG:CENTURY 7
PRINTS: 1 FIELD 3 FINALS
9) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 34.9 CU.M.
10) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 17.8 CU.M.
11) SONIC CASING SIGNAL AT ##### M.
12) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
13) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
14) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.
15) SONIC DOES NOT REPEAT AT 1985. DISCRIMINATORS WERE ADJUSTED TO TRY AND CLEAN UP THE SONIC REPEATABILITY WITH NO SUCCESS.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAINLOG 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 08-SEP-2005 01:58
Recorded on 07-SEP-2005 20:22

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

Replay Scale 1:200

MMR Caliper
inches
16 11 6 6 11 16

MMR Caliper
inches
16 11 6 6 11 16

Bit Size
inches
16 11 6 6 11 16

Bit Size
inches
16 11 6 6 11 16

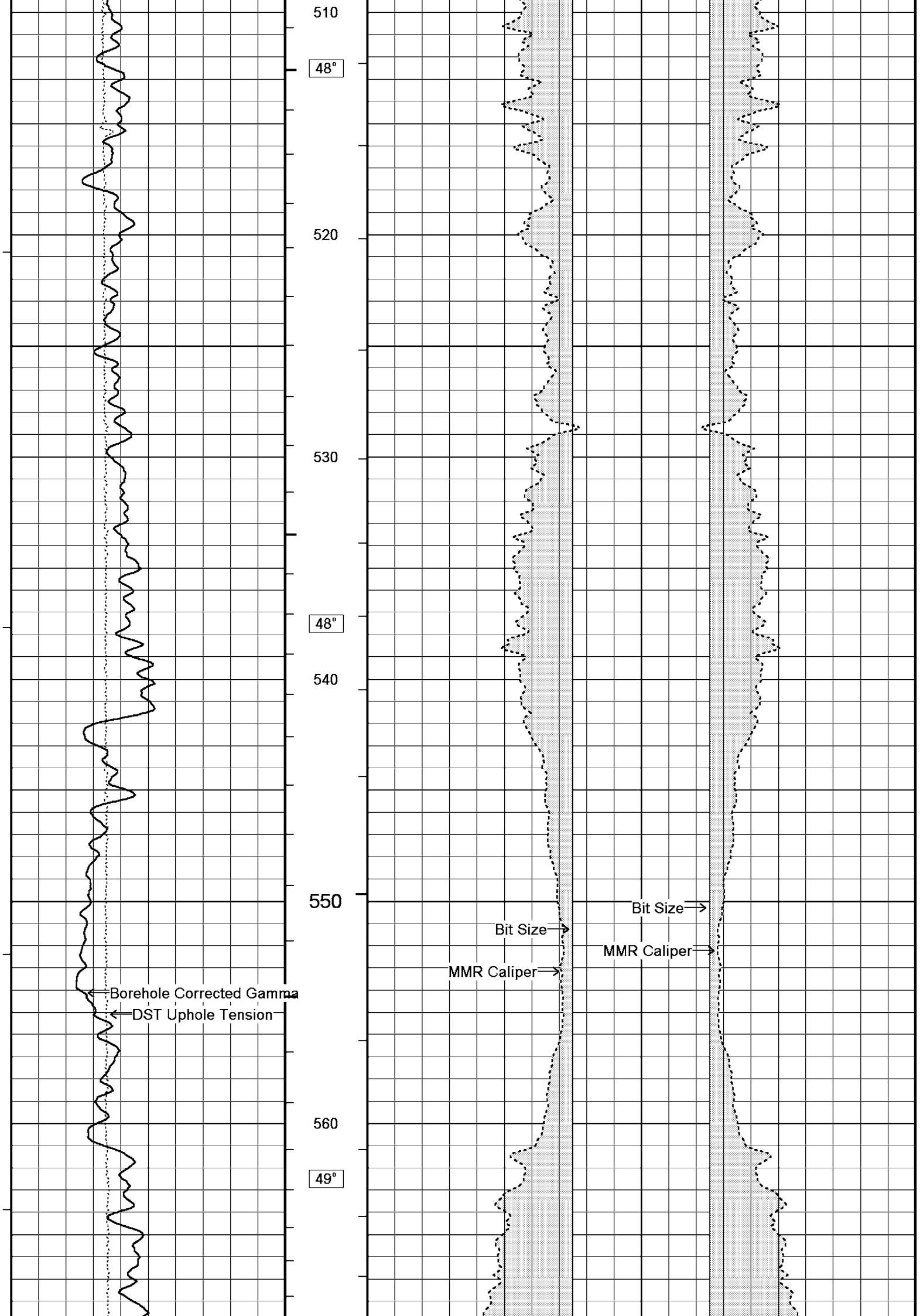
480

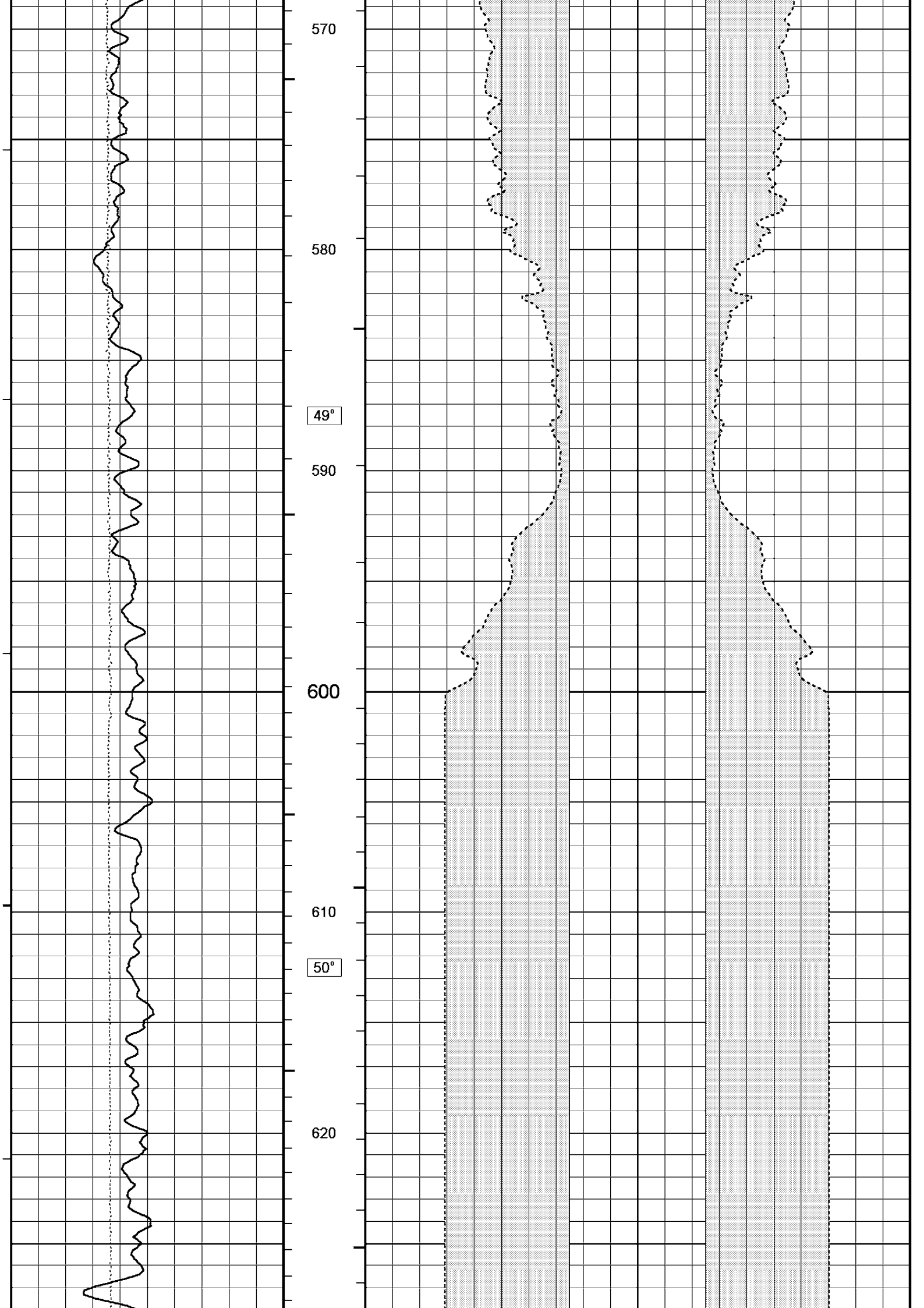
47°

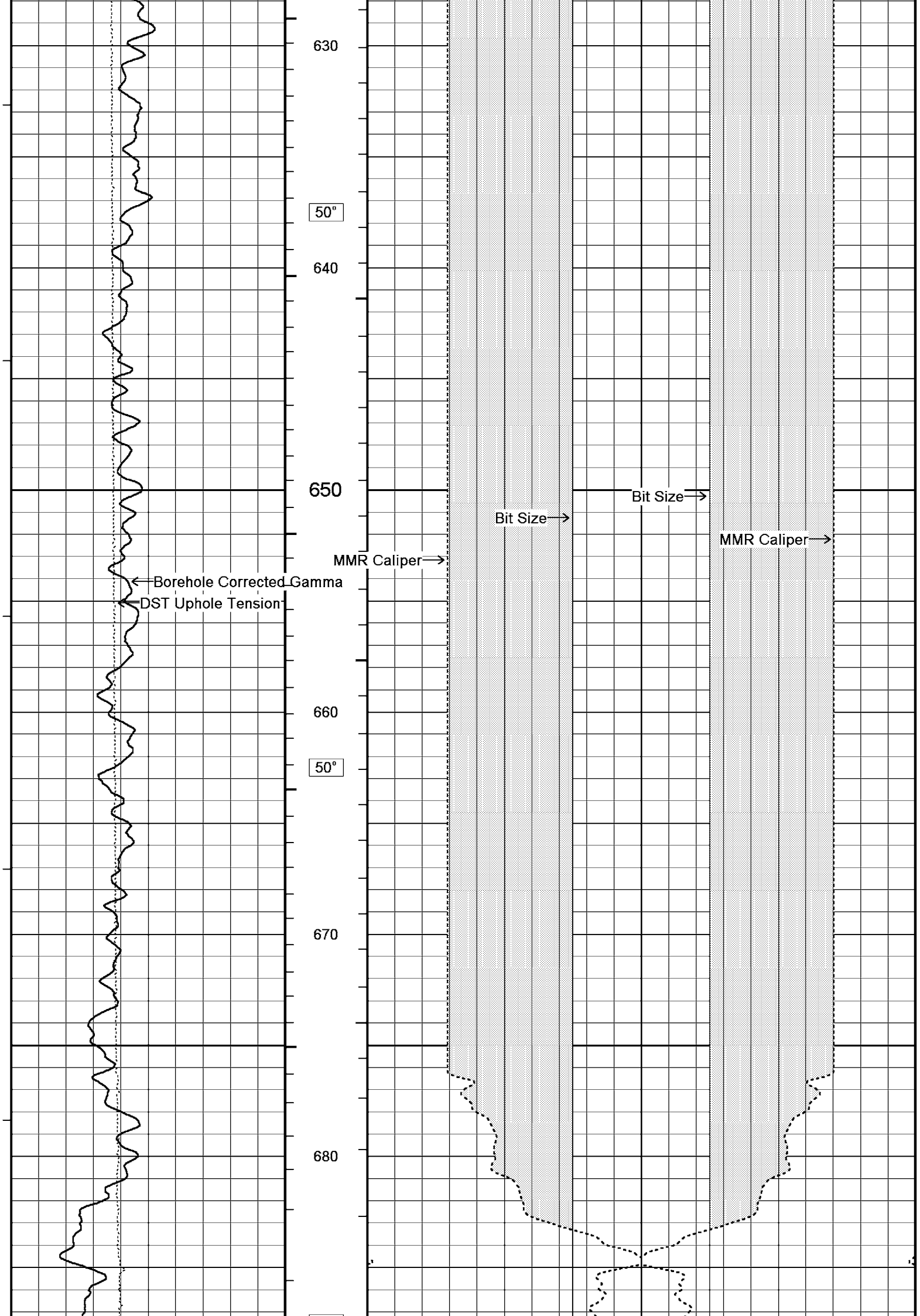
490

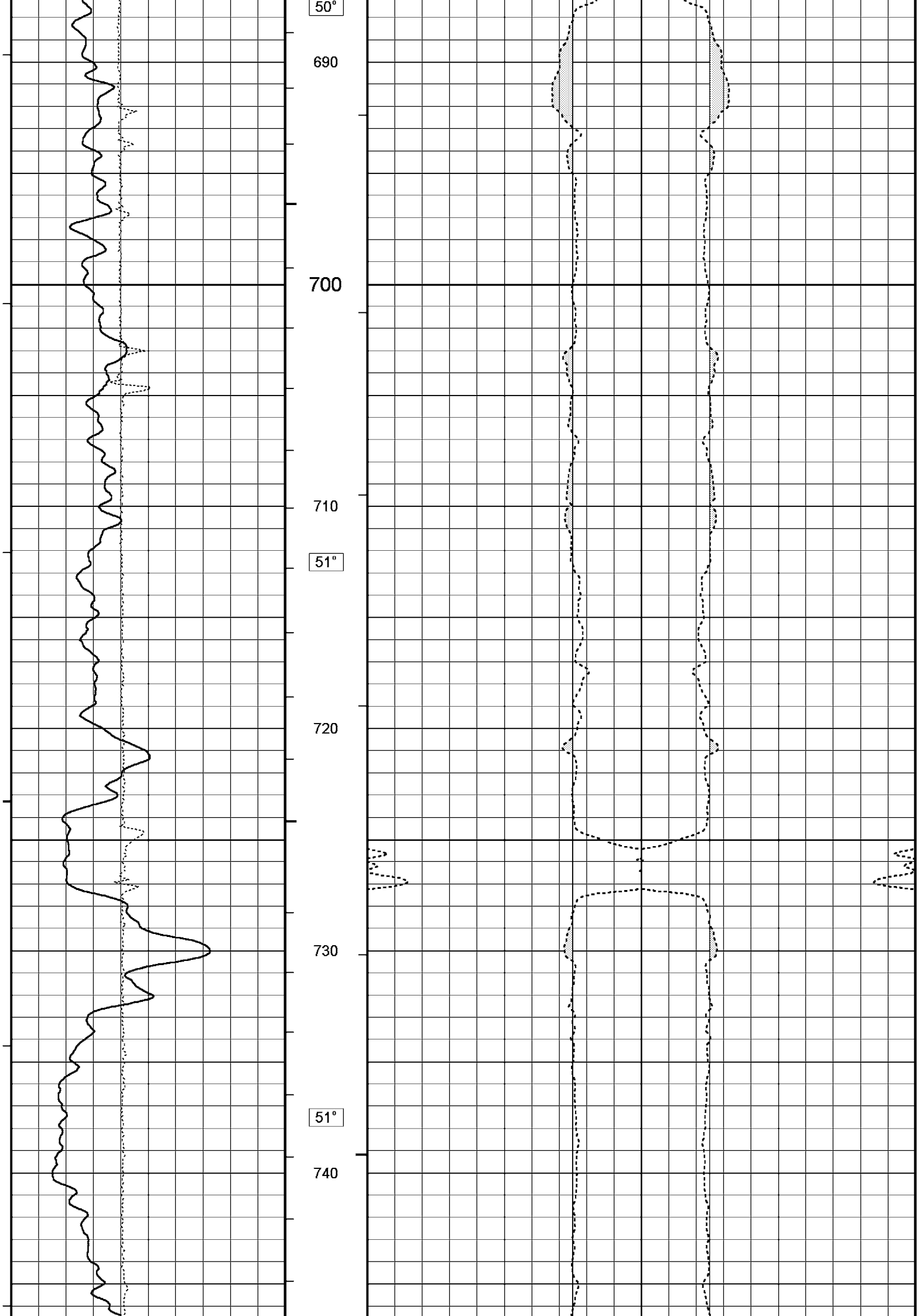
Casing Shoe

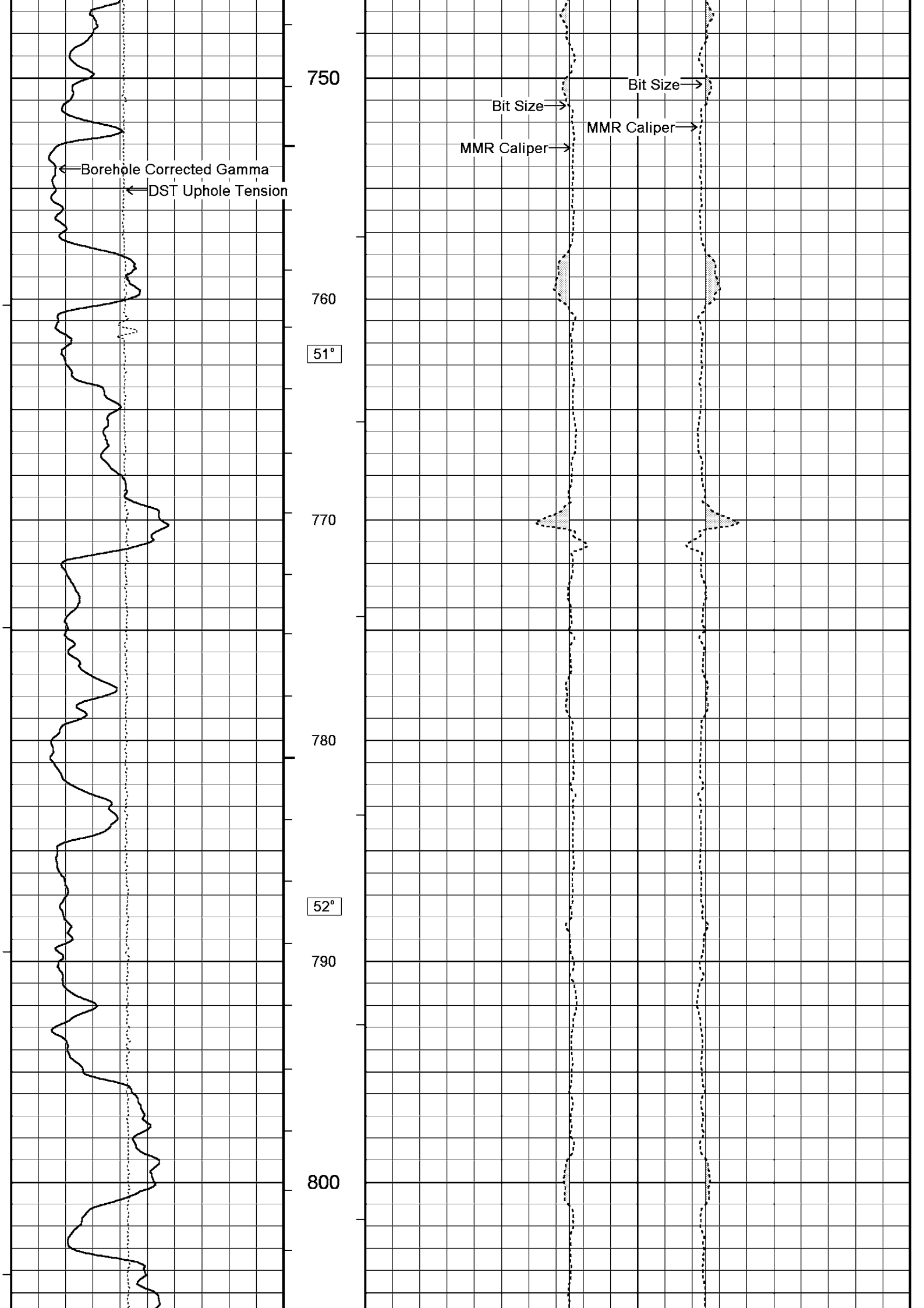
500

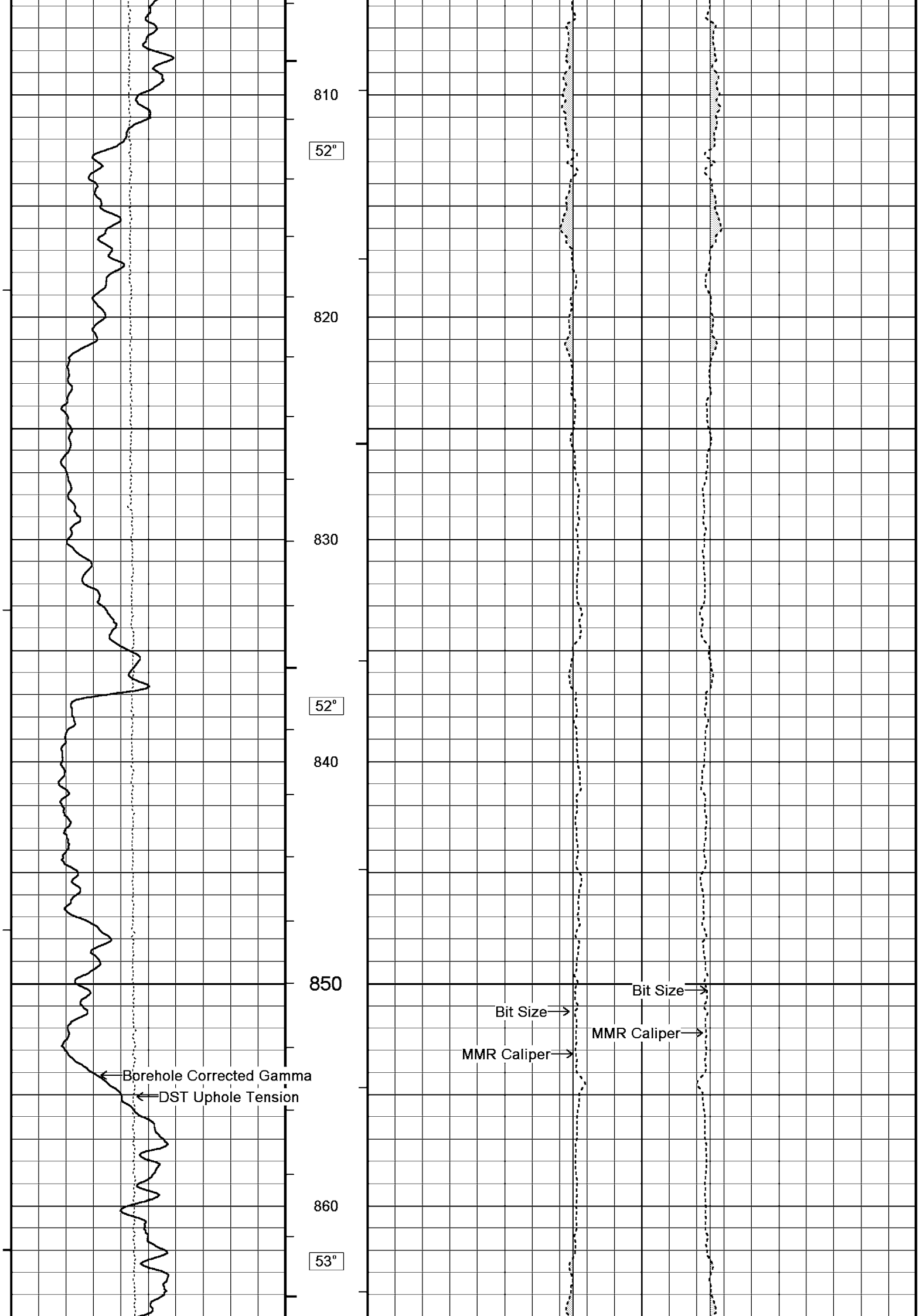

510
48°
520
530
48°
540
550
560
49°
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
MMR Caliper
Bit Size
MMR Caliper

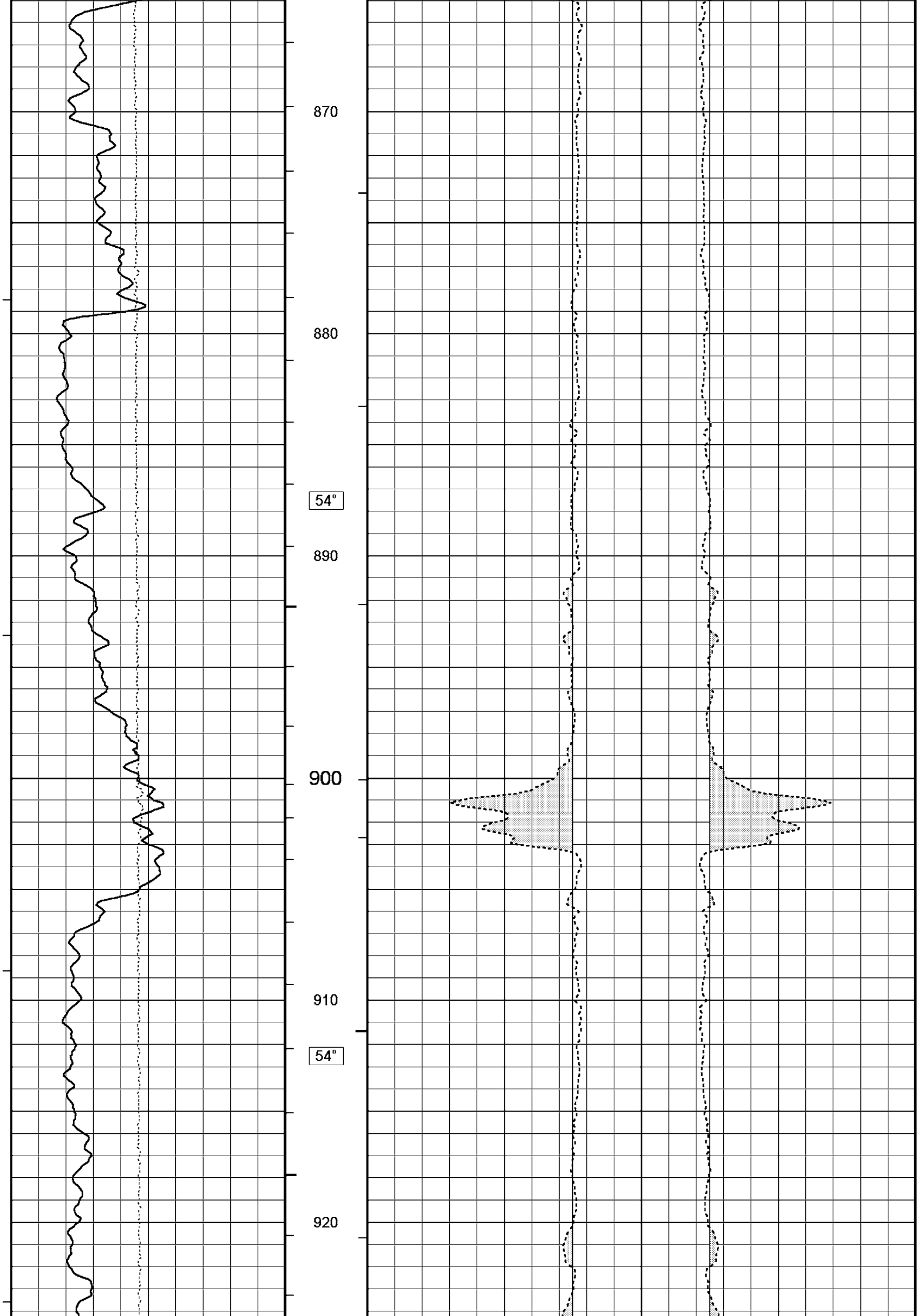

570
580
49°
590
600
610
50°
620

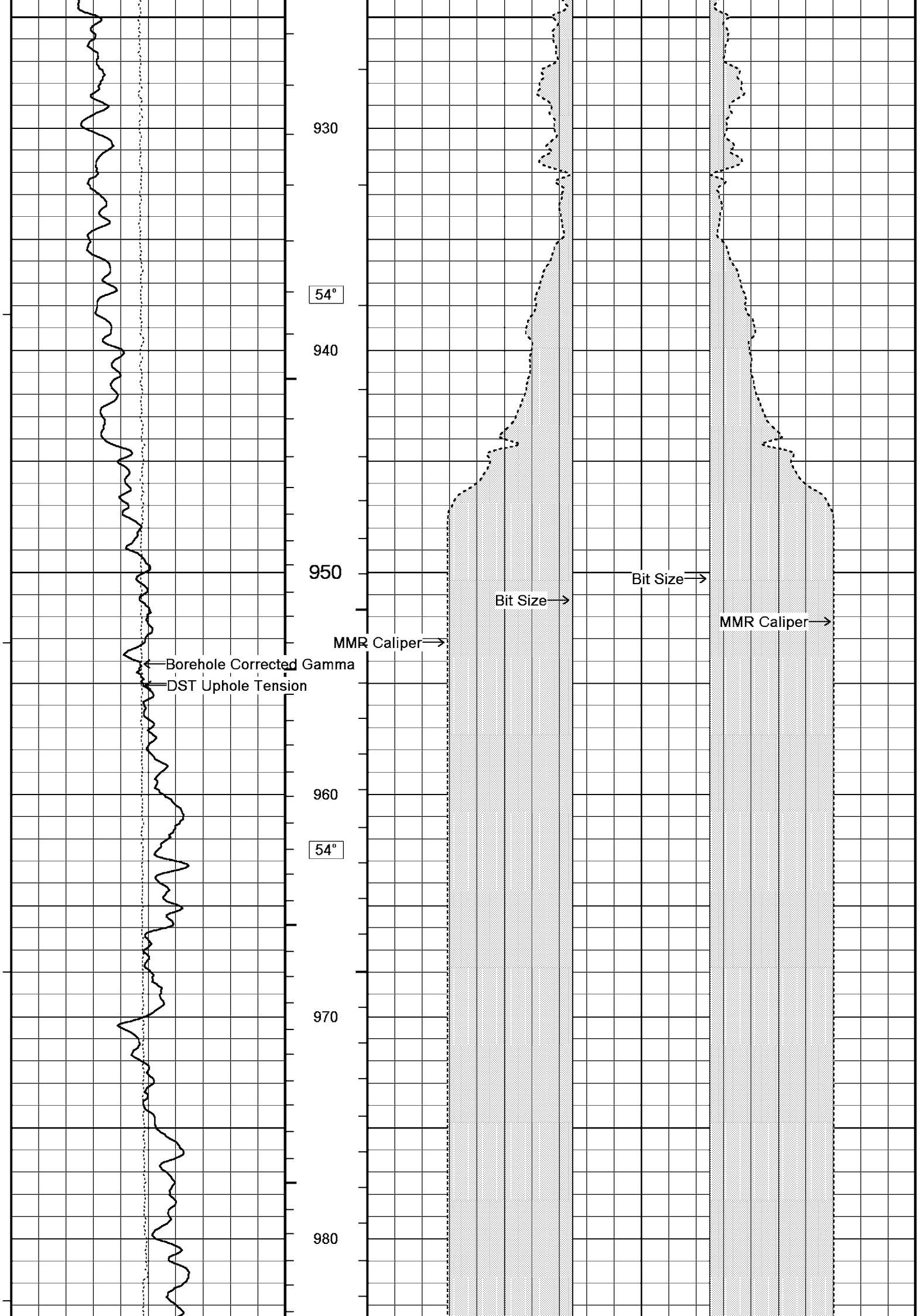

630
50°
640
650
660
50°
670
680
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension

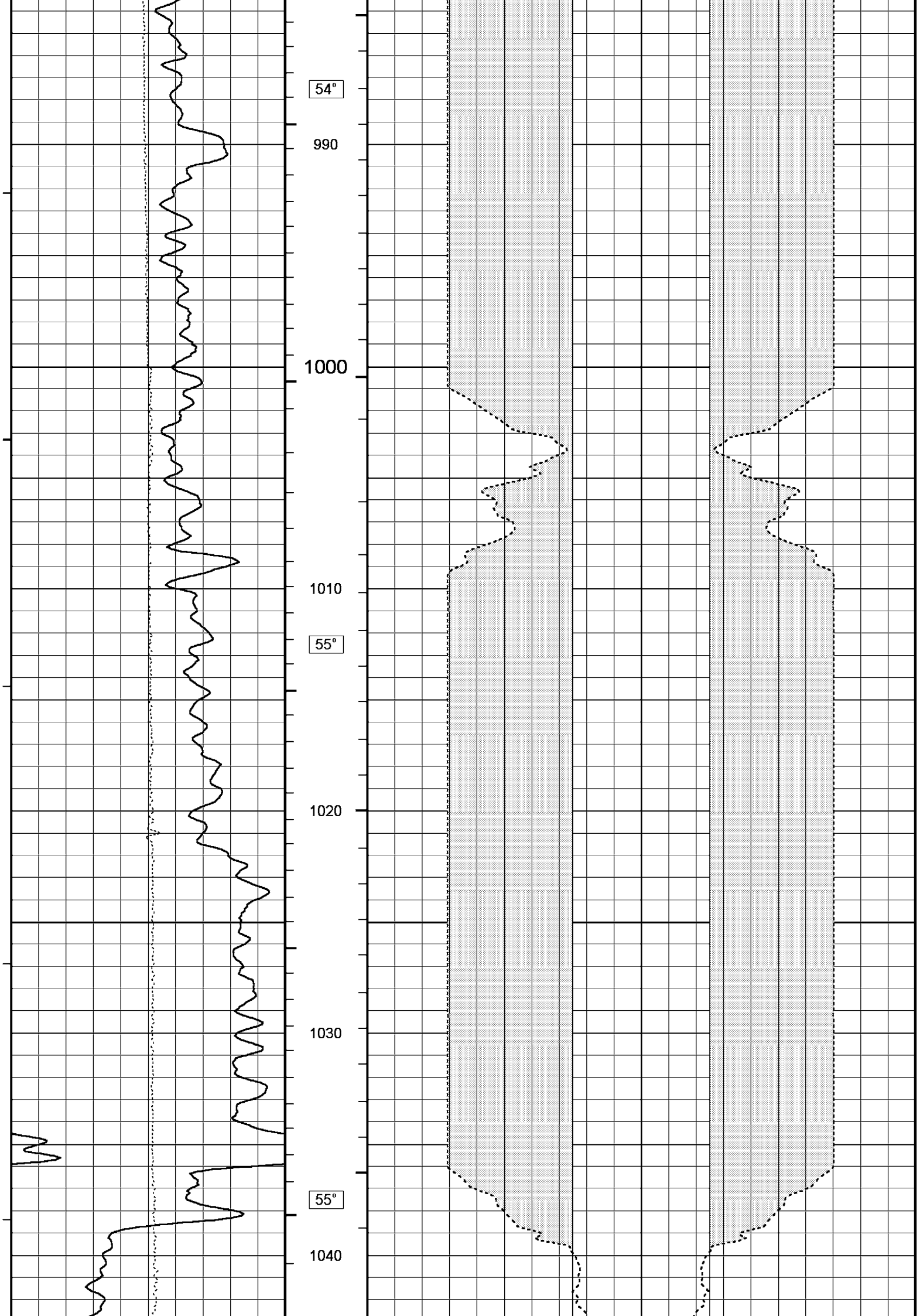

50°
690
700
710
51"
720
730
51°
740

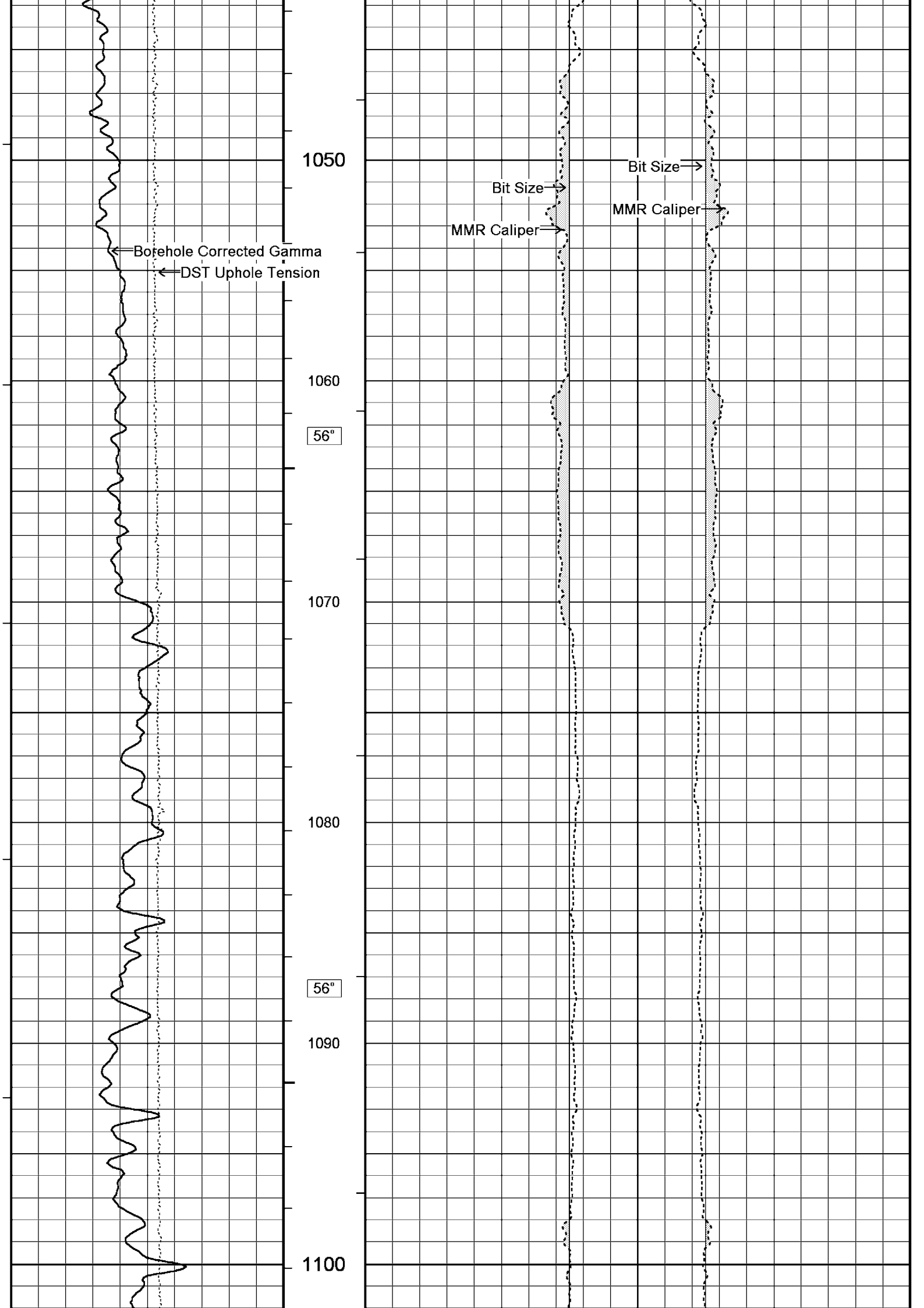

750
760
770
780
790
800
51°
52°
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
MMR Caliper
Bit Size
MMR Caliper

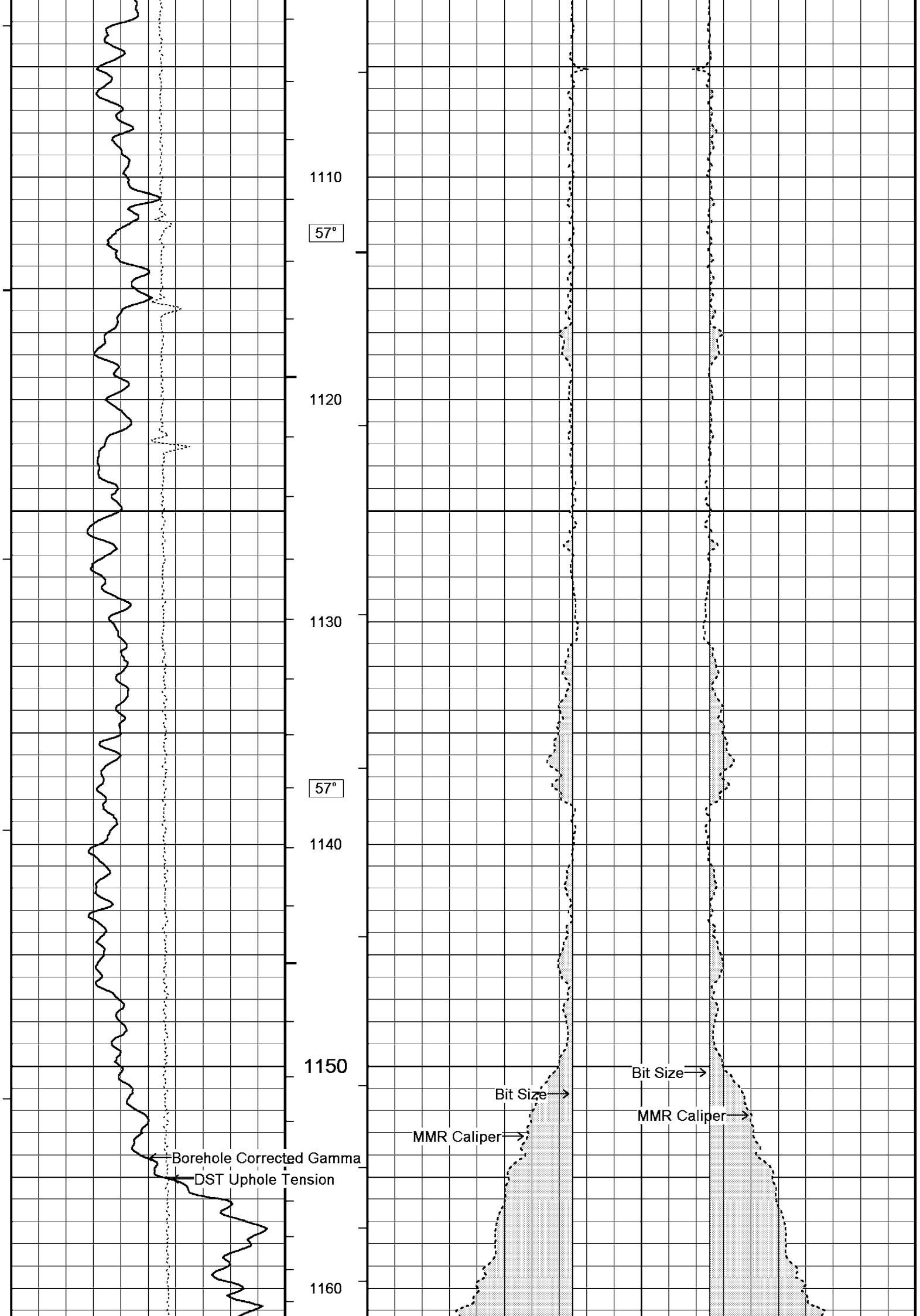

810
52°
820
830
52°
840
850
860
53°
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
MMR Caliper
Bit Size
MMR Caliper

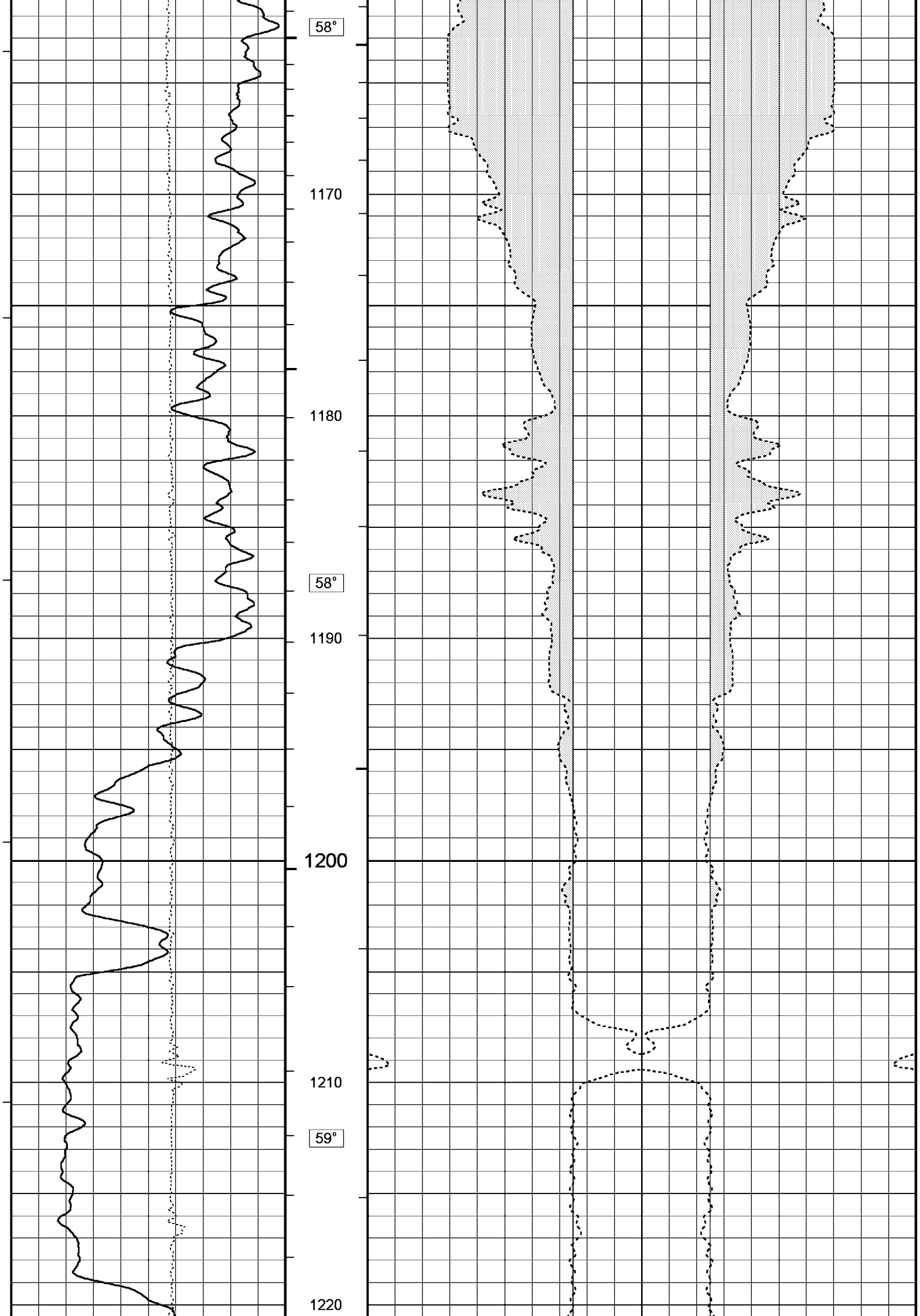

870
880
54"
890
900
910
54"
920

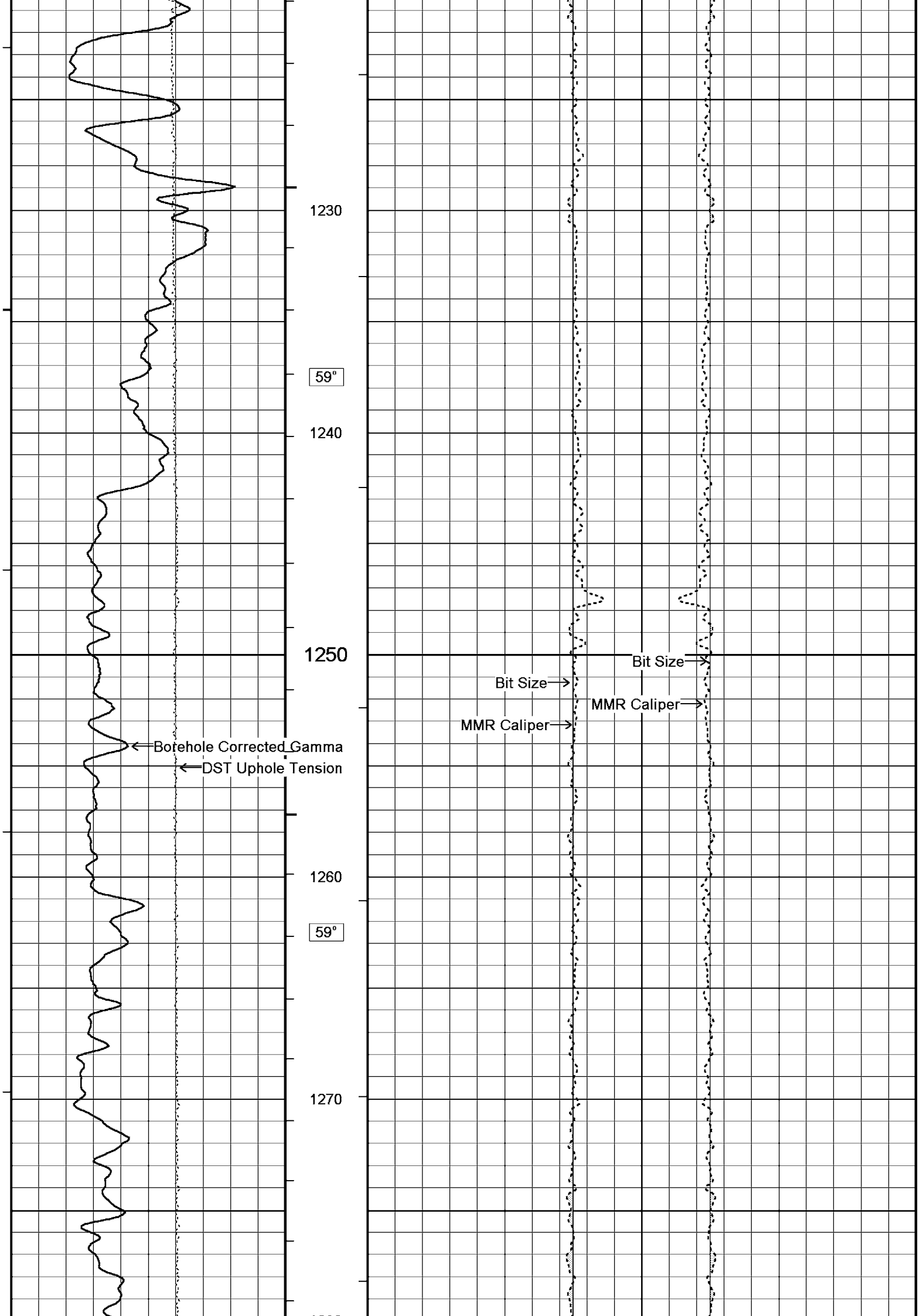

930
54°
940
950
960
54°
970
980
Borehole Corrected Gamma
DST Uphole Tension
MMR Caliper
Bit Size
Bit Size
MMR Caliper

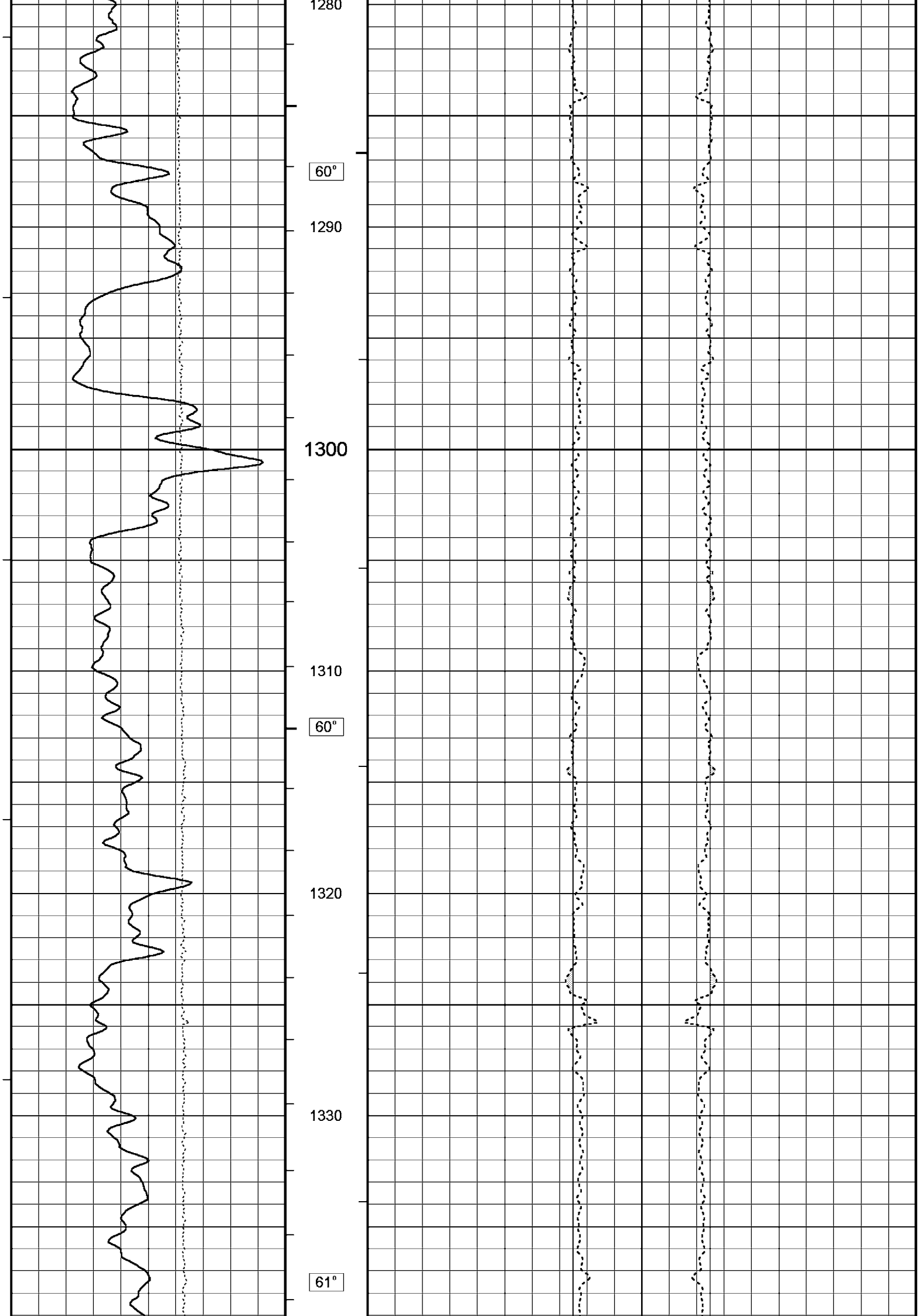

54°
990
1000
1010
55°
1020
1030
55°
1040

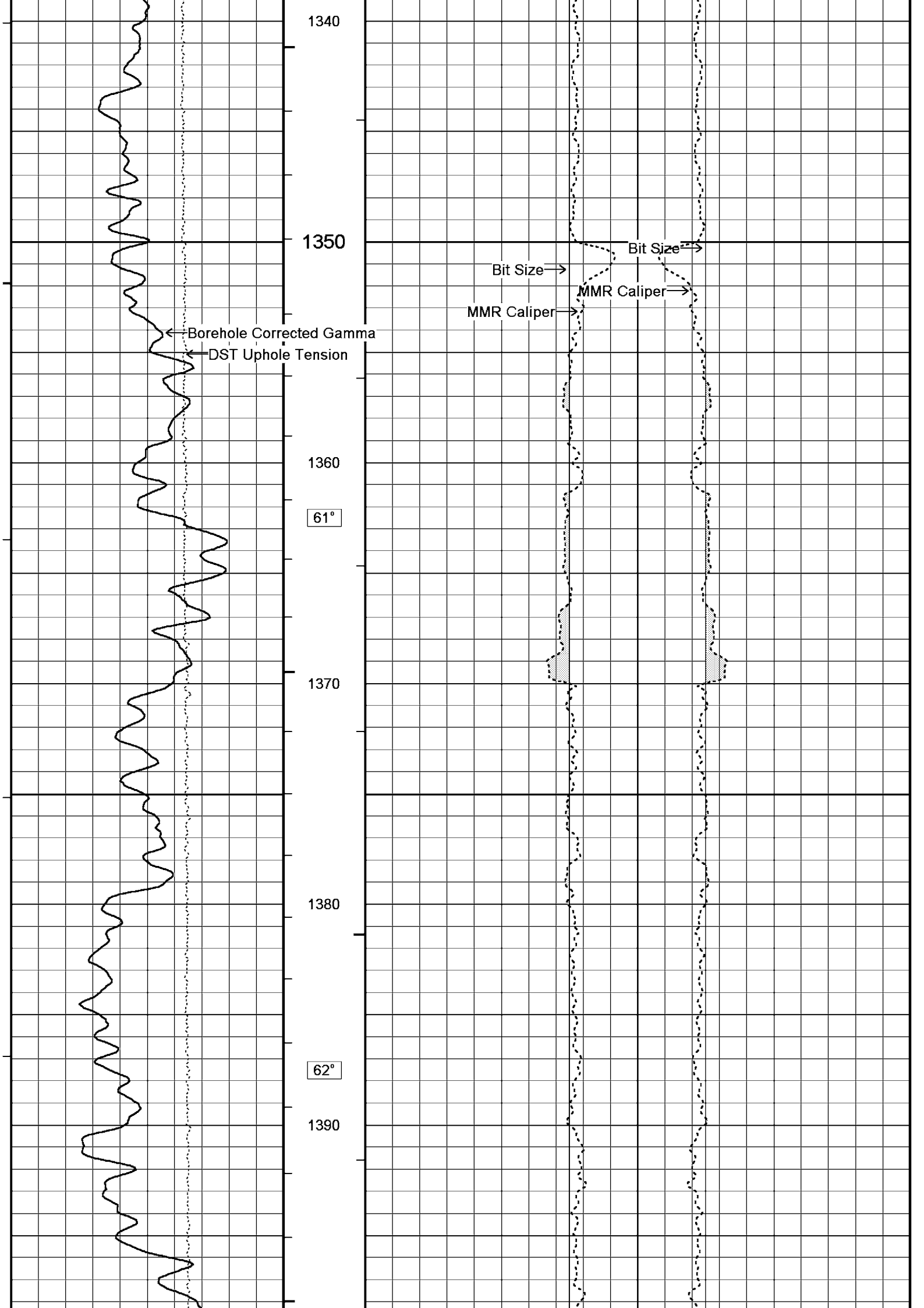

1050
1060
1070
1080
1090
1100
56°
56°
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
MMR Caliper
Bit Size
MMR Caliper

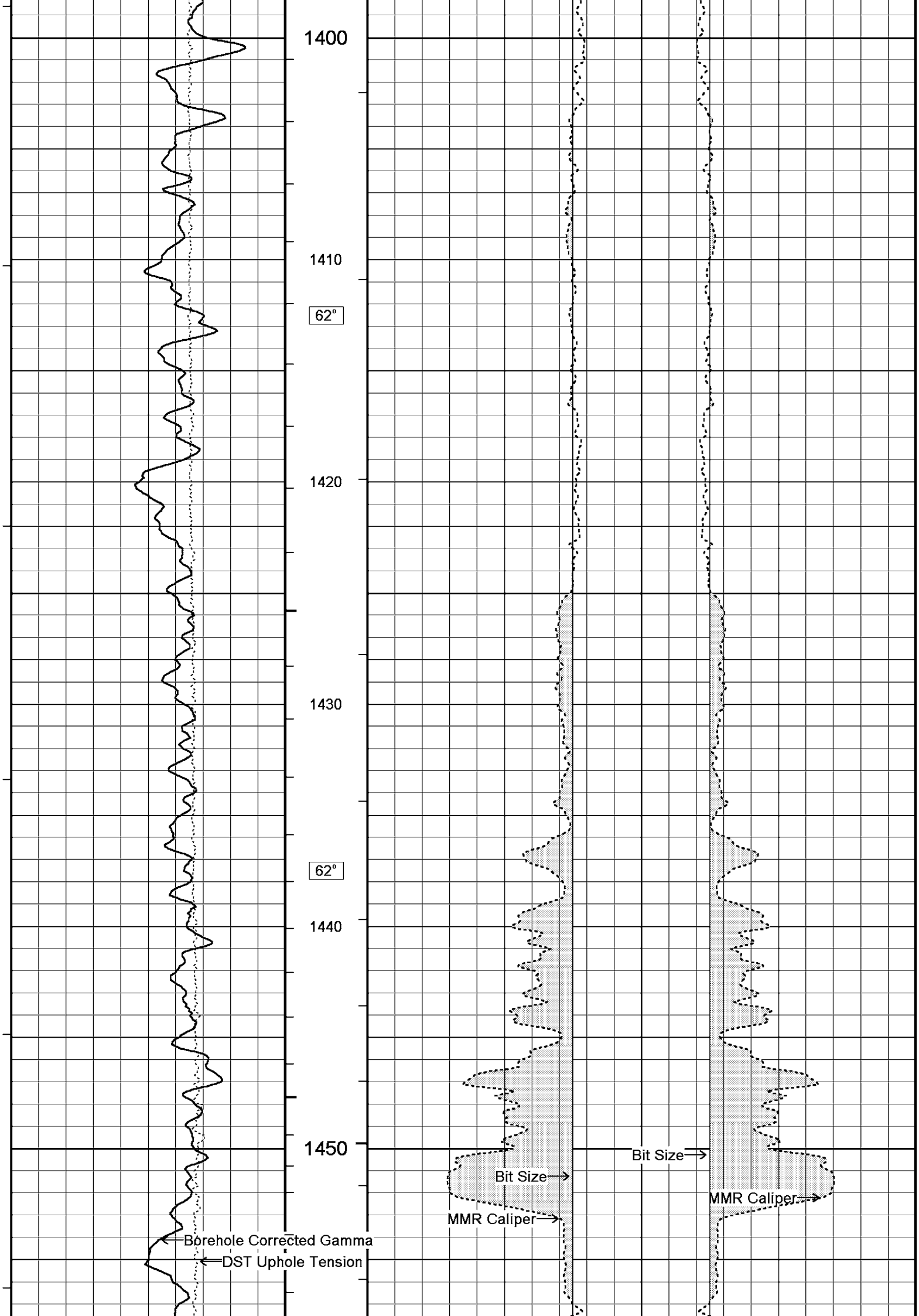

1110
57°
1120
1130
57°
1140
1150
1160
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
MMR Caliper
Bit Size
MMR Caliper

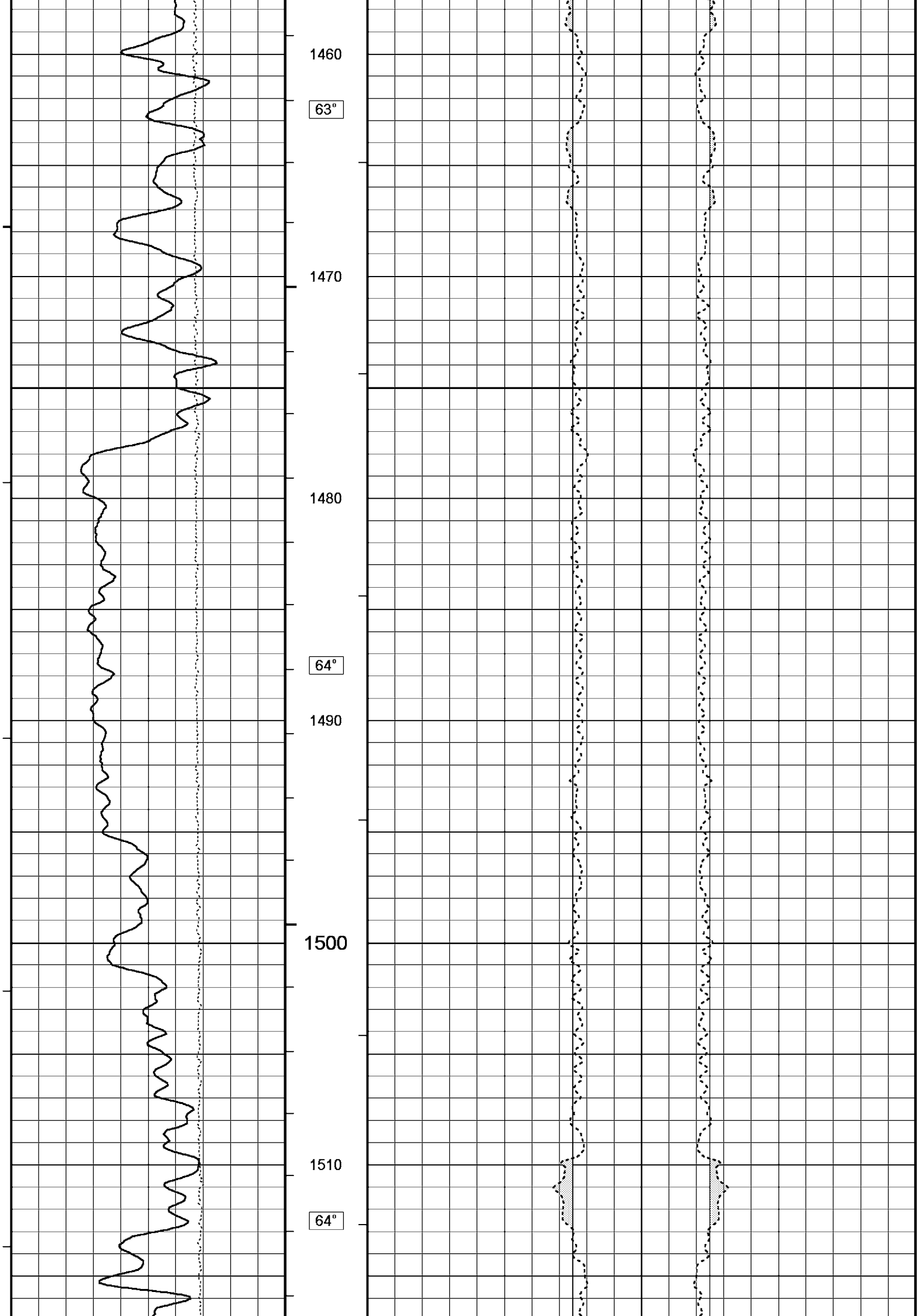

58°
1170
1180
58°
1190
1200
1210
59°
1220

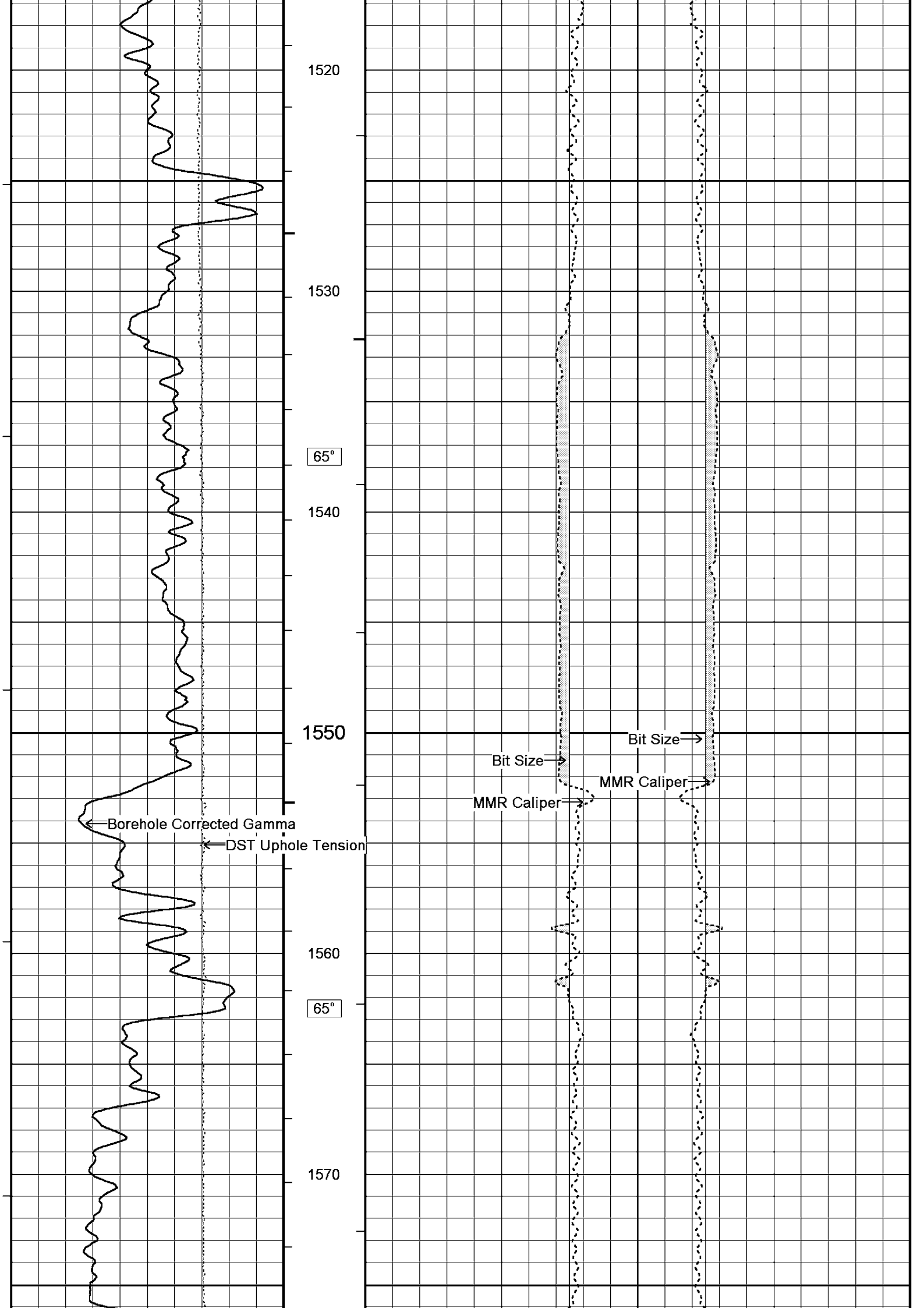

1230
59°
1240
1250
1260
59°
1270
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension

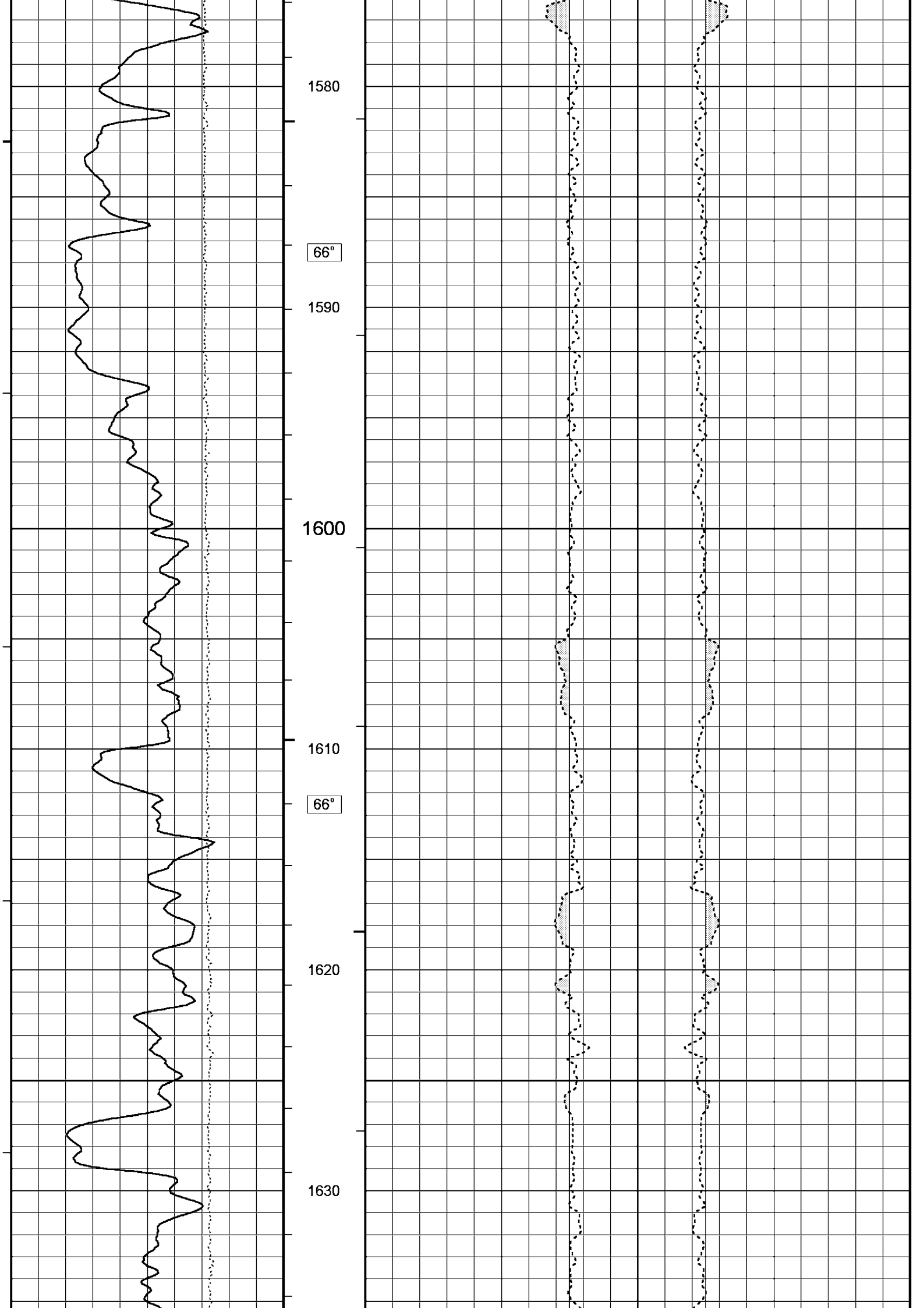

1280
60°
1290
1300
1310
60°
1320
1330
61°

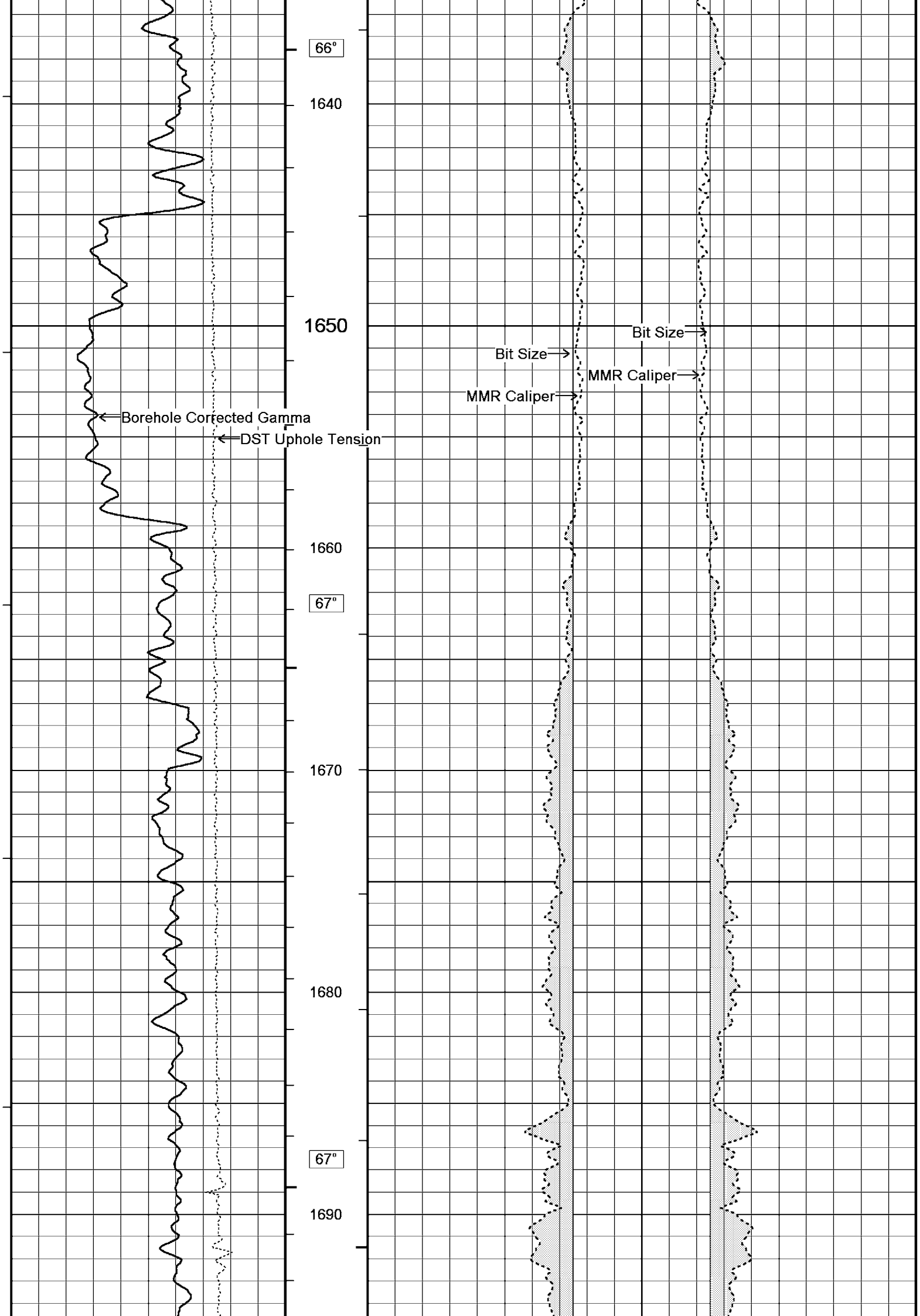

1340
1350
1360
1370
1380
1390
61°
62°
Borehole Corrected Gamma
DST Uphole Tension
Bit Size
Bit Size
MMR Caliper
MMR Caliper

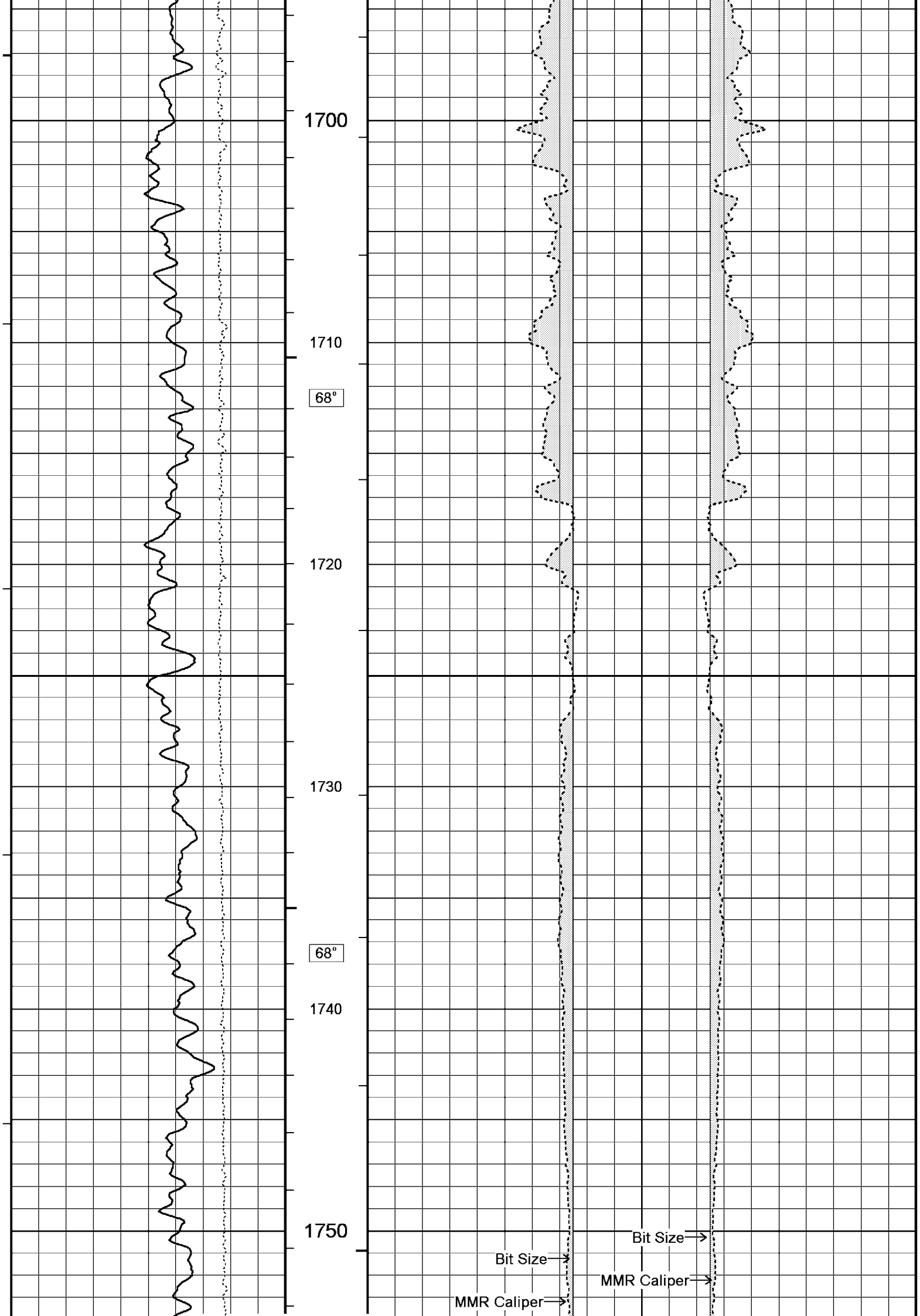

1400
1410
62°
1420
1430
62°
1440
1450
Bit Size
MMR Caliper
Bit Size
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension

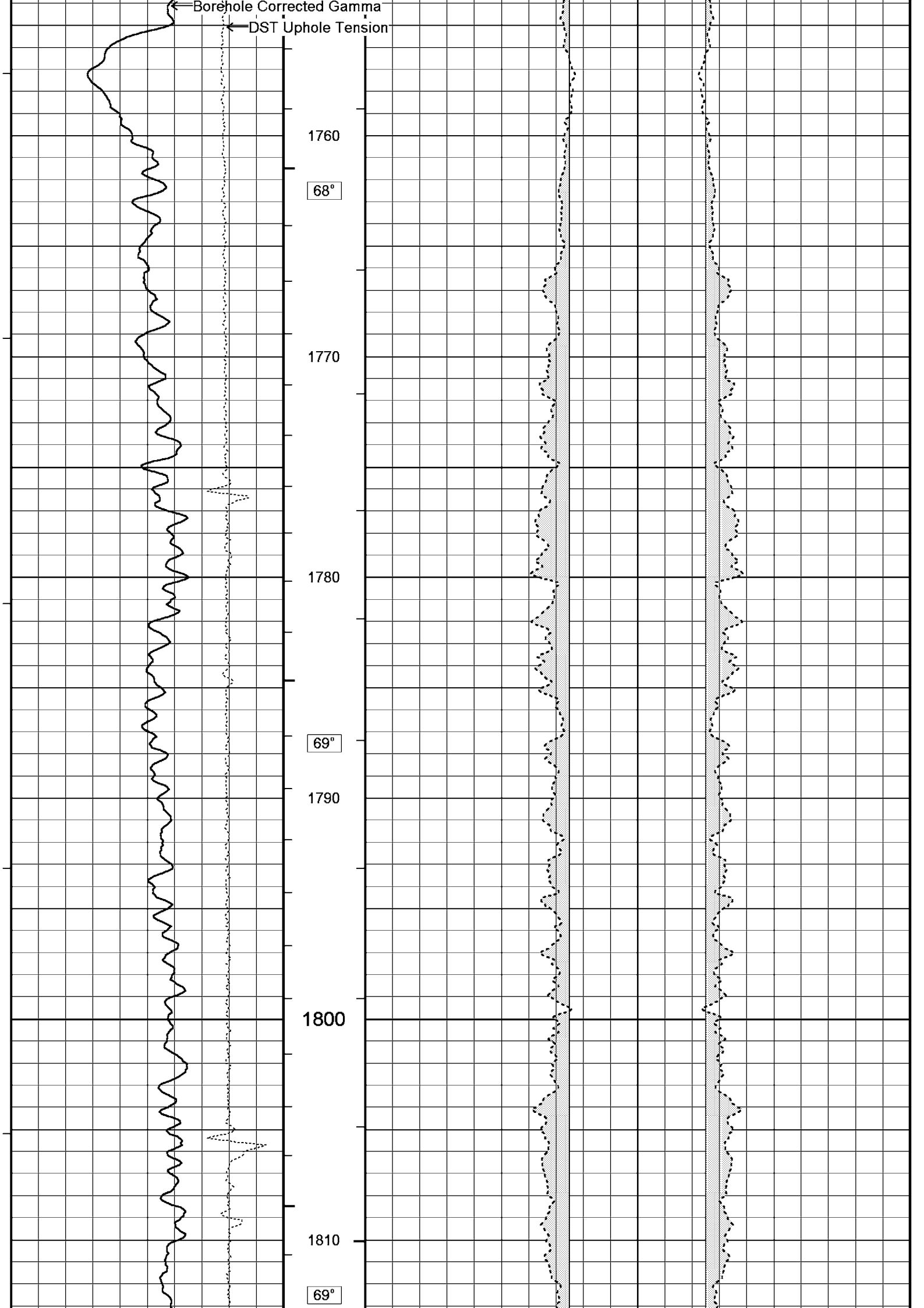

1460
63°
1470
1480
64°
1490
1500
1510
64°

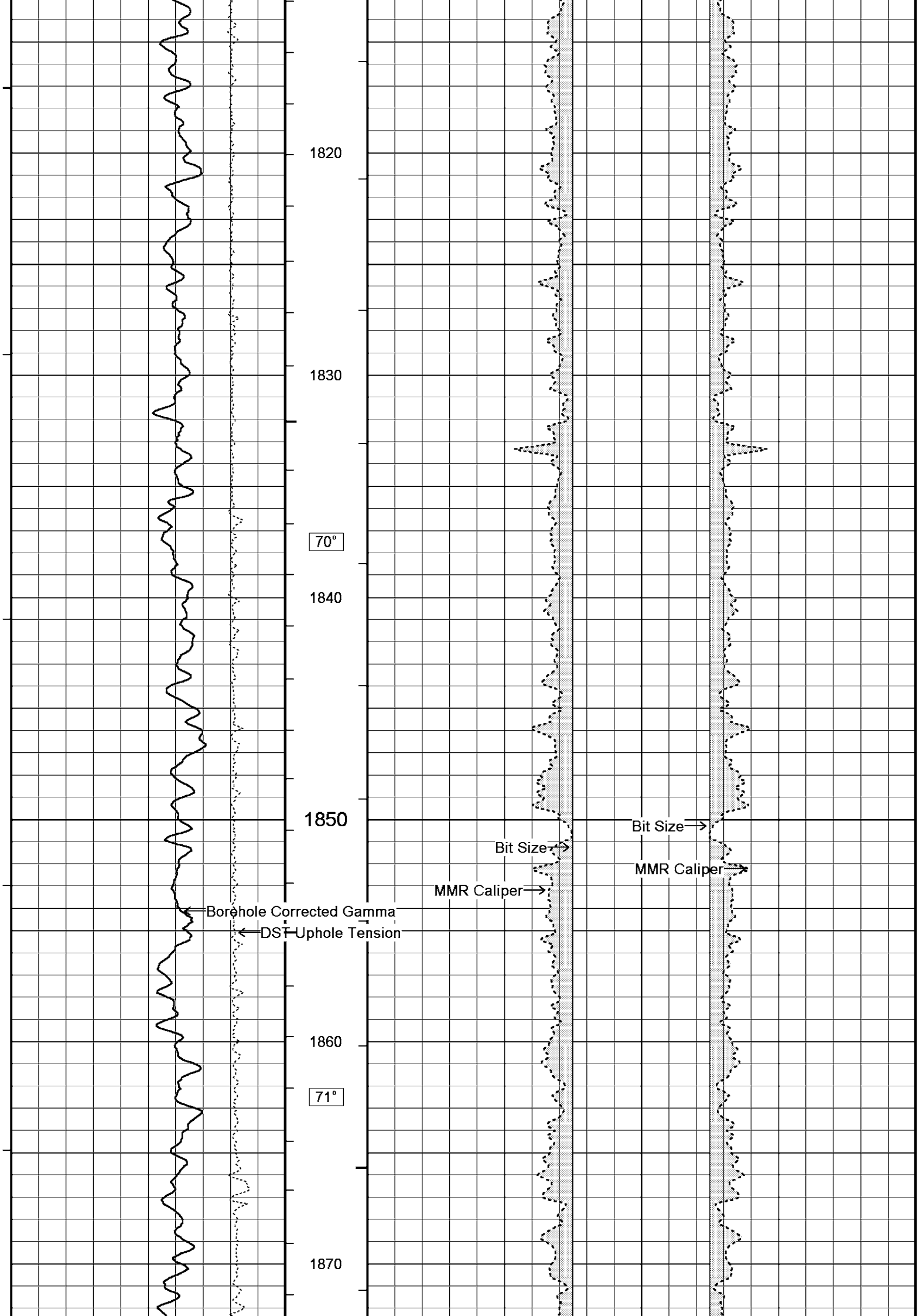

1520
1530
65°
1540
1550
1560
65°
1570
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension

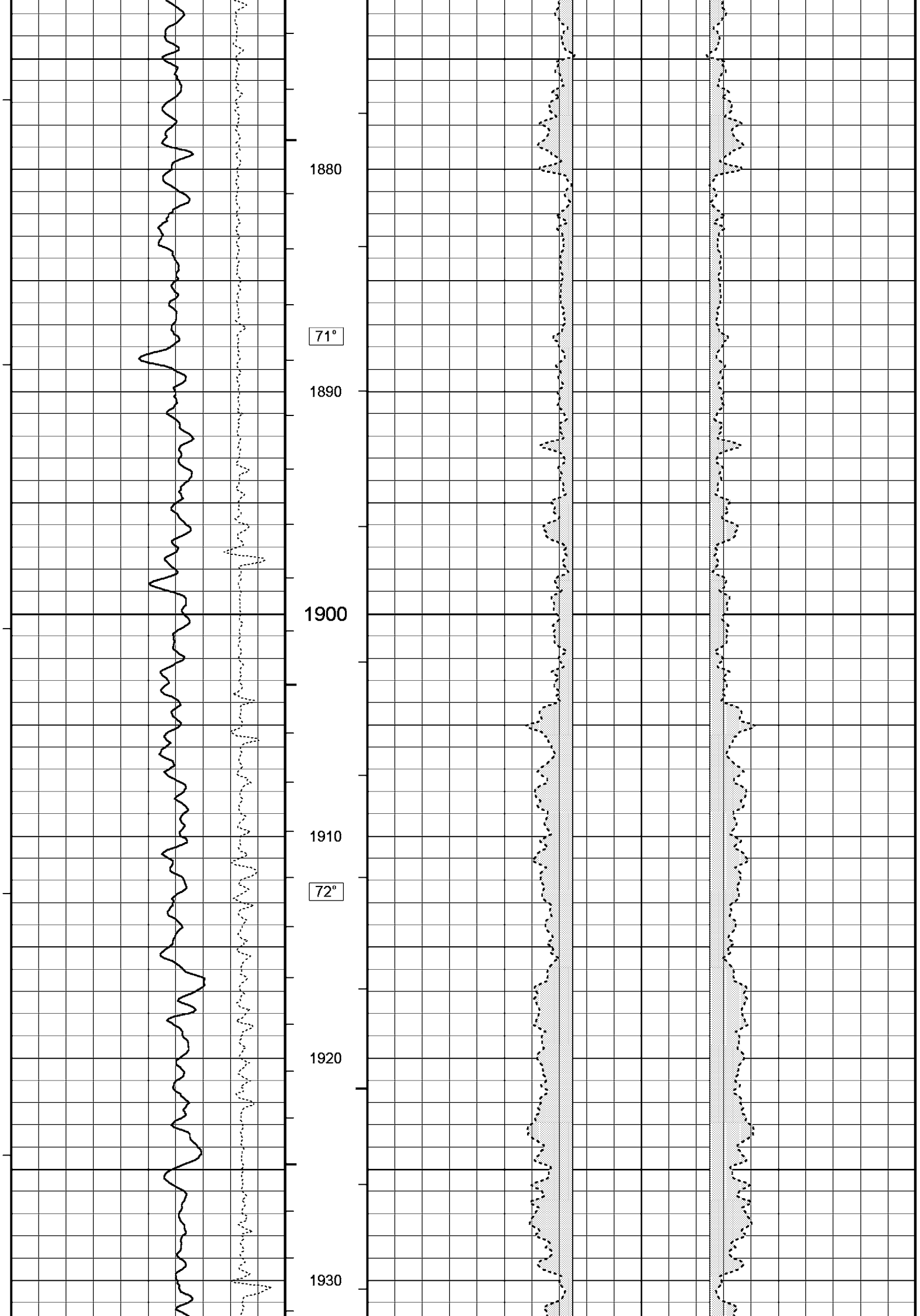

1580
66°
1590
1600
1610
66°
1620
1630

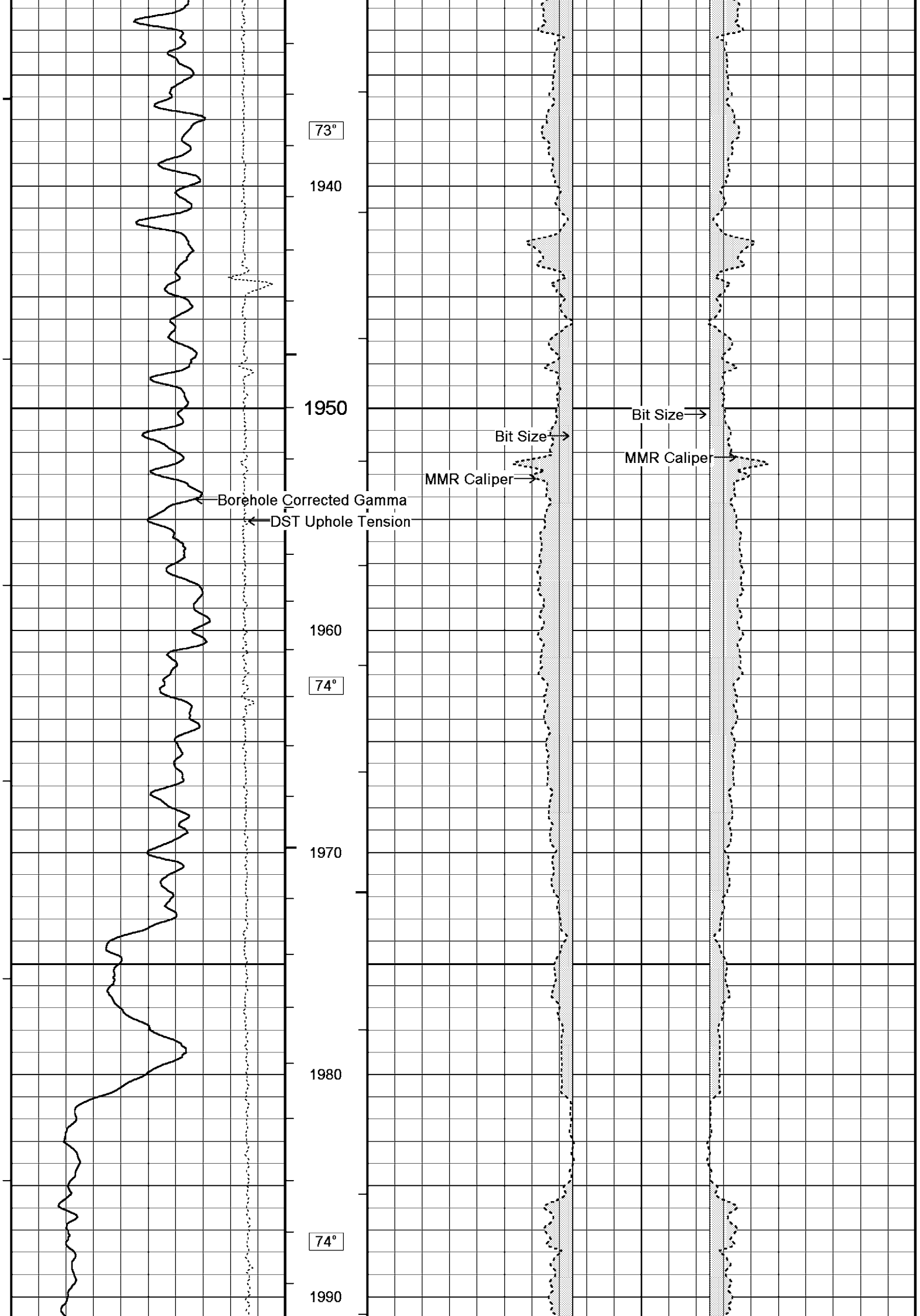

66°
1640
1650
1660
67°
1670
1680
67°
1690
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension

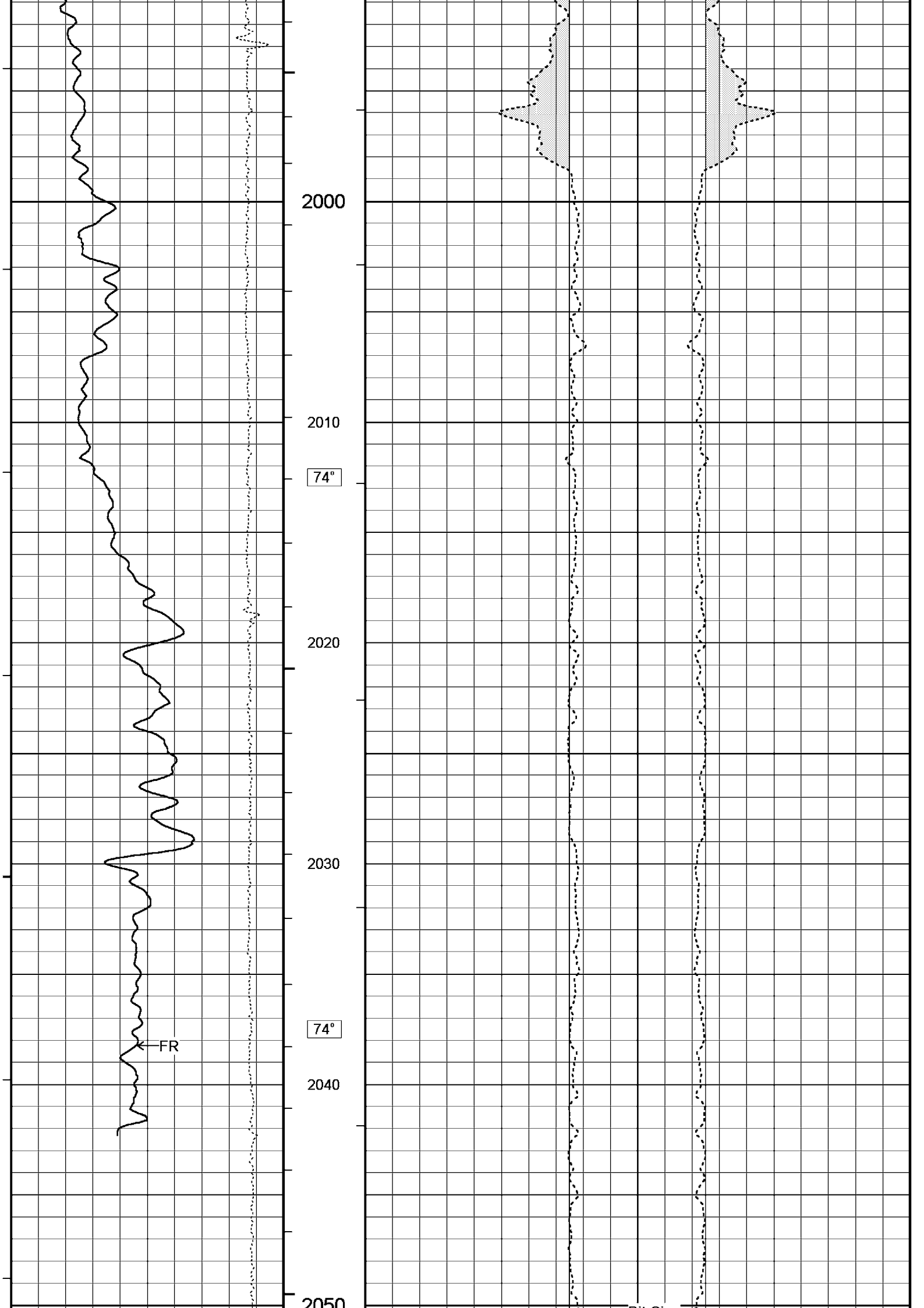

1700
1710
68°
1720
1730
68°
1740
1750
Bit Size
MMR Caliper
Bit Size
MMR Caliper

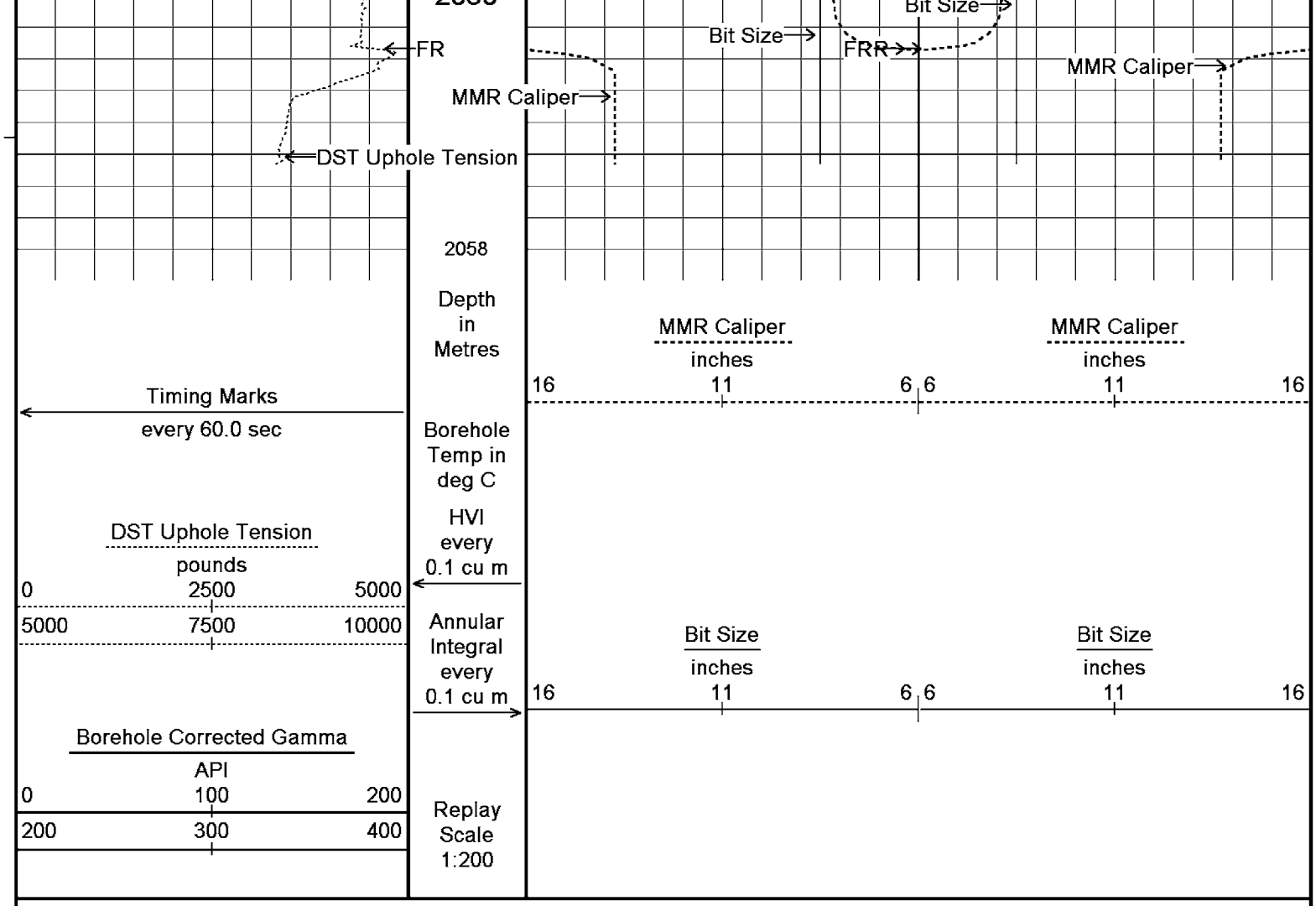

Borehole Corrected Gamma
DST Uphole Tension
1760
68°
1770
1780
69°
1790
1800
1810
69°


1820
1830
70°
1840
1850
1860
71°
1870
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension


1880
71°
1890
1900
1910
72°
1920
1930


73°
1940
1950
1960
74°
1970
1980
74°
1990
Bit Size
Bit Size
MMR Caliper
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension


2000
2010
74°
2020
2030
74°
FR
2040
2050



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 01:59
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta — Recorded on 07-SEP-2005 20:22
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:200

BEFORE SURVEY CALIBRATION

C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta

General Constants All 000

General Parameters		
Mud Resistivity	3.210	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Water Level Switch	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	MMR Caliper	
HVOL Caliper 2	MMR Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Limestone Sonic Porosity	
Resistivity used	Deep Laterolog	
RWA Constant A	0.610	
RWA Constant M	2.150	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	MMR Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Sonic Constants MSS 047

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec

Fixed Gate Parameters

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (m)
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	

Down Hole Fixed Gate Parameters

Gate Start	0.00	micro-sec
Gate Width	0.00	micro-sec
Initial Discriminator Level	0.0000	mVolts

Full Waveform Parameters

Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

SP Calibration MLE 016

Field Calibration on 31-AUG-2005 09:41

	Measured	Calibrated (mV)
Reference 1	93.1	100.0
Reference 2	-114.1	-100.0

Laterolog Constants MLE 016

Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3273	
Deep Laterolog K Factor	0.8527	

Groningen Laterolog K Factor	0.8527
Interference Rejection	50 Hz
SP Connection	SP Bridle Electrode
Groningen Connection	None

Micro Laterolog Calibration MMR 005

Base Calibration on 24-AUG-2005 09:35
Field Check on 4-SEP-2005 20:38

Base Calibration

Measured		Calibrated (ohm-m)	
Ref 1	Ref 2	Ref 1	Ref 2
0.0	9744.7	0.0	196.0

Base Check (ohm-m)	Field Check (ohm-m)
8.1	8.0

Micro Laterolog Constants MMR 005

Micro Laterolog K Factor	0.0196	
Standoff Offset	N/A	inches

Caliper Calibration MMR 005

Base Calibration on 24-AUG-2005 09:28
Field Calibration on 4-SEP-2005,20:39

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	12058	4.01
2	14996	5.99
3	18272	7.98
4	21721	9.94
5	25905	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.92	8.92

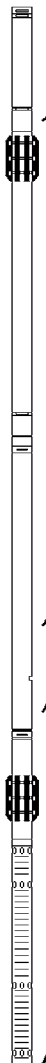
DOWNHOLE EQUIPMENT

C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta

Compact Stiff Bridle Electrode Sub.
MBE 22 Length: 3.76 m Weight: 94.8 lb

Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

Compact Sonic
MSS 47 Length: 3.82 m Weight: 72.8 lb



17.78 m	SPDL - Spontaneous Potential
13.44 m	GRGC - Gamma Ray
12.55 m	CGXT - MCG External Temperature
9.24 m	DT35 - 3-5' Compensated Sonic
9.24 m	TR12 - 6' Transit Time
9.24 m	TR22 - 5' Transit Time
9.24 m	TR11 - 4' Transit Time

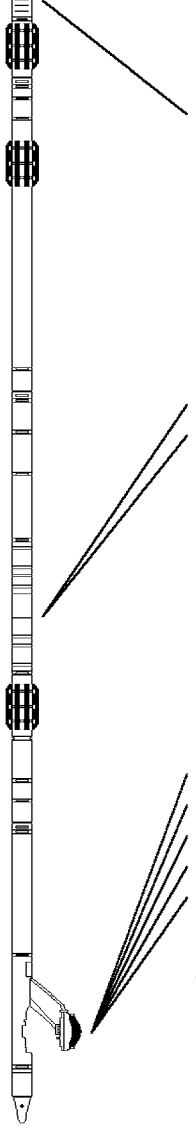
Compact Upper Guard Sub.
MUG 20 Length: 2.74 m Weight: 68.3 lb

Compact Laterolog Electrode Sub.
MLE 16 Length: 3.76 m Weight: 92.6 lb

Compact Micro-Resistivity
MMR 5 Length: 2.62 m Weight: 81.6 lb

Pressure Bung + Hole Finder
HFS 3 Length: 0.28 m Weight: 6.6 lb

Total Length: 19.62 m Weight: 480.6 lb



9.24 m	TR21 - 3' Transit Time
3.93 m	DDLL - Deep Laterolog
3.93 m	DSLL - Shallow Laterolog
0.00 m	MRRS - MicroRes Resistance (S)
0.00 m	MATC - MMR Caliper
0.00 m	HVOL - Hole Volume
0.00 m	AVOL - Annular Volume
Tool Zero	(0.85m from bottom)

All measurements relative to tool zero.

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.70	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

Reeves Compact

CEMENT LOG

1:200

Reeves Compact

COMPENSATED NEUTRON PHOTO DENSITY 1:200

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FIELD PRINT

LSD	SEC	TWP	RGE

Other Services
MICRO-LATEROLOG
COMPENSATED SONIC

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	2			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.50	metres		
Last Reading	1750.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	26 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MPD, MDN, MCG RAN IN COMBINATION.
4) HARDWARE: MDN: DUAL BOWSPRING

5) MPD CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY.
6) MDN CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY AND SALINITY.

7) SERVICE ORDER:2391
8) RIG:CENTURY 7

PRINTS: 1 FIELD 3 FINALS

9) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 34.9 CU.M.
10) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 17.8 CU.M.

11) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
12) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
13) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for

or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAINLOG 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta
Recorded on 08-SEP-2005 02:48
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

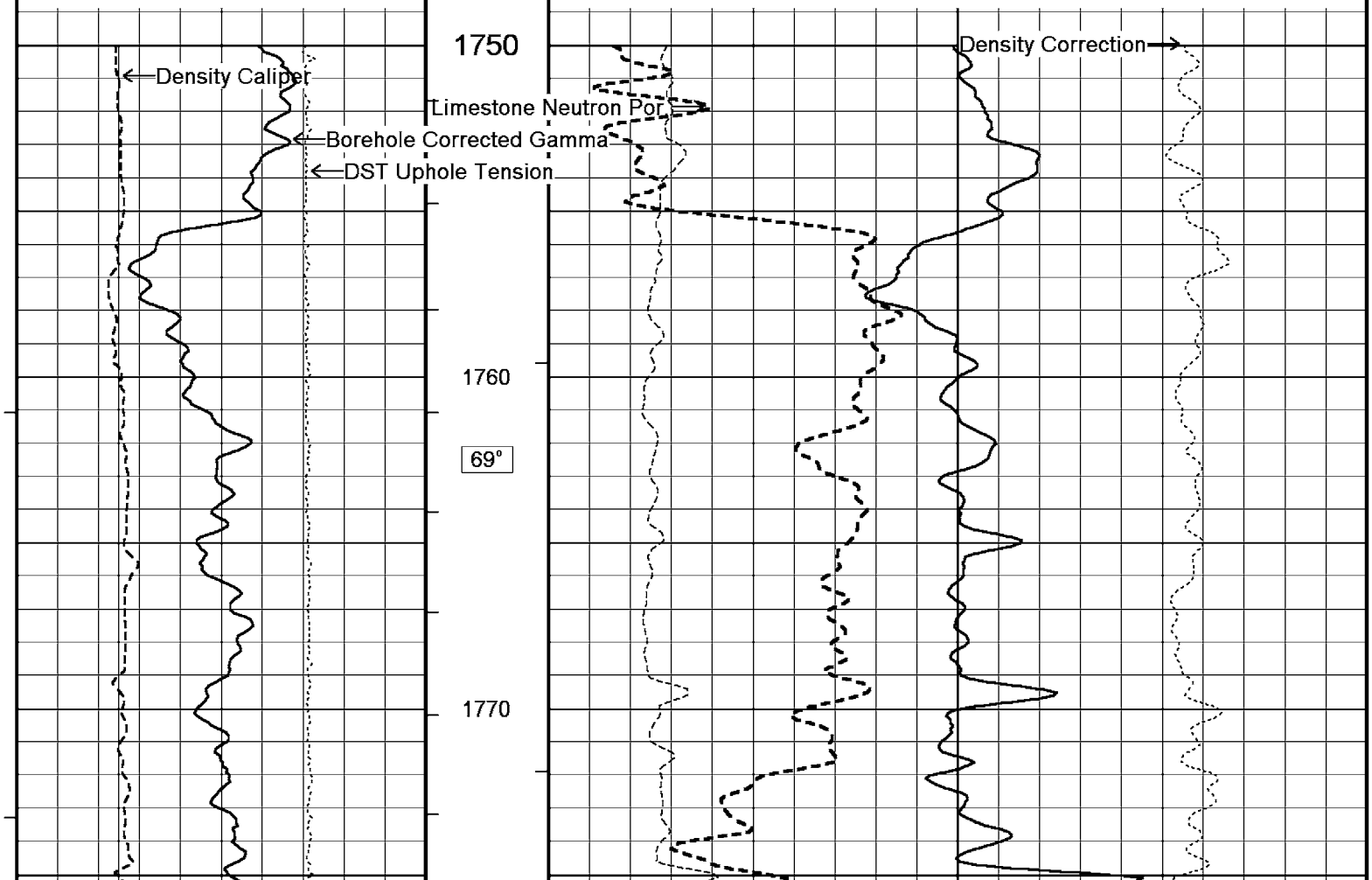
Replay Scale 1:200

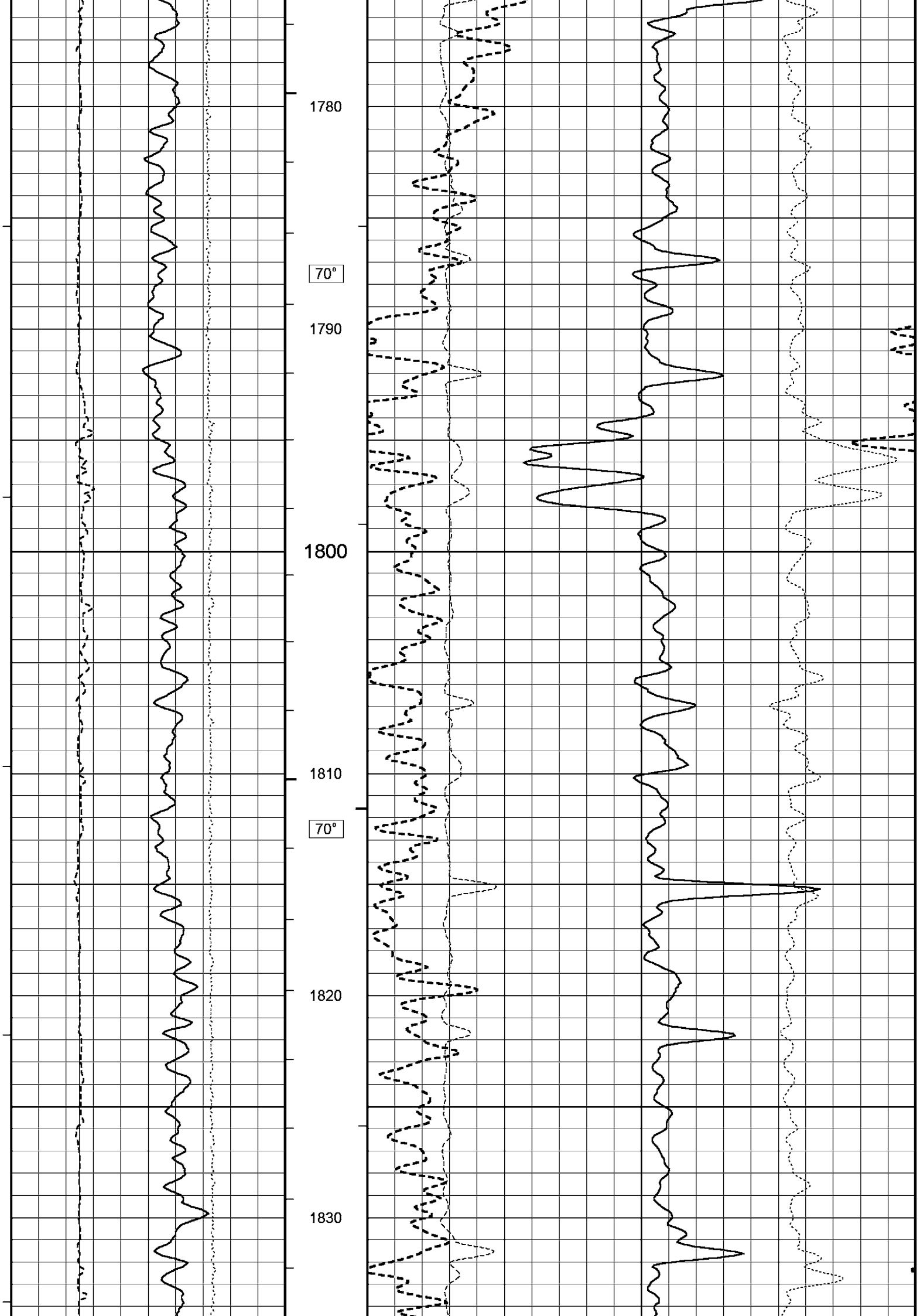
Limestone Neutron Por.
percent
45 30 15 0 -15

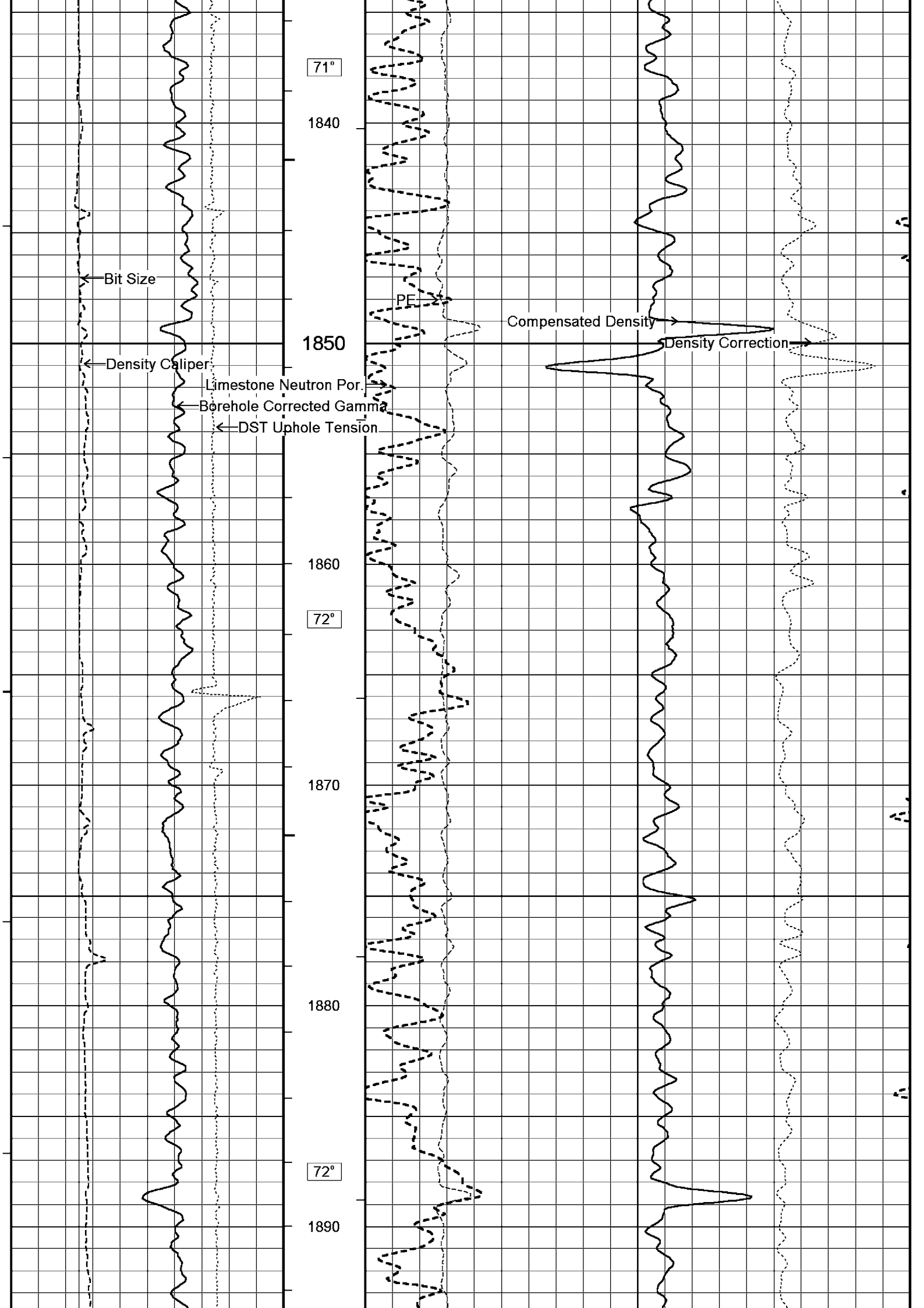
Compensated Density
grams/cc
1.95 2.20 2.45 2.70 2.95

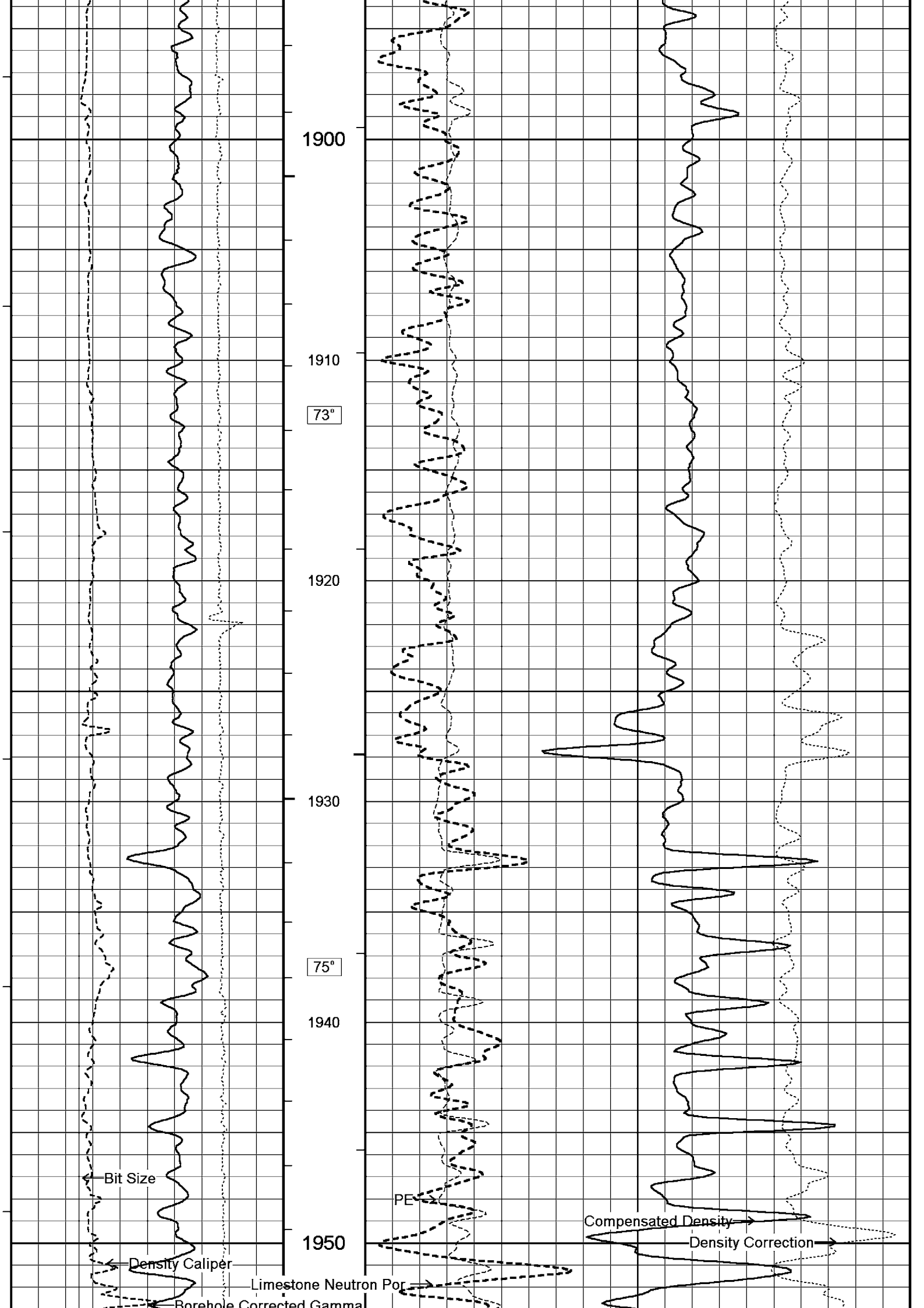
PE
barns/electron
0 5 10 15 20

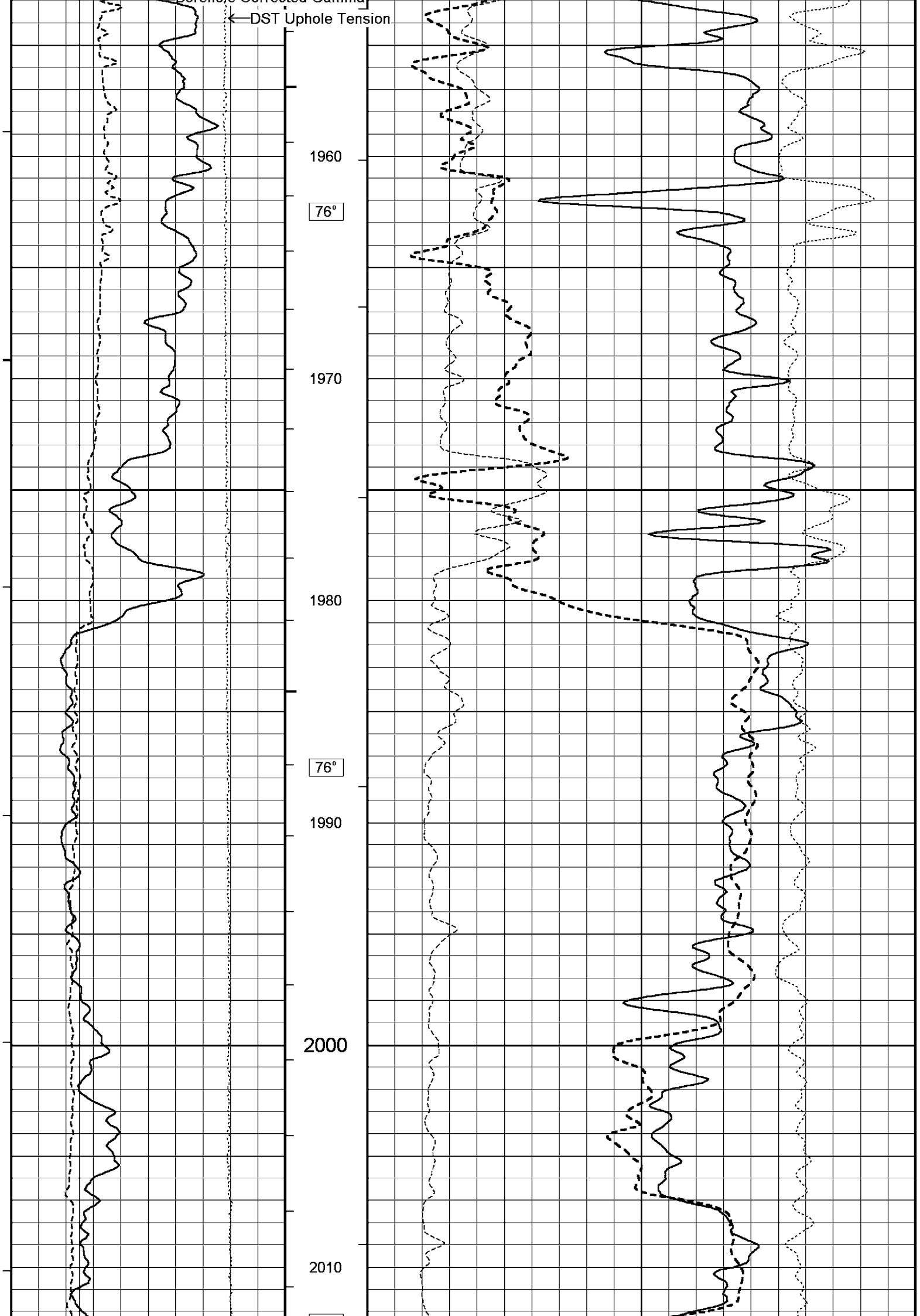
Density Correction
grams/cc
-0.25 0 0.25

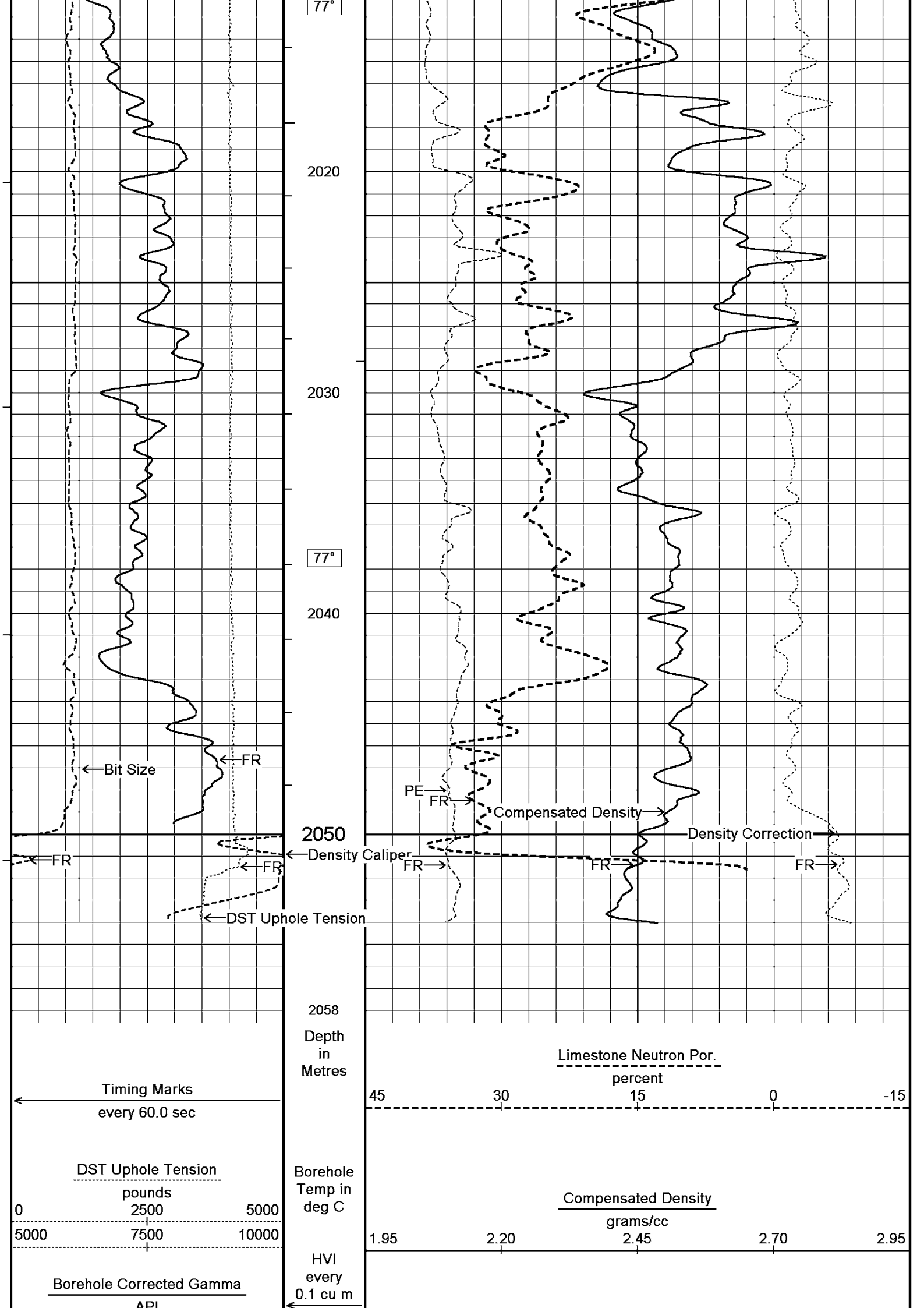


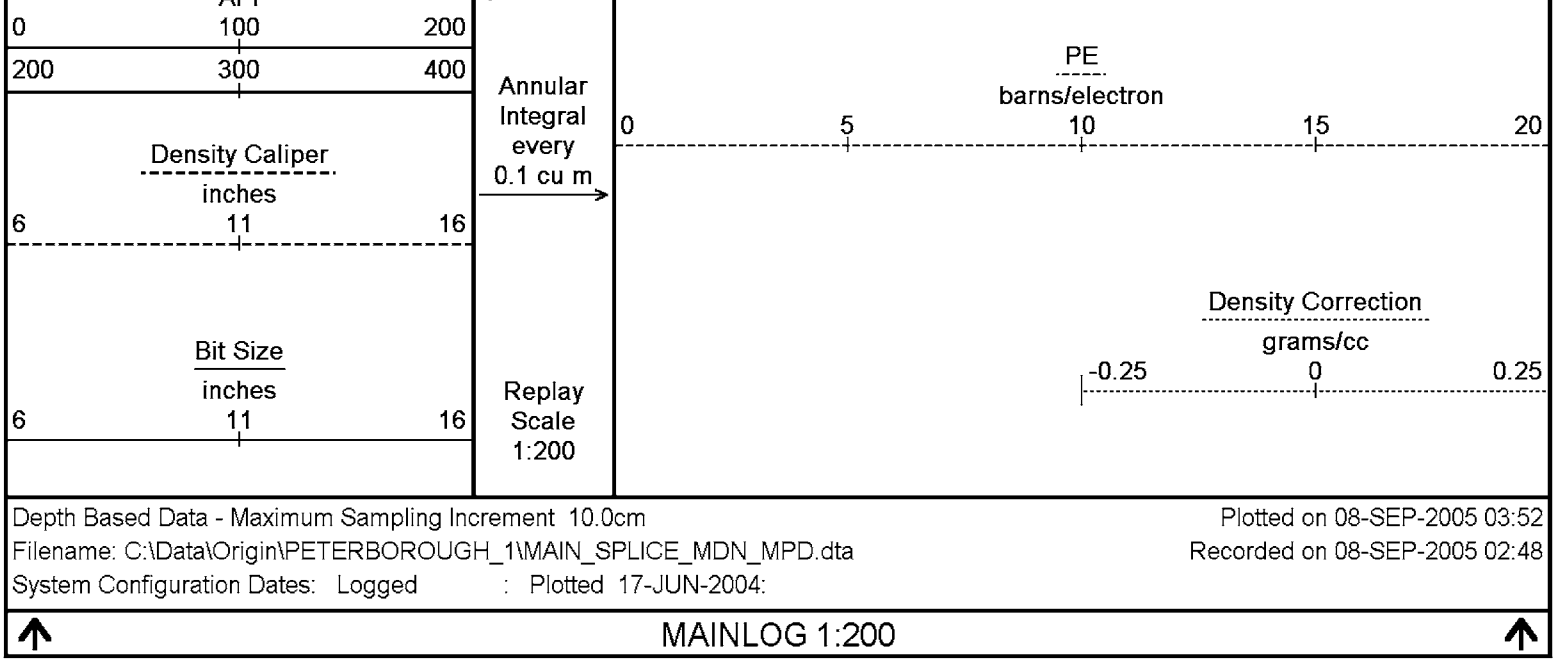

1780
70°
1790
1800
1810
70°
1820
1830


71°
1840
Bit Size
PE
Compensated Density
1850
Density Correction
Density Caliper
Limestone Neutron Por.
Borehole Corrected Gamma
DST Uphole Tension
1860
72°
1870
1880
72°
1890


1900
1910
73°
1920
1930
75°
1940
1950
Bit Size
Density Caliper
Limestone Neutron Por
Borehole Corrected Gamma
PE
Compensated Density
Density Correction


←DST Uphole Tension
1960
76°
1970
1980
76°
1990
2000
2010


77°
2020
2030
77°
2040
2050
2058
Bit Size
FR
FR
FR
Density Caliper
FR
DST Uphole Tension
PE
FR
Compensated Density
Density Correction
FR
FR
Depth in Metres
Timing Marks
every 60.0 sec
DST Uphole Tension
pounds
0
2500
5000
5000
7500
10000
Borehole Corrected Gamma
API
Borehole Temp in deg C
HVI every 0.1 cu m
Limestone Neutron Por.
percent
45
30
15
0
-15
Compensated Density
grams/cc
1.95
2.20
2.45
2.70
2.95

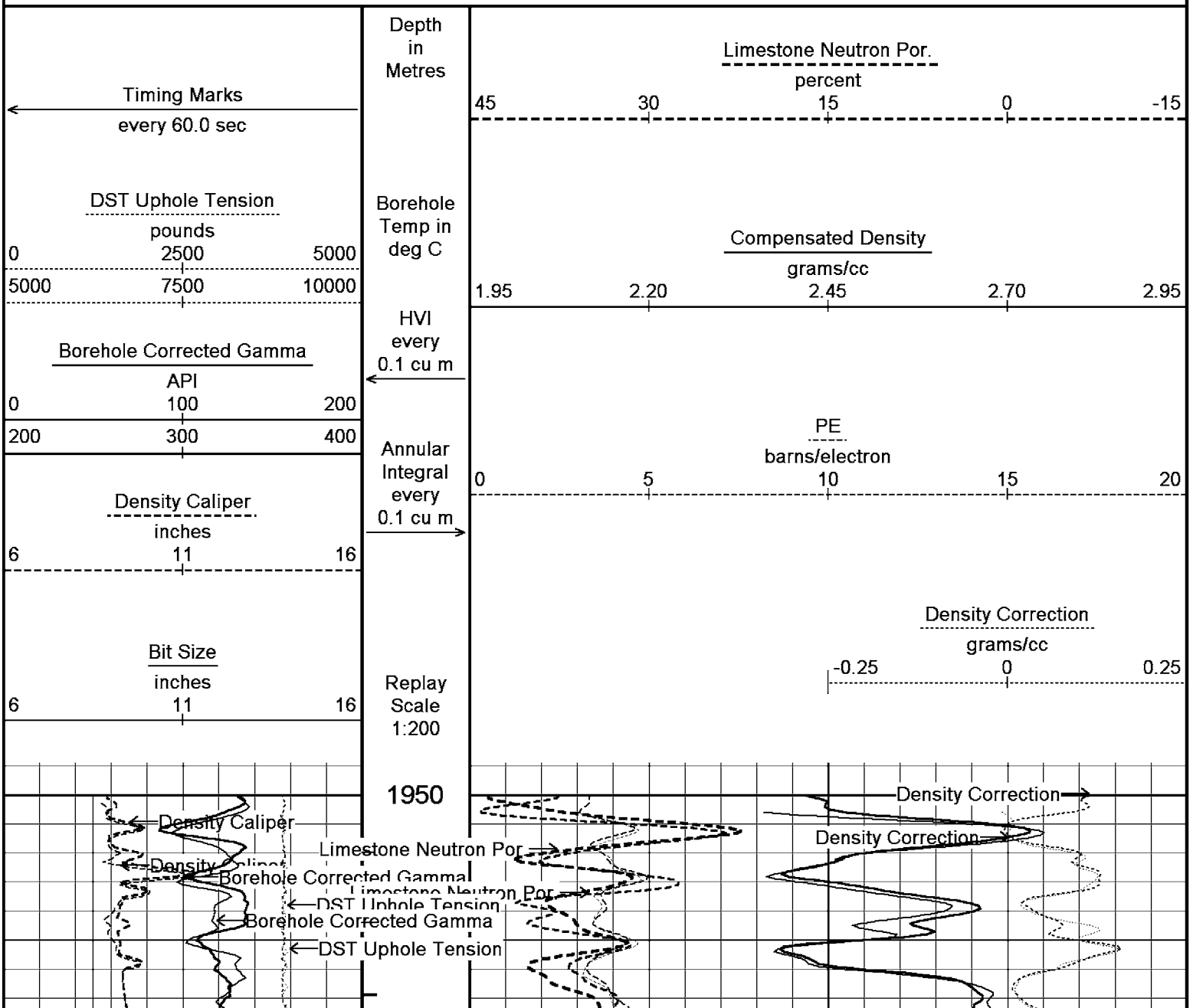


Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta — Recorded on 08-SEP-2005 02:48
System Configuration Dates: Logged : Plotted 17-JUN-2004:

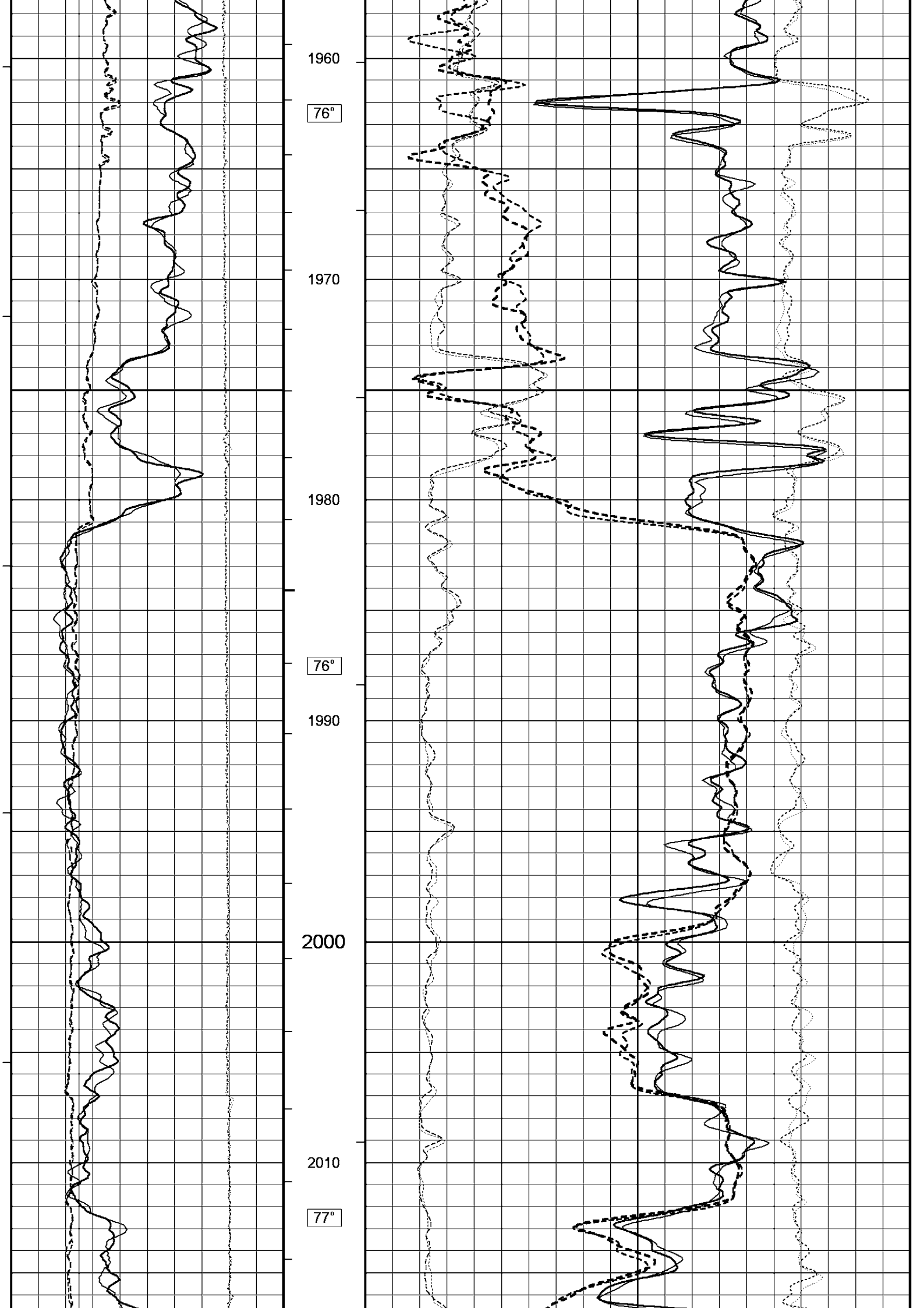
MAINLOG 1:200

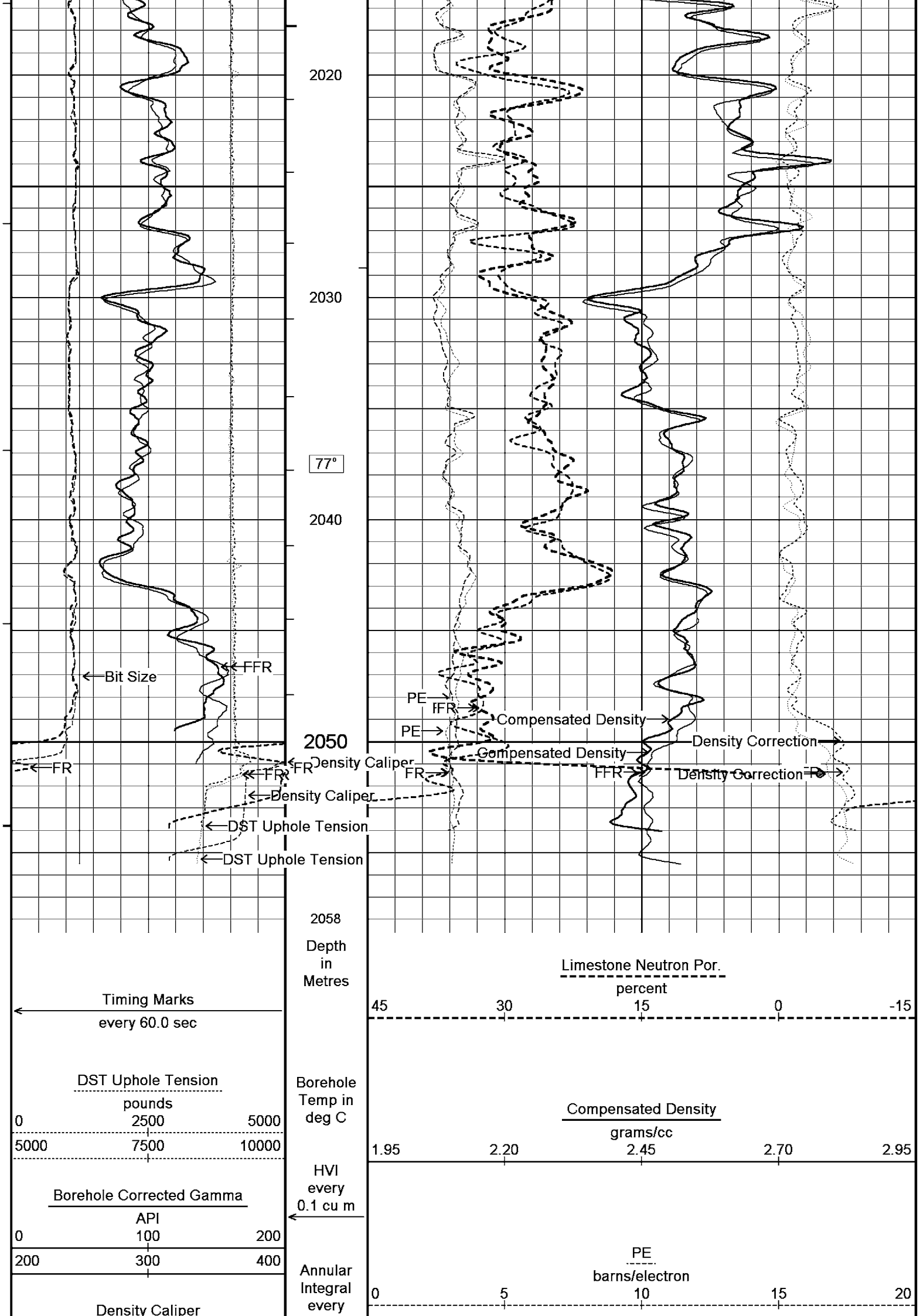
MAINLOG 1:200
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta — Recorded on 08-SEP-2005 02:48
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_MDN_MPD.dta — Recorded on 08-SEP-2005 02:14
System Configuration Dates: Logged : Plotted 17-JUN-2004:



MAINLOG 1:200


1960
76°
1970
1980
76°
1990
2000
2010
77°


2020
2030
77°
2040
2050
2058
Bit Size
FFR
FR
FR
FR
Density Caliper
Density Caliper
DST Uphole Tension
DST Uphole Tension
PE
IFR
Compensated Density
PE
Compensated Density
Density Correction
FR
FFR
Density Correction
Depth in Metres
Timing Marks
every 60.0 sec
DST Uphole Tension
pounds
0
2500
5000
5000
7500
10000
Borehole Corrected Gamma
API
0
100
200
200
300
400
Density Caliper
Borehole Temp in deg C
HVI every 0.1 cu m
Annular Integral every
Limestone Neutron Por.
percent
45
30
15
0
-15
Compensated Density
grams/cc
1.95
2.20
2.45
2.70
2.95
PE
barns/electron
0
5
10
15
20

inches
6 11 16

0.1 cu m

Density Correction
grams/cc
-0.25 0 0.25

Bit Size
inches
6 11 16

Replay
Scale
1:200

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta — Recorded on 08-SEP-2005 02:48
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_MDN_MPD.dta — Recorded on 08-SEP-2005 02:14
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:200
REPEAT SECTION

MAINLOG 1:200
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta — Recorded on 08-SEP-2005 02:48
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_2_MDN_MPD.dta — Recorded on 08-SEP-2005 02:31
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Depth in Metres

Timing Marks
every 60.0 sec

Limestone Neutron Por.
percent
45 30 15 0 -15

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Temp in deg C

Compensated Density
grams/cc
1.95 2.20 2.45 2.70 2.95

HVI
every
0.1 cu m

Borehole Corrected Gamma
API
0 100 200
200 300 400

PE
barns/electron
0 5 10 15 20

Annular Integral every 0.1 cu m

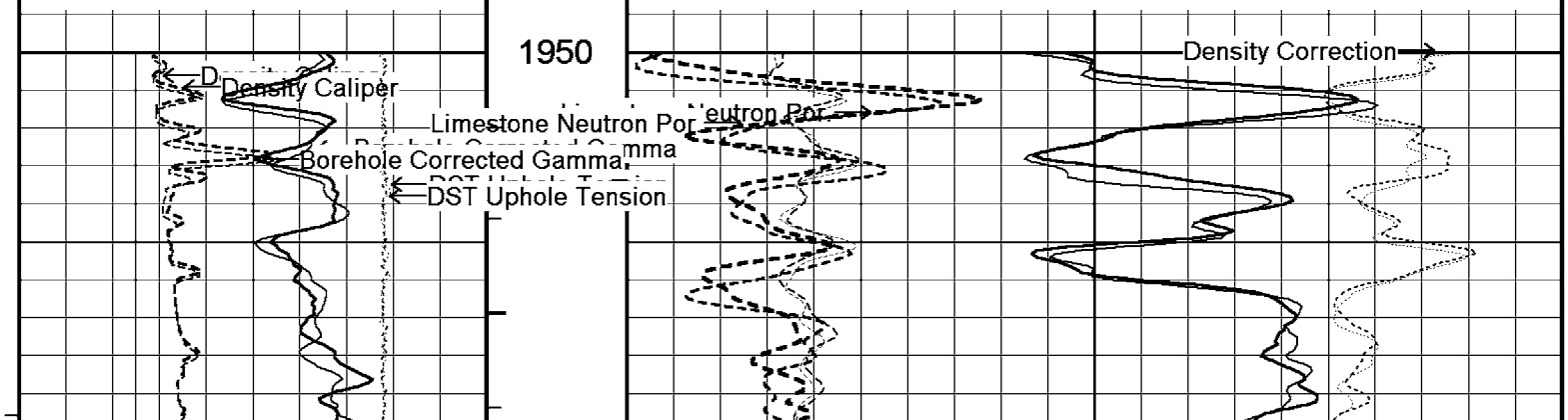
Density Caliper
inches
6 11 16

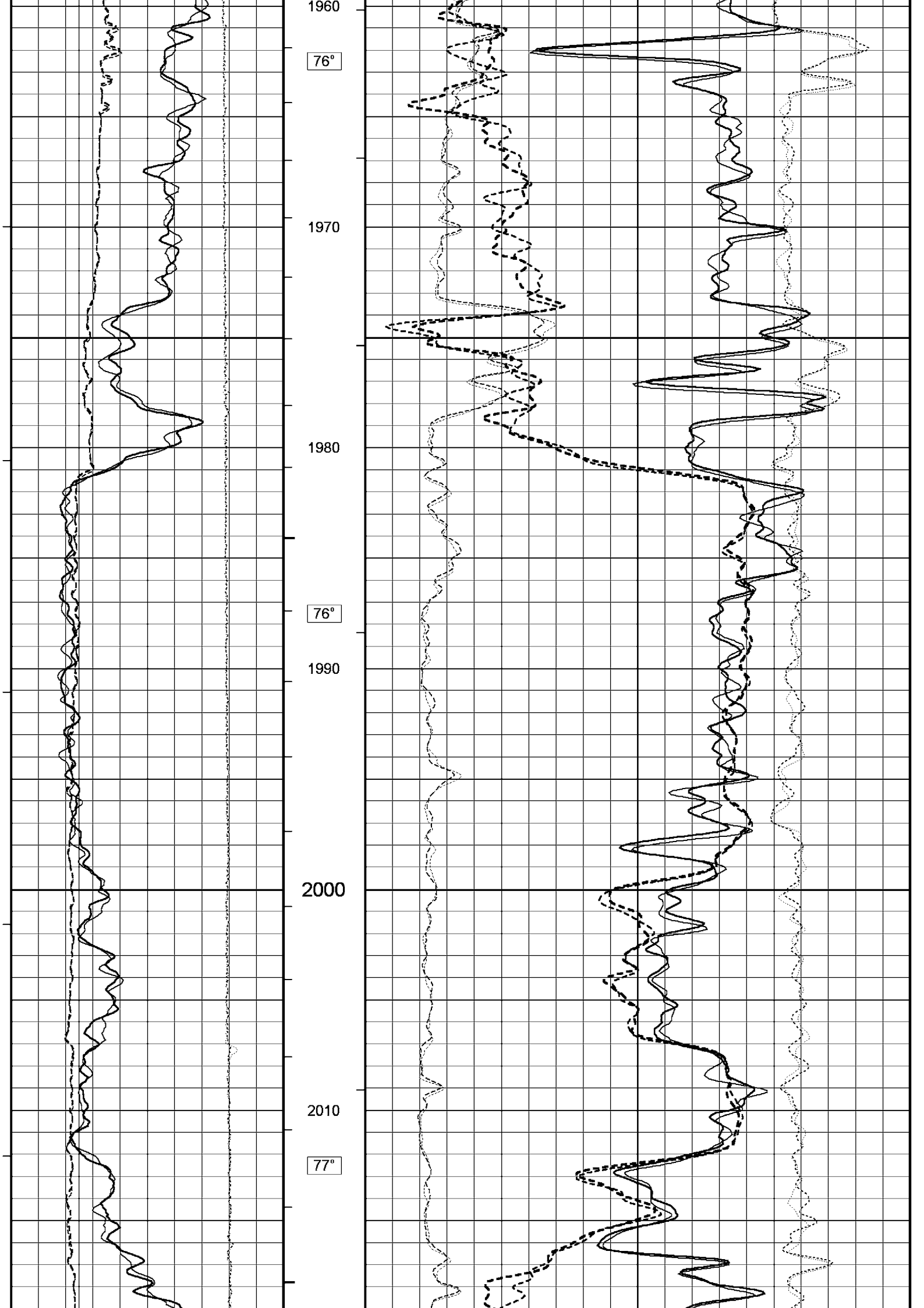
Density Correction
grams/cc
-0.25 0 0.25

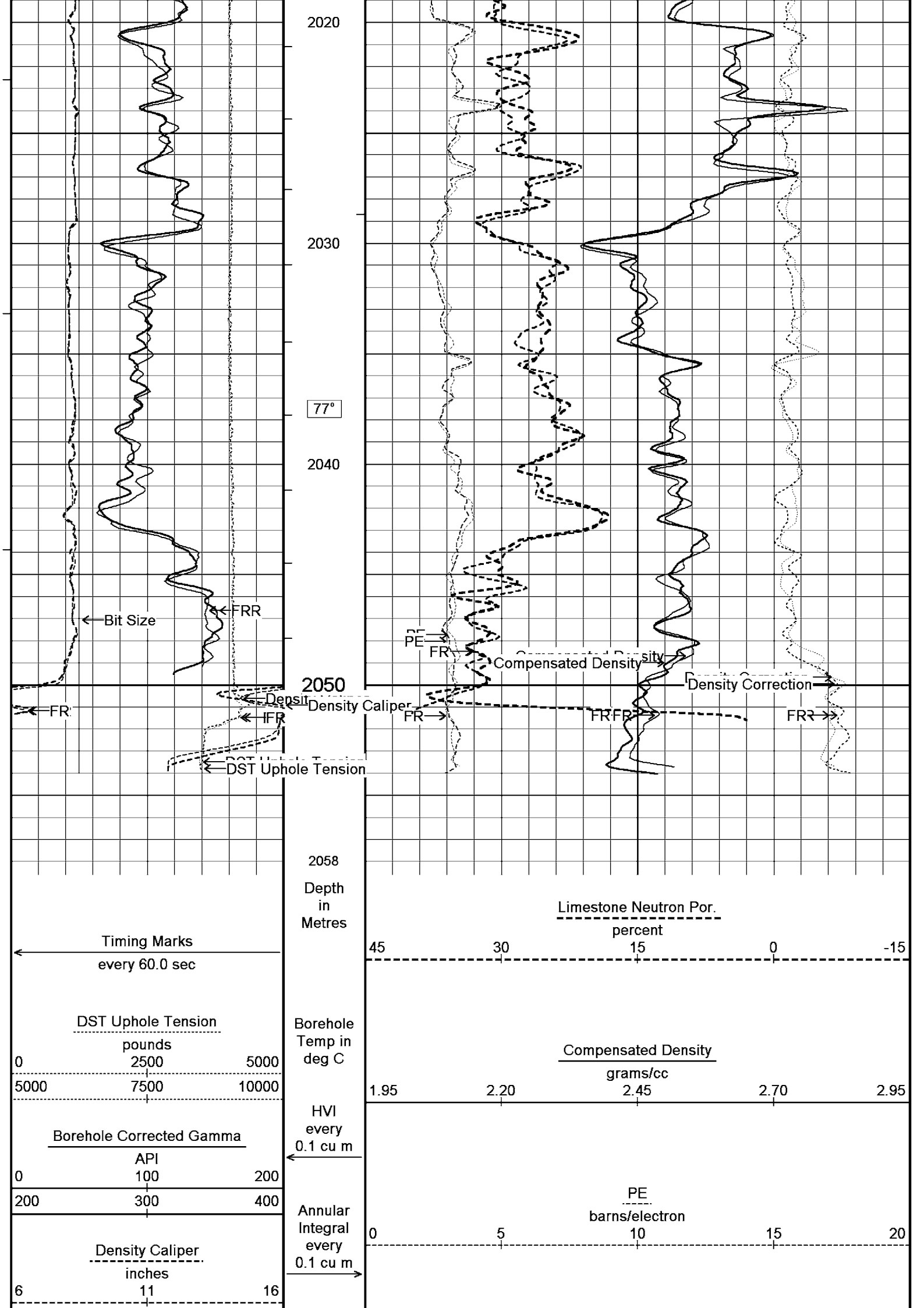
Bit Size
inches
6 11 16

Replay
Scale
1:200

1950




1960
76°
1970
1980
76°
1990
2000
2010
77°


2020
2030
77°
2040
2050
2058
Bit Size
FRR
FR
Densit
IFR
Density Caliper
DST Uphole Tension
PE
FR
Compensated Density
Density Correction
FR
FR
FR
Depth in Metres
Timing Marks
every 60.0 sec
DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000
Borehole Corrected Gamma
API
0 100 200
200 300 400
Density Caliper
inches
6 11 16
Borehole Temp in deg C
HVI every 0.1 cu m
Annular Integral every 0.1 cu m
Limestone Neutron Por.
percent
45 30 15 0 -15
Compensated Density
grams/cc
1.95 2.20 2.45 2.70 2.95
PE
barns/electron
0 5 10 15 20

Bit Size
inches
6 11 16

Replay
Scale
1:200

Density Correction
grams/cc
-0.25 0 0.25

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 08-SEP-2005 03:52
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta
Recorded on 08-SEP-2005 02:48
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_2_MDN_MPD.dta
Recorded on 08-SEP-2005 02:31
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:200
REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta

General Constants All 000

General Parameters		
Mud Resistivity	3.210	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Density Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	N/A	
Resistivity used	N/A	
RWA Constant A	N/A	
RWA Constant M	N/A	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Neutron Calibration MDN 043

Base Calibration on 22-AUG-2005 15:53
Field Check on 4-SEP-2005 20:27

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far

	Near	Far	Near	Far
	3021	94	3714	110
Ratio	32.071		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1674	2333
Ratio	0.717	

Field Check	Calibrated (cps)	
	1645	2338
Ratio	0.703	

Neutron Constants MDN 043

Neutron Source Id	NSNE-747	
Neutron Jig Number	31	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.14	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	20.00	degrees C
Mud Salinity	21.14	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Photo Density Calibration MPD 066

Base Calibration on 22-AUG-2005,12:13
Field Check on 4-SEP-2005 20:33

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	49825	17938	53111	19310
Reference 2	23308	2480	24951	2530

Field Check at Base		
	918.0	1089.7

Field Check		
	921.8	1085.1

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	176	793		
Reference 1	15856	49650	0.321	0.320
Reference 2	6240	23176	0.271	0.273

Field Check at Base		
	176.0	793.2

Field Check		
	175.6	798.1

Density Constants MPD 066

Density Source Id	NSDL250	
Nylon Calibrator Number	DNC-D-536	
Aluminium/Fe Calibrator Number	DAC-D-536	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.14	gm/cc
Mud Density Z/A Correction	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc

Matrix Density (gm/cc)	Depth (m)
2.71	
	0.00

0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Caliper Calibration MPD 066

Base Calibration on 22-AUG-2005 11:11
Field Calibration on 8-SEP-2005,03:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	11983	4.01
2	20446	5.99
3	29120	7.98
4	37568	9.94
5	47008	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.37	8.92

DOWNHOLE EQUIPMENT

C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta

All measurements relative to tool zero.

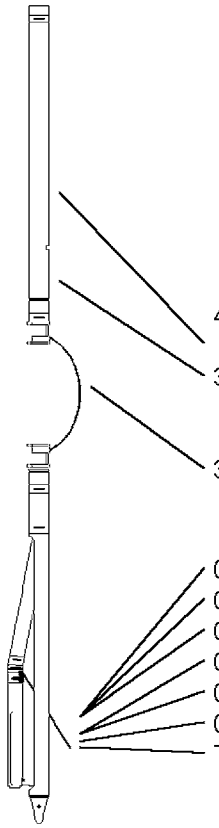
Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

Compact Neutron
MDN 43 Length: 1.53 m Weight: 50.7 lb

Compact Density/Caliper
MPD 66 Length: 2.92 m Weight: 90.4 lb

Pressure Bung + Hole Finder
HFS 3 Length: 0.28 m Weight: 6.6 lb

Total Length: 7.39 m Weight: 211.6 lb



4.87 m	GGCE - Borehole Corrected Gamma
3.98 m	CGXT - MCG External Temperature
3.00 m	NPRS - Sandstone Neutron Por.
0.32 m	AVOL - Annular Volume
0.32 m	HVOL - Hole Volume
0.32 m	CLDC - Density Caliper
0.10 m	DCOR - Density Correction
0.10 m	DPRS - Sandstone Density Por.
0.08 m	PDPE - PE
Tool Zero	(0.95m from bottom)

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.50	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

Reeves Compact

COMPENSATED NEUTRON
PHOTO DENSITY
1:200

Compact	1:200

Reeves Compact

COMPENSATED NEUTRON PHOTO DENSITY 1:500

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FIELD PRINT

LSD	SEC	TWP	RGE

Other Services
MICRO-LATEROLOG
COMPENSATED SONIC

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	2			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.50	metres		
Last Reading	1750.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	26 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MPD, MDN, MCG RAN IN COMBINATION.
4) HARDWARE: MDN: DUAL BOWSPRING

5) MPD CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY.
6) MDN CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY AND SALINITY.

7) SERVICE ORDER:2391
8) RIG:CENTURY 7

PRINTS: 1 FIELD 3 FINALS

9) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 34.9 CU.M.
10) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 17.8 CU.M.

11) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
12) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
13) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for

any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAINLOG 1:500

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 08-SEP-2005 04:03
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta
Recorded on 08-SEP-2005 02:48
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

Replay Scale 1:500

Limestone Neutron Por.
percent
45 30 15 0 -15

Compensated Density
grams/cc
1.95 2.20 2.45 2.70 2.95

PE
barns/electron
0 5 10 15 20

Density Correction
grams/cc
-0.25 0 0.25

1750

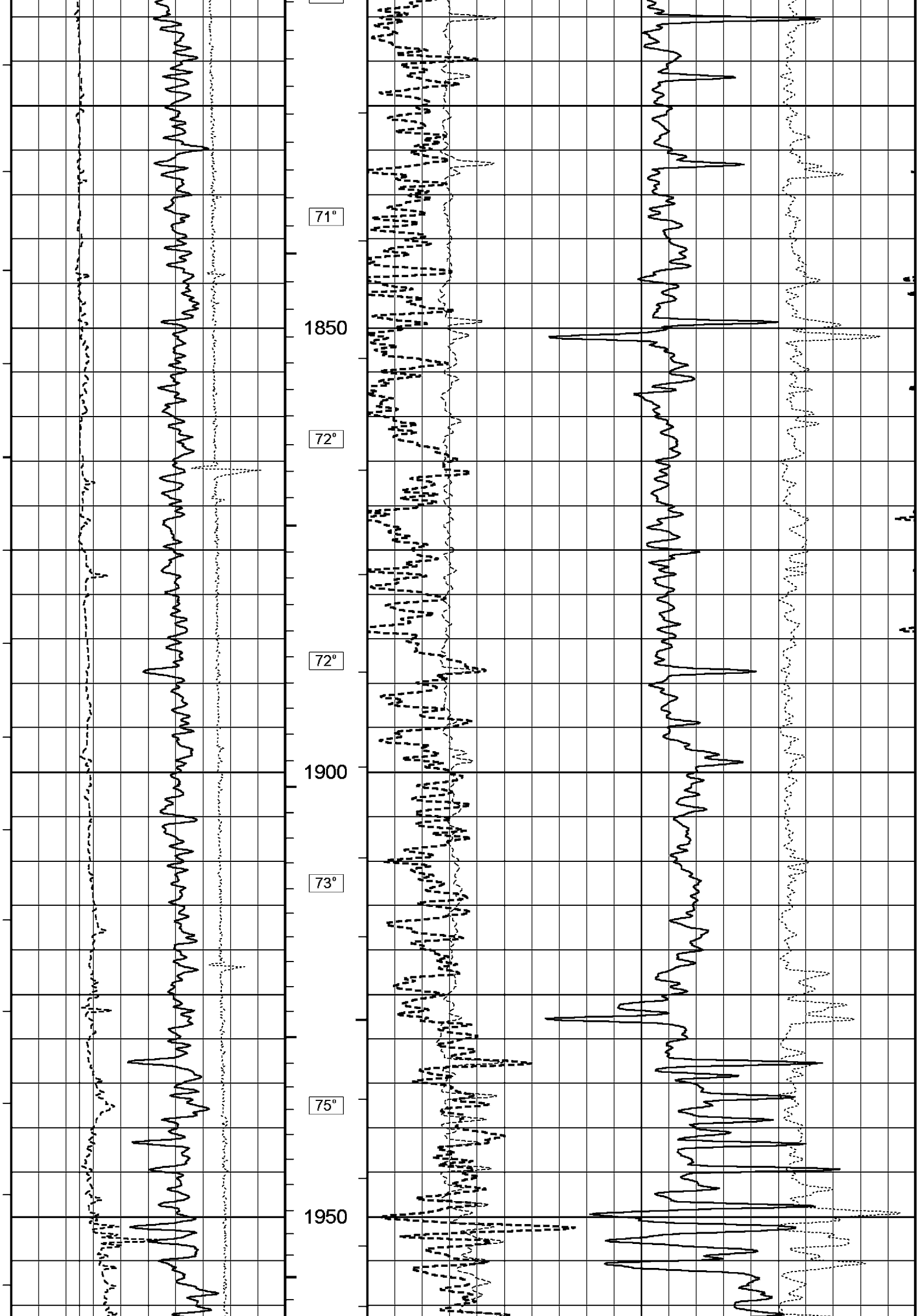
69°

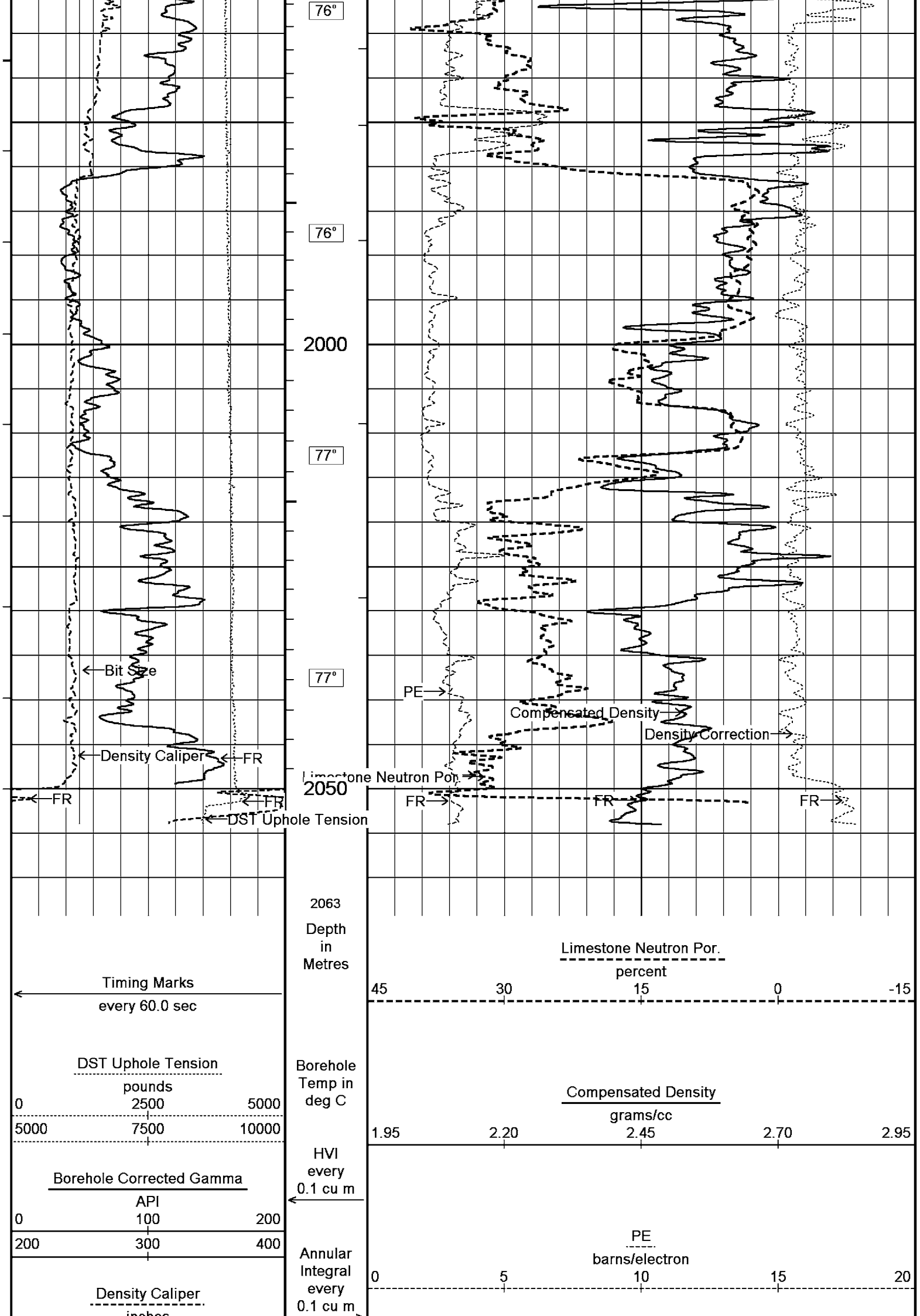
1800

70°

70°

Bit Size
Density Caliper
Limestone Neutron Por.
Borehole Corrected Gamma
DST Uphole Tension
PE
Compensated Density
Density Correction


71°
1850
72°
72°
1900
73°
75°
1950


76°
76°
2000
77°
77°
Bit Size
Density Caliper
FR
FR
FR
FR
DST Uphole Tension
PE
Compensated Density
Density Correction
Limestone Neutron Por.
FR
FR
FR
2050
2063
Depth in Metres
Timing Marks
every 60.0 sec
DST Uphole Tension
pounds
0
2500
5000
5000
7500
10000
Borehole Temp in deg C
Borehole Corrected Gamma
API
0
100
200
200
300
400
HVI
every 0.1 cu m
Annular Integral
every 0.1 cu m
Density Caliper
inches
Limestone Neutron Por.
percent
45
30
15
0
-15
Compensated Density
grams/cc
1.95
2.20
2.45
2.70
2.95
PE
barns/electron
0
5
10
15
20

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 04:03
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta — Recorded on 08-SEP-2005 02:48
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:500

BEFORE SURVEY CALIBRATION

C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta

General Constants All 000

General Parameters		
Mud Resistivity	3.210	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Density Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	N/A	
Resistivity used	N/A	
RWA Constant A	N/A	
RWA Constant M	N/A	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Neutron Calibration MDN 043

Base Calibration on 22-AUG-2005 15:53
Field Check on 4-SEP-2005 20:27

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far

	3021	94	3714	110
Ratio	32.071		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1674	2333
Ratio	0.717	

Field Check	Calibrated (cps)	
	1645	2338
Ratio	0.703	

Neutron Constants MDN 043

Neutron Source Id	NSNE-747	
Neutron Jig Number	31	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.14	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	20.00	degrees C
Mud Salinity	21.14	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Photo Density Calibration MPD 066

Base Calibration on 22-AUG-2005,12:13
Field Check on 4-SEP-2005 20:33

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	49825	17938	53111	19310
Reference 2	23308	2480	24951	2530

Field Check at Base		
	918.0	1089.7

Field Check		
	921.8	1085.1

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	176	793		
Reference 1	15856	49650	0.321	0.320
Reference 2	6240	23176	0.271	0.273

Field Check at Base		
	176.0	793.2

Field Check		
	175.6	798.1

Density Constants MPD 066

Density Source Id	NSDL250	
Nylon Calibrator Number	DNC-D-536	
Aluminium/Fe Calibrator Number	DAC-D-536	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.14	gm/cc
Mud Density Z/A Correction	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc

Matrix Density (gm/cc)	Depth (m)
2.71	
0.00	0.00

0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

Caliper Calibration MPD 066

Base Calibration on 22-AUG-2005 11:11
Field Calibration on 8-SEP-2005,03:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	11983	4.01
2	20446	5.99
3	29120	7.98
4	37568	9.94
5	47008	12.01
6	N/A	N/A

Field Calibration

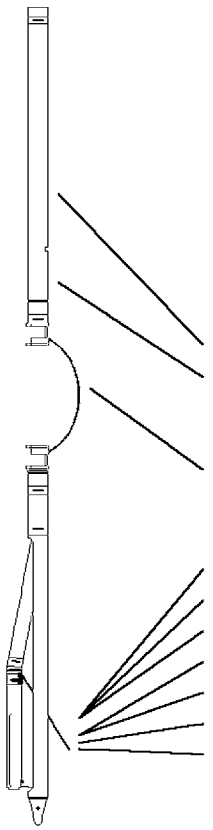
Measured Caliper (in)	Actual Caliper (in)
8.37	8.92

DOWNHOLE EQUIPMENT

C:\Data\Origin\PETERBOROUGH_1\MAIN_SPLICE_MDN_MPD.dta

All measurements relative to tool zero.

Compact Gamma MCG 98	Length: 2.65 m	Weight: 63.9 lb
Compact Neutron MDN 43	Length: 1.53 m	Weight: 50.7 lb
Compact Density/Caliper MPD 66	Length: 2.92 m	Weight: 90.4 lb
Pressure Bung + Hole Finder HFS 3	Length: 0.28 m	Weight: 6.6 lb
Total	Length: 7.39 m	Weight: 211.6 lb



4.87 m	GGCE - Borehole Corrected Gamma
3.98 m	CGXT - MCG External Temperature
3.00 m	NPRS - Sandstone Neutron Por.
0.32 m	AVOL - Annular Volume
0.32 m	HVOL - Hole Volume
0.32 m	CLDC - Density Caliper
0.10 m	DCOR - Density Correction
0.10 m	DPRS - Sandstone Density Por.
0.08 m	PDPE - PE
Tool Zero	(0.95m from bottom)

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.50	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

Reeves Compact

COMPENSATED NEUTRON
PHOTO DENSITY
1:500

Reeves Compact

DUAL LATEROLOG - MLL
COMPENSATED SONIC
1:200

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FIELD PRINT

LSD	SEC	TWP	RGE

Other Services
COMPENSATED NEUTRON FORMATION TESTER
PHOTO DENSITY

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	1			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.70	metres		
Last Reading	30.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	19.5 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MMR, MLE, MUG, MSS, MCG, MBE RAN IN COMBINATION.
4) HARDWARE: MMR: ONE 25.4MM STANDOFF
MSS: TWO 25.4MM STANDOFF
MUG: ONE 25.4MM STANDOFF
MBE: ONE 25.4MM STANDOFF
5) MPD CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY.
6) MDN CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY AND SALINITY.
7) SERVICE ORDER:2391
8) RIG:CENTURY 7
PRINTS: 1 FIELD 3 FINALS
9) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 34.9 CU.M.
10) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 17.8 CU.M.
11) SONIC CASING SIGNAL AT 284.6 M.
12) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
13) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
14) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.
15) SONIC DOES NOT REPEAT AT 1985. DISCRIMINATORS WERE ADJUSTED TO TRY AND CLEAN UP THE SONIC REPEATABILITY WITH NO SUCCESS.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAINLOG 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 08-SEP-2005 00:05
Recorded on 07-SEP-2005 20:22

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Spontaneous Potential
millivolts
− → | 10 | ← +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

Replay Scale 1:200

16
20
30

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

Transit Time
every millisec

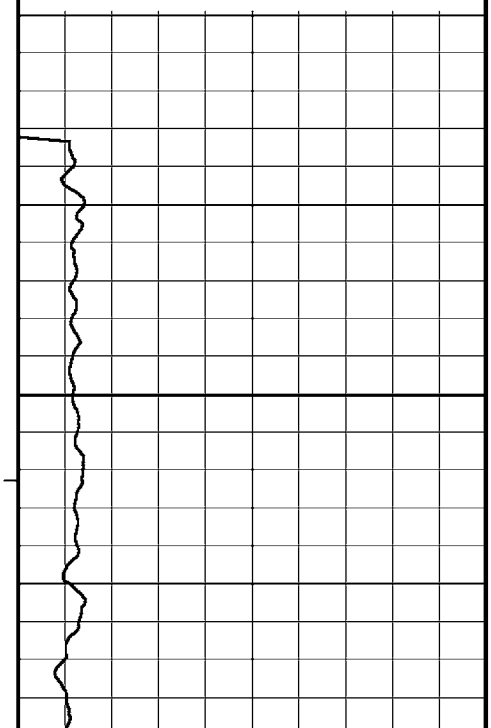
3-5' Compensated Sonic
microsec/foot
140 90 40

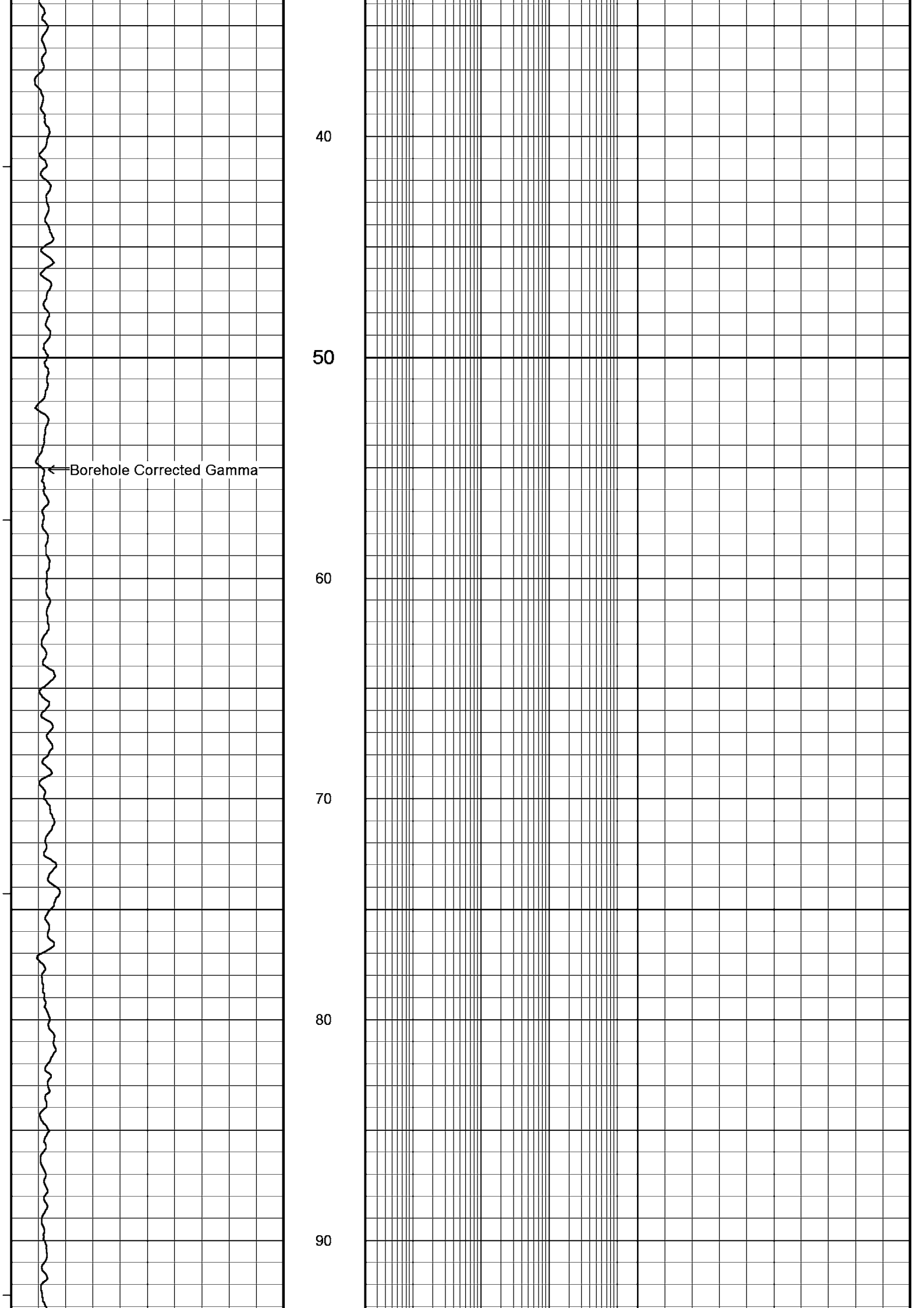
3' Transit Time
microseconds
1100 100

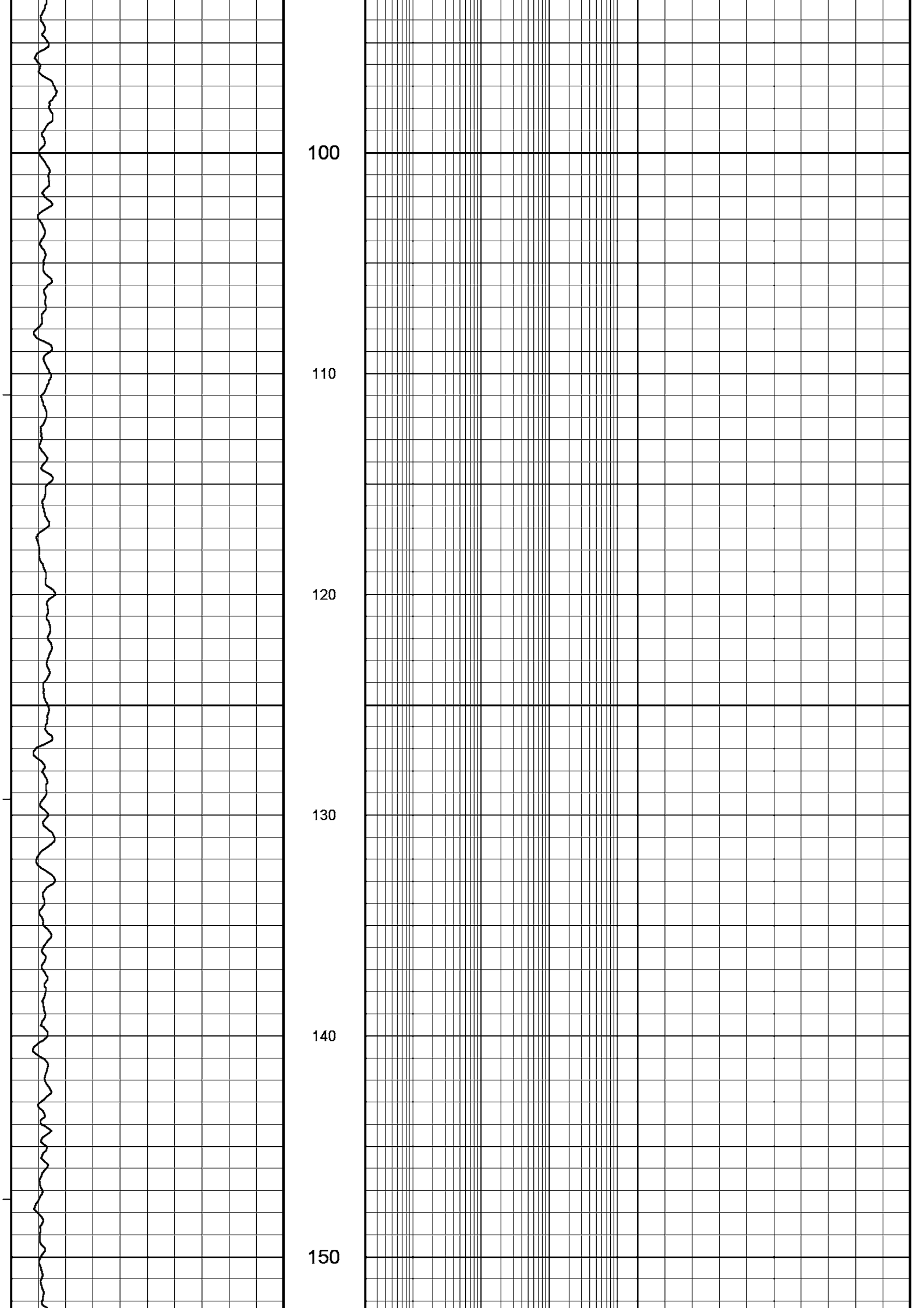
4' Transit Time
microseconds
1100 100

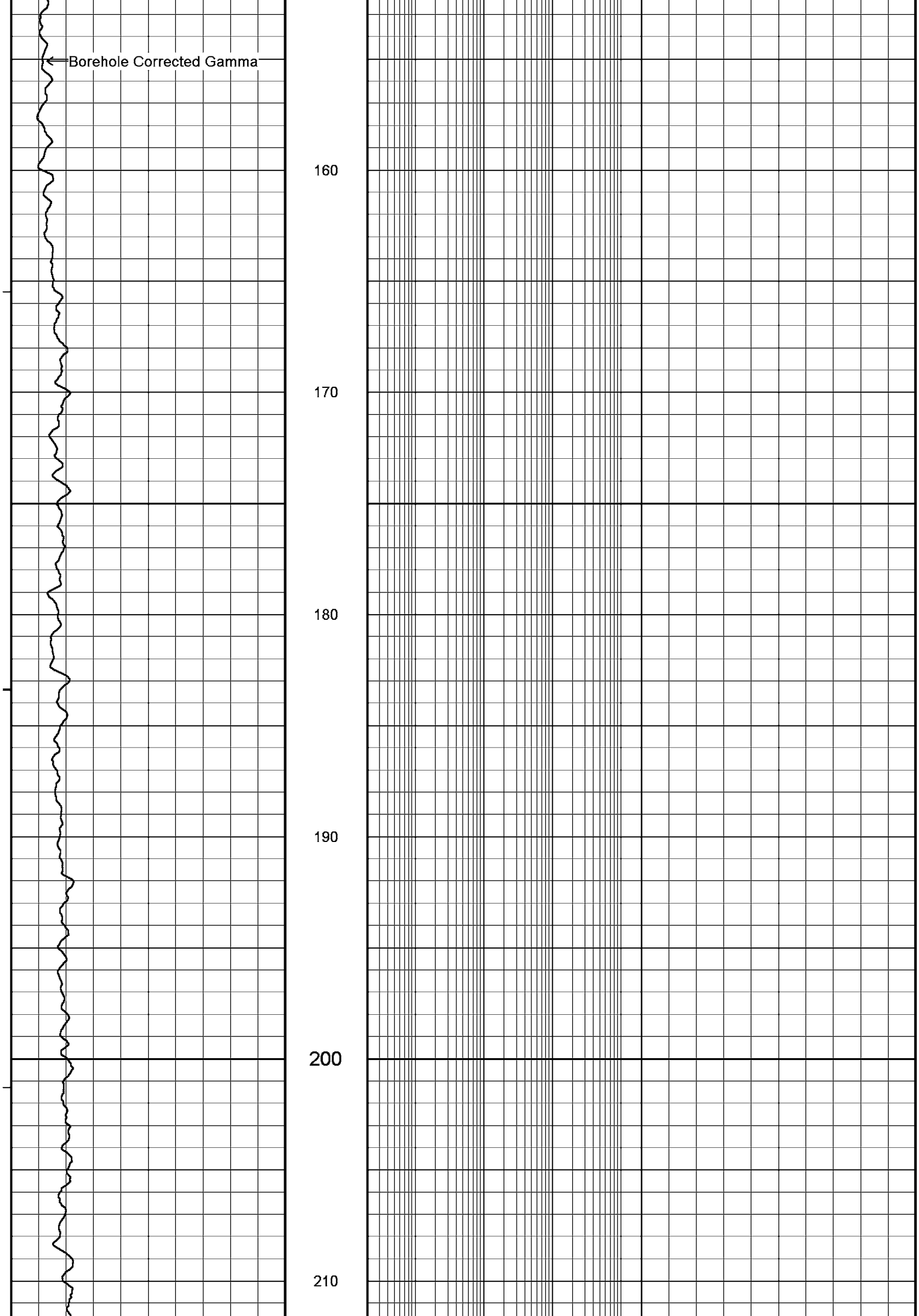
5' Transit Time
microseconds
1100 100

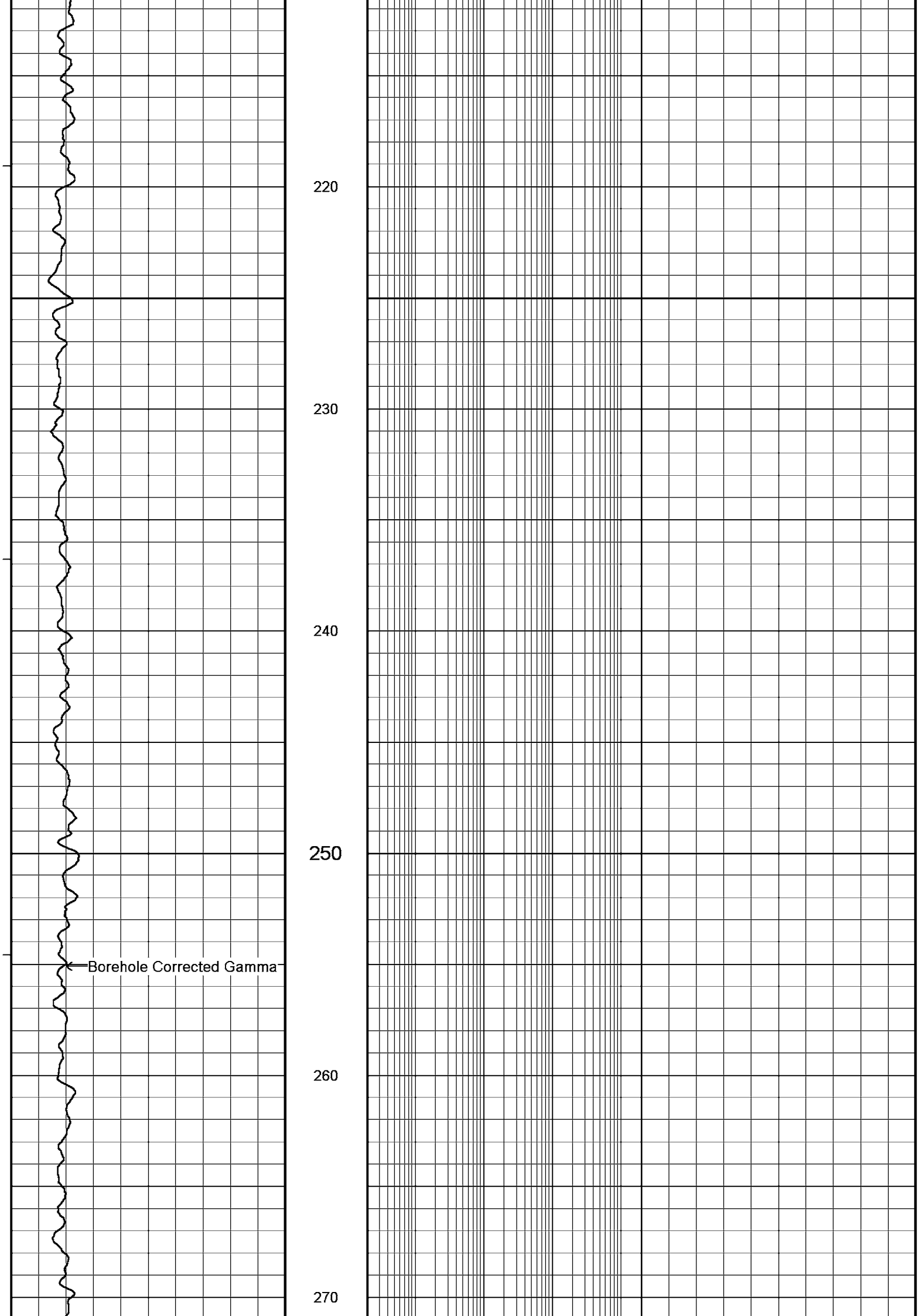
6' Transit Time
microseconds
1100 100

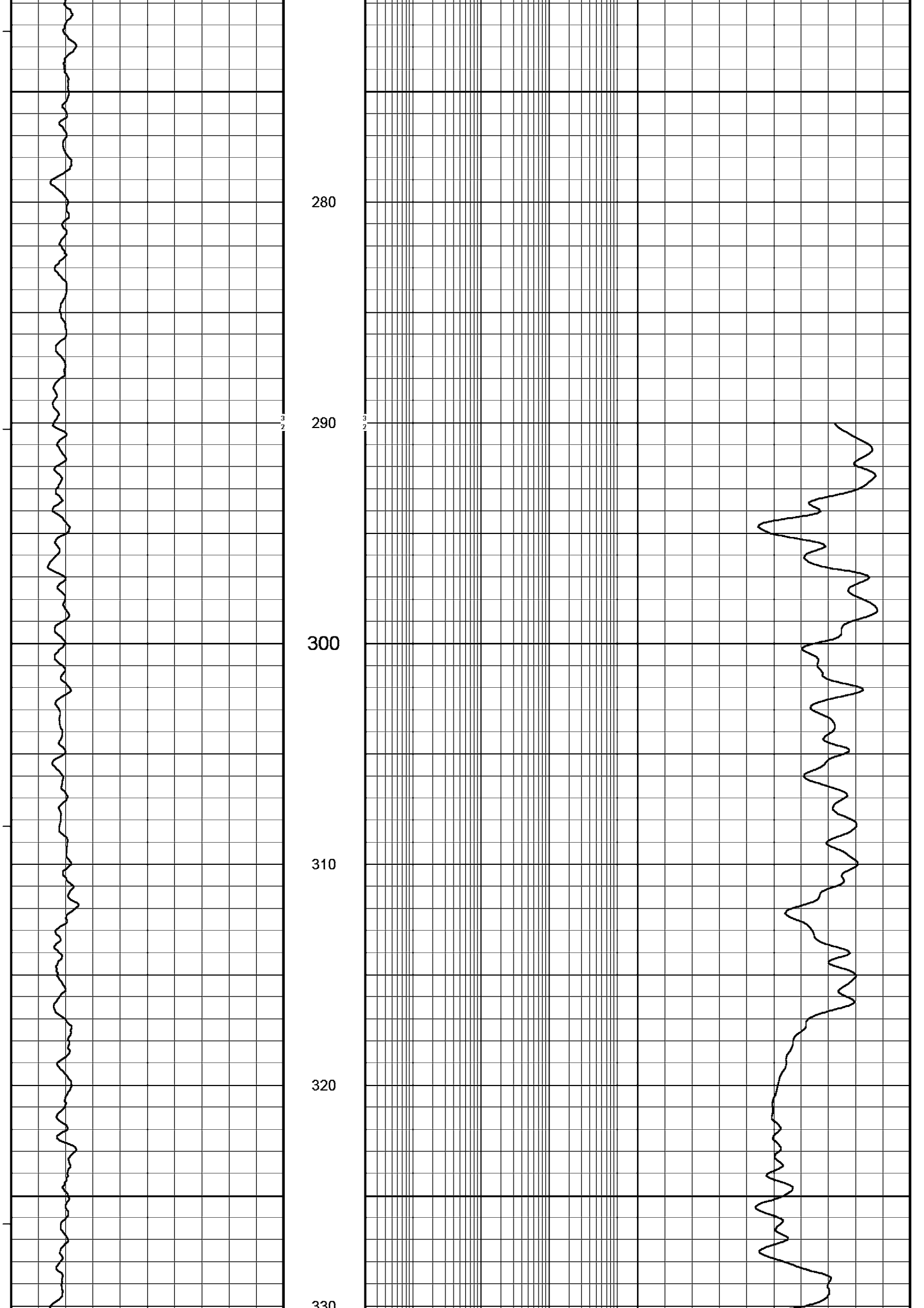


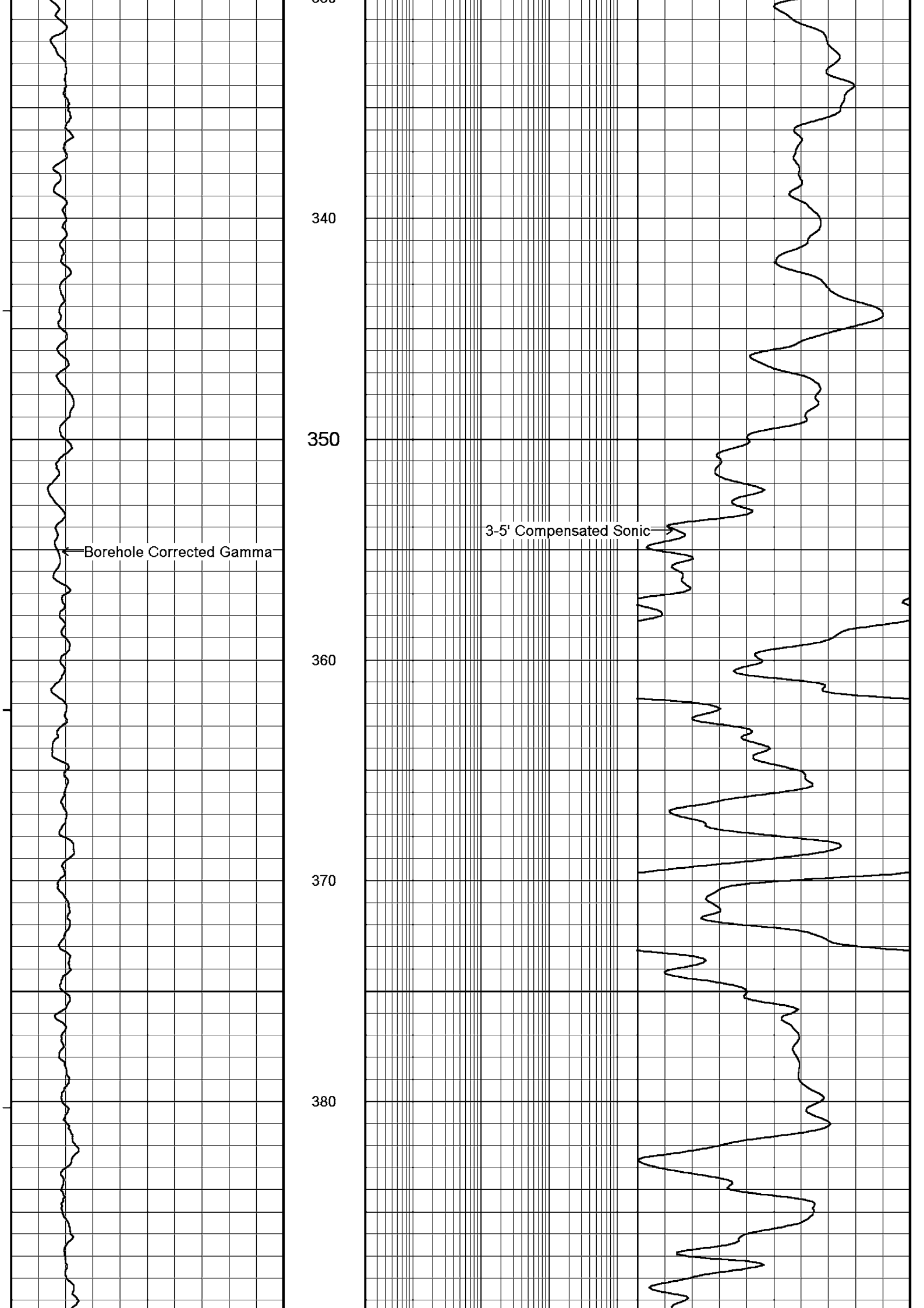

40
50
Borehole Corrected Gamma
60
70
80
90

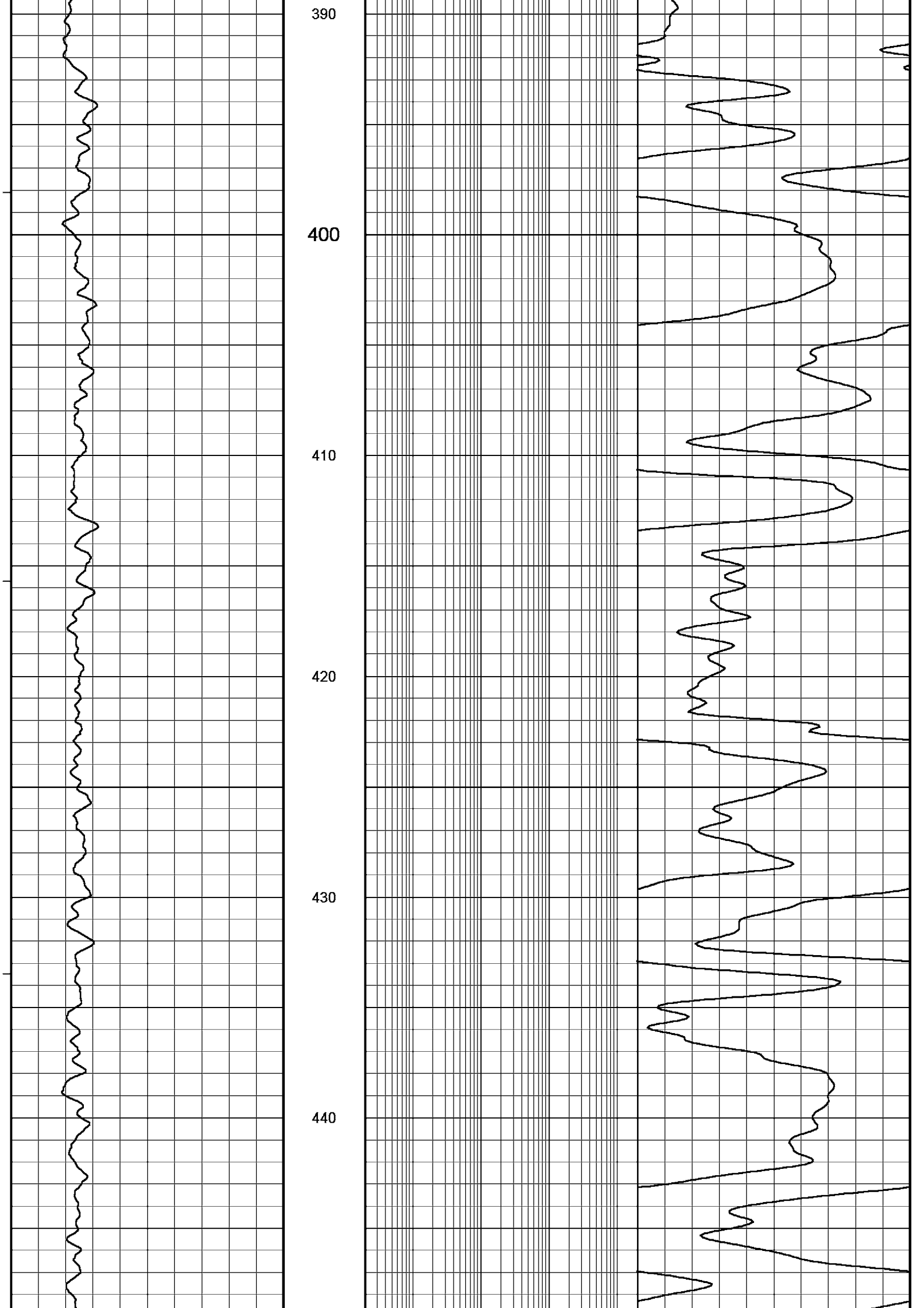

100
110
120
130
140
150

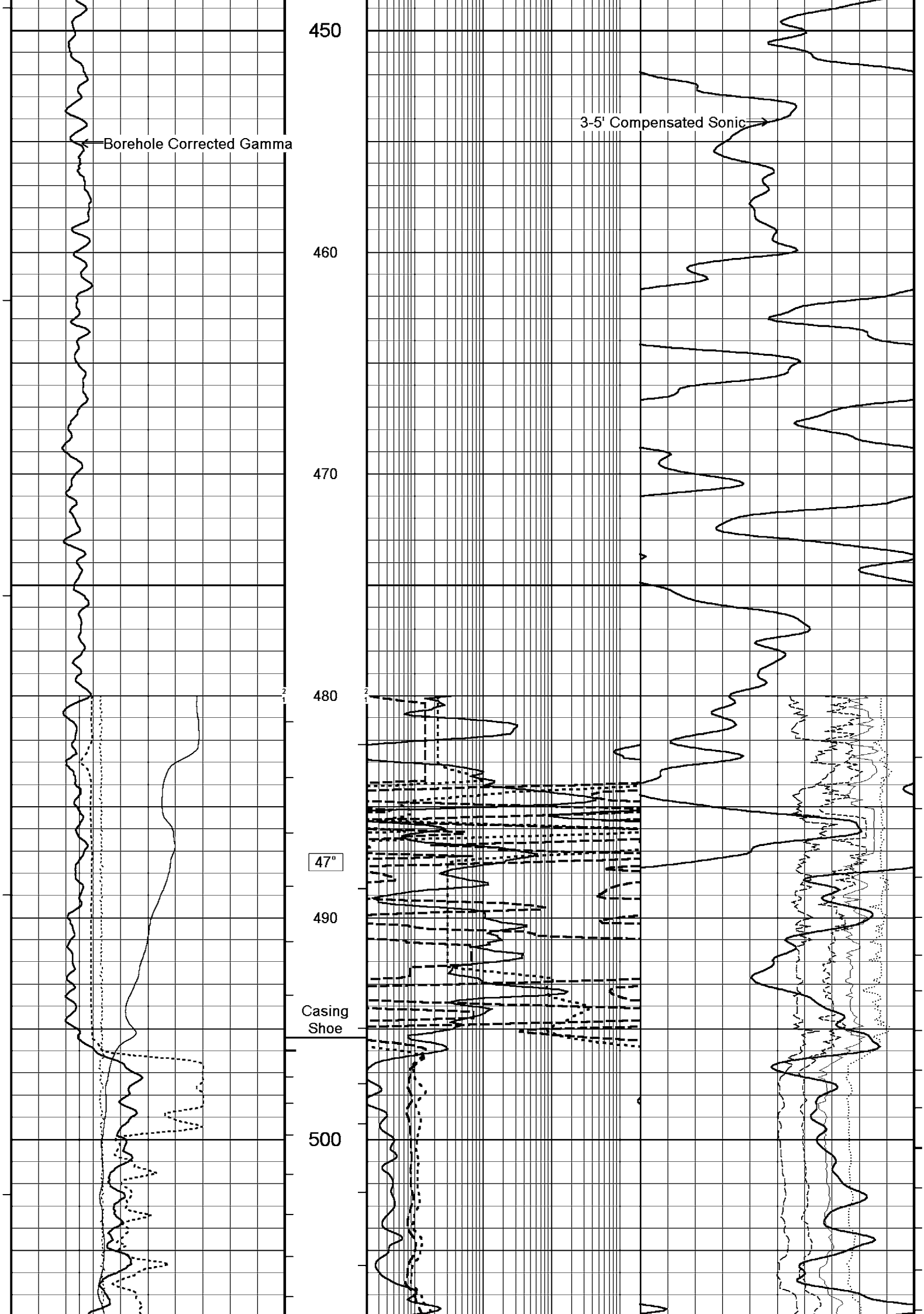

Borehole Corrected Gamma
160
170
180
190
200
210

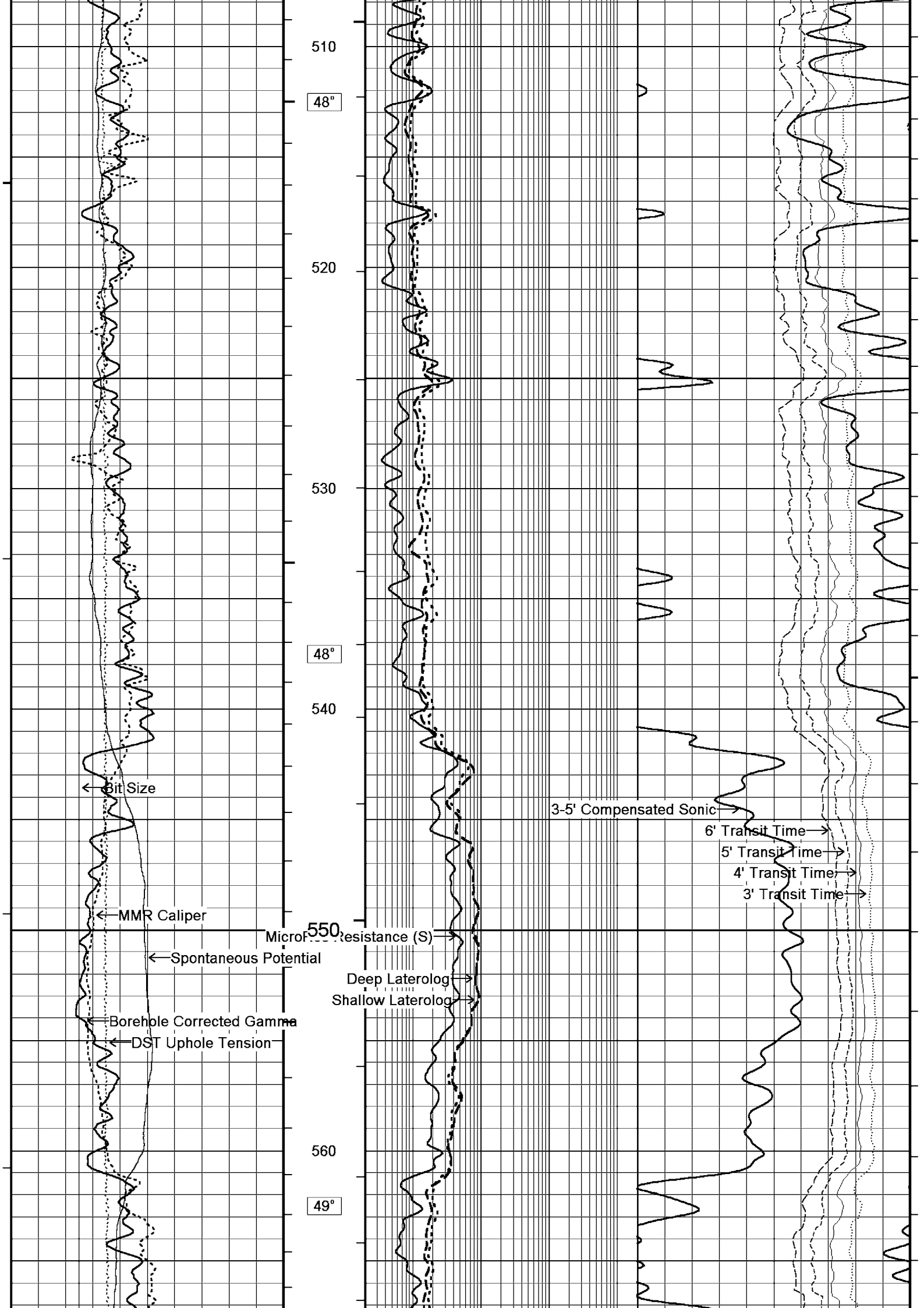

220
230
240
250
260
270
Borehole Corrected Gamma

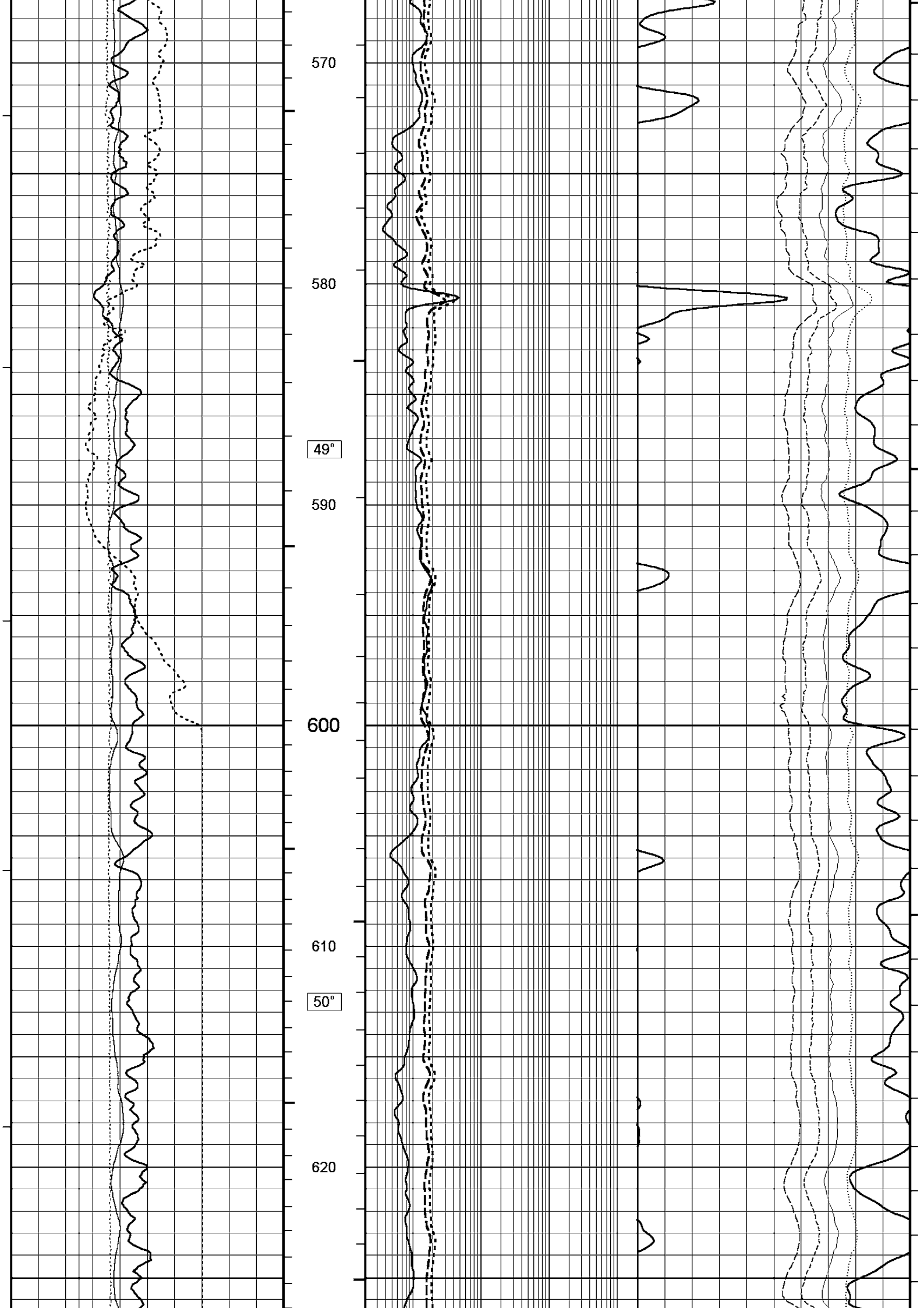

280
290
300
310
320
330

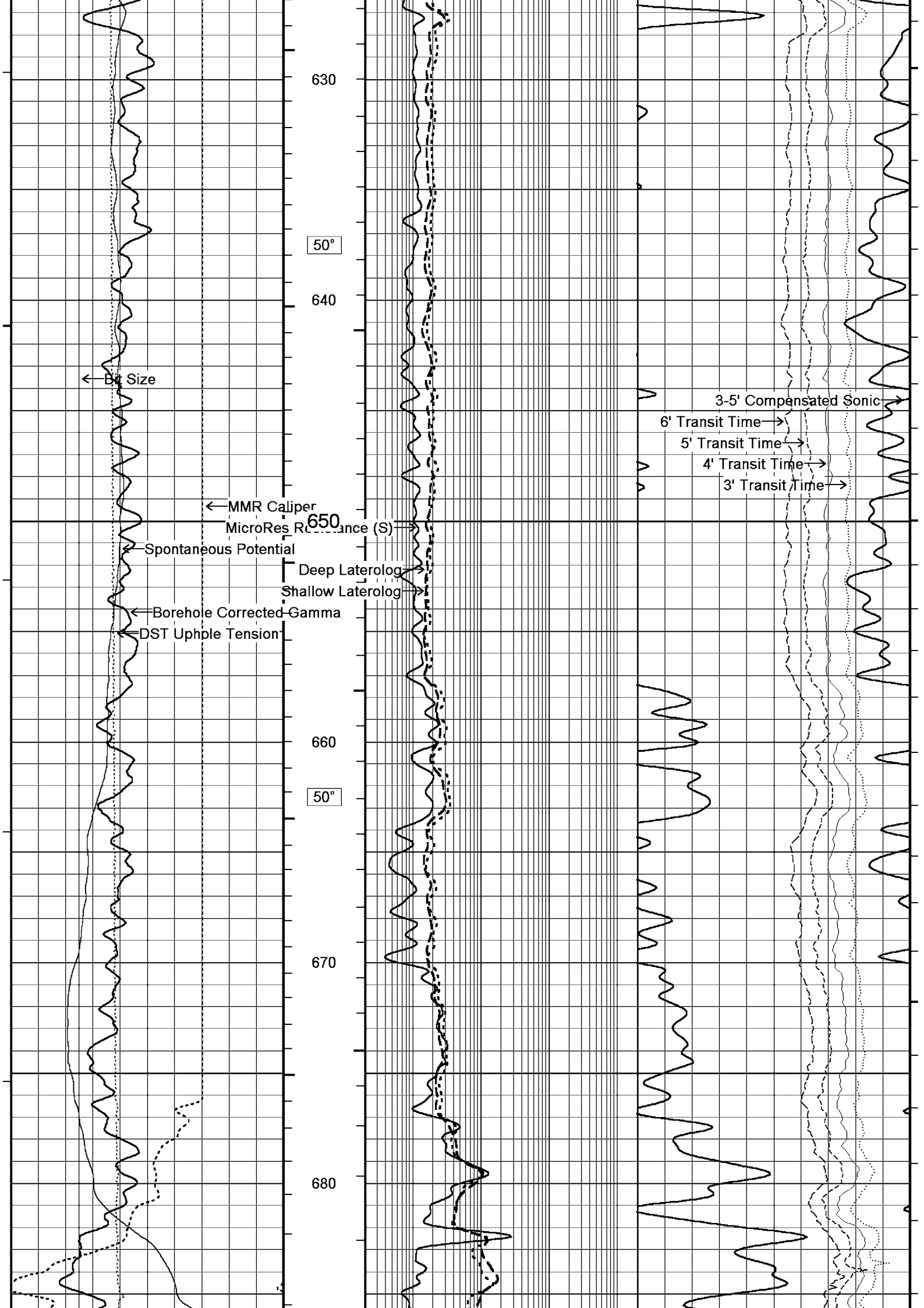

340
350
360
370
380
Borehole Corrected Gamma
3-5' Compensated Sonic

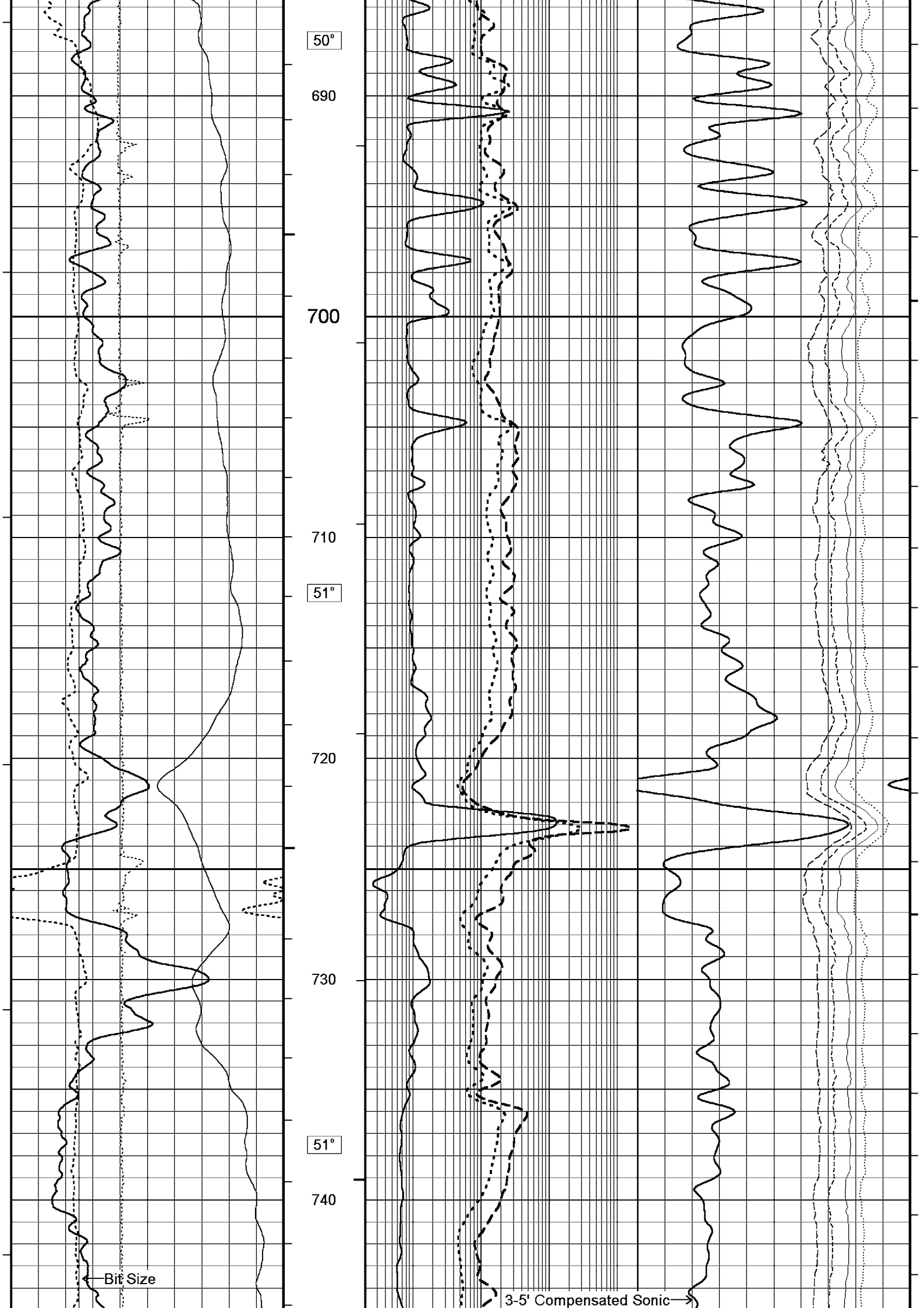

390
400
410
420
430
440

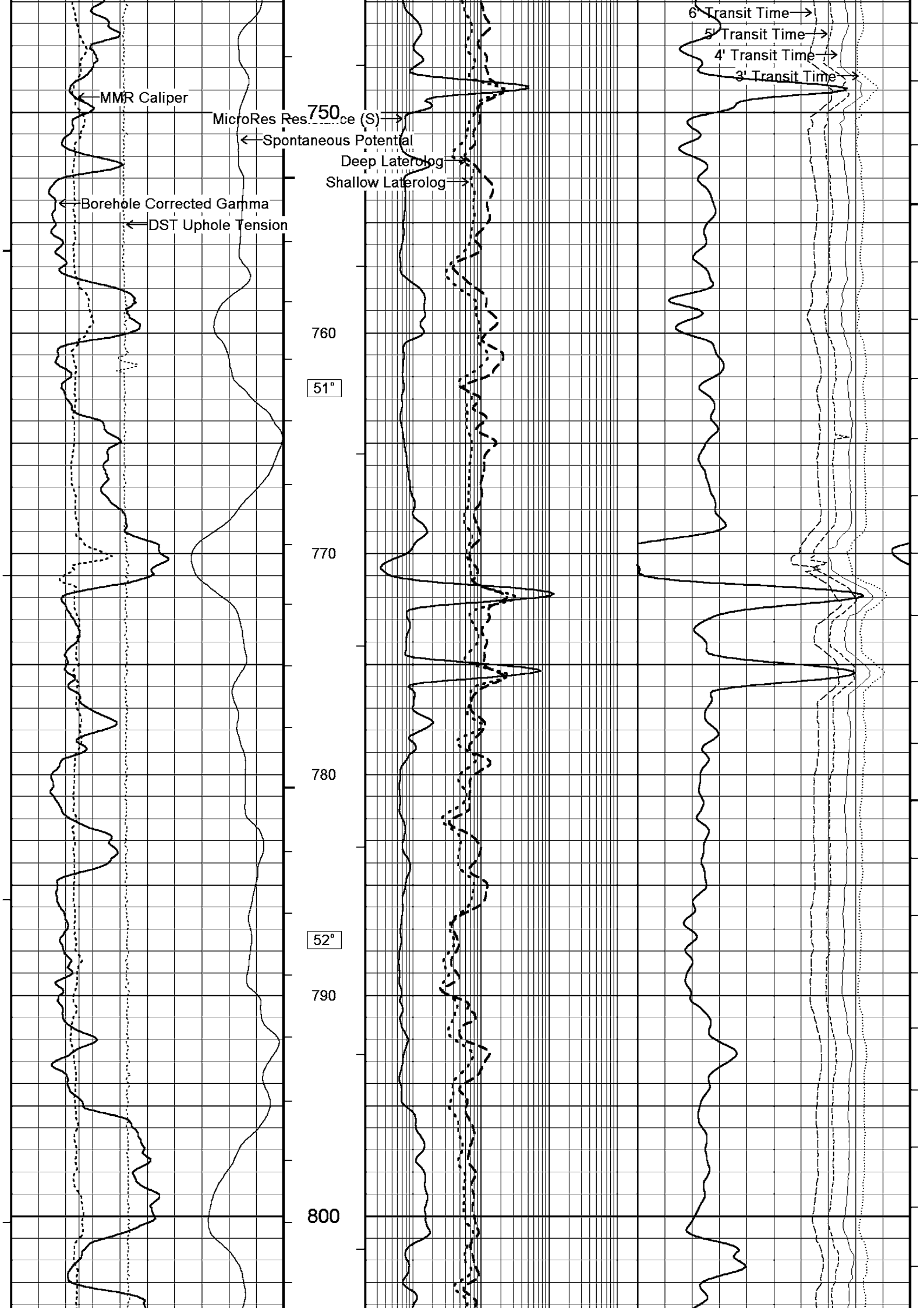

450
460
470
480
490
500
Borehole Corrected Gamma
3-5' Compensated Sonic
47°
Casing
Shoe

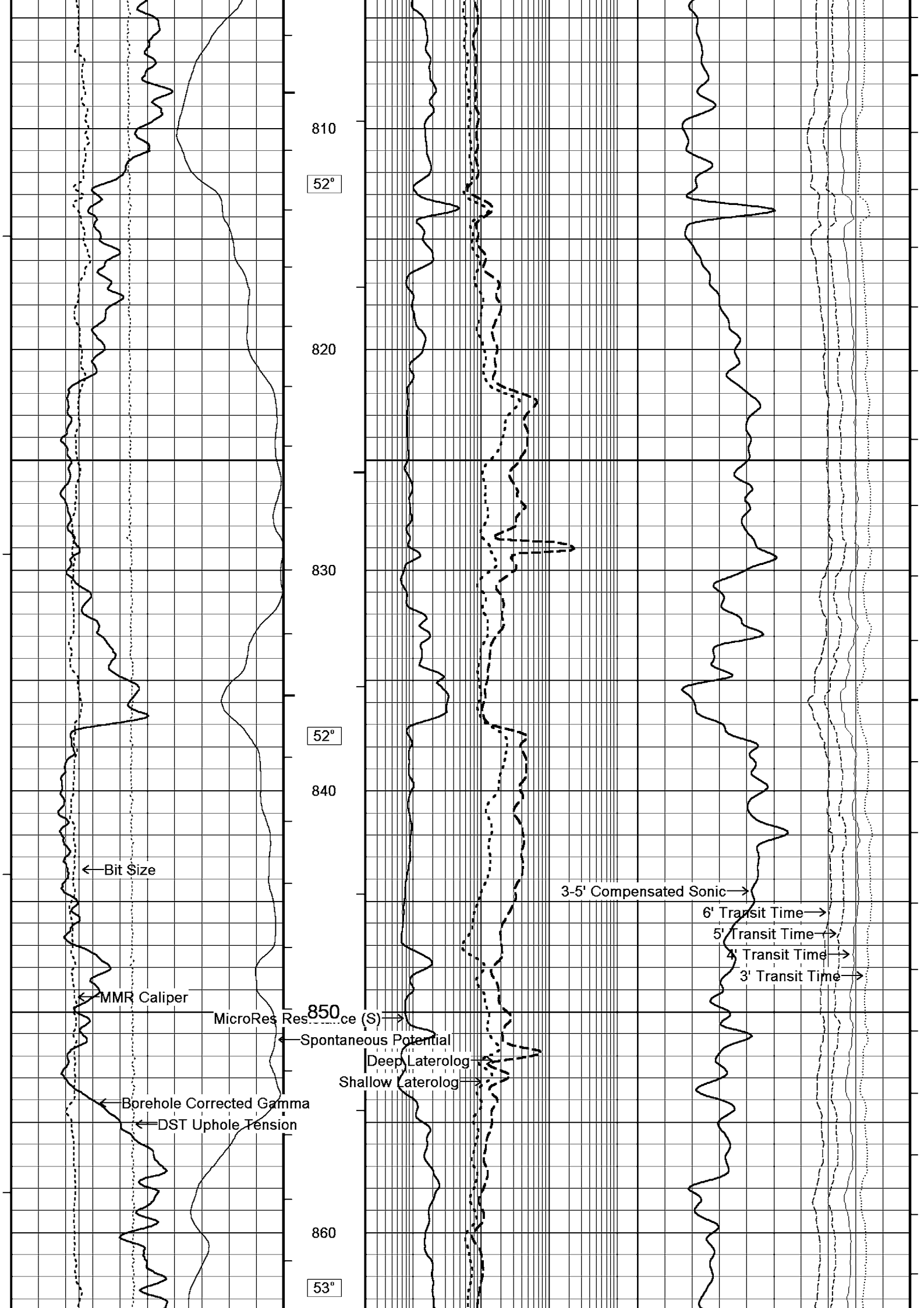

510
48°
520
530
48°
540
Bit Size
MMR Caliper
550
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
Deep Laterolog
Shallow Laterolog
560
49°
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

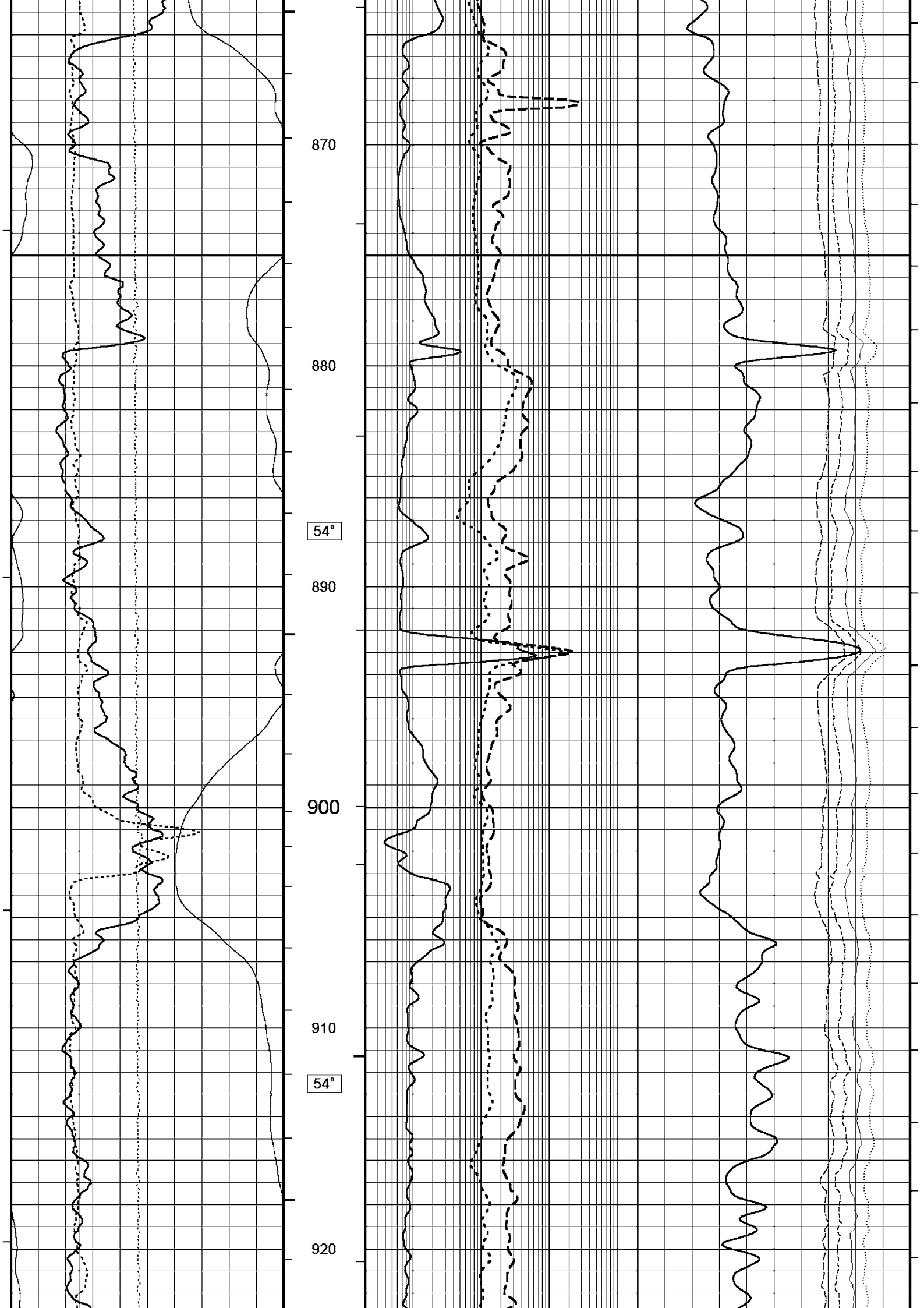

570
580
49°
590
600
610
50°
620

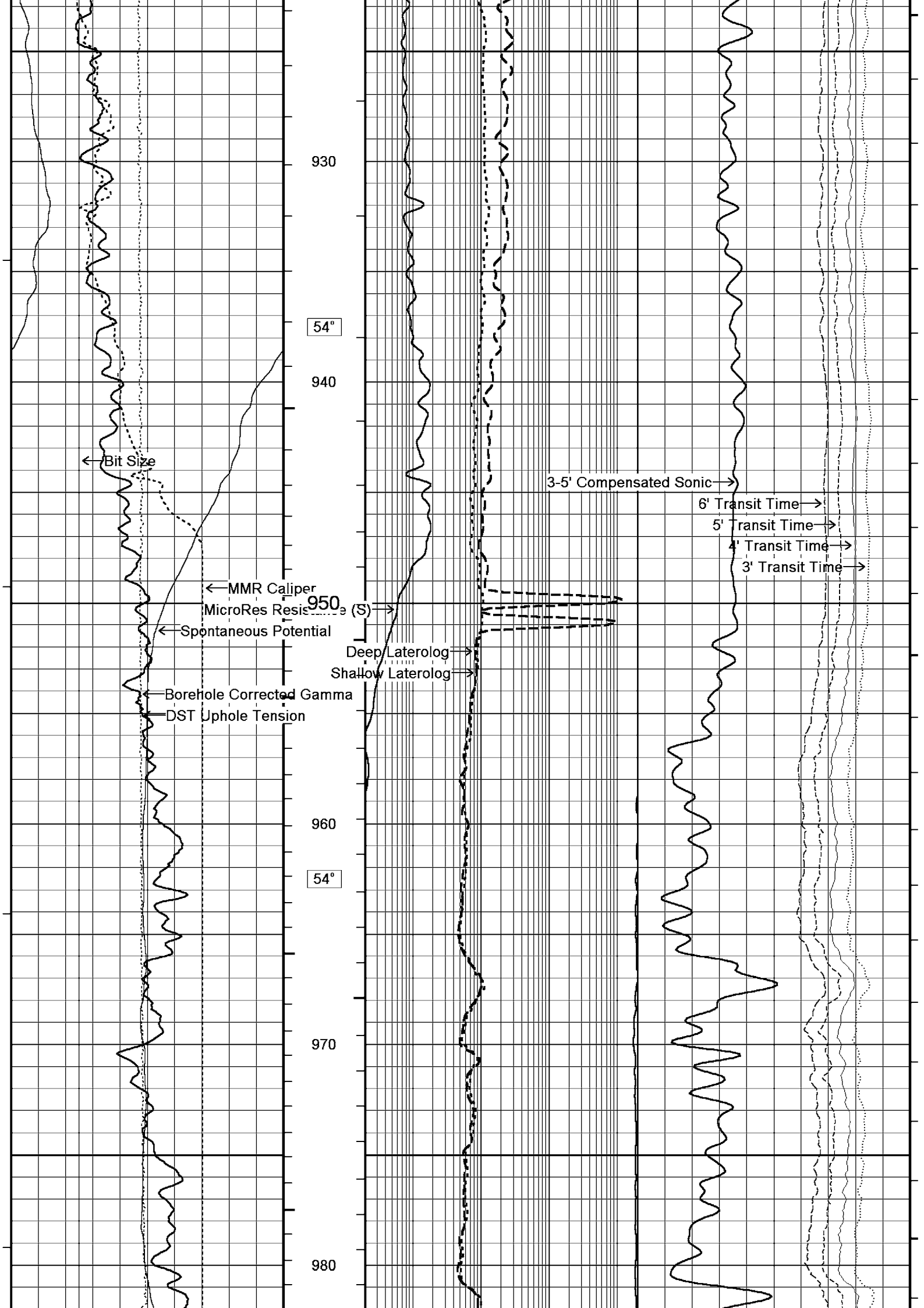

630
50°
640
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
MMR Caliper
650
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
660
50°
670
680

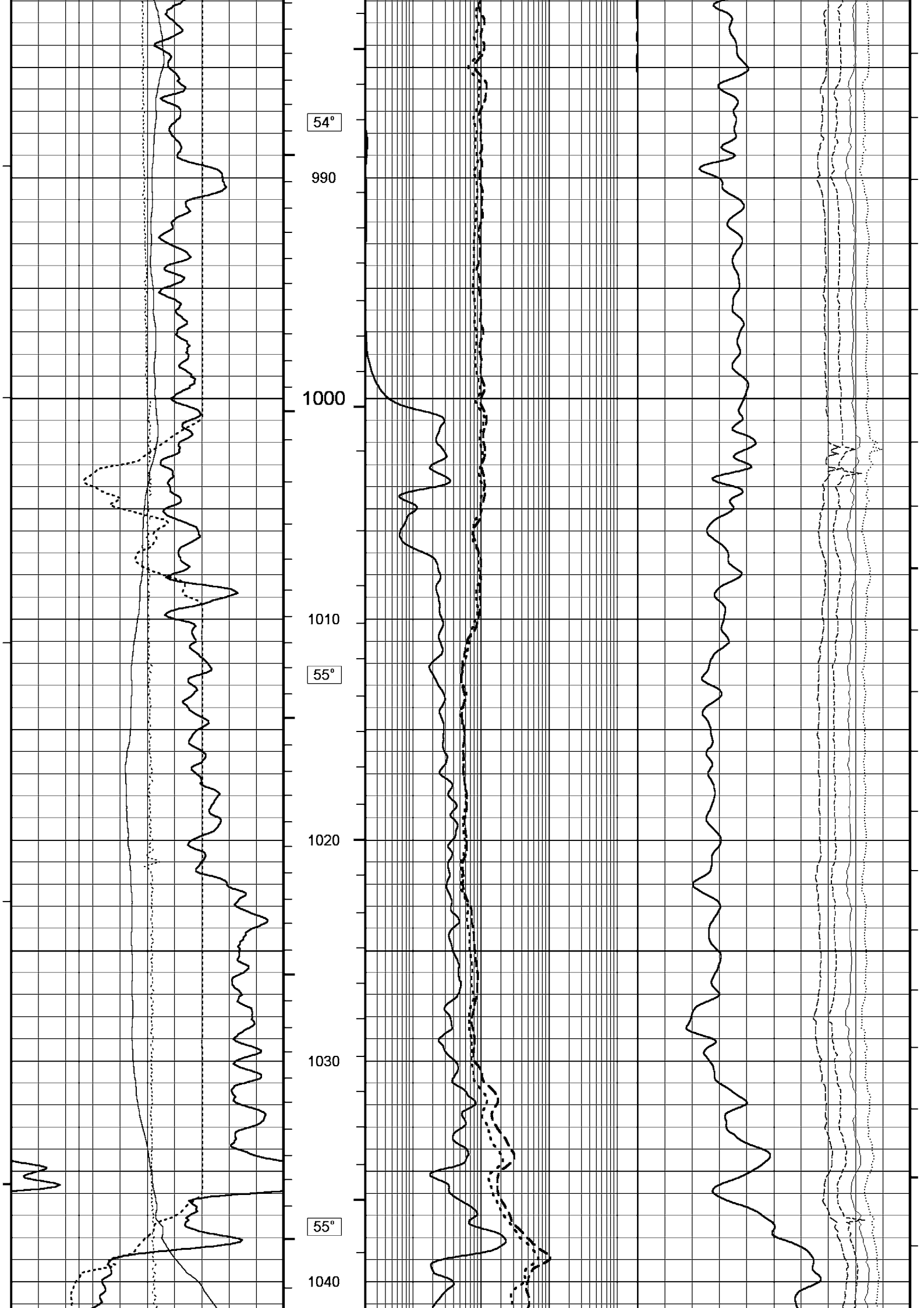

50°
690
700
710
51°
720
730
51°
740
Bit Size
3-5' Compensated Sonic

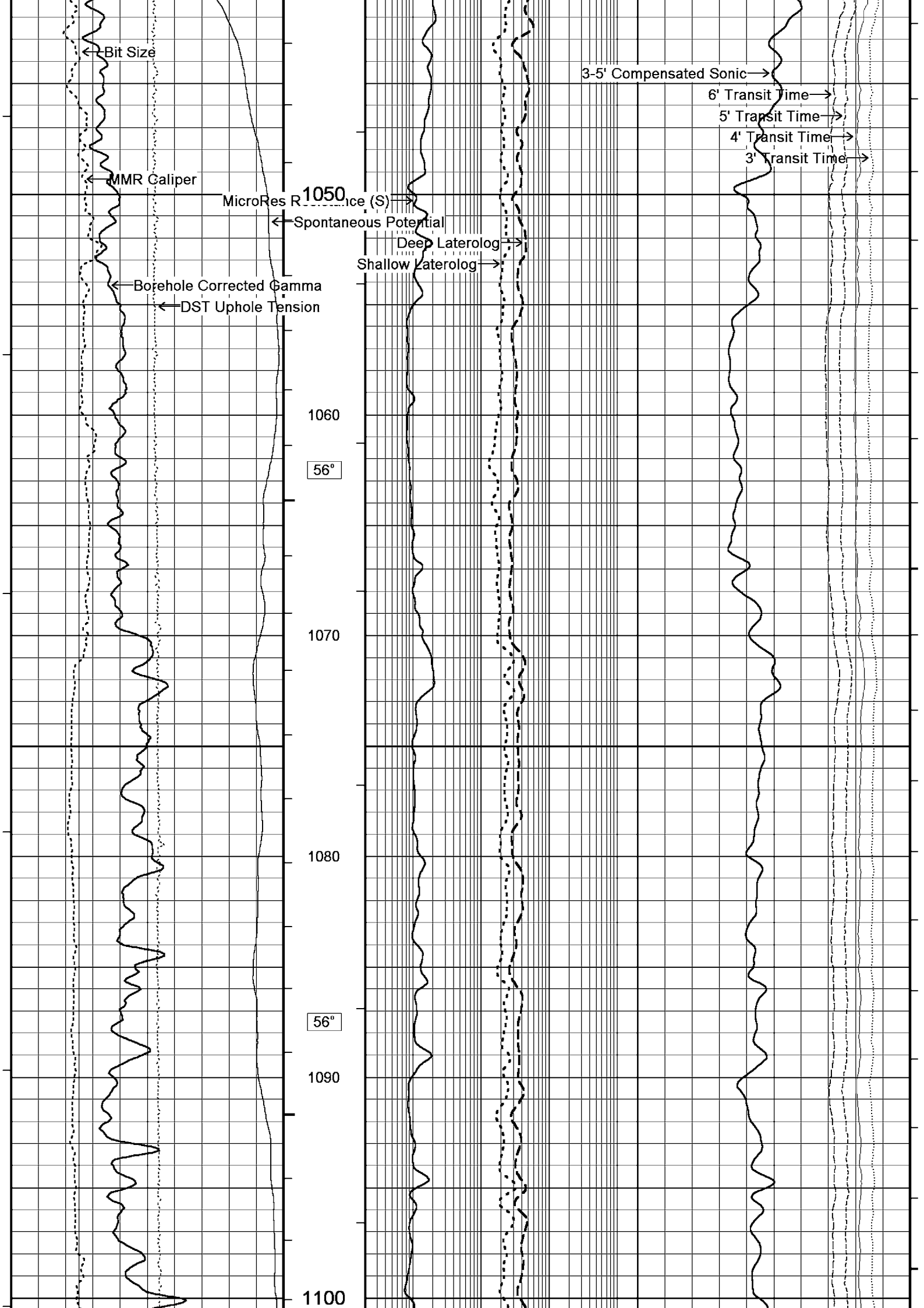

MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
750
760
770
780
790
800
51°
52°

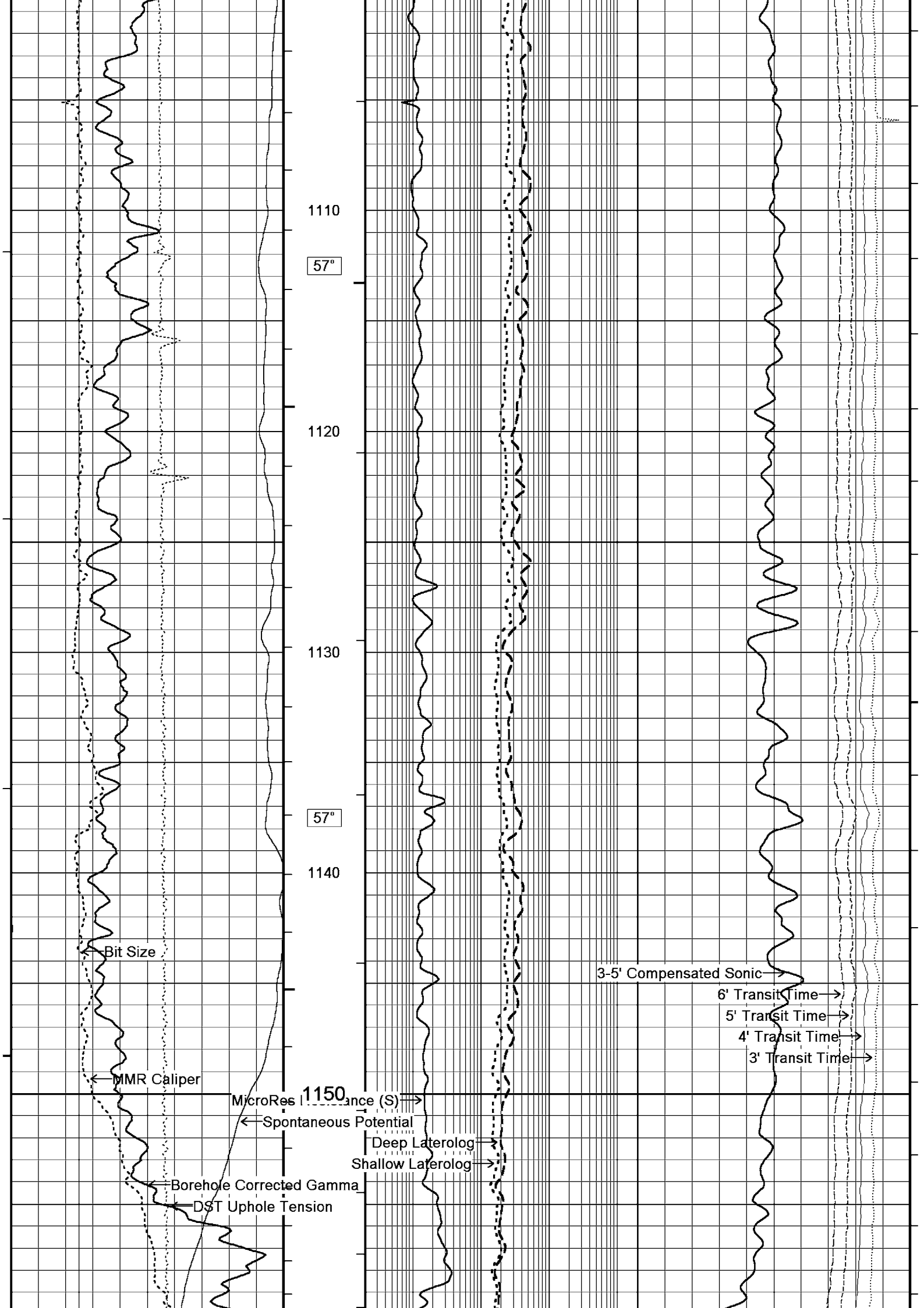

810
52°
820
830
52°
840
Bit Size
MMR Caliper
850
MicroRes Res...ce (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
860
53°
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

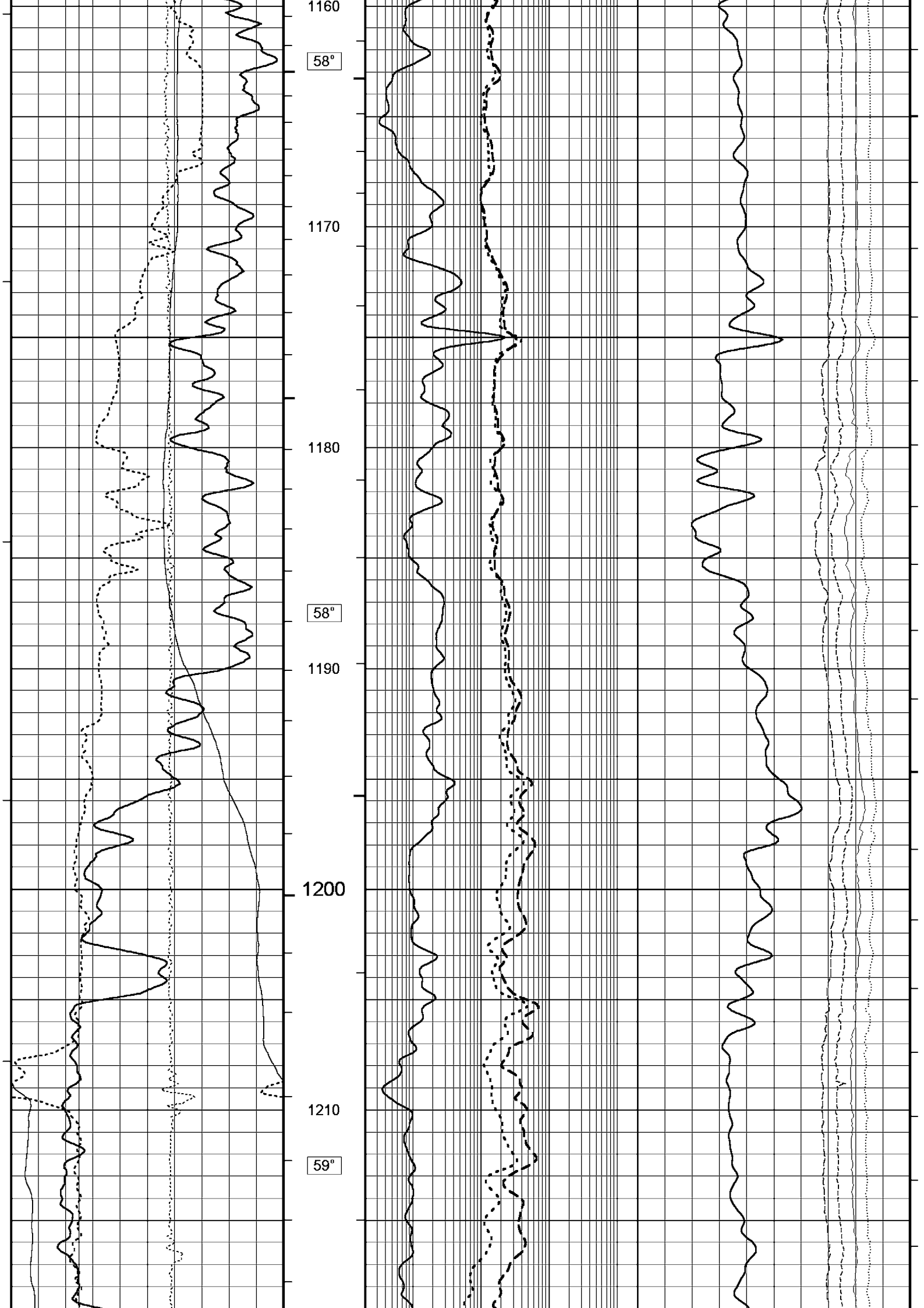

870
880
54°
890
900
910
54°
920

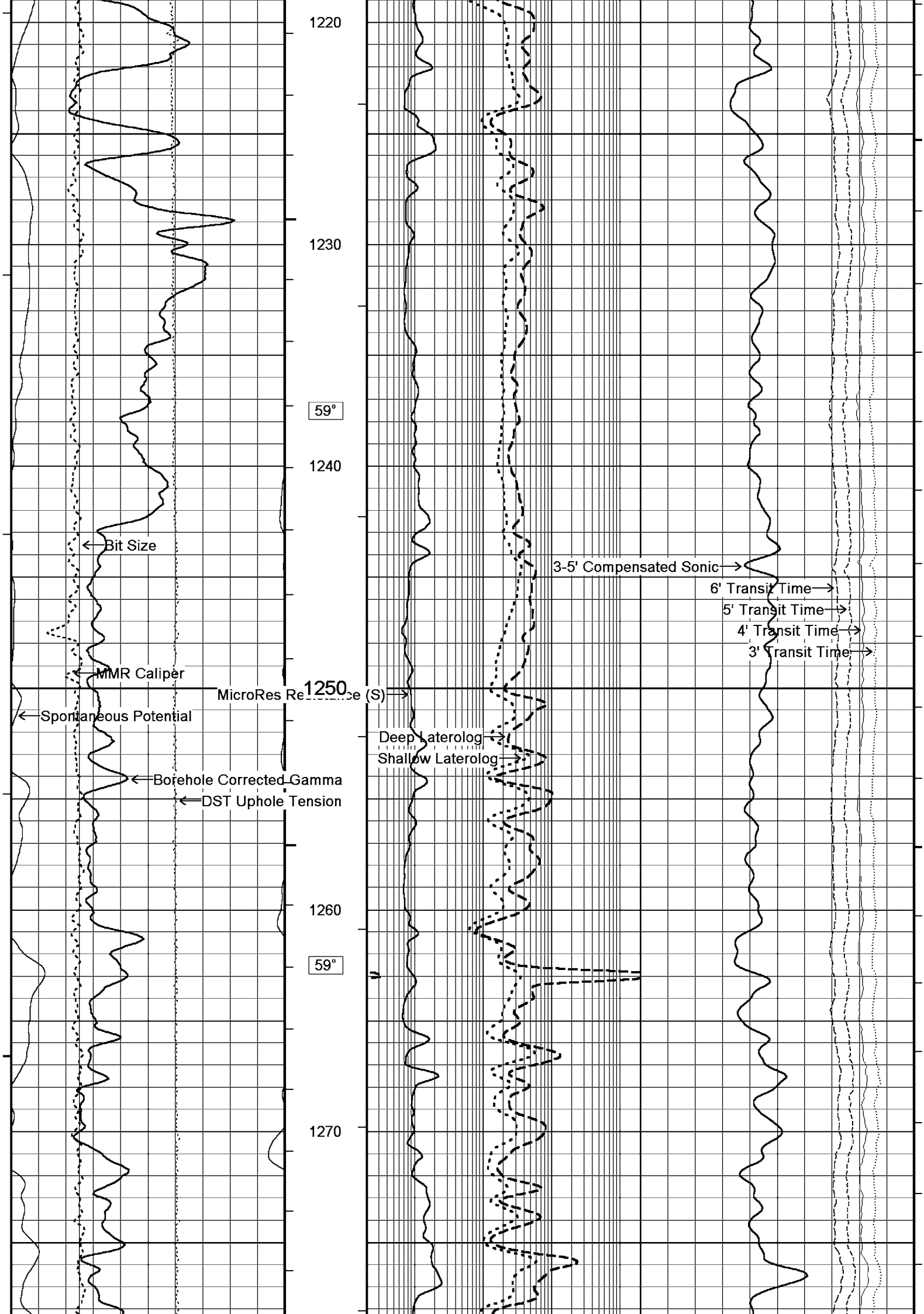

930
54°
940
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
MMR Caliper
950
MicroRes Resistivity (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
960
54°
970
980

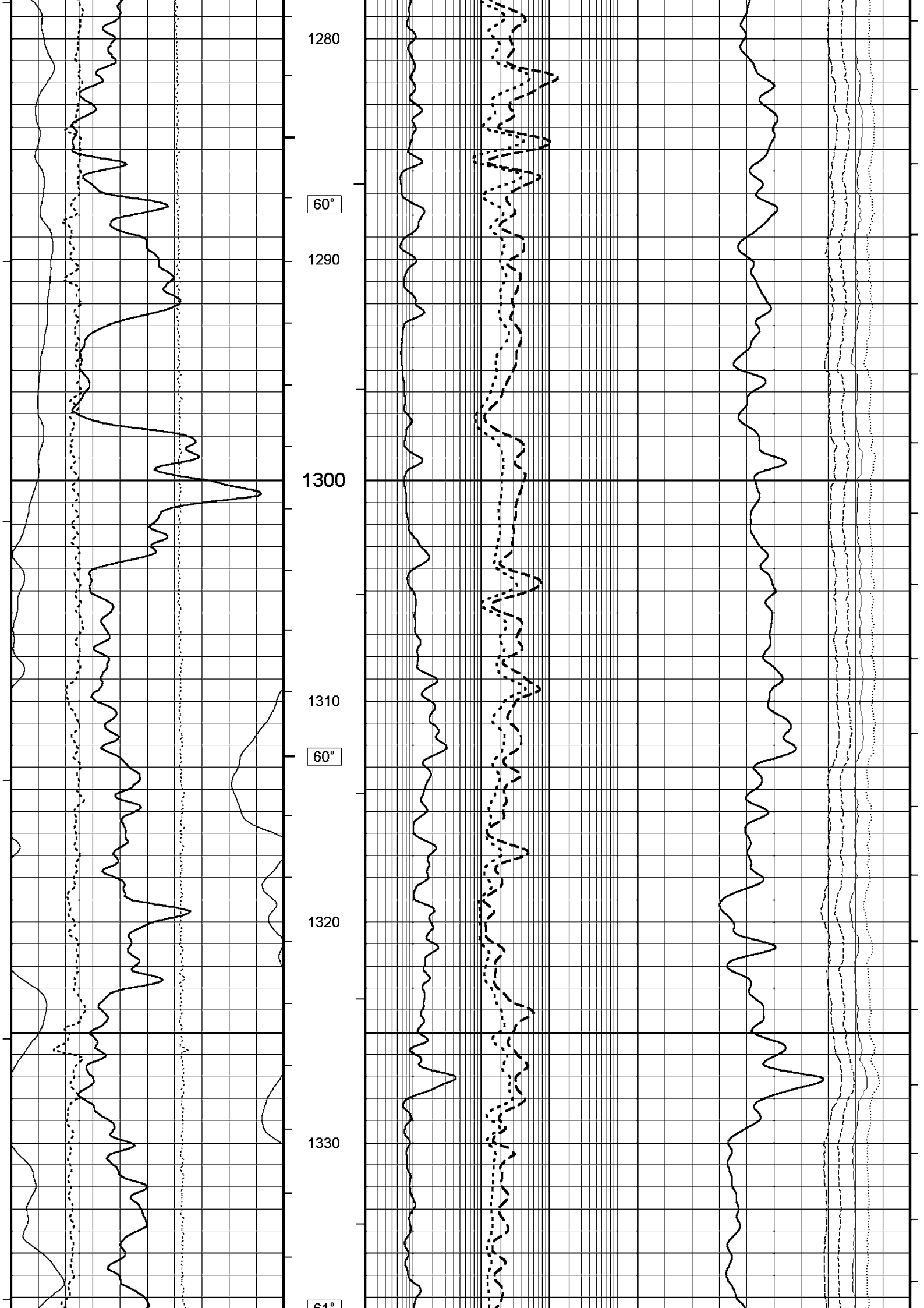

54°
990
1000
1010
55°
1020
1030
55°
1040

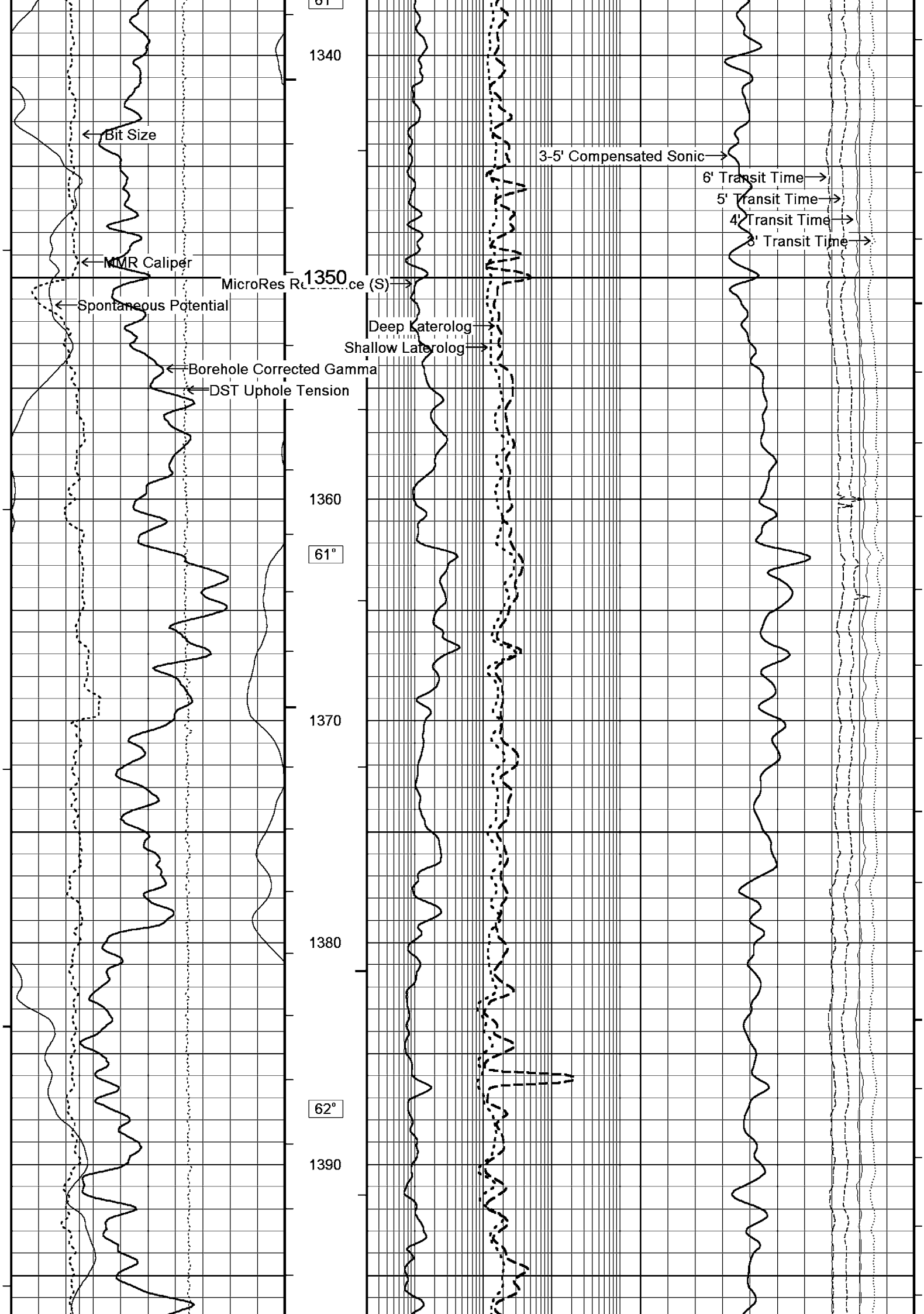

Bit Size
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
1050
1060
56°
1070
1080
56°
1090
1100

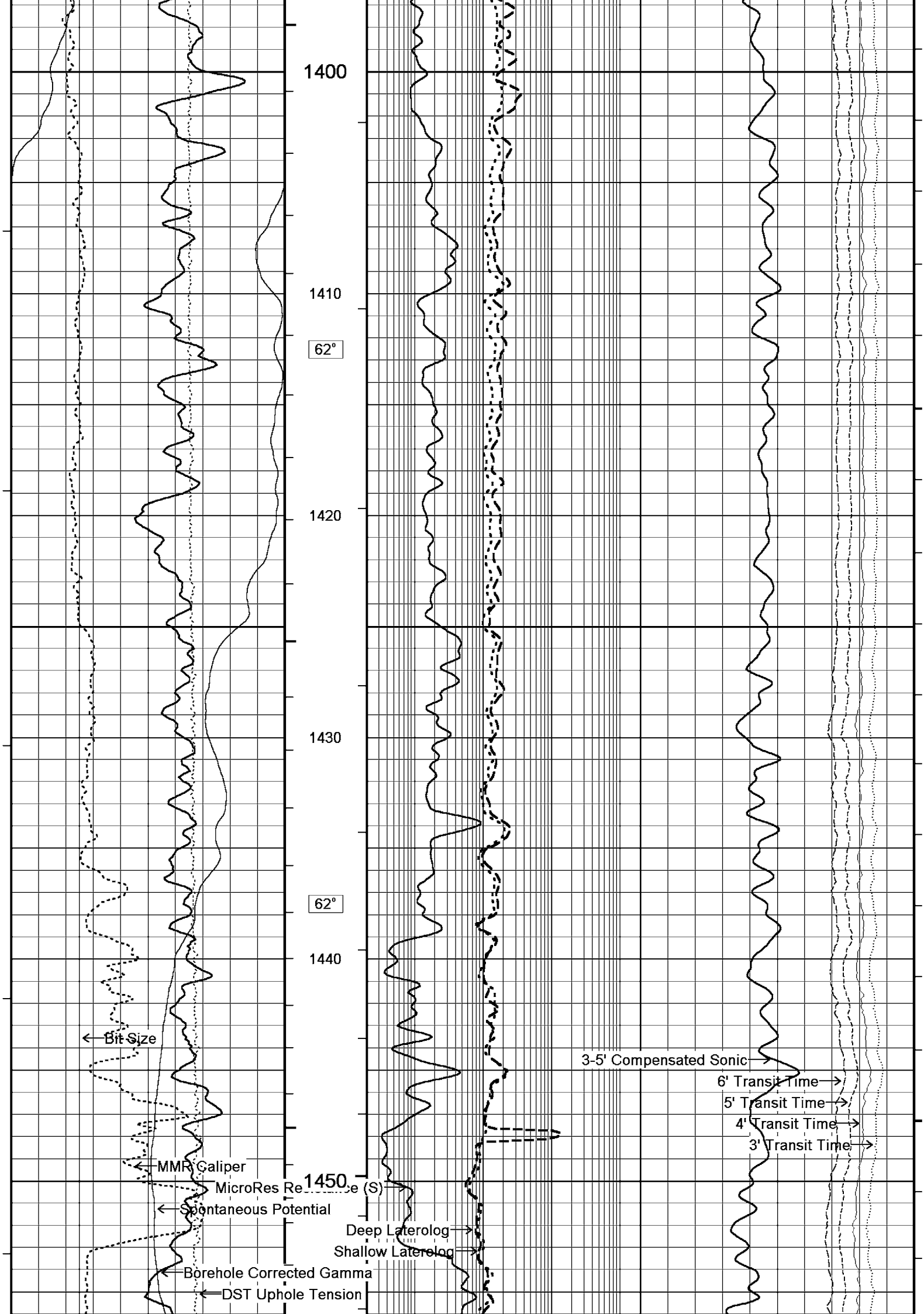

1110
57°
1120
1130
57°
1140
Bit Size
MMR Caliper
1150
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

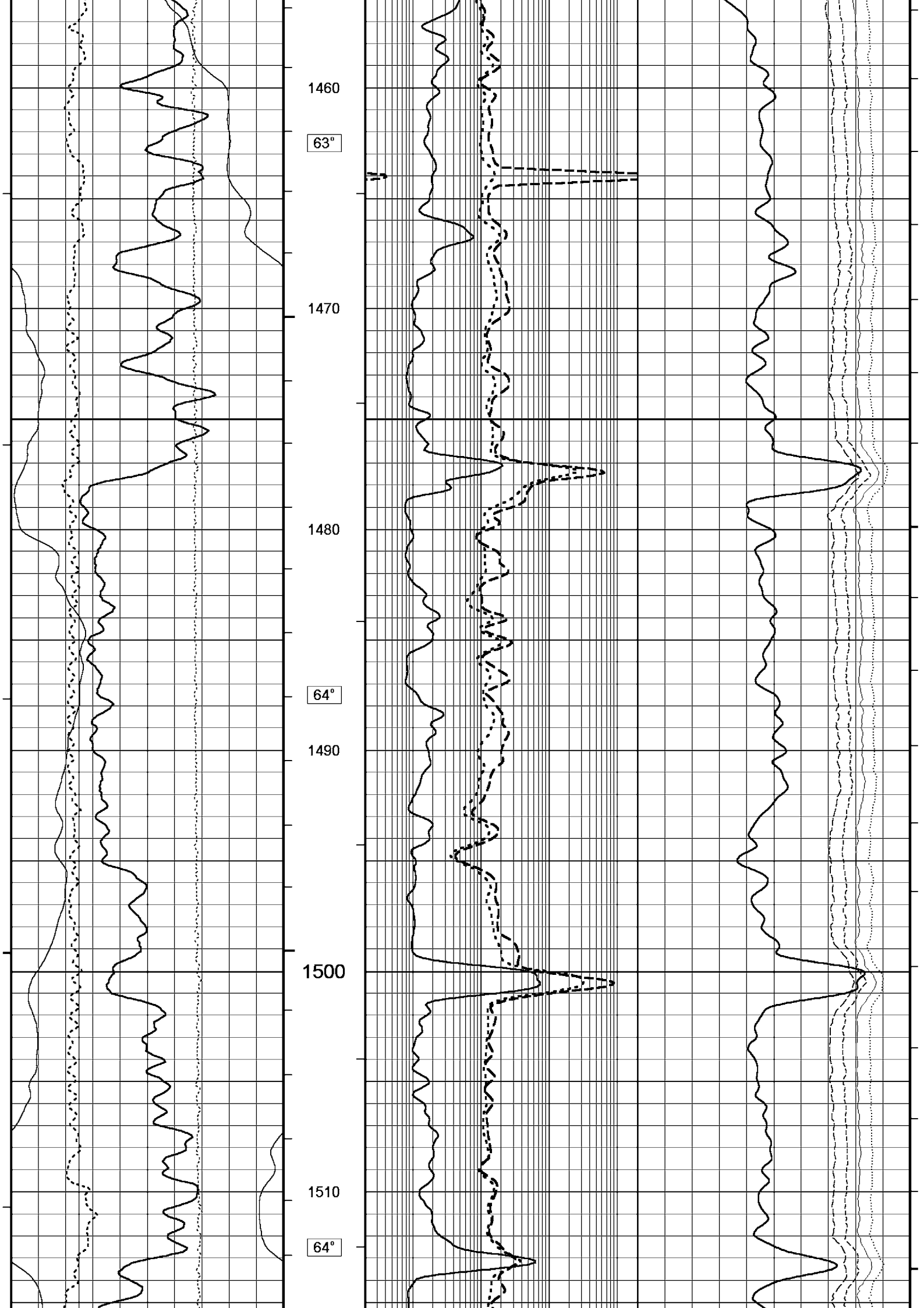

1160
58°
1170
1180
58°
1190
1200
1210
59°

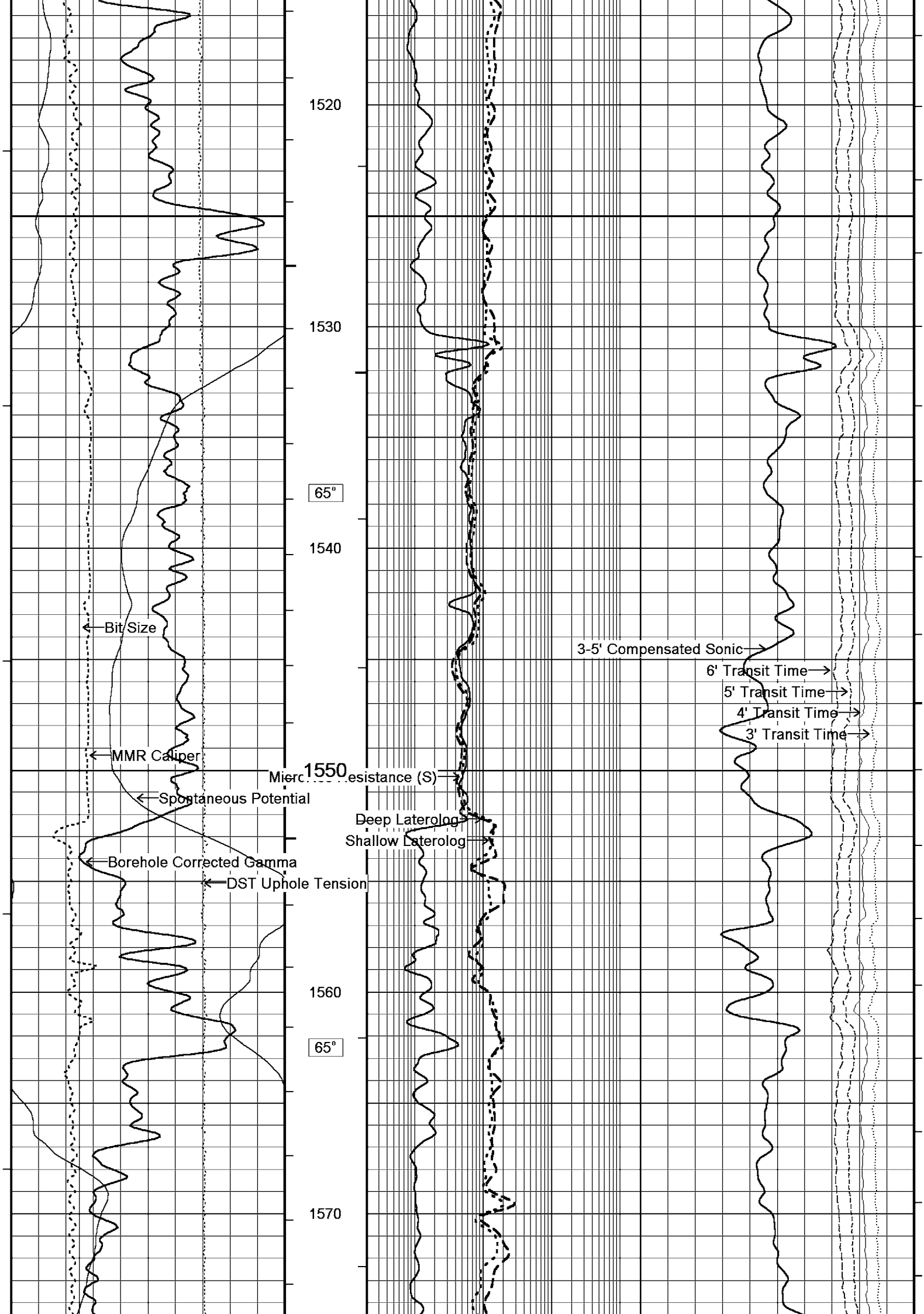

1220
1230
59°
1240
Bit Size
MMR Caliper
1250
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
1260
59°
1270
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Deep Laterolog
Shallow Laterolog

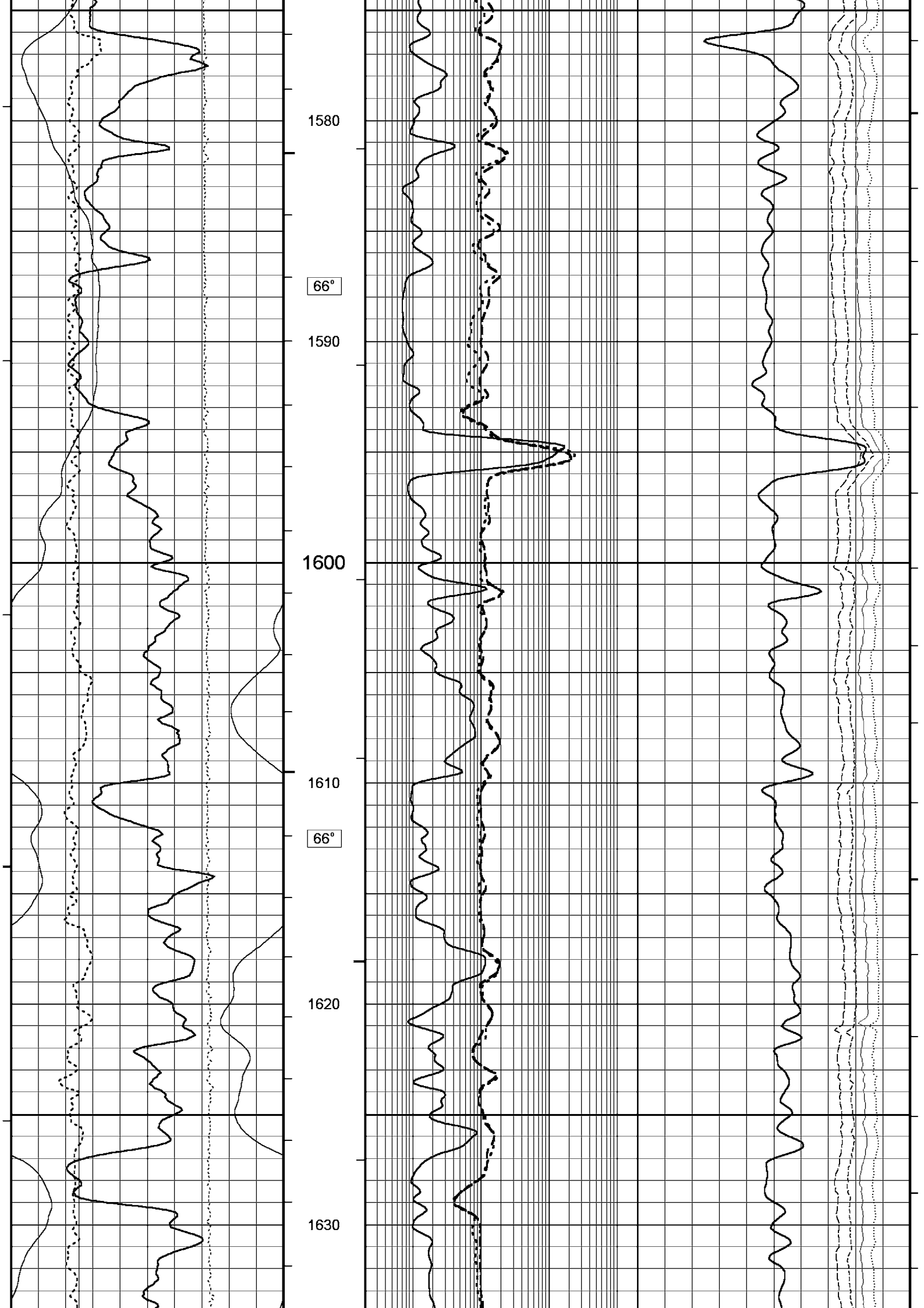

1280
60°
1290
1300
1310
60°
1320
1330

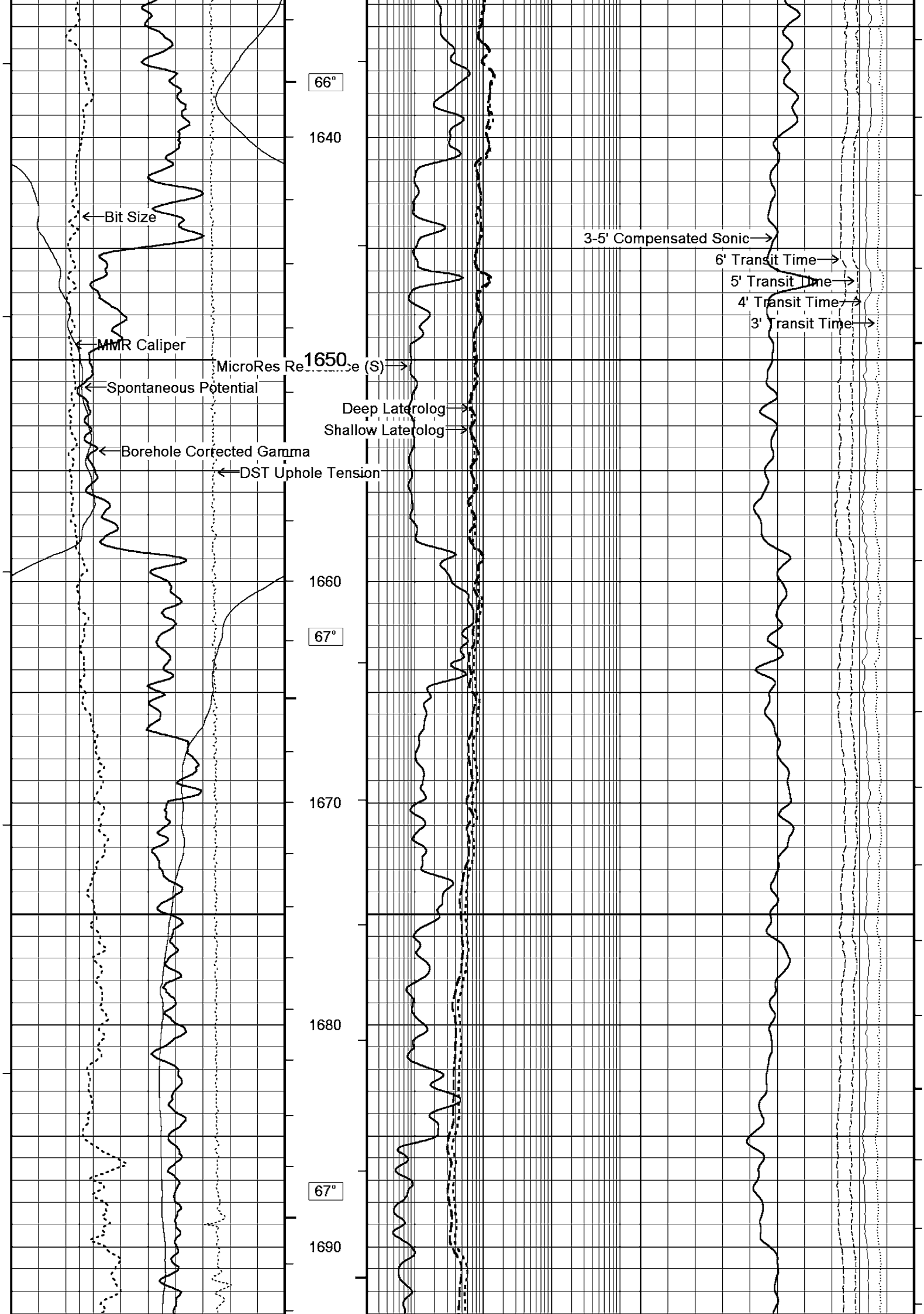

1340
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
MMR Caliper
1350
MicroRes Resistivity (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1360
61°
1370
1380
62°
1390

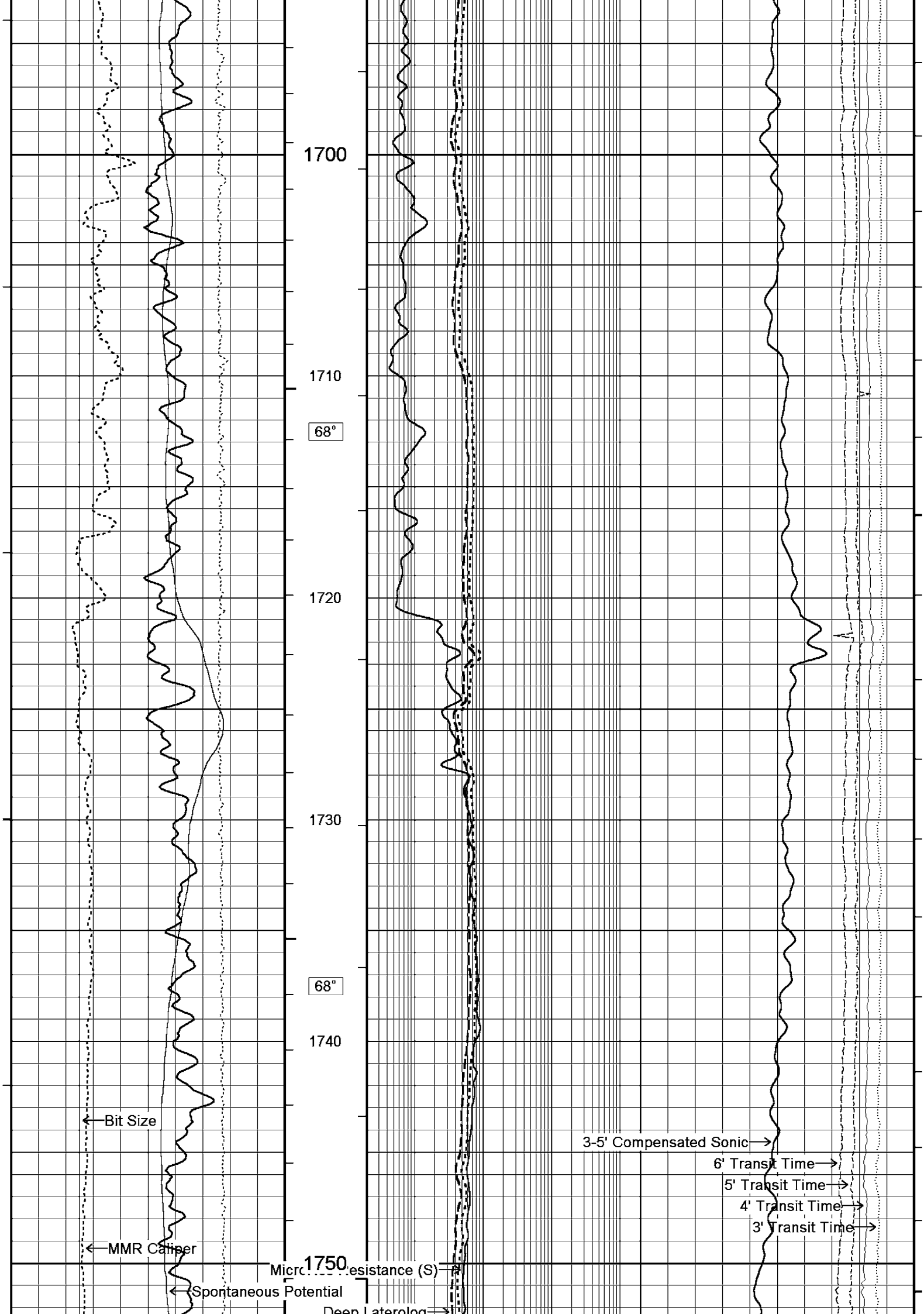

1400
1410
62°
1420
1430
62°
1440
1450
Bit Size
MMR Caliper
MicroRes Re...e (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

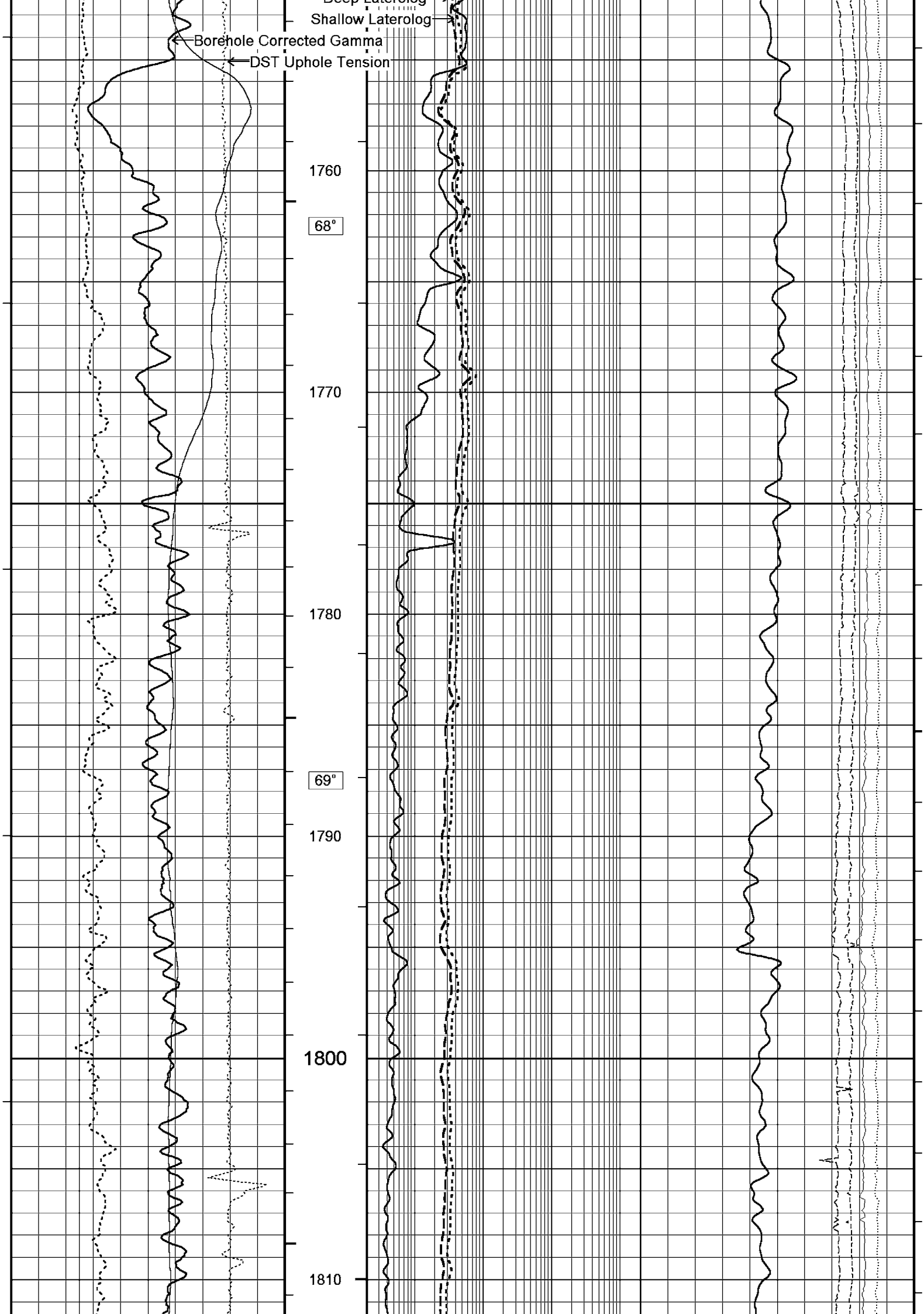

1460
63°
1470
1480
64°
1490
1500
1510
64°

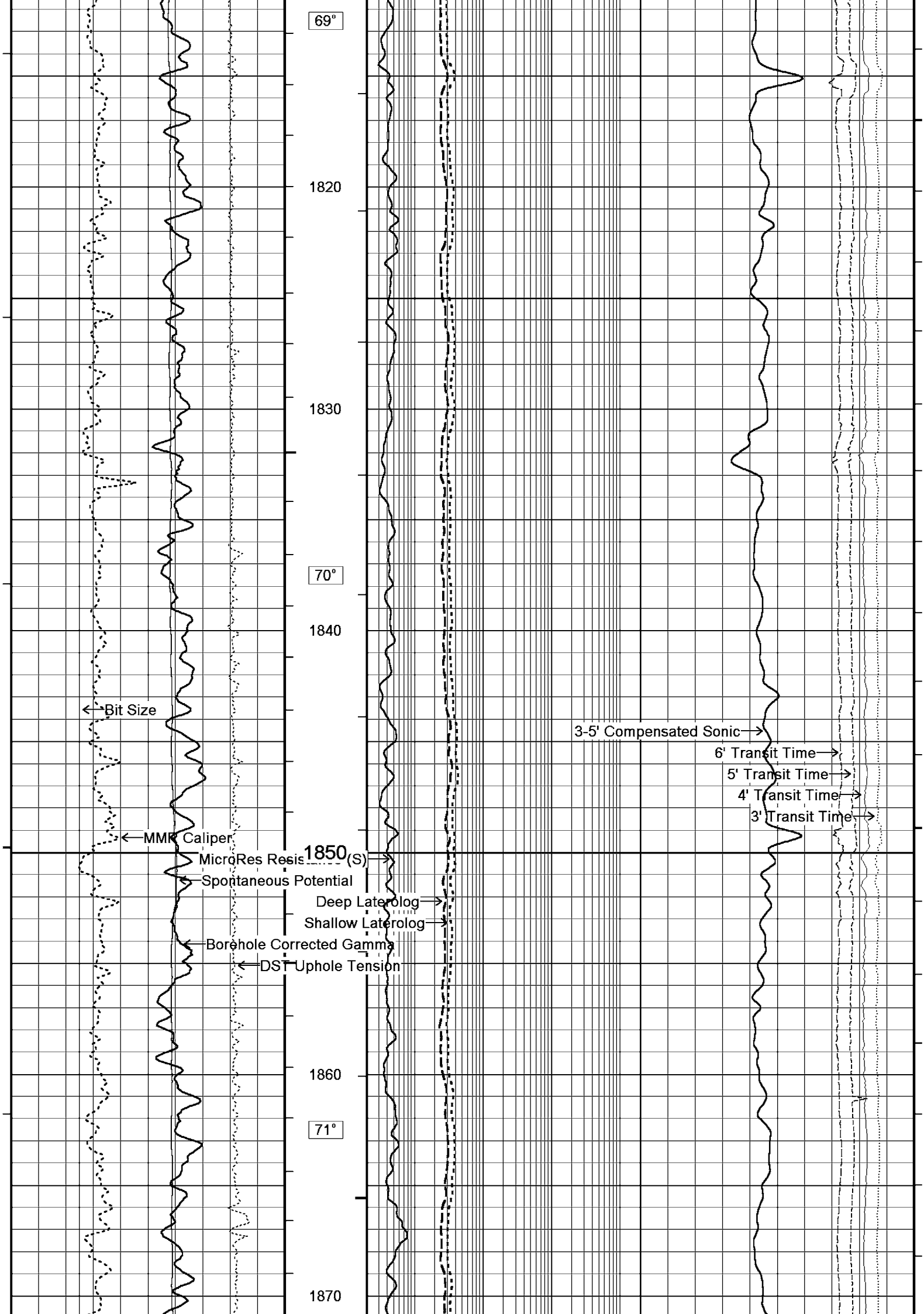

1520
1530
65°
1540
Bit Size
MMR Caliper
1550
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
1560
65°
1570

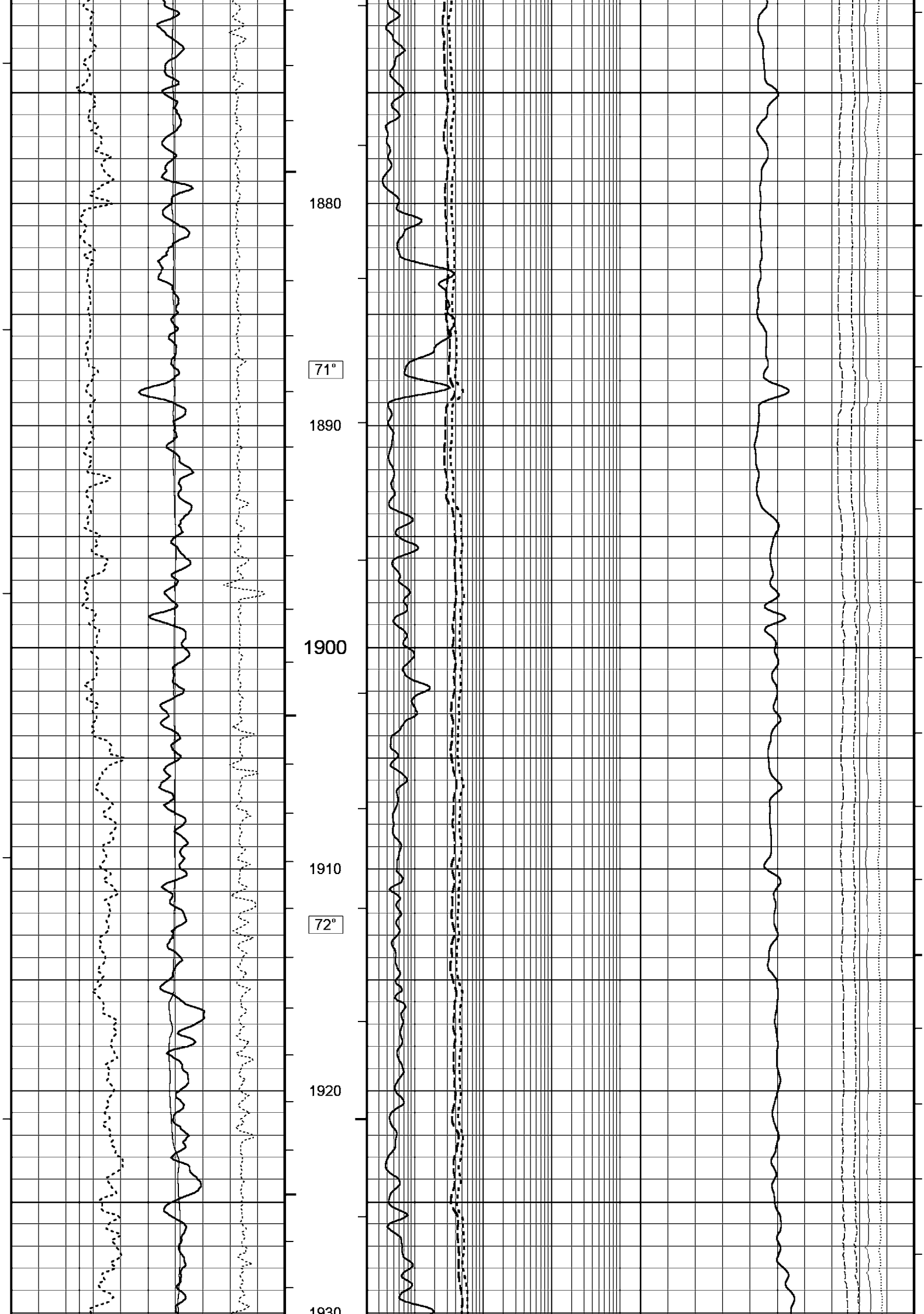

1580
66°
1590
1600
1610
66°
1620
1630

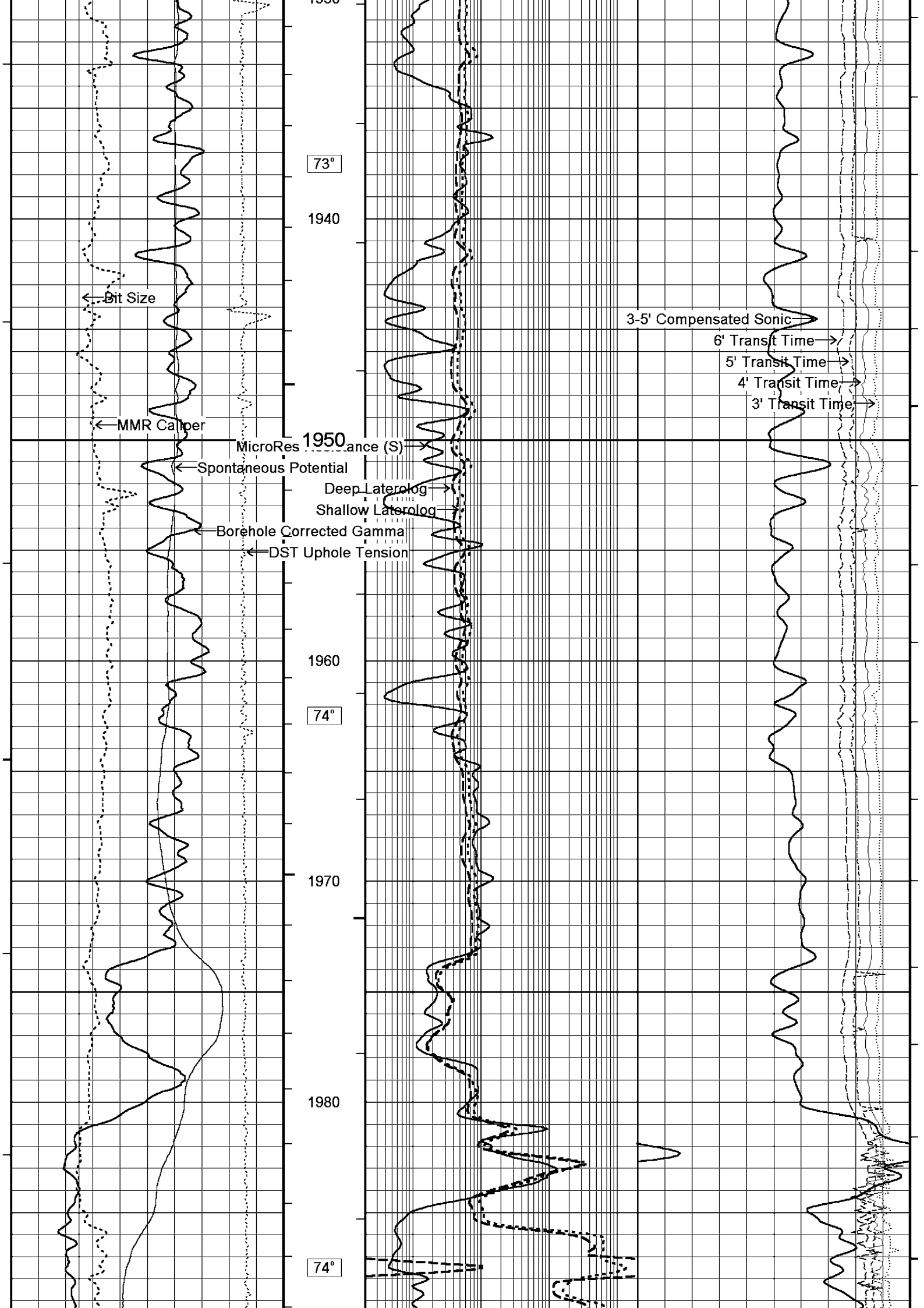

66°
1640
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
MMR Caliper
1650
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1660
67°
1670
1680
67°
1690

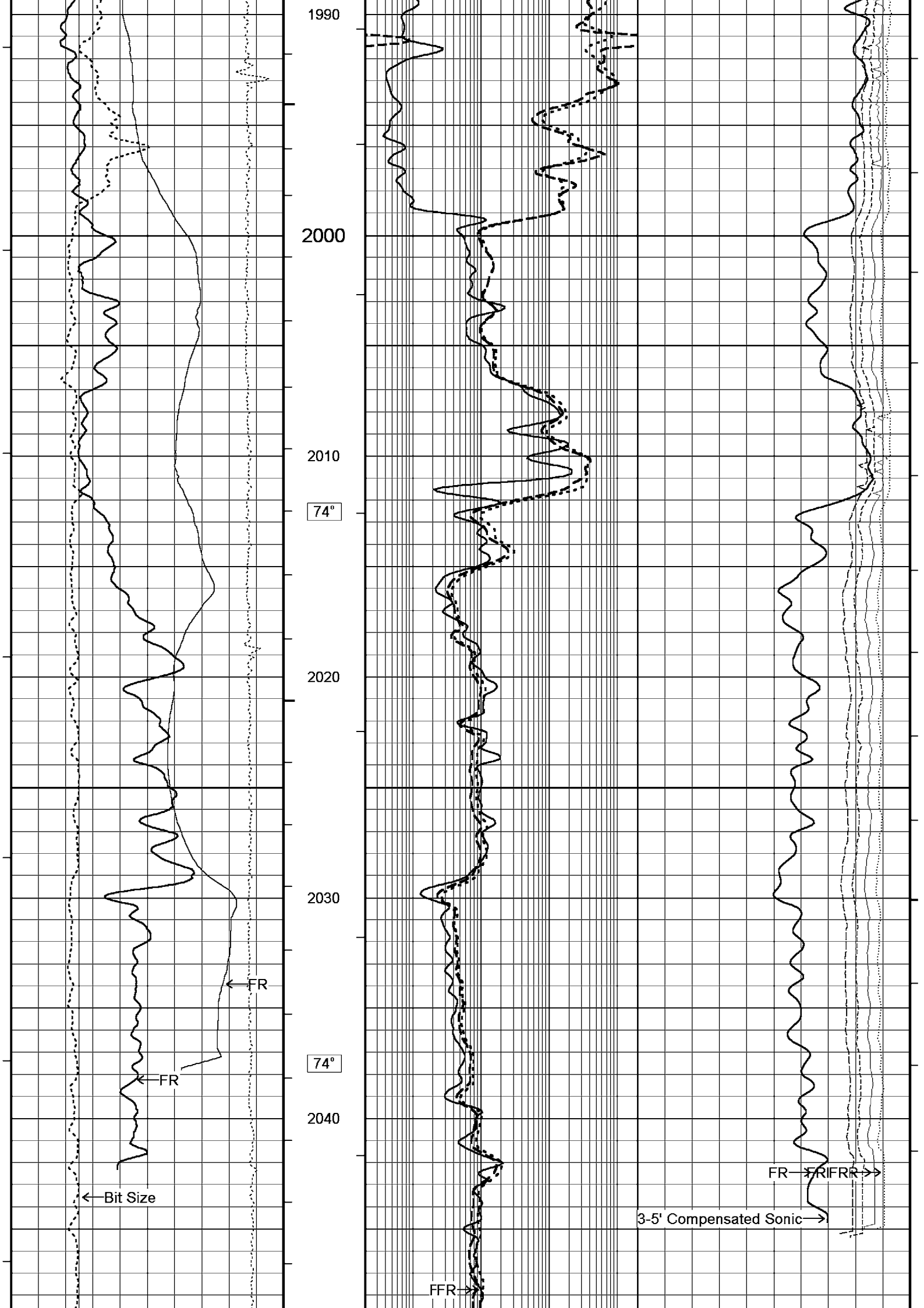

1700
1710
68°
1720
1730
68°
1740
1750
Bit Size
MMR Caliper
Spontaneous Potential
Micro Resistance (S)
Deep Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

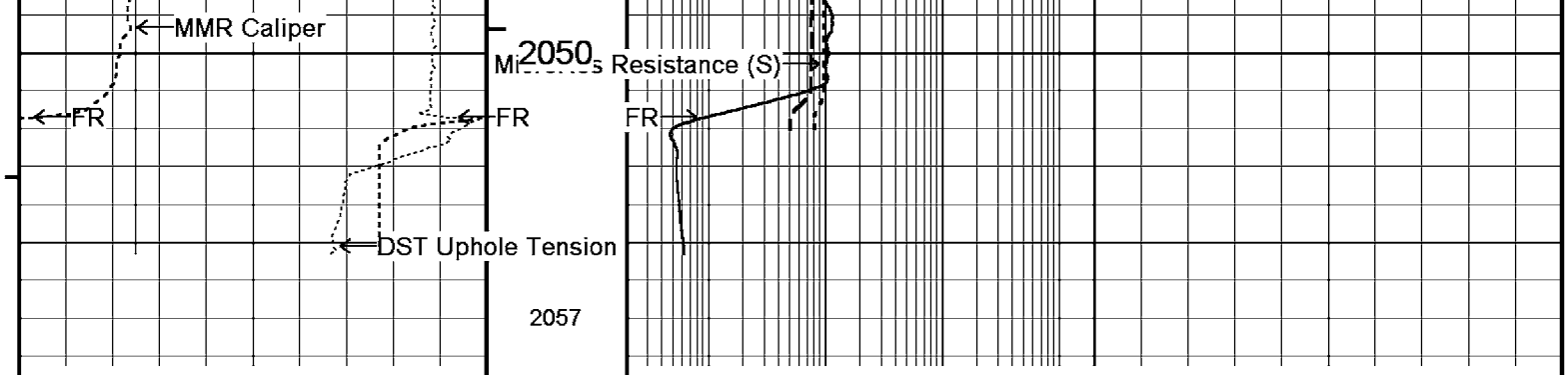

Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1760
68°
1770
1780
69°
1790
1800
1810


69°
1820
1830
70°
1840
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
MMR Caliper
1850
MicroRes Resis (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1860
71°
1870


1880
71°
1890
1900
1910
72°
1920
1930


73°
1940
Bit Size
MMR Caliper
1950
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1960
74°
1970
1980
74°
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


1990
2000
2010
74°
2020
2030
74°
2040
←FR
←FR
←Bit Size
FFR→
FR→FRIFRR→→
3-5' Compensated Sonic→



Depth in Metres

Timing Marks
every 60.0 sec

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Transit Time
every millisec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

3-5' Compensated Sonic
microsec/foot
140 90 40

Borehole Temp in deg C

Borehole Corrected Gamma
API
0 100 200
200 300 400

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

3' Transit Time
microseconds
1100 100

HVI every 0.1 cu m

Spontaneous Potential
millivolts
– → | 10 | ← +

4' Transit Time
microseconds
1100 100

Annular Integral every 0.1 cu m

MMR Caliper
inches
6 11 16

5' Transit Time
microseconds
1100 100

Bit Size
inches
6 11 16

6' Transit Time
microseconds
1100 100

Replay Scale 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 08-SEP-2005 00:05
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
Recorded on 07-SEP-2005 20:22
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:200

MAINLOG 1:200
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 08-SEP-2005 00:05
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
Recorded on 07-SEP-2005 20:22
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT2_MDL_MSS.dta
Recorded on 07-SEP-2005 20:00
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Depth in Metres

Timing Marks
every 60.0 sec

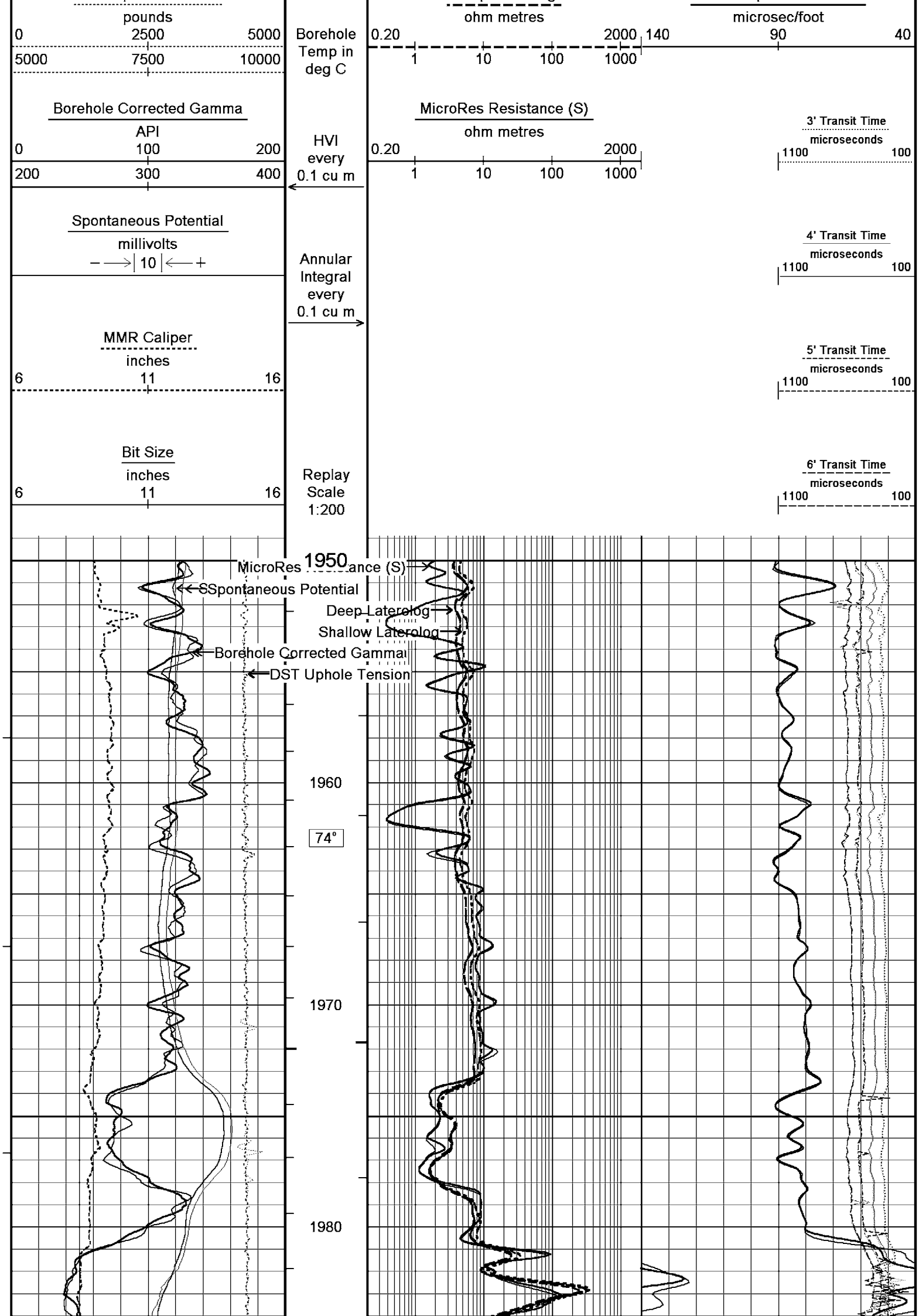
Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

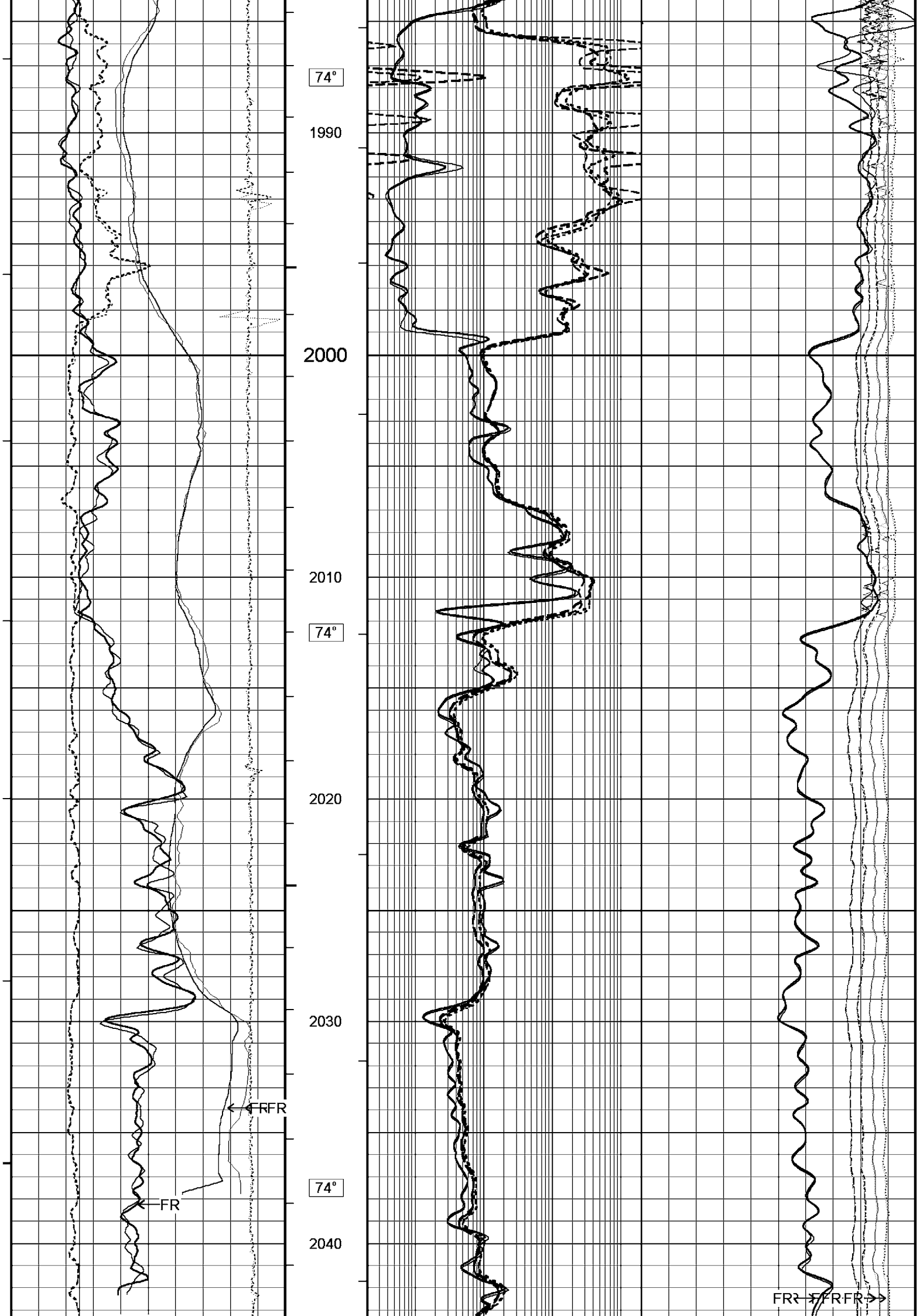
Transit Time
every millisec

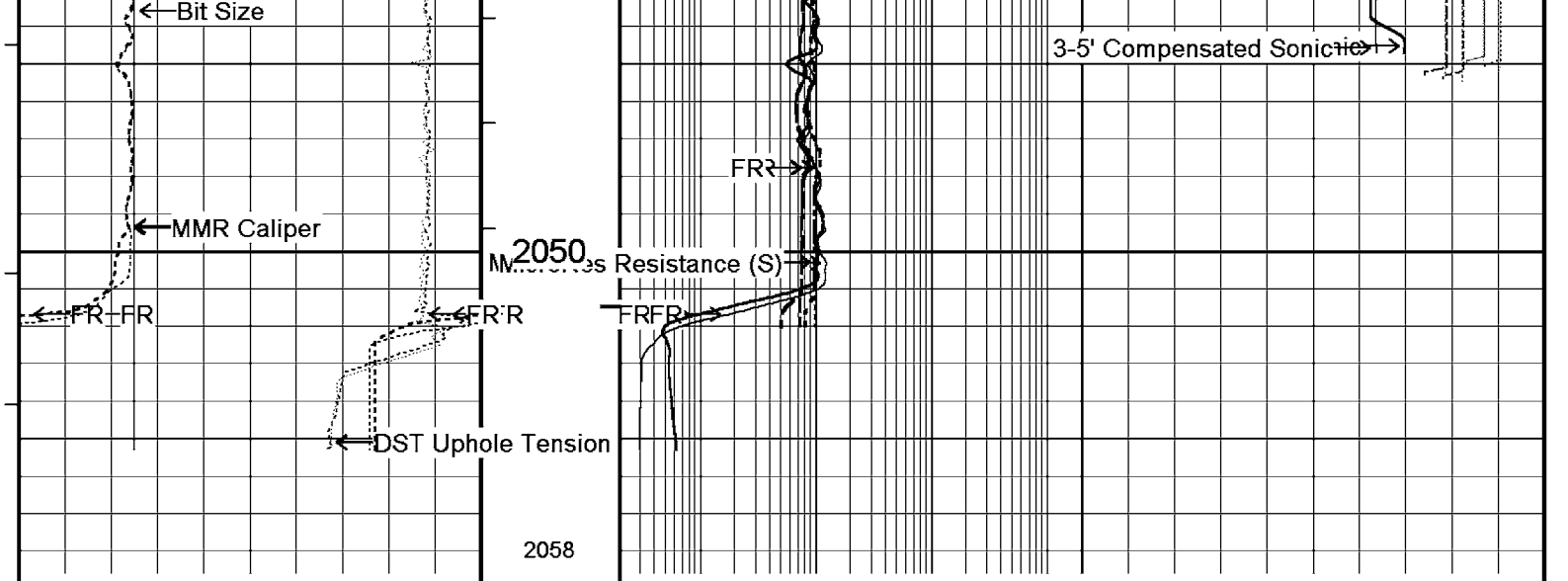
DST Uphole Tension

Deep Laterolog

3-5' Compensated Sonic


pounds
0
2500
5000
5000
7500
10000
Borehole Temp in deg C
ohm metres
0.20
2000
1
10
100
1000
140
90
40
microsec/foot
Borehole Corrected Gamma
API
0
100
200
200
300
400
HVI every 0.1 cu m
MicroRes Resistance (S)
ohm metres
0.20
2000
1
10
100
1000
3' Transit Time
microseconds
1100
100
Spontaneous Potential
millivolts
10
4' Transit Time
microseconds
1100
100
Annular Integral every 0.1 cu m
MMR Caliper
inches
6
11
16
5' Transit Time
microseconds
1100
100
Bit Size
inches
6
11
16
Replay Scale 1:200
6' Transit Time
microseconds
1100
100
1950
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
1960
74°
1970
1980


74°
1990
2000
2010
74°
2020
2030
FRFR
74°
FR
2040
FR→FFRFR→→



2058

Depth in Metres

Timing Marks
every 60.0 sec

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Transit Time
every millisec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

3-5' Compensated Sonic
microsec/foot
140 90 40

Borehole Temp in deg C

Borehole Corrected Gamma
API
0 100 200
200 300 400

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

3' Transit Time
microseconds
1100 100

HVI every 0.1 cu m

Spontaneous Potential
millivolts
– 10 +

4' Transit Time
microseconds
1100 100

Annular Integral every 0.1 cu m

MMR Caliper
inches
6 11 16

5' Transit Time
microseconds
1100 100

Bit Size
inches
6 11 16

6' Transit Time
microseconds
1100 100

Replay Scale 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 00:05
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta — Recorded on 07-SEP-2005 20:22
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT2_MDL_MSS.dta — Recorded on 07-SEP-2005 20:00
System Configuration Dates: Logged : Plotted 17-JUN-2004:

MAINLOG 1:200
REPEAT SECTION

MAINLOG 1:200
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 08-SEP-2005 00:05
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta — Recorded on 07-SEP-2005 20:22
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_MDL_MSS3.dta — Recorded on 07-SEP-2005 19:07
System Configuration Dates: Logged : Plotted 17-JUN-2004:

System Configuration Dates: Logged . Plotted 17-JUN-2004.

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Spontaneous Potential
millivolts
– → | 10 | ← +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

Replay Scale 1:200

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

Transit Time
every millisec

3-5' Compensated Sonic
microsec/foot
140 90 40

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

1950

MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension

1960

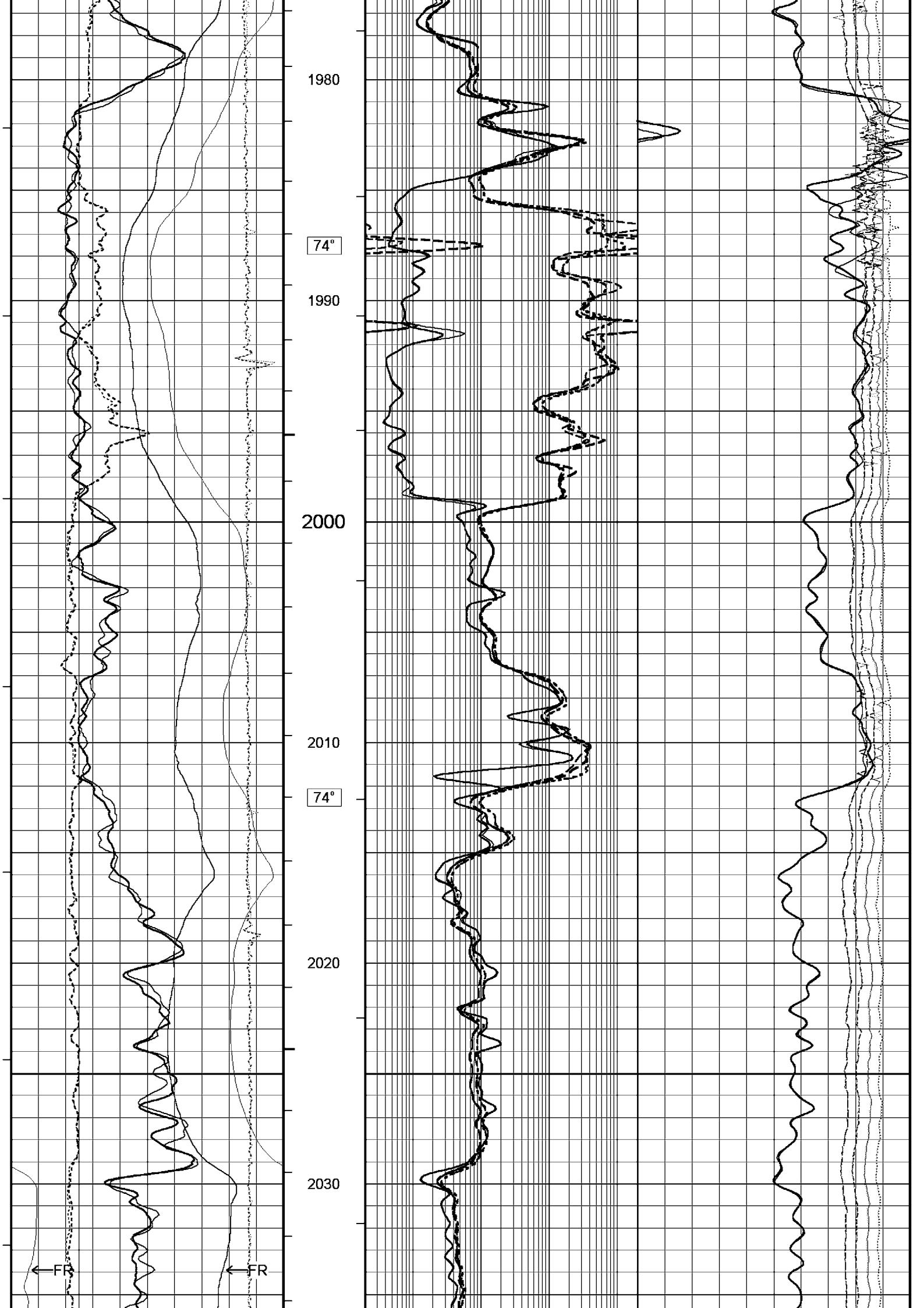
74"

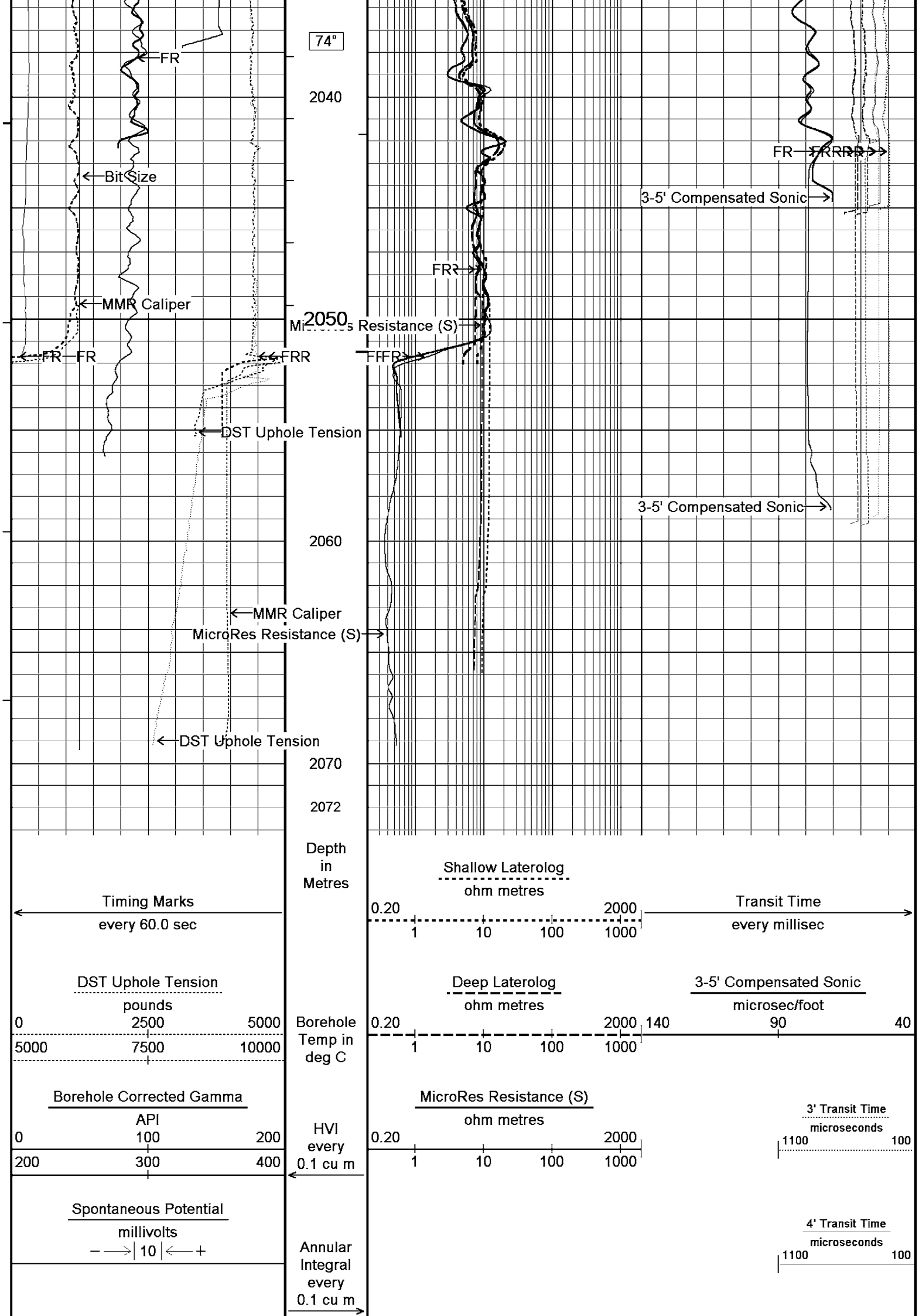
MMR Caliper

MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension

1970

3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


1980
74°
1990
2000
2010
74°
2020
2030
←FR
←FR


74°
2040
2050
2060
2070
2072
FR
Bit Size
MMR Caliper
FR
FR
FRR
DST Uphole Tension
MMR Caliper
MicroRes Resistance (S)
DST Uphole Tension
FR
FRR
FRR
3-5' Compensated Sonic
3-5' Compensated Sonic
Depth in Metres
Timing Marks
every 60.0 sec
Shallow Laterolog
ohm metres
0.20
2000
1
10
100
1000
Transit Time
every millisec
DST Uphole Tension
pounds
0
2500
5000
5000
7500
10000
Deep Laterolog
ohm metres
0.20
2000
1
10
100
1000
3-5' Compensated Sonic
microsec/foot
140
90
40
Borehole Temp in deg C
Borehole Corrected Gamma
API
0
100
200
200
300
400
HVI every 0.1 cu m
MicroRes Resistance (S)
ohm metres
0.20
2000
1
10
100
1000
3' Transit Time
microseconds
1100
100
Spontaneous Potential
millivolts
– 10 +
4' Transit Time
microseconds
1100
100
Annular Integral every 0.1 cu m

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Replay
Scale
1:200

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
Filename: C:\Data\Origin\PETERBOROUGH_1\REPEAT_MDL_MSS3.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 08-SEP-2005 00:05
Recorded on 07-SEP-2005 20:22
Recorded on 07-SEP-2005 19:07

MAINLOG 1:200
REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Data\Origin\PETERBOROUGH_1\MAIN_MDL_MSS.dta

General Constants All 000

General Parameters		
Mud Resistivity	3.210	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Water Level Switch	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	MMR Caliper	
HVOL Caliper 2	MMR Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Limestone Sonic Porosity	
Resistivity used	Deep Laterolog	
RWA Constant A	0.610	
RWA Constant M	2.150	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	MMR Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Sonic Constants MSS 047

Sonic Constants MSC 047

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec

Fixed Gate Parameters

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (m)
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	

Down Hole Fixed Gate Parameters

Gate Start	0.00	micro-sec
Gate Width	0.00	micro-sec
Initial Discriminator Level	0.0000	mVolts

Full Waveform Parameters

Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

SP Calibration MLE 016

Field Calibration on 31-AUG-2005 09:41

	Measured	Calibrated (mV)
Reference 1	93.1	100.0
Reference 2	-114.1	-100.0

Laterolog Constants MLE 016

Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3273	
Deep Laterolog K Factor	0.8527	
Groningen Laterolog K Factor	0.8527	
Interference Rejection	50 Hz	
SP Connection	SP Bridle Electrode	
Groningen Connection	None	

Micro Laterolog Calibration MMR 005

Base Calibration on 24-AUG-2005 09:35
Field Check on 4-SEP-2005 20:38

Base Calibration

Measured		Calibrated (ohm-m)	
Ref 1	Ref 2	Ref 1	Ref 2
0.0	9744.7	0.0	196.0

Base Check (ohm-m)	Field Check (ohm-m)
8.1	8.0

Micro Laterolog Constants MMR 005

Micro Laterolog K Factor	0.0196	
Standoff Offset	N/A	inches

Caliper Calibration MMR 005

Base Calibration on 24-AUG-2005 09:28
Field Calibration on 4-SEP-2005,20:39

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	12058	4.01
2	14996	5.99
3	18272	7.98
4	21721	9.94
5	25905	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.92	8.92

DOWNHOLE EQUIPMENT

C:\Data\Origin\PETERBOROUGH_1\MAIN_MDL_MSS.dta

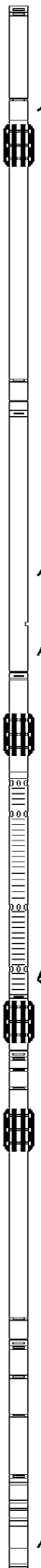
Compact Stiff Bridle Electrode Sub.
MBE 22 Length: 3.76 m Weight: 94.8 lb

Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

Compact Sonic
MSS 47 Length: 3.82 m Weight: 72.8 lb

Compact Upper Guard Sub.
MUG 20 Length: 2.74 m Weight: 68.3 lb

Compact Laterolog Electrode Sub.
MLE 16 Length: 3.76 m Weight: 92.6 lb



17.78 m	SPDL - Spontaneous Potential
13.44 m	GRGC - Gamma Ray
12.55 m	CGXT - MCG External Temperature
9.24 m	DT35 - 3-5' Compensated Sonic
9.24 m	TR12 - 6' Transit Time
9.24 m	TR22 - 5' Transit Time
9.24 m	TR11 - 4' Transit Time
9.24 m	TR21 - 3' Transit Time
3.93 m	DDLL - Deep Laterolog
3.93 m	DSLL - Shallow Laterolog

Compact Micro-Resistivity
MMR 5 Length: 2.62 m Weight: 81.6 lb

Pressure Bung + Hole Finder
HFS 3 Length: 0.28 m Weight: 6.6 lb

Total Length: 19.62 m Weight: 480.6 lb

0.00 m	MRRS - MicroRes Resistance (S)
0.00 m	MATC - MMR Caliper
0.00 m	HVOL - Hole Volume
0.00 m	AVOL - Annular Volume
Tool Zero	(0.85m from bottom)

All measurements relative to tool zero.

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.70	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

Reeves Compact

DUAL LATEROLOG - MLL
COMPENSATED SONIC
1:200

Reeves Compact

DUAL LATEROLOG - MLL
COMPENSATED SONIC
1:500

COMPANY	ORIGIN ENERGY LIMITED
WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA
LOCATION	38º 35' 11.98" S, 142º 51' 34.06" E

FIELD PRINT

LSD	SEC	TWP	RGE	Other Services
				COMPENSATED NEUTRON
				PHOTO DENSITY

API Number
Permit Number PEP 154

Permanent Datum MSL , Elevation 0.0 metres
Log Measured From KB @ 14.95 above Permanent Datum
Drilling Measured From

Elevations:
KB 14.95 metres
DF metres
GL 9.65 metres

Date	05-SEP-2004			
Run Number	1			
Depth Driller	2070.00	metres		
Depth Logger	2052.55	metres		
First Reading	2051.70	metres		
Last Reading	30.00	metres		
Casing Driller	495.60	metres		
Casing Logger	495.40	metres		
Bit Size	8.50	inches		
Hole Fluid Type	KCL POLYMER			
Density / Viscosity	1.14 g/c3	45.00 CP		
PH / Fluid Loss	9.50	4.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.30 @ 22.2	ohm-m		
Rmf @ Measured Temp	0.53 @ 22.3	ohm-m		
Rmc @ Measured Temp	0.12 @ 22.1	ohm-m		
Source Rmf / Rmc	FILTER	PRESS		
Rm @ BHT	0.14 @ 74.0	ohm-m		
Time Since Circulation	19.5 HRS			
Max Recorded Temp	74.00	deg C		
Equipment Name	SCOMBO			
Equipment / Base	8			
Recorded By	SHAWN STASIUK			
Witnessed By	JOHN HOBDAY			
Circ. Stop	01:00-SEP 05			

BOREHOLE RECORD

Bit Size inches	Depth From metres	Depth To metres
8.500	495.00	2070.00

CASING RECORD

Type	Size inches	Depth From metres	Shoe Depth metres	Weight pounds/ft
K55	9.625	0.00	495.00	36.00

REMARKS

1) SOFTWARE ISSUE: JUN 17, 2004.
2) CUSTOMER SCALES AND INTERVALS LOGGED.
3) HFS, MMR, MLE, MUG, MSS, MCG, MBE RAN IN COMBINATION.
4) HARDWARE: MMR: ONE 25.4MM STANDOFF
MSS: TWO 25.4MM STANDOFF
MUG: ONE 25.4MM STANDOFF
MBE: ONE 25.4MM STANDOFF
5) MPD CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY.
6) MDN CORRECTED FOR BOREHOLE SIZE AND MUD DENSITY AND SALINITY.
7) SERVICE ORDER:2391
8) RIG:CENTURY 7
PRINTS: 1 FIELD 3 FINALS
9) TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 34.9 CU.M.
10) TOTAL ANNULAR VOLUME WITH 7 INCH CASING = 17.8 CU.M.
11) SONIC CASING SIGNAL AT 284.6 M.
12) PARTIAL CEMENT IN THE HOLE BETWEEN 925 AND 980M.
13) LOGGING TOOLS WERE REPEATEDLY HUNG UP FROM 720 TO 1354M.
14) UNABLE TO MAKE IT PAST 2049M. SEVERAL ATTEMPTS WERE MADE.
15) SONIC DOES NOT REPEAT AT 1985. DISCRIMINATORS WERE ADJUSTED TO TRY AND CLEAN UP THE SONIC REPEATABILITY WITH NO SUCCESS.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

MAINLOG 1:200

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 08-SEP-2005 01:25
Recorded on 07-SEP-2005 20:22

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Spontaneous Potential
millivolts
– → | 10 | ← +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Depth in Metres

Borehole Temp in deg C

HVI every 0.1 cu m

Annular Integral every 0.1 cu m

Replay Scale 1:500

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

3-5' Compensated Sonic
microsec/foot
140 90 40

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

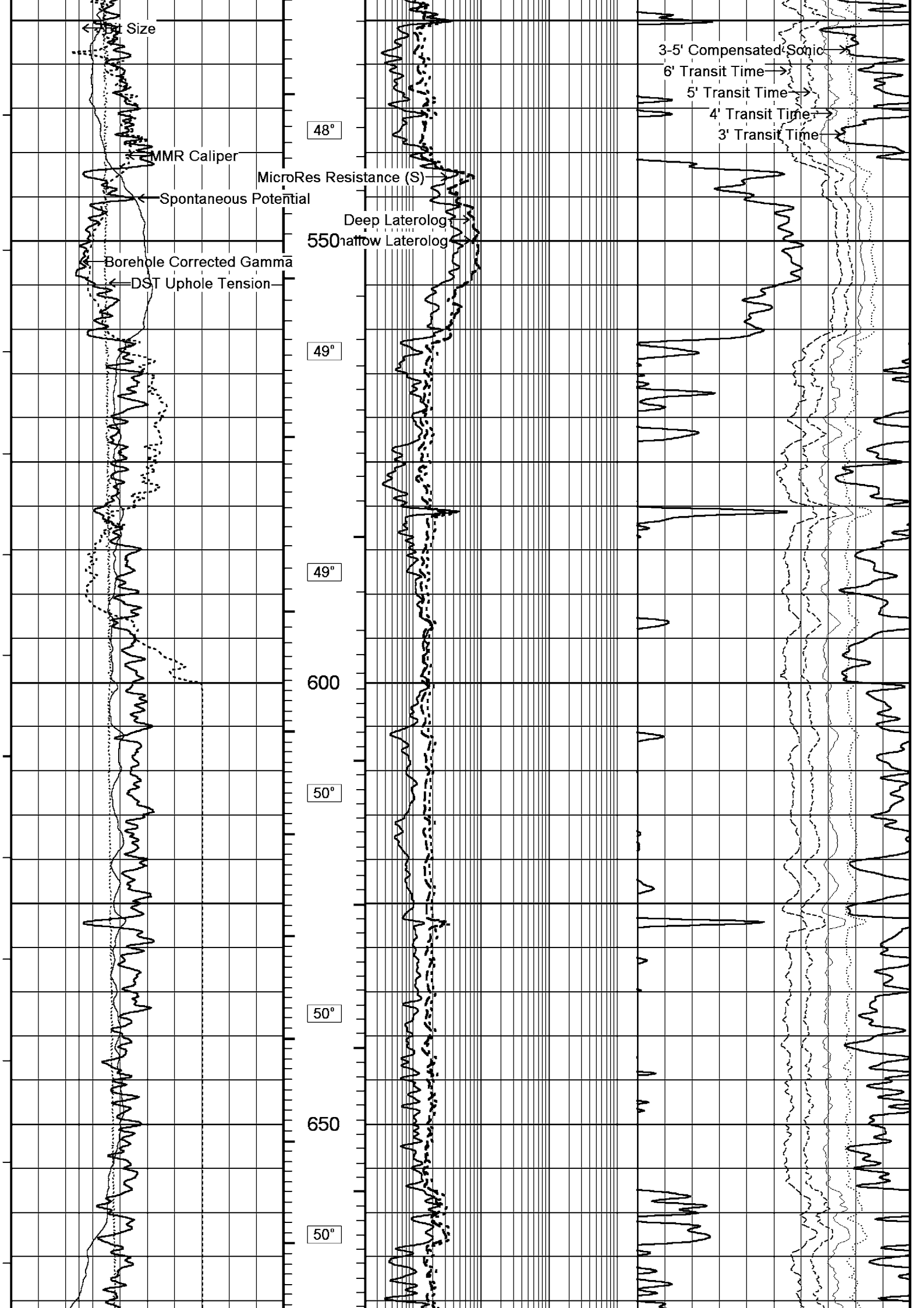
479

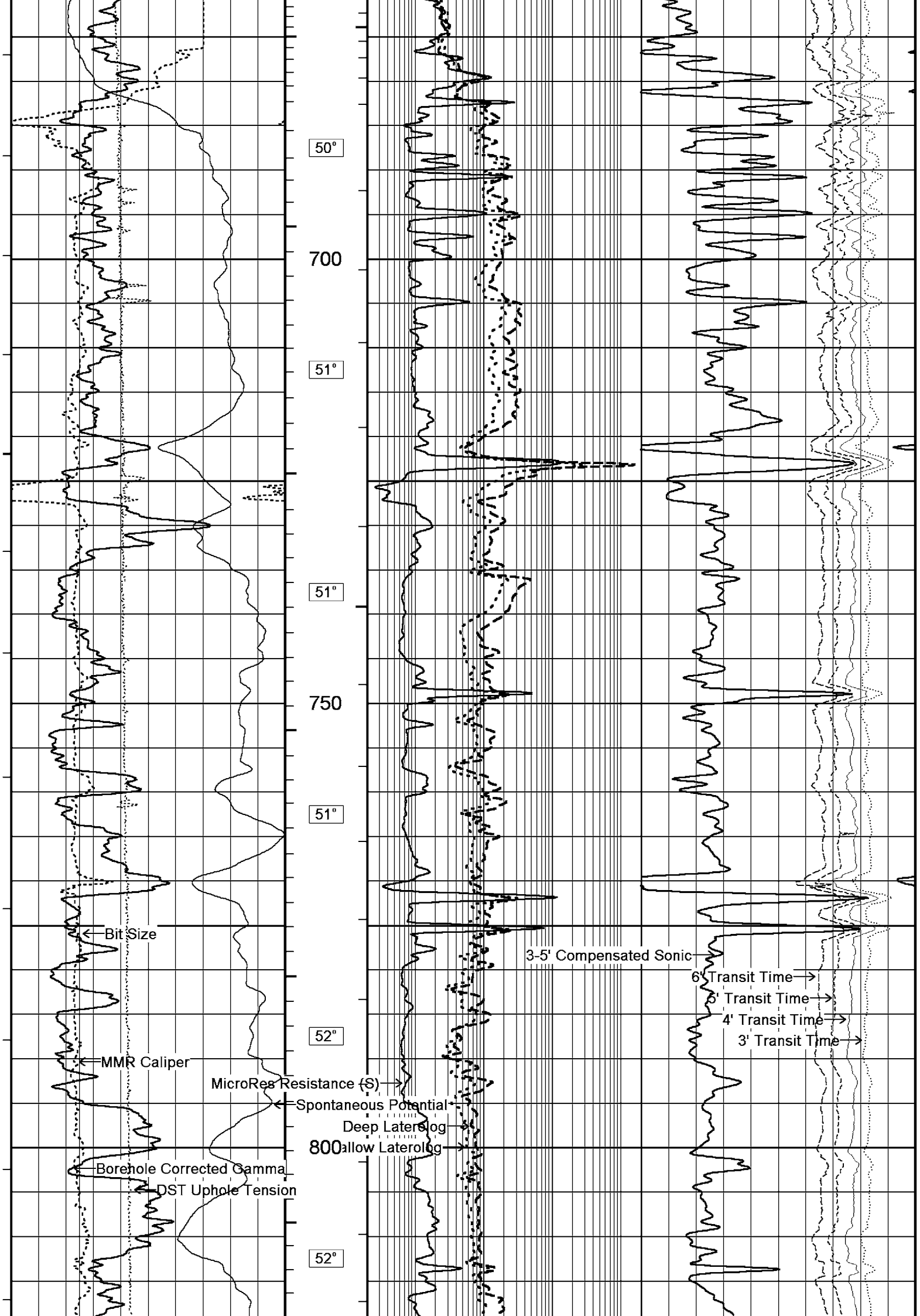
47°

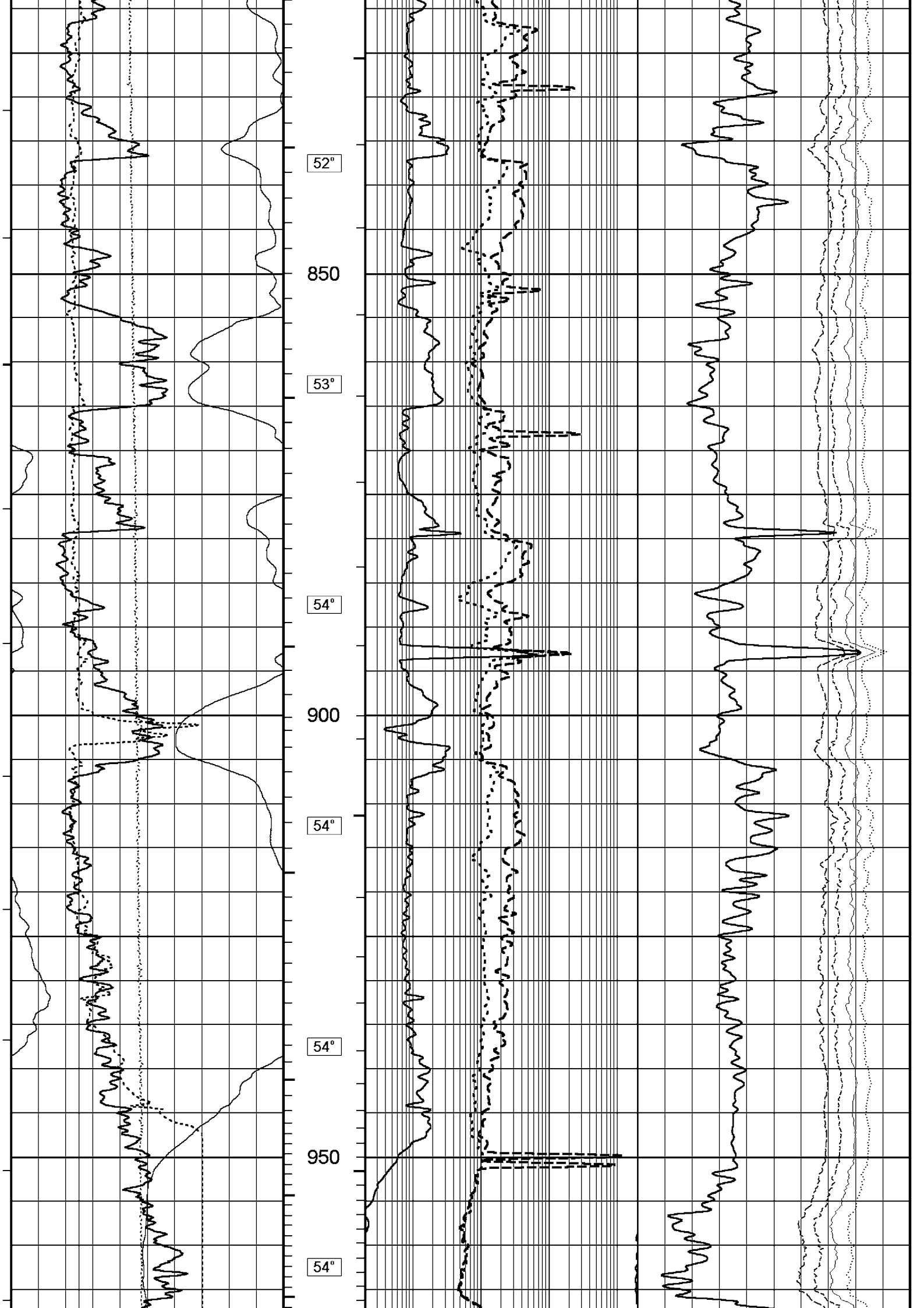
Casing Shoe

500

48°


Bit Size
MMR Caliper
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
48°
49°
49°
50°
50°
50°
550
600
650


50°
700
51°
51°
750
51°
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
52°
MMR Caliper
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
800
allow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
52°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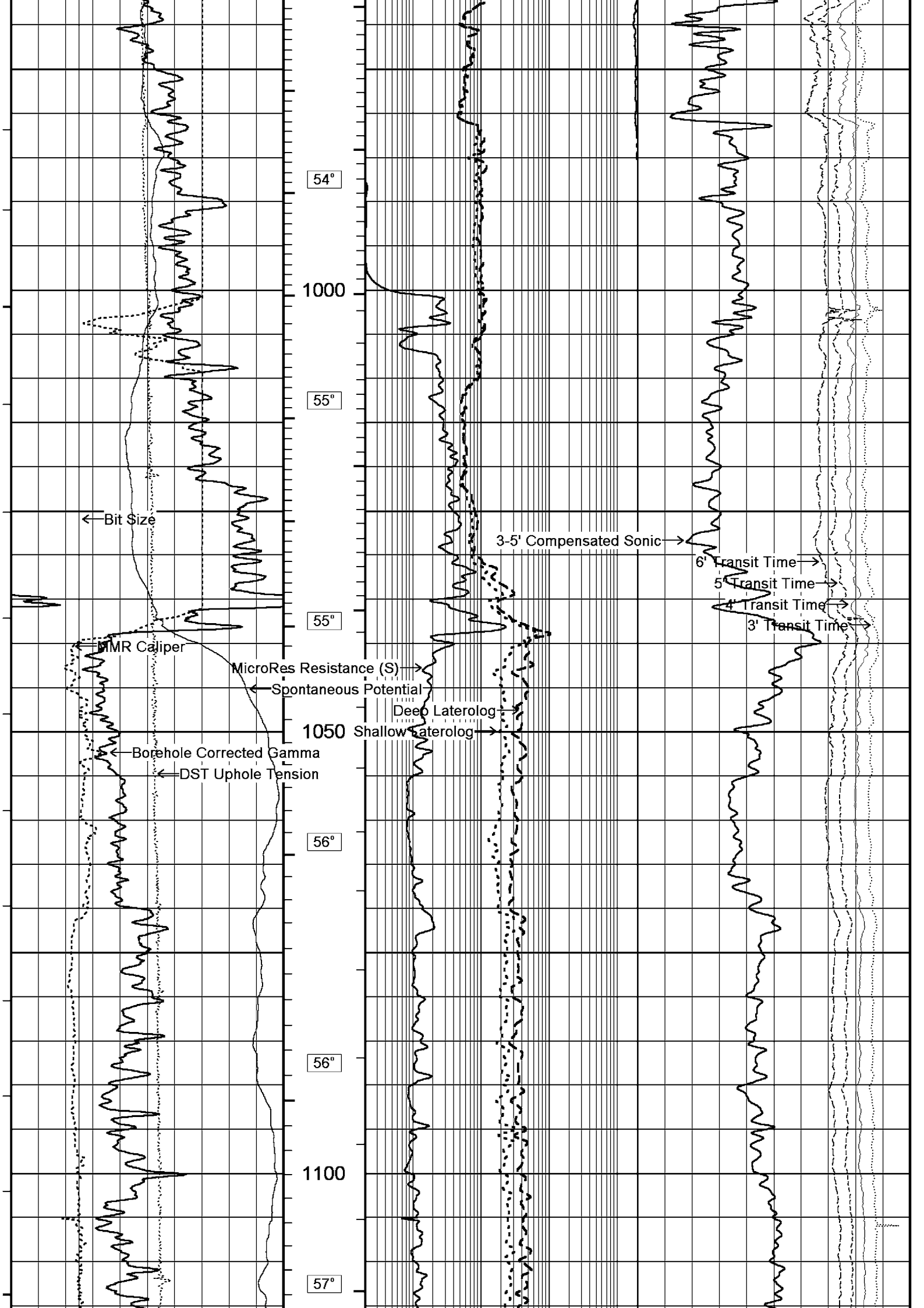
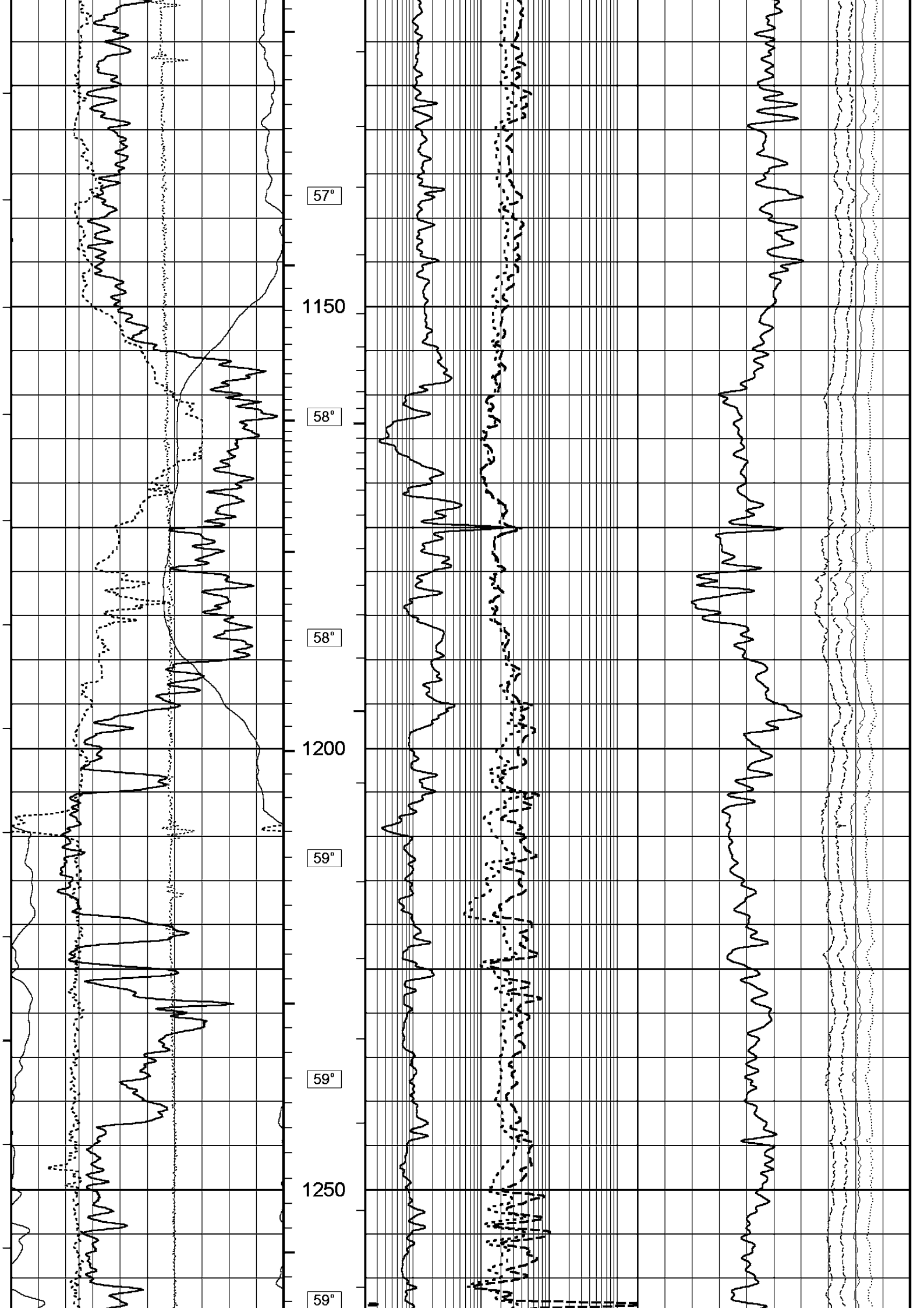
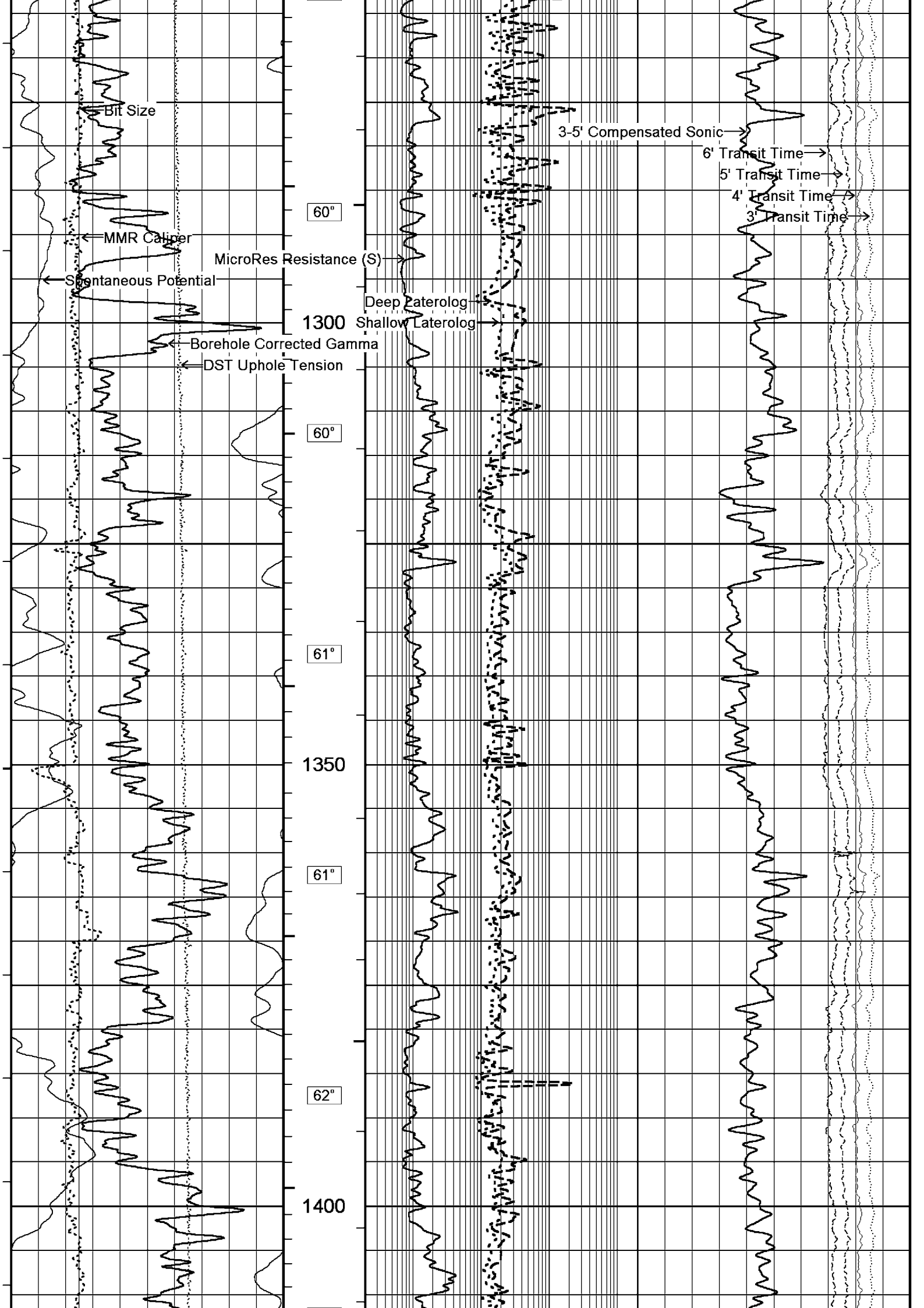
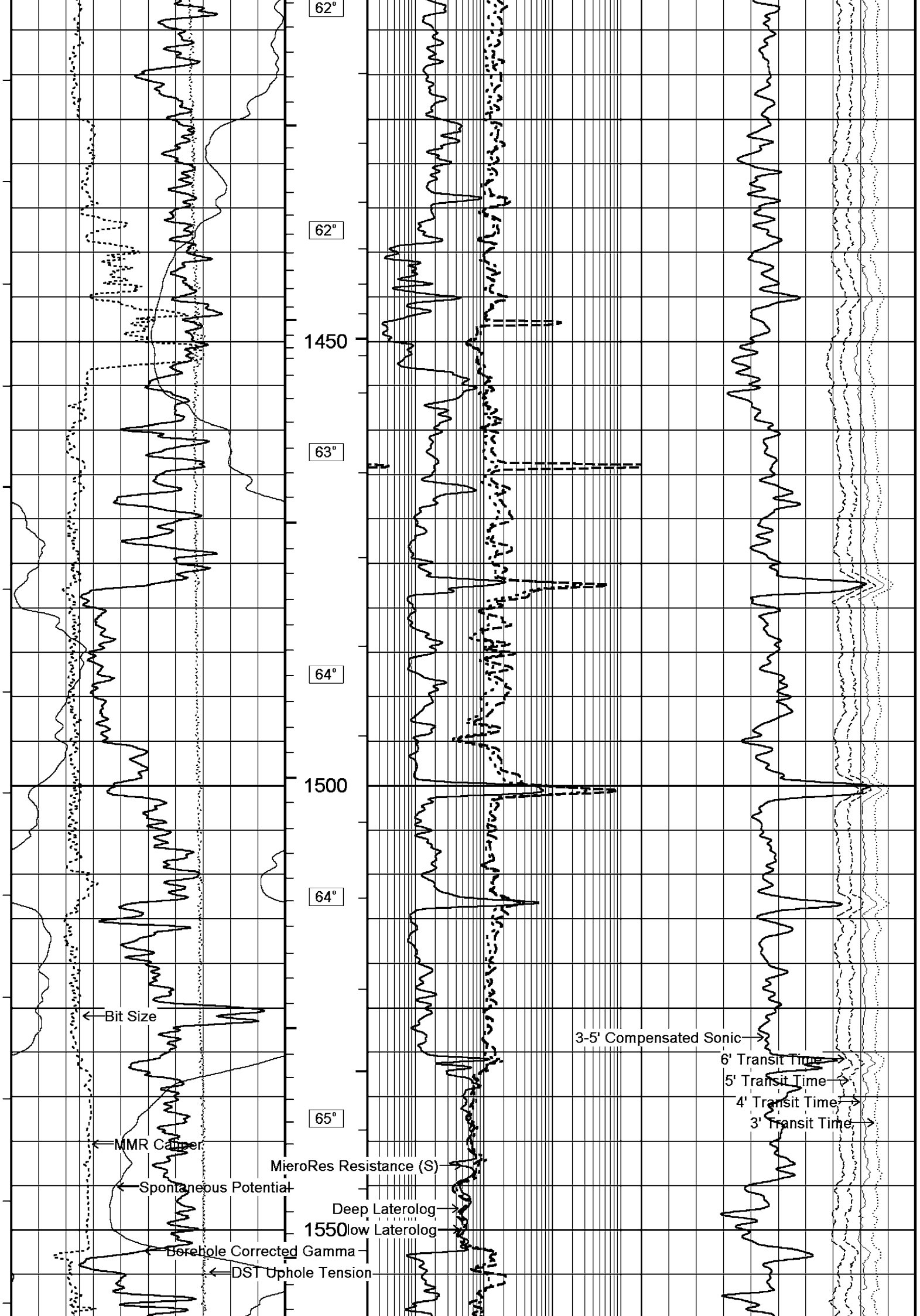
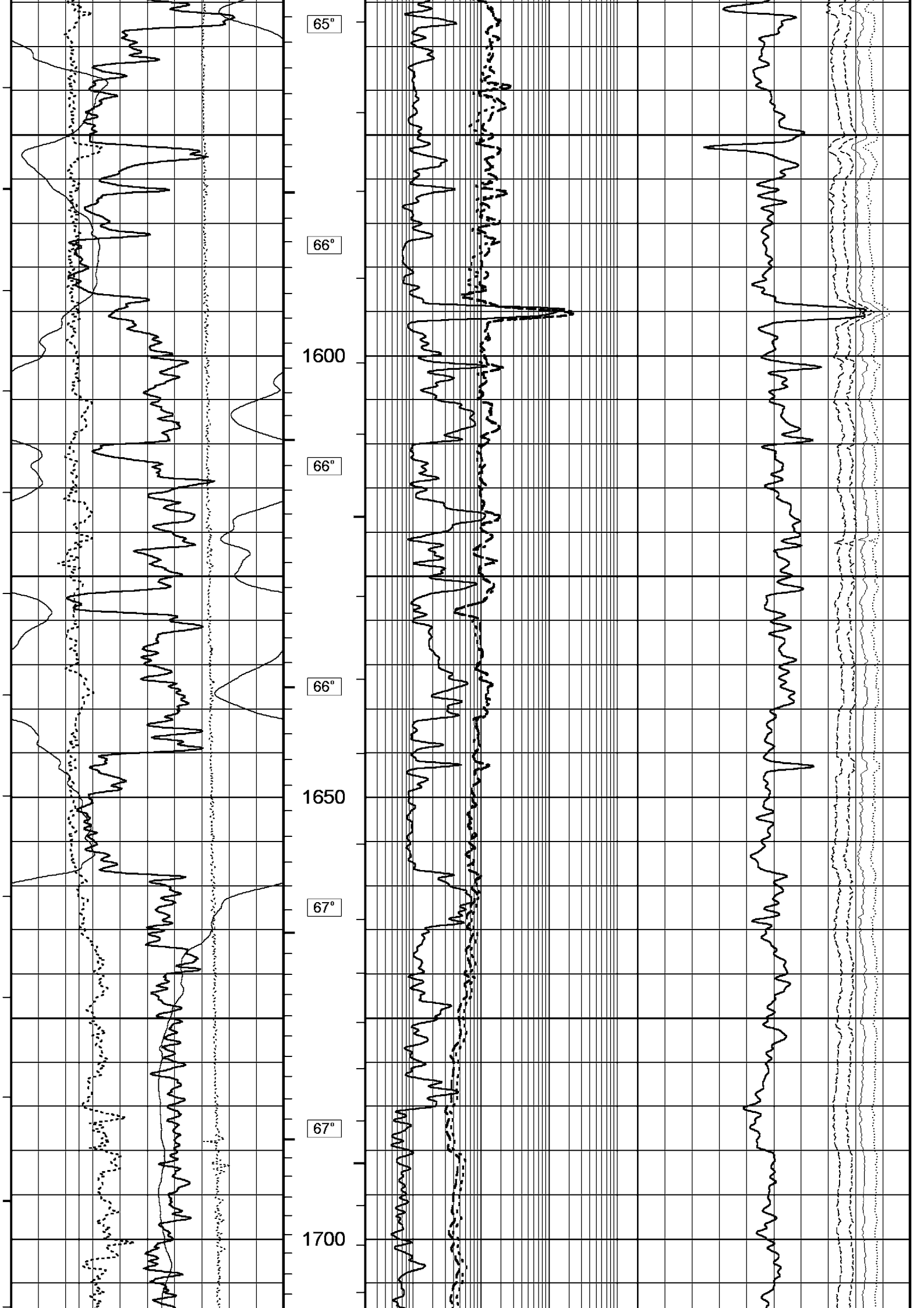
850
53°
54°
900
54°
54°
950
54°

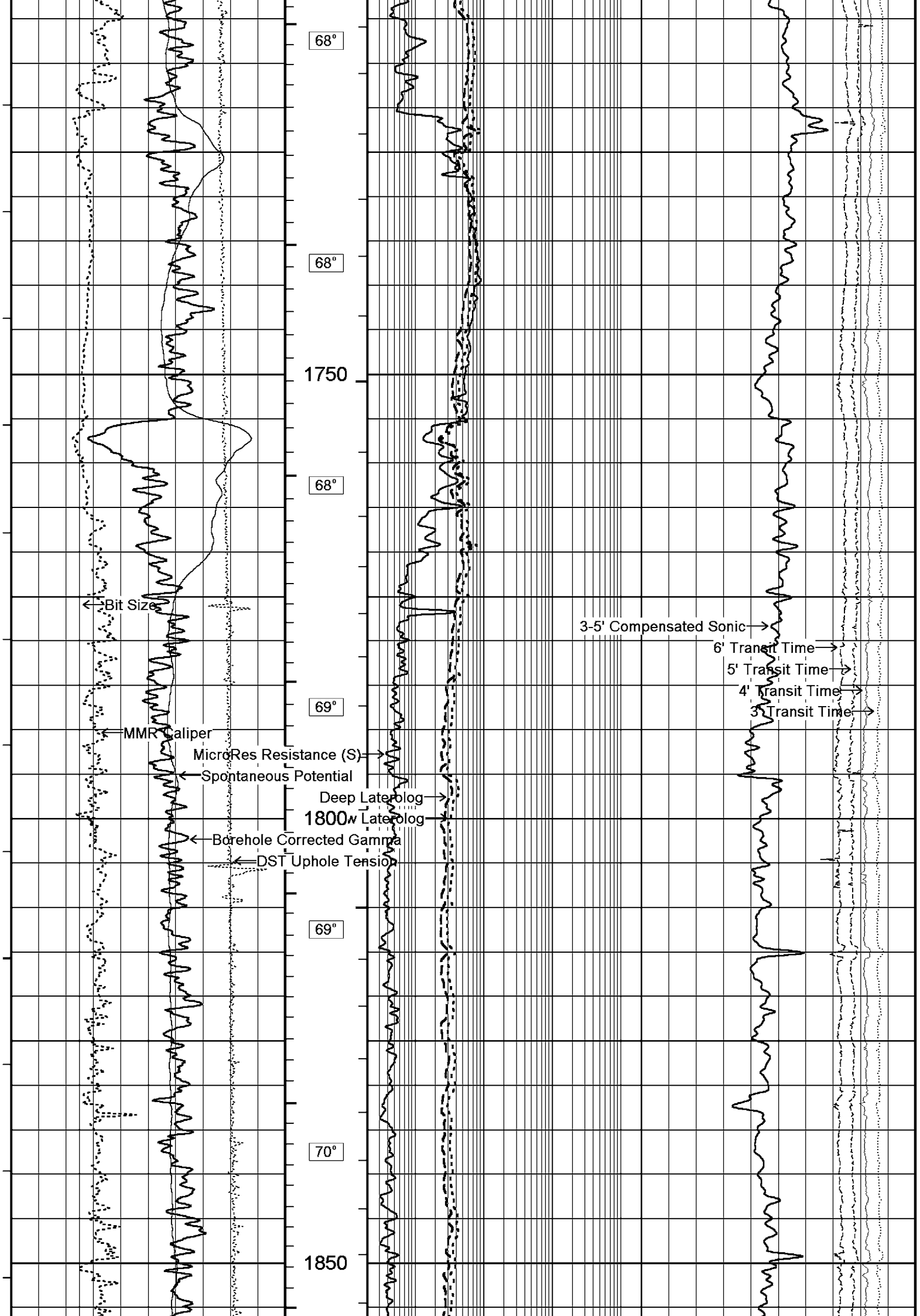

54°
1000
55°
55°
1050
56°
56°
1100
57°
Bit Size
MMR Caliper
Borehole Corrected Gamma
DST Uphole Tension
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

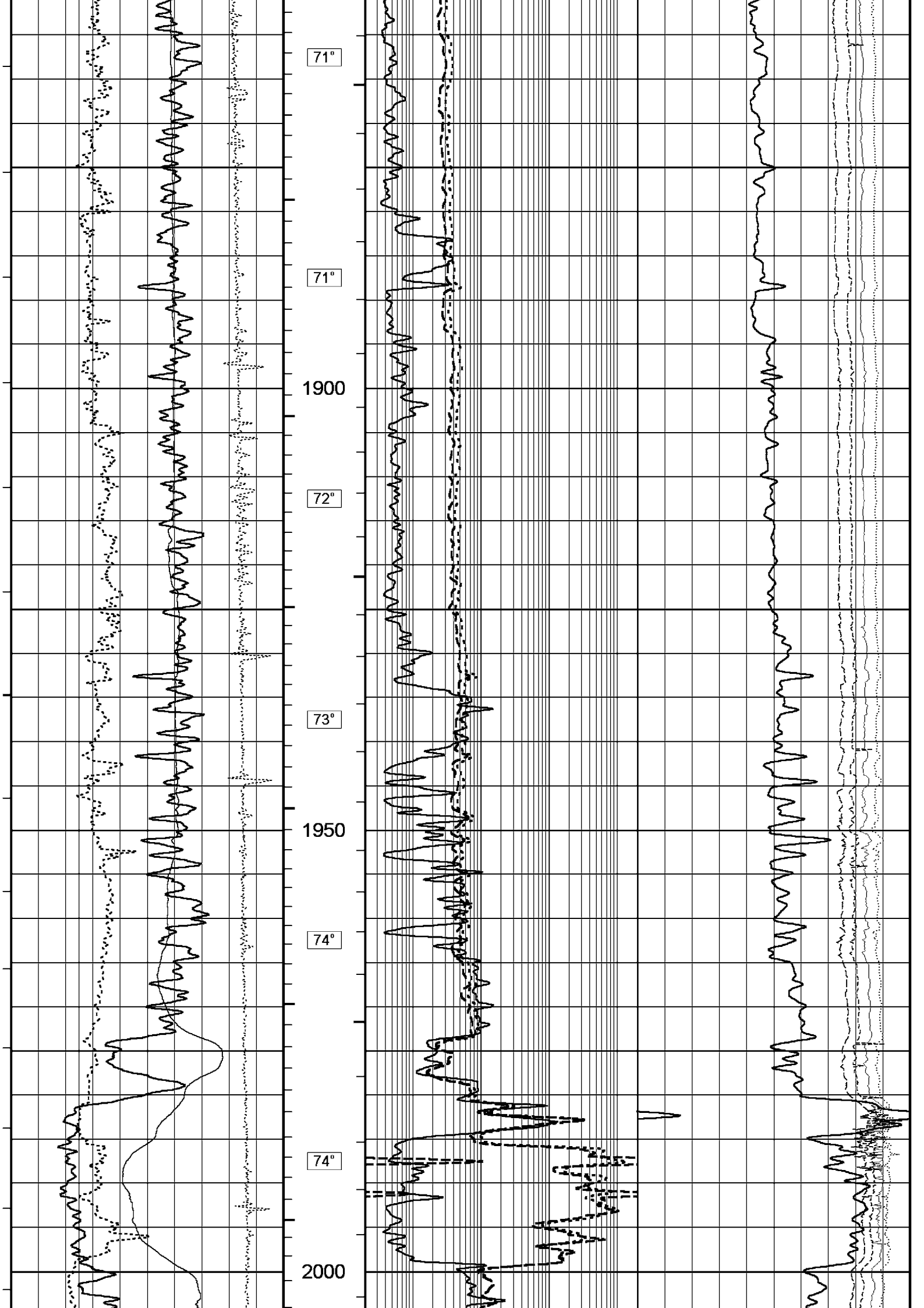

57°
1150
58°
58°
1200
59°
59°
1250
59°

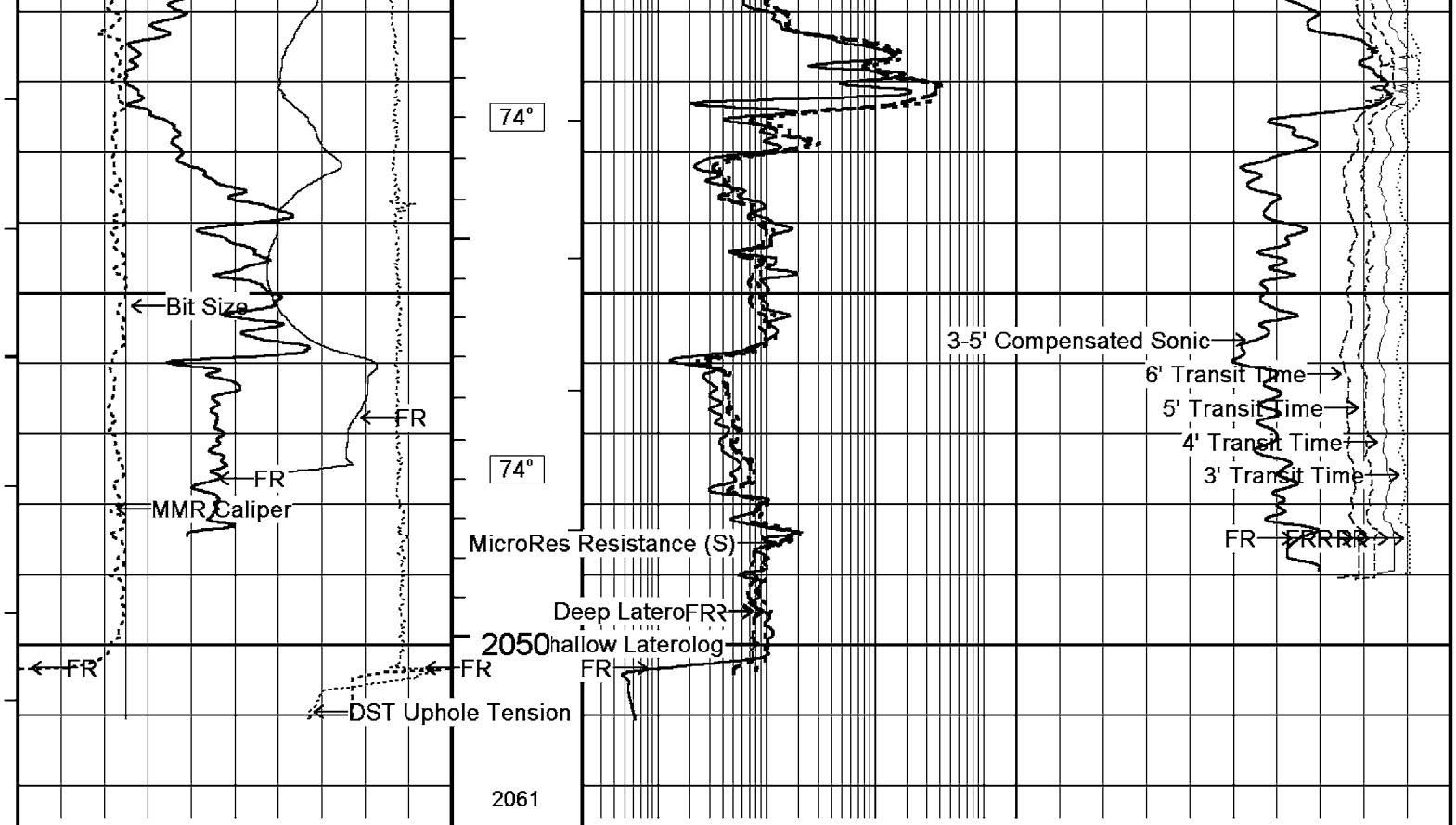

Bit Size
MMR Caliper
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
60°
60°
61°
61°
62°
1300
1350
1400
MicroRes Resistance (S)
Deep Laterolog
Shallow Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


62°
62°
1450
63°
64°
1500
64°
65°
1550
Bit Size
MMR Caliper
Spontaneous Potential
Borehole Corrected Gamma
DST Uphole Tension
MieroRes Resistance (S)
Deep Laterolog
low Laterolog
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


65°
66°
1600
66°
66°
1650
67°
67°
1700


68°
68°
1750
68°
Bit Size
69°
MMR Caliper
MicroRes Resistance (S)
Spontaneous Potential
Deep Laterolog
1800
Shallow Laterolog
Borehole Corrected Gamma
DST Uphole Tension
69°
70°
1850
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


71°
71°
1900
72°
73°
1950
74°
74°
2000



2061

Depth in Metres

Timing Marks
every 60.0 sec

DST Uphole Tension
pounds
0 2500 5000
5000 7500 10000

Borehole Corrected Gamma
API
0 100 200
200 300 400

Spontaneous Potential
millivolts
– → | 10 | ← +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Shallow Laterolog
ohm metres
0.20 2000
1 10 100 1000

Deep Laterolog
ohm metres
0.20 2000
1 10 100 1000

Borehole Temp in deg C

HVI every 0.1 cu m

MicroRes Resistance (S)
ohm metres
0.20 2000
1 10 100 1000

Annular Integral every 0.1 cu m

Replay Scale 1:500

3-5' Compensated Sonic
microsec/foot
140 90 40

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Origin\PETERBOROUGH_1\MAIN_BU.dta
System Configuration Dates: Logged : Plotted 17-JUN-2004:

Plotted on 08-SEP-2005 01:25
Recorded on 07-SEP-2005 20:22

MAINLOG 1:200

BEFORE SURVEY CALIBRATION

C:\Data\Origin\PETERBOROUGH_1\MAIN_MDL_MSS.dta

General Constants All 000

General Parameters		
Mud Resistivity	3.210	ohm-metres
Mud Resistivity Temperature	20.000	degrees C
Water Level	0.000	metres
Density/Neutron Processing	Water Level Switch	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	MMR Caliper	
HVOL Caliper 2	MMR Caliper	
Annular Volume Diameter	7.000	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Limestone Sonic Porosity	
Resistivity used	Deep Laterolog	
RWA Constant A	0.610	
RWA Constant M	2.150	

Gamma Calibration MCG 098

Field Calibration on 23-AUG-2005 10:33

	Measured	Calibrated (API)
Background	48	35
Calibrator (Gross)	1070	784
Calibrator (Net)	1022	749

Gamma Constants MCG 098

Gamma Calibrator Number	30	
Mud Density	1.14	gm/cc
Caliper Source for Processing	MMR Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG 098

Field Calibration on 23-AUG-2005,10:33

	Measured	Calibrated(Deg C)
Lower	0.00	0.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 098

Pre-filter Length	11

SP Calibration MCG 098

Field Calibration on 9-JAN-2005,00:41

	Measured	Calibrated (mV)
Reference 1	1604.7	1599.0
Reference 2	-1599.8	-1599.0

Sonic Constants MSS 047

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec

Fixed Gate Parameters

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (m)
0.00	0.00	0.00	
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00

Down Hole Fixed Gate Parameters		
Gate Start	0.00	micro-sec
Gate Width	0.00	micro-sec
Initial Discriminator Level	0.0000	mVolts
Full Waveform Parameters		
Use 3' Waveform to derive TR	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

SP Calibration MLE 016

Field Calibration on 31-AUG-2005 09:41

	Measured	Calibrated (mV)
Reference 1	93.1	100.0
Reference 2	-114.1	-100.0

Laterolog Constants MLE 016

Squasher Start	40000	ohm-m
Shallow Laterolog K Factor	1.3273	
Deep Laterolog K Factor	0.8527	
Groningen Laterolog K Factor	0.8527	
Interference Rejection	50 Hz	
SP Connection	SP Bridle Electrode	
Groningen Connection	None	

Micro Laterolog Calibration MMR 005

Base Calibration on 24-AUG-2005 09:35
Field Check on 4-SEP-2005 20:38

Base Calibration

Measured		Calibrated (ohm-m)	
Ref 1	Ref 2	Ref 1	Ref 2
0.0	9744.7	0.0	196.0

Base Check (ohm-m)	Field Check (ohm-m)
8.1	8.0

Micro Laterolog Constants MMR 005

Micro Laterolog K Factor	0.0196	
Standoff Offset	N/A	inches

Caliper Calibration MMR 005

Base Calibration on 24-AUG-2005 09:28
Field Calibration on 4-SEP-2005,20:39

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	12058	4.01
2	14996	5.99
3	18272	7.98
4	21721	9.94
5	25905	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.92	8.92

DOWNHOLE EQUIPMENT

C:\Data\Origin\PETERBOROUGH_1\MAIN_MDL_MSS.dta

Compact Stiff Bridle Electrode Sub.
MBE 22 Length: 3.76 m Weight: 94.8 lb

17.78 m SPDL - Spontaneous Potential

Compact Gamma
MCG 98 Length: 2.65 m Weight: 63.9 lb

13.44 m GRGC - Gamma Ray
12.55 m CGXT - MCG External Temperature

Compact Sonic
MSS 47 Length: 3.82 m Weight: 72.8 lb

9.24 m DT35 - 3-5' Compensated Sonic
9.24 m TR12 - 6' Transit Time
9.24 m TR22 - 5' Transit Time
9.24 m TR11 - 4' Transit Time

Compact Upper Guard Sub.
MUG 20 Length: 2.74 m Weight: 68.3 lb

9.24 m TR21 - 3' Transit Time

Compact Laterolog Electrode Sub.
MLE 16 Length: 3.76 m Weight: 92.6 lb

3.93 m DDLL - Deep Laterolog
3.93 m DSLL - Shallow Laterolog

Compact Micro-Resistivity
MMR 5 Length: 2.62 m Weight: 81.6 lb

0.00 m MRRS - MicroRes Resistance (S)
0.00 m MATC - MMR Caliper
0.00 m HVOL - Hole Volume
0.00 m AVOL - Annular Volume
Tool Zero (0.85m from bottom)

Pressure Bung + Hole Finder
HFS 3 Length: 0.28 m Weight: 6.6 lb

All measurements relative to tool zero.

Total Length: 19.62 m Weight: 480.6 lb

COMPANY	ORIGIN ENERGY LIMITED

WELL	PETERBOROUGH - 1ST1
FIELD	OTWAY BASIN
PROVINCE/COUNTY	VICTORIA
COUNTRY/STATE	AUSTRALIA

Elevation Kelly Bushing	14.95	metres	First Reading	2051.70	metres
Elevation Drill Floor		metres	Depth Driller	2070.00	metres
Elevation Ground Level	9.65	metres	Depth Logger	2052.55	metres

Reeves Compact

DUAL LATEROLOG - MLL

COMPENSATED SONIC

1:500

APPENDIX 6

CUTTING DESCRIPTIONS

Depth	%	Lithology	Gas
		PETERBOROUGH-1	
		Peterborough-1 spudded 20:30hrs on the 16th August, 2005.	
20 (2.4)	100	LIMESTONE, off white to tan, pale orangish brown, sparitic, fossiliferous, microcrystalline to crystalline, friable to occasionally moderately hard.	Nil Gas
30 (1.1)	100	LIMESTONE, a. a.	Nil Gas
40 (0.8)	100	LIMESTONE, pale brown to pale greyish blue, occasionally pale orangish brown, sparitic to occasionally micritic, fossiliferous, rare nodular pyrite, microcrystalline to crystalline, friable to moderately hard, hard in part.	Nil Gas
50 (1.4)	100	LIMESTONE, pale blue to pale greyish brown, occasionally tan, pale orangish brown, sparitic to minor micritic, fossiliferous, occasionally glauconite, friable to moderately hard.	Nil Gas
60 (2.2)	100	LIMESTONE, pale grey, off white to pale yellowish brown in part, sparitic, locally micritic, fossiliferous, tr nodular pyrite, friable to moderately hard, hard.	Nil Gas
70 (1.8)	100	LIMESTONE, a. a. – very pale grey, bluish grey in part.	Nil Gas
80 (2.2)	100	LIMESTONE, very pale grey to off white, sparitic, locally micritic, fossiliferous, friable to moderately hard.	Nil Gas
90 (1.1)	100	LIMESTONE, pale grey to off white, rare dark grey, rare pale yellow, sparitic, fossiliferous, tr locally crystalline, friable to moderately hard.	Nil Gas
100 (0.9)	100	LIMESTONE, a. a.	Nil Gas
110 (1.3)	100	LIMESTONE, a. a.	Nil Gas
120 (0.8)	90 10	LIMESTONE, very pale grey to off white, sparitic, micritic in part, commonly fossiliferous and shell fragments, rare microcrystalline, moderately hard to hard, friable in part. MARL, pale grey, occasionally medium grey, very calcareous, commonly shell and fossiliferous fragments, minor to trace nodules pyrite, soft occasionally hard in part, blocky to sub-blocky, amorphous in part.	Nil Gas
130 (0.8)	60 40	LIMESTONE, a. a. MARL, a. a.	Nil Gas
140 (1.2)	50 50	LIMESTONE, very pale grey to off white, sparitic, micritic in part, commonly fossiliferous and shell fragments, rare microcrystalline, moderately hard to hard, friable in part. MARL, pale grey, occasionally medium grey, very calcareous, commonly shell and fossiliferous fragments, minor to trace nodules pyrite, soft occasionally hard in part, blocky to sub-blocky, amorphous in part.	Nil Gas
150 (0.6)	30 70	LIMESTONE, a. a. MARL, a. a.	Nil Gas
160 (0.8)	Tr 100	LIMESTONE, a. a. MARL, a. a.	Nil Gas
170 (1.0)	Tr 100	LIMESTONE, very pale grey to off white, sparitic, micritic in part, commonly fossiliferous and shell fragments, rare microcrystalline, moderately hard to hard, friable in part. MARL, pale grey, occasionally medium grey, very calcareous, commonly shell and fossiliferous fragments, minor to trace nodules pyrite, soft occasionally hard in part, blocky to sub-blocky, amorphous in part.	Nil Gas
180 (0.9)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
190 (0.8)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
200 (0.9)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
210 (0.8)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
220 (0.8)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas

Depth	%	Lithology	Gas
230 (1.7)	Tr 100	LIMESTONE, very pale grey to off white, sparitic, micritic in part, commonly fossiliferous and shell fragments, rare microcrystalline, moderately hard to hard, friable in part. MARL, pale grey, occasionally medium grey, very calcareous, commonly shell and fossiliferous fragments, minor to trace nodules pyrite, soft occasionally hard in part, blocky to sub-blocky, amorphous in part.	Nil Gas
240 (1.1)	100	MARL, pale to medium grey, argillaceous, very calcareous, commonly fossiliferous and shell fragments, occasionally nod pyrite, dispersive to firm, sub-blocky, amorphous.	Nil Gas
250 (1.0)	Tr 100	LIMESTONE, very pale grey to off white, sparitic, micritic in part, commonly fossiliferous and shell fragments, rare microcrystalline, moderately hard to hard, friable in part. MARL, pale grey, occasionally medium grey, very calcareous, commonly shell and fossiliferous fragments, minor to trace nodules pyrite, soft occasionally hard in part, blocky to sub-blocky, amorphous in part.	Nil Gas
260 (0.9)	100	MARL, pale to medium grey, argillaceous, very calcareous, commonly fossiliferous and shell fragments, occasionally nod pyrite, dispersive to firm, sub-blocky, amorphous.	Nil Gas
270 (1.1)	100	MARL, pale to medium grey, greyish brown in part, argillaceous, very calcareous, abundant fossiliferous and shell fragments, occasionally pyrite nodules, soft to firm in part, dispersive, blocky, amorphous.	Nil Gas
280 (0.9)	100	MARL, medium brownish grey to medium greyish green, argillaceous, calcareous, commonly fossiliferous LIMESTONE fragments, trace pyrite nodules, soft to firm, occasionally dispersive, sub-blocky to sub-fissile, amorphous in part.	Nil Gas
290 (0.9)	100	MARL, a. a.	Nil Gas
300 (1.0)	100	MARL, pale to medium greyish brown, pale to medium greenish grey, argillaceous, calcareous, commonly pale orangish brown fossiliferous fragments, soft to dispersive, minor firm, sub-blocky to amorphous.	Nil Gas
310 (0.8)	100	MARL, pale to medium greyish brown, minor greenish grey, argillaceous, calcareous, minor fossiliferous LIMESTONE fragments, predominantly soft to dispersive, sub-blocky to amorphous.	Nil Gas
320 (1.1)	100	MARL, a. a.	Nil Gas
330 (1.0)	100	MARL, pale brown to pale greyish brown, minor pale grey to pale greenish grey, argillaceous very calcareous, minor brownish orange fossiliferous fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
340 (1.1)	100	MARL, a. a.	Nil Gas
350 (1.3)	100	MARL< pale brown to pale greyish brown, minor pale greenish grey, argillaceous, calcareous, commonly off white to pale brownish orange fossiliferous fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
360 (1.1)	10 90	LIMESTONE, off white to pale brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to hard MARL, a. a.	Nil Gas
370 (1.1)	100	MARL, predominantly medium greyish brown, minor pale grey to pale brown, argillaceous, calcareous con fossiliferous LIMESTONE fragments, dispersive to firm, sub-blocky to amorphous.	Nil Gas
380 (1.0)	100	MARL, a. a.	Nil Gas
390 (1.2)	100	MARL, pale to medium greyish brown, minor off white to pale grey, very calcareous, argillaceous, commonly pale brownish orange fossiliferous fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
400 (1.4)	100	MARL, a. a.	Nil Gas
410 (1.5)	10 90	LIMESTONE, off white to predominantly brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to occasionally hard. MARL, pale to medium greyish brown, minor pale grey to pale greenish grey, argillaceous, calcareous, minor fossiliferous, LIMESTONE fragments, soft to dispersive, occasionally firm, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
420 (1.3)	10 90	LIMESTONE, off white to predominantly brownish orange, sparitic, fossiliferous, microcrystalline to crystalline, moderately hard to occasionally hard. MARL, pale to medium greyish brown, minor pale grey to pale greenish grey, argillaceous, calcareous, minor fossiliferous, LIMESTONE fragments, soft to dispersive, occasionally firm, sub-blocky to amorphous.	Nil Gas
430 (1.4)	100	MARL,, pale to medium greyish brown, minor pale grey to pale greenish grey, argillaceous, calcareous, minor fossiliferous LIMESTONE fragments, soft to dispersive, occasionally firm, sub-blocky to amorphous.	Nil Gas
440 (1.4)	100	MARL, a. a.	Nil Gas
450 (1.8)	100	MARL, pale to medium greenish grey, pale to medium greyish brown, argillaceous, calcareous, minor brownish orange fossiliferous fragments, occasionally very fine carbonaceous specks, soft to firm, minor dispersive, sub-blocky to sub-fissile, minor amorphous.	Nil Gas
460 (1.6)	100	MARL, pale to medium greenish grey, minor medium greyish brown, argillaceous, calcareous, minor fossiliferous LIMESTONE fragments, occasionally very fine carbonaceous inclusions, soft to predominantly firm, sub-blocky to occasionally sub-fissile.	Nil Gas
470 (1.7)	100	MARL, pale to medium greenish grey, medium greyish brown in part, calcareous, argillaceous, occasionally grading to arenaceous, occasionally brownish orange fossiliferous fragments, trace very fine disseminated carbonaceous specks, soft to firm, sub-blocky to sub-fissile.	Nil Gas
480 (1.8)	100	MARL, a. a.	Nil Gas
490 (1.6)	100	MARL, pale to medium greenish grey, medium greyish brown in part, calcareous, argillaceous, occasionally grading to arenaceous, occasionally brownish orange fossiliferous fragments, trace very fine disseminated carbonaceous specks, soft to firm, sub-blocky to sub-fissile.	Nil Gas
500 (2.2)	100	MARL, a. a.	Nil Gas
505 (0.7)	100	MARL, pale to medium grey, medium greyish green, argillaceous, very calcareous, occasionally pale brown fossiliferous fragments, soft to firm, sub-blocky to sub-fissile.	Nil Gas
510 (1.1)	100	MARL, generally dark greenish grey, argillaceous, calcareous, minor fossiliferous LIMESTONE fragments, soft to firm, occasionally dispersive, sub-blocky to occasionally amorphous.	Nil Gas
515 (1.0)	100	MARL, a. a.	Nil Gas
520 (0.9)	100	MARL, predominantly dark greenish grey, minor medium dark grey, argillaceous, calcareous, occasionally pale brown to brownish orange fossiliferous fragments, trace glauconite grains, soft to firm, sub-blocky to sub-fissile.	Nil Gas
525 (0.8)	100	MARL, a. a.	Nil Gas
530 (2.0)	100	MARL, a. a.	Nil Gas
535 (3.0)	100	MARL, greenish grey, predominantly dark greyish green, minor moderately dark grey, argillaceous, calcareous, minor pale brownish orange fossiliferous fragments, soft to firm, sub-blocky to sub-fissile, rare amorphous.	Nil Gas
540 (2.0)	100	MARL, a. a.	Nil Gas
545 (2.7)	40 40 20	SILTSTONE, moderately reddish brown, orangish brown, minor brownish grey, argillaceous, calcareous, grading to CLAYSTONE in part, abundant Fe staining, dispersive to soft, minor firm, blocky to sub-blocky, amorphous. MARL, medium dark greenish grey, minor dark grey in part, argillaceous, very calcareous, abundant orangish brown shell and fossiliferous fragments, soft to minor firm, sub-blocky to sub-fissile. LIMESTONE, whitish orange, odd white, micritic to lutitic, argillaceous, microcrystalline to crystalline, firm to moderately hard.	Nil Gas

Depth	%	Lithology	Gas
550 (2.7)	10 60 30	SANDSTONE, dominantly reddish orange, minor orangish grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orange to red argillaceous matrix, commonly Fe staining, commonly fossiliferous and shell fragments, loose, unconsolidated, friable to occasionally moderately hard aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, orangish brown, reddish brown, argillaceous, slightly arenaceous in part, calcareous, grading to CLAYSTONE in part, dominantly Fe staining, soft to predominantly firm, dispersive in part, sub-blocky to sub-fissile in part, amorphous in part. LIMESTONE, whitish orange, off white, orangish brown, lutitic, microcrystalline to crystalline, firm to dominantly moderately hard, hard in part.	Nil Gas
555 (2.7)	10 70 10 10	SANDSTONE, dominantly reddish orange, minor orangish grey, trace clear to translucent, fine to medium, moderately poor sorted, sub-angular to sub-rounded, minor angular grains, strong calcareous cement, orange to red argillaceous matrix, commonly Fe staining, commonly fossiliferous and shell fragments, loose, unconsolidated, friable to occasionally moderately hard aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, reddish orange, argillaceous, calcareous, slightly arenaceous in part, abundant Fe staining, soft to occasionally firm, dispersive, sub-blocky to sub-fissile, amorphous in part. MARL, greyish green, grey, argillaceous, fossiliferous fragments, soft to occasionally firm, blocky to sub-blocky. LIMESTONE, orangish brown, reddish brown, orangish white, lutitic, argillaceous, microcrystalline to crystalline i/o, Fe staining, moderately hard to hard.	Nil Gas
560 (1.9)	Tr 60 20 20	SANDSTONE, a. a. SILTSTONE, a. a. MARL, a, a, LIMESTONE, a. a.	Nil Gas
565 (1.5)	40 40 20	SILTSTONE, greyish orange, whitish orange, argillaceous, calcareous, grading to CLAYSTONE, soft to occasionally firm, dispersive in part, sub-blocky to blocky, amorphous. MARL, a. a. LIMESTONE, a. a.	Nil Gas
570 (0.8)	90 10	MARL, dark grey to brownish grey, very argillaceous, calcareous, minor glauconite grains, minor carbonaceous specks, soft to dispersive, sub-blocky to amorphous. LIMESTONE, moderately reddish brown, lutitic, argillaceous, microcrystalline, commonly Fe staining, moderately hard to occasionally hard.	Nil Gas
575 (0.8)	100 Tr	MARL, a. a. LIMESTONE, a. a.	Nil Gas
580 (0.7)	80 20	MARL, dark grey to brownish grey, argillaceous, minor carbonaceous specks, very fine glauconite, occasionally pyrite nodules, dispersive to soft, sub-blocky to amorphous. LIMESTONE, a. a.	Nil Gas
585 (1.6)	90 10	MARL, brownish grey, occasionally dark grey, argillaceous, trace carbonaceous specks, minor pyrite nodules, soft to dispersive, sub-blocky to amorphous. LIMESTONE, moderately reddish brown, lutitic, argillaceous, microcrystalline, commonly Fe staining, moderately hard to occasionally hard.	Nil Gas
590 (1.3)	100	MARL, brownish grey, very argillaceous, calcareous, occasionally carbonaceous specks and inclusions, lithics, soft to dispersive, sub-blocky to amorphous.	Nil Gas
595 (1.1)	100	MARL, a. a.	Nil Gas
600 (0.9)	90 10	MARL, a. a. LIMESTONE, a. a.	Nil Gas
605 (1.3)	100	MARL, brownish grey very argillaceous, calcareous, minor carbonaceous specks, and material, minor pyrite nodules, fossiliferous and shell fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
610 (09)	100 Tr	MARL, brownish grey, dark grey in part, very argillaceous, moderately calcareous, minor pyrite nodules, carbonaceous specks and material, fossiliferous fragments, soft to dispersive, blocky to amorphous. LIMESTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
615 (1.0)	5 85 10	SANDSTONE, translucent, yellowish orange, reddish brown, coarse to very coarse, poor sorted, sub-rounded to round, angular very coarse fractured grains, weak siliceous cement, no visual matrix, strong Fe staining, loose, fair porosity, no fluorescence. MARL, a. a. LIMESTONE, off white to greyish orange, lutitic, argillaceous, microcrystalline to crystalline, friable to moderately hard, hard in part.	Nil Gas
620 (0.7)	100 Tr	MARL, a. a. LIMESTONE, a. a.	Nil Gas
625 (1.1)	100 Tr	MARL, brownish grey, brownish black, very argillaceous, calcareous, minor pale blue to brownish orange fossiliferous and shell fragments, trace pyrite nodules, occasionally very fine carbonaceous specks, soft to dispersive, sub-blocky y amorphous. LIMESTONE, whitish red to moderately reddish brown, minor off white to pale brown, lutitic, argillaceous fossiliferous in part, microcrystalline to crystalline, moderately hard to hard.	Nil Gas
630 (2.3)	90 10	MARL, brownish grey, brownish black, very argillaceous, calcareous, minor pale blue to brownish orange fossiliferous and shell fragments, trace pyrite nodules, occasionally very fine carbonaceous specks, soft to dispersive, sub-blocky y amorphous. LIMESTONE, whitish red to moderately reddish brown, minor off white to pale brown, lutitic, argillaceous fossiliferous in part, microcrystalline to crystalline, moderately hard to hard.	Nil Gas
635 (1.6)	100 Tr	MARL, generally brownish grey, minor dusky yellowish brown, very argillaceous, moderately calcareous, minor pyrite nodules, occasionally very fine calcareous laminations, soft to dispersive, sub-blocky to amorphous.	Nil Gas
640 (1.9)	100	MARL, brownish grey to occasionally brownish black, argillaceous to very argillaceous, calcareous, minor fossiliferous LIMESTONE fragments, occasionally pyrite nodules, soft to firm, sub-blocky to amorphous.	Nil Gas
645 (1.9)	100	MARL, a. a.	Nil Gas
650 (2.1)	100	MARL, predominantly brownish grey, very argillaceous, calcareous, minor very fine glauconite grains, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous.	Nil Gas
655 (1.1)	100	MARL, pale brownish grey to predominantly brownish green, very argillaceous, calcareous, minor nodules and disseminated pyrite, occasionally carbonaceous specks and calcareous fragments, soft to dispersive, sub-blocky y amorphous.	Nil Gas
660 (1.1)	100	MARL, a. a.	Nil Gas
665 (0.9)	100	MARL, brownish grey to minor brownish black, very argillaceous, calcareous, minor to locally commonly glauconite grains, occasionally pyrite nodules, fossiliferous fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
670 (0.9)	100	MARL, off white to brownish grey, argillaceous, calcareous, commonly glauconite grains, minor pyrite nodules, soft to dispersive, sub-blocky to amorphous.	Nil Gas
675 (1.1)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
680 (1.4)	20 80	SANDSTONE, translucent yellow, clear to frosted in part, coarse to very coarse, moderately sorted, sub-rounded to round, occasionally sub-angular, weak siliceous cement, clean, unconsolidated, good inferred porosity, no fluorescence. MARL, a. a.	Nil Gas
685 (2.9)	30 40 30	SANDSTONE, a. a. SILTSTONE, off white to white, very argillaceous, grading to CLAYSTONE in part, calcareous, very soft to dispersive, predominantly sub-blocky to amorphous. MARL, a. a.	Nil Gas
690 (2.1)	20 60 20	SANDSTONE, a. a. SILTSTONE, a. a. MARL, brownish grey, very argillaceous, calcareous, minor very fine disseminated carbonaceous specks, occasionally nodules pyrite, soft to dispersive, sub-blocky to sub-fissile. MARL, a. a.	Nil Gas

Depth	%	Lithology	Gas
695 (2.6)	30 50 20	SANDSTONE, translucent to light grey, off white, fine to medium, commonly coarse grains, moderately sorted, sub-angular to sub-rounded, commonly strong calcareous cement, locally white argillaceous matrix, commonly dark brown and black lithics, occasionally glauconite, friable to locally moderately hard, poor visual porosity, no fluorescence. SILTSTONE, a. a. MARL, a. a.	Nil Gas
700 (1.4)	30 40 30	SANDSTONE, a. a. SILTSTONE, a. a. MARL, bluish grey to grey, very argillaceous, calcareous, minor carbonaceous specks, trace pyrite nodules, soft to dispersive, sub-blocky to sub-fissile, amorphous in part.	Nil Gas
705 (0.7)	60 30 10	SANDSTONE, translucent to pale brown, fine to very coarse grains, dominantly coarse, sub-angular to round, poor sorted, moderately to locally strong calcareous cement, trace brown argillaceous matrix, minor Fe staining, commonly lithics, trace glauconite, rare friable to hard aggregates, dominantly loose grains, poor visual porosity and fair to good inferred porosity, no fluorescence. SILTSTONE, a. a. MARL, a. a.	Nil Gas
710 (0.6)	60 30 10	SANDSTONE, a. a. SILTSTONE, light to medium brown, dark brown in part, argillaceous, calcareous, trace carbonaceous specks, green lithics, soft to dispersive, sub-blocky to amorphous. MARL, a. a.	Nil Gas
715 (0.6)	60 30 10	SANDSTONE, a. a. SILTSTONE, a. a. MARL, a. a.	Nil Gas
720 (0.8)	60 20 20	SANDSTONE, a. a. SILTSTONE, a. a. MARL, medium grey, bluish grey, dark brown in part, argillaceous, calcareous, occasionally fossiliferous material, soft to firm, dispersive in part, sub-blocky to sub-fissile.	Nil Gas
725 (0.7)	60 40	SANDSTONE, a, a. SILTSTONE, medium to dark brown, greyish brown in part, locally strong calcareous, occasionally carbonaceous specks, trace fossiliferous material, soft to dispersive, occasionally firm, sub-blocky to blocky.	Nil Gas
730 (0.7)	70 30	SANDSTONE, translucent to pale brown, clear to frosted, fine to very coarse, predominantly coarse to very coarse, poor sorted, dominantly sub-rounded to sub-angular, commonly coarse to very coarse round grains, minor angular fractured very coarse grains, weak to locally moderately siliceous and calcareous cement, brown argillaceous matrix, commonly pyrite nodules, trace Fe staining, dominantly loose, unconsolidated, poor to locally fair porosity, no fluorescence. SILTSTONE, medium to dark brown, argillaceous, arenaceous in part, locally strong calcareous, trace micromicaceous, predominantly blocky, sub-blocky to sub-fissile in part.	Nil Gas
735 (0.8)	90 10	SANDSTONE, translucent to clear, opaque pale brown, frosted, minor milky, fine to very coarse, dominantly coarse to very coarse, moderately well sorted, sub-rounded to sub-angular, commonly round very coarse grains, weak siliceous cement, trace to rare brown argillaceous matrix, locally commonly pyrite nodules, loose, minor unconsolidated, fair porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
740 (0.6)	90 10	SANDSTONE, translucent to clear, opaque, occasionally pale brown, frosted, fine to very coarse, dominantly coarse to very coarse, moderately well sorted, sub-angular to sub-rounded, occasionally round grains, weak to moderately calcareous cement, trace dark brown argillaceous matrix, occasionally mica flakes, minor Fe staining, dominantly loose to unconsolidated, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
745 (0.7)	80 20	SANDSTONE, a. a. SILTSTONE, medium to dark brown, greyish brown in part, argillaceous, trace arenaceous, occasionally pyrite nodules, trace black lithics specks, soft to dispersive, blocky, amorphous in part.	Nil Gas
750 (0.8)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
755 (0.6)	90 10	SANDSTONE, translucent to clear, opaque, rare pale brown, milky, fine to very coarse, dominantly coarse, poor sorted, sub-angular to sub-rounded, weak calcareous cement, trace to minor pale to medium brown argillaceous matrix, locally commonly pyrite nodules, occasionally Fe staining, rare mica, dominantly loose, unconsolidated, occasionally friable aggregates, poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
760 (0.6)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
765 (0.8)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
770 (0.6)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium brown, occasionally dark brown, dominantly argillaceous, minor arenaceous, occasionally micromicaceous, carbonaceous specks, soft to dispersive, occasionally firm, sub-blocky, amorphous in part.	Nil Gas
775 (1.7)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
780 (1.8)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
785 (0.6)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
790 (0.5)	90 10	SANDSTONE, a. a. SILTSTONE, medium to dark brown, dominantly argillaceous, slightly arenaceous in part, commonly micromicaceous, occasionally carbonaceous specks, dominantly soft, rare locally firm, sub-blocky to blocky, amorphous in part.	Nil Gas
795 (0.5)	80 0	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
800 (0.7)	70 30	SANDSTONE, translucent to clear, off white, opaque, very fine to coarse, poor sorted, sub-angular to sub-rounded, trace weak siliceous cement, commonly pale brown argillaceous matrix, occasionally pyrite nodules, trace green and black lithics, dominantly loose and clean, occasionally friable aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
805 (0.8)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
810 (1.2)	100 Tr	SANDSTONE, translucent to clear, opaque, frosted, fine to coarse, dominantly medium, moderately well sorted, sub-angular to sub-rounded, trace weak calcareous cement and moderately siliceous cement, trace pale brown argillaceous matrix, predominantly loose and clean, fair to good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
815 (2.0)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
820 (0.7)	100 Tr	SANDSTONE, a. a. – trace angular fracture quartz grains, no fluorescence. SILTSTONE, a. a.	Nil Gas
825 (0.6)	100 Tr	SANDSTONE, a. a. – trace angular fracture quartz grains, no fluorescence. SILTSTONE, a. a.	Nil Gas
830 (0.7)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium brown, dark brown in part, argillaceous, commonly locally arenaceous, occasionally black land pale green lithics, soft to dispersive, trace locally firm, sub-blocky to amorphous.	Nil Gas
835 (0.6)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
840 (0.7)	100 Tr	SANDSTONE, a. a. – occasionally orange and brown lithics, trace angular fracture quartz grains, no fluorescence. SILTSTONE, a. a.	Nil Gas
845 (1.2)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
850 (0.8)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
855 (1.2)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
860 (0.8)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium brown, occasionally dark brown, argillaceous, arenaceous in part, commonly light green lithics, occasionally trace dark brown to black lithics, soft, sub-fissile to blocky. SILTSTONE, a. a.	Nil Gas
865 (0.8)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
870 (0.6)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
875 (0.6)	70 30	SANDSTONE, translucent to clear, opaque, frosted, pale yellow, fine to coarse, dominantly medium, sub-angular to sub-rounded, minor calcareous cement, trace weak siliceous cement, commonly light brown argillaceous matrix, commonly disseminated pyrite, commonly black and green lithics, trace fossiliferous material, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
880 (1.2)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
885 (0.7)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
890 (0.8)	100 Tr	SANDSTONE, translucent to clear, frosted, occasionally opaque, very fine to coarse, dominantly medium, angular to sub-rounded, trace weak siliceous cement, trace to locally calcareous cement, no visual matrix, occasionally angular fracture quartz grains, generally loose and clean, fair porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
895 (6.)	80 20	SANDSTONE, a. a. SILTSTONE, medium brown, occasionally dark brown, argillaceous, calcareous, commonly carbonaceous specks, trace disseminated pyrite, soft to dispersive, trace firm to moderately hard, sub-blocky to blocky, amorphous in part.	Nil Gas
900 (0.5)	80 20	SANDSTONE, translucent to clear, opaque, very fine to medium, rare coarse grains, angular to sub-rounded, commonly moderately to very strong calcareous cement, trace siliceous cement, trace pale brown to off white argillaceous matrix, commonly disseminated pyrite, trace mica flakes, trace LIMESTONE fragments, generally loose, rare friable to moderately hard aggregates, poor visual and poor to fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
905 (0.8)	90 10	SANDSTONE, translucent to clear, opaque, frosted, fine to coarse, dominantly medium to coarse, angular to sub-rounded, weak to locally strong calcareous cement, rare locally medium brown to off white argillaceous matrix, commonly black and light to dark green lithics, occasionally very coarse angular fracture quartz grains, dominantly loose and clean, friable aggregates, poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
910 (0.9)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium brown, dark brown in part, argillaceous, dominantly locally arenaceous, calcareous, odd green lithics, carbonaceous specks, soft to firm in part, sub-blocky to blocky.	Nil Gas
915 (1.2)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
920 (1.5)	80 20	SANDSTONE, a. a. SILTSTONE, a. a. – very calcareous.	Nil Gas
925 (0.9)	100 Tr	SANDSTONE, translucent to clear, frosted, fine to coarse, dominantly medium, sub-angular to sub-rounded, moderately clean cement, trace pale brown to off white argillaceous matrix, dominantly soft, dispersive in part, blocky, amorphous.	Nil Gas
930 (1.0)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
935 (1.4)	60 40	SANDSTONE, a. a. SILTSTONE, light to medium, brown, very pale brown in part, argillaceous, commonly locally arenaceous, calcareous in part, commonly disseminated pyrite, commonly black and green lithics, trace micromicaceous, dominantly soft, dispersive in part, blocky, amorphous.	Nil Gas

Depth	%	Lithology	Gas
940 (1.2)	60 40	SANDSTONE, translucent to clear, frosted, rare milky to opaque, fine to medium, rare coarse, moderately calcareous cement, trace pale brown to off white argillaceous matrix, dominantly loose and clean, rare mica flakes, disseminated pur, poor porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
945 (1.3)	70 30	SANDSTONE, a. a. SILTSTONE, a. a. – very calcareous.	Nil Gas
950 (1.3)	30 70	SANDSTONE, a. a. SILTSTONE, light to medium brown, dark brown in part, argillaceous, moderately calcareous, commonly cream and dark brown lithics, black lithics in part, soft to dispersive, sub-blocky to amorphous.	Nil Gas
955 (1.1)	30 70	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
960 (1.3)	20 80	SANDSTONE, clear to translucent, occasionally frosted, very fine to very coarse, generally fine to coarse, poor sorted, sub-angular to round, occasionally sub-angular, weak siliceous cement, occasionally mica flakes, loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
965 (1.3)	20 80	SANDSTONE, a. a. SILTSTONE, greyish brown to minor dusky brown, argillaceous, moderately calcareous, minor pyrite nodules, occasionally to locally commonly carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
970 (1..5)	30 70	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
975 (1.4)	20 80	SANDSTONE, clear to translucent, predominantly fine to coarse, minor very coarse frosted and round grains, poor sorted, sub-rounded to round, occasionally sub-angular, weak siliceous cement, no visual matrix, loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
980 (2.3)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
985 (3.0)	10 90	SANDSTONE, a. a. SILTSTONE, predominantly greyish brown, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally pyrite nodules, trace glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
990 (1.2)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
995 (1.3)	10 90	SANDSTONE, clear to translucent, fine to coarse, rare very coarse frosted grains, poor sorted, sub-rounded to round, weak siliceous cement, no visual matrix, loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1000 (1.3)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1005 (0.7)	10 90	SANDSTONE, a. a. SILTSTONE, brownish grey, argillaceous, grading to CLAYSTONE in part, commonly calcareous inclusions, minor pyrite nodules, occasionally glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1010 (0.8)	10 90	SANDSTONE, clear to translucent, fine to medium, rare coarse, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, no visual matrix, loose and unconsolidated, fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1015 (1.1)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1020 (1.6)	10 90	SANDSTONE, a. a. SILTSTONE, brownish grey to occasionally brownish black, argillaceous, commonly grading to CLAYSTONE, minor pyrite nodules, occasionally glauconite grains, soft to dispersive, occasionally firm, sub-blocky to amorphous.	Nil Gas
1025 (1.8)	Tr 100	SANDSTONE, clear to translucent, minor translucent yellowish brown, fine to very coarse, predominantly medium to coarse, poor sorted, sub-rounded to round, weak siliceous cement, no visual matrix, trace pyrite nodules, loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1030 (1.4)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1035 (1.2)	30 70	SANDSTONE, a. a. SILTSTONE, dark grey to greyish black, minor brownish grey, argillaceous, grading to very fine arenaceous, commonly glauconite, firm to moderately hard, minor soft to dispersive, sub-blocky to sub-fissile, minor dispersive.	Nil Gas
1040 (3.5)	30 70	SANDSTONE, frosted to translucent, brownish yellow, coarse to very coarse, minor medium, moderately fair sorted, sub-angular to sub-rounded, weak siliceous cement, loose and unconsolidated, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1045 (1.6)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1050 (0.9)	80 20	SANDSTONE, a. a. SILTSTONE, 1) dark greenish grey to greyish black, argillaceous, grading to arenaceous in part, glauconite, firm to moderately hard, sub-blocky to sub-fissile. 2) brownish grey, argillaceous, grading to CLAYSTONE, calcareous, soft to dispersive, sub-blocky to dispersive.	Nil Gas
1055 (1.0)	80 20	SANDSTONE, yellowish brown to dusky yellowish brown, predominantly translucent yellowish brown, minor clear to translucent, fine to very coarse, predominantly medium to coarse, poor sorted, sub-angular to sub-rounded, weak siliceous cement, minor yellowish brown argillaceous matrix, friable to loose, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1060 (1.1)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1065 ()1.2	70 30	SANDSTONE, a. a. SILTSTONE, dark greyish green, brownish grey, argillaceous, occasionally grading to CLAYSTONE, minor very fine arenaceous, calcareous, glauconite in part, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1070 (1.2)	80 20	SANDSTONE, yellowish brown, predominantly translucent yellowish brown, occasionally translucent to frosted, very to coarse, predominantly medium, moderately sorted, sub-rounded to occasionally round, weak siliceous cement, minor yellowish brown argillaceous matrix, firm to predominantly loose, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1075 (1.4)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1080 (1.4)	80 20	SANDSTONE, a. a. SILTSTONE, dark yellowish brown, minor dark greenish grey, argillaceous, grading to CLAYSTONE, commonly Fe staining, slightly calcareous, minor glauconite, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1085 (1.1)	60 40	SANDSTONE, translucent yellowish brown, minor clear to frosted, predominantly medium to coarse, fine and very coarse, poor sorted, sub-rounded to round, weak siliceous cement, minor yellowish brown argillaceous matrix, mica flakes, predominantly loose, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1090 ()1.1	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1095 (1.2)	70 30	SANDSTONE, a. a. SILTSTONE, dark yellowish brown, brownish grey in part, argillaceous, grading to CLAYSTONE in part, slightly calcareous, commonly Fe staining, minor glauconite, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1100 (1.2)	70 30	SANDSTONE, moderately to dark yellowish brown, translucent yellowish brown, minor clear to translucent, fine to coarse, predominantly medium, moderately sorted, sub-angular to round, generally sub-rounded, weak siliceous and calcareous cement, trace off white to yellowish brown argillaceous matrix, occasionally mica flakes, trace pyrite nodules, generally loose and clean, fair visual and good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1105 (1.3)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1110 (1.4)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1115 (1.9)	80 20	SANDSTONE, a. a. SILTSTONE, dark yellowish brown, brownish grey in part, occasionally dark greenish grey, argillaceous, grading to CLAYSTONE in part, calcareous, minor disseminated pyrite, occasionally glauconite, soft to dispersive, occasionally firm, sub-blocky to amorphous.	Nil Gas
1120 (1.9)	90 10	SANDSTONE, moderately to dark yellowish brown, translucent yellowish brown, minor translucent to frosted, predominantly fine to medium, minor coarse grains, rare very coarse, moderately sorted, sub-angular to sub-rounded, occasionally round, weak calcareous and siliceous cement, trace yellowish brown argillaceous matrix, occasionally mica flakes, minor pyrite nodules, predominantly clean and unconsolidated, good vid and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1125 (1.6)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1130 (1.6)	90 10	SANDSTONE, moderately to dark yellowish brown, translucent yellowish brown, translucent to minor clear, predominantly medium to coarse, minor fine and very coarse grains, moderately sorted, sub-angular to sub-rounded, trace round grains, weak calcareous and siliceous cement, trace brown and rare white argillaceous matrix, trace pyrite nodules, rare fossiliferous fragments, minor white lithics, loose, unconsolidated, good inferred and visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1135 (1.9)	90 10	SANDSTONE, a. a. SILTSTONE, dark greyish brown to dark yellowish brown, argillaceous, minor disseminated pyrite, soft to dispersive, blocky to amorphous.	Nil Gas
1140 (1.8)	90 10	SANDSTONE, medium to dark yellowish brown, translucent yellowish brown, translucent to clear, predominantly medium, minor fine and coarse, rare very coarse grains, well sorted, sub-angular to sub-rounded, minor round grains, weak to locally moderately calcareous cement, minor to trace brown argillaceous matrix, rare mica flakes and pyrite nodules, loose, unconsolidated, good inferred and visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1145 (2.0)	70 30	SANDSTONE, medium to dark yellowish brown, translucent yellowish brown, clear to translucent, predominantly medium, minor fine and coarse, well sorted, sub-rounded to sub-angular, minor round, weak to locally moderately calcareous cement, trace brown argillaceous matrix, rare green lithics, loose, unconsolidated, good porosity, no fluorescence. SILTSTONE, a .a	Nil Gas
1150 (2.7)	70 30	SANDSTONE, a. a. SILTSTONE, dark greyish brown, medium to minor light grey.	Nil Gas
1155 (2.1)	60 40	SANDSTONE, a. a. SILTSTONE, 1) brownish grey to brownish black, argillaceous, grading to CLAYSTONE in part, calcareous, occasionally carbonaceous specks, soft to dispersive, sub-blocky to amorphous. 2) Off white, argillaceous, grading to CLAYSTONE in part, non-calcareous, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1160 (1.4)	60 40	SANDSTONE, translucent, very pale brown, predominantly medium, occasionally coarse grains, moderately sorted, sub-angular to sub-rounded, trace weak calcareous cement, trace brown argillaceous matrix, occasionally disseminated pyrite, rare green lithics, loose and unconsolidated, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1165 (1.8)	50 50	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1170 (1.6)	30 70	SANDSTONE, a. a. SILTSTONE, medium to dark brown, brown to black in part, argillaceous, grading to CLAYSTONE in part, locally calcareous, occasionally carbonaceous specks and flakes in part, trace green lithics, soft to firm, dispersive in part, sub-blocky to amorphous.	Nil Gas
1175 (2.0)	100	SILTSTONE, a. a.	Nil Gas
1180 (1.9)	100	SILTSTONE, medium to dark brown, brown to black, argillaceous, grading to CLAYSTONE in part, commonly green lithics, trace disseminated pyrite, soft to dispersive, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1185 (2.3)	100	SILTSTONE, a. a.	Nil Gas
1190 (2.0)	100	SILTSTONE, a. a.	Nil Gas
1195 (1.5)	100	SILTSTONE, medium to dark brown, black, occasionally light brown, argillaceous, occasionally locally arenaceous, trace green and cream lithics, soft to firm, dispersive in part, sub-blocky to blocky, amorphous in part.	Nil Gas
1200 (1.4)	100	SILTSTONE, a. a.	Nil Gas
1205 (1.4)	10 90	SANDSTONE, translucent to pale brown, frosted, milky in part, very to very coarse, dominantly coarse, angular to sub-rounded, trace weak calcareous cement, trace pale brown to white argillaceous matrix, commonly argillaceous matrix, commonly angular fractured quartz grains, generally loose and clean, fair to good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1210 (0.8)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1215 (1.3)	Tr 100	SANDSTONE, a. a. SILTSTONE, medium to dark grey, black, greyish brown in part, argillaceous, grading to CLAYSTONE, commonly disseminated pyrite, trace black lithics, soft to firm, sub-blocky to blocky, amorphous in part.	Nil Gas
1220 (1.2)	70 30	SANDSTONE, translucent to clear, frosted, trace pale yellow, fine to coarse, occasionally very coarse, predominantly medium, moderately sorted, sub-angular to sub-rounded, angular in part, trace weak calcareous cement, no visual porosity, generally loose and clean, good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1225 (0.8)	100 Tr	SANDSTONE, translucent to clear, frosted, trace pale yellow, fine to coarse, occasionally very coarse, predominantly medium, moderately sorted, sub-angular to sub-rounded, angular in part, trace weak calcareous cement, no visual porosity, generally loose and clean, good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1230 (1.4)	100 Tr	SANDSTONE, translucent to clear, frosted, trace pale yellow, fine to coarse, occasionally very coarse, predominantly medium, moderately sorted, sub-angular to sub-rounded, angular in part, trace weak calcareous cement, no visual porosity, generally loose and clean, good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1235 (1.7)	100 Tr	SANDSTONE, translucent to clear, occasionally frosted, rare milky, very to very coarse, dominantly medium to coarse, moderately sorted, sub-angular to sub-rounded, trace locally calcareous cement, trace weak siliceous cement, trace matrix, trace fossiliferous material, pry nodules, trace mica, generally loose and clean, good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1240 (2.3)	90 10	SANDSTONE, a. a. SILTSTONE, medium brownish grey, occasionally dark brown, pale grey, argillaceous, commonly locally calcareous, commonly medium brown, green lithics, trace fossiliferous fragments, soft to firm, commonly dispersive, sub-blocky to blocky, amorphous in part.	Nil Gas
1245 (1.9)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1250 (1.4)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1255 (1.3)	80 20	SANDSTONE, translucent to clear, very pale grey to off white, very fine to medium, occasionally coarse grains, moderately well sorted, sub-angular to sub-rounded, locally weak calcareous cement, trace siliceous cement, commonly locally off white to white argillaceous matrix, occasionally pyrite nodules, brown and black lithics, friable aggregates, dominantly loose and clean, or visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1260 (1.2)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1265 (1.1)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium grey, rare dark greyish brown, dominantly argillaceous, commonly locally arenaceous, trace carbonaceous specks, trace brown lithics, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1270 (1.3)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1275 (1.3)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium grey, occasionally dark grey, argillaceous, arenaceous in part, trace carbonaceous specks, trace disseminated pyrite, soft to firm, rare moderately hard, sub-blocky to blocky.	Nil Gas
1280 (1.5)	100 Tr	SANDSTONE, a. a. – opaque, pale yellow in part, no fluorescence. SILTSTONE, a. a.	Nil Gas
1285 (1.6)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
1290 (1.5)	90 10	SANDSTONE, translucent to clear, milky to opaque, trace pale yellow, dominantly fine to medium, occasionally coarse, moderately sorted, sub-angular to sub-rounded, trace weak calcareous and siliceous cement, minor locally white argillaceous matrix, rare orange lithics, trace mica flakes, predominantly loose and clean, locally friable aggregates, poor to fair visual and fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1295 (2.0)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, occasionally dark grey, rare pale green to pale brown, dominantly argillaceous, commonly arenaceous in part, grading to very fine SANDSTONE in part, trace carbonaceous specks, soft to dispersive, locally firm, sub-blocky to amorphous, locally blocky.	Nil Gas
1300 (4.1)	90 10	SANDSTONE, a. a. – translucent to clear, no fluorescence. SILTSTONE, a. a.	Nil Gas
1305 (1.1)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, occasionally dark grey, argillaceous, rare locally arenaceous, occasionally carbonaceous specks and flakes, soft to dispersive, blocky to amorphous.	Nil Gas
1310 (1.2)	70 30	SANDSTONE, translucent to clear, milky to opaque, occasionally pale yellow, trace pale green, fine to very coarse, dominantly fine to medium, poor sorted, angular to sub-rounded, well calcareous cement, white to off white argillaceous matrix, commonly lithics, trace carbonaceous specks, friable aggregates, commonly loose grains, poor visual and fair inferred, no fluorescence. SILTSTONE, a. a.	Nil Gas
1315 (0.8)	90 10	SANDSTONE, translucent to clear, milky to opaque pale yellow, pale green, fine to very coarse, dominantly medium to coarse, poor sorted, sub-angular to sub-rounded, trace calcareous cement, trace white argillaceous matrix, occasionally orange lithics, trace carbonaceous specks, generally loose and clean, fair to good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1320 (1.0)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1325 (1.1)	80 20	SANDSTONE, translucent to clear, milky to opaque, white to off white, very fine to coarse, dominantly fine to medium, angular to sub-rounded, locally weak calcareous cement, commonly white argillaceous matrix, commonly pyrite nodules, occasionally carbonaceous fragments, orange lithics, friable aggregates, loose coarse grains, poor visual and good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1330 (1.5)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, occasionally dark grey, argillaceous, tr arenaceous in part, commonly micromicaceous, trace disseminated pyrite, soft to firm, sub-blocky to blocky.	Nil Gas
1335 (1.1)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1340 (1.3)	70 30	SANDSTONE, translucent to translucent yellowish brown, minor clear, occasionally frosted, medium to very coarse, minor fine, poor sorted, predominantly sub-angular to sub-rounded, occasionally round grains, predominantly loose and clean, occasionally friable to moderately hard aggregates, good inferred and fair visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1345 (1.2)	60 40	SANDSTONE, a. a. SILTSTONE, brownish grey to dark grey, minor dark greyish green, argillaceous, grading to CLAYSTONE in part, slightly calcareous, generally soft to dispersive, occasionally firm to moderately hard, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1350 (1.3)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1355 (1.4)	80 20	SANDSTONE, clear to translucent, minor translucent yellowish brown, fine to very coarse, very poor sorted, sub-angular to sub-rounded, weak calcareous cement, trace matrix, occasionally pyrite nodules, loose and unconsolidated, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1360 (0.9)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1365 (2.0)	80 20	SANDSTONE, predominantly clear to translucent, occasionally translucent yellowish brown, predominantly fine to medium, minor coarse to very coarse, moderately sorted, sub-angular to sub-rounded, weak calcareous cement, trace white argillaceous matrix, biotite/mica flakes, occasionally pyrite nodules, predominantly loose, occasionally friable aggregates, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1370 (2.9)	70 30	SANDSTONE, a. a. SILTSTONE, brownish grey, minor light brownish grey, occasionally dark greenish grey, argillaceous grading to CLAYSTONE in part, slightly calcareous, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1375 (2.2)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1380 (3.3)	60 40	SANDSTONE, clear to translucent, occasionally translucent yellowish brown, trace frosted, fine to medium, occasionally coarse, rare very coarse grains, moderately sorted, sub-angular to sub-rounded, weak calcareous cement, trace strong pyrite cement, occasionally white argillaceous matrix, commonly pyrite nodules, minor mica flakes, pale green lithics, predominantly loose and clean, occasionally friable aggregates, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1389 ()	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
		Peterborough-1 TD of1389.0nRT @ 2300 hours 24th August, 2005 due to deviation concerns. See WCR for details	

		PETERBOROUGH-1ST1	
		Peterborough-1ST1 kicked off on the 26th August, 2005	
945 (1.3)	100	CEMENT: cement plug due to deviations.	Nil Gas
950 (3.1)	100	CEMENT: a. a.	Nil Gas
955 (7.7)	100	CEMENT, a. a.	Nil Gas
960 (10.8)	10 90	SILTSTONE, predominantly greyish brown, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally nodular pyrite, trace glauconite grains, soft to dispersive, sub-blocky to amorphous. CEMENT, a. a.	Nil Gas
965 (8.8)	10 90	SILTSTONE, a. a. CEMENT, a. a.	Nil Gas
970 (3.7)	10 90	SILTSTONE, predominantly greyish brown, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally nodular pyrite, trace glauconite grains, soft to dispersive, sub-blocky to amorphous. CEMENT, a. a.	Nil Gas
975 (2.7)	20 80	SILTSTONE, a. a. CEMENT, a. a.	Nil Gas
980 (10.4)	60 40	SILTSTONE, predominantly greyish brown, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally nodular pyrite, trace glauconite grains, soft to dispersive, sub-blocky to amorphous. CEMENT, a. a.	Nil Gas

Depth	%	Lithology	Gas
985 (25.7)	90 10	SILTSTONE, a. a. CEMENT, a. a.	Nil Gas
990 (24.9)	10 90	SANDSTONE, clear to translucent, fine to coarse, occasionally very coarse frosted grains, poor sorted, sub-rounded to round, weak siliceous cement, loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, predominantly greyish brown, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally nodular pyrite, trace glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
995 (10.3)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1000 (7.2)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1005 (10.3)	20 80	SANDSTONE, clear to minor translucent, very fine to fine, occasionally medium, rare coarse grains, moderately sorted, predominantly sub-angular, weak calcareous cement, occasionally off white argillaceous matrix, generally loose and clean, occasionally friable aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE, predominantly brownish gym minor off white to pale brown, argillaceous, grading to CLAYSTONE in part, calcareous, occasionally fossiliferous fragments, occasionally pyrite nodules and glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1010 (5.2)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1015 (3.8)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1020 (4.6)	30 70	SANDSTONE, a. a. SILTSTONE, brownish grey to olive black, minor grading to CLAYSTONE in part, commonly calcareous inclusions, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1025 (4.6)	20 80	SANDSTONE, predominantly clear, predominantly fine, occasionally fine, rare medium to coarse, moderately well sorted, sub-angular to minor sub-rounded, weak calcareous cement, clean and unconsolidated, poor inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1030 (4.5)	20 80	SANDSTONE, a. a. SILTSTONE, brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous, minor pyrite nodules, trace glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1035 (6.9)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1040 (5.6)	20 80	SANDSTONE, clear to occasionally translucent, predominantly very fine, occasionally fine to medium, moderately well sorted, sub-angular to minor sub-rounded, weak calcareous cement, occasionally pyrite nodules, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1045 (4.6)	20 80	SANDSTONE, a. a. SILTSTONE, brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous fragments, commonly glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1050 (3.0)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1055 (2.5)	40 60	SANDSTONE, translucent to translucent yellowish brown, minor frosted, very fine to very coarse, predominantly medium to coarse, poor sorted, angular to sub-rounded, generally sub-angular, weak siliceous cement, trace argillaceous matrix, commonly Fe staining, clean and unconsolidated, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1060 (2.1)	60 40	SANDSTONE, yellowish brown to translucent yellowish brown, clear to translucent, occasionally frosted, medium to very coarse, poor sorted, sub-angular to and, sub-rounded in part, weak siliceous cement, minor yellowish brown argillaceous matrix, unconsolidated and loose, fair to good inferred porosity, no fluorescence. SILTSTONE, dark greenish grey to olive black, minor moderately brown, argillaceous, grading to CLAYSTONE in part, glauconite in part, minor Fe staining, soft to dispersive, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1065 (1.3)	80 20	SANDSTONE, yellowish brown to translucent yellowish brown, minor clear to translucent, medium to very coarse, poor sorted, sub-angular to and, sub-rounded in part, weak siliceous cement, minor yellowish brown argillaceous matrix, unconsolidated and loose, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1070 (0.9)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1075 (0.7)	70 30	SANDSTONE, a. a. SILTSTONE, olive black to greenish black, yellowish brown to moderately brown, calcareous in part, occasionally pyrite nodules, soft to firm, occasionally dispersive, sub-blocky to sub-fissile.	Nil Gas
1080 (0.6)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1085 (0.9)	60 40	SANDSTONE, yellowish brown to dark yellowish brown, translucent yellowish brown, minor clear to frosted, predominantly medium to coarse, minor fine and very coarse grains, poor sorted, sub-rounded to round, weak siliceous cement, minor yellowish brown argillaceous matrix, occasionally mica flakes, predominantly loose, fair visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1090 (1.0)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1095 (0.9)	70 30	SANDSTONE, a. a. SILTSTONE, dark yellowish brown, brownish grey in part, minor dark greenish grey, argillaceous, grading to CLAYSTONE in part, slightly calcareous, commonly Fe staining, minor glauconite, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1100 (0.8)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1105 (1.0)	90 10	SANDSTONE, moderately to dark yellowish brown, translucent yellowish brown, minor translucent to clear, fine to coarse, predominantly medium, moderately sorted, sub-angular to round, generally sub-rounded, weak siliceous and calcareous cement, trace of white to yellowish brown argillaceous matrix, occasionally mica flakes, trace pyrite nodules, generally loose and clean, good visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1110 (0.7)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1115 (0.8)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1120 (0.9)	90 10	SANDSTONE, a. a. SILTSTONE, dark yellowish brown, dark greenish grey to greenish black, argillaceous, grading to CLAYSTONE, in part, slightly calcareous, occasionally glauconite, commonly Fe staining, soft to dispersive, occasionally moderately hard, sub-blocky to amorphous.	Nil Gas
1125 (0.9)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1130 (1.0)	90 10	SANDSTONE, translucent yellowish brown, occasionally opaque yellow, medium to coarse, occasionally fine, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, trace weak calcareous cement, rare off white to pale brown argillaceous matrix, occasionally mica flakes, trace to moderately pyrite nodules, generally loose and clean, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1135 (1.2)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1140 (1.0)	80 20	SANDSTONE, light to medium yellowish brown, translucent, fine to coarse, dominantly medium, sub-angular to sub-rounded, angular in part, weak siliceous cement, trace pale brown argillaceous matrix, occasionally mica flakes, trace pyrite nodules, glauconite, loose and clean, fair to good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1145 (1.0)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium grey, dark brownish grey, argillaceous, slightly calcareous, trace carbonaceous specks, soft to dispersive, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1150 (1.3)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1155 (1.3)	80 20	SANDSTONE, translucent yellowish brown, fine to coarse, dominantly medium, angular to sub-rounded, weak siliceous cement, trace pale brown to off white argillaceous matrix, trace mica flakes, glauconite, generally loose and clean, fair to good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1160 (2.0)	100	SANDSTONE, translucent yellowish brown, abundant Fe staining, fine to coarse, predominantly medium grains, moderately to well sorted, sub-angular to predominantly sub-rounded, weak siliceous cement, trace argillaceous matrix, trace glauconite, trace pyrite nodules, loose and clean, fair inferred porosity, no fluorescence.	Nil Gas
1165 (1.2)	100	SANDSTONE, a. a.	Nil Gas
1170 (1.2)	100	SANDSTONE, a. a. – increase in pry nodules, rare pyrite cement, no glauconite, no fluorescence.	Nil Gas
1175 (1.7)	40 60	SANDSTONE, a. a. SILTSTONE, light to medium brownish grey, olive grey, argillaceous, slightly calcareous, trace pyrite, minor fossiliferous material, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1180 (3.9)	30 70	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1185 (6.2)	10 90	SANDSTONE, translucent to clear, off white, pale yellowish brown, very fine to medium, dominantly fine, moderately sorted, sub-angular to sub-rounded, trace angular, trace siliceous cement, commonly pyrite cement, trace medium brown argillaceous matrix, commonly pyrite nodules, occasionally fossiliferous fragments, generally loose and clean, occasionally very hard aggregates, nil to tight visual and fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1190 (8.9)	Tr 100	SANDSTONE, a. a. SILTSTONE, medium to dark grey, very pale grey, medium brown in part, argillaceous, locally calcareous, trace glauconite, pyrite, minor carbonaceous specks and flakes, soft to dispersive, firm in part, sub-blocky to amorphous.	Nil Gas
1195 (3.4)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1200 (3.2)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1205 (2.9)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1210 (2.0)	Tr 100	SANDSTONE, a. a. SILTSTONE, medium to dark brown, grey to brown, olive grey in part, argillaceous, slightly calcareous, trace carbonaceous specks, trace glauconite, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1215 (1.5)	60 40	SANDSTONE, translucent to clear, frosted, pale yellow, milky in part, fine to very coarse, sub-angular to sub-rounded, trace weak siliceous cement, trace locally pale brown argillaceous matrix, commonly green and black lithics, trace glauconite, occasionally angular fracture quartz grains, trace Fe staining, poor visual and good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1220 (0.8)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1225 (1.1)	90 10	SANDSTONE, translucent to clear, frosted to milky, opaque, fine to very coarse, sub-angular to sub-rounded, trace weak siliceous cement, no visual matrix, generally loose and clean, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1230 (0.9)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1235 (1.0)	100 Tr	SANDSTONE, translucent to clear, fine to coarse, dominantly coarse, trace very coarse grains, sub-angular to sub-rounded, trace siliceous cement, no visual matrix, generally loose and clean, good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1240 (1.1)	100 Tr	SANDSTONE, a. a. – commonly pry cement, mica flakes, abundant pyrite nodules, good porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1245 (1.3)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium grey, dark greyish brown in part, greyish green, argillaceous, trace glauconite, pyrite nodules, soft to firm in part, dispersive, sub-blocky to amorphous.	Nil Gas
1250 (1.2)	-	***No sample caught due to mud difficulties over shakers***	Nil Gas
1255 (1.0)	90 10	SANDSTONE, translucent to clear, opaque, rare pale yellow, fine to coarse, dominantly medium, sub-angular to sub-rounded, trace weak siliceous cement, rare light grey to pale brown argillaceous, matrix, commonly pyrite nodules, occasionally very coarse round quartz grains, generally loose and clean, rare friable aggregates, poor visual and fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1260 (0.9)	90 10	SANDSTONE, a. a. SILTSTONE, light to medium grey, argillaceous, trace arenaceous, commonly carbonaceous specks and fragments, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1265 (1.0)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1270 (0.9)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1275 (0.9)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1280 (1.0)	90 10	SANDSTONE, translucent to clear, pale yellow, fine to coarse, dominantly fine to medium, moderately sorted, sub-angular to sub-rounded, trace siliceous cement, rare locally white to pale grey argillaceous, matrix, occasionally green lithics, commonly mica flakes, trace pyrite nodules, carbonaceous material, rare friable aggregates, generally loose and clean, poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1285 (0.9)	100 Tr	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1290 (1.0)	100	SANDSTONE, clear to translucent, minor translucent yellowish brown, occasionally frosted, fine to coarse, occasionally very coarse, poor sorted, weak siliceous and trace strong pyrite cement, minor calcareous fragments, ped loose and clean, rare strong pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence.	Nil Gas
1295 (1.1)	90 10	SANDSTONE, a. a. SILTSTONE, olive black, argillaceous, grading to CLAYSTONE in part, slightly calcareous, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1300 (1.0)	100	SANDSTONE, clear to translucent, minor translucent yellowish brown, occasionally frosted, fine to coarse, occasionally very coarse, poor sorted, weak siliceous and trace strong pyrite cement, minor calcareous fragments, ped loose and clean, rare strong pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence.	Nil Gas
1305 (1.3)	90 10	SANDSTONE, clear to translucent, minor translucent yellowish brown, fine to very coarse, very poor sorted, weak siliceous cement, no visual matrix, minor pyrite nodules, occasionally mica flakes, predominantly loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1310 (1.5)	70 30	SANDSTONE, a. a. SILTSTONE, brownish grey to olive green, minor off white, argillaceous, commonly grading to CLAYSTONE, calcareous in part, occasionally glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1315 (1.3)	90 10	SANDSTONE, clear to translucent, minor translucent yellowish brown, fine to very coarse, very poor sorted, weak siliceous cement, no visual matrix, minor pyrite nodules, occasionally mica flakes, predominantly loose and clean, fair to good inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1320 (1.3)	80 20	SANDSTONE, clear to translucent, minor frosted, occasionally translucent yellowish brown, very fine to very coarse, generally medium to coarse, poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasionally strong pyrite cement, minor calcareous fragments, pyrite nodules, predominantly loose and clean, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1325 (1.1)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1330 (1.6)	80 20	SANDSTONE, a. a. SILTSTONE, medium dark green to olive green, medium brown, greenish grey, arenaceous to occasionally argillaceous, siliceous, moderately hard to hard, sub-blocky to sub-fissile.	Nil Gas
1335 (1.7)	90 10	SANDSTONE, clear to translucent, minor translucent yellowish brown, occasionally frosted, medium to coarse, minor fine and very coarse grains, poor sorted, weak siliceous cement, minor strong pry cement, occasionally calcareous fragments and chert fragments, predominantly loose and clean, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1340 (2.0)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1345 (2.2)	90 10	SANDSTONE, a. a. SILTSTONE, 1) medium dark grey to olive grey, medium brown, greenish grey, arenaceous, siliceous, grading to chert, moderately hard to hard, sub-blocky to sub-fissile. 2) Translucent grey to olive black, minor off white, argillaceous grading to CLAYSTONE, slightly calcareous, occasionally locally commonly carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1350 (2.0)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1355 (1.4)	70 30	SANDSTONE, clear to translucent, minor frosted, occasionally translucent yellowish brown, predominantly very fine to medium, minor coarse to very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasionally moderately strong pyrite cement, minor off white to white argillaceous matrix, minor biotite/mica flakes, occasionally to locally commonly inclusions, occasionally glauconite grains, commonly pyrite nodules, commonly loose, friable aggregates, fair inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1360 (1.8)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1365 (1.6)	70 30	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, minor brownish black, occasionally off white argillaceous grading to CLAYSTONE in part, calcareous in part, minor to locally commonly carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1370 (2.1)	70 30	SANDSTONE, clear to translucent, minor frosted, occasionally translucent yellowish brown, predominantly very fine to fine, minor medium to coarse, occasionally very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, minor brownish grey argillaceous matrix, minor to locally commonly mica flakes, locally commonly carbonaceous inclusions, trace glauconite, occasionally pyrite nodules, commonly loose, friable aggregates, poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1375 (2.2)	60 40	SANDSTONE, a. a. SILTSTONE, dark greenish grey to olive green, minor brownish grey, argillaceous, grading to CLAYSTONE, slightly calcareous, minor carbonaceous specks, occasionally glauconite grains, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1380 (2.2)	50 50	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1385 (4.1)	50 50	SANDSTONE, clear to translucent, minor frosted, occasionally translucent yellowish brown, generally very fine to fine, minor medium to very coarse, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, commonly pyrite nodules, clean and unconsolidated, poor to fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1390 (4.3)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1395 (3.0)	30 70	SANDSTONE, a. a. SILTSTONE, brownish grey, olive grey, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, pyrite nodules, occasionally carbonaceous specks, soft to dispersive, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1400 (2.9)	40 60	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1405 (2.0)	60 40	SANDSTONE, clear to translucent, minor frosted, trace translucent yellowish brown, fine to very coarse, very poor sorted, sub-angular to sub-rounded, weak siliceous cement, occasionally strong pyrite cement, commonly pyrite nodules, predominantly loose and clean, occasionally moderately hard to hard aggregates, fair inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1410 (2.1)	70 30	SANDSTONE, a. a. SILTSTONE, predominantly olive grey, minor brownish grey, occasionally off white to white, argillaceous, grading to CLAYSTONE in part, minor calcareous fragments, occasionally carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1415 (2.2)	40 60	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1420 (2.2)	30 70	SANDSTONE, clear to minor translucent, occasionally frosted, predominantly very fine to fine, minor medium to coarse, occasionally very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, minor pyrite nodules, generally clean and unconsolidated, fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1425 (2.3)	20 80	SANDSTONE, a. a. SILTSTONE, brown grey to olive grey, off white to light brownish grey in part, argillaceous, commonly grading to CLAYSTONE, commonly calcareous fragments, minor carbonaceous inclusions and occasionally laminations, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1430 (3.5)	30 70	SANDSTONE, clear to translucent, rare frosted, very fine to minor fine, occasionally medium to very coarse grains, moderately sorted, generally sub-angular, weak calcareous and siliceous cement, minor brownish grey argillaceous matrix, occasionally pyrite nodules, predominantly loose, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1435 (3.1)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1440 (2.7)	20 80	SANDSTONE, a. a. SILTSTONE, brownish grey to predominantly olive grey, minor off white to light brownish grey, argillaceous, grading to CLAYSTONE, commonly calcareous fragments, occasionally pyrite nodules and carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1445 (4.2)	10 90	SANDSTONE, clear to occasionally translucent, predominantly very fine, minor fine to medium, moderately well sorted, sub-angular to sub-rounded, weak siliceous cement, clean and unconsolidated, poor inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1450 (2.8)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1455 (4.4)	10 90	SANDSTONE, a. a. SILTSTONE, dark greenish grey to olive grey, occasionally off white to light brownish grey, argillaceous, grading to CLAYSTONE, commonly calcareous fragments, minor very fine disseminated carbonaceous specks, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1460 (5.0)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1465 (5.8)	10 90	SANDSTONE, predominantly clear, minor translucent, very fine, minor fine, occasionally medium, moderately well sorted, sub-angular to sub-rounded, weak siliceous cement, rare visual matrix, occasionally glauconite grains, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, greyish black to olive black, minor light brownish grey to light olive grey, very argillaceous, grading to CLAYSTONE, commonly calcareous fragments, occasionally carbonaceous inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1470 (6.5)	10 90	SANDSTONE, a. a. SILTSTONE, light brownish grey, light bluish grey, light brown, very argillaceous, grading to CLAYSTONE in part, occasionally calcareous material, carbonaceous specks and inclusions, soft to dispersive, sub-blocky to amorphous.	Nil Gas

Depth	%	Lithology	Gas
1475 (4.1)	Tr 100	SANDSTONE, a. a. SILTSTONE, light to medium bluish grey, minor light to medium brown, argillaceous, trace locally calcareous, grading to CLAYSTONE in part, commonly carbonaceous specks, soft to dispersive, dominantly amorphous, sub-blocky in part.	Nil Gas
1480 (1.9)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1485 (2.6)	10 90	SANDSTONE, translucent, clear, very fine to fine, occasionally medium, moderately well sorted, sub-angular to sub-rounded, trace weak siliceous cement, abundant very pale grey to white argillaceous matrix, grading to SILTSTONE in part, trace pyrite nodules, trace carbonaceous material, fair to poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1490 (2.4)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1495 (4.6)	20 80	SANDSTONE, a. a. SILTSTONE, light to medium bluish grey, trace light to medium brown in part, argillaceous, commonly locally arenaceous, grading to very fine SANDSTONE in part, commonly pyrite nodules, carbonaceous specks, dispersive to soft, locally firm, sub-blocky to amorphous, minor blocky.	Nil Gas
1500 (7.5)	60 40	SANDSTONE, transparent to clear, frosted, fine to very coarse, predominantly medium to coarse, poor sorted, sub-angular, minor calcareous cement, weak siliceous cement, commonly argillaceous matrix, grading to silty matrix, trace pyrite nodules, rare carbonaceous specks, loose and clean, friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1505 (2.5)	60 40	SANDSTONE, a. a. SILTSTONE, light to medium grey, bluish grey, occasionally dark greenish grey, dominantly argillaceous, commonly locally arenaceous, commonly pyrite, carbonaceous specks and micro-laminations, dominantly soft to dispersive, occasionally moderately hard, sub-blocky to amorphous.	Nil Gas
1510 (6.9)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1515 (2.2)	70 30	SANDSTONE, translucent to clear, off white to very pale grey, very fine to coarse, dominantly medium, poor sorted, angular to sub-rounded, trace weak calcareous cement, commonly pale grey to off white matrix, commonly angular very coarse, fracture quartz grains, commonly carbonaceous specks, friable to moderately hard, rare locally hard, dominantly loose and clean, poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1520 (10.2)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1525 (2.4)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1530 (5.1)	30 70	SANDSTONE, a. a. SILTSTONE, light to medium grey, greyish brown in part, dominantly argillaceous, arenaceous in part, slightly calcareous, soft to dispersive, commonly firm, sub-blocky minor amorphous.	Nil Gas
1535 (4.1)	50 50	SANDSTONE, translucent to clear, frosted, milky, very fine to fine, occasionally medium to very coarse grains, moderately sorted, sub-angular to sub-rounded, weak to moderately calcareous cement, occasionally siliceous cement, abundant white to pale grey argillaceous matrix, occasionally grading to arenaceous SILTSTONE in part, commonly carbonaceous specks and fragments, occasionally pyrite, dominantly friable to moderately hard, occasionally very hard aggregates, trace loose in part, tight to poor visual and fair inferred porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1540 (2.2)	60 40	SANDSTONE, a. a. SILTSTONE, pale grey, pale brown to off white, argillaceous, commonly arenaceous, calcareous in part, minor to locally commonly carbonaceous specks and micro-laminations, minor disseminated pyrite, soft to firm, commonly moderately hard, sub-blocky to blocky.	Nil Gas
1545 (2.2)	60 40	SANDSTONE, a. a. – dominantly very fine grains, friable aggregates, no fluorescence. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1550 (6.1)	40 60	SANDSTONE, a. a. SILTSTONE, light to medium grey, greyish brown, argillaceous, commonly locally arenaceous, commonly carbonaceous specks, occasionally disseminated pyrite, soft to dispersive, sub-blocky to amorphous.	Nil Gas
1555 (10.3)	40 60	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1560 (11.6)	10 90	SANDSTONE, a. a. SILTSTONE, medium grey, dark grey in part, occasionally light brownish grey, argillaceous, slightly calcareous, occasionally carbonaceous specks, trace dark green and cream lithics, trace pyrite, soft, firm in part, sub-blocky to blocky in part.	Nil Gas
1565 (10.4)	10 90	SANDSTONE, translucent to clear, very fine to fine, well sorted, sub-rounded, sub-angular in part, weak to moderately calcareous cement, commonly white to off white argillaceous matrix, commonly pyrite nodules, trace glauconite, carbonaceous material, friable aggregates, commonly loose grains, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a. – commonly pyrite.	Nil Gas
1570 (9.2)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1575 (4.3)	70 30 Tr	SANDSTONE, predominantly clear to translucent, minor frosted, fine to very coarse, very poor sorted, angular to sub-rounded, generally sub-angular, weak calcareous cement, commonly carbonaceous material, grading to COAL in part, minor pyrite nodules, generally clean and unconsolidated, fair to good inferred pot, no fluorescence. SILTSTONE, a. a. COAL, (Tr) black, dull to subvitreous, argillaceous, moderately hard to brittle, sub-blocky to sub-fissile, uneven to minor subconchoidal.	Tr C1 < 1 unit 100% C1
1580 (9.6)	40 60 Tr	SANDSTONE, a. a. SILTSTONE, predominantly brownish grey, minor brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous fragments, minor to locally commonly carbonaceous material, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous. COAL, (Tr), a. a.	Tr C1 < 1 unit 100% C1
1585 (4.4)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas
1590 (4.6)	80 20	SANDSTONE, clear to translucent, frosted in part, occasionally translucent grey, fine to very coarse grains, poor sorted, sub-angular to sub-rounded, weak siliceous cement, trace strong pyrite cement, minor calcareous fragments, moderately pyrite nodules, unconsolidated and predominantly clean, trace very hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a.	Nil Gas
1595 (9.8)	50 50 Tr	SANDSTONE, a. a. SILTSTONE, bluish grey to brownish black, olive grey in part, argillaceous, grading to CLAYSTONE in part, calcareous, minor to locally commonly carbonaceous material, grading to COAL in part, occasionally pyrite nodules, soft to dispersive, sub-blocky to amorphous. COAL, (Tr) black, dull to subvitreous, argillaceous, moderately hard to brittle, sub-blocky to sub-fissile, uneven to minor subconchoidal.	Nil Gas
1600 (6.6)	60 40 Tr	SANDSTONE, clear to translucent, minor frosted, fine to very coarse, very poor sorted, sub-angular to occasionally sub-rounded, weak siliceous cement, occasionally strong pyrite cement, commonly calcareous fragments and pyrite nodules, generally loose and unconsolidated, occasionally moderately hard to hard pyrite aggregates, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a. COAL, a. a.	Nil Gas
1605 (2.3)	60 40 Tr	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, very light grey to light olive grey, minor brownish black, predominantly argillaceous, grading to CLAYSTONE, occasionally arenaceous calcareous in part, minor to locally commonly carbonaceous material, grading to silty COAL, occasionally glauconite grains, soft to generally dispersive, occasionally firm, sub-blocky to amorphous. COAL, a. a.	Nil Gas
1610 (2.2)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	Nil Gas

Depth	%	Lithology	Gas
1615 (12.1)	80 20	SANDSTONE, off white to pale brown, clear to translucent, very fine to minor fine, sub-angular, well sorted, moderately strong to strong calcareous cement, commonly off white to white argillaceous matrix, minor carbonaceous inclusions, occasionally disseminated pyrite, moderately hard to hard aggregates, very poor to tight visual porosity, fluorescence. SILTSTONE, a. a. **FLUORESCENCE, 20-30%, moderately bright to bright pale greenish yellow, patchy to even in part, slow to very slow blooming dull pale yellow crush cut, thin very dull ring residue.**	Trace gas 100% C1
1620 (4.7)	70 30	SANDSTONE, translucent to white, off white, dominantly very fine to fine, trace medium to very coarse in part, moderately well sorted, sub-angular to sub-rounded, locally weak to moderately strong calcareous cement, commonly pale brown to off white argillaceous, matrix, commonly carbonaceous specks and flakes, commonly pyrite nodules, glauconite grains, dominantly friable to moderately hard, occasionally hard, poor visual porosity, no fluorescence. SILTSTONE, light to medium grey, greyish brown, argillaceous, commonly arenaceous, commonly locally calcareous, occasionally glauconite, carbonaceous specks, trace disseminated pyrite, soft to firm, moderately hard in part, sub-blocky to blocky.	Trace gas 100% C1
1625 (2.7)	60 40	SANDSTONE, a. a. – glauconite grains, no fluorescence. SILTSTONE, a. a.	Trace gas 100% C1
1630 (1.4)	60 40	SANDSTONE, translucent to clear, off white to very pale grey, very fine to fine, well sorted, sub-angular to sub-rounded, trace locally calcareous cement, commonly white to off white argillaceous matrix, occasionally glauconite, commonly carbonaceous specks and flakes, trace disseminated pyrite, friable to moderately hard, tight visual porosity, no fluorescence. SILTSTONE, a. a.	1 (98,2,0,0,0)
1635 (1.7)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, trace medium brown, dominantly argillaceous, commonly locally arenaceous, commonly carbonaceous specks, occasionally black and green lithics, soft to dispersive, amorphous in part, dominantly sub-blocky to blocky, amorphous in part.	Trace gas 100% C1
1640 (2.8)	70 30	SANDSTONE, clear to translucent, white to off white, very pale green, very fine to fine, moderately well sorted, moderately siliceous cement, commonly to abundant off white to white argillaceous matrix, commonly carbonaceous specks and minor micro-laminations, trace disseminated pyrite, friable to moderately hard, tight visual porosity, no fluorescence. SILTSTONE, a. a.	1 (96,4,0,0,0)
1645 (1.9)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, greyish brown, olive grey in part, arenaceous, argillaceous, occasionally grading to very fine SANDSTONE, commonly carbonaceous specks, trace glauconite, soft to firm, sub-blocky to sub-fissile in part.	1 (98,2,0,0,0)
1650 (2.7)	80 20	SANDSTONE, translucent, off white, greyish brown, very fine, occasionally medium, dominantly fine, moderately well sorted, sub-angular to sub-rounded, trace to weak calcareous cement, moderately siliceous cement, off white argillaceous matrix, commonly carbonaceous specks and flakes, pyrite nodules, minor glauconite, moderately hard, friable in part, tight visual porosity, no fluorescence. SILTSTONE, a. a.	1 (94,5,1,0,0)
1655 (1.7)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	2 (96,4,0,0,0)
1660 (1.7)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium greyish brown, argillaceous, occasionally arenaceous, minor carbonaceous specks and micro-laminations, soft to firm, locally moderately hard, blocky to sub-blocky, amorphous in part.	2 (94,5,1,0,0)
1665 (2.5)	70 30	SANDSTONE, translucent to opaque, pale grey, very fine to fine, occasionally medium, moderately well sorted, sub-angular to sub-rounded, occasionally angular grains, trace pyrite nodules, moderately siliceous cement, abundant pale grey to off white argillaceous matrix, commonly carbonaceous specks and fragments, occasionally pyrite nodules, rare fossiliferous fragments, friable to moderately hard, hard in part, tight visual porosity, no fluorescence. SILTSTONE, a. a.	3 (91,7,2,0,0)
1670 (2.8)	70 30	SANDSTONE, a. a. SILTSTONE, a. a. – light to medium grey.	4 (89,8,3,0,0)

Depth	%	Lithology	Gas
1675 (3.6)	60 40	SANDSTONE, a. a. SILTSTONE, light to medium grey, greyish brown in part, occasionally dark brown, dominantly arenaceous, locally commonly argillaceous, slightly calcareous, commonly carbonaceous specks and fragments, trace disseminated pyrite, friable to moderately hard, sub-blocky, blocky in part.	3 (90,8,2,0,0)
1680 (4.1)	30 70	SANDSTONE, a. a. SILTSTONE, light grey, pale brownish grey, rare medium grey to brown, dominantly arenaceous, commonly argillaceous in part, slightly calcareous, commonly carbonaceous specks, disseminated pyrite, trace glauconite, firm to moderately hard, trace dispersive, sub-blocky to blocky, amorphous in part.	5 (87,10,3,0,0)
1685 (3.4)	20 80	SANDSTONE, a. a. SILTSTONE, light to medium grey, light brownish grey in part, argillaceous, commonly arenaceous, minor carbonaceous specks, trace glauconite, soft to firm, predominantly sub-blocky, trace sub-fissile.	5 (89,9,2,0,0)
1690 (4.3)	10 90	SANDSTONE, a. a. SILTSTONE, light to medium greyish brown, medium to dark grey in part, argillaceous, locally commonly arenaceous, minor cab specks and micro-laminations, minor pyrite nodules, soft to dispersive, locally firm to minor moderately hard in part, sub-blocky to sub-fissile, blocky to amorphous in part.	4 (91,8,1,0,0)
1695 (2.8)	10 90 Tr	SANDSTONE, medium light to medium grey, clear to translucent, very fine, occasionally grading to arenaceous SILTSTONE, well sorted, sub-angular to predominantly sub-rounded, weak calcareous and siliceous cement, commonly white argillaceous matrix, commonly very fine carbonaceous specks, minor off white lithics, occasionally disseminated pyrite, friable to occasionally moderately hard, very poor visual porosity, no fluorescence. SILTSTONE, a. a. LIMESTONE, (tr) dark yellowish brown to brownish orange, odd white in part, micritic to lutitic, argillaceous, microcrystalline to crystalline, moderately hard to hard.	5 (92,7,1,0,0)
1700 (2.1)	10 90 Tr	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	5 (93,6,1,0,0)
1705 (2.4)	20 80 Tr	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	5 (94,6,0,0,0)
1710 (2.1)	10 80 10	SANDSTONE, a. a. SILTSTONE, dark grey to dark brownish grey, predominantly arenaceous, minor argillaceous, commonly disseminated carbonaceous material, off white lithics and glauconite grains, occasionally pyrite nodules, firm to occasionally moderately hard, sub-blocky to minor sub-fissile. LIMESTONE, a. a.	7 (94,6,0,0,0)
1715 (2.1)	20 70 10	SANDSTONE, medium light grey to medium grey, grading to brownish grey in part, very fine, commonly grading to arenaceous SILTSTONE in part, predominantly coarse, moderately well sorted, sub-angular to sub-rounded, weak to occasionally strong calcareous and siliceous cement, commonly white argillaceous and grey to brownish grey silty matrix, friable to moderately hard in part, very poor visual porosity, no fluorescence. SILTSTONE, a. a. LIMESTONE, a. a.	13 (94,6,0,0,0)
1720 (2.1)	10 80 10	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	12 (95,5,0,0,0)
1725 (2.7)	30 70 Tr	SANDSTONE, a. a. SILTSTONE, light brownish grey to brownish grey, dark grey to olive black in part, argillaceous, grading to arenaceous in part, commonly carbonaceous inclusions and micro-laminations, minor disseminated pyrite, glauconite grains, firm to moderately hard, sub-blocky, minor sub-fissile. LIMESTONE, a. a.	11 (96,4,0,0,0)
1730 (1.4)	20 80 Tr	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	16 (96,4,0,0,0)

Depth	%	Lithology	Gas
1735 (1.5)	30 70 Tr	SANDSTONE, medium light grey to medium grey, coarse, occasionally very fine to fine grains, grading to arenaceous SILTSTONE, moderately well sorted, weak to occasionally moderately strong siliceous cement, commonly white argillaceous matrix, minor glauconite grains, carbonaceous inclusions, friable to occasionally moderately hard, very poor visual porosity, no fluorescence. SILTSTONE, a. a. LIMESTONE, a. a.	20 (95,5,0,0,0)
1740 (1.4)	30 70	SANDSTONE, a. a. SILTSTONE, brownish grey grading to olive black, predominantly arenaceous, commonly carbonaceous specks and flakes, occasionally off white lithics, soft to moderately hard, generally firm, sub-blocky to occasionally sub-fissile.	20 (95,5,0,0,0)
1745 (1.5)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	24 (95,5,0,0,0)
1750 (1.5)	10 80 10	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, brownish orange, off white to white, micritic to lutitic, argillaceous, crystalline to microcrystalline, moderately hard to hard.	24 (95,5,0,0,0)
1755 (1.6)	10 80 10	SANDSTONE, translucent to frosted, clear in part, very fine to very coarse, very poor sorted, angular to sub-rounded, generally sub-angular, weak siliceous cement, trace white argillaceous matrix, commonly calcareous fragments, occasionally pale green lithics, predominantly loose and clean, fair to good inferred and poor visual porosity, no fluorescence. SILTSTONE, a. a. LIMESTONE, a. a.	26 (95,5,0,0,0)
1760 (0.9)	50 50 Tr	SANDSTONE, a. a. SILTSTONE, brownish grey r olive grey, brownish black, black to olive black, argillaceous to arenaceous, commonly carbonaceous material, minor off white lithics, occasionally glauconite grains, soft to moderately hard, generally firm, sub-blocky to sub-fissile. LIMESTONE, a. a.	25 (95,5,0,0,0)
1765 (1.2)	50 50 Tr	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	31 (96,4,0,0,0)
1770 (1.2)	40 60	SANDSTONE, medium to light grey, clear to translucent, minor frosted, 90% very fine to very coarse loose grains, 10% very fine to fine aggregates, very poor sorted, sub-angular to sub-rounded, occasionally angular, weak to occasionally moderately strong calcareous and siliceous cement, minor white argillaceous matrix, minor carbonaceous specks, occasionally pale green lithics, friable to moderately hard aggregates, predominantly loose, fair to good inferred and poor visual porosity, no fluorescence SILTSTONE, a. a.	23 (95,5,0,0,0)
1775 (1.7)	20 70 10	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, brownish orange to brownish grey, micritic to sparitic, generally argillaceous, minor quartz grains, moderately hard to hard, crystalline to microcrystalline.	25 (95,5,0,0,0)
1780 (1.6)	10 90	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, minor brownish black, olive black, predominantly argillaceous, locally commonly arenaceous, commonly carbonaceous specks, trace micromicaceous, predominantly firm to moderately hard, locally soft to dispersive in part, sub-blocky to sub-fissile, minor amorphous.	29 (96,4,0,0,0)
1785 (1.7)	5 95 Tr	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, predominantly light brownish grey, argillaceous, locally minor arenaceous, trace pyrite, trace green lithics, carbonaceous specks, dispersive to soft, firm in part, sub-blocky to amorphous. LIMESTONE, a. a.	26 (96,4,0,0,0)
1790 (1.6)	5 95	SANDSTONE, clear to translucent, translucent orange, coarse to very coarse, trace very fine to fine, angular to sub-rounded, poor sorted, trace strong siliceous cement, off white argillaceous matrix, loose, unconsolidated, fair to good porosity, no fluorescence. SILTSTONE, a. a.	24 (96,4,0,0,0)

Depth	%	Lithology	Gas
1795 (1.8)	5 95	SANDSTONE, clear to occasionally translucent, very fine to fine, moderately well sorted, sub-angular to sub-rounded, weak siliceous cement, unconsolidated and clean, poor inferred porosity, no fluorescence. SILTSTONE, a. a.	24 (96,4,0,0,0)
1800 (1.4)	5 95	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE in part, slightly calcareous, minor very fine carbonaceous inclusions, trace pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous.	27 (96,4,0,0,0)
1803 (3.7)	100	SILTSTONE, a. a.	27 (97,3,0,0,0)
1806 (2.6)	100	SILTSTONE, a. a.	20 (97,3,0,0,0)
1809 (1.6)	Tr 100 Tr	SANDSTONE, clear to minor translucent, very fine to fine, moderately well sorted, sub-angular to minor sub-rounded, weak siliceous cement, loose and clean, poor inferred porosity, no fluorescence. SILTSTONE, brownish grey to olive grey, olive black in part, argillaceous, grading to CLAYSTONE in part, slightly calcareous, minor very fine carbonaceous inclusions, trace pale green glauconite grains, predominantly soft to dispersive, minor firm, sub-blocky to amorphous. LIMESTONE, brownish orange to brownish grey, micritic to sparitic, generally argillaceous, minor quartz grains, moderately hard to hard, crystalline to microcrystalline.	16 (97,3,0,0,0)
1812 (1.4)	5 95	SANDSTONE, a. a. SILTSTONE, a. a.	23 (97,3,0,0,0)
1815 (1.5)	5 95	SANDSTONE, a. a. SILTSTONE, brownish grey to olive grey, brownish black to olive black, argillaceous, grading to CLAYSTONE in part, commonly calcareous fragments, locally commonly glauconite grains, minor carbonaceous inclusions, soft to minor firm, sub-blocky to amorphous.	22 (97,3,0,0,0)
1818 (1.4)	100	SILTSTONE, a. a.	25 (97,3,0,0,0)
1821 (1.9)	95 5	SILTSTONE, a. a. LIMESTONE, greyish orange to moderately yellowish brown, minor off white, micritic to lutitic, argillaceous to occasionally arenaceous, microcrystalline to crystalline, moderately hard to hard.	30 (97,3,0,0,0)
1824 (1.1)	100	SILTSTONE, brownish grey to brownish black, olive grey to olive black in part, predominantly argillaceous, grading to CLAYSTONE, occasionally arenaceous, minor to locally commonly glauconite grains, minor pyrite nodules, minor carbonaceous specks, soft to dispersive, occasionally firm, sub-blocky to amorphous.	27 (97,3,0,0,0)
1827 (1.3)	100	SILTSTONE, a. a.	25 (97,3,0,0,0)
1830 (2.2)	90 10	SILTSTONE, a. a. LIMESTONE, a. a.	27 (97,3,0,0,0)
1833 (1.3)	100	SILTSTONE, a. a.	19 (97,3,0,0,0)
1836 (1.3)	100	SILTSTONE, a. a.	29 (97,3,0,0,0)
1839 (1.3)	5 95 Tr	SANDSTONE, clear to occasionally translucent, very fine to medium, moderately sorted, sub-angular to sub-rounded, weak siliceous cement, clean and unconsolidated, fair to poor inferred porosity, no fluorescence. SILTSTONE, a. a. LIMESTONE, a. a.	36 (97,3,0,0,0)
1842 (1.1)	5 95 Tr	SANDSTONE, a. a. SILTSTONE, a. a. LIMESTONE, a. a.	34 (97,3,0,0,0)
1845 (1.2)	100 Tr	SILTSTONE, olive grey to olive black, brownish grey, argillaceous, commonly grading to CLAYSTONE, commonly calcareous fragments, grading to LIMESTONE in part, minor pyrite nodules, glauconite grains, dispersive to firm, generally soft, sub-blocky to amorphous. LIMESTONE, a. a.	29 (97,3,0,0,0)
1848 (1.3)	100 Tr	SILTSTONE, a. a. LIMESTONE, a. a.	34 (97,3,0,0,0)
1851 (1.4)	Tr 100	SILTSTONE, a. a. LIMESTONE, a. a.	27 (98,2,0,0,0)

Depth	%	Lithology	Gas
1854 (1.5)	100	SILTSTONE, brownish grey, minor brownish black, olive black, argillaceous, grading to CLAYSTONE, occasionally arenaceous, commonly calcareous fragments, locally commonly glauconite grains, minor pyrite nodules, micromicaceous in part, predominantly soft, minor firm, sub-blocky to amorphous.	22 (98,2,0,0,0)
1857 (4.8)	100	SILTSTONE, a. a.	17 (97,3,0,0,0)
1860 (1.9)	100	SILTSTONE, brownish grey, brown to black, argillaceous, grading to CLAYSTONE, calcareous in part, occasionally LIMESTONE fragments, minor to commonly glauconite grains, minor pyrite nodules, soft to dispersive, rare locally firm in part, dominantly sub-blocky to amorphous.	13 (98,2,0,0,0)
1863 (1.3)	100	SILTSTONE, a. a.	22 (98,2,0,0,0)
1866 (1.4)	100	SILTSTONE, a. a.	31 (97,3,0,0,0)
1869 (1.5)	100	SILTSTONE, medium to dark grey, brownish grey, greyish black in part, dominantly argillaceous, grading to CLAYSTONE, slightly calcareous, rare locally arenaceous, minor to commonly glauconite, rare carbonaceous specks, trace pyrite nodules, LIMESTONE fragments, soft to firm, dispersive in part, sub-blocky, minor amorphous.	33 (97,3,0,0,0)
1872 (1.6)	100	SILTSTONE, a. a.	31 (97,3,0,0,0)
1875 (2.0)	100	SILTSTONE, a. a.	33 (97,3,0,0,0)
1878 (2.1)	100	SILTSTONE, a. a.	35 (97,3,0,0,0)
1881 (1.8)	100	SILTSTONE, medium to dark grey, brownish grey, trace light brown, dominantly argillaceous, grading to CLAYSTONE, minor to commonly glauconite, trace carbonaceous specks, trace pyrite nodules, soft to firm, trace locally dispersive, sub-blocky to blocky, amorphous.	34 (97,3,0,0,0)
1884 (1.9)	100	SILTSTONE, a. a.	42 (97,3,0,0,0)
1887 (2.4)	100	SILTSTONE, a. a.	42 (97,3,0,0,0)
1890 (1.5)	100	SILTSTONE, medium to dark grey, brownish grey, occasionally light brown, greyish black, dominantly argillaceous, commonly locally arenaceous, occasionally carbonaceous specks and fragments, minor pyrite nodules, glauconite, trace LIMESTONE fragments, soft to predominantly firm, sub-blocky to blocky, sub-fissile in part.	41 (97,3,0,0,0)
1893 (1.8)	100	SILTSTONE, a. a.	47 (96,4,0,0,0)
1896 (2.1)	100	SILTSTONE, a. a.	42 (96,4,0,0,0)
1899 (4.0)	100	SILTSTONE, a. a.	25 (96,4,0,0,0)
1902 (2.6)	100	SILTSTONE, a. a.	36 (96,4,0,0,0)
1905 (2.1)	100	SILTSTONE, medium to dark grey, greyish brown in part, commonly dark grey to black, dominantly argillaceous, calcareous in part, commonly LIMESTONE fragments, minor to commonly glauconite, trace pyrite nodules, soft to predominantly firm, rare locally moderately hard, sub-blocky to blocky.	41 (96,4,0,0,0)
1908 (2.7)	100	SILTSTONE, a. a.	34 (96,4,0,0,0)
1911 (3.0)	100	SILTSTONE, a. a.	33 (95,5,0,0,0)
1914 (2.1)	100	SILTSTONE, medium to dark grey, greyish brown in part, dominantly argillaceous, slightly calcareous in part, commonly LIMESTONE fragments, glauconite, trace disseminated and nodular pyrite, dominantly firm, trace moderately hard in part, soft in part, sub-blocky to blocky.	26 (95,5,0,0,0)
1917 (6.7)	100	SILTSTONE, a. a.	25 (95,5,0,0,0)
1920 (4.7)	100	SILTSTONE, a. a.	21 (95,5,0,0,0)
1923 (2.3)	100	SILTSTONE, a. a.	22 (94,5,1,0,0)

Depth	%	Lithology	Gas
1926 (1.9)	100	SILTSTONE, dark grey to greyish black, minor brownish grey, argillaceous, grading to very fine arenaceous in part, commonly disseminated carbonaceous inclusions, commonly calcareous fragments, minor disseminated and nodular pyrite, firm to occasionally moderately hard, sub-blocky to sub-fissile. minor to locally commonly glauconite grains,	24 (95,5,0,0,0)
1929 (8.0)	100	SILTSTONE, a. a.	12 (95,5,0,0,0)
1932 (5.0)	100	SILTSTONE, a. a.	8 (95,5,0,0,0)
1935 (3.4)	100	SILTSTONE, dark grey to greyish black, brownish grey, argillaceous, grading to very fine arenaceous in part, commonly calcareous fragments, minor to locally commonly carbonaceous inclusions, locally commonly glauconite grains, minor micromicaceous, disseminated pyrite, firm to moderately hard, sub-blocky to sub-fissile.	8 (95,5,0,0,0)
1938 (5.4)	100	SILTSTONE, a. a.	7 (95,5,0,0,0)
1941 (13.6)	100	SILTSTONE, a. a.	3 (95,5,0,0,0)
1944 (7.0)	100	SILTSTONE, dark grey to greyish black, brownish grey in part, argillaceous, grading to arenaceous in part, micromicaceous in part, commonly calcareous fragments, minor to locally commonly glauconite grains, minor nodular pyrite, dispersive to moderately hard, generally soft to firm, sub-blocky to minor sub-fissile, amorphous in part.	5 (95,5,0,0,0)
1947 (4.0)	100	SILTSTONE, a. a.	13 (93,6,1,0,0)
1950 (5.4)	100	SILTSTONE, dark grey to greyish black, brownish grey, argillaceous, occasionally grading to arenaceous in part, calcareous, commonly glauconite grains, minor pyrite nodules, firm to dispersive, sub-blocky to amorphous.	11 (93,6,1,0,0)
1953 (4.1)	100	SILTSTONE, a. a.	11 (93,6,1,0,0)
1956 (4.7)	100	SILTSTONE, a. a.	12 (93,6,1,0,0)
1959 (10.9)	100	SILTSTONE, 1) dark grey to greyish black, argillaceous grading to arenaceous in part, calcareous, commonly glauconite grains, minor pyrite nodules, occasionally carbonaceous inclusions, firm to occasionally moderately hard, sub-blocky to sub-fissile. 2) brownish grey, argillaceous, grading to CLAYSTONE, calcareous, minor very fine carbonaceous inclusions, soft to dispersive, generally amorphous.	9 (93,6,1,0,0)
1962 (7.5)	100	SILTSTONE, a. a.	9 (93,6,1,0,0)
1965 (3.7)	100	SILTSTONE, 1) medium dark grey to dark grey, minor olive black, brownish black, arenaceous, grading to argillaceous in part, calcareous, commonly glauconite grains, minor nodular and disseminated pyrite, firm to occasionally moderately hard, sub-blocky to sub-fissile, 2) light brownish grey to brownish grey, slightly calcareous, grading to CLAYSTONE in part, soft to dispersive, amorphous in part.	10 (92,6,2,0,0)
1968 (3.6)	Tr 100	SANDSTONE, a. a. SILTSTONE, a. a.	10 (92,6,2,0,0)
1971 (3.3)	30 70	SANDSTONE, translucent, opaque white to off white, pale yellow, opaque yellowish brown, clear, very fine to very coarse, dominantly coarse grains, very poor sorted, sub-angular to sub-rounded, minor angular, occasionally round grains, locally strong calcareous and moderately siliceous cement, white to off white argillaceous matrix, pry nodules, locally commonly fine glauconite grains, dominantly loose, unconsolidated, poor to fair inferred porosity, no fluorescence. SILTSTONE, a. a.	11 (93,6,1,0,0)
1974 (1.7)	70 30	SANDSTONE, a. a. – increasing to strong siliceous cement, no fluorescence. SILTSTONE, a. a.	17 (95,4,1,0,0)

Depth	%	Lithology	Gas
1977 (2.9)	60 40	SANDSTONE, translucent, frosted, opaque pale grey to white, opaque yellow to yellowish brown, clear, very fine to very coarse, predominantly coarse grains, very poor sorted, sub-angular to sub-rounded very fine to medium grains, sub-angular to angular coarse to very coarse grains, moderately to locally strong siliceous cement, white to off white argillaceous/siliceous matrix, occasionally pyrite nodules, minor fine glauconite grains, predominantly loose, unconsolidated, fair inferred and poor visual porosity, no fluorescence. SILTSTONE, light to medium grey, pale greyish brown, off white to pale brown, predominantly argillaceous, commonly arenaceous, occasionally glauconite, locally commonly carbonaceous specks and micro-laminations, minor disseminated pyrite, minor micromicaceous, dispersive to moderately hard, predominantly soft, sub-blocky to sub-fissile.	15 (95,4,1,0,0)
1980 (6.1)	50 50	SANDSTONE, a. a. – strong siliceous cement, no fluorescence. SILTSTONE, a. a.	11 (94,5,1,0,0)
1983 (29.9)	50 50	SANDSTONE, clear to translucent, minor frosted, medium to generally very coarse, grains, minor fine, very poor sorted, sub-angular to angular fractured grains, locally weak to dominantly strong siliceous cement, strong pyrite cement, trace white argillaceous/siliceous matrix, commonly pyrite nodules, very poor to tight visual and poor to locally fair inferred porosity, no fluorescence. SILTSTONE, a. a.	6 (94,5,1,0,0)
1986 (50.8)	50 50	SANDSTONE, translucent to clear, frosted, opaque, medium to coarse, occasionally very coarse, rare fine, poor sorted, argillaceous, sub-angular in part, weak to moderately calcareous cement, strong siliceous cement, strong pyrite cement, trace white to off white argillaceous matrix, commonly pyrite nodules, occasionally glauconite, weak lithics, poor to fair inferred and no visual porosity, no fluorescence. SILTSTONE, medium to dark grey, grey to black, rare pale brown, argillaceous, siliceous, commonly to abundant disseminated pyrite, commonly glauconite, dominantly hard to very hard, soft to firm, sub-blocky to blocky, sub-fissile in part.	4 (97,3,0,0,0)
1989 (52.1)	30 70	SANDSTONE, translucent, opaque pale grey, opaque yellowish brown, frosted, clear, fine to coarse, very coarse angular grains, angular to sub-rounded, predominantly sub-angular, strong siliceous cement, minor strong pyrite cement, white siliceous matrix, pyrite nodules, fossiliferous and shell fragments, very angular fractures quartz overgrowths, loose, unconsolidated, moderately hard to very hard aggregates, fair to poor inferred and very poor to tight visual porosity, no fluorescence. SILTSTONE, medium to dark grey, brownish grey, pale to medium brown in part, dominantly argillaceous, minor arenaceous, occasionally disseminated pyrite, minor glauconite, firm to moderately hard, occasionally soft and hard in part, sub-blocky to sub-fissile, blocky in part.	3 (98,2,0,0,0)
1992 (52.2)	40 60	SANDSTONE, a. a. SILTSTONE, a. a.	1 (100,0,0,0,0)
1995 (54.1)	60 40	SANDSTONE, clear to translucent, minor frosted and pale grey grains, fine to very coarse, very poor sorted, angular, minor sub-angular, very strong siliceous cement, minor pyrite cement, whitish siliceous matrix, common nodule and disseminated pyrite, abundant very angular fracture very coarse quartz overgrowths, minor fossiliferous and shell fragments, unconsolidated, firm to very hard aggregates, poor inferred and nil to tight visual porosity, no fluorescence. SILTSTONE, medium to dark grey, medium to dark greyish brown, predominantly argillaceous, arenaceous in part, calcareous, commonly glauconite, commonly pyrite, minor micromicaceous, soft to firm, moderately hard in part, predominantly sub-blocky, sub-fissile in part, locally blocky to amorphous.	tr (100,0,0,0,0)
1998 (45.6)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	tr (100,0,0,0,0)
2001 (17.9)	70 30	SANDSTONE, translucent to clear, frosted, occasionally pale grey, fine to very coarse, very poor sorted, angular, trace sub-angular, very strong siliceous cement, trace locally pyrite cement, off white to pale grey siliceous/argillaceous matrix, commonly disseminated pyrite, minor pyrite nodules, abundant angular very coarse fractured quartz overgrowths, dominantly very hard aggregates, minor unconsolidated, poor inferred and nil visual poor, no fluorescence SILTSTONE, a. a.	tr (100,0,0,0,0)

Depth	%	Lithology	Gas
2004 (23.8)	70 30	SANDSTONE, translucent, frosted, opaque, clear, minor pale grey, fine to very coarse, predominantly medium to coarse, sub-angular aggregates, angular very coarse fractured grains, sub-rounded to sub-angular fine grains, strong siliceous cement, minor to tr pyrite cement, white siliceous and pyrite matrix, minor pale grey argillaceous matrix, commonly to locally abundant pyrite nodules, very angular fractured very coarse quartz overgrowths, trace to rare fossiliferous and shell fragments, hard to very hard aggregates, trace loose, commonly unconsolidated fracture grains, trace to nil visual and very poor inferred porosity, no fluorescence. SILTSTONE, a. a.	1 (99,1,0,0,0)
2007 (45.4)	70 30	SANDSTONE, a. a. SILTSTONE, light to medium grey, commonly dark grey, occasionally light to medium brownish grey, dominantly argillaceous, locally arenaceous, calcareous in part, abundant disseminated pyrite, commonly glauconite, trace micromicaceous, hard to very hard, trace to minor soft, dominantly sub-blocky to sub-fissile.	1 (99,1,0,0,0)
2010 (70.7)	60 40	SANDSTONE, a. a. SILTSTONE, a. a.	1 (100,0,0,0,0)
2013 (47.7)	70 30	SANDSTONE, a. a. SILTSTONE, a. a.	1 (100,0,0,0,0)
2016 (42.0)	90 10	SANDSTONE, a. a. SILTSTONE, a. a.	1 (100,0,0,0,0)
2019 (56.1)	30 70	SANDSTONE, a. a. – increasing very fine to fine, minor coarse. SILTSTONE, commonly medium to dark grey, occasionally light to brownish grey, dominantly argillaceous, locally arenaceous, calcareous in part, abundant pyrite nodules, trace disseminated pyrite, trace carbonaceous specks, firm to very hard, trace soft, dominantly sub-blocky, commonly sub-fissile.	1 (100,0,0,0,0)
2022 (44.7)	20 80	SANDSTONE, translucent, opaque pale grey, frosted, minor clear, fine to very coarse, moderately well sorted, occasionally very poor sorted in part, sub-angular to sub-rounded fine to medium, very angular fractured coarse to very coarse grains, very strong siliceous cement, rare pyrite cement, white siliceous matrix, pyrite nodules, quartz overgrowths, rare fossiliferous fragments, hard to very hard aggregates, unconsolidated, nil to tight visual and poor inferred porosity, no fluorescence. SILTSTONE, medium to medium dark grey, dark grey, argillaceous, trace arenaceous in part, calcareous, minor carbonaceous specks and micro-laminations, minor micromicaceous, disseminated pyrite, moderately hard to hard, soft to dispersive in part, sub-fissile to sub-blocky, blocky to amorphous in part.	1 (100,0,0,0,0)
2025 (47.9)	10 90	SANDSTONE, translucent to clear, pale yellowish brown, yellowish orange in part, trace light greenish grey greenish grey, predominantly fine to medium, coarse to coarse in part, moderately well sorted, locally poor sorted, sub-angular to sub-rounded, minor angular coarse and very coarse fractured grains, strong to very strong siliceous cement, siliceous matrix, commonly pyrite nodules, rare fossiliferous fragments, rare glauconite/chlorite grains, hard to very hard aggregates, unconsolidated, nil to tight visual and poor inferred porosity, no fluorescence. SILTSTONE, medium light to medium grey, pale brownish grey in part, argillaceous, trace micromicaceous, soft to firm, sub-blocky to sub-fissile in part.	1 (99,1,0,0,0)
2028 (33.8)	60 40	SANDSTONE, translucent to clear, frosted, slightly pale yellow, slightly yellowish grey, minor to trace pale bluish green, predominantly medium to coarse, moderately well sorted, 20% round to sub-rounded coarse to very coarse grains, 80% sub-angular to angular fine to medium fine to medium grains, moderately siliceous cement, white to pale brown siliceous and argillaceous matrix, decreasing pyrite nodules, decreasing very coarse quartz overgrowths, unconsolidated, loose, hard to very hard aggregates, poor to locally fair inferred and tight to nil visual porosity, no fluorescence. SILTSTONE, a. a.	1 (96,4,0,0,0)

Depth	%	Lithology	Gas
2031 (12.0)	80 20	SANDSTONE, clear to translucent, opaque pale grey, trace opaque yellowish grey to yellowish brown, dominantly fine to medium, occasionally coarse, moderately well to well sorted, sub-rounded to sub-angular, moderately to strong siliceous matrix, white argillaceous/siliceous matrix, minor pyrite nodules, loose, unconsolidated, friable aggregates, poor inferred and very poor visual or, no fluorescence. SILTSTONE, a. a.	2 (97,3,0,0,0)
2034 (10.5)	70 30	SANDSTONE, clear to translucent, very fine to medium, predominantly fine, moderately sorted, off white to pale grey argillaceous/clay matrix, trace pyrite nodules, carbonaceous material, black lithics, loose, minor friable aggregates, poor inferred and visual porosity, no fluorescence. SILTSTONE, pale grey, medium to dark grey, argillaceous, commonly grading to CLAYSTONE, minor carbonaceous material, trace micromicaceous, firm in part, soft to dispersive, sub-blocky to blocky, amorphous.	3 (96,4,0,0,0)
2037 (12.3)	70 30	SANDSTONE, a. a. SILTSTONE, medium to dark grey, brownish black, occasionally light to medium brown, argillaceous, commonly arenaceous, calcareous, commonly carbonaceous specks and flakes, occasionally disseminated pyrite, trace micromicaceous, dominantly moderately hard to hard, occasionally soft, sub-blocky, blocky to amorphous.	2 (96,4,0,0,0)
2040 (13.2)	80 20	SANDSTONE, a. a. SILTSTONE, a. a.	2 (97,3,0,0,0)
2043 (24.9)	40 60	SANDSTONE, translucent to clear, frosted to very pale grey, very fine to medium, dominantly fine, sub-rounded, sub-angular in part, well sorted, strong calcareous cement, abundant white to off white argillaceous matrix, commonly disseminated and nodular pyrite, occasionally carn specks and fragments, friable aggregates, dominantly loose grains, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	1 (99,1,0,0,0)
2046 (24.8)	30 70	SANDSTONE, a. a. SILTSTONE, light to medium grey, brownish grey, minor dark grey, argillaceous, grading to CLAYSTONE in part, commonly locally calcareous, trace arenaceous, occasionally carbonaceous specks, disseminated pyrite, commonly soft, firm to occasionally moderately hard in part, sub-blocky to amorphous.	3 (96,4,0,0,0)
2049 (28.2)	10 90	SANDSTONE, a. a. SILTSTONE, a. a.	3 (96,4,0,0,0)
2052 (13.7)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	2 (99,1,0,0,0)
2055 (26.2)	30 70	SANDSTONE, translucent to clear, very pale grey to off white, very fine to medium, dominantly fine, well sorted, sub-angular to sub-rounded, moderately calcareous and well siliceous cement, abundant white to off white argillaceous/clay matrix, disseminated pyrite, carbonaceous specks and inclusions, black and green lithics, loose, friable to minor moderately hard aggregates in part, poor visual and inferred porosity, no fluorescence. SILTSTONE, a. a.	2 (99,1,0,0,0)
2058 (33.5)	40 60	SANDSTONE, a. a. SILTSTONE, light to minor medium brown, very pale greyish brown, pale grey, rare dark grey, argillaceous, grading to CLAYSTONE, trace carbonaceous specks, dark green lithics, dominantly soft to dispersive, sub-blocky to amorphous.	2 (99,1,0,0,0)
2061 (39.9)	30 70	SANDSTONE, a. a. SILTSTONE, pale grey to increasing light pale olive, light greyish green, tr to rare dark to medium grey, very argillaceous, grading to CLAYSTONE, minor carbonaceous specks, green lithics, commonly soft to minor firm, predominantly dispersive, blocky to amorphous.	2 (99,1,0,0,0)
2064 (28.8)	30 70	SANDSTONE, a. a. SILTSTONE, a. a.	1 (100,tr,0,0,0)
2067 (23.6)	20 80	SANDSTONE, translucent, clear, milky, white, pale green, pale grey, fine to medium, occasionally coarse, well sorted, sub-angular to sub-rounded, moderately calcareous cement, pale greyish green to white argillaceous matrix, glauconite, minor pyrite nodules, loose and clean, poor to fair inferred porosity, no fluorescence. SILTSTONE, very pale grey to greenish white, minor pale olive, minor to rare brown, very argillaceous, commonly grading to CLAYSTONE, minor pyrite, minor carbonaceous specks, dispersive to very soft, amorphous to blocky.	1 (100,tr,0,0,0)

Depth	%	Lithology	Gas
2070 (23.6)	20 80	SANDSTONE, a. a. SILTSTONE, a. a.	Tr (100,tr,0,0,0)
		Peterborough-1ST1 TD of 2070.0nRT @ 2030 hours 6th September, 2005	

APPENDIX 7

PETROPHYSICAL EVALUATION REPORT

PEP 154, OTWAY BASIN, VICTORIA

PETERBOROUGH-1

PETROPHYSICAL INTERPRETATION

1950 – 2050 mRT

Origin Energy Resources Limited
Second Floor, South Tower, John Oxley Centre
339 Coronation Drive
MILTON QLD 4064

Andy Hall, September 2005

EXECUTIVE SUMMARY

Peterborough-1 was drilled in August / September 2005 as an exploration well targeting the Waarre Formation sandstones in the onshore Otway basin. Peterborough-1 was drilled to 1000 mRT in vertical hole. Beyond 1000 mRT, the well built angle very rapidly and was abandoned. A sidetrack from a kick-off point at 944 mRT, Peterborough-1 ST1, was drilled to a TD of 2070 mRT and penetrated the target formation. Tripping out of hole with the drill bit proved slow and problematic due to severe dog legs at the point where P-1 ST1 was kicked off from the P-1 borehole.

Whilst drilling the Waarre Formation, the rate of penetration was very slow, indicating hard, probably cemented rocks. Drilling bits were very worn when tripped out.

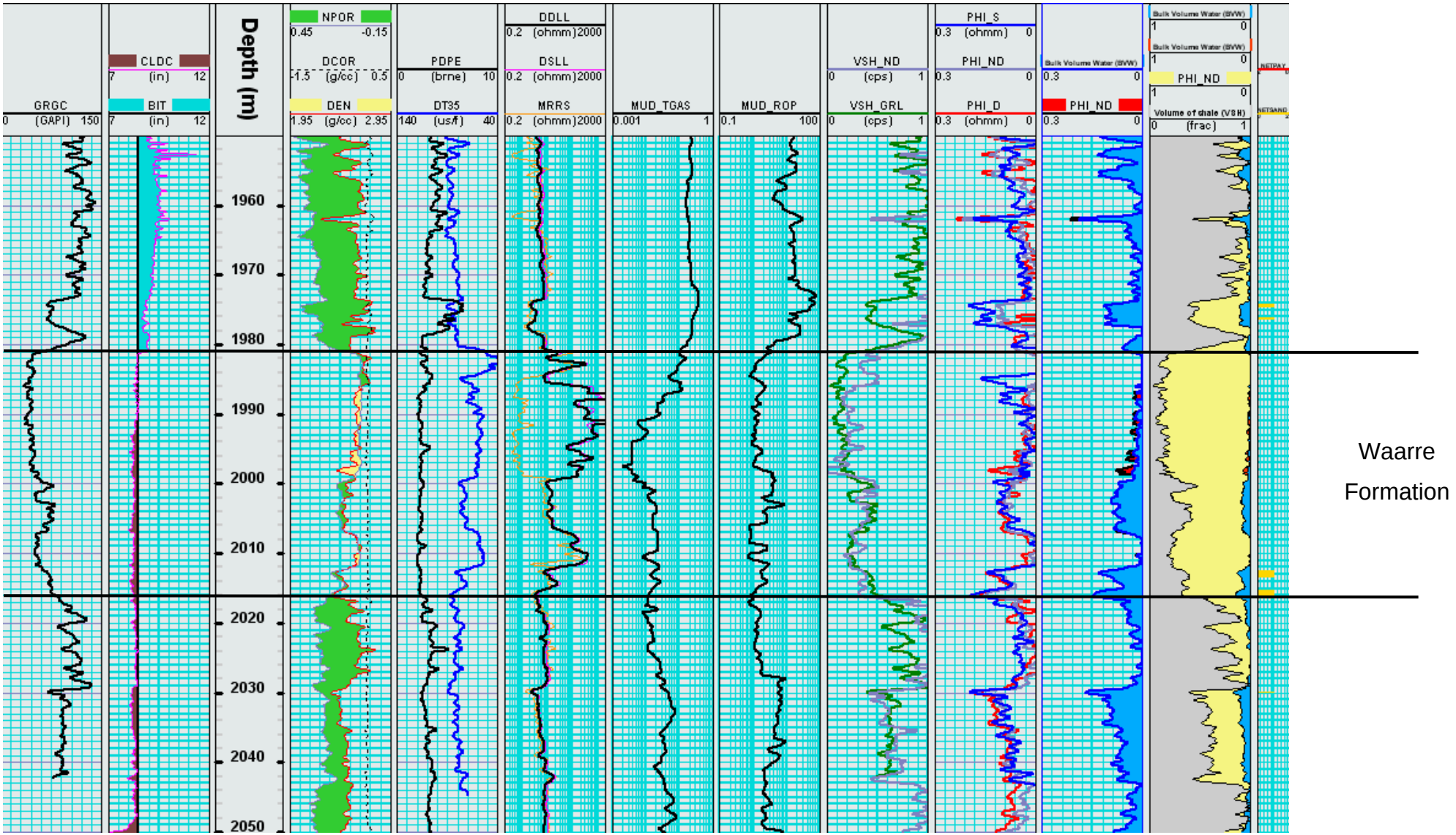
Two logging runs were undertaken. The first run consisted of the GR-DT-RES tools. The nuclear tools were not run due to a concern about losing the tools in the difficult hole conditions around 1000 mRT. When no problems were encountered when tripping out in Run 1, a decision to run the nuclear tools (NPOR-RHOB) was made.

Log interpretation through the Waarre Formation shows a very tight section with porosity typically less than 5%. Indications from the rock strength during drilling and the low PEF readings suggest quartz overgrowths have occluded the porosity. Some better porosities are observed in the slightly shalier intervals and net sand is interpreted to be present in these intervals. The high sonic porosity relative to the neutron density porosity in some intervals indicates likely fracturing, possibly induced by drilling the hard, but brittle sandstones.

Minor hydrocarbon saturation is calculated to be present in the tight sandstones. This could indicate either residual gas or that the resistivity log resolution is not sufficient to register the true resistivity of the more porous zones within the surrounding high resistivity beds.

The Waarre Formation was encountered at 1981 mRT and extends to 2017 mRT (36 metres). Using net sand parameters of shale volume > 40% and porosity < 10%, the Waarre Formation is interpreted to have 1.9 metres (5%) net sand with an average porosity of 12.8%. No net pay is interpreted to be present. No net sand was calculated to be present in any other intervals of the target section.

Figure 1: Interpreted Log Across the Waarre Sandstone in Peterborough-1 ST1



WELL DETAILS

Latitude		Longitude	Drill Floor		Ground Elevation
38° 35' 11.98" S		142° 51' 34.06" E	5.30 m AGL		9.65 m AMSL
			Rig		Century #7
Borehole Record			**Casing Record**		
Inches	**mm**	**Base (mRT)**	**Inches**	**mm**	**Shoe Depth (mRT)**
			20	508	10.5
12 ¼	311	499	9 5/8	244	495.6
8 ½	216	2070	Not Run		
Peterborough-1 ST1					
Spud date		16 August 2005	**TD (mRT)**		2070
End Date		6 September 2005	**TD (mTVDSS)**		2054

Peterborough-1 was drilled to 1000 mRT with a maximum deviation of less than 2°. Between 1000 – 1225 mRT, the inclination increased to 25° and the well was plugged back and side-tracked to the reservoir target as Peterborough-1 ST1.

Peterborough-1 ST1 was drilled to TD in vertical hole. At the kick-off point (~1000 mRT), the deviation was approximately 9° and the rate of change of inclination (dog legs) in the well were quite severe. This caused problems when pulling the drill string out of hole. When logging, the nuclear tools were not run in the first logging suite in case of getting stuck in this interval. In the event, no problems were encountered and the nuclear tools were logged in Run 2.

Borehole temperatures were measured in each logging run. The maximum temperature recorded in both logging runs was 74°C. This was 19.5 hours after circulation stopped in Run 1 and 26 hours after circulation stopped in Run 2. This temperature was applied in the log interpretation.

Formation Evaluation Data

Two wireline log runs were undertaken in Peterborough-1. The runs / logs acquired were:

1. GR – DT – LLD – LLS – MRRS
2. GR – DEN – NPOR

The Drillers TD was 2070 mRT. When logging was conducted, the tools would not pass below 2050 mRT. Hence, the bottom 20 metres of the well were not logged. Full log coverage was, however, obtained across the entire Waarre Formation, the target interval.

No formation pressure data was acquired and no full diameter or sidewall core data was acquired.

INTERPRETATION METHODOLOGY

The interpretation was conducted using a Terrastation II TCL macro. The macro, with all the details of the interpretation is included in Appendix A of this report.

The shale volume was determined from the minimum of the gamma ray and neutron-density cross-plot determination. The two determinations give a very similar answer across the Waarre target interval.

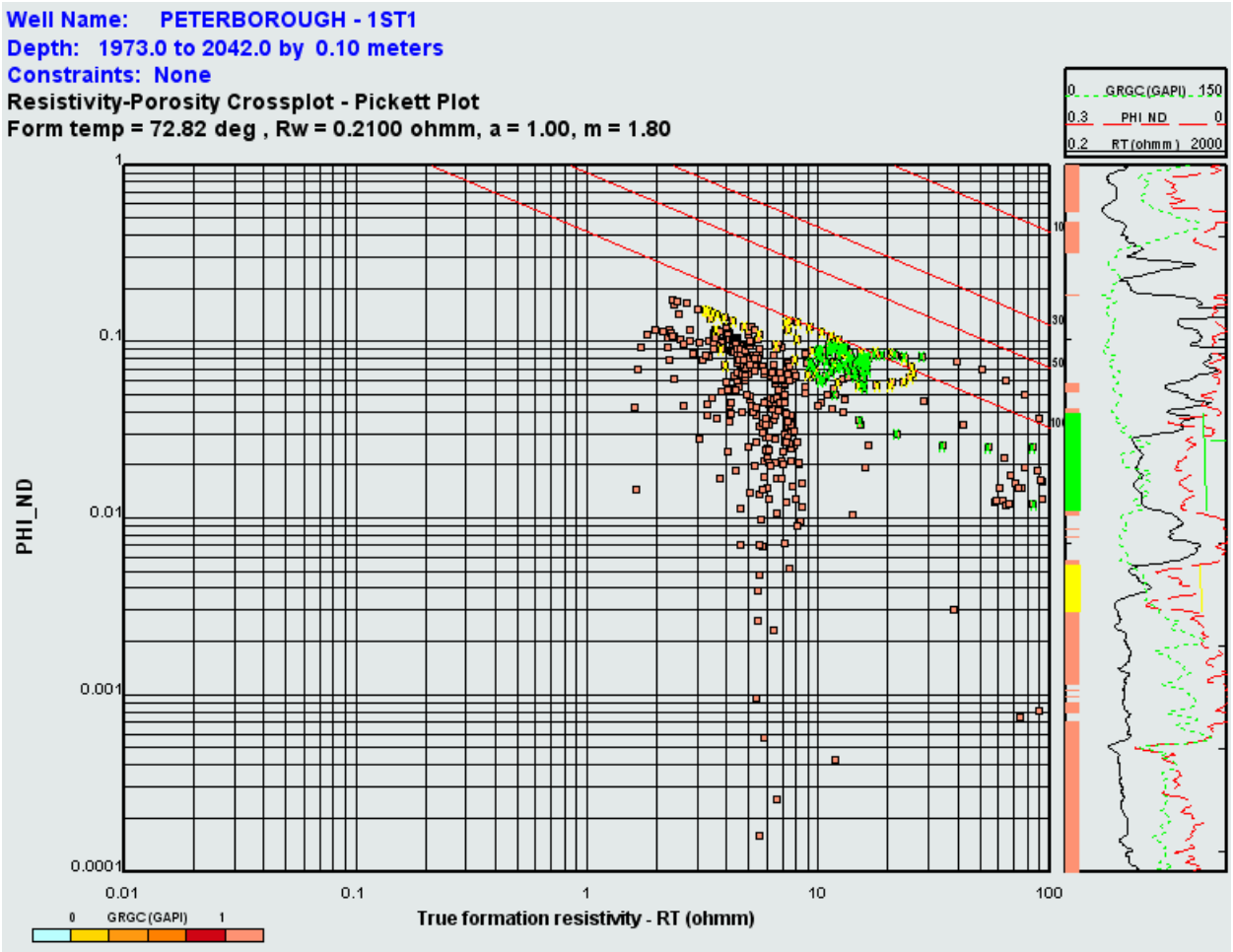
Porosity was determined from the sonic, density and neutron density curves, all appropriately shale corrected. The neutron-density porosity was assumed to be the best representation of actual formation conditions and was used in the interpretation.

No attempt has been made to estimate formation permeability.

Water saturation was calculated using the Archie equation, since the sandstones are very clean and little will be gained by using a more complex shaly sandstone equation. The formation water salinity was determined from the Pickett Plot (Figure 2) for the Waarre Formation to be 0.21 Ω.m at 72°C (0.422 Ω.m at 25°C – 13,300 ppm NaCl equiv). The micro-resistivity reads the same value as the deep resistivity through most of the hole indicating little invasion. In the interval between 1984 – 1999 mRT, the micro-resistivity reads significantly lower than the deep logs in good borehole conditions. This suggests that the log is reading the mud in the borehole.

Net Sand was defined as Shale volume < 40% and Porosity > 10%. Net Pay was defined as Net Sand = 1 and Water Saturation < 60%. Intervals calculated to be net sand or net pay thinner that 1 metre were not included in the final well statistics.

Figure 2: Pickett Plot for the Waarre Formation



Appendix A: Terrastation TCL macro Used to Interpret Peterborough-1 ST1

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* VSH Terms
*
CLEAR CHANNEL 170
SET CHANNEL NAME 170 VSH_GRL
*
CLEAR CHANNEL 171
SET CHANNEL NAME 171 VSH_ND
*
CLEAR CHANNEL 60
SET CHANNEL NAME 60 VSH
*
CLEAR CHANNEL 1375
SET CHANNEL NAME 1375 TEMPA
*
CLEAR CHANNEL 1376
SET CHANNEL NAME 1376 TEMPB
*-----------------------------------
*
* Porosity Terms
*
CLEAR CHANNEL 250
SET CHANNEL NAME 250 PHI_D
*
CLEAR CHANNEL 136
SET CHANNEL NAME 136 DTSC
*
CLEAR CHANNEL 251
SET CHANNEL NAME 251 PHI_S
*
CLEAR CHANNEL 116
SET CHANNEL NAME 116 NPSC
*
CLEAR CHANNEL 86
SET CHANNEL NAME 86 PHI_ND
*-----------------------------------
*
* Water Saturation Terms
*
CLEAR CHANNEL 328
SET CHANNEL NAME 328 SW_ARCH
*
CLEAR CHANNEL 335
SET CHANNEL NAME 335 SXO_ARCH
*
CLEAR CHANNEL 360
SET CHANNEL NAME 360 BVW
*
CLEAR CHANNEL 388
SET CHANNEL NAME 388 RW_T
*
CLEAR CHANNEL 389
SET CHANNEL NAME 389 RMF_T
*
CLEAR CHANNEL 460
SET CHANNEL NAME 460 POPE1
*
CLEAR CHANNEL 927
SET CHANNEL NAME 927 T
*
CLEAR CHANNEL 120
SET CHANNEL NAME 120 NETSAND
*
CLEAR CHANNEL 121
SET CHANNEL NAME 121 NETPAY

*
************************************************
* Mud properties RM (C7), RMF (C9), RMC (C5), MW (C25)
* Temperatures RM (C8), RMF (C10), RMC (C6)
*
* MW
```

```
            C25= 1.14*8.347
* Rm
            C7 = 0.3
            C8 = 22.2
* Rmf
            C9 = 0.53
            C10 = 22.3
* Rmc
            C5 = 0.12
            C6 = 22.1
PRINT Mud Properties entered
************************************************
* Temperature Log
*
* SET BHT (C13) and Depth (C20), Surface Temp (C14) and Depth (C34)
            C13 = 74
            C20 = 2052
            C14 = 20
            C34 = 9.65
BEGIN
            VT= C14 + (C13 - C14) * (VDEPTH - C34) / (C20 - C34)
ENDBEGIN
PRINT Temperature Log Created
************************************************
*
* Formation Water Resistivity and Archie 'a'
*
RW_TEMP_CORR ON
*
* Set Rw (C11) and RW temp (C12)
C11 = 0.21
C12 = 72
*
* Set Archie a (C16)
C16=1
PRINT Rw and Archie a entered
*Set Flag for cycling zones
C40=0
************************************************
SET DEPTH INTERVAL 1950 2050
*
* Matrix GR (C61), Density (C62), Sonic (C63), Neutron (C64)
            C61 = 30
            C62 = 2.65
            C63 = 51.5
            C64 = -0.06
*
* Shale GR (C65), Density (C66), Sonic (C67), Neutron (C68)
            C65 = 130
            C66 = 2.60
            C67 = 80
            C68 = 0.27
*
* Fluid GR (C69), Density (C70), Sonic (C71), Neutron (C72)
            C69 = 10
            C70 = 1
            C71 = 189
            C72 = 1.00
*
* Archie Parameters
* Set m (C17), n (C18)
C17 = 1.9
C18 = 1.9
*-------------------------------------------------------------------
BEGIN
*-------------------------------------------------------------------
* Shale Volume
            VVSH_GRL = (VGRGC-C61)/(C65 - C61)
            V1375 = (C62 - C70) * (C72 - VNPOR) - (VDEN-C70)*(C72 - C64)
            V1376 = (C62 - C70) * (C72 - C68)-(C66-C70)*(C72 - C64)
            VVSH_ND=V1375 / V1376
*
            if (VVSH_GRL<=VVSH_ND)
                        VVSH = VVSH_GRL
            else
```

```
                VVSH=  VVSH_ND
        endif
*
        if (VDEPTH > 2042)
                VVSH = VVSH_ND
        Endif
        if (VDEPTH > 1997.5 & VDEPTH < 1998.5)
                VVSH = VVSH_GRL
        endif
*
        if (VVSH < 0)
                VVSH=0
        endif
        if (VVSH > 1)
                VVSH=1
        endif
*
*-------------------------------------------------------------
* Porosity
*
        VPHI_D = (C62 - VDEN) / (C62 - C70)
*
        VDTSC = VDT35 - VVSH * 29
        VPHI_S = (C63 - VDTSC) / (C63 - C71)
*
        VNPSC = VNPOR_SS - VVSH * 0.37
        VPHI_ND = (VPHI_D + VNPSC) / 2
*
*-------------------------------------------------------------
* Water Saturation
* Rw and Rmf correction
*
        VRW_T = C11 * (C12 + 21.5) / (VT + 21.5)
        VRMF_T = C9 * (C10 + 21.5) / (VT + 21.5)
*
* Archie Water saturation
        VSW_ARCH = ((C16/VPHI_ND^C17)*(VRW_T/VRT))^(1/C18)
        VSXO_ARCH = ((C16/VPHI_ND^C17)*(VRMF_T/VRXO))^(1/C18)
*
        if (VSW_ARCH>1)
                VSW_ARCH=1
        endif
        if (VSW_ARCH<0)
                VSW_ARCH=0
        endif
*
        VBVW = VPHI_ND * VSW_ARCH
*
        if (VVSH < 0.4 & VPHI_ND > 0.10)
                VNETSAND = 1
        else
                VNETSAND = 0
        endif
        if (VNETSAND = 1 & VSW_ARCH < 0.60)
                VNETPAY = 1
        else
                VNETPAY = 0
        endif
ENDBEGIN
```

APPENDIX 8

ANADRILL SCHLUMBERGER

END OF WELL REPORT

Anadrill Schlumberger
c/o Schlumberger Oilfield Australia Pty. Limited
Level 5 Capital Building,
256 St Georges Tce
Perth WA 6000

End of Well Report

Job Number : AWA - 05 - 14

DIRECTIONAL DRILLING, MWD & LWD SERVICES

WELL NAME : Peterborough-1, Peterborough 1ST1

FIELD NAME : Peterborough

COMPANY : Origin Energy

LOCATION : Peterborough

RIG NAME : Century 7

Spud Date : 16-Aug-05

T.D. DATE : 4-Sep-05

ENGINEERS ON JOB :	**Bob Manjenic**	**(DD Engineer)**
	Troy Auger	**(DD Engineer)**
	Duncan Hay	**(DD Engineer)**
	Ricardo Borjas	**(MWD/LWD Engineer)**
	Ben Pattarakorn	**(MWD/LWD Engineer)**
	James Dolan	**(MWD/LWD Engineer)**

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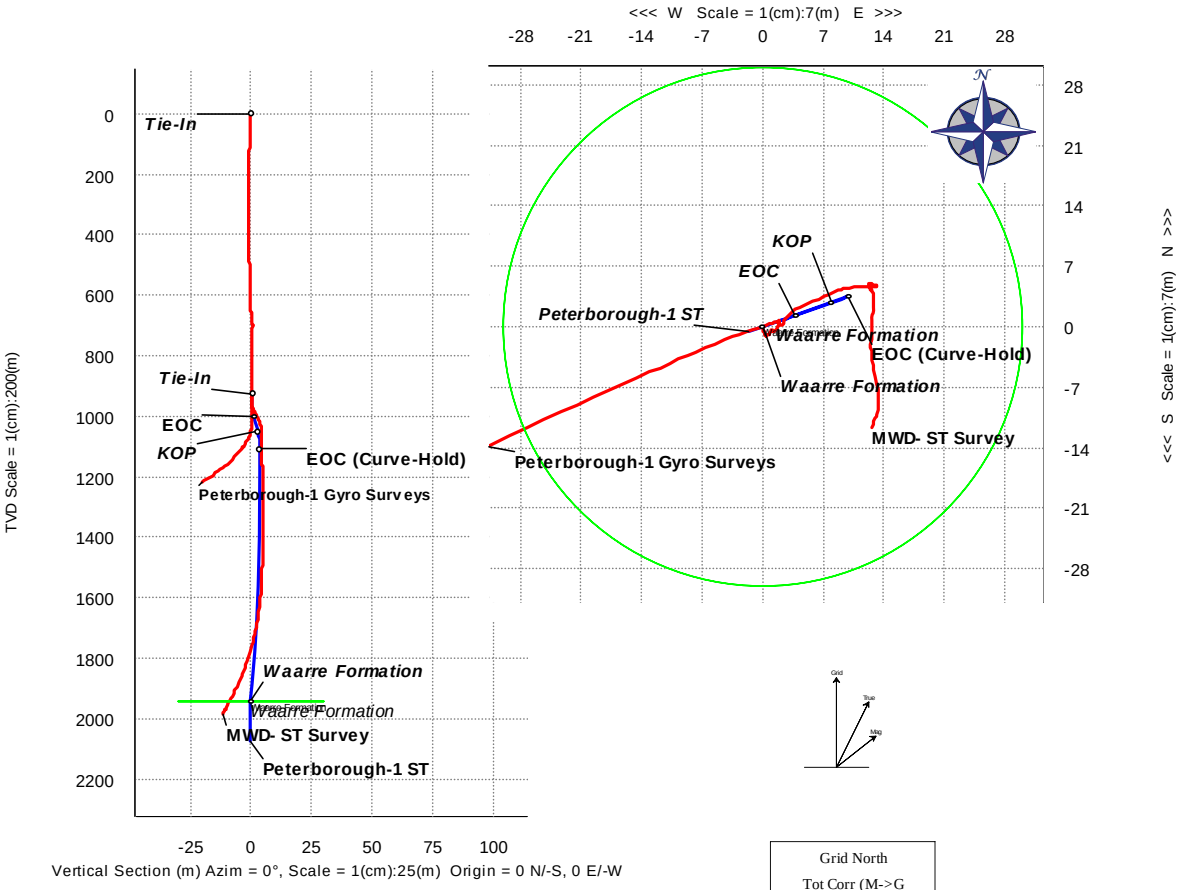
WELL PLOT AND SUMMARY

Schlumberger

Origin Energy

WELL	FIELD	STRUCTURE
Peterborough 1 , Peterborough 1ST1	Origin Energy Peterborough	Century Rig 7

Magnetic Parameters					Surface Location					Miscellaneous			
Model:	BGGM 2004	Dip:	-69.797°	Date:	August 25, 2005	Lat:	S 38 35 12.512	Northing:	5727435.00 m	Slot:	Peterborough 1	TVD Ref:	RKB (18.30 m above MSL)
		Mag Dec:	+10.966°	FS:	60795.3 nT	Lon:	E 142 51 33.331	Easting:	661935.00 m	Plan:	Peterborough 1 ST	Srvy Date:	August 28, 2005



Grid North
Tot Corr (M->G +12.1259°)
Mag Dec (+10.966°)
Grid Conv (-1.15987074°)

Surface Location

Northing: 5727435.00 m Easting: 661935.00 m

Target Description			Grid Coord				Local Coord	
Target Name	Shape	Major Axis	N(+)/S(-)	E(+)/W(-)	TVD	VSec	N(+)/S(-)	E(+)/W(-)
Waarre Formation	Circle	60.00	5727435.00	661935.00	1943.30	0.00	0.00	0.00
Waarre Formation	Circle	60.00	5727435.00	661935.00	1943.30	0.00	0.00	0.00

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
Tie-In	925.00	0.15	181.51	924.97	-0.57	0.53	1.82	
Survey Station	950.00	0.16	303.90	949.97	-0.56	0.51	1.79	0.33
EOC	1000.96	5.00	70.00	1000.87	-1.41	1.31	3.82	3.00
KOP	1050.96	5.00	70.00	1050.68	-3.01	2.80	7.91	0.00
EOC (Curve-Hold)	1108.18	0.72	250.38	1107.84	-3.80	3.54	9.92	3.00
Waarre Formation	1943.71	0.72	250.38	1943.30	0.00	0.00	0.00	0.00
TD	2075.42	0.72	250.38	2075.00	0.60	-0.56	-1.56	0.00

Quality Control
Date Drawn: Thu 01:07 AM September 08, 2005
Drawn by: Current User
Checked by:
Client OK:

ORIGIN Energy

Peterborough -1, Peterborough 1ST1

End of Well Drilling Summary

16th August to 4th September 2005

Peterborough-1 Objectives:

Peterborough 1 was a proposed vertical gas exploration well targeting the Waarre Formation.

The target co-ordinates were:

Latitude	38°	35'	12.30"	South	5 727 435m North
Longitude	142°	51'	33.30"	East	61 935m East

The co-ordinates were calculated from the GDA94/MGA94, Zone 54.

Target depth was 1943.3m TVDRT.

BHA # 2: PowerV Vertical Drilling Assembly
8 ½" Hole Section – Vertical (499mRT – 1228mRT)

The following 8 ½" Assembly was made up and run in:

8 ½" M90 PDC Bit
675 PowerV
Float sub
8 ¼" String Stabilizer
X/Over
AnderDrift (max 5° Inc)
14 x 6 1/4" Drill Collars
Jars
2 x 6 ¼" Drill Collars
4 x 5" HWDP
5" DP to Surface

The tool was made up and completed a successful shallow hole test.

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The top of the cement plug was tagged at 477m. The float, shoe and rat hole were drilled out to 502m. Drilling commenced after a successful FIT – 700psi 16.9 EMW.

The drilling was steady with an average on bottom ROP of ~ 48m/hr. A survey at 657m and again at 666m indicated 2°. The company man alerted the directional driller and the parameters were optimized by reducing ROP, increasing flow and RPM's to maximize the annulus contact and side force. The inclination was brought back to vertical within 25m.

Drilling continued with Anderdrift surveys being taken at regular intervals. ROP was constant at ~48m/hr and the hole gave no indication of any problems.

Anderdrift surveys were taken and recorded in the IADC report of 0° inclination at 1043m and again at 1088m. The DD went to rest in camp after being given the results of the survey at 1043m of 0° inclination. It should be noted that at this point the inclination was in fact 2.5°, taken after pulling back with the Anderdrift to crosscheck the surveys noted in the IADC report. This was still well within range of dropping to vertical and hitting the target.

The company man instructed the drillers to discontinue surveying every 3 singles & to survey every 150m. The instructions given by the Directional Driller were that he was to be notified if any deviation was recorded. High RPM and low WOB were the instructed parameters and to maintain maximum flow achievable with only two shakers and fine screens.

At a depth of 1219m the Anderdrift was suspected to be faulty, reading only 1 pulse which indicated > 5°. A Totco survey was taken reading > 8°. Another single was drilled with high RPM and 0 WOB where another Totco survey was run. It also read > 8°. At this point the Schlumberger DD was advised of a possible deviation in his absence.

The decision was made to pull back and check the inclination with the Anderdrift to the last confirmed (from drillers) 0° inclination survey. The Anderdrift was checked every 10m and indicated > 5° back to 1052m where the first readable survey was taken showing 3.5°. Surveys taken every 10m higher than this point showed the last actual 0° was at 1023m. This was in contradiction to the reported surveys from the rig crew. Clearly the rig crew had not correctly used the Anderdrift and had been reporting surveys of 0° when the reality was that the well had begun deviating at 1020m.

If the DD had of been made aware of this then very close supervision of the deviation would have been carried out with surveys each single. Parameters would have been maximized and if the shakers could not have handled the

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required flow to achieve 750psi pressure drop across the pads then another solution would have been presented. Instead of this the rig kept on drilling in a very strong fault not recognizing that they were deviating at an alarming 4° DLS. By the time the DD was made aware that there was more than 0° inclination the well had deviated to a point that it was impossible to drop to vertical and remain within target tolerance.

At this point a surveys tool was needed to confirm actual inclination and azimuth to continue drilling. An EMS Gyro was mobilized.

The BHA was POOH and the PowerV bias unit was restricted with 32"/32" flow restrictor. It was than ran back in to check Anderdrift readings. The surveys confirmed the worst showing a strong build from ~ 1020m. At this point the EMS Gyro was RIH showing the well path to have begun building at ~ 1020m at approximately 4° DLS to 23.52° Inclination and 243.88° Azimuth.

The hole had deviated due to a lack of quality survey information and an obvious very strong formation dip/fault. If the Schlumberger DD had been given correct surveys when the first deviation should have been noted then parameters or BHA hydraulics would have been changed to stop the build.

At this point the decision to POOH and change the BHA to a directional motor assembly was made.

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BHA # 3: Steerable Motor Assembly
8 ½" Hole Section – Drop to Vertical (1228mRT – 1389mRT)

The following 8 ½" Motor Assembly was made up and run in:-

8 ½" Insert Bit
PowerPak 675XP Motor with 1.15° ABH
Float Sub
8 1/4" String Stabliizer
SlimPulse MWD
30' NMDC
Crossover
14 x 6 ¼" Drill Collars
Jars
2 x 6 ¼" Drill Collars
4 x 5" HWDP

This BHA was run in the hole with intention to bring the inclination back to 0^o The well plan was redesigned and the Waarre Formation Target redefined to accommodate hole deviation. To break trend of building inclination, seen from previous BHA, long low side slides were utilized and inclination has eventually brought back to 13^o with strong left hand walk experienced.

At 1389m MD while making connection a tight hole was encountered with 70 K.lbs overpull. We were unable to continue further drilling and decision was to plug the well back and perform sidetrack from 925m MD.

BHA # 4: Steerable Motor Assembly
8 ½" Hole Section – Sidetrack (925mRT – 1595mRT)

The following 8 ½" Motor Assembly was made up and run in:-

8 ½" Insert Bit
PowerPak 675XP Motor with 1.5° ABH
Float Sub
8 1/4" String Stabliizer
SlimPulse MWD
30' NMDC
Crossover
14 x 6 ¼" Drill Collars
Jars
2 x 6 ¼" Drill Collars
4 x 5" HWDP

The well was plugged back and cement set from 925m to 1025m MD. The cement was tagged at 903m MD, dressed to 945m and tested with 10 Klbs. The well was kicked off from cement plug at depth 945m MD. The inclination was built to 9^o on an azimuth of 70^o thus making enough separation from the original well. Drilling continued ahead and at 1033m MD separation factor indicated satisfactory distance from the original well and from that depth the inclination was gradually dropped to 0^o utilizing three short low side slides. The MWD Survey at 1185.65m MD recorded inclination 0.65^0. Drilling then was continued in rotary mode with BHA holding inclination close to 0^o all the way down to 1614m MD when decision was made to perform wiper trip and POOH.

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BHA # 5: Steerable Motor Assembly
8 ½" Hole Section – Sidetrack (1595mRT – 1988mRT)

The following 8 ½" Motor Assembly was made up and run in:-

8 ½" M90 PDC Bit
PowerPak 675XP Motor with 1.5° ABH
Float Sub
8 1/4" String Stabliizer
SlimPulse MWD
30' NMDC
Crossover
14 x 6 ¼" Drill Collars
Jars
2 x 6 ¼" Drill Collars
4 x 5" HWDP

This assembly was decided upon to optimize penetration rates while maintaining vertical. At 1670m MD a build trend of 0.35° inclination per 30m started. This trend continued through the course of the run. Corrective slides of up to 7m were carried out to oppose this trend and try to steer back to vertical. The effect of the slides was to hold the inclination at an average of 3.5° inclination which was acceptable for intersecting the target. The target was intersected 16.14m from well center at 33.6° South of West. This was well inside the 30m target which was intersected at a trajectory of 3.6° inclination. At 1981m MD a hard pyrite stringer was encountered. Penetration rated was less than 1.5 m/hr so at 1988m MD the decision was made to pull the bit.

BHA # 6: Rotary Assembly
8 ½" Hole Section – Sidetrack (1988mRT – 2075mRT)

A rotary assembly with a roller cone bit was chosen to drill the final 87m due to the fact the target had already been intersected. The packed hole assembly run was adequate for controlling inclination for the remaining 87m to be drilled. All Schlumberger tools were laid out. Schlumberger equipment and staff were demobilized

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SURVEY CALCULATIONS

Peterborough-1 Survey Final

Schlumberger

Report Date:	August 25, 2005	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	Origin Energy	**Vertical Section Azimuth:**	248.920°
Field:	Origin Energy Peterborough	**Vertical Section Origin:**	N 0.000 m, E 0.000 m
Structure / Slot:	Century Rig 7 / Peterborough 1	**TVD Reference Datum:**	RKB
Well:	Peterborough 1	**TVD Reference Elevation:**	18.3 m relative to MSL
Borehole:	Peterborough 1	**Sea Bed / Ground Level Elevation:**	13.000 m relative to MSL
UWI/API#:		**Magnetic Declination:**	10.966°
Survey Name / Date:	MWD Surveys / August 23, 2005	**Total Field Strength:**	60795.489 nT
Tort / AHD / DDI / ERD ratio:	62.122° / 104.87 m / 4.335 / 0.078	**Magnetic Dip:**	-69.797°
Grid Coordinate System:	GDA94/MGA94 Zone 54	**Declination Date:**	August 23, 2005
Location Lat/Long:	S 38 35 12.512, E 142 51 33.331	**Magnetic Declination Model:**	BGGM 2004
Location Grid N/E Y/X:	N 5727435.000 m, E 661935.000 m	**North Reference:**	Grid North
Grid Convergence Angle:	-1.15987074°	**Total Corr Mag North -> Grid North:**	+12.126°
Grid Scale Factor:	0.99992293	**Local Coordinates Referenced To:**	Well Head

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	Closure (m)	Closure Azimuth (deg)	DLS (deg/30 m)	Tool Face (deg)
Tie-In	1200.00	23.52	243.88	1194.23	39.02	-15.79	-35.73	39.07	246.15	3.19	-24.07G
	1214.30	26.43	240.99	1207.19	45.02	-18.59	-41.08	45.09	245.65	6.62	-2.59G
	1223.67	27.88	240.85	1215.52	49.25	-20.67	-44.81	49.35	245.24	4.65	164.74G
	1233.05	27.08	241.33	1223.85	53.54	-22.76	-48.60	53.67	244.90	2.65	-162.12G
	1242.42	24.66	239.45	1232.28	57.58	-24.78	-52.16	57.75	244.59	8.18	-37.05G
	1252.61	25.31	238.31	1241.51	61.82	-27.01	-55.84	62.03	244.19	2.38	-177.40G
	1261.19	21.51	237.84	1249.39	65.17	-28.81	-58.74	65.42	243.87	13.30	-38.12G
	1270.53	22.21	236.40	1258.05	68.57	-30.70	-61.66	68.87	243.53	2.83	-177.55G
	1279.87	20.19	236.15	1266.76	71.87	-32.57	-64.46	72.23	243.19	6.49	-131.72G
	1289.30	19.41	233.45	1275.63	74.96	-34.41	-67.08	75.39	242.84	3.82	-122.88G
	1308.11	18.04	225.85	1293.45	80.66	-38.30	-71.68	81.27	241.88	4.46	13.68G
	1317.53	18.43	226.15	1302.40	83.37	-40.35	-73.80	84.11	241.33	1.28	95.61G
	1326.91	18.37	228.59	1311.30	86.12	-42.35	-75.98	86.98	240.86	2.47	120.86G
	1336.32	18.17	229.68	1320.23	88.90	-44.28	-78.21	89.87	240.48	1.26	-132.25G
	1345.70	17.63	227.68	1329.16	91.60	-46.19	-80.37	92.70	240.12	2.62	172.33G
	1355.09	15.83	228.57	1338.15	94.13	-47.99	-82.38	95.34	239.78	5.81	153.48G
	1364.42	13.54	233.56	1347.18	96.38	-49.48	-84.22	97.68	239.56	8.41	0.00G

Survey Type: DEF Survey

Survey Error Model: **SLB ISCWSA version 24 *** 3-D 95.00% Confidence 2.7955 sigma**

Surveying Prog:

MD From (m)	MD To (m)	EOU Freq	Survey Tool Type	Borehole -> Survey
0.00	5.30	Act-Stns	SLB_EMS-STD-Depth Only	Peterborough 1 -> Peterborough-1 Gyro Surveys
5.30	1200.00	Act-Stns	SLB_EMS-STD	Peterborough 1 -> Peterborough-1 Gyro Surveys
1200.00	1364.42	Act-Stns	SLB_MWD-STD	Peterborough 1 -> MWD Surveys

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Peterborough 1 ST1 Survey Final

Report Date:	September 3, 2005	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	Origin Energy	**Vertical Section Azimuth:**	68.310°
Field:	Origin Energy Peterborough	**Vertical Section Origin:**	N 0.000 m, E 0.000 m
Structure / Slot:	Century Rig 7 / Peterborough 1	**TVD Reference Datum:**	RKB
Well:	Peterborough 1	**TVD Reference Elevation:**	18.3 m relative to MSL
Borehole:	Peterborough 1	**Sea Bed / Ground Level Elevation:**	13.000 m relative to MSL
UWI/API#:		**Magnetic Declination:**	10.966°
Survey Name / Date:	MWD- ST Survey / August 26, 2005	**Total Field Strength:**	60795.277 nT
Tort / AHD / DDI / ERD ratio:	49.119° / 35.79 m / 3.761 / 0.018	**Magnetic Dip:**	-69.797°
Grid Coordinate System:	GDA94/MGA94 Zone 54	**Declination Date:**	August 26, 2005
Location Lat/Long:	S 38 35 12.512, E 142 51 33.331	**Magnetic Declination Model:**	BGGM 2004
Location Grid N/E Y/X:	N 5727435.000 m, E 661935.000 m	**North Reference:**	Grid North
Grid Convergence Angle:	-1.15987074°	**Total Corr Mag North -> Grid North:**	+12.126°
Grid Scale Factor:	0.99992293	**Local Coordinates Referenced To:**	Well Head

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	Closure (m)	Closure Azimuth (deg)	DLS (deg/30 m)	Tool Face (deg)
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.30M
	50.00	0.52	177.30	50.00	-0.07	-0.23	0.01	0.23	177.30	0.31	145.37M
	75.00	0.44	145.37	75.00	-0.09	-0.42	0.07	0.42	170.44	0.33	132.26M
	100.00	0.33	132.26	100.00	-0.04	-0.55	0.18	0.57	161.92	0.17	160.32M
	125.00	0.42	160.32	125.00	-0.01	-0.68	0.26	0.73	158.92	0.24	175.89M
	150.00	0.32	175.89	150.00	-0.03	-0.84	0.30	0.89	160.38	0.17	-161.56M
	175.00	0.04	198.44	175.00	-0.06	-0.91	0.30	0.96	161.81	0.34	96.37M
	200.00	0.06	96.37	200.00	-0.05	-0.92	0.31	0.98	161.41	0.09	142.51M
	225.00	0.25	142.51	225.00	-0.03	-0.97	0.36	1.03	159.78	0.26	-88.65M
	250.00	0.09	271.35	250.00	-0.03	-1.01	0.37	1.08	159.89	0.38	-146.66M
	275.00	0.07	213.34	275.00	-0.06	-1.02	0.34	1.08	161.51	0.10	11.65M
	300.00	0.19	11.65	300.00	-0.05	-1.00	0.34	1.05	161.03	0.31	130.42M
	325.00	0.12	130.42	325.00	-0.01	-0.97	0.37	1.04	159.13	0.32	86.36M
	350.00	0.25	86.36	350.00	0.05	-0.99	0.45	1.08	155.71	0.22	76.93M
	375.00	0.24	76.93	375.00	0.15	-0.97	0.55	1.12	150.44	0.05	58.51M
	400.00	0.27	58.51	400.00	0.26	-0.93	0.65	1.13	144.93	0.10	36.77M
	425.00	0.26	36.77	425.00	0.37	-0.85	0.74	1.13	139.18	0.12	35.71M
	450.00	0.22	35.71	450.00	0.46	-0.77	0.80	1.11	133.90	0.05	36.10M
	475.00	0.25	36.10	475.00	0.54	-0.68	0.86	1.10	128.59	0.04	21.88M
	500.00	0.18	21.88	499.99	0.62	-0.60	0.91	1.09	123.74	0.11	60.98M
	525.00	0.16	60.98	524.99	0.68	-0.55	0.95	1.10	120.11	0.14	45.18M
	550.00	0.13	45.18	549.99	0.74	-0.51	1.00	1.13	117.19	0.06	-5.70M
	575.00	0.09	354.30	574.99	0.77	-0.47	1.02	1.12	114.97	0.12	-18.13M
	600.00	0.19	341.87	599.99	0.78	-0.42	1.00	1.09	112.49	0.12	112.17M
	625.00	1.12	112.17	624.99	0.96	-0.47	1.22	1.30	111.04	1.50	30.91M
	650.00	1.98	30.91	649.99	1.48	-0.19	1.67	1.68	96.51	2.55	-10.17M
	675.00	1.20	349.83	674.98	1.87	0.44	1.84	1.89	76.61	1.60	74.39M
	700.00	0.08	74.39	699.98	1.94	0.70	1.81	1.94	68.86	1.43	168.55M
	725.00	0.15	168.55	724.98	1.95	0.67	1.84	1.95	69.86	0.21	-150.60M
	750.00	0.18	209.40	749.98	1.92	0.61	1.82	1.92	71.58	0.14	-134.78M
	775.00	0.14	225.22	774.98	1.86	0.55	1.78	1.86	72.81	0.07	-69.75M
	800.00	0.18	290.25	799.97	1.80	0.54	1.72	1.81	72.50	0.21	57.92M
	825.00	0.15	57.92	824.97	1.80	0.57	1.71	1.81	71.48	0.36	170.14M
	850.00	0.19	170.14	849.97	1.83	0.55	1.75	1.83	72.52	0.34	98.64M
	875.00	0.20	98.64	874.97	1.86	0.50	1.80	1.87	74.37	0.27	-18.46M
	900.00	0.15	341.54	899.97	1.90	0.53	1.83	1.91	73.92	0.36	-178.49M
Tie-In	925.00	0.15	181.51	924.97	1.89	0.53	1.82	1.89	73.88	0.35	142.84M
	933.58	0.96	142.84	933.55	1.90	0.46	1.86	1.92	76.20	2.97	156.29M
	942.94	1.76	156.29	942.91	1.93	0.26	1.97	1.99	82.38	2.74	22.57M
	971.01	3.65	22.57	970.96	2.57	0.69	2.49	2.58	74.39	5.38	68.23M
	1008.13	9.37	68.23	1007.85	6.42	2.91	5.75	6.44	63.16	5.90	-177.56G
	1036.52	3.72	64.51	1036.04	9.65	4.16	8.73	9.67	64.50	5.98	82.47M
	1055.27	2.14	82.47	1054.77	10.60	4.47	9.63	10.61	65.09	2.89	89.89M
	1092.79	2.15	89.89	1092.26	11.93	4.56	11.02	11.93	67.51	0.22	87.70M
	1120.91	2.29	87.70	1120.36	12.95	4.59	12.11	12.95	69.26	0.17	91.22M

	1149.00	1.35	91.22	1148.44	13.78	4.60	13.00	13.80	70.51	1.01	5.80M
	1167.69	0.65	5.80	1167.12	14.04	4.70	13.24	14.05	70.43	2.33	-83.93M
	1195.83	0.73	276.07	1195.26	13.95	4.88	13.07	13.95	69.52	1.04	-133.48M
	1223.83	0.31	226.52	1223.26	13.72	4.85	12.84	13.73	69.31	0.62	-133.01M
	1251.91	0.35	226.99	1251.34	13.57	4.74	12.72	13.58	69.58	0.04	3.44M
	1279.97	0.12	3.44	1279.40	13.51	4.71	12.66	13.51	69.60	0.48	-62.98M
	1308.20	0.19	297.02	1307.63	13.49	4.76	12.62	13.49	69.34	0.19	39.83M
	1336.44	0.17	39.83	1335.87	13.49	4.81	12.61	13.49	69.11	0.30	-49.62M
	1364.61	0.24	310.38	1364.04	13.50	4.88	12.59	13.50	68.80	0.31	-92.38M
	1392.67	0.25	267.62	1392.10	13.42	4.92	12.48	13.42	68.49	0.19	-96.63M
	1420.84	0.32	263.37	1420.27	13.28	4.91	12.34	13.28	68.32	0.08	-174.58M
	1448.96	0.29	185.42	1448.39	13.17	4.83	12.26	13.18	68.51	0.41	-127.30M
	1477.05	0.19	232.70	1476.48	13.10	4.73	12.22	13.10	68.84	0.23	141.99M
	1505.16	0.35	141.99	1504.59	13.08	4.63	12.23	13.08	69.26	0.43	139.96M
	1533.54	0.50	139.96	1532.97	13.14	4.47	12.36	13.15	70.13	0.16	158.39M
	1561.58	0.38	158.39	1561.01	13.18	4.29	12.48	13.19	71.03	0.20	131.53M
	1588.94	0.72	131.53	1588.37	13.26	4.09	12.64	13.28	72.06	0.46	176.85M
	1617.04	0.99	176.85	1616.46	13.26	3.73	12.78	13.32	73.73	0.75	161.12M
	1645.19	0.89	161.12	1644.61	13.17	3.28	12.87	13.28	75.69	0.29	-168.74M
	1673.28	1.35	191.26	1672.69	12.98	2.75	12.87	13.17	77.94	0.78	-177.07M
	1710.70	1.51	182.93	1710.10	12.53	1.83	12.76	12.89	81.86	0.21	-168.89M
	1729.55	1.53	191.11	1728.95	12.29	1.33	12.70	12.77	84.02	0.35	-179.24M
	1757.83	2.19	180.76	1757.21	11.88	0.42	12.62	12.63	88.09	0.78	-176.47M
	1796.10	2.06	183.53	1795.46	11.31	-1.00	12.57	12.61	94.54	0.13	-178.99M
	1823.31	2.34	181.01	1822.64	10.89	-2.04	12.53	12.70	99.25	0.33	174.42M
	1851.42	2.97	174.42	1850.72	10.47	-3.34	12.59	13.03	104.85	0.75	168.09M
	1879.58	3.63	168.09	1878.84	10.11	-4.94	12.85	13.76	111.03	0.80	167.41M
	1907.68	3.42	167.41	1906.88	9.83	-6.63	13.21	14.78	116.63	0.23	176.99M
	1935.79	3.85	176.99	1934.94	9.39	-8.39	13.44	15.85	121.96	0.79	-158.79M
	1963.94	3.36	201.21	1963.03	8.53	-10.10	13.20	16.62	127.43	1.69	-159.59M
	1972.01	3.74	200.41	1971.09	8.19	-10.57	13.02	16.77	129.07	1.42	-161.00M
Projection to bit	1988.00	4.40	199.00	1987.04	7.44	-11.64	12.64	17.18	132.64	1.25	0.00M

Survey Type: DEF Survey

Survey Error Model: **SLB ISCWSA version 24 *** 3-D 95.00% Confidence 2.7955 sigma**

Surveying Prog:

MD From (m)	MD To (m)	EOU Freq	Survey Tool Type	Borehole -> Survey
0.00	5.30	Act-Stns	SLB_EMS-STD-Depth Only	Peterborough 1 -> Peterborough-1 Gyro Surveys
5.30	925.00	Act-Stns	SLB_EMS-STD	Peterborough 1 -> Peterborough-1 Gyro Surveys
925.00	1988.00	Act-Stns	SLB_MWD-STD	Peterborough 1 -> MWD- ST Survey

DD WORKSHEETS

COMPANY:	Origin Energy	DLS & Depths are, 1= °/100Ft, 2= °/30Mts, 3= °/10Mts:	2	Flow Rate is, 1=GPM, 2=Lt/m :	1	Mud Wt is 1=ppg,2=SG:	1

BHA #	4	Type	Steerable Drilling Assembly	Field	Otway Basin	Well	Peterborough-1	Well Type	Sidetrack	Page 1 of 2	Wellhead	North'g	East'g
Date IN	26-Aug-05	Mud Type	KCL/PHPA Polymer	Bit Nº	4	Size	8 1/2"	PDM Model	Anadrill	Steerable Assembly	Co-ordinates	0.00	0.00
Date OUT	31-Aug-05	Mud Grad	0.477 psi/ft	Make	Type	IADC	S/Nº	Run : 2	Type A675M	Drld Rty 589.0	Motor Hrs Ream. 30.34	Casing	Targets	EOC(1)	EOC(2)	TD
Depth IN	925 mts	Mud Wt	9.20 ppg	Smith	MF05TC	427	MR5354	PDM S/Nº	2019 02019	Time Rty 29.50	Motor Hrs Circ. 14.00	To surface	Inclination			
TVD IN	925.0 mts	Viscos'y	51 sec/qt	I O	D.C. L	B G	Other	R/S 7:8	Size 6 3/4"	% Rty 85	Motor Hrs Drlg. 40.50		Azimuth			
Depth OUT	1614 mts	PV / YP	20 22	4 3	BT G	4 4	SD	Hsg Stab OD	8 3/8"	ROP Rty 20.0	Motor Hrs Total 84.84		MD			
TVD OUT	1614.0 mts	Filtrate	6.00 ml/30"	PH 9.0			Reason	Adjustable Bent Hsg	1.5°	Drld Slide 71.0	Previous Hrs. 17.75		TVD			
Interval Drld	689.0 mts	Cir Temp	42 °C				HR/BHA	GST Deg Bend	N/A	Time Slide 11.30	Cumulative Hrs 102.59		Section			
Hrs On Bit	40.50 hrs.	% Solids	% Sand % oil/water	Nº of Jets x /32"		3.18	0.00	Delta Press from	PSI	% Slide 10	0		NORTH			
ROP	17.01 mts/hr	7.50	0.10 88.5	TFA	0.746	0.00		Off Btm - On Btm	200	ROP Slide 6.3			EAST			

BOTTOM HOLE ASSEMBLY					Drilling Parameters					0.0	Steerable			AG Stab		Survey Information								PROJECTED AZIMUTH	68.31	Dogleg/Trends		
Stabilizers	A	B	C	FLOW	SPP	RPM	rop inclinatio	TORQ		Interval		Average	Interval		Bit	Stn	Depth	Incl	Azim	CL	TVD	Section	North'g	East'g	DLS	B/D	L/R
Stab Size IN				GPM	PSI	TDS	KLbs	K Ft Lbs	to	Slide	Rty	TFW	UG	FG	Depth	TIP	925.00	0.15	181.51		924.97	-0.57	0.53	1.82	°/30m	°/30m	°/30m
Stab to stab span															977		951.58	0.96	142.84	27	951.55	1.93	0.32	1.95	0.96	0.91	-43.65
Bit-Stab Distance															986	1	960.94	1.76	156.29	9	960.91	1.96	0.12	2.06	2.74	2.56	43.11
Element	O.D.	I.D.	Length	Total											1014	2	989.01	3.65	22.57	28	988.96	2.60	0.55	2.58	5.38	2.02	-142.91
TCI Bit	8 1/2"	N/A	0.25	0.25							#REF!				1051	3	1,026.13	9.37	68.23	37	1025.84	6.45	2.77	5.84	5.90	4.62	36.90
A675XP7850	6 3/4"	rotor	7.65	7.90											1080	4	1,054.52	3.72	64.51	28	1054.04	9.68	4.02	8.82	5.98	-5.97	-3.93
Float Sub	6 3/4"	2 7/8"	0.48	8.38											1098	5	1,073.27	2.14	82.47	19	1072.76	10.63	4.33	9.72	2.89	-2.53	28.74
8 1/4 " String Stabil	6 3/4"	2 1/4"	1.81	10.19											1136	6	1,110.79	2.15	89.89	38	1110.26	11.96	4.42	11.11	0.22	0.01	5.93
SlimPulse	6 7/8"		9.81	20.00											1164	7	1,138.91	2.29	87.70	28	1138.35	12.98	4.45	12.20	0.17	0.15	-2.34
6 3/4" NMDC	6 3/4"	3 7/8"	9.48	29.48											1192	8	1,167.00	1.35	91.22	28	1166.43	13.82	4.46	13.09	1.01	-1.00	3.76
Crossover	6 7/8"	3 7/8"	0.51	29.99											1211	9	1,185.69	0.65	5.80	19	1185.12	14.07	4.56	13.33	2.33	-1.12	-137.11
14 x 6 1/4" DC	6 1/2"	5 1/8"	129.00	158.99											1239	10	1,213.83	0.73	276.07	28	1213.26	13.98	4.74	13.16	1.04	0.09	-95.66
Jar	6 1/2"	2 1/4"	9.77	168.76											1267	11	1,241.83	0.31	226.52	28	1241.26	13.76	4.71	12.93	0.62	-0.45	-53.09
2 x 6 1/4" DC	6 1/2"	2 3/4"	18.26	187.02											1295	12	1,269.91	0.35	226.99	28	1269.34	13.61	4.60	12.81	0.04	0.04	0.50
4 x 4 1/2" HWDP	5	3"	37.36	224.38											1323	13	1,297.97	0.12	3.44	28	1297.40	13.54	4.57	12.75	0.48	-0.25	145.88
4 1/2" DP	5	2 3/4"													1351	14	1,326.20	0.19	297.02	28	1325.63	13.52	4.62	12.71	0.19	0.07	-70.58
															1380	15	1,354.44	0.17	39.83	28	1353.87	13.53	4.67	12.70	0.30	-0.02	109.22
															1408	16	1,382.61	0.24	310.38	28	1382.03	13.53	4.74	12.68	0.31	0.07	-95.26
															1436	17	1,410.67	0.25	267.62	28	1410.09	13.45	4.78	12.57	0.19	0.01	-45.72
															1464	18	1,438.84	0.32	263.37	28	1438.26	13.32	4.77	12.43	0.08	0.07	-4.53
															1492	19	1,466.96	0.29	185.42	28	1466.38	13.21	4.69	12.35	0.41	-0.03	-83.16
															1520	20	1,495.05	0.19	232.70	28	1494.47	13.13	4.59	12.31	0.23	-0.11	50.49
															1548	21	1,523.16	0.35	141.99	28	1522.58	13.11	4.49	12.32	0.43	0.17	-96.81
															1577	22	1,551.54	0.50	139.96	28	1550.96	13.17	4.33	12.45	0.16	0.16	-2.15
															1605	23	1,579.58	0.38	158.39	28	1579.00	13.21	4.15	12.57	0.20	-0.13	19.72

Bouyancy Factor		0.859
BHA Weight	In Air	In Mud
Below Jars	44,600	38,312
Above Jars	12,000	10,308
Total BHA Wt	56,600	48,620
DP String Wt	0	
Blk+(Top Dr/Kelly)Wt	50,000	50,000
DP Wt (Lbs/ft)	21.9	
Act Rt Wt 106600	Cal Wt	98,620
Hole Drag		
Up 0	Down	0

OBJECTIVE : To drill 8 1/2" hole section toTD

RESULTS :

Drill to 1614m (1595m) when decision was to POOH and change bit

REASON TO POOH : PR HR/BH

| | | | | | | | | | | | | | | |

COMPANY:	Origin Energy	DLS & Depths are, 1= °/100Ft, 2= °/30Mts, 3= °/10Mts:	2	Flow Rate is, 1=GPM, 2=Lt/m :	1	Mud Wt is 1=ppg,2=SG:	1

BHA #	5	Type	Steerable Drilling Assembly	Field	Otway Basin	Well	Peterborough-1	Well Type	Sidetrack	Page 1 of 2	Wellhead	North'g	East'g
Date IN	31-Aug-05	Mud Type	KCL/PHPA Polymer	Bit N°	5	Size	8 1/2"	PDM Model	Anadrill	Steerable Assembly	Co-ordinates	0.00	0.00
Date OUT	4-Sep-05	Mud Grad	0.485 psi/ft	Make	Type	IADC	S/N°	Run : 3	Type A675M	Drld Rty 364.0	Motor Hrs Ream. 10.11	Casing	Targets	EOC(1)	EOC(2)	TD
Depth IN	1595 mts	Mud Wt	9.34 ppg	Smith	M90BHVP	427	MR5354	PDM S/N°	2019 02019	Time Rty 21.00	Motor Hrs Circ. 9.00	To surface	Inclination			
TVD IN	1595.0 mts	Viscos'y	47 sec/qt	I O	D.C. L	B G	Other	R/S 7:8	Size 6 3/4"	% Rty 93	Motor Hrs Drlg. 24.50	9 5/8" 495m	Azimuth			
Depth OUT	1988 mts	PV / YP	18 18	5 7	BT A	X 4	RG, CT	Hsg Stab OD	8 3/8"	ROP Rty 17.3	Motor Hrs Total 43.61		MD			
TVD OUT	1987.0 mts	Filtrate	5.20 ml/30"	PH 9.5			Reason	Adjustable Bent Hsg	1.5°	Drld Slide 29.0	Previous Hrs. 102.59		TVD			
Interval Drld	393.0 mts	Cir Temp	49 °C				PR	GST Deg Bend	N/A	Time Slide 3.50	Cumulative Hrs 146.20		Section			
Hrs On Bit	24.50 hrs.	% Solids	% Sand % oil/water	N° of Jets x /32"	6.12	1.14		Delta Press from	PSI	% Slide 7	0		NORTH			
ROP	16.04 mts/hr	7.50	0.30 -	TFA 0.813	0.00			Off Btm - On Btm	200	ROP Slide 8.3			EAST			

BOTTOM HOLE ASSEMBLY					Drilling Parameters					#REF!	Steerable			AG Stab		Survey Information									PROJECTED AZIMUTH	68.31	Dogleg/Trends		
Stabilizers	A	B	C	FLOW	SPP	RPM	rop inclinatio	TORQ		Interval		Average	Interval		Bit	Stn	Depth	Incl	Azim	CL	TVD	Section	North'g	East'g		DLS	B/D	L/R
Stab Size IN	8 3/8"	8 1/4"		GPM	PSI	TDS	KLbs	K Ft Lbs	to	Slide	Rty	TFW	UG	FG	Depth	TIP	1,561.58	0.38	158.39		1561.01	13.18	4.29	12.48		°/30m	°/30m	°/30m
Stab to stab span	8.03														1614		1588.94	0.72	131.53	27	1588.37	13.26	4.09	12.64		0.46	0.37	-29.45
Bit-Stab Distance	9.08														1642	1	1,617.04	0.99	176.85	28	1616.47	13.26	3.73	12.79		0.75	0.29	48.38
Element	O.D.	I.D.	Length	Total											1670	2	1,645.19	0.89	161.12	28	1644.61	13.17	3.28	12.87		0.29	-0.11	-16.76
PDC Bit	8 1/2"	N/A	0.25	0.25											1698	3	1,673.28	1.35	191.26	28	1672.70	12.98	2.75	12.88		0.78	0.49	32.19
A675XP7850	6 3/4"	rotor	7.65	7.90											1736	4	1,710.70	1.51	182.93	37	1710.11	12.54	1.83	12.77		0.21	0.13	-6.68
Float Sub	6 3/4"	2 7/8"	0.48	8.38											1755	5	1,729.55	1.53	191.11	19	1728.95	12.30	1.33	12.71		0.35	0.03	13.02
8 1/4 " String Stabil	6 3/4"	2 1/4"	1.81	10.19											1783	6	1,757.83	2.19	180.76	28	1757.21	11.89	0.42	12.63		0.78	0.70	-10.98
SlimPulse	6 7/8"		9.81	20.00											1821	7	1,796.10	2.06	183.53	38	1795.46	11.31	-1.00	12.57		0.13	-0.10	2.17
6 3/4" NMDC	6 3/4"	3 7/8"	9.48	29.48											1848	8	1,823.31	2.34	181.01	27	1822.65	10.89	-2.04	12.53		0.33	0.31	-2.78
Crossover	6 7/8"	3 7/8"	0.51	29.99											1877	9	1,851.42	2.97	174.42	28	1850.73	10.47	-3.34	12.59		0.75	0.67	-7.03
14 x 6 1/4" DC	6 1/2"	5 1/8"	129.00	158.99											1905	10	1,879.58	3.63	168.09	28	1878.84	10.11	-4.94	12.85		0.80	0.70	-6.74
Jar	6 1/2"	2 1/4"	9.77	168.76											1933	11	1,907.68	3.42	167.41	28	1906.89	9.83	-6.63	13.22		0.23	-0.22	-0.73
2 x 6 1/4" DC	6 1/2"	2 3/4"	18.26	187.02											1961	12	1,935.79	3.85	176.99	28	1934.94	9.40	-8.39	13.45		0.79	0.46	10.22
4 x 4 1/2" HWDP	5	3"	37.36	224.38											1989	13	1,963.94	3.36	201.21	28	1963.04	8.53	-10.10	13.20		1.69	-0.52	25.81
4 1/2" DP	5	2 3/4"													1997	14	1,972.01	3.74	200.41	8	1971.09	8.19	-10.57	13.02		1.42	1.41	-2.97

Bouyancy Factor		0.857
BHA Weight	In Air	In Mud
Below Jars	44,600	38,216
Above Jars	12,000	10,282
Total BHA Wt	56,600	48,498
DP String Wt	0	
Blk+(Top Dr/Kelly)Wt	50,000	50,000
DP Wt (Lbs/ft)	21.9	
Act Rt Wt 106600	Cal Wt	98,498
Hole Drag		
Up 0	Down	0

OBJECTIVE : To drill a vertical 8 1/2" hole section toTD

RESULTS :

Drilled to 1988m MD with a maximum inclination of 3.74.

REASON TO POOH : PR

| | | | | | | | | | | | | | |

BIT GRADING

PDC GRADING CHART

BIT RUN DATA#2

Bit Size:	8 1/2"
Manufacturer:	Hycalog
Bit Type:	RSX272
Serial Number:	110574
New Bit:	Yes
IADC Code:	M223
Number of Nozzles:	7
Size of Nozzles:	12
T.F.A. (sq ins):	0.773
W.O.B. :	0-6
Depth Out:	1228
Depth In:	449
Meters Drilled:	729
Rotating Hours:	17.70
Sliding Hours:	0.00
Metres Rotary:	779
Metres Slide:	0
Total Hours:	17.70
Average R.O.P:	41.19
Circulation Rate (GPM):	550
R.P.M. at Bit:	100-120
Bit K revs:	N/A
Motor Used:	No
Motor Size:	N/A
Good for Rerun:	YES

WELL DATA

Date:	22-08-05
Drilling Supervisor:	S.Porter / B.Webb
Rig Name:	Century 7
Well Number:	Peterborough-1
Rig Contractor:	Century
Average Hole Angle:	0°
Date in:	20-08-05
Date Out:	22-08-05

MUD AND LITHOLOGY DATA

Majority Formation:	Siltstone
Other Formation:	Claystone
% Formation:	80%
Mud Type:	KCL / PHPA/Pol
Mud Weight:	8.80
PV:	11
YP:	26
% Solids:	7.00
Circulating Temperature	49.0

COMMENTS: **3 Slightly chipped teeth on the Nose row**

PDC GRADING (THIS BIT RUN)

(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)
3	1	CT	N	X	IN	NO	BHA

PDC GRADING CHART AS PER IADC NOMENCLATURE

CUTTING STRUCTURE				B	G	REMARKS	
INNER ROWS	OUTER ROWS	DULL CHAR.	LOC ATION.	BRING SEALS	GAUGE 1/16"	OTHER CHAR.	REASON PULLED
(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)

(A)	0	No Wear
	8	No Cutting structure

(B)	BT	Broken Cutters
	BU	Balled Up
	CR	Cored
	CT	Chipped Cutters
	ER	Erosion
	HC	Heat Checking
	JD	Junk Damage
	LN	Lost Nozzle
	LT	Lost Cutters
	OC	Off-Center Wear
	PN	Plugged Nozzle/ Waterway Passage
	RG	Rounded Gauge
	RO	Ring Out
	WO	Washed Out - Bit
	WT	Worn Cutters
	NO	Bit is Green
	IM	Impact
	DEL	Delamination
	SPL	Spalling
	BF	Bond Failure

(C)	C	Cone
	N	Nose
	T	Taper
	S	Shoulder
	G	Gauge
	A	All Angles

(D)	X	Fixed Cutter Bits

(E)	1	In Gauge
	1/16	1/16" Undergauge
	2/16	1/8" Undergauge etc.

(F)	BHA	Change BHA
	DMF	Downhole Motor Fail
	DSF	Drill String Fail
	DST	Drill Stem Test
	DTF	Downhole Tool Fail
	LOG	Run Logs
	RIG	Rig Repair
	CM	Condition mud
	CP	Core Point
	DP	Drill Plug
	FM	Formation Change
	HP	Hole Problems
	HR	Hours
	PP	Pump Pressure
	PR	Penetration Rate
	TD	Total Depth
	TC	Casing Depth
	TQ	Torque
	TW	Twist-Off
	WC	Weather Conditions
	WO	Washout/Drill String
	ROP	Rate of Penetration

Schlumberger Private

ROCK BIT GRADING CHART

BIT RUN DATA # 3

Bit Size:	8 1/2 inches
Manufacturer:	Smith
Bit Type:	M704VC
Serial Number:	MR4667
New Bit:	Yes
IADC Code:	417
Number of Nozzles:	3
Size of Nozzles:	18
T.F.A. (sq ins):	0.746
W.O.B. :	10-25 k LBS
Depth Out:	1389.0 m
Depth In:	1228.0 m
Meters Drilled:	161.0 m
Drilling Hours:	2.58 hours
Steering Hours:	4.28 hours
Metres Rotary:	74.0 m
Metres Steered:	87.0 m
On bottom hours:	20.10 hours
Average R.O.P:	29.00 m/hour
Circulation Rate:	553 g / min
R.P.M. at Bit:	215
Motor Used:	Yes
Motor Size:	6 3/4 inch
Bit Good for Rerun:	Yes

WELL DATA

Date:	25-Aug-05
Drilling Supervisor:	Seton Porter
Platform:	Century 7
Well Number:	Peterborough-1
Rig Contractor:	Century
Average Hole Angle:	15 °
Date in:	24-Aug-05
Date Out:	25-Aug-05
BHA #	3

MUD DATA

Mud Type:	KCl PHPA
Mud Weight:	8.90
Funnel Viscosity	53
Flow line Temperature	42
PV:	21
YP:	29
Correct Solids % vol:	6.5
Oil / Water Ratio	0 / 100

COMMENTS:

IADC ROCK BIT GRADING

(A)	(A)	(B)	(C)	(D1)	(D2)	(D3)	(E)	(B)	(F)
1	1	WT	A	E	E	E	In	NO	HP

GRADING CHART AS PER IADC NOMENCLATURE

CUTTING STRUCTURE				Cone 1	Cone 2	Cone 3		REMARKS	
INNER ROWS	OUTER ROWS	DULL CHAR.	LOCATION	BEARING / SEALS	BEARING / SEALS	BEARING / SEALS	GAUGE	OTHER CHAR.	REASON PULLED
(A)	(A)	(B)	(C)	(D)	(D)	(D)	(E)	(B)	(F)

(A) Inner cutting structure = all inner rows. **(A)** Outer cutting structure = gauge row only.
In columns 1 and 2 **(A)** , a linear scale from 0 to 8 is used to describe the condition of the cutting structure according to the following -

Steel Tooth Bits - A measure of lost tooth height due to abrasion and or damage. 0 = No loss of tooth height, 8 = total loss of tooth height.
Insert Bits - A measure of total cutting structure reduction due to lost, worn and broken inserts. 0 = As new, 8 = all inserts lost, worn and / or broken.

(A)

0	No Wear
8	No Cutting structure

(B)

BC *	Broken Cone
BF	Bond Failure
BT	Broken Teeth/Cutters
BU	Balled Up
CC *	Cracked Cone
CD *	Cone Dragged
CI	Cone Interference
CR	Cored
CT	Chipped Cutters
ER	Erosion
FC	Flat Crested Wear
HC	Heat Checking
JD	Junk Damage
LC *	Lost Cone
LN	Lost Nozzle
LT	Lost Teeth / Cutters
OC	Off-Center Wear
PB	Pinched Bit
PN	Plugged Nozzle / Flow Passage
RG	Rounded Gauge
RO	Ring Out
SD	Shirttail Damage
SS	Self-Sharpening Wear
TR	Tracking
WO	Washed Out Bit
WT	Worn Teeth / Cutters
NO	No Dull Characteristics

* Show cone number or numbers under location **(C)** .

(C)
N - Nose Row
M - Middle Row
G - Gauge Row
A - All Rows

CONE #
1
2
3

(D)

NON - SEALED BEARINGS
A linear scale estimating bearing life.
0 - No life used,
8 - No bearing life remaining.

SEALED BEARINGS
E - Effective bearings
F - Failed Bearings

(E) In - In gauge, 1 - 1/16", 2 - 2/16", 3 - 3/16" UG etc

(F)

BHA	Change BHA
CM	Condition mud
CP	Core Point
DMF	Downhole Motor Fail
DP	Drill Plug
DSF	Drill String Failure
DST	Drill Stem Test
DTF	Downhole Tool Fail
FM	Formation Change
HP	Hole Problems/ LIH
HR	Hours on Bit
LIH	Lost in Hole
LOG	Run Logs
PP	Pump Pressure
PR	Penetration Rate
PR	Penetration Rate
RIG	Rig Repair
TD	Total Depth
TQ	Torque
TW	Twist-Off
WC	Weather Conditions
WO	Washout/Drill String

Schlumberger Private

BIT GRADING CHART

BIT RUN DATA # 4

Bit Size:	8 1/2"	
Manufacturer:	Smith	
Bit Type:	MF05TC	
Serial Number:	MR5354	
New Bit:	Yes	
IADC Code:	427	
Number of Nozzles:	3	3
Size of Nozzles:	12/32"	10/32"
Number of Blades:	9	
Number of Cutters:	n/a	n/a
Size of Cutters:	n/a	n/a
T.F.A. (sq ins):	0.7455	
W.O.B. :	5-20 klbs	
Depth Out:	1614 m	
Depth In:	925 m	
Feet Drilled:	689 m	
Rotating Hours:	29.50 hrs	
Steering Hours:	11.30 hr	
Feet Rotary:	589 m	
Feet Steered:	71 m	
Total Hours:	40.80 hrs	
Average R.O.P:	16.89 m / hr	
Circulation Rate:	550 gpm	
R.P.M. at Bit:	234	
K.Revs:	430825	
Motor Used:	Yes	
Motor Size:	9 5/8"	
Bit Good for Rerun:	No	

WELL DATA

Date:	31-Aug-05
Drilling Supervisor:	C. Dann / B. Webb
Rig:	Century 7
Well Number:	Peterborough
Rig Contractor:	Century
Average Hole Angle:	0° - 3°
Date in:	26-Aug-05
Date Out:	31-Aug-05
BHA #	4

MUD AND LITHOLOGY DATA

Majority Formation:	Sandstone
Other Formation:	Siltstone
% Formation:	100%
Mud Type:	KCL/PHPA Polymer
Mud Weight:	9.20 ppg
PV:	20
YP:	22
% Solids:	7.50
PH:	9

COMMENTS:

BIT GRADING

(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)
4	3	BT	G	4	4	SD	HR/BHA

BIT GRADING CHART AS PER IADC NOMENCLATURE

CUTTING STRUCTURE				B	G	REMARKS	
INNER ROWS	OUTER ROWS	DULL CHAR.	LOC ATION.	BRING SEALS	GAUGE 1/16"	OTHER CHAR.	REASON PULLED
(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)

(A)	0	No Wear
	8	No Cutting structure

(B)	*BC	Broken Cone
	BF	Bond Failure
	BT	Broken Teeth/Cutters
	BU	Balled Up
	*CC	Cracked Cone
	*CD	Cone Dragged
	CI	Cone Interference
	CR	Cored
	CT	Chipped Cutter
	ER	Erosion
	FC	Flat Crested Wear
	HC	Heat Checking
	JD	Junk Damage
	*LC	Lost Cone
	LN	Lost Nozzle
	LT	Lost Teeth/Cutter
	OC	Off-Centre Wear
	PB	Pinched Bit
	PN	Plugged Nozzle/ Flow Passage
	RG	Rounded Gauge
	RO	Ring Out
	SD	Shirttail Damage
	SS	Self Sharpening Wear
	TR	Tracking
	WO	Washed Out-Bit
	WT	Worn Teeth / Cutters
	NO	No Dull Characteristics

(C)	N	Nose Row	Cone#	1
	M	Middle Row		2
	G	Gauge Row		3
	A	All Rows		

(D)	NON-SEALED BEARINGS:	
		0 - No life used
		8 - All life used
	SEALED BEARINGS:	
		E - Effective
		F - Failed

(E)	1	In Gauge
	1/16	1/16" Undergauge
	2/16	1/8" Undergauge etc.

(F)	BHA	Change BHA
	DMF	Downhole Motor Fail
	DSF	Drill String Fail
	DST	Drill Stem Test
	DTF	Downhole Tool Fail
	LOG	Run Logs
	RIG	Rig Repair
	CM	Condition mud
	CP	Core Point
	DP	Drill Plug
	FM	Formation Change
	HP	Hole Problems
	HR	Hours
	PP	Pump Pressure
	PR	Penetration Rate
	TD	Total Depth
	TC	Casing Depth
	TQ	Torque
	TW	Twist-Off
	WC	Weather Conditions
	WO	Washout/Drill String

PDC GRADING CHART

BIT RUN DATA#5

Bit Size:	8 1/2"	
Manufacturer:	Geodiamond	
Bit Type:	M90	
Serial Number:	JT6937	
New Bit:	Yes	
IADC Code:	M223	
Number of Nozzles:	6	1
Size of Nozzles:	12	14
T.F.A. (sq ins):	0.813	
W.O.B. :	10-35	
Depth Out:	1988	
Depth In:	1595	
Meters Drilled:	393	
Rotating Hours:	21.00	
Sliding Hours:	3.50	
Metres Rotary:	364	
Metres Slide:	29	
Total Hours:	24.50	
Average R.O.P:	16.04	
Circulation Rate (GPM):	550	
R.P.M. at Bit:	60-100	
Bit K revs:	N/A	
Motor Used:	No	
Motor Size:	6 3/4	
Good for Rerun:	YES	

WELL DATA

Date:	4-Sep-2005
Drilling Supervisor:	C. Dann / B.Webb
Rig Name:	Century 7
Well Number	Peterborough 1ST1
Rig Contractor:	Century
Average Hole Angle:	0°
Date in:	31-Aug-2005
Date Out:	4-Sep-2005

MUD AND LITHOLOGY DATA

Majority Formation:	Siltstone
Other Formation:	Claystone
% Formation:	80%
Mud Type:	KCL / PHPA/Pol
Mud Weight:	9.30
PV:	18
YP:	18
% Solids:	7.50
Circulating Temperature	49.0

COMMENTS: **Bit severely under gauge and started to ring out.**

PDC GRADING (THIS BIT RUN)

(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)
5	7	BT	A	X	4	CT	PR

PDC GRADING CHART AS PER IADC NOMENCLATURE

CUTTING STRUCTURE				B	G	REMARKS	
INNER ROWS	OUTER ROWS	DULL CHAR.	LOC ATION.	BRING SEALS	GAUGE 1/16"	OTHER CHAR.	REASON PULLED
(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)

(A)	0	No Wear
	8	No Cutting structure

(B)	BT	Broken Cutters
	BU	Balled Up
	CR	Cored
	CT	Chipped Cutters
	ER	Erosion
	HC	Heat Checking
	JD	Junk Damage
	LN	Lost Nozzle
	LT	Lost Cutters
	OC	Off-Center Wear
	PN	Plugged Nozzle/ Waterway Passage
	RG	Rounded Gauge
	RO	Ring Out
	WO	Washed Out - Bit
	WT	Worn Cutters
	NO	Bit is Green
	IM	Impact
	DEL	Delamination
	SPL	Spalling
	BF	Bond Failure

(C)	C	Cone
	N	Nose
	T	Taper
	S	Shoulder
	G	Gauge
	A	All Angles

(D)	X	Fixed Cutter Bits

(E)	1	In Gauge
	1/16	1/16" Undergauge
	2/16	1/8" Undergauge etc.

(F)	BHA	Change BHA
	DMF	Downhole Motor Fail
	DSF	Drill String Fail
	DST	Drill Stem Test
	DTF	Downhole Tool Fail
	LOG	Run Logs
	RIG	Rig Repair
	CM	Condition mud
	CP	Core Point
	DP	Drill Plug
	FM	Formation Change
	HP	Hole Problems
	HR	Hours
	PP	Pump Pressure
	PR	Penetration Rate
	TD	Total Depth
	TC	Casing Depth
	TQ	Torque
	TW	Twist-Off
	WC	Weather Conditions
	WO	Washout/Drill String
	ROP	Rate of Penetration

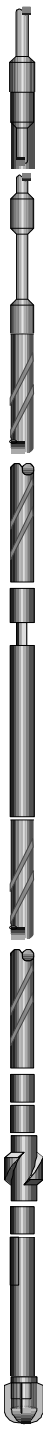
Schlumberger Private

BOTTOM HOLE ASSEMBLIES

All BHA's run in on Peterborough-1, ST1

BHA Nº	Hole Size	BHA Type	MD IN	Bit Nº	Bit Type
2	8 1/2"	PowerV Assembly w/PDC Bit	495	2	RSX272
3	8 1/2"	Steerable Assembly w/TCI Bit	1,228	3	M704VC
4	8 1/2"	Steerable Assembly w/TCI Bit	925	4	MF05TC
5	8 1/2"	Steerable Assembly w/PDC Bit	1,595	5	M90BHVPX

Origin Energy
Peterborough 1
Century Rig 7
Origin Energy Peterborough
Peterborough 1
BHA 2



	Cum. Len. (m)
4-1/2 " Drill Pipe To Surface	
4 x 4 1/2" HWDP	204.49
2 x 6 1/4" Collar	167.13
Hydraulic Jar	148.87
14 x 6 1/4" Collar	139.10
Anderdrift	10.10
Crossover	7.10
8 1/4" String Stabilizer	6.59
Float Sub	4.78
PowerDrive 675	4.30
8 1/2" PDC Bit	0.30

BHA DESCRIPTION

ELEMENT	LENGTH (m)	OD (in)	ID (in)	MAX OD (in)
8 1/2" PDC Bit	0.30	8.50	2.25	8.50
PowerDrive 675	4.00	6.75	2.63	6.75
Float Sub	0.48	6.75	2.81	6.75
8 1/4" String Stabilizer	1.81	6.75	2.88	8.25
Crossover	0.51	6.50	2.63	6.50
Anderdrift	3.00	6.75	2.81	6.50
14 x 6 1/4" Collar	129.00	6.25	2.81	6.25
Hydraulic Jar	9.77	6.38	2.75	6.38
2 x 6 1/4" Collar	18.26	6.25	2.81	6.25
4 x 4 1/2" HWDP	37.36	4.50	2.75	6.25
4-1/2 " Drill Pipe To Surface		4.43	3.83	6.25

DRILLING OVERVIEW

Depth in: 495.00 m Depth out: 1228.00 m

Inclination in: 0 degrees To: 23 degrees

Direction in: 0 degrees To: 243 degrees

Total Drilled 733.00 m Dogleg:

Schlumberger

Quality Control

Created by: BManjenic Date: 9/7/2005

Checked by: Date:

BHA Data Sheet

Origin Energy - Peterborough 1

BHA #	BHA 2	**Date**	August 30, 2005
Field	Origin Energy Peterborough	**Well**	Peterborough 1
Structure	Century Rig 7	**Borehole**	Peterborough 1

Item	Name	Vendor/ Model	Serial #	Fish. Neck OD (in)/ Length (m)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (m)	Cum. Length (m)
1	8 1/2" PDC Bit	Smith Bits Geodiam	JT6937		6.00	8.50		0.30	0.30
		ER 20197			2.25		4.50 Reg Pin		
2	PowerDrive 675	Schlumberger	60069	6.75	6.75	6.75	4.50 Reg Box	4.00	4.30
				0.62	2.63		4.50 NC50(IF) Box		
3	Float Sub	Schlumberger	CMP1543		6.75	6.75	4.50 NC50(IF) Pin	0.48	4.78
					2.81		4.50 NC50(IF) Box		
4	8 1/4" String Stabilizer	Schlumberger	OSS040935	6.75	6.75	8.25	4.50 NC50(IF) Pin	1.81	6.59
				0.74	2.88		4.50 NC50(IF) Box		
5	Crossover	Schlumberger	ASS12504	6.50	6.50	6.50	4.50 NC50(IF) Pin	0.51	7.10
				1.14	2.63		4.00 IF Box		
6	Anderdrift	Andergauge	ADB732829	6.50	6.75	6.50	4.00 IF Pin	3.00	10.10
				0.16	2.81		4.00 IF Box		
7	14 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	129.00	139.10
					2.81		4.00 IF Box		
8	Hydraulic Jar	Dailey Petroleum Se	DO 52	6.38	6.38	6.38	4.00 IF Pin	9.77	148.87
				0.35	2.75		4.00 IF Box		
9	2 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	18.26	167.13
					2.81		4.00 IF Box		
10	4 x 4 1/2" HWDP	Century			4.50	6.25	4.00 IF Pin	37.36	204.49
					2.75		4.00 IF Box		
11	4-1/2 " Drill pipe To Sufrace				4.43	6.25	4.00 IF Pin		
					3.83		4.00 IF Box		

Origin Energy
Peterborough 1
Century Rig 7
Origin Energy Peterborough
Peterborough 1
BHA 3

	Cum. Len. (m)
4-1/2 " Drill Pipe To Surface	
4 x 4 1/2" HWDP	224.38
2 x 6 1/4" Collar	187.02
Hydraulic Jar	168.76
14 x 6 1/4" Collar	158.99
Crossover	29.99
6 3/4" NM DC	29.48
SlimPulse	20.00
8 1/4" String Stabilizer	10.19
Float Sub	8.38
A675M7850XP (1.15 deg)	7.90
8 1/2" Roller Cone Bit	0.25

BHA DESCRIPTION

ELEMENT	LENGTH (m)	OD (in)	ID (in)	MAX OD (in)
8 1/2" Roller Cone Bit	0.25	8.50	2.25	8.50
A675M7850XP (1.15 deg)	7.65	6.75	5.50	8.38
Float Sub	0.48	6.75	2.81	6.75
8 1/4" String Stabilizer	1.81	6.75	2.88	8.25
SlimPulse	9.81	6.68	3.88	6.68
6 3/4" NM DC	9.48	6.75	2.88	6.75
Crossover	0.51	6.50	2.63	6.50
14 x 6 1/4" Collar	129.00	6.25	2.81	6.25
Hydraulic Jar	9.77	6.38	2.75	6.38
2 x 6 1/4" Collar	18.26	6.25	2.81	6.25
4 x 4 1/2" HWDP	37.36	4.50	2.75	6.25
4-1/2 " Drill Pipe To Surface		4.43	3.83	6.25

Bit to Direction & Inclination Sensor = 14.9266 m

DRILLING OVERVIEW

Depth in: 1228.00 m Depth out: 1389.00 m

Inclination in: 23 degrees To: 13 degrees

Direction in: 243 degrees To: 233 degrees

Total Drilled 161.00 m Dogleg:

Schlumberger

Quality Control

Created by: BManjenic Date: 9/7/2005

Checked by: Date:

BHA Data Sheet

Origin Energy - Peterborough 1

BHA #	BHA # 3	**Date**	August 30, 2005
Field	Origin Energy Peterborough	**Well**	Peterborough 1
Structure	Century Rig 7	**Borehole**	Peterborough 1

Item	Name	Vendor/ Model	Serial #	Fish. Neck OD (in)/ Length (m)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (m)	Cum. Length (m)
1	8 1/2" Roller Cone Bit	Smith International	MR4667		6.00	8.50		0.25	0.25
		M704VC			2.25		4.50 Reg Pin		
2	A675M7850XP (1.15 deg)	Schlumberger	02019		6.75	8.38	4.50 Reg Box	7.65	7.90
		A675M7850XP			5.50		4.50 IF Box		
3	Float Sub	Schlumberger	CMP1543		6.75	6.75	4.50 IF Pin	0.48	8.38
					2.81		4.50 IF Box		
4	8 1/4" String Stabilizer	Schlumberger	OSS040935	6.75	6.75	8.25	4.50 IF Pin	1.81	10.19
				0.74	2.88		4.50 IF Box		
5	SlimPulse	Schlumberger	060404		6.68	6.68	4.50 IF Pin	9.81	20.00
		SlimPulse			3.88		4.50 IF Box		
6	6 3/4" NM DC	Schlumberger	SBD2265		6.75	6.75	4.50 IF Pin	9.48	29.48
					2.88		4.50 IF Box		
7	Crossover	Schlumberger	ASS12504		6.50	6.50	4.50 IF Pin	0.51	29.99
		TSF			2.63		4.00 IF Box		
8	14 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	129.00	158.99
					2.81		4.00 IF Box		
9	Hydraulic Jar	Dailey Petroleum Se	DO 52	6.38	6.38	6.38	4.00 IF Pin	9.77	168.76
		HDL-100		0.35	2.75		4.00 IF Box		
10	2 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	18.26	187.02
					2.81		4.00 IF Box		
11	4 x 4 1/2" HWDP	Century			4.50	6.25	4.00 IF Pin	37.36	224.38
					2.75		4.00 IF Box		
12	4-1/2 " Drill Pipe To Surface				4.43	6.25	4.00 IF Pin		
					3.83		4.00 IF Box		

Origin Energy
Peterborough 1ST1
Century Rig 7
Origin Energy Peterborough
Peterborough 1ST1
BHA 4

	Cum. Len. (m)
4-1/2 " Drill Pipe To Surface	
4 x 4 1/2" HWDP	224.38
2 x 6 1/4" Collar	187.02
Hydraulic Jar	168.76
14 x 6 1/4" Collar	158.99
Crossover	29.99
6 3/4" NM DC	29.48
SlimPulse	20.00
8 1/4" String Stabilizer	10.19
Float Sub	8.38
A675M7850XP (1.5 deg)	7.90
8 1/2" Roller Cone Bit	0.25

BHA DESCRIPTION

ELEMENT	LENGTH (m)	OD (in)	ID (in)	MAX OD (in)
8 1/2" Roller Cone Bit	0.25	8.50	2.25	8.50
A675M7850XP (1.5 deg)	7.65	6.75	5.50	8.38
Float Sub	0.48	6.75	2.81	6.75
8 1/4" String Stabilizer	1.81	6.75	2.88	8.25
SlimPulse	9.81	6.68	3.88	6.68
6 3/4" NM DC	9.48	6.75	2.88	6.75
Crossover	0.51	6.50	2.63	6.50
14 x 6 1/4" Collar	129.00	6.25	2.81	6.25
Hydraulic Jar	9.77	6.38	2.75	6.38
2 x 6 1/4" Collar	18.26	6.25	2.81	6.25
4 x 4 1/2" HWDP	37.36	4.50	2.75	6.25
4-1/2 " Drill Pipe To Surface		4.43	3.83	6.25

Bit to Direction & Inclination Sensor = 14.9266 m

DRILLING OVERVIEW

Depth in: 925.00 m Depth out: 1595.00 m

Inclination in: 13 degrees To: 0 degrees

Direction in: 233 degrees To: 0 degrees

Total Drilled 670.00 m Dogleg:

Schlumberger

Quality Control

Created by: BManjenic Date: 9/7/2005

Checked by: Date:

BHA Data Sheet

Origin Energy - Peterborough 1ST1

BHA #	BHA 4 ST-1	**Date**	August 30, 2005
Field	Origin Energy Peterborough	**Well**	Peterborough 1ST1
Structure	Century Rig 7	**Borehole**	Peterborough 1ST1

Item	Name	Vendor/ Model	Serial #	Fish. Neck OD (in)/ Length (m)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (m)	Cum. Length (m)
1	8 1/2" Roller Cone Bit	Smith International	MR5354		6.00	8.50		0.25	0.25
		MF05TCPS			2.25		4.50 Reg Pin		
2	A675M7850XP (1.5 deg)	Schlumberger	02019		6.75	8.38	4.50 Reg Box	7.65	7.90
		A675M7850XP			5.50		4.50 IF Box		
3	Float Sub	Schlumberger	CMP1543		6.75	6.75	4.50 IF Pin	0.48	8.38
					2.81		4.50 IF Box		
4	8 1/4" String Stabilizer	Schlumberger	OSS040935	6.75	6.75	8.25	4.50 IF Pin	1.81	10.19
				0.74	2.88		4.50 IF Box		
5	SlimPulse	Schlumberger	060404		6.68	6.68	4.50 IF Pin	9.81	20.00
		SlimPulse			3.88		4.50 IF Box		
6	6 3/4" NM DC	Schlumberger	SBD2265		6.75	6.75	4.50 IF Pin	9.48	29.48
					2.88		4.50 IF Box		
7	Crossover	Schlumberger	ASS12504		6.50	6.50	4.50 IF Pin	0.51	29.99
					2.63		4.00 IF Box		
8	14 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	129.00	158.99
					2.81		4.00 IF Box		
9	Hydraulic Jar	Dailey Petroleum Se	DO 52	6.38	6.38	6.38	4.00 IF Pin	9.77	168.76
				0.35	2.75		4.00 IF Box		
10	2 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	18.26	187.02
					2.81		4.00 IF Box		
11	4 x 4 1/2" HWDP	Century			4.50	6.25	4.00 IF Pin	37.36	224.38
					2.75		4.00 IF Box		
12	4-1/2 " Drill Pipe To Surface				4.43	6.25	4.00 IF Pin		
					3.83		4.00 IF Box		

Origin Energy
Peterborough 1ST1
Century Rig 7
Origin Energy Peterborough
Peterborough 1ST1
BHA 5

	Cum. Len. (m)
4-1/2 "Drill Pipe To Surface	
4 x 4 1/2" HWDP	224.38
2 x 6 1/4" Collar	187.02
Hydraulic Jar	168.76
14 x 6 1/4" Collar	158.99
Crossover	29.99
6 3/4" NM DC	29.48
SlimPulse	20.00
8 1/4" String Stabilizer	10.19
Float Sub	8.38
A675M7850XP (1.5 deg)	7.90
8 1/2" PDC Bit	0.25

BHA DESCRIPTION

ELEMENT	LENGTH (m)	OD (in)	ID (in)	MAX OD (in)
8 1/2" PDC Bit	0.25	8.50	2.25	8.50
A675M7850XP (1.5 deg)	7.65	6.75	5.50	8.38
Float Sub	0.48	6.75	2.81	6.75
8 1/4" String Stabilizer	1.81	6.75	2.88	8.25
SlimPulse	9.81	6.68	3.88	6.68
6 3/4" NM DC	9.48	6.75	2.88	6.75
Crossover	0.51	6.50	2.63	6.50
14 x 6 1/4" Collar	129.00	6.25	2.81	6.25
Hydraulic Jar	9.77	6.38	2.75	6.38
2 x 6 1/4" Collar	18.26	6.25	2.81	6.25
4 x 4 1/2" HWDP	37.36	4.50	2.75	6.25
4-1/2 " Drill Pipe To Surface		4.43	3.83	6.25

Bit to Direction & Inclination Sensor = 14.9266 m

DRILLING OVERVIEW

Depth in: 1595.00 m Depth out: 1988.00 m

Inclination in: 0 degrees To: 4 degrees

Direction in: 0 degrees To: 200 degrees

Total Drilled 393.00 m Dogleg:

Schlumberger

Quality Control

Created by: BManjenic Date: 9/7/2005

Checked by: Date:

BHA Data Sheet

Origin Energy - Peterborough 1ST1

BHA #	BHA # 5 ST-1'	**Date**	August 31, 2005
Field	Origin Energy Peterborough	**Well**	Peterborough 1ST1
Structure	Century Rig 7	**Borehole**	Peterborough 1ST1

Item	Name	Vendor/ Model	Serial #	Fish. Neck OD (in)/ Length (m)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (m)	Cum. Length (m)
1	8 1/2" PDC Bit	Smith International	JT 6937		6.00	8.50		0.25	0.25
		M90BHVPX			2.25		4.50 Reg Pin		
2	A675M7850XP (1.5 deg)	Schlumberger	02019		6.75	8.38	4.50 Reg Box	7.65	7.90
		A675M7850XP			5.50		4.50 IF Box		
3	Float Sub	Schlumberger	CMP1543		6.75	6.75	4.50 IF Pin	0.48	8.38
					2.81		4.50 IF Box		
4	8 1/4" String Stabilizer	Schlumberger	OSS040935	6.75	6.75	8.25	4.50 IF Pin	1.81	10.19
				0.74	2.88		4.50 IF Box		
5	SlimPulse - Bat. On bottom	Schlumberger	060404		6.68	6.68	4.50 IF Pin	9.81	20.00
		SlimPulse			3.88		4.50 IF Box		
6	6 3/4" NM DC	Schlumberger	SBD2265		6.75	6.75	4.50 IF Pin	9.48	29.48
					2.88		4.50 IF Box		
7	Crossover	Schlumberger	ASS12504		6.50	6.50	4.50 IF Pin	0.51	29.99
					2.63		4.00 IF Box		
8	14 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	129.00	158.99
					2.81		4.00 IF Box		
9	Hydraulic Jar	Dailey Petroleum Se	DO 52	6.38	6.38	6.38	4.00 IF Pin	9.77	168.76
				0.35	2.75		4.00 IF Box		
10	2 x 6 1/4" Collar	Century			6.25	6.25	4.00 IF Pin	18.26	187.02
					2.81		4.00 IF Box		
11	4 x 4 1/2" HWDP	Century			4.50	6.25	4.00 IF Pin	37.36	224.38
					2.75		4.00 IF Box		
12	4-1/2 " Drill Pipe To Surface				4.43	6.25	4.00 IF Pin		
					3.83		4.00 IF Box		

MWD/LWD
RUN SUMMARIES

Schlumberger

Equipment Run Summary

12-Sep-2005
3:53PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: S. Porter, B. Webb **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 1

Run Information

	Date In		Date Out
	23-Aug-2005 7:30PM		25-Aug-2005 8:00AM
Depth (MD):	1,228.0 m	to	1,389.0 m
Depth (TVD):	1,194.0 m	to	1,372.0 m
Inclination:	23.52 deg	to	13.54 deg
Azimuth:	243.88 deg	to	233.56 deg
Hole Size:	8.50 in		
Last Casing Size:	9.65 in		
Last Casing Depth:	459.0 m	(MD)	
Tool Face Arc:	34.00 cm		
Total Face Angle:	225.41 deg		

Drilling Distance:	161.00 m	Drilling Hours:	6.86 hrs
Rotary Drilling Distance:	74.00 m	Rotary Drilling Hrs:	2.58 hrs
Sliding Distance:	87.00 m	Sliding Hours:	4.28 hrs
Reaming Distance:	0.00 m	Reaming Hours:	0.00 hrs
		Hrs Below Rotary:	36.50 hrs
		On Bottom Hours:	6.86 hrs
		Total Pumping Hrs:	17.75 hrs
North Ref Used:	Grid North	Min DLS:	1.28
Magnetic Dec:	0.19 deg	Max DLS:	13.52
Grid Correction:	-0.02 deg	Max DLS Depth:	1,261.2 m
Total Correction:	0.21 deg	Surface Screen:	Yes
Est. Mag. Int:	0.74 deg	DFS Used:	Yes

Rig Information

Rig Type:	LAND RIG	Pump Type:	Triplex
Water Depth:	0.00 m	Pulse Damp Press:	650.00 psi
Air Gap:	18.00 m	Number of Pumps:	2
RKB Height:	18.00 m	Pump Line ID:	8.50 in
Ground Elevation:	13.00 m	Pump Output:	3.02 gpm
		Pump Stroke Len:	6.00 in

Run Objective

Drill through the Waarre Sands.

D&M Crew List:

Cell Manager: RICARDO BORJAS
Crew: Ricardo Borjas, Cell Manager
Ben Pattarakorn, Trainee
Duncan Hay, DD
Bob Manjenic, DD

DH Motor Information

Manufacturer:		Bit to Bend Dist:	1.84 m
Motor Type:		Bearing Gap In:	0.00 in
Motor Size:	6.75	Bearing Gap Out:	0.04 in
Serial No.:		Radial Bearing Play:	in
Lobe Config:	7:8	Thrust Bearing Play:	in
Stage Length:	5.00 m	Bent Sub Angle:	deg
Rubber:	RM100	Bent HSG Angle:	1.50 deg
Sleeve Position:	Bearing		
Sleeve Size:	8.38 in		
Bearing Type:	M		

RSS Information

RSS Manufacturer:	
RSS Type:	
RSS SN:	
RSS Size:	
Pulse Height:	
Min Pulse Width:	
Max Pulse Width:	
Conn Phase Angle:	deg
Rise Time Const:	
Fall Time Const:	
Digit Time:	

MWD Configuration

Mod Type:	CPMSK	Int Tool Face Offset:	18.00 deg	Bit Rate:	0.50 bps	Stab Spacing:	
Mod Gap:	0.58	Turbine Config:	Other gpm	Frequency:	0.5 Hz	Slimpulse Pulser Config:	G11
SPT Type:	FA	Turbine Rotor Prt #:	F			Pred Sig Strength @ TD:	24.20 psi

Drilling Parameters

	Min	Max	Avg		
Circulating Temp:	41.00 C	49.00 C		Total DH Shocks (k):	1 k
Surface RPM:	0.00 rpm	60.00 rpm	60.00 rpm	Max Shock Level:	3
				Max Shock Duration:	0 sec

Schlumberger

Equipment Run Summary

12-Sep-2005
3:53PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: S. Porter, B. Webb **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 1

ROP:		46.50 m/hr	23.47 m/hr
Surface Torque:	7.00 Kft-lbs	9.00 Kft-lbs	8.00 Kft-lbs
Flow Rate:	540.00 gpm	570.00 gpm	550.00 gpm
Pump Pressure:			1,600.00 psi
Surface WOB:	13.00 Klbs	17.00 Klbs	15.00 Klbs
DLS:	1.28	13.52	

Checkshot Type:	Gyro
Checkshot Depth:	1,225 m
Checkshot Incl:	25.37 deg
Checkshot Azim:	243.18 deg
H2S In Well:	No

Turbine RPM @ Min Flow Rate:	0.00 rpm	Min Flow Rate:	0.00 gpm	Pump Pressure Off Bottom:	1,800.00 psi
Turbine RPM @ Max Flow Rate:	0.00 rpm	Max Flow Rate:	0.00 gpm	Pump Pressure On Bottom:	1,950.00 psi

Mud Information

Mud Type:	Water Base	Mud Clean:	Yes	pH:	9.50
Mud Company:	Mi Swaco	LCM Type:		Chlorides:	21,000.00 ppm
Mud Brand:	Generic	LCM Size:		Sand	0.50 %
Funnel Viscosity:	53.00 spq	LCM Concentration:	lbs/bbl	Solids:	7.00 %
Plastic Viscosity:	21.00 cp	Weighting Material:	Barite	Percent Oil:	0.00 %
Yield Point:	29.00 lb/100ft2	Mud Weight:	9.34 lb/gal		
Mud Resistivity:	0.00 ohm-m				

IADC Bit Grading

Manufacturer:	Smith	Total Revs:	60,400.00	IADC Code:	427
Model:	M704VC	Stick/Slip:	No	No. of Jets:	3X18
Type:	M	Reason Pulled:	HP	Bit TFA:	0.75 in2

Inner Row	Outer Row	Dull Char	Location	Bearings/Seals	Gauge	Other Chars
1	1	WT	A	E	I	NO

End of Run - Summary

Sync Hours:	17.75 hrs	Downhole Noise:	Yes	Run Failed:	Yes
Jamming:	No hrs	Surface System Failure:	No	D&M Trip:	No
Surface Vibration:	No	Surface Noise:	Yes	Low Oil Flag:	No hrs

Client Inconvenience: No Lost Time: hrs

Reason for POOH: HP

D&M Run Obj Met? [DD and MWD/LWD]: No

Brief Run Summary:

Good MWD Run

If not, why?:

POOH due to high possibility of stuck pipe

Schlumberger

Equipment Run Summary

12-Sep-2005
3:53PM

Job Number: ASQ-05-14
Company Rep: S. Porter, B. Webb
Run Number: 1
Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ
Rig Name: Century 7
Well Name: Peterborough-1

Equipment on the Run

Equipment	Pump Hours Start	Pump Hours Cumulative	Software Version	Tool Size
A675M-02019	0.00 hrs	17.75 hrs		6.75 in
H357840-4118	0.00 hrs	17.75 hrs		6.75 in
NMDC675L-SBD-2265	0.00 hrs	17.75 hrs		6.75 in
SPEC-DA-182	0.00 hrs	17.75 hrs	6.0	6.75 in
SPMA-BC-287	0.00 hrs	17.75 hrs		6.75 in
SPSA-BB-6806-9X	0.00 hrs	17.75 hrs		6.75 in

Services on the Run

Equipment	Service	Tool Name	Real Time Hours	Real Time Failed	Real Time Depth	Recorded Mode Hours	Recorded Mode Failed	Recorded Mode Depth	CAF
MOTORS	PowerPak	PowerPak	17.75 hrs	No	161.0 m				No
MWD	Cont D&I	SlimPulse	17.75 hrs	Yes	161.0 m				No
MWD	D&I	SlimPulse	17.75 hrs	Yes	161.0 m	36.50 hrs	No	161.0 m	No

Schlumberger

BHA Report

12-Sep-2005
3:54PM

Job Number: ASQ-05-14
Company: ORIGIN ENERGY CSG LIMITED
Rig Name: Century 7
Company Rep: S. Porter, B. Webb
Location: MEA-APG-ASQ
Well Name: Peterborough-1
Run Number: 1

								Fishing Neck		Stab	Bottom Connection		Top Connection		
Item	Description	Vendor	Tool Name	Serial Number	Length	OD, in	ID, in	OD, in	Len, m	OD, in	Size	Type	Size	Type	Cumul Len
1	BIT	Smith	Milltooth		0.25 m	8.50							114.30	REG PIN	0.25 m
2	MOTORS	D&M	PowerPak	02019	7.65 m	6.75	5.50			8.38	114.300	REG BOX	114.30	IF BOX	7.90 m
3	FLOAT SUB	D&M	Float Sub	CMP1543	0.48 m	6.75	2.81				114.300	IF PIN	114.30	IF BOX	8.38 m
4		D&M	String Stabilizer	OSS040935G	1.81 m	6.75	2.88	6.75	0.74	8.25	114.300	IF PIN	114.30	IF BOX	10.19 m
5	MWD	D&M	SlimPulse	6806-9X	9.81 m	6.75	3.88				114.300	IF PIN	114.30	IF BOX	20.00 m
6	DRILL COLLAR - NONMAG	D&M	DC	SBD-2265	9.48 m	6.75	2.88				114.300	IF PIN	114.30	IF BOX	29.48 m
7	CROSSOVER	D&M	X/O	ASS12504	0.51 m	6.50	2.63				114.300	IF PIN	101.60	IF BOX	29.99 m
8	DRILL COLLAR	Century	14 x DC	Century	129.00 m	6.25	2.81				101.600	IF PIN	101.60	IF BOX	158.99 m
9	JAR	Dailey Petroleum Services	Hydraulic Jar	DO 52	9.77 m	6.38	2.75				101.600	IF PIN	101.60	IF BOX	168.76 m
10	DRILL COLLAR	Century	2 x DC	Century	18.26 m	6.25	2.81				101.600	IF PIN	101.60	IF BOX	187.02 m
11	HWDP	Century	4 x HWDP	Century	37.36 m	4.50	2.75				101.600	IF PIN	101.60	IF BOX	224.38 m
12	DRILLPIPE	Century	Dp to Surface	Century		4.43	3.83				101.600	IF PIN	101.60	IF BOX	224.38

Predicted BHA Tendency: Drop

Hookload Out:	140,000	lbs	Wt Below Jars:	44,606	lbs
Pickup Out:	170,000	lbs	Wt Above Jars:	12,100	lbs
Slack Weight:	120,000	lbs	Total Air Wt:	56,706	lbs

	Mid Pt	Blade			Gauge		
Stab Description	to Bit	Type	Len	Width	Len	In	Out
A675XP Motor Sleeve	0.78 m	Straight	14.17 in	2.50 in	in	in	in
String Stabilizer	9.13 m	String	23.62 in	2.00 in	in	in	in

Bit to Read Out Port		Bit to Measurement Port	
SlimPulse	20.00 m	D&I	15.29 m
		Gamma Ray	16.17 m

Schlumberger

Time Description Report

12-Sep-2005
3:54PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: S. Porter, B. Webb **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 1

Date/Time	Depth	Description
23-Aug-2005 2:00PM	0.0 m	Rig Up
23-Aug-2005 7:00PM	0.0 m	M/U BHA
23-Aug-2005 7:30PM	0.0 m	Measure TFC = 34/54.3cm = 225.41deg.
23-Aug-2005 8:40PM	30.0 m	SHT is Good. FR=370gpm, SPT=26.8 psi, SPP=500psi
23-Aug-2005 9:00PM	30.0 m	RIH
24-Aug-2005 3:30AM	1,228.0 m	Tag bottom. Drill ahead.
24-Aug-2005 8:50AM	1,305.0 m	Repair Shale Shakers.
24-Aug-2005 9:30AM	1,305.0 m	Back on bottom. Drill ahead.
24-Aug-2005 4:20PM	1,389.0 m	Stopped drilling due to high overpull, ream back 8 singles.
25-Aug-2005 2:15AM	1,389.0 m	POOH.
25-Aug-2005 8:00AM	0.0 m	Tool ART. Rack back BHA.

Schlumberger

Drilling Parameters Report

12-Sep-2005
3:54:04PM

Job Number: ASQ-05-14
Company Rep: S. Porter, B. Webb
Run Number: 1

Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ

Rig Name: Century 7
Well Name: Peterborough-1

	24-Aug-2005 4:00 PM	24-Aug-2005 5:36 AM
Field Engineer	Ricardo Borjas	Ricardo Borjas
Depth	1,350.00 m	1,258.00 m
Avg ROP	29.00 m/hr	46.50 m/hr
Avg Std Press	1,500.00 psi	1,771.00 psi
Turbine RPM	.00 rpm	.00 rpm
Flow Rate	550.00 gpm	548.00 gpm
Avg RPM	.00 rpm	.00 rpm
Max RPM	.00 rpm	.00 rpm
Total Shocks (k)	1 k	
Avg SWOB	15.00 Klbs	13.00 Klbs
Max Shock	3	2
Max SWOB	17.00 Klbs	15.00 Klbs
Avg DH WOB		
Max DH WOB		
Avg Surf Torque	.00 Kft-lbs	.00 Kft-lbs
Max Surf Torque	.00 Kft-lbs	.00 Kft-lbs
Avg DH Torque		
Max DH Torque		
Formation	Claystone	Claystone
Friction		
Drag Up		
Drag Down		
Mud Weight	9.34 lb/gal	9.00 lb/gal
Funnel Viscosity	53.00 spq	56.00 spq
Plastic Viscosity	21.00 cp	15.00 cp
Circ Temp	49.00 C	41.00 C
Signal Strength	3.50 psi	8.50 psi
% Signal Conf	92.00 %	92.00 %
Diff Press	150.00 psi	150.00 psi

Schlumberger

Equipment Run Summary

12-Sep-2005
4:33PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: C. Dann, B. Webb **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 2

Run Information

	Date In		Date Out
	26-Aug-2005 12:30PM		31-Aug-2005 3:30PM
Depth (MD):	925.0 m	to	1,614.0 m
Depth (TVD):	925.0 m	to	1,613.0 m
Inclination:	0.15 deg	to	0.38 deg
Azimuth:	181.51 deg	to	158.39 deg
Hole Size:	8.50 in		
Last Casing Size:	9.65 in		
Last Casing Depth:	459.0 m	(MD)	
Tool Face Arc:	33.00 cm		
Total Face Angle:	218.38 deg		

Drilling Distance:	689.00 m	Drilling Hours:	51.80 hrs
Rotary Drilling Distance:	589.00 m	Rotary Drilling Hrs:	40.50 hrs
Sliding Distance:	71.00 m	Sliding Hours:	11.30 hrs
Reaming Distance:	0.00 m	Reaming Hours:	30.34 hrs
		Hrs Below Rotary:	123.00 hrs
		On Bottom Hours:	40.50 hrs
		Total Pumping Hrs:	61.00 hrs
North Ref Used:	Grid North	Min DLS:	0.04
Magnetic Dec:	0.19 deg	Max DLS:	6.08
Grid Correction:	-0.02 deg	Max DLS Depth:	1,036.5 m
Total Correction:	0.21 deg	Surface Screen:	Yes
Est. Mag. Int:	0.74 deg	DFS Used:	Yes

Rig Information

Rig Type:	Land Rig	Pump Type:	Triplex
Water Depth:	0.00 m	Pulse Damp Press:	650.00 psi
Air Gap:	18.00 m	Number of Pumps:	2
RKB Height:	18.00 m	Pump Line ID:	8.50 in
Ground Elevation:	13.00 m	Pump Output:	3.02 gpm
		Pump Stroke Len:	6.00 in

Run Objective

D&M Crew List:

Cell Manager: Ricardo Borjas
Crew: Ricardo Borjas, Cell Manager
Ben Pattarakorn, Trainee
Bob Manjenic, DD
Troy Auger, DD

DH Motor Information

Manufacturer:	Schlumberger	Bit to Bend Dist:	1.84 m
Motor Type:	475xp	Bearing Gap In:	0.00 in
Motor Size:	6.75	Bearing Gap Out:	0.04 in
Serial No.:	02019	Radial Bearing Play:	in
Lobe Config:	7:8	Thrust Bearing Play:	in
Stage Length:	5.00 m	Bent Sub Angle:	deg
Rubber:	RM100	Bent HSG Angle:	1.50 deg
Sleeve Position:	Bearing		
Sleeve Size:	8.38 in		
Bearing Type:	M		

RSS Information

RSS Manufacturer:	
RSS Type:	
RSS SN:	
RSS Size:	
Pulse Height:	
Min Pulse Width:	
Max Pulse Width:	
Conn Phase Angle:	deg
Rise Time Const:	
Fall Time Const:	
Digit Time:	

MWD Configuration

Mod Type:	CPMSK	Int Tool Face Offset:	19.00 deg	Bit Rate:	0.50 bps	Stab Spacing:	
Mod Gap:	0.58	Turbine Config:	Other gpm	Frequency:	0.5 Hz	Slimpulse Pulser Config:	G11
SPT Type:	FA	Turbine Rotor Prt #:	F			Pred Sig Strength @ TD:	24.20 psi

Drilling Parameters

	Min	Max	Avg		
Circulating Temp:	49.00 C	49.00 C		Total DH Shocks (k):	1 k
Surface RPM:	150.00 rpm	250.00 rpm	202.00 rpm	Max Shock Level:	3
				Max Shock Duration:	0 sec

Schlumberger

Equipment Run Summary

12-Sep-2005
4:33PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: C. Dann, B. Webb **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 2

ROP:		19.20 m/hr	16.30 m/hr	Checkshot Type:	
Surface Torque:	5.00 Kft-lbs	5.00 Kft-lbs	5.00 Kft-lbs	Checkshot Depth:	m
Flow Rate:	529.00 gpm	587.00 gpm	556.00 gpm	Checkshot Incl:	deg
Pump Pressure:			1,808.50 psi	Checkshot Azim:	deg
Surface WOB:	14.00 Klbs	18.00 Klbs	15.50 Klbs		
DLS:	0.04	6.08		H2S In Well:	No

Turbine RPM @ Min Flow Rate:	0.00 rpm	Min Flow Rate:	0.00 gpm	Pump Pressure Off Bottom:	1,850.00 psi
Turbine RPM @ Max Flow Rate:	0.00 rpm	Max Flow Rate:	0.00 gpm	Pump Pressure On Bottom:	2,000.00 psi

Mud Information

Mud Type:	Water Base	Mud Clean:	Yes	pH:	9.50
Mud Company:	Mi Swaco	LCM Type:		Chlorides:	21,000.00 ppm
Mud Brand:	Generic	LCM Size:		Sand	0.50 %
Funnel Viscosity:	53.00 spq	LCM Concentration:	lbs/bbl	Solids:	7.00 %
Plastic Viscosity:	21.00 cp	Weighting Material:	Barite	Percent Oil:	0.00 %
Yield Point:	29.00 lb/100ft2	Mud Weight:	9.34 lb/gal		
Mud Resistivity:	0.00 ohm-m				

IADC Bit Grading

Manufacturer:	Smith	Total Revs:	430,000.00	IADC Code:	427
Model:	MF05TC	Stick/Slip:		No. of Jets:	3X12 3X10
Type:	I	Reason Pulled:	HR	Bit TFA:	0.56 in2

Inner Row	Outer Row	Dull Char	Location	Bearings/Seals	Gauge	Other Chars
4	3	BT	G		4	SD

End of Run - Summary

Sync Hours:	61.00 hrs	Downhole Noise:	Yes	Run Failed:	Yes
Jamming:	No hrs	Surface System Failure:	No	D&M Trip:	No
Surface Vibration:	No	Surface Noise:	No	Low Oil Flag:	No hrs

Client Inconvenience: No Lost Time: hrs

Reason for POOH: HR

D&M Run Obj Met? [DD and MWD/LWD]: No

Brief Run Summary:

Good MWD run

If not, why?:

POOH to change the bit

Schlumberger

Equipment Run Summary

12-Sep-2005
4:33PM

Job Number: ASQ-05-14
Company Rep: C. Dann, B. Webb
Run Number: 2
Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ
Rig Name: Century 7
Well Name: Peterborough-1

Equipment on the Run

Equipment	Pump Hours Start	Pump Hours Cumulative	Software Version	Tool Size
A675M-02019	17.75 hrs	78.75 hrs		6.75 in
H357840-4118	17.75 hrs	78.75 hrs		6.75 in
NMDC675L-SBD-2265	17.75 hrs	78.75 hrs		6.75 in
SPEC-DA-182	17.75 hrs	78.75 hrs	6.0	6.75 in
SPMA-BC-287	17.75 hrs	78.75 hrs		6.75 in
SPSA-BB-6806-9X	17.75 hrs	78.75 hrs		6.75 in

Services on the Run

Equipment	Service	Tool Name	Real Time Hours	Real Time Failed	Real Time Depth	Recorded Mode Hours	Recorded Mode Failed	Recorded Mode Depth	CAF
MOTORS	PowerPak	PowerPak	61.00 hrs	No	689.0 m				No
MWD	Cont D&I	SlimPulse	61.00 hrs	Yes	689.0 m				No
MWD	D&I	SlimPulse	61.00 hrs	Yes	689.0 m	123.00 hrs	No	689.0 m	No

Schlumberger

BHA Report

12-Sep-2005
4:33PM

Job Number: ASQ-05-14
Company: ORIGIN ENERGY CSG LIMITED
Rig Name: Century 7
Company Rep: C. Dann, B. Webb
Location: MEA-APG-ASQ
Well Name: Peterborough-1
Run Number: 2

								Fishing Neck		Stab	Bottom Connection		Top Connection		
Item	Description	Vendor	Tool Name	Serial Number	Length	OD, in	ID, in	OD, in	Len, m	OD, in	Size	Type	Size	Type	Cumul Len
1	BIT	Smith	Insert		0.25 m	8.50							114.30	REG PIN	0.25 m
2	MOTORS	D&M	PowerPak	02019	7.65 m	6.75	5.50			8.38	114.300	REG BOX	114.30	IF BOX	7.90 m
3	FLOAT SUB	D&M	Float Sub	CMP1543	0.48 m	6.75	2.81				114.300	IF PIN	114.30	IF BOX	8.38 m
4	STABILIZER	D&M	String Stabilizer	OSS040935G	1.81 m	6.75	2.88	6.75	0.74	8.25	114.300	IF PIN	114.30	IF BOX	10.19 m
5	MWD	D&M	SlimPulse	6806-9X	9.81 m	6.75	3.88				114.300	IF PIN	114.30	IF BOX	20.00 m
6	DRILL COLLAR - NONMAG	D&M	DC	SBD-2265	9.48 m	6.75	2.88				114.300	IF PIN	114.30	IF BOX	29.48 m
7	CROSSOVER	D&M	X/O	ASS12504	0.51 m	6.50	2.63				114.300	IF PIN	101.60	IF BOX	29.99 m
8	DRILL COLLAR	Century	14 x DC	Century	129.00 m	6.25	2.81				101.600	IF PIN	101.60	IF BOX	158.99 m
9	JAR	Dailey Petroleum Services	Hydraulic Jar	DO 52	9.77 m	6.38	2.75				101.600	IF PIN	101.60	IF BOX	168.76 m
10	DRILL COLLAR	Century	2 x DC	Century	18.26 m	6.25	2.81				101.600	IF PIN	101.60	IF BOX	187.02 m
11	HWDP	Century	4 x HWDP	Century	37.36 m	4.50	2.75				101.600	IF PIN	101.60	IF BOX	224.38 m
12	DRILLPIPE	Century	Dp to Surface	Century		4.43	3.83				101.600	IF PIN	101.60	IF BOX	224.38

Predicted BHA Tendency: Drop

Hookload Out:	14,000 lbs	Wt Below Jars:	44,606 lbs
Pickup Out:	17,000 lbs	Wt Above Jars:	12,100 lbs
Slack Weight:	12,000 lbs	Total Air Wt:	56,706 lbs

	Mid Pt	Blade			Gauge		
Stab Description	to Bit	Type	Len	Width	Len	In	Out
A675xp Motor Sleeve	0.75 m	Straight	14.17 in	2.50 in	in	in	in
String Stabilizer	9.13 m	string	23.62 in	2.00 in	in	in	in

Bit to Read Out Port	
SlimPulse	20.00 m

Bit to Measurement Port	
D&I	15.29 m
Gamma Ray	16.17 m

Schlumberger

Time Description Report

12-Sep-2005
4:33PM

Job Number: ASQ-05-14
Company: ORIGIN ENERGY CSG LIMITED
Rig Name: Century 7
Company Rep: C. Dann, B. Webb
Location: MEA-APG-ASQ
Well Name: Peterborough-1
Run Number: 2

Date/Time	Depth	Description
26-Aug-2005 12:00PM		Make up BHA
26-Aug-2005 1:00PM		RIH
26-Aug-2005 1:00PM		SHT is good
26-Aug-2005 8:00PM	925.0 m	On bottom
27-Aug-2005 6:00AM	977.0 m	Bad signal in HSPM
27-Aug-2005 10:00AM	1,000.0 m	Air in the circulating system deteriorated the signal.
27-Aug-2005 11:00AM	1,000.0 m	Cont. Drill
27-Aug-2005 2:30PM	1,023.0 m	Repair Shale shaker
28-Aug-2005 8:00AM	1,239.0 m	Rig Service
29-Aug-2005 9:30AM	1,558.0 m	Rig service
29-Aug-2005 7:00PM	1,614.0 m	Circulate hole clean, prepare POOH
30-Aug-2005 3:00AM	1,000.0 m	Tight hole, need to slowly POOH
31-Aug-2005 12:30AM	650.0 m	Stuck in the tight hole need to ream back to 1200m
31-Aug-2005 3:30PM		Finish POOH

Schlumberger

Drilling Parameters Report

12-Sep-2005
4:33:19PM

Job Number: ASQ-05-14
Company Rep: C. Dann, B. Webb
Run Number: 2

Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ

Rig Name: Century 7
Well Name: Peterborough-1

	30-Aug-2005 6:00 AM	29-Aug-2005 6:00 AM	28-Aug-2005 6:00 AM	27-Aug-2005 6:00 AM
Field Engineer	Ben Pattarakorn	Ben Pattarakorn	Ben Pattarakorn	Ben Pattarakorn
Depth	1,614.00 m	1,530.00 m	1,202.00 m	977.00 m
Avg ROP	14.00 m/hr	14.00 m/hr	19.20 m/hr	18.00 m/hr
Avg Std Press	1,800.00 psi	1,987.00 psi	1,881.00 psi	1,566.00 psi
Turbine RPM				.00 rpm
Flow Rate	540.00 gpm	529.00 gpm	568.00 gpm	587.00 gpm
Avg RPM	150.00 rpm	244.00 rpm	250.00 rpm	164.00 rpm
Max RPM	200.00 rpm	250.00 rpm	278.00 rpm	230.00 rpm
Total Shocks (k)				
Avg SWOB	15.00 Klbs	18.00 Klbs	14.00 Klbs	15.00 Klbs
Max Shock				3
Max SWOB	18.00 Klbs	20.00 Klbs	15.00 Klbs	18.00 Klbs
Avg DH WOB				
Max DH WOB				
Avg Surf Torque				
Max Surf Torque				
Avg DH Torque				
Max DH Torque				
Formation				
Friction				
Drag Up				
Drag Down				
Mud Weight	9.17 lb/gal	9.34 lb/gal	9.00 lb/gal	9.34 lb/gal
Funnel Viscosity	51.00 spq	54.00 spq	57.00 spq	54.00 spq
Plastic Viscosity	20.00 cp	20.00 cp	19.00 cp	17.00 cp
Circ Temp	49.00 C	49.00 C	49.00 C	49.00 C
Signal Strength	6.50 psi	7.00 psi	6.00 psi	10.00 psi
% Signal Conf	90.00 %	89.00 %	98.00 %	95.00 %
Diff Press				

Schlumberger

Equipment Run Summary

12-Sep-2005
3:48PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: SLB **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 3

Run Information

	Date In		Date Out
	31-Aug-2005 8:00PM		4-Sep-2005 5:30AM
Depth (MD):	1,614.0 m	to	1,988.0 m
Depth (TVD):	1,613.0 m	to	1,987.0 m
Inclination:	0.38 deg	to	3.74 deg
Azimuth:	158.39 deg	to	200.41 deg
Hole Size:	8.50 in		
Last Casing Size:	9.65 in		
Last Casing Depth:	495.0 m	(MD)	
Tool Face Arc:	33.00 cm		
Total Face Angle:	218.38 deg		

Drilling Distance:	374.00 m	Drilling Hours:	24.50 hrs
Rotary Drilling Distance:	364.00 m	Rotary Drilling Hrs:	21.10 hrs
Sliding Distance:	29.00 m	Sliding Hours:	3.40 hrs
Reaming Distance:	0.00 m	Reaming Hours:	0.00 hrs
		Hrs Below Rotary:	81.50 hrs
		On Bottom Hours:	24.50 hrs
		Total Pumping Hrs:	43.66 hrs
North Ref Used:	Grid North	Min DLS:	0.13
Magnetic Dec:	0.19 deg	Max DLS:	1.72
Grid Correction:	-0.02 deg	Max DLS Depth:	1,963.0 m
Total Correction:	0.21 deg	Surface Screen:	Yes
Est. Mag. Int:	0.74 deg	DFS Used:	No

Rig Information

Rig Type:	LAND RIG	Pump Type:	Triplex
Water Depth:	0.00 m	Pulse Damp Press:	650.00 psi
Air Gap:	18.00 m	Number of Pumps:	2
RKB Height:	18.00 m	Pump Line ID:	8.50 in
Ground Elevation:	13.00 m	Pump Output:	3.02 gpm
		Pump Stroke Len:	6.00 in

Run Objective

Drill to TD holding zero inclination.

D&M Crew List:

Cell Manager: JAMES DOLAN
Crew: James Dolan, Cell Manager
Ben Pattarakorn, Trainee
Bob Manjenic, DD
Troy Auger, DD

DH Motor Information

Manufacturer:		Bit to Bend Dist:	1.84 m
Motor Type:		Bearing Gap In:	0.00 in
Motor Size:	6.75	Bearing Gap Out:	0.04 in
Serial No.:		Radial Bearing Play:	in
Lobe Config:	7:8	Thrust Bearing Play:	in
Stage Length:	5.00 m	Bent Sub Angle:	deg
Rubber:	RM100	Bent HSG Angle:	1.50 deg
Sleeve Position:	Bearing		
Sleeve Size:	8.38 in		
Bearing Type:	M		

RSS Information

RSS Manufacturer:	
RSS Type:	
RSS SN:	
RSS Size:	
Pulse Height:	
Min Pulse Width:	
Max Pulse Width:	
Conn Phase Angle:	deg
Rise Time Const:	
Fall Time Const:	
Digit Time:	

MWD Configuration

Mod Type:	CPMSK	Int Tool Face Offset:	54.00 deg	Bit Rate:	0.50 bps	Stab Spacing:	
Mod Gap:	0.58	Turbine Config:	Other gpm	Frequency:	0.5 Hz	Slimpulse Pulser Config:	G11
SPT Type:	FA	Turbine Rotor Prt #:	F			Pred Sig Strength @ TD:	24.20 psi

Drilling Parameters

	Min	Max	Avg		
Circulating Temp:	59.00 C	61.00 C		Total DH Shocks (k):	1 k
Surface RPM:	100.00 rpm	100.00 rpm	100.00 rpm	Max Shock Level:	1
				Max Shock Duration:	0 sec

Schlumberger

Equipment Run Summary

12-Sep-2005
3:48PM

Job Number: ASQ-05-14 **Company:** ORIGIN ENERGY CSG LIMITED **Rig Name:** Century 7
Company Rep: SLB **Location:** MEA-APG-ASQ **Well Name:** Peterborough-1
Run Number: 3

ROP:		40.00 m/hr	20.00 m/hr
Surface Torque:	7.00 Kft-lbs	7.00 Kft-lbs	7.00 Kft-lbs
Flow Rate:	500.00 gpm	500.00 gpm	500.00 gpm
Pump Pressure:			1,990.00 psi
Surface WOB:	15.00 Klbs	25.00 Klbs	15.00 Klbs
DLS:	0.13	1.72	

Checkshot Type:
Checkshot Depth: m
Checkshot Incl: deg
Checkshot Azim: deg
H2S In Well: No

Turbine RPM @ Min Flow Rate: 0.00 rpm Min Flow Rate: 0.00 gpm Pump Pressure Off Bottom: 1,890.00 psi
Turbine RPM @ Max Flow Rate: 0.00 rpm Max Flow Rate: 0.00 gpm Pump Pressure On Bottom: 1,990.00 psi

Mud Information

Mud Type: Water Base Mud Clean: Yes pH: 9.50
Mud Company: MI Swaco LCM Type: Chlorides: 21,000.00 ppm
Mud Brand: Generic LCM Size: Sand 0.50 %
Funnel Viscosity: 53.00 spq LCM Concentration: lbs/bbl Solids: 7.00 %
Plastic Viscosity: 21.00 cp Weighting Material: Barite Percent Oil: 0.00 %
Yield Point: 29.00 lb/100ft2 Mud Weight: 9.34 lb/gal
Mud Resistivity: 0.00 ohm-m

IADC Bit Grading

Manufacturer: Smith Total Revs: IADC Code: 427
Model: Stick/Slip: No. of Jets:
Type: P Reason Pulled: TD Bit TFA: 0.00 in2

Inner Row	Outer Row	Dull Char	Location	Bearings/Seals	Gauge	Other Chars

End of Run - Summary

Sync Hours: 43.66 hrs Downhole Noise: Yes Run Failed: Yes
Jamming: No hrs Surface System Failure: No D&M Trip: No
Surface Vibration: No Surface Noise: No Low Oil Flag: No hrs

Client Inconvenience: No Lost Time: hrs
Reason for POOH: TD **D&M Run Obj Met? [DD and MWD/LWD]: Yes**

Brief Run Summary:
Good MWD run

If not, why?:

Schlumberger

Equipment Run Summary

12-Sep-2005
3:48PM

Job Number: ASQ-05-14
Company Rep: SLB
Run Number: 3
Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ
Rig Name: Century 7
Well Name: Peterborough-1

Equipment on the Run

	Pump Hours			
Equipment	Start	Cumulative	Software Version	Tool Size
A675M-02019	79.39 hrs	123.05 hrs		6.75 in
H357840-6109	0.00 hrs	43.66 hrs		6.75 in
NMDC675L-SBD-2265	79.39 hrs	123.05 hrs		6.75 in
SPEC-DA-182	79.39 hrs	123.05 hrs	6.0	6.75 in
SPMA-BC-287	79.39 hrs	123.05 hrs		6.75 in
SPSA-BB-6806-9X	79.39 hrs	123.05 hrs		6.75 in

Services on the Run

			Real Time			Recorded Mode			
Equipment	Service	Tool Name	Hours	Failed	Depth	Hours	Failed	Depth	CAF
MOTORS	PowerPak	PowerPak	hrs	No					No
MWD	Cont D&I	SlimPulse	43.66 hrs	Yes	374.0 m				No
MWD	D&I	SlimPulse	43.66 hrs	Yes	374.0 m	81.50 hrs	No	374.0 m	No

Schlumberger

BHA Report

12-Sep-2005
3:48PM

Job Number: ASQ-05-14
Company: ORIGIN ENERGY CSG LIMITED
Rig Name: Century 7
Company Rep: SLB
Location: MEA-APG-ASQ
Well Name: Peterborough-1
Run Number: 3

								Fishing Neck		Stab	Bottom Connection		Top Connection		
Item	Description	Vendor	Tool Name	Serial Number	Length	OD, in	ID, in	OD, in	Len, m	OD, in	Size	Type	Size	Type	Cumul Len
1	BIT	Smith	PDC		0.25 m	8.50							4 1/2"	REG PIN	0.25 m
2	MOTORS	D&M	PowerPak	02019	7.65 m	6.75	5.50			8.38	4 1/2"	REG BOX	4 1/2"	IF BOX	7.90 m
3	FLOAT SUB	D&M	Float Sub	CMP1543	0.48 m	6.75	2.81				4 1/2"	IF PIN	4 1/2"	IF BOX	8.38 m
4	STABILIZER	D&M	String Stabilizer	OSS040935G	1.81 m	6.75	2.88	6.75	0.74	8.25	4 1/2"	IF PIN	4 1/2"	IF BOX	10.19 m
5	MWD	D&M	SlimPulse	6806-9X	9.81 m	6.75	3.88				4 1/2"	IF PIN	4 1/2"	IF BOX	20.00 m
6	DRILL COLLAR - NONMAG	D&M	DC	SBD-2265	9.48 m	6.75	2.88				4 1/2"	IF PIN	4 1/2"	IF BOX	29.48 m
7	CROSSOVER	D&M	X/O	ASS12504	0.51 m	6.50	2.63				4 1/2"	IF PIN	4"	IF BOX	29.99 m
8	DRILL COLLAR	Century	14x DC	Century	129.00 m	6.25	2.81				4"	IF PIN	4"	IF BOX	158.99 m
9	JAR	Dailey Petroleur	Hydraulic Jar	DO 52	9.77 m	6.38	2.75				4"	IF PIN	4"	IF BOX	168.76 m
10	DRILL COLLAR	Century	2x DC	Century	18.26 m	6.25	2.81				4"	IF PIN	4"	IF BOX	187.02 m
11	HWDP	Century	4 x HWDP	Century	37.36 m	4.50	2.75				4"	IF PIN	4"	IF BOX	224.38 m
12	DRILLPIPE	Century	Dp to surface	Century		4.43	3.83				4"	IF PIN	4"	IF BOX	224.38

Predicted BHA Tendency: Drop

Hookload Out:	14,000 lbs		Wt Below Jars:	44,606 lbs	
Pickup Out:	17,000 lbs		Wt Above Jars:	12,100 lbs	
Slack Weight:	12,000 lbs		Total Air Wt:	56,706 lbs	

	Mid Pt	Blade			Gauge		
Stab Description	to Bit	Type	Len	Width	Len	In	Out
A675xp Motor Sleeve	0.75 m	straight	14.17 in	2.50 in	in	in	in
String Stabilizer	9.13 m	string	23.63 in	2.00 in	in	in	in

Bit to Read Out Port	
SlimPulse	20.00 m

Bit to Measurement Port	
DNI	15.29 m
Gamma ray	16.17 m

Schlumberger

Time Description Report

12-Sep-2005
3:48PM

Job Number: ASQ-05-14
Company: ORIGIN ENERGY CSG LIMITED
Rig Name: Century 7
Company Rep: SLB
Location: MEA-APG-ASQ
Well Name: Peterborough-1
Run Number: 3

Date/Time	Depth	Description
31-Aug-2005 6:00AM	1,614.0 m	On bottom, drill ahead
31-Aug-2005 7:15PM	0.0 m	Make up BHA
31-Aug-2005 8:00PM	0.0 m	SHT is good
31-Aug-2005 8:15PM	0.0 m	RIH
1-Sep-2005 9:30AM	1,661.0 m	Repair shale shaker
1-Sep-2005 10:00AM	1,661.0 m	Back on bottom, drill ahead
1-Sep-2005 2:20PM	1,707.0 m	Loss of power to acquisition computer
2-Sep-2005 12:00AM	1,875.0 m	Midnight Depth
2-Sep-2005 6:00AM	1,923.0 m	Wiper trip, 200m of hole
2-Sep-2005 11:00AM	1,923.0 m	Back on bottom, drill ahead
2-Sep-2005 11:46AM	1,933.0 m	Repair Mud Pumps
2-Sep-2005 12:00PM	1,933.0 m	Back on bottom
2-Sep-2005 12:46PM	1,944.0 m	Power trip in unit, shutdown ASAP. Restart. Century electrician trying to fix power supply.
2-Sep-2005 2:24PM	1,950.0 m	Power trip in unit, shutdown ASAP. Restart. Century electrician trying to fix power supply.
2-Sep-2005 3:34PM	1,952.0 m	Control drill at 20m/hr
2-Sep-2005 7:17PM	1,975.0 m	Drill through sands, drilling break to 50m/hr. Circulate B/U.
2-Sep-2005 8:39PM	1,975.0 m	Survey on connection and drill ahead.
3-Sep-2005 4:40AM	1,988.0 m	Reach the target and take Survey
3-Sep-2005 5:00AM	1,988.0 m	POOH for bit trip
3-Sep-2005 4:34PM	1,070.0 m	Tight hole, work pipe free

Schlumberger

Drilling Parameters Report

12-Sep-2005
3:48:48PM

Job Number: ASQ-05-14
Company Rep: SLB
Run Number: 3

Company: ORIGIN ENERGY CSG LIMITED
Location: MEA-APG-ASQ

Rig Name: Century 7
Well Name: Peterborough-1

	03-Sep-2005 4:00 AM	02-Sep-2005 11:53 AM
Field Engineer	Ben Pattarakorn	James Dolan
Depth	1,987.00 m	1,933.00 m
Avg ROP	.20 m/hr	30.00 m/hr
Avg Std Press	2,040.00 psi	1,950.00 psi
Turbine RPM		
Flow Rate	520.00 gpm	500.00 gpm
Avg RPM	233.00 rpm	100.00 rpm
Max RPM	240.00 rpm	100.00 rpm
Total Shocks (k)		
Avg SWOB	12.00 Klbs	10.00 Klbs
Max Shock		
Max SWOB	15.00 Klbs	20.00 Klbs
Avg DH WOB		
Max DH WOB		
Avg Surf Torque		5.00 Kft-lbs
Max Surf Torque		7.00 Kft-lbs
Avg DH Torque		
Max DH Torque		
Formation	Sandstone	Shale
Friction		
Drag Up		
Drag Down		
Mud Weight	9.50 lb/gal	9.30 lb/gal
Funnel Viscosity	45.00 spq	
Plastic Viscosity	17.00 cp	
Circ Temp	61.00 C	52.50 C
Signal Strength	7.00 psi	6.00 psi
% Signal Conf	94.00 %	99.00 %
Diff Press		100.00 psi

MOTOR RUN SUMMARIES

Schlumberger

Origin energy

PowerDrive+Motor Run Summary

PowerDrive — The new direction in rotary drilling

Rev 3: Please do not make any changes to this form !!!

JOB NUMBER	COMPANY REP.	DATE IN	DATE OUT	PowerDrive Run #	MWD Run #	Rig Bit Run #	PD Engineer
AWA-05-14	S.Porter / B.Webb	20/8/2002	23/8/05	1	N/A	2	D.Hay

CLIENT	Hole Depth - FROM	TO	Flex/ILF SN (ft/m)	Xtra Receiver #	Control Unit #
ORIGIN	499	1228			303

RIG NAME	Inclination - FROM	TO	Control Collar #	Ext Sub #	Bias Unit #
CENTURY 7	0.00 deg	23.52 deg	60089	48552	48550

WELL NAME	Azimuth - FROM	TO	Bit Mfg	Bit Type	Bit SN
Peterborough 1	0.00 deg	243.88 deg	Hycalog	RSX272	110574

LOCATION	Hole Size	Bit to D&I	Bit to AIM	Dull Grade - IADC Cutting Structure
Peterborough	8.50 inches	N/A	N/A	3-1-CT-N-X-IN-NO-BHA

Map file name	Mag Dec / Grid Cor / Total Corr.			Connector Phase Angle	Downlink response ?	On Bottom Hours	Last Casing size/wt / depth
From CU303	10.89	-1.16	12.05	139	N/A	17.70	9 5/8 / 495m

Bit to Bottom of BU Pad	Bit to Midpoint of Stab	Flex Lgth	WOB MIN / MAX		Ave. RPM	Ave. WOB	Off Bottom Circulating Hours	ft / M Drilled this run
0.40	5.50	N/A	5	10	100	5	12.50	729m

PP MIN/MAX		Initial / Final Battery Voltage		RPM MIN / MAX		MWD Min/Max Flow Rating		Below Rotary Table Hours	PD ft/M Drilled (Operating)
800	1200	3.74		90	120			73.00	729m

Pulse Width MIN/MAX		Pulse height th	Digit Time	Actual Flow MIN / MAX		Pump Output / Type		PowerDrive Operating Hours	On Btm ROP	Ave ROP
4 sec	8 sec	100%	60 sec			3.024	Triplex	33.39	41.2	20.0

Tool Response

Max DLS	Max BUR	Max Turn Rt
-	-	-

Stab gauge before/after run: 8 1/4" / 8 1/4"

Run Objective: Maintain vertical to TD

SOFTWARE VERSION

TSIM	Comms module	Sensor module	MWD	IDEAL
AC	3.31	1.91		

Reason for POOH: Anderdrift surveys indicated more than 5deg

Bit Hydraulics Calculations

Enter data in blue areas

Pump Flow	600
Mud Weight	9
Bit Diameter	8.5
Bit Flow	583
Bit Pressure Drop	471
Hydraulic HP	160
HSI	2.8
Impact Press.	851

Note: Rock compressive strength should be greater than the Impact Pressure.

Bit Nozzle Size and TFA

Nozzle	/ 32	TFA
1	12	0.110
2	12	0.110
3	12	0.110
4	12	0.110
5	12	0.110
6	12	0.110
7	12	0.110
8		
9		
10		
Bit TFA =		0.773

PowerDrive Serial No. / PUMP HOURS

PART	PFIX	SN	START	CUM
Control Unit	CU	303		33.39
Control Collar	CC	60089		33.39
Ext Sub	ES	48552		33.39
Bias Unit	BU	48550		33.39
Flex/ILF	PCF6-AA			33.39
Xtra Receiver	PD6RX-AA			33.39
Upper Torquer	CU			
Lower Torquer	CU			
Comms Module	CU	3.31		
Sensor Module	CU	1.91		
Motor		0		

Motor Run Information

Motor type	Seiral number
Bend type	Bend Angle
Stab type	Stab Gauge
Off Bottom pressure	On Bottom pressure
Backreaming Hours	Total Reaming Hours
Bearing Play after run (mm)	

Flow Restrictor Pressure Drop

Nozzle size (32nd)	TFA	Press. Drop

Total Pressure Drop Below PowerDrive

471 psi

Note: If the box above is red, the total pressure drop below the PowerDrive is not in the optimal range for pad operation. Confirm restrictor and bit nozzle selection is correct such that the total pressure drop below the PowerDrive is between 500 psi an

Downward Telemetry Calculations

Enter data in the blue areas

Digit Time	60	secs
Falling Time Constant (FTC)	30	secs
Rising Time Constant (RTC)	30	secs
Driller's Pulse - High / Low	580 / 440	
Driller's Pulse Height	24	%
Pulse Amplitude	21	%
Minimum Recoverable Pulse	18	%
Minimum Threshold	84	%

Mud properties

Mud Company	MI
Mud Type	KCL/PHPA
MW at **start** of run	8.6 ppg
MW at **end** of run	8.8 ppg
Funnel Viscosity	53 sec
Plastic Viscosity	15
Yeild Point	23
Maximum DH Temp. deg C	49 degC
Sand %	2.0 %
Soild %	7.00 %

ummary

Drilled out shoe track and first 130m to 630m holding vertical. The inclination built to 2deg and the parameters were increased to stop the build and drop to vertical. This was achieved in 25m. The drilling remained steady and surveys from the drilers on tour and recorded in the IADC report confirmed a vertical well to 1088m. A gyro was run to check suspected deviation where it was confirmed that the inclination had in fact built to 23.52Deg at 1200m. The PowerV was not run at maximum parameters due to the information given from the rig personnel indicating a straight hole. The tool was laid out in good condition and the memory SCB dumped confirming the default PowerV SCB.

Schlumberger

Origin energy

DOWN-HOLE MOTOR RUN REPORT

RUN N°	3	Motor Size/Run	6 3/4" 1	Serial No	02019	Measurements are in	Mt

Company	Origin Energy	Well	Peterborough-1	Slot	n/a	Field	Peterborough
		Location	Otway Basin	Country	Australia		
Operator	Century	Rig	Century 7	Engineer	D.Hay / B.Manjenic	Date	25-Aug-05

Bit Size	Make	Type	IADC	Jets	Jets	Jets	TFA
8 1/2"	Smith	M704VC	417	3 x 18			0.746

IADC CUTTING STRUCTURE

Inner Row	Outer Row	Dull Char'	Location	Brg/Seals	Gauge	Others	Reason for Trip
1	1	WT	A	E	I	NO	HP

Motor Made By	Size	Model / Type	Rot'/Stat', Stages		Serial No	Hsg Stab OD	° Bent Hsg	° Bent Sub
Anadrill	6 3/4"	A675M	7:8	5.0	02019	8 3/8"	1.15	n/a

Type — 1 = Straight; 2 = Steerable; 3 = Double Bend: **2** | Rotor S/N°: 2218 | Stator S/N°: 3516

Drlg Cmt, W/Ream	Drlg Hrs	Circ Hrs	Total Motor Circ Hrs
8.88	6.87	2.00	17.75

Purpose of Run Drop inclination to Vertical

BHA# 3

8 1/2" Insert Bit
A675M Motor
Float Sub
8 1/4" String Stab
MWD
NMDC
Crossover
14 x 6 1/4" Collars
Jars
2 x 6 1/4" Collars
5 x HWDP

Depth In	1228.00	Depth Out	1295.00	Inter'l Drld	67.00
Date In	23-Aug-05	Date Out	25-Aug-05	Inter'l ROP	9.75
Time In	19:30	Time Out	8:00	Time BRT	36.50 Hrs

Surveys	MD IN	1200.00	Inclin	23.52	Azim	243.88
	MD OUT	1364.42	Inclin	13.54	Azim	233.56

Flow Rate GPM	Off Bttm Press PSI	On Bttm Press PSI	RPM Surface	WOB KLbs
553	1800	1950	60	20

Mud Type	KCl PHPA	Mud Wt	8.9	Mud Grad'	3.848	Vis	56
PV	15	Filtrate	6.5	% Solids	7	pH	9.5
YP	22	% Oil	0	% Sand	0.5	Circ Temp	44

FAILURE?	No	Slide Mts	87	Previous Hrs	0	Cumulative Hrs	17.75

Remarks / Failure Report.

1) Motor was checked prior to RIH.
2) Motor was laid out in good condition.

Reason for POOH : Hole Problems

Failure : Type = Category = -

Did Motor Stall?	
No	No
Slide	Rty
-	-

Bearing Play	
In	0
Out	1
Condition	
Good	

Client Representative : Seton Porter

Anadrill Representative : Duncan Hay

Schlumberger

Origin energy

DOWN-HOLE MOTOR RUN REPORT

Ft, Mt

Motor Size :	Serial No :	Run No :	BHA No:	Mt
6 3/4"	02019	2	4	

Company	Origin Energy	Well	Peterborough-1	Slot	1	Field	Otwey
		Location	Otway Basin	Country	Australia		
Operator	Century	Rig	Century 7	Engineer	B Manjenic/T. Auger	Date	31-Aug-05

Bit Size	Make	Type	IADC	Jets	Jets	Jets	Jets	TFA
8 1/2"	Smith	MF05TC	427	3.18	0.00	0.00	0.00	0.746

IADC CUTTING STRUCTURE

Inner Row	Outer Row	Dull Char'	Location	Brg/Seals	Gauge	Others	Reason for Trip
4	3	BT	G	4	4	SD	HR/BHA

Motor Made By	Size	Model / Type	Rotor/Stator	Serial No	Hsg Stab OD	° Bent Hsg	° Bent Sub
Anadrill	6 3/4"	A675M	7:8	02019	8 3/8"	1.5°	n/a

Type	1 = Straight; 2 = Steerable; 3 = Double Bend	Stator Ser Nº	100043501-3516	Rotor Ser Nº	S281873-2218	Drlg Cmt, Wash/Ream	30.3
2		Drlg Hrs	40.50	Circ Hrs	14.00	Total Motor Circ Hrs	84.84

Purpose of Run To drill 8 1/2" hole section toTD

BHA

TCI Bit
A675XP7850
Float Sub
8 1/4 " String Stabilizer
SlimPulse
6 3/4" NMDC
Crossover
14 x 6 1/4" DC
Jar
2 x 6 1/4" DC
4 x 4 1/2" HWDP
4 1/2" DP

Surveys	MD IN	925.00	Inclin	0.15	Azim	181.51
	MD OUT	1614.00	Inclin	0.38	Azim	158.39

Flow Rate GPM	Off Bttm PSI	On Bttm PSI	RPM	WOB Klbs
550	1,750	1,950	80	25-45

Mud Type	KCL/PHPA	Mud Wt	9.20	Mud Grad'	0.477	Vis	51
PV	20	Filtrate	6.00	% Solids	7.50	Aniline Pt	n/a
YP	22	% Oil	88.5	% Sand	0.10	Circ Temp	42

Depth In	925	Depth Out	1614	Inter'l Drld	689	
Date In	26-Aug-05	Date Out	31-Aug-05	ROP	17.01	
Time In	12:00	Time Out	15:30	Time BRT	122.50	Hrs

FAILURE?	No	Slide Mts	71	Previous Hrs	17.75	Cumulative Hrs	102.59

Remarks / Failure Report.

1) Motor was checked prior to RIH.
2) Motor will be run in BHA#5
3)

Did Motor Stall	
No	No
Slide	Rty
No	No

Bearing Play	
In	1.0 mm
Out	1.0 mm
Condition	
Good	

Schlumberger

Origin energy

DOWN-HOLE MOTOR RUN REPORT

Ft, Mt

Motor Size :	Serial No :	Run No :	BHA No:	Mt
6 3/4"	02019	3	5	

Company	Origin Energy	Well	Peterborough-1	Slot	1	Field	Otwey
		Location	Otway Basin	Country	Australia		
Operator	Century	Rig	Century 7	Engineer	B Manjenic/T. Auger	Date	4-Sep-05

Bit Size	Make	Type	IADC	Jets	Jets	Jets	Jets	TFA
8 1/2"	Smith	M90BHVP	427	6.12	1.14	0.00	0.00	0.813

IADC CUTTING STRUCTURE

Inner Row	Outer Row	Dull Char'	Location	Brg/Seals	Gauge	Others	Reason for Trip
5	7	BT	A	X	4	RG, CT	PR

Motor Made By	Size	Model / Type	Rotor/Stator	Serial No	Hsg Stab OD	° Bent Hsg	° Bent Sub
Anadrill	6 3/4"	A675M	7:8	02019	8 3/8"	1.5°	n/a

Type	1 = Straight; 2 = Steerable; 3 = Double Bend	Stator Ser Nº	S287961-3815	Rotor Ser Nº	S281873-2127	Drlg Cmt, Wash/Ream	10.1
2		Drlg Hrs	24.50	Circ Hrs	9.00	Total Motor Circ Hrs	43.61

Purpose of Run To drill a vertical 8 1/2" hole section toTD

BHA

PDC Bit
A675XP7850
Float Sub
8 1/4 " String Stabilizer
SlimPulse
6 3/4" NMDC
Crossover
14 x 6 1/4" DC
Jar
2 x 6 1/4" DC
4 x 4 1/2" HWDP
4 1/2" DP

Surveys						
MD IN	1595.00	Inclin	0.38	Azim	158.39
MD OUT	1988.00	Inclin	0.22	Azim	170.41

Flow Rate GPM	Off Bttm PSI	On Bttm PSI	RPM	WOB Klbs
550	2,950	2,800	80	25-45

Mud Type	KCL/PHPA	Mud Wt	9.34	Mud Grad'	0.485	Vis	47
PV	18	Filtrate	5.20	% Solids	7.50	Aniline Pt	n/a
YP	18	% Oil	-	% Sand	0.30	Circ Temp	49

Depth In	1595	Depth Out	1988	Inter'l Drld	393	
Date In	31-Aug-05	Date Out	4-Sep-05	ROP	16.04	
Time In	19:00	Time Out	6:00	Time BRT	83.00	Hrs

FAILURE?	No	Slide Mts		Previous Hrs	102.59	Cumulative Hrs	146.20

Remarks / Failure Report.

1) Motor was checked prior to RIH.
2) Motor was L/D
3) Motor sleeve stabilizer is 1/8" undergauged

Did Motor Stall	
No	No
Slide	Rty
No	No

Bearing Play	
In	1.0 mm
Out	1.5 mm
Condition	
Good	

SLIDE SHEETS

Well: Peterborough-1				Operator: Origin Energy			Date: 22 Aug 05					Page # 1
Depth	ROP	WOB	RPM	TORQUE	SPP	Flow	Anderdrift Survey		Gyro Surveys			Comments
m	m/h	klbs	rpm	Rig Sensor	psi	gpm	Depth	Inclination	Depth	Inclination	Azimuth	
509	22.5	6.9	120	428	677	440	505	0	500	0.18	21.88	
519	105	6.7	130	417	705	496						
529	42.7	8.2	123	400	783	508			525	0.16	60.98	
539	32.6	6.1	112	632	795	502			550	0.13	45.18	
549	20.8	5.7	137	857	810	504						
559	32	6.4	128	629	815	502			550	0.13	45.18	
569	76	6.4	153	579	837	496						
579	93.2	7.4	160	417	847	495			575	0.09	354.3	
589	36.1	5.2	125	707	844	508						
599	71.2	6.5	146	702	831	508						
609	60.7	6.3	135	829	1184	607			600	0.19	341.87	
619	84	9	125	916	1229	615						
629	44.1	4.1	112	689	1003	568			625	1.12	112.17	
639	21.1	3.6	115	577	727	463						
649	40.9	4.8	118	572	1120	572						
659	60.6	6.4	113	738	954	535	657	2	650	1.98	30.91	
669	79.1	6.5	147	840	1139	584	666	2				Increase Parameters
679	49.2	5.6	130	745	1089	559			675	1.2	349.83	Drop to Vertical
689	32.5	5.6	126	733	1297	620	685	0				
699	56.3	6.9	136	1182	1332	627	694	0	700	0.08	74.39	
709	103.8	3.8	143	899	1366	634						
719	66.5	11.9	120	954	1370	628	713	0				
729	68.9	12.4	116	746	1379	626			725	0.15	168.55	
739	98.4	10.2	122	851	1401	625			750	0.18	209.4	
749	12.6	9.2	116	803	1386	621						
759	101.3	13.7	115	980	1418	620						
769	73.8	11	119	784	1394	624	769	0	775	0.14	225.22	Anderdrift taken from IADC
779	42.3	9.5	100	403	1397	622						
789	89	6.3	117	820	1394	621			800	0.18	290.25	
799	80.7	17.2	125	631	1193	560						
809	39.8	14.4	118	493	0	593	806	0				Anderdrift taken from IADC
819	89.3	16.1	116	649	0	585			825	0.15	57.92	
829	129.2	16.4	118	956	1317	586						

Schlumberger Private

Well: Peterborough-1				Operator: Origin Energy			Date: 22 Aug 05					Page # 2
Depth	ROP	WOB	RPM	TORQUE	SPP	Flow	Anderdrift Survey		Gyro Surveys			Comments
m	m/h	klbs	rpm	Rig Sensor	psi	gpm	Depth	Inclination	Depth	Inclination	Azimuth	
839	79.3	12.3	116	618	1325	585	844	0				Anderdrift taken from IADC
849	98.7	13.4	123	483	1374	592						
859	92.6	16	123	731	1353	597			850	0.19	170.14	
869	107	14.8	94	931	1355	595						
879	82.4	16.1	100	998	1366	594			875	0.2	98.64	
889	81.3	10.7	91	660	1357	597						
899	114	12	125	1292	1229	552						
909	92	4.1	126	901	1238	550			900	0.15	341.54	
919	41.8	5.9	113	376	1210	535						
929	43	2.3	126	458	1250	536			925	0.15	181.51	
939	31.6	3.9	128	276	1308	535	940	0				Anderdrift taken from IADC
949	49.4	4	122	526	1255	534			950	0.16	303.9	
959	44.6	5.2	131	1036	1247	536						
969	43.8	5.4	122	662	1254	535	977	0				Anderdrift taken from IADC
979	28.6	6.5	154	538	1261	533			975	0.14	35.68	
989	19.5	10	105	964	1260	530						
999	53.7	6.9	126	731	1352	549						
1009	68.9	8.6	124	940	1359	544			1000	0.12	281.2	
1019	37.6	6.5	121	693	1364	544						
1029	45.2	4.6	123	754	1332	553	1023	0	1025	2.74	254.72	Anderdrift taken from IADC
1039	14	6.1	125	791	1322	554						
1049	99.6	4.8	125	730	1342	550	1043	0				Anderdrift taken from IADC
1059	43.1	6	127	537	1348	546			1050	5.62	250.95	
1069	49	6.1	129	716	1358	544						
1079	35.6	6.4	123	765	1336	551			1075	8.85	249.24	
1089	53.9	7.5	120	868	1341	549	1088	0				Anderdrift taken from IADC
1099	61.9	7.3	125	940	1347	546						
1109	36.1	6.3	105	848	1355	543			1100	11.94	246.89	Driller atempted survey
1119	34.7	3.7	105	423	1350	544						Told to drill on by co-man
1129	39.8	6.1	102	753	1363	541			1125	15.28	245.79	
1139	32	6.6	124	811	1372	540						Driller atempted survey
1149	36.8	5	107	670	1360	537						Told to drill on by co-man
1159	42.1	6.6	125	843	1375	536			1150	18.14	246.24	

Schlumberger Private

Well: Peterborough-1				Operator: Origin Energy					Date: 22 Aug 05			Page # 3
Depth	ROP	WOB	RPM	TORQUE	SPP	Flow	Anderdrift Survey		Gyro Surveys			Comments
m	m/h	klbs	rpm	Rig Sensor	psi	gpm	Depth	Inclination	Depth	Inclination	Azimuth	
1169	33.5	7.8	115	890	1385	537						
1179	33.4	6.5	122	899	1388	536			1175	20.87	244.46	
1189	29.2	5.4	125	845	1383	536						
1199	43.6	5.8	119	798	1394	534						
1209	83.4	7.5	120	1514	1392	531			1200	23.52	243.88	Totco survey off maximum
1219	57	5	101	1300	1607	586						

WELL# Peterborough-1 **DATE:** 24-Aug-05 **Depth In :** 1228m Meters **Pump Output** **Planned Angle : 0°** **PAGE # 1**

Planned Direction : 248.92°

BHA # 3 **BIT#** 3 **BHA :** 8 1/2" Insert Bit, 675XP Motor, Float Sub, 8 1/4" Stabilizer, MWD, Crossover, 14 x 6 1/4" DC, Jars, 2 x 6 1/4" DC, 4 x 5" HWDP

SURVEY SPACING - 15.29m **Last Casing 9 5/8" @ 497m.**

	DRILLING TIME			Motor Work Sheet				Tool	SURVEY			STK /	FLOW	Surf	Motor			PRESSURE		REMARKS
R / S	START	STOP	SUM	FROM	TO	Meters Rotated	Meters Slide	Face	DEPTH	INCL	AZM	MIN	RATE	RPM	RPM	WOB	TORQ	Off Bottom	On Bottom	
R	3:00	3:11	0:11	1,228.0	1,229	1			1214.30	26.43	240.99	160	484	60	195	5	5	1,200	1,300	
S	3:34	3:58	0:24	1,229	1,239		10	180	1223.67	27.88	240.85	183	553	-	155	10-15	-	1,700	1,800	
S	4:25	4:42	0:17	1,239	1,248		9	180	1233.05	27.08	241.33	183	553	-	155	10-16	-	1,700	1,800	
R	5:06	5:14	0:08	1,248	1,258	10			1242.42	24.66	239.45	183	553	60	155	10	6	1,700	1,800	
S	5:43	5:57	0:14	1,258	1,267		9	160R	1252.61	25.31	238.31	183	553	-	155	20-25	-	1,700	1,800	
R	6:15	6:23	0:08	1,267	1,277	10			1261.19	21.51	237.84	183	553	60	215	15	7	1,700	1,800	
R	6:32	6:48	0:16	1,277	1,286	9			1270.53	22.21	236.40	183	553	60	215	15	7	1,700	1,800	
S	7:13	7:32	0:19	1,286	1,295		9	160R	1279.87	20.19	236.15	183	553		155			1,700	1,850	
S	7:56	8:26	0:30	1,295	1,305		10	160R	1289.30	19.41	233.45	183	553		155			1,700	1,850	
R	9:30	9:50	0:20	1,305	1,314	9			1308.11	18.04	225.85	183	553		155			1,700	1,850	
R	10:10	10:22	0:12	1,314	1,323	9			1317.53	18.43	226.15	183	553		155			1,750	1,900	
S	10:58	11:24	0:26	1,323	1,333		10		1326.91	18.37	228.59	183	553		155			1,750	1,900	
R	11:42	11:49	0:07	1,333	1,338	5			1336.32	18.17	229.68	183	553		155			1,750	1,900	
S	12:00	12:10	0:10	1,338	1,342		4					183	553		155			1,750	1,900	
R	12:28	12:40	0:12	1,342	1,346	4			1345.70	17.63	227.68	183	553		155			1,750	1,900	
S	12:40	13:03	0:23	1,346	1,351		5	LS				183	553		155			1,750	1,900	
S	13:03	13:40	0:37	1,351	1,361		10	LS	1355.09	15.83	228.57	183	553		155			1,750	1,900	
S	14:02	14:34	0:32	1,361	1,370		9	LS	1364.42	13.54	233.56	183	553		155			1,750	1,900	
R	14:35	15:00	0:25	1,370	1,374	4						183	553	60	155	15	10	1,800	1,950	
S	15:00	15:25	0:25	1,374	1,376		2	LS				183	553		155	25		1,800	1,950	
R	15:30	15:36	0:06	1,376	1,380	4						183	553	60	155	15	6	1,800	1,950	wiper trip
R	22:50	23:20	0:30	1,380	1,389	9						183	553	50	155	15	6	1,800	1,950	POOH

TIME BREAKDOWN:

Rotated Time : 2.58 **Meters Rotated :** 74

Slide Time : 4.28 **Meters Slide :** 87

Total Time : 6.87 **Meters Drilled :** 161

Slide Sheet

BHA: BHA # 4 ST-1

Client: Origin Energy | **Well:** Peterborough 1ST1 | **Directional Driller:** B Manjenic
Field: Origin Energy Peterborough | **Borehole:** Peterborough 1ST1 | **Directional Driller:** T Auger
Structure: Century Rig 7 | **UWI/API#:** | **Job #:** ASQ - 05 - 14

Depth In: 945.00 | **Depth Out:** 1614.00 | **Tot Distance:** 660.00 | **Total Time:** 40.8 | **Total ROP:** 16.2
Inclination In: 0.96 | **Inclination Out:** 0.38 | **SLIDE:** 71.00 | **% SLIDE** 10.8 | **SLIDE Time:** 11.3 | **SLIDE ROP:** 6.3
Azimuth In: 142.84 | **Azimuth Out:** 158.39 | **ROTATE:** 589.00 | **% ROTAT** 89.2 | **ROTATE Time:** 29.5 | **ROTATE ROP:** 19.9

Comments:

Statistics:

None	None	Max	Min	Sum	Min	Max	Sum	Avg	Max	Avg	Avg	Avg	Avg	Avg	Avg	Avg	None	Max	Avg	Avg
		29/8/05 17:16	26/8/05 20:20	40.833	945.00	1614.00	660.00	69.3	M	555	1801	1634	28.0	16.1	84	4.5		1579.58	1.35	119.13

BHA Name	Orientin g	End Time (d/m/yy h:mm)	Start Time (d/m/yy h:mm)	Duration (hr)	Md From (m)	Md To (m)	Course (m)	TF Angle (°)	TF Mode (G/M)	Flow (gal/min)	SPP On Bot (psi)	SPP Off Bo (psi)	Calc ROP (ft/h)	WOB (1000 lbf	RPM (c/min)	Torque (1000 ft.lbf	Comment	Svy Md (m)	Incl (°)	Azmth (°)
BHA #4st	SLIDE	26/8/05 21:28	26/8/05 20:20	1.133	945.00	948.00	3.00	70.0	M	400	920	900	2.6	1.0	0	0.0				
BHA #4st	SLIDE	26/8/05 22:28	26/8/05 21:40	0.800	948.00	951.00	3.00	70.0	M	400	920	900	3.8	1.0	0	0.0		951.58	0.96	142.84
BHA #4st	SLIDE	26/8/05 23:55	26/8/05 23:00	0.917	951.00	958.00	7.00	70.0	M	400	920	900	7.6	1.0	0	0.0				
BHA #4st	SLIDE	27/8/05 0:50	27/8/05 0:25	0.417	958.00	959.00	1.00	70.0	M	470	1075	1050	2.4	3.0	0	0.0				
BHA #4st	SLIDE	27/8/05 1:44	27/8/05 1:02	0.700	959.00	963.00	4.00	70.0	M	450	1225	1200	5.7	4.0	0	0.0		960.94	1.76	156.29
BHA #4st	ROTATE	27/8/05 2:18	27/8/05 1:47	0.517	963.00	967.00	4.00	0.0	M	500	1275	1225	7.7	4.0	60	0.0				
BHA #4st	ROTATE	27/8/05 3:03	27/8/05 2:34	0.483	967.00	976.00	9.00	0.0	M	500	1275	1225	18.6	5.0	60	0.0				
BHA #4st	SLIDE	27/8/05 6:23	27/8/05 4:32	1.850	976.00	984.00	8.00	70.0	M	570	1560	1500	4.3	7.0	0	0.0				
BHA #4st	ROTATE	27/8/05 6:35	27/8/05 6:28	0.117	984.00	986.00	2.00	0.0	M	570	1560	1500	17.1	8.0	60	0.0				
BHA #4st	SLIDE	27/8/05 9:00	27/8/05 7:20	1.667	986.00	995.00	9.00	70.0	M	500	1575	1500	5.4	15.0	0	0.0		989.01	3.65	22.57
BHA #4st	ROTATE	27/8/05 10:10	27/8/05 9:38	0.533	995.00	1000.00	5.00	0.0	M	570	1375	1300	9.4	10.0	60	0.0				
BHA #4st	SLIDE	27/8/05 11:33	27/8/05 10:50	0.717	1000.00	1005.00	5.00	70.0	M	560	1500	1425	7.0	20.0	0	0.0				
BHA #4st	ROTATE	27/8/05 12:55	27/8/05 12:05	0.833	1005.00	1014.00	9.00	0.0	M	560	1500	1425	10.8	15.0	60	4.5				
BHA #4st	SLIDE	27/8/05 13:55	27/8/05 13:30	0.417	1014.00	1021.00	7.00	70.0	M	560	1500	1425	16.8	20.0	0	0.0				
BHA #4st	ROTATE	27/8/05 14:10	27/8/05 13:55	0.250	1021.00	1023.00	2.00	0.0	M	560	1500	1425	8.0	15.0	60	4.5				
BHA #4st	ROTATE	27/8/05 15:30	27/8/05 14:50	0.667	1023.00	1033.00	10.00	0.0	M	560	1500	1425	15.0	15.0	60	4.5		1026.13	9.37	68.23
BHA #4st	SLIDE	27/8/05 17:15	27/8/05 16:30	0.750	1033.00	1039.00	6.00	180.0	G	560	1600	1425	8.0	22.0	0	0.0				
BHA #4st	ROTATE	27/8/05 17:25	27/8/05 17:15	0.167	1039.00	1042.00	3.00	0.0	G	560	1600	1450	18.0	15.0	60	4.5				
BHA #4st	SLIDE	27/8/05 18:22	27/8/05 17:50	0.533	1042.00	1047.00	5.00	180.0	G	560	1600	1450	9.4	20.0	0	0.0				
BHA #4st	ROTATE	27/8/05 18:30	27/8/05 18:22	0.133	1047.00	1051.00	4.00	0.0	G	560	1600	1450	30.0	15.0	60	4.5				
BHA #4st	SLIDE	27/8/05 19:30	27/8/05 19:20	0.167	1051.00	1054.00	3.00	180.0	G	560	1600	1450	18.0	15.0	0	0.0		1054.52	3.72	64.51
BHA #4st	ROTATE	27/8/05 19:45	27/8/05 19:30	0.250	1054.00	1061.00	7.00	0.0	G	560	1600	1450	28.0	15.0	60	4.5				
BHA #4st	SLIDE	27/8/05 20:20	27/8/05 20:05	0.250	1061.00	1064.00	3.00	150.0	G	560	1600	1450	12.0	15.0	0	0.0				
BHA #4st	ROTATE	27/8/05 20:27	27/8/05 20:20	0.117	1064.00	1070.00	6.00	0.0	G	560	1600	1450	51.4	15.0	60	4.5				
BHA #4st	ROTATE	27/8/05 21:00	27/8/05 20:46	0.233	1070.00	1079.00	9.00	0.0	G	560	1600	1450	38.6	15.0	60	4.0		1073.27	2.14	82.47
BHA #4st	ROTATE	27/8/05 21:25	27/8/05 21:14	0.183	1079.00	1089.00	10.00	0.0	G	560	1600	1450	54.5	15.0	60	4.0				
BHA #4st	ROTATE	27/8/05 21:55	27/8/05 21:43	0.200	1089.00	1098.00	9.00	0.0	G	560	1700	1500	45.0	15.0	60	4.0				
BHA #4st	ROTATE	27/8/05 22:19	27/8/05 22:08	0.183	1098.00	1108.00	10.00	0.0	G	560	1700	1500	54.5	15.0	60	4.0				
BHA #4st	ROTATE	27/8/05 22:35	27/8/05 22:29	0.100	1108.00	1117.00	9.00	0.0	G	560	1700	1500	90.0	15.0	60	4.0		1110.79	2.15	89.89
BHA #4st	ROTATE	27/8/05 22:48	27/8/05 22:39	0.150	1117.00	1126.00	9.00	0.0	G	570	1700	1500	60.0	15.0	60	4.0				
BHA #4st	ROTATE	27/8/05 23:40	27/8/05 23:25	0.250	1126.00	1136.00	10.00	0.0	G	570	1700	1500	40.0	15.0	90	4.0				
BHA #4st	ROTATE	28/8/05 0:15	28/8/05 0:01	0.233	1136.00	1145.00	9.00	0.0	G	570	1700	1500	38.6	15.0	90	4.0		1138.91	2.29	87.70
BHA #4st	ROTATE	28/8/05 0:44	28/8/05 0:28	0.267	1145.00	1154.00	9.00	0.0	G	570	1700	1500	33.8	15.0	90	4.0				
BHA #4st	SLIDE	28/8/05 1:12	28/8/05 1:00	0.200	1154.00	1158.00	4.00	-110.0	M	570	1675	1600	20.0	20.0	0	0.0				
BHA #4st	ROTATE	28/8/05 1:26	28/8/05 1:15	0.183	1158.00	1164.00	6.00	0.0	M	570	1900	1800	32.7	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 2:00	28/8/05 1:52	0.133	1164.00	1173.00	9.00	0.0	M	570	1900	1800	67.5	15.0	100	4.0		1167.00	1.35	91.22
BHA #4st	ROTATE	28/8/05 3:00	28/8/05 2:14	0.767	1173.00	1182.00	9.00	0.0	M	570	1900	1800	11.7	15.0	100	4.0				
BHA #4st	SLIDE	28/8/05 4:00	28/8/05 3:14	0.767	1182.00	1185.00	3.00	260.0	M	570	1900	1800	3.9	20.0	0	0.0		1185.69	0.65	5.80
BHA #4st	ROTATE	28/8/05 4:21	28/8/05 4:00	0.350	1185.00	1192.00	7.00	0.0	M	570	1925	1800	20.0	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 5:09	28/8/05 4:35	0.567	1192.00	1202.00	10.00	0.0	M	570	1925	1800	17.6	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 5:55	28/8/05 5:28	0.450	1202.00	1211.00	9.00	0.0	M	570	1925	1800	20.0	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 6:21	28/8/05 6:07	0.233	1211.00	1220.00	9.00	0.0	M	570	1925	1800	38.6	15.0	100	4.0		1213.83	0.73	276.07
BHA #4st	ROTATE	28/8/05 7:30	28/8/05 7:12	0.300	1220.00	1230.00	10.00	0.0	M	570	1925	1800	33.3	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 7:48	28/8/05 7:40	0.133	1230.00	1239.00	9.00	0.0	M	570	1925	1800	67.5	15.0	100	4.0				
BHA #4st	ROTATE	28/8/05 9:36	28/8/05 9:22	0.233	1239.00	1249.00	10.00	0.0	M	570	1925	1800	42.9	15.0	100	4.0		1241.83	0.31	226.52
BHA #4st	ROTATE	28/8/05 10:01	28/8/05 9:53	0.133	1249.00	1258.00	9.00	0.0	M	570	1925	1800	67.5	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 10:24	28/8/05 10:15	0.150	1258.00	1267.00	9.00	0.0	M	570	1925	1800	60.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 10:48	28/8/05 10:35	0.217	1267.00	1276.00	9.00	0.0	M	570	1925	1800	41.5	15.0	100	5.0		1269.91	0.35	226.99
BHA #4st	ROTATE	28/8/05 11:14	28/8/05 11:02	0.200	1276.00	1286.00	10.00	0.0	M	570	1925	1800	50.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 11:44	28/8/05 11:29	0.250	1286.00	1295.00	9.00	0.0	M	570	1925	1800	36.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 12:03	28/8/05 11:52	0.183	1295.00	1305.00	10.00	0.0	M	570	1925	1800	54.5	15.0	100	5.0		1297.97	0.12	3.44
BHA #4st	ROTATE	28/8/05 12:28	28/8/05 12:11	0.283	1305.00	1313.00	8.00	0.0	M	570	1925	1800	28.2	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 12:55	28/8/05 12:40	0.250	1313.00	1323.00	10.00	0.0	M	570	1925	1800	40.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 13:14	28/8/05 13:02	0.200	1323.00	1332.00	9.00	0.0	M	570	1925	1800	45.0	15.0	100	5.0		1326.20	0.19	297.02
BHA #4st	ROTATE	28/8/05 13:45	28/8/05 13:27	0.300	1332.00	1342.00	10.00	0.0	M	570	1925	1800	33.3	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 14:18	28/8/05 14:02	0.267	1342.00	1351.00	9.00	0.0	M	570	1925	1800	33.8	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 14:42	28/8/05 14:25	0.283	1351.00	1361.00	10.00	0.0	M	570	1925	1800	35.3	15.0	100	5.0		1354.44	0.17	39.83
BHA #4st	ROTATE	28/8/05 15:15	28/8/05 15:00	0.250	1361.00	1370.00	9.00	0.0	M	570	1925	1800	36.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 15:55	28/8/05 15:35	0.333	1370.00	1379.00	9.00	0.0	M	570	1925	1800	27.0	15.0	100	5.0				

BHA Name	Orientin g	End Time (d/m/yy h:mm)	Start Time (d/m/yy h:mm)	Duration (hr)	Md From (m)	Md To (m)	Course (m)	TF Angle (°)	TF Mode (G/M)	Flow (gal/min)	SPP On Bot (psi)	SPP Off Bot (psi)	Calc ROP (ft/h)	WOB (1000 lbf	RPM (c/min)	Torque (1000 ft.lbf	Comment	Svy Md (m)	Incl (°)	Azmth (°)
BHA #4st	ROTATE	28/8/05 16:45	28/8/05 16:05	0.667	1379.00	1389.00	10.00	0.0	M	570	1925	1800	15.0	15.0	100	5.0		1382.61	0.24	310.38
BHA #4st	ROTATE	28/8/05 17:20	28/8/05 16:55	0.417	1389.00	1398.00	9.00	0.0	M	570	1925	1800	21.6	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 18:20	28/8/05 18:00	0.333	1398.00	1408.00	10.00	0.0	M	550	1925	1800	30.0	15.0	100	5.0				
BHA #4st	ROTATE	28/8/05 18:47	28/8/05 18:28	0.317	1408.00	1417.00	9.00	0.0	M	550	1925	1800	28.4	15.0	100	5.0		1410.67	0.25	267.62
BHA #4st	ROTATE	28/8/05 19:19	28/8/05 18:55	0.400	1417.00	1426.00	9.00	0.0	M	550	1925	1800	22.5	17.0	70	5.0				
BHA #4st	ROTATE	28/8/05 20:10	28/8/05 19:38	0.533	1426.00	1436.00	10.00	0.0	M	550	1925	1800	18.8	17.0	70	5.0				
BHA #4st	ROTATE	28/8/05 20:50	28/8/05 20:18	0.533	1436.00	1445.00	9.00	0.0	M	550	1925	1800	16.9	17.0	80	5.0		1438.84	0.32	263.37
BHA #4st	ROTATE	28/8/05 21:35	28/8/05 21:00	0.583	1445.00	1454.00	9.00	0.0	M	550	1925	1800	15.4	17.0	80	5.0				
BHA #4st	ROTATE	28/8/05 22:45	28/8/05 21:50	0.917	1454.00	1464.00	10.00	0.0	M	550	1925	1800	10.9	20.0	80	5.0	pump repai			
BHA #4st	ROTATE	28/8/05 23:50	28/8/05 22:57	0.883	1464.00	1473.00	9.00	0.0	M	550	1925	1800	10.2	20.0	80	5.0		1466.96	0.29	185.42
BHA #4st	ROTATE	29/8/05 0:20	28/8/05 23:59	0.350	1473.00	1482.00	9.00	0.0	M	550	1925	1800	25.7	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 1:12	29/8/05 0:50	0.367	1482.00	1492.00	10.00	0.0	M	550	1925	1800	27.3	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 1:32	29/8/05 1:24	0.133	1492.00	1495.00	3.00	0.0	M	550	1925	1800	22.5	20.0	80	5.0		1495.05	0.19	232.70
BHA #4st	ROTATE	29/8/05 2:20	29/8/05 2:05	0.250	1495.00	1502.00	7.00	0.0	M	550	1925	1800	28.0	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 3:25	29/8/05 2:33	0.867	1502.00	1511.00	9.00	0.0	M	550	1925	1800	10.4	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 4:44	29/8/05 3:41	1.050	1511.00	1520.00	9.00	0.0	M	550	1925	1800	8.6	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 5:35	29/8/05 4:57	0.633	1520.00	1530.00	10.00	0.0	M	550	1925	1800	15.8	20.0	80	5.0		1523.16	0.35	141.99
BHA #4st	ROTATE	29/8/05 6:23	29/8/05 5:49	0.567	1530.00	1539.00	9.00	0.0	M	550	1925	1800	15.9	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 7:15	29/8/05 6:46	0.483	1539.00	1549.00	10.00	0.0	M	550	1950	1850	20.7	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 9:22	29/8/05 7:32	1.833	1549.00	1558.00	9.00	0.0	M	550	1950	1850	4.9	20.0	80	5.0		1551.54	0.50	139.96
BHA #4st	ROTATE	29/8/05 11:31	29/8/05 9:52	1.650	1558.00	1568.00	10.00	0.0	M	550	1950	1850	6.1	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 12:50	29/8/05 11:50	1.000	1568.00	1577.00	9.00	0.0	M	550	1950	1850	9.0	20.0	80	5.0				
BHA #4st	ROTATE	29/8/05 14:05	29/8/05 13:05	1.000	1586.00	1595.00	9.00	0.0	M	550	1950	1850	9.0	20.0	80	5.0		1579.58	0.38	158.39
BHA #4st	ROTATE	29/8/05 16:20	29/8/05 15:50	0.500	1595.00	1605.00	10.00	0.0	M	550	1950	1850	20.0	30.0	60	5.0				
BHA #4st	ROTATE	29/8/05 17:16	29/8/05 16:30	0.767	1605.00	1614.00	9.00	0.0	M	550	1950	1850	11.7	30.0	60					

Peterborough 1 - ST1 Slide Sheet

BHAs: BHA # 5 ST-1'

Client: Origin Energy
Field: Origin Energy Peterborough
Structure: Century Rig 7
Well: Peterborough 1ST1
Borehole: Peterborough 1ST1
UWI/API#:
Directional Driller:
Directional Driller:
Job #: ASQ - 05 - 14

Depth In: 1595.00
Inclination In: 0.99
Azimuth In: 176.85
Depth Out: 1988.00
Inclination Out: 3.74
Azimuth Out: 200.41
Tot Distance: 393
SLIDE: 29.00 **% SLIDE** 7.5
ROTATE: 364 **% ROTAT** 92.5
Total Time: 24.5
SLIDE Time: 3.5
ROTATE Time: 21.0
Total ROP: 15.3
SLIDE ROP: 8.4
ROTATE ROP: 16.4

Comments:

Statistics:

None	None	Max	Min	Sum	Min	Max	Sum	Avg	Max	Avg	Avg	Avg	Avg	Avg	Avg	Avg	None	Max	Avg	Avg
		3/9/05 4:15	1/9/05 4:46	25.367	1595.00	1988.00	389.00	258.2	M	522	2075	1968	27.6	10.0	100	7.0		1972.01	2.42	181.21

BHA Name	Orienting Method	End Time (d/m/yy h:mm)	Start Time (d/m/yy h:mm)	Duration (hr)	Md From (m)	Md To (m)	Course (m)	TF Angle (°)	TF Mode (G/M)	Flow (gal/min)	SPP On Bot (psi)	SPP Off Bot (psi)	Calc ROP (ft/h)	WOB (1000 lbf)	RPM (c/min)	Torque (1000 ft.lbf)	Comment	Svy Md (m)	Incl (°)	Azmth (°)
BHA # 5 ST-1'	ROTATE	1/9/05 5:06	1/9/05 4:46	0.333	1595.00	1604.00	9.00	0.0	M	550	2050	1950	27.0	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 5:43	1/9/05 5:24	0.317	1604.00	1614.00	10.00	0.0	M	530	2050	1950	31.6	8.0						
BHA # 5 ST-1'	ROTATE	1/9/05 6:36	1/9/05 5:56	0.667	1614.00	1624.00	10.00	0.0	M	530	2050	1950	15.0	8.0	100	7.0		1617.04	0.99	176.85
BHA # 5 ST-1'	ROTATE	1/9/05 7:01	1/9/05 6:48	0.217	1624.00	1633.00	9.00	0.0	M	530	2050	1950	41.5	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 7:35	1/9/05 7:14	0.350	1633.00	1642.00	9.00	0.0	M	530	2050	1950	25.7	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 8:08	1/9/05 7:48	0.333	1642.00	1652.00	10.00	0.0	M	530	2050	1950	30.0	8.0	100	7.0		1645.19	0.89	161.12
BHA # 5 ST-1'	ROTATE	1/9/05 8:37	1/9/05 8:25	0.200	1652.00	1661.00	9.00	0.0	M	530	2075	1975	45.0	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 9:30	1/9/05 9:03	0.450	1661.00	1671.00	10.00	0.0	M	530	2075	1975	22.2	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 10:45	1/9/05 10:10	0.583	1671.00	1680.00	9.00	0.0	M	530	2075	1975	15.4	8.0	100	7.0		1673.28	1.35	191.26
BHA # 5 ST-1'	ROTATE	1/9/05 11:43	1/9/05 11:05	0.633	1680.00	1689.00	9.00	0.0	M	530	2075	1975	14.2	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 12:34	1/9/05 12:07	0.450	1689.00	1698.00	9.00	0.0	M	530	2075	1975	20.0	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 13:10	1/9/05 12:50	0.333	1698.00	1707.00	9.00	0.0	M	530	2075	1975	27.0	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 13:44	1/9/05 13:25	0.317	1707.00	1717.00	10.00	0.0	M	530	2075	1975	31.6	8.0	100	7.0		1710.70	1.51	182.93
BHA # 5 ST-1'	ROTATE	1/9/05 14:30	1/9/05 14:10	0.333	1717.00	1726.00	9.00	0.0	M	530	2075	1975	27.0	8.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 15:02	1/9/05 14:48	0.233	1726.00	1736.00	10.00	0.0	M	530	2075	1975	42.9	8.0	100	7.0		1729.55	1.53	191.11
BHA # 5 ST-1'	ROTATE	1/9/05 15:28	1/9/05 15:13	0.250	1736.00	1745.00	9.00	0.0	M	530	2075	1975	36.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 15:52	1/9/05 15:38	0.233	1745.00	1754.00	9.00	0.0	M	530	2075	1975	38.6	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 16:18	1/9/05 16:07	0.183	1754.00	1764.00	10.00	0.0	M	530	2075	1975	54.5	10.0	100	7.0		1757.83	2.19	180.76
BHA # 5 ST-1'	ROTATE	1/9/05 16:41	1/9/05 16:18	0.383	1764.00	1774.00	10.00	0.0	M	530	2075	1975	26.1	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 17:25	1/9/05 17:10	0.250	1774.00	1783.00	9.00	0.0	M	530	2075	1975	36.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 17:59	1/9/05 17:40	0.317	1783.00	1792.00	9.00	0.0	M	530	2075	1975	28.4	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 18:28	1/9/05 18:12	0.267	1792.00	1801.00	9.00	0.0	M	530	2075	1975	33.8	10.0	100	7.0		1796.10	2.06	183.53
BHA # 5 ST-1'	SLIDE	1/9/05 19:20	1/9/05 18:55	0.417	1801.00	1805.00	4.00	300.0	M	530	2075	1975	9.6	20.0	0	0.0				
BHA # 5 ST-1'	ROTATE	1/9/05 19:37	1/9/05 19:20	0.283	1805.00	1811.00	6.00	0.0	M	530	2075	1975	21.2	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 20:14	1/9/05 19:58	0.267	1811.00	1820.00	9.00	0.0	M	530	2075	1975	33.8	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 20:38	1/9/05 20:23	0.250	1820.00	1829.00	9.00	0.0	M	530	2075	1975	36.0	10.0	100	7.0		1823.31	2.34	181.01
BHA # 5 ST-1'	ROTATE	1/9/05 21:04	1/9/05 20:52	0.200	1829.00	1839.00	10.00	0.0	M	530	2075	1975	50.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 21:32	1/9/05 21:19	0.217	1839.00	1848.00	9.00	0.0	M	530	2100	1975	41.5	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	1/9/05 22:12	1/9/05 22:05	0.117	1848.00	1852.00	4.00	0.0	M	530	2100	1975	34.3	10.0	100	7.0		1851.42	2.97	174.42
BHA # 5 ST-1'	SLIDE	1/9/05 23:00	1/9/05 22:35	0.417	1852.00	1858.00	6.00	330.0	M	530	2100	1975	14.4	10.0	0	0.0				
BHA # 5 ST-1'	ROTATE	1/9/05 23:32	1/9/05 23:18	0.233	1858.00	1867.00	9.00	0.0	M	530	2100	1975	38.6	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 0:05	1/9/05 23:48	0.283	1867.00	1877.00	10.00	0.0	M	530	2100	1975	35.3	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 0:35	2/9/05 0:17	0.300	1877.00	1886.00	9.00	0.0	M	530	2100	1975	30.0	10.0	100	7.0		1879.58	3.63	168.09
BHA # 5 ST-1'	ROTATE	2/9/05 1:05	2/9/05 0:44	0.350	1886.00	1896.00	10.00	0.0	M	530	2100	1975	28.6	10.0	100	7.0				
BHA # 5 ST-1'	SLIDE	2/9/05 1:55	2/9/05 1:40	0.250	1896.00	1897.00	1.00	180.0	G	530	2175	2000	4.0	20.0	0	0.0				
BHA # 5 ST-1'	ROTATE	2/9/05 2:17	2/9/05 1:57	0.333	1897.00	1905.00	8.00	0.0	G	530	2100	2000	24.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 2:40	2/9/05 2:28	0.200	1905.00	1909.00	4.00	0.0	G	530	2100	2000	20.0	10.0	100	7.0		1907.68	3.42	167.41
BHA # 5 ST-1'	SLIDE	2/9/05 2:58	2/9/05 2:50	0.133	1909.00	1910.00	1.00	180.0	G	530	2050	1950	7.5	20.0	0	0.0				
BHA # 5 ST-1'	ROTATE	2/9/05 3:36	2/9/05 3:28	0.133	1910.00	1914.00	4.00	0.0	G	485	2100	2000	30.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 3:51	2/9/05 3:47	0.067	1914.00	1916.00	2.00	0.0	G	485	2050	1950	30.0	10.0	100	7.0				
BHA # 5 ST-1'	SLIDE	2/9/05 4:50	2/9/05 4:26	0.400	1916.00	1920.00	4.00	-30.0	M	485	2050	1900	10.0	10.0	0	0.0				
BHA # 5 ST-1'	ROTATE	2/9/05 5:03	2/9/05 4:52	0.183	1920.00	1924.00	4.00	0.0	M	485	2050	1950	21.8	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 11:25	2/9/05 10:40	0.750	1924.00	1933.00	9.00	0.0	M	485	2050	1950	12.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	2/9/05 12:20	2/9/05 11:50	0.500	1933.00	1942.00	9.00	0.0	M	485	2050	1950	18.0	10.0	100	7.0		1935.79	3.85	176.99
BHA # 5 ST-1'	ROTATE	2/9/05 12:50	2/9/05 12:29	0.350	1942.00	1945.00	3.00	0.0	M	485	2050	1950	8.6	10.0	100	7.0				
BHA # 5 ST-1'	SLIDE	2/9/05 15:05	2/9/05 14:15	0.833	1945.00	1952.00	7.00	140.0	M	485	2100	1950	8.4	20.0	0	0.0				
BHA # 5 ST-1'	ROTATE	2/9/05 16:17	2/9/05 15:33	0.733	1952.00	1955.00	3.00	0.0	M	485	2050	1950	4.1	10.0	100	7.0				
BHA # 5 ST-1'	SLIDE	2/9/05 17:55	2/9/05 16:55	1.000	1955.00	1961.00	6.00	170.0	M	485	2050	1950	6.0	10.0	0	0.0				
BHA # 5 ST-1'	ROTATE	2/9/05 18:52	2/9/05 18:20	0.533	1965.00	1970.00	5.00	0.0	M	485	2050	1950	9.4	15.0	100	7.0		1963.94	3.36	201.21
BHA # 5 ST-1'	ROTATE	2/9/05 19:15	2/9/05 19:05	0.167	1970.00	1975.00	5.00	0.0	M	485	2050	1950	30.0	10.0	100	7.0	Circulate bottom up for Gas	1972.01	3.74	200.41
BHA # 5 ST-1'	ROTATE	2/9/05 20:15	2/9/05 20:00	0.250	1975.00	1980.00	5.00	0.0	M	485	2050	1950	20.0	10.0	100	7.0				
BHA # 5 ST-1'	ROTATE	3/9/05 4:15	2/9/05 20:40	7.583	1980.00	1988.00	8.00	0.0	M	485	2150	2050	1.1	25.0		8.0	Circulate & POOH.			

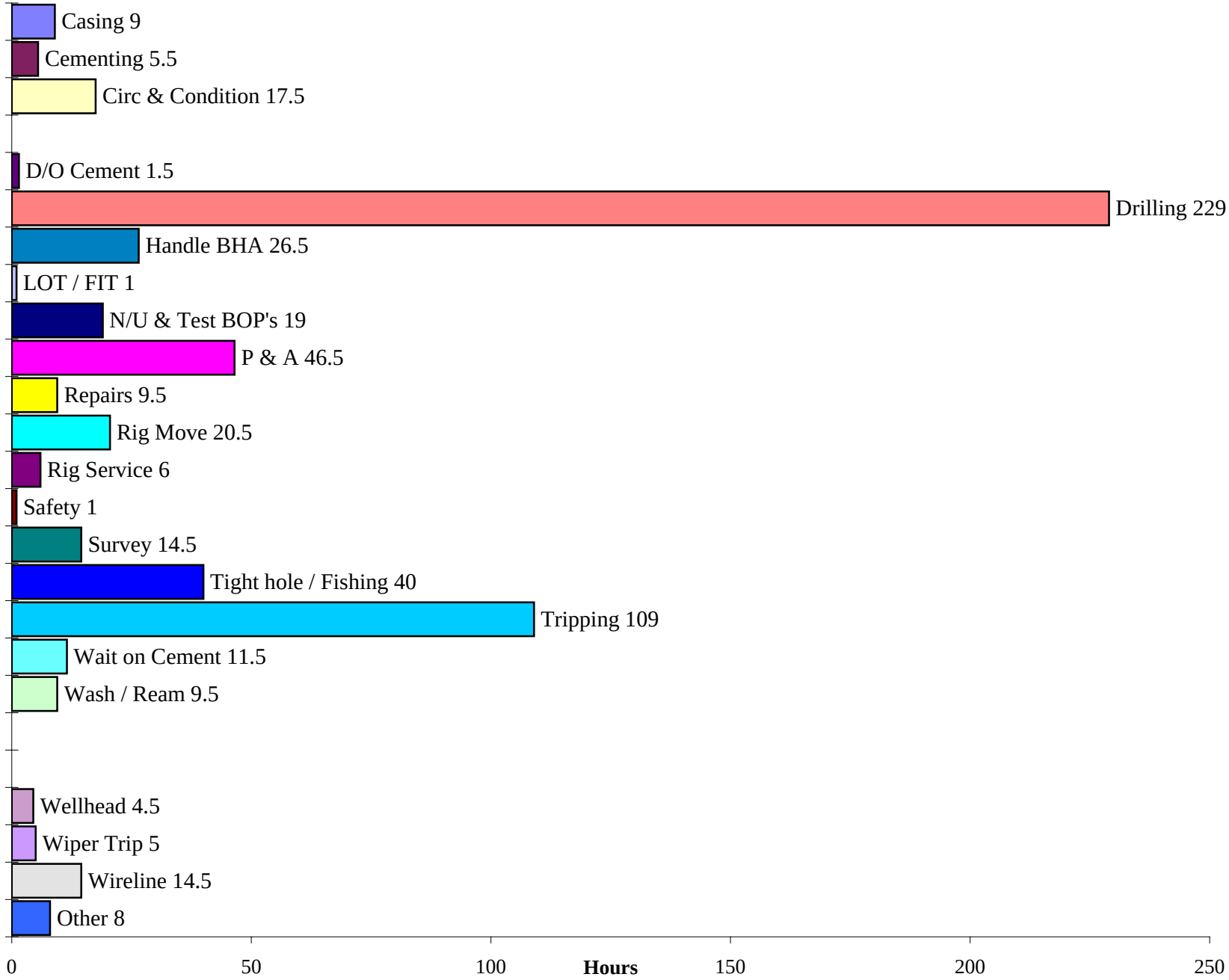
APPENDIX 9

TIME BREAKDOWN

AND

TIME/DEPTH-CURVE

Peterborough 1 & 1ST1- 609Hrs Total



Peterborough 1
Peterborough 1ST1
(PEP 154)
Vertical Gas Exploration Well
CDL Rig 7
P&A
Depth-Time curve

Drilled with Century Rig 7

A. 508 mm conductor set at 10.5m before rig moves on.
1. Drill 311 mm hole to 499m
2. 244 mm casing set at 495.6m, cement to surface
3. Install A section and BOP, pressure test
4. RIH with PDC bit, drill cement and 3m m new formation, FIT to 2.01 sg
5. Drill 216 mm hole with PDC bit to 1228m. POOH to run gyro
6. Drill 216 mm hole with tricone bit, MWD and downhole motor
7. Unable to move string without rotating at 1389, POOH (excessive drag)
8. Pump cement plugs to sidetrack well. WOC.
9. Kick off Peterborough 1ST1 from 944mRT with motor & bent sub assembly (with new tri cone bit). Drill ahead maintaining near vertical hole.
10. POOH for bit change at 1613 mRT, hole tight, obstruction at 659m.
11. Make up stabilizer on drillpipe and RIH to ream obstruction, POOH.
12. RIH with PDC bit, downhole motor and MWD (depth adjustment - 1613m to 1595m).
13. Drill 216 mm hole to 1867 mRT, perform wiper trip over Belfast Formation.
14. Drill 216 mm hole to 1988 mRT, poor ROP, POOH.
15. Lay out motor/MWD, make up pendulum assy, RIH.
16. Drill 216 mm hole with insert bit to 2070 mRT TD. Short wiper trip, POH
17. Run wireline logs: sonic-resistivity-gamma, density neutron
18. Wiper trip, layout drillstring
19. Run plugs. Rig on released 11/9/05 at 09:00 hrs.

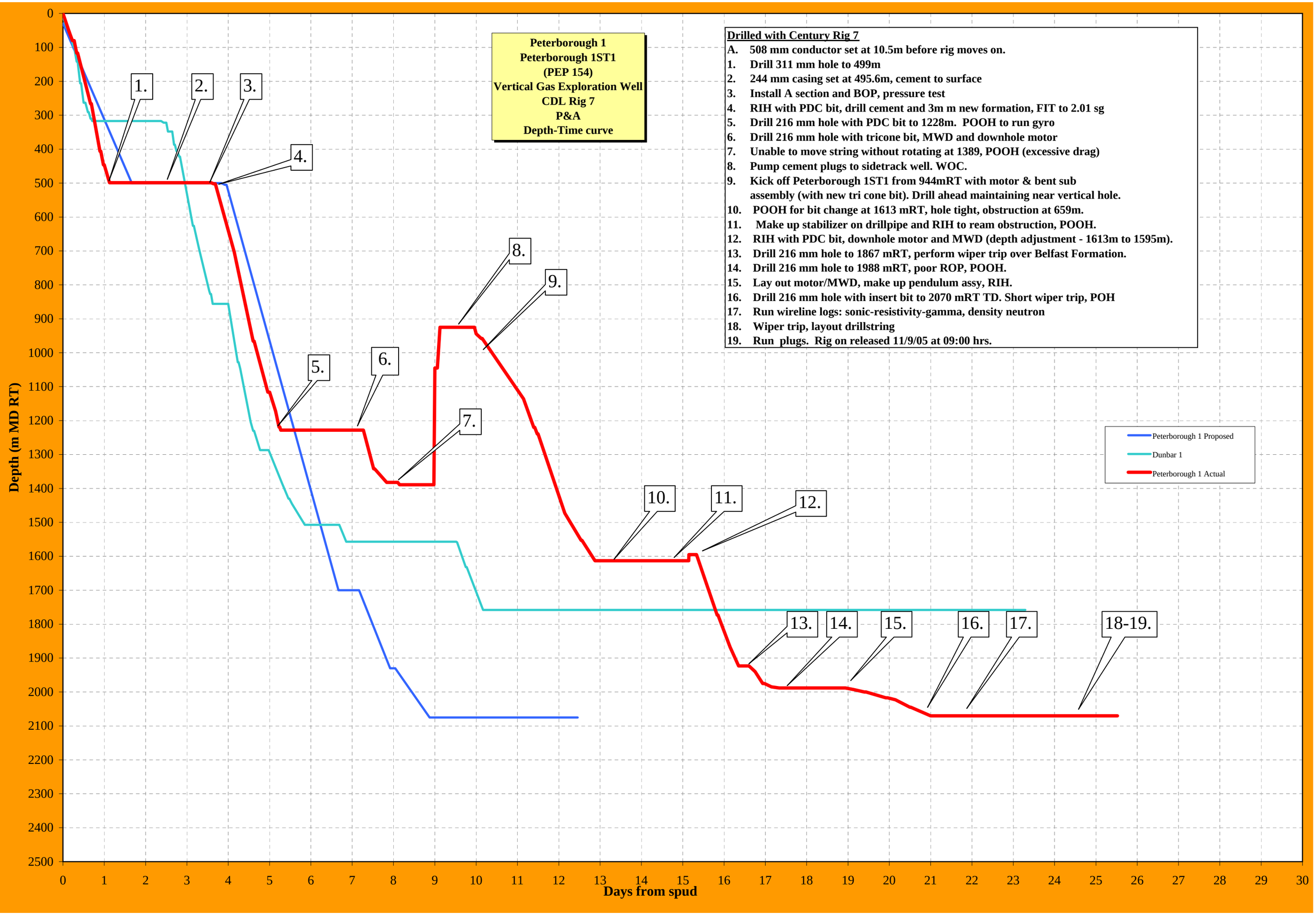


FIGURE 4

APPENDIX 10

BIT RECORD

ORIGIN ENERGY

BIT RECORD

Well : **Peterborough 01ST1** Basin / Area : **Otway** Permit : **PEP 154** Field : **Otway**

Location : Latitude : **142° 51' 33.30'' S** G.L. **13.00** metres Spud Date: **16-Aug-05**

Longitude : **38° 35' 12.30'' E** Well Site Supervisor: **C Dann / Q Cahill** K.B. **18.30** metres T.D. Date: **6-Sep-05**

Contractor : **Century Resources Ltd** Rig #: **7** Proposed TD: **2075** metres Rig Released Date: **10-Sep-05**

PUMPS				MUD TYPE			
No.	**Type**	**Stroke (in)**	**Liner (in)**	**Output (gps)**	**Section**	**Dev**	**Interval**	**Type**	**Wt**
1	8-P-80 Triplex	8.50	6.00	3.03	Surface	38384.00°	0m to 499m	Spud	8.88
2	8-P-80 Triplex	8.50	6.00	3.03	Main	#VALUE!	499m to 2070.1m	KCL/Poly/Phpa	9.50

Bit No.	Run No.	Size (in)	Make	Type	IADC Code	Serial No.	# of nozzles Size- 32nds			Motor Y / N	Shock-Sub Serial No.	Depth Out	Metres	Hours	ROP (m/hr)	Accum Hours	Bit Grading I	O	D	L	B	G	O	R	WOB Mn	WOB Mx	RPM Mn	RPM Mx	Press (psi)	Pump (gpm)
1	A											16	16	0	0.0	0													
2	1	12.25	Varel	CH1GMS	117	198598	3		16	N		499	483	24	20.1	24	1	2	WT	A	E	I	NO	TD	5	20	100	120	1600	606
3	2	8.5	Smith	M 90	M223	JT6937	7		12	N		945	446	11	40.5	35	3	1	WT	N	X	I	NO	BHA	0	8	80	130	1400	600
4	3	8.5	Smith	MF04VCPS	417X	MR4667	3		18	Y		945	0	0		35	1	1	WT	A	E	I	NO	HP	5	25	120	200	1950	550
5	4	8.5	Smith	MF05TCPS	427X	MR5354	3		18	Y		1595	650	106.5	6.1	141.5	4	3	BT	G	4	4	SD	HA/HP	0	30	150	250	2000	550
6	2RR1	8.5	Smith	M90	M223	JT6937	6	1	12	Y		1988	393	40.5	9.7	182	5	7	BT	A	X	4	RG	PR	8	25	180	240	2150	550
7	5	8.5	Hughes	GT-90	437	6006566	3		14	N		2070.1	82	47	1.7	229	3	7	CT	G	E	2	WT	TD	10	35	65	95	1800	440

Comments :

APPENDIX 11

CASING AND CEMENTING REPORT

CASING AND CEMENTING REPORT

WELL: Peterborough 1 **SUPERVISOR:** S.Porter / B. Webb **DATE:** 18/08/05

CASING DETAILS

Size (")	Weight (ppf)	Grade	Landed depth (mRT)	Av. Length	Collapse (psi)	Burst (psi)
9 5/8	36	K-55	495.6	11.93	2020	3520

Joints on location	No. of joints run	Joints in shoe track	Float shoe (Y/N)	Float collar (Y/N)
41	41	1	Y	Y

Final displ. (psi)	Buoyed wt. (kLb)	Set weight (kLb)	Displ. (Bbls)	Coupling
476	51	16	21	BTC

PRE JOB CIRCULATION

Pump 1 (spm)	Pump 2 (spm)	Pressure	Time (mins)	Vol. Pumped (Bbls)	Mud wt (ppg)
100		400	30	216	8.8

PRE-FLUSH

Volume (Bbls)	Wt(ppg)	Hyd. Loss (psi)	Additives:					
20	8.34	9			Kg			Kg

TAIL SLURRY

Wt(ppg)	Class	Volume (Bbls)	Yield	Sacks	Water (g/sx)	Water (Bbls)	Design top
15.8	G	59	1.12	295	5.11	36	349

OH/Cal	Excess (%)	Hole size (")	Mix (bpm)	Mix (psi)	Start	Finish
OH	107	12.25	5	190	190	250

Additives:								
	%			gals			lb	
	%			gals			lb	

LEAD SLURRY

Wt(ppg)	Class	Volume (Bbls)	Yield	Sacks	Water (g/sx)	Water (Bbls)	Design top
13.2	G	132	1.81	410	9.97	97	0

OH/Cal	Excess (%)	Hole size (")	Mix (bpm)	Mix (psi)	Start	Finish
OH	98	12.25	5	250	250	136

Additives:								
0.4	%	Econolite	146.0	gals			lb	
0.2	%	Econolite		gals		77.0	lb	

DISPLACEMENT

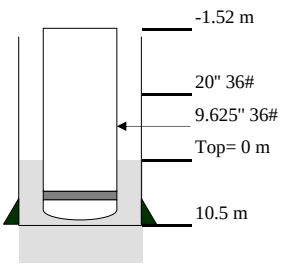
Fluid type	Wt	Calculated (Bbls)	Pumped (Bbls)	Bump pressure (psi)	Used (Rig/Unit)
Water	8.34	122	127	1500	Unit

Time: Start	Finish	Returns (%)	Top plug (Y/N)	Bottom plug (Y/N)	Floats held (Y/N)
00:10	00:31	100	Y	Y	Y

Pressure (psi)	Initial	final	max	min	Rate (bpm)	Initial	final	max	min
	185	700	700	185		8.5	5	8.5	5

LOT / FIT

OMW (ppg)	FIT (ppg)	FIT Pressure (psi)	Test pressure (psi)	EMW (ppg)
8.50	16.80	702	702	16.80



CASING RUN LIST

QTY	DESCRIPTION	LENGTH	FROM	TO
1	Float Shoe	0.44	495.11	495.55
1	Shoe Joint. 36# K-55 BTC	12.18	482.93	495.11
1	NR Float Collar	0.31	482.62	482.93
40	9-5/8" 36# K-55 BTC Casing	477.12	5.50	482.62
1	Landing joint	7.02	-1.52	5.50

APPENDIX 12

FLUID RECAPS

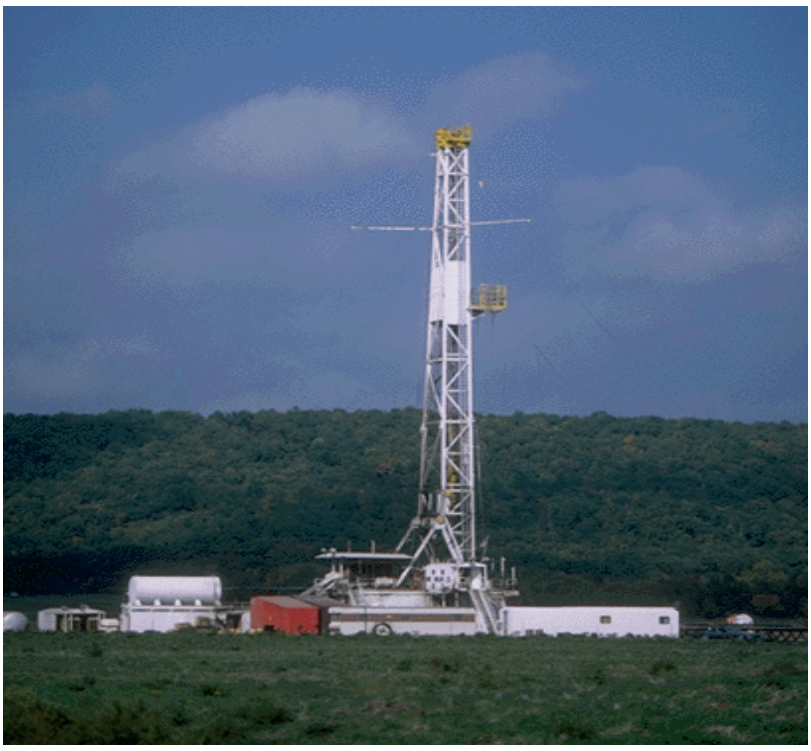
AND

DAILY MUD REPORTS

Fluids Recap

Origin Energy

Peterborough - 1/ST1
Onshore Otway Basin
Exploration
Victoria



Prepared by: **Nigel Warman**

MI SWACO

M-I *L.L.C.*

ONE-TRAX

DRILLING FLUID DATA MANAGEMENT SYSTEM

Operator:	Origin Energy	**Spud Date:**	16/08/2005
Well Name:	Peterborough -1/1ST1	**TD Date:**	06/09/2005
Field/Area:	Onshore Otway Basin	**Location Code:**	7001
Description:	Exploration	**Project Engineer:**	Nigel Warman
Location:	Victoria	**Sales Engineer:**	Nick Cooper
Warehouse:	Adelaide	**Sales Engineer:**	Eladio Melendez
Contractor:	Century Resources	**M-I Well No.**	26104

Comments:

Type	Size in	Depth m	TVD m	Hole in	Max MW sp.gr.	Fluid 1	Fluid2	Drilling Problem	Days	Cost A$
Casing	20	16	16	20	1	N/A		None		
Casing	9.625	496	496	12.25	1.04	Spud Mud		None	3	5434.25
Open Hole	.	2070	2069	8.5	1.15	KCL/PHPA	N/A	None	22	68697.70

Total Depth: 2070 m TVD: 2069 m Water Depth: m Drilling Days: 24 Total Cost: 74,131.95

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

CONTENTS:

– DISCUSSION BY INTERVAL

– DAILY DISCUSSION REPORT

– COST BY INTERVAL

– DAILY VOLUME SUMMARY SHEET

– TOTAL MATERIAL COST

– HYDRAULICS REPORT

– DRILLING FLUIDS SUMMARY

– PRODUCT CONSUMPTION

– DAILY MUD REPORTS

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

DISCUSSION
BY
INTERVAL

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

INTRODUCTION

Origin Energy was the operator for the exploration well Peterborough - 1, situated in PEP 154 onshore in the Otway Basin of Victoria, approximately 2.5 kms north-west of the town of Peterborough. The rig used was Century Drilling rig 7. The well was spudded on 16th of August 2005 and reached a Total Depth of 2070m on 6th September 2005. The co-ordinates of the well were Lat 38° 35' 12.3" South and Long 142° 51' 33.3" East. The primary objective was the sandstone of the Waarre Formation at an estimated depth of 1972m RT.

The well was drilled to a depth of 2070m in 22 drilling days.

The 12¼" section was drilled using pre-hydrated gel spud mud system to a depth of 499 metres. No problems were experienced while drilling this section, as expected mud losses through the shallow depth fractured limestone formations did not occur. The 8.5" hole was drilled to 2070m with a 4% KCl/PHPA/Polymer water base mud. There were problems with hole deviation which required the hole to be plugged back from 1389 metres to 944 metres.

Drilling continued again without incident to 2070m although there were problems while tripping due to ledges restricting the pipe movement.

After making a wiper trip, the hole was logged before P & A on 8th September 2005.

Formation Tops:

Formation	Lithology	Depth (TVD)
Port Campbell Limestone	5	
Gelibrand Marl	119	122
Clifton Fm	534	539
Narrawaturk Fm	550	555
Mepunga Fm	684	679
Dilwyn Fm	736	734
Pember Mudstone	993	975
Pebble Point Fm	1042	1036
Paaratte Fm	1159	1150
Skull Creek Mudstone	N/A	
Nullawarre Greensand	1696	1726
Belfast Mudstone	1943	1774
Waare Fm	1943	1972
Eumeralla Fm	2034	
TD	**2075**	**2070**

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

Interval I	0 - 495 m	12¼" Hole section	9⅝" Casing set @ 495m

MUD TYPE : PHG WITH 2% KCL

MUD PROBLEMS : None

MUD RELATED HOLE PROBLEMS : None

MUD PROPERTIES :

Mud Weight	:	1.04 - 1.065 sg
Viscosity	:	40 - 45 sec/qt
Yield Point	:	30 – 33 lb/100 100 ft^2
Plastic Viscosity	:	5 – 6 cP
6 rpm	:	18-19

OPERATIONS

Once rig up operations were completed, Peterborough-1 was spudded at around 20:00 hrs on 16th August 2005. The drilling assembly (BHA) was made and run into the hole tagging the ground at 19m. Drilling proceeded to 130m using pre-hydrated gel mud when 2% KCl was incorporated to the active system to provide clay inhibition. Drilling continued to the casing point at 499m without any hole problems. A precautionary wiper trip was conducted to the shoe; the hole appeared to be in good condition. Thereafter the 9⅝" casing was run to 495.5m and cemented as per program.

MUD SYSTEM & MAINTENANCE

An initial 320 bbls of 17ppb gel mud was prepared for displacement. At 130m, once through the Gelibrand formation, 2% KCl was incorporated to the active system to provide some clay inhibition. Thereafter additions of drill water were made to control flow properties and mud weight. No significant losses were noticed but LCM was mixed and pumped as a precautionary measure. When near TD, the KCl concentration was readjusted to 2%. No hole problems were encountered.

SOLIDS CONTROL EQUIPMENT

DFE ALS Shale Shakers (x 2)
Desander (12" x 2 cones)
DeSilter (4" x 10 cones)

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

The shale shakers were initially dressed with 110 mesh, which were maintained throughout this hole section. Operation of the desander and desilter was not required.

OBSERVATIONS & RECOMMENDATIONS

The Gel/KCl system used on this section worked well in providing good hole cleaning and relatively stable mud with good API loss. The possibility of high mud losses in the high level fractured limestone formations did not materialise, enabling the section to be drilled with minimal interruption.

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

Interval II	495 - 2070 m	8½" (216 mm) Hole section	P & A

MUD TYPE : 4% KCl / PHPA / Polymer

MUD RELATED HOLE PROBLEMS : None

MUD PROPERTIES :

Mud Weight	:	1.08 - 1.15 sg
Viscosity	:	47 - 57 sec/qt
Plastic Viscosity	:	12 - 21 cP
Yield Point	:	17 - 30 lb/100 ft²
6 rpm	:	6 - 8 units
Filtrate		4.5 - 7.5 mls/30 min
pH		9 - 9.5
MBT	:	6.25. - 10 ppb
Sulphite	:	80 - 100 mg/l
PHPA	:	1.3 – 1.5 ppb
KCl	:	3.5 – 4.5% wt
Drilled Solids	:	2.1 – 3.9% v/v

OPERATIONS

An 8½" Smith M90 PDC bit, fitted with 5 x 12/32" jets was run in with an Anadrift survey assembly to drill the cement and shoe. The drill water already in the hole was used to drill the cement and 3m of new formation prior to conducting the formation integrity test to 2.0 sg (16.8 ppg). The newly prepared KCl/PHPA/Polymer mud (1.03 sg) was displaced into the hole while drilling, after the FIT was completed.

Drilling proceeded with high ROP to 1228m. Drilling was halted at 1228m due to some conflicting data with regard to well inclination. The drill string was POOH, taking surveys on the way out of the hole to ensure the validity of previous surveys. On inspection, no problems were evident with the Anadrift tool and so the assembly was RIH to bottom, again taking surveys for confirmation.

Once on bottom, a gyro survey was run. Results from this survey indicated a reasonably straight hole to 1000m, at which point inclination began to increase steadily, up to 25° by 1228m. A slug was pumped and the string once again POOH. After waiting for a motor and directional drilling assembly to arrive, the BHA was made up and RIH.

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

Drilling proceeded by sliding and monitoring directional data from the MWD to 1389m to correct the well inclination. While drilling and back-reaming, some over-pull was experienced. An 8 joint wiper trip was performed to clean the hole, experiencing over-pull of up to 60,000 lbs. Over-pull was possibly from key seats at the deviations or some hole cave-ins. The decision was made to increase mud weight to 9.4 ppg/1.13 sg to improve formation support. 2 ppb LCM (Mix II Medium) was also added to system in attempt to plug any fractures. Continued reaming and working pipe to open the hole seemed to result only in apparent deteriorating hole integrity. The drill string was POOH to assess further options.

The decision was made to set two cement plugs, back to 925m and kick off to maintain a straight hole. A 2⅞" tubing assembly was RIH on 4½" drill pipe to 1200m where a Hi-Vis pill was spotted to support the cement plug. The first plug was set to 1100m. The second plug was set from 1025m to 925m after spotting another Hi-Vis pill. The stinger was POOH to wait on cement.

Peterborough 1ST1

After waiting on cement, a Smith M704VC tri-cone bit was run in the hole and tagged cement at 944m. Directional drilling/sliding commenced and continued until a new hole was drilled and the angle correct for straight hole again. Drilling continued to 1613.2m with the driller reporting the hole to be in good condition, no excess torque from the dog leg and not sticky on connections. However, while making the wiper trip, the hole was reported to be very sticky and the bit was reamed back to bottom.

While making the second attempt to trip, the hole was again reported to be tight, requiring extensive reaming and pumping out of the hole. There appeared to be a ledge as well as problems from the dog-leg created with the kick-off. Tight hole was observed at 1089m which again required extensive reaming. While running back in the hole it was necessary to ream from 695 to 723 metres. The bit was run back to 1126m, washed to 1285m. While tripping back again, it was necessary to ream at 627m. The bit was again run back to 1332m and then POOH with a tight spot at 768m. The bit was changed to a Smith M90 before running back in the hole. Fill was tagged at 1549m and washed to bottom.

Drilling continued to 1988m without problems where the decision was made to pull the bit due to slow penetration rate. The hole was again very tight with the pipe appearing to get hung up on ledges, rather than sticky hole conditions. The bit was changed to a Hughes GT-09 and run in the hole to 1931m and washed to bottom at 1988m. There were 78 units of trip gas recorded by the mud loggers.

Drilling continued to TD at 2070m. The survey recorded at 2033m showed the hole deviation to be 3°. After circulating the hole clean, a wiper trip was made before pulling out of the hole to run wire-line logs. These were run without any hole

problems. The pipe was then run back in the hole to P and A the well as per program on 8th September 2005.

MUD SYSTEMS & MAINTENANCE

The mud system used in this section was a 4% KCl/PHPA/Polymer mud. After the initial displacement to the new mud system and sufficient shearing had occurred, polymer concentrations were raised to programmed levels through the addition of higher concentration premixes.

The basic formula for the KCl/PHPA/Polymer system was:

1 Fresh water as required.
2 Trugel at 4 ppb.
3 Potassium Chloride at 14 ppb (4%).
4 Duotec at 1.4 ppb.
5 Polypac UL at 1 ppb.
6 Caustic soda at 0.1 ppb for pH 9.
7 Barite as required.
8 The Polyplus was then added at 1.5 ppb.
9 Barite as required.

The mixing procedure was as follows:

A Add all the commercial chemicals first, including biocide, de-foamer and salt to ensure maximum solubility.
B The Duovis was added next to minimise the formation of fisheyes .
C The Polypac UL was added at 10 mins sack.
D The PHPA was then added by the slam dunk method. Only half the PHPA was added initially to avoid mud losses at the shakers due to un-sheared polymers. Once these polymers had sheared, extra PHPA was added to the premixes to bring the whole system up to the required concentration.

The mud system salinity was initially run at 4.5% KCl but this was lowered to 4% as requested after 1200m. The cement plugs placed for the kick-off posed potential contamination problems. The mud was treated with citric acid and sodium bicarbonate to minimise contamination. Although the mud properties themselves were not adversely affected, there was a tendency for the mud to become aerated with agitation. Consequently, mixing to active and the use of solids control equipment was carefully monitored. The problem was greatly reduced by keeping the mud pits at their maximum working volume which kept the aerated mud away from the pump suctions. This problem only lasted a few days.

The water from the sump was recycled and used for the premix make-up water. This had the advantage of reducing transport costs for the removal of the sump water as

well as reclaiming some of the polymers and salts that would normally have been lost from the mud system. This is also the reason why a study of the mass balances will show discrepancies for things like the salt concentration of the mud compared to the actual salt additions made. The reclaimed water was treated with Glute 25 biocide and caustic soda to ensure there was no bacterial degradation.

In the latter part of the 8½" hole there were hole problems noted while tripping. After consultation with the Origin wellsite representative, the KCl concentration was raised (4.7% w/w) and the fluid loss lowered (4.4cc) to help improve the hole conditions. The hole problems were later decided to be mechanical rather than hole degradation.

The mud was treated with Glute 25 bactericide to prevent any bacterial degradation along with OS-1 oxygen scavenger for corrosion control. Some extra additions of Duotec and Polypac UL were required directly to the active system to more closely control rheological and fluid loss properties. Although the requested fluid loss was 7cc, the actual fluid loss was lowered after there was observed to be hole problems while tripping. This fluid loss was lowered to 4.5cc by the addition of small quantities of Polypac UL. It is quite economical to lower the fluid loss from 7 to 4.5 cc, however, lowering the fluid loss further can require considerably higher concentrations of fluid loss agents.

SOLIDS CONTROL EQUIPMENT

DFE ALS Shale Shakers (x 2)
Desander (12" x 2 cones)
Desilter (4" x 10 cones)

The DFE shale shakers were initially dressed with 110 mesh while drilling the cement and after the initial displacement to the new mud until it had been sheared. There were some mud losses at the shakers due to un-sheared polymers. The shakers were screened up to 140 mesh on one shaker, and 175 mesh on the other after the polymers had sheared. The required flow to control well direction was too high for the shakers to manage and so the 175 mesh screens were replaced with 140 mesh screens.

The shakers seemed to work well with a combination of 2 x 140 and 1 x 110 mesh screens. The flow was handled reasonably well without having excess shaker bed inclination. When the ROP reduced, the shakers were fitted with 210 mesh screens which showed an immediate improvement in solids removal. The mud weight dropped 0.1 ppg in the first few hours.

The shale shakers proved to be in poor condition, which resulted in gaps being present between the screens allowing some cuttings to penetrate. The maintenance

of the counter weights was also questioned, as the shakers did not appear to be operating as well as would be expected.

The desander was used constantly after the first 12 hours of drilling as sufficient sand passed by the shakers into the mud system. The high quantity of sand solids discharge from the desander, undoubtedly as a result of high rate of solids penetration through the shakers, warranted its continual operation.

The desilter was also in continuous operation after the first 12 hours of drilling to assist in the control of mud weight and drill solids content, exhibiting a discharge weight from 10.0 ppg initially, to 12.2 ppg as solids content of the mud increased.

In the latter section of the hole the desander discharge was found to be insufficient to justify its continued operation and so it was only run intermittently. The desilter continued to work efficiently and it was run continuously.

OBSERVATIONS & RECOMMENDATIONS

This system proved to both economical and well suited to the Peterborough 1 well. The programmed cost was exceeded by around $10,000 but this was entirely due to the sidetrack and the extra time required to drill it. The well was planned to be at total depth 9 days from spud. Due to the sidetrack etc, the well was at TD 22 days from spud.

The shale shakers were a major concern. Basically, they were worn out. Century has 2 new shaker beds on order and hopefully they will be on location very soon. This will enable a much wider selection of shaker screens to be used.

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

DAILY DISCUSSION
REPORT

MI SWACO	**Operator :** Origin Energy	**Field/Area :** Onshore Otway Basi	**Daily Discussion**
	Well Name : Peterborough -1/1ST	**Description :** Exploration	
	Contractor : Century Resources	**Location :** Victoria	M-I Well : **26104**

16/08/2005	TD = 53 m	Day 1

Spud well and drill ahead to 53m at report time.
Mixed 330bbls of PHGel mud.

17/08/2005	TD = 490 m	Day 2

Continued to drill ahead to 490m at 23:00 hrs report time.
Mixed LCM pill and pumped out to minimize losses.
Added 2% KCl to the whole active system while drilling the Gellibrand Marl formation for clay inhibiton. Bled water as required to the active to maintain mud viscosity and MW. Also dumped sand trap as required to make space for dilution.

Continued to drill 12 1/4" hole to 490m.

18/08/2005	TD = 499 m	Day 3

Drilled to TD 499m, circulated hole clean and conducted a wiper trip, run into the hole, circulate hole and Pooh to run casing, hole appears in good condition.

Rig up 9 5/8" csg running assembly and run to 495.5m as per program. Make up JSA and commence with cementing operation as per program. Make preparation to mix KCl/PHPA/Polymer mud for the 8 1/2" interval. After cementing operation, Old mud to be dumped and Pits clean after cementing operation. All old mud in hole and pits are considered dumped for KCl/Polymer mud reconciliation.

Drilled to 499m section TD, POOH. Ran and cemented casing at 495m.

19/08/2005	TD = 499 m	Day 4

Completed cementing of 9 5/8" casing, P/U and circulated clean. POOH with cementing assembly.
Nippling up BOPs and rigging up to RIH with 8.5" assembly.
Received chemicals for 8.5" section into inventory.
Built 520bbls of KCl/PHPA/Polymer WBM in preparation for displacement.

Completed cementing operations, Rigged and Nippled up BOPs, RIH with 8.5" drilling assembly.

20/08/2005	TD = 704 m	Day 5

N/u and pressure tested BOP's. RIH with 8.5" steerable assembly. Tagged cement @ 477m. Drilled through cement plugs and3m of new formation. Performed FIT to 2.0SG. Drilled ahead to 704m
Built and added premix to active as required for volume and extra Duotec for rheology maintenance. Added OS-1 for corrosion control. shaker screens retained at 110mesh to accomodate flowrate. Some mud lost over shakers until new PHPA had sheared.

RIH and tagged cement at 477m. Drilled new formation and performed FIT before drilling ahead.

21/08/2005	TD = 1172 m	Day 6

Drilled ahead to 1172m without problems.
Continued building premixes as required for volume maintenance. Caustic Soda added to active for pH maintenance. Desander and desilter inoperation to control mud weight.
Shakers were screened up to 140 mesh, but continued to have difficulty coping with the required flow rate. Some excess mud losses over shakers.

Drilled ahead to 1172m.

22/08/2005	TD = 1228 m	Day 7

Drilled ahead to 1228m, before an anomaly in the survey data indicated a possible hole deviation of 4deg. Pumped slug and POOH to investigate possible problem with survey tool. No problems, RIH taking surveys, showed varying deviations. Preparing to run gyro survey to confirm.
Built premixes as required for volume building and mud property maintenance.

23/08/2005	TD = 1228 m	Day 8

Gyro survey indicated angle building from vertical at 1000m to 25 degrees by 1220m. POOH and waited for mud motor steerable assembly. M/U new BHA and RIH to drill ahead and correct angle.
Built slug for POOH. Dumped ~40bbls solids and volume from sand trap.

Gyro survey shows bottom hole inclination at 25 deg.POOH. RIH with steerable assembly to drill ahead and correct angle

24/08/2005	TD = 1389 m	Day 9

Began drilling when BOB, sliding for directional requirements to 1383m. While drilling and backreaming, some overpull was experienced. An 8 joint wiper trip was performed to clean hole, experiencing 60K overpull. Overpull possibly caused by key seats or some hole cave-ins. Decision made to increase mud weight to 9.4ppg/1.13SG to improve formation support. Also added 2ppb LCM to system to plug any fractures. Continued reaming and working pipe to open the hole.
Reduced KCl concentrations in premixes to allow lower KCl content in mud system. Added OS-1 to maintain corrosion control. Build and added premixes as required for volume.
Added barite to weight up active system to 9.4ppg and 2ppb MIX II for improved fluid loss and wellbore stability. Adding water to active to control rheology.

Drilled sliding to 1383m, experienced overpull, made wiper trip and reaming to open hole.

25/08/2005	TD = 925 m	Day 10

After working pipe, hole conditions appeared to be deteriorating. Decision was made to POOH. Rigged up and RIH with open ended tubing as cement stinger. Pumped hi-vis slug(1200m-1180m) and set cement plug to 1100m. Pulled back and spotted second hi-vis slug (1045m-1025m) and set another cement plug to 925m. Pulled above cement and reverse circ'd cement out of string, dumping contaminated mud, POOH
Added premix to active for volume and built slug for POOH. Built hi-vis pills to support cement plugs.
No cement seen at shakers, but dumped pH contaminated mud before POOH.

26/08/2005	TD = 958 m	Day 11

POOH to surface. Waited on cement. R/U 8.5" tricone bit and MWD and RIH. Tagged cement at 944m. Sliding for directional work to 958m. Dumped 40bbls of solids and heavy mud from sand trap and degasser pit. Added citric acid to active to treat high pH from cement job and Defoam A to reduce aeration. Lost some mud when power shut down to shakers and pits.

27/08/2005	TD = 1131 m	Day 12

Continue drilling sidetrack to 1131 meters as per DD's instructions for straight hole.
Continue treating for cement contamination of mud with sodium bicarbonate and citric acid. Add Pac UL for fluid loss control, Duotec for low end rheology. Adding defoamer as required to minimise aeration of mud. Installed 2 x 110 mesh screens to lower shaker bed angle as poor removal of cuttings from screens was casuing high screen elevation and short screen life. Shall replace with 140 mesh screens when conditions permit.

Continue drilling to 1131 meters.

28/08/2005	TD = 1473 m	Day 13

Continue drilling to 1473 meters, following DD's insructions to maintain straight hole. Driller reports hole to be in good conditon.
Adding premix as required to maintain volume and control build up of LGS/mud weight. Running desander and desilter 24 hours to minimise solids. Adding extra Polyplus to maintain PHPA concentration. Adding OS-1 oxygen scavenger for corrosion control

Drill to 1473 meters

29/08/2005	TD = 1613.2 m	Day 14

Continue drilling to 1613.2 meters. Circulate hole clean, pump slug and make wiper trip. Hole sticky, ream back to bottom and circulate again.
Note: Cumulative cost now includes cost for citric acid previously used.
Using recycled water from sump for premix make-up water. Treating with Glute biocide and extra caustic to prevent bacterial contamination.
Dumped sand trap and possum belly as required to allow for dilution additions. Running shakers at lowered elevation to ensure prompt removal of cuttings.

Drill to 1613.2 meters. Wiper trip.

30/08/2005	TD = 1613.2 m	Day 15

POH to 1089, tight hole, pick up weight = 125Klb and down weight = 110Klb. Pick up kelly and work pipe, pump out singles. Lost approx 2 bbls per hour while pumping out of the hole.
Cumulative price now includes costs for DeFoam A, previously omitted.
Increase KCl concentration and lower fluid loss to try and help improve hole conditions.
Barite used for slugs.
Make extra premixes to mainatin volume while pumping out of the hole.

POH

31/08/2005	TD = 1613.2 m	Day 16

Wash and ream with singles from 695 to 723m. RIH to 1126m. Wash to 1285m. Back ream with string stabiliser from 627 to 626m. Cont wash and ream from 1285 to 1332m. POH, tight spot at 768m. Cont POH, change bit and RIH.
None required.

Bit change.

1/09/2005	TD = 1867 m	Day 17

RIH, tag fill at 1549 meters. Wash to 1594 meters, continue drilling to 1875 meters at midnight.
Continue adding premix as required to maintain volume. Turned off desander and desilter at 21:00 hrs as discharge density too low (desander 9.8ppg and desilter 10.2 ppg). Using recycled mud from sump for make up water. Treat with caustic and biocide to prevent bacterial degradation.
Initial high mud weight from slugs in system.

Continue drilling to 1875 meters.

2/09/2005	TD = 1985 m	Day 18

Drill to 1911 meters, make wiper trip to 1714 meters, RIH, no fill. Continue drilling to 1985 meters at midnight.
Take water from sump for make up water. Treat with Glute 25 biocide to prevent bacterial contamination. Diluting as required to minimise low gravity solids build-up. Running desander and desilter to control solids.

Continue drilling to 1985 meters.

3/09/2005	TD = 1988 m	Day 19

Continue drilling to 1988 meters. ROP decreased, circulate hole clean, pump barite slug and POH for new bit. Hole very tight. Pump up kelly and circulate as required. Three slugs pumped.
Dump and clean out possum belly and sand trap. Mud weight observed to be increasing due to barite slugs (3). Prepare new premix in premix tank.

POH

4/09/2005	TD = 1993 m	Day 20

Continue POH, change bit, RIH to 1067m, break circulation. RIH to 1434m, break circulation. RIH to 1931m, wash and ream to bottom, drill ahead to 1993 meters at midnight.
Trip gas = 78.4 units.
Continue taking water from sump for premix additions. Running desander and desilte to try and reduce low gravity solids. Mud properties stable after bit trip.

Continue drilling to 1993 meters.

5/09/2005	TD = 2023 m	Day 21

Continue drilling to 2023 meters.
Survey at 2005 meters = 5.25 degrees.
Lost 25 bbls mud at shakers due to power failure. Due to slow ROP, fine (210 mesh) screens could be installed on the shakers. This resulted in the mud weight being reduced from 1.15 to 1.14 sg.
Make up water was sucked from the sump, reclaiming polymers and salt. Dumped and cleaned out sand trap while making survey.

Continue drilling to 2023 meters.

6/09/2005	TD = 2070 m	Day 22

Continue drilling to TD at 2070 meters. Circulate hole clean, pump barite pill. POH for wiper trip. Make 10 stand wiper trip, RIH to circulate and condition mud for wireline logs.
Survey at 2033 meters = 3 degrees.

Continue add premix to control mud weight and low gravity solids build up. Taking water from sump for premixes. Add biocide to mud before tripping to prevent bacterial degradation. Desilter working well with discharge underflow of 10.7 ppg. Desander less efficient, running intermittently.
Lost 20 bbls cleaning sandtrap and possum belly.

Drill to TD at 2070 meters.

7/09/2005	TD = 2070 m	Day 23

Continue POH, rig up and run wireline logs.
None required.
Barite used for slugs.
Trugel is for product used in 12.25" hole but not charged off.
Pipe Lax was delivered in initial order but not entered in inventory.
Dump and clean sand trap.

Run wireline logs.

8/09/2005	TD = 2070 m	Day 24

Complete logging, RIH with DP and start P and A program.

None required.

P and A

9/09/2005	TD = 2070 m	Day 25

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

COST
BY
INTERVAL

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria

SUMMARY OF PRODUCT USAGE FOR 12-1/4" INTERVAL 16/08/2005 - 18/08/2005, 0 - 495 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST (A$)	PROD COST (A$)
1 - SODA ASH	25 KG BG	3	15.33	45.99
2 - CAUSTIC SODA (DRY)	25 KG DM	2	34.84	69.68
3 - KWIK SEAL FINE	40 LB BG	14	45.70	639.80
4 - Trugel 13A	25 KG BG	203	8.36	1697.08
5 - POTASSIUM CHLORIDE	25 KG BG	140	18.36	2570.40
6 - KWIK SEAL MEDIUM	40 LB BG	9	45.70	411.30

SUB TOTAL:	5434.25
TAX:	0.00
WATER-BASED MUD TOTAL COST:	5434.25

TOTAL MUD COST FOR INTERVAL: 5434.25

MI SWACO Australia

PRODUCT SUMMARY

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria

SUMMARY OF PRODUCT USAGE FOR 8-1/2" INTERVAL 19/08/2005 - 9/09/2005, 495 - 2070 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST (A$)	PROD COST (A$)
1 - CITRIC ACID	25 KG BG	11	56.00	616.00
2 - SODA ASH	25 KG BG	48	15.33	735.84
3 - CAUSTIC SODA (DRY)	25 KG DM	12	34.84	418.08
4 - SODIUM BICARBONATE	25 KG BG	15	16.97	254.55
5 - M-I BAR	25 KG BG	680	7.84	5331.20
6 - Trugel 13A	25 KG BG	85	8.36	710.60
7 - POTASSIUM CHLORIDE	25 KG BG	980	18.36	17992.80
8 - GLUTE 25	25 LT CN	10	103.20	1032.00
9 - DEFOAM A	25 LT CN	4	0.00	0.00
10 - Polyplus Powder	25 KG BG	84	133.85	11243.40
11 - DUOTEC	25 KG BG	49	270.83	13270.67
12 - POLYPAC UL	25 KG BG	112	130.54	14620.48
13 - MIX II MEDIUM	25 LB BG	40	40.13	1605.20
14 - OS-1	25 KG BG	16	54.18	866.88

SUB TOTAL:	68697.70
TAX:	0.00
WATER-BASED MUD TOTAL COST:	68697.7

TOTAL MUD COST FOR INTERVAL: 68697.7

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

DAILY VOLUME
SUMMARY SHEET

Origin Energy
Peterborough 1

Daily Volume Summary

12.25" Hole Interval
(Freshwater/Gel Mud)

		Mud Volume Status (bbls)				Mud Volume Built (bbls)					Mud Volume Lost (bbls)						
Date 2005	Depth (m)	Hole	Surf Active	Res	Total Vol	Water	Chem	Barite	Daily Total	Cum. Built	Solids Equip	Surf	Dump	Hole	Csg / Plugs	Daily Total	Cum. Lost
16-Aug	53	31	153	137	321	318	12		330	330		9				9	9
17-Aug	490	224	343	15	582	405	15		420	750		159				159	168
18-Aug	499	229			229				0	750		353				353	521

8 1/2" Hole Interval
(KCl/PHPA/Polymer Mud)

		Mud Volume Status (bbls)				Mud Volume Built (bbls)						Mud Volume Lost (bbls)						
Date 2005	Depth (m)	Hole	Surf Active	Res	Total Vol	Mud Rec'd	Water	Chem	Barite	Daily Total	Cum. Built	Solids Equip	Surf	Dump	Hole	Csg / Plugs	Daily Total	Cum. Lost
19-Aug	499	120	445	75	640		632	8		640	640						0	0
20-Aug	704	140	340	30	510		121	2		123	763	117	96	40			253	253
21-Aug	1172	240	341	30	611		379	4		383	1146	45	237				282	535
22-Aug	1228	251	315	78	644		176	2	1	179	1325	10	91	45			146	681
23-Aug	1228	250	241	63	554		1			1	1326		51	40			91	772
24-Aug	1389	280	320	79	679		247	2	5	254	1580	80	49				129	901
25-Aug	925	203	305	62	570		26	1	2	29	1609	43		40		55	138	1039

Peterborough 1ST1

8 1/2" Hole Interval
(KCl/PHPA/Polymer Mud)

		Mud Volume Status (bbls)				Mud Volume Built (bbls)						Mud Volume Lost (bbls)						
Date 2005	Depth (m)	Hole	Surf Active	Res	Total Vol	Mud Rec'd	Water	Chem	Barite	Daily Total	Cum. Built	Solids Equip	Surf	Dump	Hole	Csg / Plugs	Daily Total	Cum. Lost
26-Aug	958	188	292	42	522		49	1		50	1659	44	54				98	1137
27-Aug	1131	225	330	42	597		240	5	4	249	1908	135		39			174	1311
28-Aug	1473	309	345	50	704		250		3	253	2161	95	6	45			146	1457
29-Aug	1613	345	360	41	746		235	4	2	241	2402	110	39	50			199	1656
30-Aug	1613	357	352	44	753		110	3	2	115	2517	30	10	20	48		108	1764
31-Aug	1613	356	353	39	748					0	2517			5			5	1769
1-Sep	1867	397	375	22	794		191	3		194	2711	97	11	40			148	1917
2-Sep	1985	424	350	47	821		180	4	2	186	2897	93	26	40			159	2076
3-Sep	1988	442	280	89	811		55	3	3	61	2958	20	11	40			71	2147
4-Sep	1993	428	339	29	796		55	2		57	3015	40	12	20			72	2219
5-Sep	2023	435	361	2	798		178	3		181	3196	24	95	60			179	2398
6-Sep	2070	445	350	52	847		145	4	2	151	3347	70	12	20			102	2500
7-Sep	2070	463	319	52	834					0	3347			13			13	2513
8-Sep	2070	463	319	52	834					0	3347						0	2513

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

TOTAL
MATERIAL
COST

MI SWACO Australia

PRODUCT SUMMARY

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria

SUMMARY OF PRODUCT USAGE FOR INTERVAL 16/08/2005 - 9/09/2005, 53 - 2070 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST (A$)	PROD COST (A$)
1 - CITRIC ACID	25 KG BG	11	56.00	616.00
2 - SODA ASH	25 KG BG	51	15.33	781.83
3 - CAUSTIC SODA (DRY)	25 KG DM	14	34.84	487.76
4 - KWIK SEAL FINE	40 LB BG	14	45.70	639.80
5 - SODIUM BICARBONATE	25 KG BG	15	16.97	254.55
6 - M-I BAR	25 KG BG	680	7.84	5331.20
7 - Trugel 13A	25 KG BG	288	8.36	2407.68
8 - POTASSIUM CHLORIDE	25 KG BG	1120	18.36	20563.20
9 - GLUTE 25	25 LT CN	10	103.20	1032.00
10 - KWIK SEAL MEDIUM	40 LB BG	9	45.70	411.30
11 - DEFOAM A	25 LT CN	4	0.00	0.00
12 - Polyplus Powder	25 KG BG	84	133.85	11243.40
13 - DUOTEC	25 KG BG	49	270.83	13270.67
14 - POLYPAC UL	25 KG BG	112	130.54	14620.48
15 - MIX II MEDIUM	25 LB BG	40	40.13	1605.20
16 - OS-1	25 KG BG	16	54.18	866.88

SUB TOTAL:	74131.95
TAX:	0.00
WATER-BASED MUD TOTAL COST:	74131.95

TOTAL MUD COST FOR INTERVAL: 74131.95

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY PETERBOROUGH 1, PETERBOROUGH 1ST1

HYDRAULICS REPORT

HYDRAULICS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		16/08/2005	17/08/2005	18/08/2005	20/08/2005	21/08/2005	22/08/2005	23/08/2005	24/08/2005
Depth	m	50	474	499	685	1149	1228	1228	1389
Days Since Spud		1	2	3	5	6	7	8	9
*RHEOLOGICAL PROPERTIES									
Mud Wt	sp.gr.	1.065	1.06	1.06	1.03	1.07	1.07	1.08	1.12
Plastic Visc	cP		5		12	15	14	15	21
Yield Point	lb/100ft²		31		17	23	23	22	29
3-rpm Rdg	Fann deg		15		4	5	5	5	6
np Value		.	.1876	.1876	.4996	.48	.463	.491	.5059
Kp Value	lb•s^n/100ft²	.	11.9205	11.9205	1.3725	2.032	2.2001	1.8474	2.2749
na Value		.	.207	.207	.4444	.4352	.4225	.4352	.4774
Ka Value	lb•s^n/100ft²	.	11.4182	11.4182	2.0675	2.6232	2.678	2.6232	2.9385
*FLOW DATA									
Flow Rate	gal/min	194	394	0	484	536	536	0	469
Pump Pressure	psi	0	0	0	1085	1380	1450	0	1410
Pump	hhp			*	306	432	453	*	386
*PRESSURE LOSSES									
Drill String	psi		102	*	322	562	562	*	601
Bit	psi		364	*	608	775	775	*	341
Annulus	psi		23	*	67	126	125	*	226
Total System	psi		490	*	997	1463	1462	*	1168
*BIT HYDRAULICS									
Nozzles	1/32"	3x16	3x16	3x16	5x12	5x12	5x12	3x18	3x18
Nozzles	1/32"								
Bit Pressure	%	*	*	*	56	56	53	*	24
Bit	hhp		84	*	172	242	242	*	93
Bit HSI	(index)	.	.71	*	3.03	4.27	4.27	*	1.64
Jet Velocity	ft/s	32	65	*	86	95	95	*	62
Impact Force	lbf		387	*	605	771	771	*	458
DRILL COLLARS ANNULUS									
Velocity	m/min	13	27	*	135	150	150	*	131
Critical Vel	m/min		130	*	127	140	135	*	172
Reynolds Number			155	*	2704	2745	2907	*	1615
Crit Re (Lam - Tran)		3470	3213	*	2786	2812	2836	*	2777
*DRILL PIPE ANNULUS									
Velocity	m/min	13	23	*	70	77	77	*	67
Critical Vel	m/min		126	*	100	111	108	*	132
Reynolds Number			123	*	1383	1385	1440	*	868
Crit Re (Lam - Tran)		3470	3213	*	2786	2812	2836	*	2777
*HOLE CLEANING									
Slip Velocity	m/min		4	*	7	6	6	*	5
Rising Velocity	m/min	13	18	*	63	71	71	*	62
Lifting Capacity	%	98	81	*	90	92	92	*	92
Cutting Conc	%	1.0	0.0	*	1.22	0.64	0.56	*	0.42
Penetration Rate	m/h	0	0	0	33	19.5	17	0	11.2
CASING SHOE PRESSURES									
ECD	sp.gr.	0.0	1.07	*	1.07	1.13	1.12	*	1.19
ECD+Cuttings	sp.gr.	0.02	1.07	*	1.09	1.14	1.13	*	1.2
TOTAL DEPTH PRESSURES									
ECD	sp.gr.	0.0	1.09	*	1.1	1.15	1.14	*	1.24
ECD+Cuttings	sp.gr.	0.02	1.09	*	1.11	1.15	1.15	*	1.24

HYDRAULICS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		25/08/2005	26/08/2005	27/08/2005	28/08/2005	29/08/2005	30/08/2005	31/08/2005	1/09/2005
Depth	m	1389	950	1005	1462	1613	687	1613	1860
Days Since Spud		10	11	12	13	14	15	16	17
*RHEOLOGICAL PROPERTIES									
Mud Wt	sp.gr.	1.12	1.12	1.08	1.12	1.10	1.12	1.12	1.14
Plastic Visc	cP	19	17	19	20	20	20	20	19
Yield Point	lb/100ft²	27	30	28	29	21	20	19	18
3-rpm Rdg	Fann deg	6	5	5	6	5	5	5	5
np Value		.4988	.4454	.4898	.4938	.5732	.585	.5972	.5979
Kp Value	lb•s^n/100ft²	2.1875	3.1182	2.3641	2.4038	1.2261	1.1115	1.0038	.9484
na Value		.4393	.5013	.4913	.4683	.5013	.4809	.459	.459
Ka Value	lb•s^n/100ft²	3.1268	2.355	2.3938	2.9822	2.355	2.4346	2.5234	2.5234
*FLOW DATA									
Flow Rate	gal/min	0	454	545	539	533	509	0	430
Pump Pressure	psi	0	1150	1650	1940	1925	1275	0	2050
Pump	hhp	*	305	525	610	599	379	*	514
*PRESSURE LOSSES									
Drill String	psi	*	403	618	763	731	452	*	669
Bit	psi	*	11492	15969	16198	15556	14445	*	245
Annulus	psi	*	159	186	214	188	112	*	186
Total System	psi	*	12054	16773	17175	16475	15009	*	1100
*BIT HYDRAULICS									
Nozzles	1/32"		18x3	18x3	18x3	18x3	18x3	6x12	6x12
Nozzles	1/32"							14	14
Bit Pressure	%	*	999	968	835	808	1133	*	12
Bit	hhp	*	3044	5078	5094	4837	4290	*	61
Bit HSI	(index)	*	53.64	89.48	89.76	85.25	75.59	*	1.08
Jet Velocity	ft/s	*	357	429	424	419	401	*	52
Impact Force	lbf	*	2574	3577	3628	3484	3235	*	359
DRILL COLLARS ANNULUS									
Velocity	m/min	*	127	153	133	131	125	*	106
Critical Vel	m/min	*	163	162	162	159	148	*	138
Reynolds Number		*	1664	2207	1805	1819	1882	*	1620
Crit Re (Lam - Tran)		*	2860	2799	2793	2685	2669	*	2651
*DRILL PIPE ANNULUS									
Velocity	m/min	*	65	78	72	72	68	*	58
Critical Vel	m/min	*	123	124	128	123	116	*	110
Reynolds Number		*	927	1211	1019	1074	1081	*	903
Crit Re (Lam - Tran)		*	2860	2799	2793	2685	2669	*	2651
*HOLE CLEANING									
Slip Velocity	m/min	*	6	6	5	6	6	*	6
Rising Velocity	m/min	*	60	72	67	66	63	*	52
Lifting Capacity	%	*	91	92	93	92	92	*	90
Cutting Conc	%	*	0.35	0.29	0.46	0.31	0.0	*	0.67
Penetration Rate	m/h	0	9	9	14.2	9.4	0	0	16
CASING SHOE PRESSURES									
ECD	sp.gr.	*	1.18	1.15	1.19	1.17	1.18	*	1.19
ECD+Cuttings	sp.gr.	*	1.19	1.15	1.2	1.17	1.18	*	1.2
TOTAL DEPTH PRESSURES									
ECD	sp.gr.	*	1.24	1.2	1.22	1.2	1.24	*	1.21
ECD+Cuttings	sp.gr.	*	1.24	1.2	1.23	1.2	1.24	*	1.22

HYDRAULICS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		2/09/2005	3/09/2005	4/09/2005	5/09/2005	6/09/2005	7/09/2005	8/09/2005	9/09/2005
Depth	m	1980	1988	1993	2022	2070	2070	2070	2070
Days Since Spud		18	19	20	21	22	23	24	25
*RHEOLOGICAL PROPERTIES									
Mud Wt	sp.gr.	1.14	1.15	1.15	1.14	1.14	1.14	1.14	1.14
Plastic Visc	cP	17	18	17	17	15	17	19	18
Yield Point	lb/100ft²	18	18	19	20	20	20	20	20
3-rpm Rdg	Fann deg	5	4	5	5	4	5	5	5
np Value		.5712	.585	.558	.5454	.5146	.5454	.5726	.5594
Kp Value	lb•s^n/100ft²	1.06	1.0003	1.1835	1.3155	1.5085	1.3155	1.1707	1.2382
na Value		.459	.5338	.4702	.459	.5338	.4473	.4702	.459
Ka Value	lb•s^n/100ft²	2.5234	1.7868	2.4778	2.5234	1.7868	2.5718	2.4778	2.5234
*FLOW DATA									
Flow Rate	gal/min	518	518	436	448	436	0	0	0
Pump Pressure	psi	2075	2075	1725	1760	1800	0	0	0
Pump	hhp	627	627	439	460	458	*	*	*
*PRESSURE LOSSES									
Drill String	psi	904	576	689	719	667	*	*	*
Bit	psi	356	359	826	865	819	*	*	*
Annulus	psi	212	136	197	195	197	*	*	*
Total System	psi	1472	1071	1712	1779	1683	*	*	*
*BIT HYDRAULICS									
Nozzles	1/32"	6x12	6x12	3x14	3x14	3x14			
Nozzles	1/32"	14	14						
Bit Pressure	%	17	17	48	49	45	*	*	*
Bit	hhp	107	108	210	226	208	*	*	*
Bit HSI	(index)	1.89	1.91	3.7	3.98	3.67	*	*	*
Jet Velocity	ft/s	62	62	95	97	95	*	*	*
Impact Force	lbf	521	526	672	703	666	*	*	*
DRILL COLLARS ANNULUS									
Velocity	m/min	128	128	107	110	107	*	*	*
Critical Vel	m/min	138	145	142	138	146	*	*	*
Reynolds Number		2158	1989	1595	1726	1532	*	*	*
Crit Re (Lam - Tran)		2688	2669	2706	2723	2765	*	*	*
*DRILL PIPE ANNULUS									
Velocity	m/min	70	70	59	60	59	*	*	*
Critical Vel	m/min	110	110	112	110	110	*	*	*
Reynolds Number		1203	1228	903	961	946	*	*	*
Crit Re (Lam - Tran)		2688	2669	2706	2723	2765	*	*	*
*HOLE CLEANING									
Slip Velocity	m/min	6	6	6	6	6	*	*	*
Rising Velocity	m/min	64	63	53	54	52	*	*	*
Lifting Capacity	%	92	91	90	91	89	*	*	*
Cutting Conc	%	0.17	0.03	0.06	0.05	0.05	*	*	*
Penetration Rate	m/h	5	1	1.5	1.3	1.3	0	0	0
CASING SHOE PRESSURES									
ECD	sp.gr.	1.2	1.21	1.21	1.2	1.19	*	*	*
ECD+Cuttings	sp.gr.	1.2	1.21	1.21	1.2	1.19	*	*	*
TOTAL DEPTH PRESSURES									
ECD	sp.gr.	1.22	1.25	1.22	1.21	1.21	*	*	*
ECD+Cuttings	sp.gr.	1.22	1.25	1.22	1.21	1.21	*	*	*

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY PETERBOROUGH 1, PETERBOROUGH 1ST1

DRILLING FLUIDS SUMMARY

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		16/08/2005	16/08/2005	17/08/2005	17/08/2005	18/08/2005	19/08/2005
Depth/TVD	m	50/50	/	474/474	210/210	499/499	/
Activity		Drilling	Drilling	Drilling	Drilling	nenting 9 5/8" C	N/U BOPs
Mud Type		PHGel Mud	PHGel Mud	PHGel Mud	PHGel Mud	PHGel Mud	KCl/PHPA/Po
Hole Size	in	12.25	12.25	12.25	12.25	12.25	8.5
Circ Volume	bbl	184	184	567	567		445
Flow Rate	gal/min	194	194	394	394	0	0
Circ Pressure	psi	0	0	0	0	0	0
Avg ROP	m/hr	0	0	0	0	0	0
Sample From		Pit	FL	Pit	Pit	Pit	
Flow Line Temp	°C						
Mud Weight	sp.gr.	1.065@ °C	1.045 @ °C	1.06 @ °C	1.06 @ °C	1.06 @ °C	@ °C
Funnel Viscosity	s/qt	42	40	41	45	39	
PV	cP			5	6		
YP	lb/100ft²			31	33		
R600/R300/R200		/ /	/ /	41/36/34	45/39/38	/ /	/ /
R100/R6/R3		/ /	/ /	31/18/15	36/19/15	/ /	/ /
10s/10m/30m Gel	lb/100ft²	//	//	//	//	//	//
API Fluid Loss	cc/30 min						
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	/	/	/	/	/	/
Solids	%Vol						
Oil/Water	%Vol	/	/	/	/	/	/
Sand	%Vol						
MBT	lb/bbl						
pH		9.5	9.0	9.0	9.2	8.8	
Alkal Mud (Pm)							
Pf/Mf		/	/	/	/	/	/
Chlorides	mg/l						
Hardness Ca							
KCl	%						
Excess Sulphite	mg/L						
PHPA	ppb						
Daily Mud Cost	A$	1720.79		3713.46		0.00	6568.15
Cuml Mud Cost	A$	1720.79		5434.25		5434.25	12002.40
Sales Engineer		Eladio Melendez	Eladio Melendez	Eladio Melendez	Eladio Melendez	Eladio Melendez	Nick Cooper
Products Used		SodaAsh / 3		Kwik F / 14			SodaAsh / 3
		Caustic / 2		TruGel / 11			Caustic / 1
		TruGel / 192		KCl / 140			TruGel / 28
				KWIK-M / 9			KCl / 126
							Glut / 2
							PHPA / 6
							DUOTEC / 6
							PacUL / 10

REMARKS

16/08/2005:

17/08/2005: Continued to drill 12 1/4" hole to 490m.

18/08/2005: Drilled to 499m section TD, POOH. Ran and cemented casing at 495m.
19/08/2005: Completed cementing operations, Rigged and Nippled up BOPs, RIH with 8.5" drilling assembly.

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		20/08/2005	20/08/2005	21/08/2005	21/08/2005	22/08/2005	23/08/2005
Depth/TVD	m	685/685	/	1149/1149	920/920	1228/1228	1228/1228
Activity		Drilling ahead	Drilling ahead	Drilling ahead	Drilling ahead	ınning gyro surv	RIH
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	480	480	579	579	566	491
Flow Rate	gal/min	484	484	536	536	536	0
Circ Pressure	psi	1085	1085	1380	1380	1450	0
Avg ROP	m/hr	33	33	19.5	19.5	17	0
Sample From		Active	Active	Active	Active	Active	Active
Flow Line Temp	°C	35		41	38	n/a	n/a
Mud Weight	sp.gr.	1.03 @ 30 °C	1.03@ °C	1.07@35 °C	1.07@34 °C	1.07@35 °C	1.08@ °C
Funnel Viscosity	s/qt	51	42	53	52	50	56
PV	cP	12	9	15	11	14	15
YP	lb/100ft²	17	9	23	26	23	22
R600/R300/R200		41/29/24	27/18/15	53/38/32	48/37/28	51/37/31	52/37/32
R100/R6/R3		19/6/4	11/3/2	23/7/5	21/7/5	22/7/5	23/7/5
10s/10m/30m Gel	lb/100ft²	5/7/8	//	6/8/9	6/8/9	6/8/9	6/8/9
API Fluid Loss	cc/30 min	9	12	6.6	7.5	6.4	6.5
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	0.5/	0.5/	1/	1/	1/	1/
Solids	%Vol	6		8	7	8	7
Oil/Water	%Vol	/94	/	/92	/93	/92	0/93
Sand	%Vol	tr		0.75	2	0.5	0.5
MBT	lb/bbl	0		6.25	5.13	6.25	6.5
pH		9.5		9.5	9.0	9.5	9.5
Alkal Mud (Pm)		0.2		0.1	0.1	0.1	0.1
Pf/Mf		0.1/0.6	/	0.1/0.6	0.1/0.4	0.1/0.5	0.1/0.6
Chlorides	mg/l	20000		20000	19000	20000	21000
Hardness Ca		100		120	300	160	100
KCl	%	4.5		4.5	4.5	4.5	4.5
Excess Sulphite	mg/L	100		100	100	100	100
PHPA	ppb						
Daily Mud Cost	A$	3832.85		8571.09		2826.88	235.20
Cuml Mud Cost	A$	15835.25		24406.34		27233.22	27468.42
Sales Engineer		Nick Cooper	Nick Cooper	Nick Cooper	Nick Cooper	Nick Cooper	Nick Cooper
Products Used		KCl / 42		SodaAsh / 3		SodaAsh / 3	M-I Bar / 30
		PHPA / 4		Caustic / 2		M-I Bar / 40	
		DUOTEC / 7		KCl / 126		KCl / 40	
		PacUL / 4		PHPA / 12		PHPA / 2	
		OS-1 / 2		DUOTEC / 10		DUOTEC / 3	
				PacUL / 14		PacUL / 5	

REMARKS

20/08/2005: RIH and tagged cement at 477m. Drilled new formation and performed FIT before drilling ahead.

21/08/2005: Drilled ahead to 1172m.

22/08/2005:
23/08/2005: Gyro survey shows bottom hole inclination at 25 deg.POOH. RIH with steerable assembly to drill ahead and correct angle

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		24/08/2005	24/08/2005	25/08/2005	26/08/2005	27/08/2005	27/08/2005
Depth/TVD	m	1389/1371	1332/1250	1389/1371	950/950	1005/1005	1131/1131
Activity		Reaming	Reaming	POOH	Drilling ahead	Drilling	Drilling
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	600	600	508	481	555	555
Flow Rate	gal/min	469	469	0	454	545	545
Circ Pressure	psi	1410	1410	0	1150	1650	1650
Avg ROP	m/hr	11.2	11.2	0	9	9	9
Sample From		Active	Active	Active	Active	PIT	PIT
Flow Line Temp	°C	44	43	n/a	35	37	39
Mud Weight	sp.gr.	1.12@40 °C	1.09@40 °C	1.12@ °C	1.12@32 °C	1.08@37 °C	1.08@39 °C
Funnel Viscosity	s/qt	53	53	52	54	57	55
PV	cP	21	15	19	17	19	19
YP	lb/100ft²	29	27	27	30	28	26
R600/R300/R200		71/50/43	57/42/35	65/46/39	64/47/39	66/47/38	64/45/36
R100/R6/R3		32/8/6	26/7/5	28/8/6	29/7/5	28/7/5	27/7/5
10s/10m/30m Gel	lb/100ft²	7/9/10	6/9/10	7/9/10	6/9/10	6/8/11	5/8/13
API Fluid Loss	cc/30 min	5.2	6	6.4	6.6	6.4	6.2
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/	1/	1/
Solids	%Vol	6.5	6.5	6.5	6.5	4.5	4.5
Oil/Water	%Vol	/93.5	/93.5	/93.5	/93.5	0/95.5	0/95.5
Sand	%Vol	0.75	0.75	0.75	1	1	1
MBT	lb/bbl	6.25	6.25	6.25	6.25	7.5	7.5
pH		9.5	9.0	9.5	10	9.5	9
Alkal Mud (Pm)		0.2	0.2	0.2	0.5	0.4	0.3
Pf/Mf		0.3/1	0.2/0.9	0.3/1	0.3/0.9	0.25/0.8	0.2/0.6
Chlorides	mg/l	21000	22000	18000	17000	20000	19000
Hardness Ca		80	100	100	120	220	200
KCl	%	4	4	4	3.5	3.5	3.5
Excess Sulphite	mg/L	180	100	100	100	100	100
PHPA	ppb					1.3	1.3
Daily Mud Cost	A$	8366.03		883.63	917.14	4959.69	
Cuml Mud Cost	A$	35834.45		36718.08	37635.22	42594.91	
Sales Engineer		Nick Cooper	Nick Cooper	Nick Cooper	Nick Co/Peter D	/Peter D	/Peter D
Products Used		SodaAsh / 4		M-I Bar / 65	Citric / 5	Citric / 6	
		Caustic / 2		Glut / 1	DefoamA / 1	Bicarb / 8	
		M-I Bar / 170		DUOTEC / 1	PHPA / 2	M-I Bar / 80	
		KCl / 94			PacUL / 2	KCl / 30	
		PHPA / 9			OS-1 / 2	DefoamA / 3	
		DUOTEC / 4				PHPA / 6	
		PacUL / 9				DUOTEC / 5	
		mixIIM / 40				PacUL / 8	
		OS-1 / 2				OS-1 / 2	

REMARKS

24/08/2005: Drilled sliding to 1383m, experienced overpull, made wiper trip and reaming to open hole.

25/08/2005:
26/08/2005:
27/08/2005: Continue drilling to 1131 meters.

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		28/08/2005	28/08/2005	29/08/2005	29/08/2005	30/08/2005	30/08/2005
Depth/TVD	m	1462/1461.5	1295/1295	1613.2/1612.7	1568/1567	687/ 687	769/769
Activity		Drilling	Drilling	Tripping	Tripping	Tripping	Tripping
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	654	654	705	705	709	709
Flow Rate	gal/min	539	539	533	533	509	509
Circ Pressure	psi	1940	1940	1925	1925	1275	1275
Avg ROP	m/hr	14.2	14.2	9.4	9.4	0	0
Sample From		F/L	F/L	PIT	PIT	Pit	Pit
Flow Line Temp	°C	41	40	44	42	n/a	n/a
Mud Weight	sp.gr.	1.12@ °C	1.12@40 °C	1.10@44 °C	1.12@42 °C	1.12@35 °C	1.12@37 °C
Funnel Viscosity	s/qt	54	52	51	51	52	51
PV	cP	20	21	20	22	20	20
YP	lb/100ft²	29	25	21	21	20	21
R600/R300/R200		69/49/42	67/46/41	61/41/34	65/43/35	60/40/34	61/41/35
R100/R6/R3		31/8/6	30/7/5	29/7/5	26/8/5	27/8/5	29/7/5
10s/10m/30m Gel	lb/100ft²	6/10/14	5/9/13	5/11/17	6/12/18	4/12/18	5/11/17
API Fluid Loss	cc/30 min	6.5	6.4	6.2	6	5	5.2
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/	2/	2/
Solids	%Vol	6.7	6.6	5.8	6.6	6.5	6.5
Oil/Water	%Vol	0/93.3	0/93.4	0/94.2	0/93.4	0/93.5	0/93.5
Sand	%Vol	0.75	0.75	0.5	0.5	0.5	0.5
MBT	lb/bbl	7.5	7.5	7.5	7.5	10	10
pH		9	9	9.5	9.3	9.5	9.5
Alkal Mud (Pm)		0.3	0.3	0.35	0.3	0.35	0.35
Pf/Mf		0.15/1.2	0.15/1	0.15/1.4	0.11/1.2	0.15/1.5	0.15/1.5
Chlorides	mg/l	19000	19500	22000	21000	26000	26000
Hardness Ca		420	380	220	260	240	220
KCl	%	3.5	3.5	3.8	3.8	4.7	4.7
Excess Sulphite	mg/L	80	100	100	80	80	80
PHPA	ppb	1.3	1.3	1.3	1.3	1.3	1.3
Daily Mud Cost	A$	5632.52		6954.93		2978.96	
Cuml Mud Cost	A$	48227.43		55182.36		58161.32	
Sales Engineer		Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer
Products Used		SodaAsh / 5		SodaAsh / 8		SodaAsh / 4	
		Caustic / 1		Caustic / 1		M-I Bar / 30	
		KCl / 80		M-I Bar / 40		KCl / 50	
		PHPA / 10		KCl / 150		PHPA / 4	
		DUOTEC / 5		Glut / 2		PacUL / 9	
		PacUL / 10		PHPA / 8		OS-1 / 1	
		OS-1 / 1		DUOTEC / 5			
				PacUL / 8			
				OS-1 / 1			

REMARKS

28/08/2005: Drill to 1473 meters

29/08/2005: Drill to 1613.2 meters. Wiper trip.

30/08/2005: POH

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		31/08/2005	31/08/2005	1/09/2005	1/09/2005	2/09/2005	2/09/2005
Depth/TVD	m	1613/1612	1613/1612	1860/1859	1689/1687	1980/1978	1928/1927
Activity		RIH	RIH	Drilling	Drilling	Drilling	Drilling
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	709	709	772	772	774	774
Flow Rate	gal/min	0	0	430	430	518	518
Circ Pressure	psi	0	0	2050	2050	2075	2075
Avg ROP	m/hr	0	0	16	16	5	5
Sample From		PIT	PIT	F/L	F/L	F/L	F/L
Flow Line Temp	°C	n/a	n/a	50	47	52	51
Mud Weight	sp.gr.	1.12@32 °C	1.12@32 °C	1.14@40 °C	1.15@37 °C	1.14@47 °C	1.14@46 °C
Funnel Viscosity	s/qt	51	50	45	46	45	47
PV	cP	20	20	19	20	17	18
YP	lb/100ft²	19	20	18	18	18	18
R600/R300/R200		59/39/31	60/40/31	56/37/31	58/38/32	52/35/30	54/36/31
R100/R6/R3		25/7/5	26/7/5	25/7/5	25/8/6	25/7/5	26/7/5
10s/10m/30m Gel	lb/100ft²	6/14/20	5/14/21	6/11/19	7/13/21	5/10/16	5/11/17
API Fluid Loss	cc/30 min	5	5	5.4	5.7	5	5.2
HTHP Fluid Loss	cc/30 min					n/a	n/a
Cake API/HT	1/32"	2/	2/	2/	2/	1/n/a	1/n/a
Solids	%Vol	6.5	6.5	7.5	8	7.5	7.5
Oil/Water	%Vol	0/93.5	0/93.5	/92.5	/92	0/92.5	0/92.5
Sand	%Vol	0.5	0.5	0.5	0.5	0.3	0.3
MBT	lb/bbl	10	10	10	10	10	10
pH		9.5	9.5	9.5	9.5	9.5	9.5
Alkal Mud (Pm)		0.35	0.35	0.35	0.3	0.3	0.3
Pf/Mf		0.15/1.5	0.15/1.5	0.15/1.8	0.1/1.6	0.15/1.8	0.15/1.9
Chlorides	mg/l	26000	26000	26000	25000	30000	28000
Hardness Ca		240	240	220	240	200	220
KCl	%	4.7	4.7	4	4	4	4
Excess Sulphite	mg/L	80	80	100	80	100	100
PHPA	ppb	1.3	1.3	1.5	1.4	1.5	1.5
Daily Mud Cost	A$	0.00		3620.98		4051.63	
Cuml Mud Cost	A$	58161.32		61782.30		65833.93	
Sales Engineer		Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer
Products Used				SodaAsh / 10		SodaAsh / 3	
				Caustic / 1		Caustic / 1	
				KCl / 92		M-I Bar / 40	
				Glut / 1		KCl / 90	
				PHPA / 6		Glut / 1	
				PacUL / 6		PHPA / 6	
				OS-1 / 1		PacUL / 8	
						OS-1 / 1	

REMARKS

31/08/2005: Bit change.

1/09/2005: Continue drilling to 1875 meters.

2/09/2005: Continue drilling to 1985 meters.

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		3/09/2005	3/09/2005	4/09/2005	4/09/2005	5/09/2005	5/09/2005
Depth/TVD	m	1988/1986	1988/1986	1993/1992	1988/1986	2022/2021	2009/2008
Activity		POH	POH	Drilling	Drilling	Drilling	Drilling
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	722	722	768	768	796	796
Flow Rate	gal/min	518	518	436	436	448	448
Circ Pressure	psi	2075	2075	1725	1725	1760	1760
Avg ROP	m/hr	1	1	1.5	1.5	1.3	1.3
Sample From		PIT	PIT	F/L	PIT	F/L	F/L
Flow Line Temp	°C	n/a	n/a	48	n/a	53	51
Mud Weight	sp.gr.	1.15@40 °C	1.14@40 °C	1.15@44 °C	1.15@40 °C	1.14@47 °C	1.15@45 °C
Funnel Viscosity	s/qt	48	47	46	50	47	46
PV	cP	18	18	17	18	17	17
YP	lb/100ft²	18	19	19	19	20	19
R600/R300/R200		54/36/32	55/37/33	53/36/31	55/37/34	54/37/31	53/36/32
R100/R6/R3		26/7/4	27/8/5	26/7/5	27/7/5	25/7/5	24/6/4
10s/10m/30m Gel	lb/100ft²	6/12/18	6/13/19	6/14/19	7/14/20	4/8/15	4/9/16
API Fluid Loss	cc/30 min	5	5	4.8	5	4.5	4.6
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/	1/	1/
Solids	%Vol	8	7.5	8	8	7.5	8
Oil/Water	%Vol	0/92	0/92.5	0/92	0/92	0/92.5	0/92
Sand	%Vol	0.3	0.3	0.3	0.3	0.3	0.3
MBT	lb/bbl	10	10	10	10	10	10
pH		9.5	9.5	9.3	9.5	9.5	9.3
Alkal Mud (Pm)		0.3	0.3	0.25	0.3	0.35	0.25
Pf/Mf		0.15/1.9	0.15/1.8	1/1.4	0.15/1.9	0.2/2.2	0.15/1.8
Chlorides	mg/l	30000	30000	30000	30000	31000	30000
Hardness Ca		220	200	260	220	200	240
KCl	%	4	4	4	4	4	4
Excess Sulphite	mg/L	80	100	100	80	100	80
PHPA	ppb	1.5	1.5	1.5	1.5	1.6	1.5
Daily Mud Cost	A$	1555.14		604.12		2487.21	
Cuml Mud Cost	A$	67389.07		67993.19		70480.40	
Sales Engineer		Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer
Products Used		SodaAsh / 2		Caustic / 1		Caustic / 1	
		Bicarb / 1		Bicarb / 1		Bicarb / 5	
		M-I Bar / 75		Glut / 1		TruGel / 1	
		KCl / 20		PHPA / 1		KCl / 10	
		Glut / 1		PacUL / 2		PHPA / 4	
		PHPA / 1		OS-1 / 1		DUOTEC / 2	
		PacUL / 2				PacUL / 8	
		OS-1 / 1				OS-1 / 1	

REMARKS

3/09/2005: POH

4/09/2005: Continue drilling to 1993 meters.

5/09/2005: Continue drilling to 2023 meters.

MI SWACO Australia

DRILLING FLUIDS SUMMARY

Operator : Origin Energy
Field/Area : Onshore Otway Basin
Well Name : Peterborough -1/1ST1
Description : Exploration
Contractor : Century Resources
Location : Victoria

Date		6/09/2005	6/09/2005	7/09/2005	7/09/2005	8/09/2005	9/09/2005
Depth/TVD	m	2070/2069	2053/2052	2070/2069	2070/2069	2070/2069	2070/2069
Activity		Wiper trip	Wiper trip	Logging	Logging	P and A	P and A
Mud Type		KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po	KCl/PHPA/Po
Hole Size	in	8.5	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	796	796	782	782	782	782
Flow Rate	gal/min	436	436	0	0	0	0
Circ Pressure	psi	1800	1800	0	0	0	0
Avg ROP	m/hr	1.3	1.3	0	0	0	0
Sample From		F/L	F/L	PIT	PIT	PIT	PIT
Flow Line Temp	°C	53	52	n/a	n/a	n/a	37
Mud Weight	sp.gr.	1.14@ °C	1.15@ °C	1.14@40 °C	1.14@40 °C	1.14@37 °C	1.14@37 °C
Funnel Viscosity	s/qt	45	44	46	47	47	48
PV	cP	15	15	17	18	19	18
YP	lb/100ft²	20	19	20	20	20	20
R600/R300/R200		50/35/30	49/34/29	54/37/31	56/38/31	58/39/31	56/38/31
R100/R6/R3		26/6/4	24/5/4	24/7/5	25/7/5	26/7/5	25/7/5
10s/10m/30m Gel	lb/100ft²	3/7/12	3/6/11	3/7/12	3/8/13	3/7/13	3/7/11
API Fluid Loss	cc/30 min	4.4	4.5	4.5	4.5	4.5	4.5
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/	1/	1/
Solids	%Vol	7.5	8	7.5	7.5	7.5	7.5
Oil/Water	%Vol	/92.5	/92	0/92.5	0/92.5	0/92.5	0/92.5
Sand	%Vol	0.3	0.3	0.3	0.3	0.3	0.3
MBT	lb/bbl	10	10	10	10	10	10
pH		9.5	9.5	9.5	9.5	9.5	9.5
Alkal Mud (Pm)		0.35	0.35	0.35	0.35	0.35	0.35
Pf/Mf		0.2/2.4	0.2/2.3	0.2/2.3	0.2/2.3	0.2/2.3	0.2/2.2
Chlorides	mg/l	32000	31000	31000	31000	31000	31000
Hardness Ca		220	200	200	200	200	220
KCl	%	4	4	4	4	4	4
Excess Sulphite	mg/L	100	80	100	100	80	80
PHPA	ppb	1.5	1.5	1.6	1.6	1.6	1.5
Daily Mud Cost	A$	2425.65		1225.90		0.00	0.00
Cuml Mud Cost	A$	72906.05		74131.95		74131.95	74131.95
Sales Engineer		Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer	Peter Dwyer
Products Used		SodaAsh / 3		M-I Bar / 80			
		Caustic / 1		TruGel / 56			
		M-I Bar / 30		PacUL / 1			
		KCl / 30					
		Glut / 1					
		PHPA / 3					
		DUOTEC / 1					
		PacUL / 6					

REMARKS

6/09/2005: Drill to TD at 2070 meters.

7/09/2005: Run wireline logs.

8/09/2005: P and A
9/09/2005:

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY PETERBOROUGH 1, PETERBOROUGH 1ST1

PRODUCT CONSUMPTION

Product Consumption

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Location : Victoria
Field/Area: Onshore Otway Basin

Contractor: Century Resources
M-I Engineer: Nick Cooper
Rig Name: Rig 7
Stock Point: Adelaide

		DATES										
Product	Product	Aug 16, 2005		Aug 17, 2005		Aug 18, 2005		Aug 19, 2005		Aug 20, 2005		Page
Name	Price	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	15.33		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	56.00		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	15.33	3	45.99		0.00		0.00	3	45.99		0.00	91.98
CAUSTIC SODA (DRY)	34.84	2	69.68		0.00		0.00	1	34.84		0.00	104.52
KWIK SEAL FINE	45.70		0.00	14	639.80		0.00		0.00		0.00	639.80
SODIUM BICARBONATE	16.97		0.00		0.00		0.00		0.00		0.00	0.00
M-I BAR	7.84		0.00		0.00		0.00		0.00		0.00	0.00
Trugel 13A	8.36	192	1605.12	11	91.96		0.00	28	234.08		0.00	1931.16
POTASSIUM CHLORIDE	18.36		0.00	140	2570.40		0.00	126	2313.36	42	771.12	5654.88
GLUTE 25	103.20		0.00		0.00		0.00	2	206.40		0.00	206.40
KWIK SEAL MEDIUM	45.70		0.00	9	411.30		0.00		0.00		0.00	411.30
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Polyplus Powder	133.85		0.00		0.00		0.00	6	803.10	4	535.40	1338.50
Omnycarb40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	270.83		0.00		0.00		0.00	6	1624.98	7	1895.81	3520.79
POLYPAC UL	130.54		0.00		0.00		0.00	10	1305.40	4	522.16	1827.56
KWIK SEAL COARSE	45.70		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	40.13		0.00		0.00		0.00		0.00		0.00	0.00
MIX II FINE	40.13		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	54.18		0.00		0.00		0.00		0.00	2	108.36	108.36
CONQOR 303A	446.10		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	623.15		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			0.00		0.00		0.00		0.00		0.00	0.00
Daily Product			1720.79		3713.46		0.00		6568.15		3832.85	15835.25
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product			1720.79		5434.25		5434.25		12002.40		15835.25	15835.25
Cumulative Cost			1720.79		5434.25		5434.25		12002.40		15835.25	15835.25

Product Consumption

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Location : Victoria
Field/Area: Onshore Otway Basin

Contractor: Century Resources
M-I Engineer: Nick Cooper
Rig Name: Rig 7
Stock Point: Adelaide

	DATES											
Product	Previous	Aug 21, 2005		Aug 22, 2005		Aug 23, 2005		Aug 24, 2005		Aug 25, 2005		Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	91.98	3	45.99	3	45.99		0.00	4	61.32		0.00	245.28
CAUSTIC SODA (DRY)	104.52	2	69.68		0.00		0.00	2	69.68		0.00	243.88
KWIK SEAL FINE	639.80		0.00		0.00		0.00		0.00		0.00	639.80
SODIUM BICARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I BAR	0.00		0.00	40	313.60	30	235.20	170	1332.80	65	509.60	2391.20
Trugel 13A	1931.16		0.00		0.00		0.00		0.00		0.00	1931.16
POTASSIUM CHLORIDE	5654.88	126	2313.36	40	734.40		0.00	94	1725.84		0.00	10428.48
GLUTE 25	206.40		0.00		0.00		0.00		0.00	1	103.20	309.60
KWIK SEAL MEDIUM	411.30		0.00		0.00		0.00		0.00		0.00	411.30
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Polyplus Powder	1338.50	12	1606.20	2	267.70		0.00	9	1204.65		0.00	4417.05
Omnycarb40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	3520.79	10	2708.30	3	812.49		0.00	4	1083.32	1	270.83	8395.73
POLYPAC UL	1827.56	14	1827.56	5	652.70		0.00	9	1174.86		0.00	5482.68
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	0.00		0.00		0.00		0.00	40	1605.20		0.00	1605.20
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	108.36		0.00		0.00		0.00	2	108.36		0.00	216.72
CONQOR 303A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			0.00		0.00		0.00		0.00		0.00	0.00
Daily Product			8571.09		2826.88		235.20		8366.03		883.63	36718.08
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product			24406.34		27233.22		27468.42		35834.45		36718.08	36718.08
Cumulative Cost			24406.34		27233.22		27468.42		35834.45		36718.08	36718.08

Product Consumption

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Location : Victoria
Field/Area: Onshore Otway Basin

Contractor: Century Resources
M-I Engineer: Nick Cooper
Rig Name: Rig 7
Stock Point: Adelaide

	DATES											
Product	Previous	Aug 26, 2005		Aug 27, 2005		Aug 28, 2005		Aug 29, 2005		Aug 30, 2005		Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	0.00	5	280.00	6	336.00		0.00		0.00		0.00	616.00
SODA ASH	245.28		0.00		0.00	5	76.65	8	122.64	4	61.32	505.89
CAUSTIC SODA (DRY)	243.88		0.00		0.00	1	34.84	1	34.84		0.00	313.56
KWIK SEAL FINE	639.80		0.00		0.00		0.00		0.00		0.00	639.80
SODIUM BICARBONATE	0.00		0.00	8	135.76		0.00		0.00		0.00	135.76
M-I BAR	2391.20		0.00	80	627.20		0.00	40	313.60	30	235.20	3567.20
Trugel 13A	1931.16		0.00		0.00		0.00		0.00		0.00	1931.16
POTASSIUM CHLORIDE	10428.4		0.00	30	550.80	80	1468.80	150	2754.00	50	918.00	16120.08
GLUTE 25	309.60		0.00		0.00		0.00	2	206.40		0.00	516.00
KWIK SEAL MEDIUM	411.30		0.00		0.00		0.00		0.00		0.00	411.30
DEFOAM A	0.00	1	0.00	3	0.00		0.00		0.00		0.00	0.00
Polyplus Powder	4417.05	2	267.70	6	803.10	10	1338.50	8	1070.80	4	535.40	8432.55
Omnycarb40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	8395.73		0.00	5	1354.15	5	1354.15	5	1354.15		0.00	12458.18
POLYPAC UL	5482.68	2	261.08	8	1044.32	10	1305.40	8	1044.32	9	1174.86	10312.66
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	1605.20		0.00		0.00		0.00		0.00		0.00	1605.20
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	216.72	2	108.36	2	108.36	1	54.18	1	54.18	1	54.18	595.98
CONQOR 303A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			0.00		0.00		0.00		0.00		0.00	0.00
Daily Product			917.14		4959.69		5632.52		6954.93		2978.96	58161.32
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product			37635.22		42594.91		48227.43		55182.36		58161.32	58161.32
Cumulative Cost			37635.22		42594.91		48227.43		55182.36		58161.32	58161.32

Product Consumption

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Location : Victoria
Field/Area: Onshore Otway Basin

Contractor: Century Resources
M-I Engineer: Nick Cooper
Rig Name: Rig 7
Stock Point: Adelaide

	DATES											
Product	Previous	Aug 31, 2005		Sep 1, 2005		Sep 2, 2005		Sep 3, 2005		Sep 4, 2005		Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	616.00		0.00		0.00		0.00		0.00		0.00	616.00
SODA ASH	505.89		0.00	10	153.30	3	45.99	2	30.66		0.00	735.84
CAUSTIC SODA (DRY)	313.56		0.00	1	34.84	1	34.84		0.00	1	34.84	418.08
KWIK SEAL FINE	639.80		0.00		0.00		0.00		0.00		0.00	639.80
SODIUM BICARBONATE	135.76		0.00		0.00		0.00	1	16.97	1	16.97	169.70
M-I BAR	3567.20		0.00		0.00	40	313.60	75	588.00		0.00	4468.80
Trugel 13A	1931.16		0.00		0.00		0.00		0.00		0.00	1931.16
POTASSIUM CHLORIDE	16120.0		0.00	92	1689.12	90	1652.40	20	367.20		0.00	19828.80
GLUTE 25	516.00		0.00	1	103.20	1	103.20	1	103.20	1	103.20	928.80
KWIK SEAL MEDIUM	411.30		0.00		0.00		0.00		0.00		0.00	411.30
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Polyplus Powder	8432.55		0.00	6	803.10	6	803.10	1	133.85	1	133.85	10306.45
Omnycarb40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	12458.1		0.00		0.00		0.00		0.00		0.00	12458.18
POLYPAC UL	10312.6		0.00	6	783.24	8	1044.32	2	261.08	2	261.08	12662.38
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	1605.20		0.00		0.00		0.00		0.00		0.00	1605.20
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	595.98		0.00	1	54.18	1	54.18	1	54.18	1	54.18	812.70
CONQOR 303A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			0.00		0.00		0.00		0.00		0.00	0.00
Daily Product			0.00		3620.98		4051.63		1555.14		604.12	67993.19
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product			58161.32		61782.30		65833.93		67389.07		67993.19	67993.19
Cumulative Cost			58161.32		61782.30		65833.93		67389.07		67993.19	67993.19

Product Consumption

Operator : Origin Energy
Well Name : Peterborough -1/1ST1
Location : Victoria
Field/Area: Onshore Otway Basin

Contractor: Century Resources
M-I Engineer: Nick Cooper
Rig Name: Rig 7
Stock Point: Adelaide

	DATES											
Product	Previous	Sep 5, 2005		Sep 6, 2005		Sep 7, 2005		Sep 8, 2005		Sep 9, 2005		Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	616.00		0.00		0.00		0.00		0.00		0.00	616.00
SODA ASH	735.84		0.00	3	45.99		0.00		0.00		0.00	781.83
CAUSTIC SODA (DRY)	418.08	1	34.84	1	34.84		0.00		0.00		0.00	487.76
KWIK SEAL FINE	639.80		0.00		0.00		0.00		0.00		0.00	639.80
SODIUM BICARBONATE	169.70	5	84.85		0.00		0.00		0.00		0.00	254.55
M-I BAR	4468.80		0.00	30	235.20	80	627.20		0.00		0.00	5331.20
Trugel 13A	1931.16	1	8.36		0.00	56	468.16		0.00		0.00	2407.68
POTASSIUM CHLORIDE	19828.8	10	183.60	30	550.80		0.00		0.00		0.00	20563.20
GLUTE 25	928.80		0.00	1	103.20		0.00		0.00		0.00	1032.00
KWIK SEAL MEDIUM	411.30		0.00		0.00		0.00		0.00		0.00	411.30
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Polyplus Powder	10306.4	4	535.40	3	401.55		0.00		0.00		0.00	11243.40
Omnycarb40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	12458.1	2	541.66	1	270.83		0.00		0.00		0.00	13270.67
POLYPAC UL	12662.3	8	1044.32	6	783.24	1	130.54		0.00		0.00	14620.48
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	1605.20		0.00		0.00		0.00		0.00		0.00	1605.20
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	812.70	1	54.18		0.00		0.00		0.00		0.00	866.88
CONQOR 303A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			0.00		0.00		0.00		0.00		0.00	0.00
Daily Product			2487.21		2425.65		1225.90		0.00		0.00	74131.95
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product			70480.40		72906.05		74131.95		74131.95		74131.95	74131.95
Cumulative Cost			70480.40		72906.05		74131.95		74131.95		74131.95	74131.95

DRILLING FLUIDS RECAP FOR ORIGIN ENERGY
PETERBOROUGH 1, PETERBOROUGH 1ST1

DAILY
MUD
REPORTS

WATER-BASED MUD REPORT No. 1

Date	16/08/2005	**Depth/TVD**	53 m / 53 m
Spud Date	16/08/2005	**Mud Type**	PHGel Mud
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 12.25 in Varel		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x16 / 1/32"			31.1	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
in	m		152.9	Pump stk/min	64@97%	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	194 gal/min	
4.5 in	m		184	Bottoms Up	6.4 min 412 stk	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	39.8 min 2549 stk	
6.25 in	53 m		137	Circulating Pressure	psi	

MUD PROPERTIES

Sample From		Pit@23:00	FL@17:00
Flow Line Temp	°C		
Depth/TVD	m	50/50	
Mud Weight	sp.gr.	1.065	1.045
Funnel Viscosity	s/qt	42	40
Rheology Temp	°C		
R600/R300			
R200/R100			
R6/R3			
PV	cP		
YP	lb/100ft²		
10s/10m/30m Gel	lb/100ft²		
API Fluid Loss	cc/30 min		
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"		
Solids	%Vol		
Oil/Water	%Vol		
Sand	%Vol		
MBT	lb/bbl		
pH		9.5	9.0
Alkal Mud (Pm)			
Pf/Mf			
Chlorides	mg/l		
Hardness Ca	mg/l		
KCl	%		
Excess Sulphite	mg/L		
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
CAUSTIC SODA (DRY)	25 KG DM	2.00
Trugel 13A	25 KG BG	192.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1		0
DFE Shaker 2		0
D-Sander		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS

Weight	
Viscosity	
Filtrate	

REMARKS AND TREATMENT

Mixed 330bbls of PHGel mud.

REMARKS

Spud well and drill ahead to 53m at report time.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	/	np/na Values	0.559/0.459
Drilling	3.5	Water Added	318	KCl	/	kp/ka (lb•s^n/100ft²)	1.238/2.523
Tripping		Mud Received	0	Low Gravity	/	Bit Loss (psi / %)	95 / 1
Non-Productive Tim	20.5	Dumped	0	Bentonite	/	Bit HHP (hhp / HSI)	11 / 1
		Shakers	9	Drill Solids	/	Bit Jet Vel (m/s)	32
		Evaporation	0	Weight Material	/	Ann. Vel DP (m/min)	4.44
		Centrifuge	0	Chemical Conc	- /	Ann. Vel DC (m/min)	13.06
		Formation	0	Inert/React		Crit Vel DP (m/min)	
		Left in Hole	0	Average SG		Crit Vel DC (m/min)	
		Desilter	0	Carb/BiCarb (m mole/L)	/	ECD @ 2033 (sp.gr.)	1.14

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Eladio Melendez			A$ 1,720.79	A$ 1,720.79

WATER-BASED MUD REPORT No. 2

Date	17/08/2005	**Depth/TVD**	490 m / 490 m
Spud Date	16/08/2005	**Mud Type**	PHGel Mud
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 12.25 in Varel		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x16 / 1/32"			223.6	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	302 m		343.4	Pump stk/min	65@97%	65@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	394 gal/min	
4.5 in	37 m		567	Bottoms Up	21.8 min	2836 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	60.4 min	7857 stk
6.25 in	151 m		15	Circulating Pressure	psi	

MUD PROPERTIES

Sample From		Pit@22:30	Pit@11:00
Flow Line Temp	°C		
Depth/TVD	m	474/474	210/210
Mud Weight	sp.gr.	1.06	1.06
Funnel Viscosity	s/qt	41	45
Rheology Temp	°C	120	120
R600/R300		41/36	45/39
R200/R100		34/31	38/36
R6/R3		18/15	19/15
PV	cP	5	6
YP	lb/100ft²	31	33
10s/10m/30m Gel	lb/100ft²		
API Fluid Loss	cc/30 min		
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"		
Solids	%Vol		
Oil/Water	%Vol		
Sand	%Vol		
MBT	lb/bbl		
pH		9.0	9.2
Alkal Mud (Pm)			
Pf/Mf			
Chlorides	mg/l		
Hardness Ca	mg/l		
KCl	%		
Excess Sulphite	mg/L		
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
KWIK SEAL FINE	40 LB BG	14.00
Trugel 13A	25 KG BG	11.00
POTASSIUM CHLORIDE	25 KG BG	140.00
KWIK SEAL MEDIUM	40 LB BG	9.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	110	24
DFE Shaker 2	110	24
D-Sander		20
D-Silter		24

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	N/A

REMARKS AND TREATMENT

Mixed LCM pill and pumped out to minimize losses.
Added 2% KCl to the whole active system while drilling the Gellibrand Marl formation for clay inhibiton. Bled water as required to the active to maintain mud viscosity and MW. Also dumped sand trap as required to make space for dilution.

REMARKS

Continued to drill ahead to 490m at 23:00 hrs report time.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	/	np/na Values	0.188/0.207
Drilling	24	Water Added	405	KCl	/	kp/ka (lb•s^n/100ft²)	11.920/11.418
Tripping		Mud Received	0	Low Gravity	/	Bit Loss (psi / %)	364 / 1
Non-Productive Tim		Dumped	117	Bentonite	/	Bit HHP (hhp / HSI)	84 / 1
		Shakers	35	Drill Solids	/	Bit Jet Vel (m/s)	65
		Evaporation	0	Weight Material	/	Ann. Vel DP (m/min)	22.67
		Centrifuge	0	Chemical Conc	- /	Ann. Vel DC (m/min)	26.52
		Formation	0	Inert/React		Crit Vel DP (m/min)	126
		Left in Hole	0	Average SG		Crit Vel DC (m/min)	130
		Desilter	7	Carb/BiCarb (m mole/L)	/	ECD @ 490 (sp.gr.)	1.09

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Eladio Melendez			A$ 3,713.46	A$ 5,434.25

WATER-BASED MUD REPORT No. 3

Date	18/08/2005	**Depth/TVD**	499 m / 499 m
Spud Date	16/08/2005	**Mud Type**	PHGel Mud
Water Depth		**Activity**	Cementing 9 5/8" CSG

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 12.25 in Varel		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x16 / 1/32"			229(Tot)/227.4(Bit)	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
9.625 in	496 m		-229	Pump stk/min	65@97%	65@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
in	m		-1.7	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
in	m			Circulating Pressure		

MUD PROPERTIES

Sample From		Pit@14:00	
Flow Line Temp	°C		
Depth/TVD	m	499/499	
Mud Weight	sp.gr.	1.06	
Funnel Viscosity	s/qt	39	
Rheology Temp	°C		
R600/R300			
R200/R100			
R6/R3			
PV	cP		
YP	lb/100ft²		
10s/10m/30m Gel	lb/100ft²		
API Fluid Loss	cc/30 min		
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"		
Solids	%Vol		
Oil/Water	%Vol		
Sand	%Vol		
MBT	lb/bbl		
pH		8.8	
Alkal Mud (Pm)			
Pf/Mf			
Chlorides	mg/l		
Hardness Ca	mg/l		
KCl	%		
Excess Sulphite	mg/L		
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	110	16
DFE Shaker 2	110	16
D-Sander		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	N/A

REMARKS AND TREATMENT

Make preparation to mix KCl/PHPA/Polymer mud for the 8 1/2" interval. After cementing operation, Old mud to be dumped and Pits clean after cementing operation. All old mud in hole and pits are considered dumped for KCl/Polymer mud reconciliation.

REMARKS

Drilled to TD 499m, circulated hole clean and conducted a wiper trip, run into the hole, circulate hole and Pooh to run casing, hole appears in good condition.

Rig up 9 5/8" csg running assembly and run to 495.5m as per program. Make up JSA and commence with cementing operation as per program.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	/	np/na Values	0.188/0.207
Drilling		Water Added	0	KCl	/	kp/ka (lb•s^n/100ft²)	11.920/11.418
Tripping		Mud Received	0	Low Gravity	/	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Dumped	582	Bentonite	/	Bit HHP (hhp / HSI)	/ 1
		Shakers	0	Drill Solids	/	Bit Jet Vel (m/s)	
		Evaporation	0	Weight Material	/	Ann. Vel DP (m/min)	
		Centrifuge	0	Chemical Conc	- /	Ann. Vel DC (m/min)	
		Formation	0	Inert/React		Crit Vel DP (m/min)	
		Left in Hole	0	Average SG		Crit Vel DC (m/min)	
		Desilter	0	Carb/BiCarb (m mole/L)	/	ECD @ 302 (sp.gr.)	1.09

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Eladio Melendez			A$ 0.00	A$ 5,434.25

WATER-BASED MUD REPORT No. 4

Date	19/08/2005	**Depth/TVD**	499 m / 499 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	N/U BOPs

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90 PDC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 5x12 / 1/32"			119.8	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
9.625 in	m		445.2	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
in	m		445.2	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
in	m		75	Circulating Pressure		

MUD PROPERTIES

Sample From			
Flow Line Temp	°C		
Depth/TVD	m		
Mud Weight	sp.gr.		
Funnel Viscosity	s/qt		
Rheology Temp	°C		
R600/R300			
R200/R100			
R6/R3			
PV	cP		
YP	lb/100ft²		
10s/10m/30m Gel	lb/100ft²		
API Fluid Loss	cc/30 min		
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"		
Solids	%Vol		
Oil/Water	%Vol		
Sand	%Vol		
MBT	lb/bbl		
pH			
Alkal Mud (Pm)			
Pf/Mf			
Chlorides	mg/l		
Hardness Ca	mg/l		
KCl	%		
Excess Sulphite	mg/L		
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
Trugel 13A	25 KG BG	28.00
POTASSIUM CHLORIDE	25 KG BG	126.00
GLUTE 25	25 LT CN	2.00
Polyplus Powder	25 KG BG	6.00
DUOTEC	25 KG BG	6.00
POLYPAC UL	25 KG BG	10.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	110	0
DFE Shaker 2	110	0
D-Sander		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	N/A

REMARKS AND TREATMENT

Received chemicals for 8.5" section into inventory.
Built 520bbls of KCl/PHPA/Polymer WBM in preparation for displacement.

REMARKS

Completed cementing of 9 5/8" casing, P/U and circulated clean. POOH with cementing assembly.
Nippling up BOPs and rigging up to RIH with 8.5" assembly.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	21	Oil Added	0	NaCl	/	np/na Values	
Drilling		Water Added	506	KCl	/	kp/ka (lb•s^n/100ft²)	
Tripping	1	Mud Received	0	Low Gravity	/	Bit Loss (psi / %)	
Non-Productive Tim		Dumped	0	Bentonite	/	Bit HHP (hhp / HSI)	
Cementing	2	Shakers	0	Drill Solids	/	Bit Jet Vel (m/s)	
		Evaporation	0	Weight Material	/	Ann. Vel DP (m/min)	
		Centrifuge	0	Chemical Conc	- /	Ann. Vel DC (m/min)	
		Formation	0	Inert/React		Crit Vel DP (m/min)	
		Left in Hole	0	Average SG		Crit Vel DC (m/min)	
		Desilter	0	Carb/BiCarb (m mole/L)	/		

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 6,568.15	A$ 12,002.40

WATER-BASED MUD REPORT No. 5

Date	20/08/2005	**Depth/TVD**	704 m / 704 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling ahead

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90 PDC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 5x12 / 1/32"		20in @16m (16TVD)	139.8	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	500 m	9.625in @496m (496TVD)	340.2	Pump stk/min	80@97%	80@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	484 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	480	Bottoms Up	9.7 min	1546 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	41.7 min	6664 stk
6.25 in	157 m		30	Circulating Pressure	1085 psi	

MUD PROPERTIES

Sample From		Active@22:00	Active
Flow Line Temp	°C	35	
Depth/TVD	m	685/685	
Mud Weight	sp.gr.	1.03@30°C	1.03
Funnel Viscosity	s/qt	51	42
Rheology Temp	°C	49	49
R600/R300		41/29	27/18
R200/R100		24/19	15/11
R6/R3		6/4	3/2
PV	cP	12	9
YP	lb/100ft²	17	9
10s/10m/30m Gel	lb/100ft²	5/7/8	
API Fluid Loss	cc/30 min	9	12
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	0.5/	0.5/
Solids	%Vol	6	
Oil/Water	%Vol	/94	
Sand	%Vol	tr	
MBT	lb/bbl	0	
pH		9.5	
Alkal Mud (Pm)		0.2	
Pf/Mf		0.1/0.6	
Chlorides	mg/l	20000	
Hardness Ca	mg/l	100	
KCl	%	4.5	
Excess Sulphite	mg/L	100	
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
POTASSIUM CHLORIDE	25 KG BG	42.00
Polyplus Powder	25 KG BG	4.00
DUOTEC	25 KG BG	7.00
POLYPAC UL	25 KG BG	4.00
OS-1	25 KG BG	2.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	110	0
DFE Shaker 2	110	0
D-Sander		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Built and added premix to active as required for volume and extra Duotec for rheology maintenance. Added OS-1 for corrosion control.
shaker screens retained at 110mesh to accomodate flowrate. Some mud lost over shakers until new PHPA had sheared.

REMARKS

N/u and pressure tested BOP's. RIH with 8.5" steerable assembly. Tagged cement @ 477m. Drilled through cement plugs and3m of new formation. Performed FIT to 2.0SG. Drilled ahead to 704m

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	5	Oil Added	0	NaCl	./.	np/na Values	0.500/0.444
Drilling	13.5	Water Added	121	KCl	1.6/ 14.6	kp/ka (lb•s^n/100ft²)	1.373/2.067
Tripping	5.5	Mud Received	0	Low Gravity	.2/ 2.2	Bit Loss (psi / %)	608 / 1
Non-Productive Tim		Dumped	40	Bentonite	./.	Bit HHP (hhp / HSI)	172 / 1
Cementing		Shakers	96	Drill Solids	./ .2	Bit Jet Vel (m/s)	86
Testing		Evaporation	0	Weight Material	NA/ NA	Ann. Vel DP (m/min)	69.53
		Centrifuge	0	Chemical Conc	- / 2.	Ann. Vel DC (m/min)	108.95
		Formation	0	Inert/React	-	Crit Vel DP (m/min)	100
		Left in Hole	0	Average SG	2.6	Crit Vel DC (m/min)	118
		Desilter	0	Carb/BiCarb (m mole/L)	2./ 3.1	ECD @ 704 (sp.gr.)	1.1

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 3,832.85	A$ 15,835.25

WATER-BASED MUD REPORT No. 6

Date	21/08/2005	**Depth/TVD**	1172 m / 1172 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling ahead

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90 PDC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 5x12 / 1/32"		20in @16m (16TVD)	239.2	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	968 m	9.625in @496m (496TVD)	339.8	Pump stk/min	87@97%	90@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	536 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	579	Bottoms Up	14.8 min	2620 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	45.4 min	8030 stk
6.25 in	157 m		30	Circulating Pressure	1380 psi	

MUD PROPERTIES

Sample From		Active@22:30	Active@10:30
Flow Line Temp	°C	41	38
Depth/TVD	m	1149/1149	920/920
Mud Weight	sp.gr.	1.07@35°C	1.07@34°C
Funnel Viscosity	s/qt	53	52
Rheology Temp	°C	49	49
R600/R300		53/38	48/37
R200/R100		32/23	28/21
R6/R3		7/5	7/5
PV	cP	15	11
YP	lb/100ft²	23	26
10s/10m/30m Gel	lb/100ft²	6/8/9	6/8/9
API Fluid Loss	cc/30 min	6.6	7.5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	8	7
Oil/Water	%Vol	/92	/93
Sand	%Vol	0.75	2
MBT	lb/bbl	6.25	5.13
pH		9.5	9.0
Alkal Mud (Pm)		0.1	0.1
Pf/Mf		0.1/0.6	0.1/0.4
Chlorides	mg/l	20000	19000
Hardness Ca	mg/l	120	300
KCl	%	4.5	4.5
Excess Sulphite	mg/L	100	100
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
CAUSTIC SODA (DRY)	25 KG DM	2.00
POTASSIUM CHLORIDE	25 KG BG	126.00
Polyplus Powder	25 KG BG	12.00
DUOTEC	25 KG BG	10.00
POLYPAC UL	25 KG BG	14.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	24
DFE Shaker 2	140	24
D-Sander		12
D-Silter	6"	12

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Continued building premixes as required for volume maintenance. Caustic Soda added to active for pH maintenance. Desander and desilter inoperation to control mud weight.
Shakers were screened up to 140 mesh, but continued to have difficulty coping with the required flow rate. Some excess mud losses over shakers.

REMARKS

Drilled ahead to 1172m without problems.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	./.	np/na Values	0.480/0.435
Drilling	24	Water Added	379	KCl	1.5/ 14.3	kp/ka (lb•s^n/100ft²)	2.032/2.623
Tripping		Mud Received	0	Low Gravity	2.8/ 25.3	Bit Loss (psi / %)	775 / 1
Non-Productive Tim		Dumped	0	Bentonite	.5/ 4.1	Bit HHP (hhp / HSI)	242 / 1
Cementing		Shakers	249	Drill Solids	2.1/ 19.2	Bit Jet Vel (m/s)	95
Testing		Evaporation	0	Weight Material	NA/ NA	Ann. Vel DP (m/min)	77
		Centrifuge	0	Chemical Conc	- / 2.	Ann. Vel DC (m/min)	120.65
		Formation	0	Inert/React	2.7303	Crit Vel DP (m/min)	111
		Left in Hole	0	Average SG	2.6	Crit Vel DC (m/min)	130
		Desilter	45	Carb/BiCarb (m mole/L)	2./ 3.1	ECD @ 1172 (sp.gr.)	1.15

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 8,571.09	A$ 24,406.34

WATER-BASED MUD REPORT No. 7

Date	22/08/2005	**Depth/TVD**	1228 m / 1228 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Running gyro survey

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90 PDC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 5x12 / 1/32"		20in @16m (16TVD)	251.1	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	1024 m	9.625in @496m (496TVD)	314.9	Pump stk/min	87@97%	90@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	536 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	566	Bottoms Up	15.5 min	2749 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	44.4 min	7850 stk
6.25 in	157 m		78	Circulating Pressure	1450 psi	

MUD PROPERTIES

Sample From		Active@13:00	
Flow Line Temp	°C	n/a	
Depth/TVD	m	1228/1228	
Mud Weight	sp.gr.	1.07@35°C	
Funnel Viscosity	s/qt	50	
Rheology Temp	°C	49	
R600/R300		51/37	
R200/R100		31/22	
R6/R3		7/5	
PV	cP	14	
YP	lb/100ft²	23	
10s/10m/30m Gel	lb/100ft²	6/8/9	
API Fluid Loss	cc/30 min	6.4	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	8	
Oil/Water	%Vol	/92	
Sand	%Vol	0.5	
MBT	lb/bbl	6.25	
pH		9.5	
Alkal Mud (Pm)		0.1	
Pf/Mf		0.1/0.5	
Chlorides	mg/l	20000	
Hardness Ca	mg/l	160	
KCl	%	4.5	
Excess Sulphite	mg/L	100	
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
M-I BAR	25 KG BG	40.00
POTASSIUM CHLORIDE	25 KG BG	40.00
Polyplus Powder	25 KG BG	2.00
DUOTEC	25 KG BG	3.00
POLYPAC UL	25 KG BG	5.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	6
DFE Shaker 2	140	6
D-Sander	2 x 12"	4
D-Silter	6"	4

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Built premixes as required for volume building and mud property maintenance.

REMARKS

Drilled ahead to 1228m, before an anomaly in the survey data indicated a possible hole deviation of 4deg. Pumped slug and POOH to investigate possible problem with survey tool. No problems, RIH taking surveys, showed varying deviations. Preparing to run gyro survey to confirm.

TIME DISTR	Last 24 Hrs
Rig Up/Service	2
Drilling	3.5
Tripping	14.5
Non-Productive Tim	
Condition Hole	1
Testing	
Dir Survey	3

MUD VOL ACCTG	(bbl)
Oil Added	0
Water Added	176
Mud Received	0
Dumped	0
Shakers	91
Evaporation	0
Formation	0
Desilter	5
Tripping	47
Desander	5

SOLIDS ANALYSIS (%/lb/bbl)	
NaCl	./.
KCl	1.5/ 14.3
Low Gravity	2.8/ 25.3
Bentonite	.5/ 4.1
Drill Solids	2.1/ 19.2
Weight Material	NA/ NA
Chemical Conc	- / 2.
Inert/React	2.7303
Average SG	2.6
Carb/BiCarb (m mole/L)	2./ 3.1

MUD RHEOLOGY & HYDRAULICS	
np/na Values	0.463/0.423
kp/ka (lb•s^n/100ft²)	2.200/2.678
Bit Loss (psi / %)	775 / 1
Bit HHP (hhp / HSI)	242 / 1
Bit Jet Vel (m/s)	95
Ann. Vel DP (m/min)	77
Ann. Vel DC (m/min)	120.65
Crit Vel DP (m/min)	108
Crit Vel DC (m/min)	126
ECD @ 1228 (sp.gr.)	1.14

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 2,826.88	A$ 27,233.22

WATER-BASED MUD REPORT No. 8

Date	23/08/2005	**Depth/TVD**	1228 m / 1228 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	RIH

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M704VC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x18 / 1/32"		20in @16m (16TVD)	250.3(Tot)/192.5(Bit)	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	753 m	9.625in @496m (496TVD)	240.7	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
4.5 in	37 m	in @2070m (2069TVD)	433.2	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
6.75 in	167 m		63	Circulating Pressure		

MUD PROPERTIES

Sample From		Active@17:00	
Flow Line Temp	°C	n/a	
Depth/TVD	m	1228/1228	
Mud Weight	sp.gr.	1.08	
Funnel Viscosity	s/qt	56	
Rheology Temp	°C	49	
R600/R300		52/37	
R200/R100		32/23	
R6/R3		7/5	
PV	cP	15	
YP	lb/100ft²	22	
10s/10m/30m Gel	lb/100ft²	6/8/9	
API Fluid Loss	cc/30 min	6.5	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	7	
Oil/Water	%Vol	0/93	
Sand	%Vol	0.5	
MBT	lb/bbl	6.5	
pH		9.5	
Alkal Mud (Pm)		0.1	
Pf/Mf		0.1/0.6	
Chlorides	mg/l	21000	
Hardness Ca	mg/l	100	
KCl	%	4.5	
Excess Sulphite	mg/L	100	
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
M-I BAR	25 KG BG	30.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	0
DFE Shaker 2	140	0
D-Sander	2 x 12"	0
D-Silter	6"	0

MUD PROPERTY SPECIFICATIONS

Weight	alap <1.08
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Built slug for POOH. Dumped ~40bbls solids and volume from sand trap.

REMARKS

Gyro survey indicated angle building from vertical at 1000m to 25 degrees by 1220m. POOH and waited for mud motor steerable assembly. M/U new BHA and RIH to drill ahead and correct angle.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	12.5	Oil Added	0	NaCl	./ .1	np/na Values	0.491/0.435
Drilling		Water Added	1	KCl	1.6/ 14.8	kp/ka (lb•s^n/100ft²)	1.847/2.623
Tripping	7.5	Mud Received	0	Low Gravity	3.3/ 30.4	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Formation	0	Bentonite	.4/ 3.8	Bit HHP (hhp / HSI)	/ 1
Condition Hole	1	Desilter	0	Drill Solids	2.7/ 24.6	Bit Jet Vel (m/s)	
Testing		Tripping	53	Weight Material	NA/ NA	Ann. Vel DP (m/min)	
Dir Survey	3	Desander	0	Chemical Conc	- / 2.	Ann. Vel DC (m/min)	
		Dumped	40	Inert/React	3.3672	Crit Vel DP (m/min)	110
		Shakers	0	Average SG	2.6	Crit Vel DC (m/min)	139
		Evaporation	0	Carb/BiCarb (m mole/L)	2./ 3.1	ECD @ 977 (sp.gr.)	1.08

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 235.20	A$ 27,468.42

WATER-BASED MUD REPORT No. 9

Date	24/08/2005	**Depth/TVD**	1389 m / 1371 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Reaming

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M704VC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x18 / 1/32"		20in @16m (16TVD)	280.1	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	1165 m	9.625in @496m (496TVD)	319.9	Pump stk/min	75@97%	80@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	469 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	600	Bottoms Up	19.7 min	3054 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	53.7 min	8328 stk
6.75 in	167 m		79	Circulating Pressure	1410 psi	

MUD PROPERTIES

Sample From		Active@23:00	Active@11:00
Flow Line Temp	°C	44	43
Depth/TVD	m	1389/1371	1332/1250
Mud Weight	sp.gr.	1.12@40°C	1.09@40°C
Funnel Viscosity	s/qt	53	53
Rheology Temp	°C	49	49
R600/R300		71/50	57/42
R200/R100		43/32	35/26
R6/R3		8/6	7/5
PV	cP	21	15
YP	lb/100ft²	29	27
10s/10m/30m Gel	lb/100ft²	7/9/10	6/9/10
API Fluid Loss	cc/30 min	5.2	6
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	6.5	6.5
Oil/Water	%Vol	/93.5	/93.5
Sand	%Vol	0.75	0.75
MBT	lb/bbl	6.25	6.25
pH		9.5	9.0
Alkal Mud (Pm)		0.2	0.2
Pf/Mf		0.3/1.0	0.2/0.9
Chlorides	mg/l	21000	22000
Hardness Ca	mg/l	80	100
KCl	%	4	4
Excess Sulphite	mg/L	180	100
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	4.00
CAUSTIC SODA (DRY)	25 KG DM	2.00
M-I BAR	25 KG BG	170.00
POTASSIUM CHLORIDE	25 KG BG	94.00
Polyplus Powder	25 KG BG	9.00
DUOTEC	25 KG BG	4.00
POLYPAC UL	25 KG BG	9.00
MIX II MEDIUM	25 LB BG	40.00
OS-1	25 KG BG	2.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	15
DFE Shaker 2	140	15
D-Sander	2 x 12"	15
D-Silter	10 x 6"	15

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Reduced KCl concentrations in premixes to allow lower KCl content in mud system. Added OS-1 to maintain corrosion control. Build and added premixes as required for volume.
Added barite to weight up active system to 9.4ppg and 2ppb MIX II for improved fluid loss and wellbore stability. Adding water to active to control rheology.

REMARKS

Began drilling when BOB, sliding for directional requirements to 1383m. While drilling and backreaming, some overpull was experienced. An 8 joint wiper trip was performed to clean hole, experiencing 60K overpull. Overpull possibly caused by key seats or some hole cave-ins. Decision made to increase mud weight to 9.4ppg/1.13SG to improve formation support. Also added 2ppb LCM to system to plug any fractures. Continued reaming and working pipe to open the hole.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	0.5	Oil Added	0	NaCl	./ .1	np/na Values	0.506/0.477
Drilling	14.5	Water Added	247	KCl	1.6/ 14.6	kp/ka (lb•s^n/100ft²)	2.275/2.939
Tripping	5.5	Mud Received	0	Low Gravity	4./ 36.2	Bit Loss (psi / %)	341 / 1
Non-Productive Tim		Formation	0	Bentonite	.3/ 2.8	Bit HHP (hhp / HSI)	93 / 1
Reaming	3.5	Desilter	65	Drill Solids	3.5/ 31.4	Bit Jet Vel (m/s)	62
Testing		Tripping	0	Weight Material	.9/ 13.9	Ann. Vel DP (m/min)	67.38
Dir Survey		Desander	15	Chemical Conc	- / 2.	Ann. Vel DC (m/min)	131.28
		Dumped	0	Inert/React	4.4707	Crit Vel DP (m/min)	132
		Shakers	60	Average SG	2.91	Crit Vel DC (m/min)	172
		Evaporation	0	Carb/BiCarb (m mole/L)	6./ 9.5	ECD @ 1389 (sp.gr.)	1.24

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 8,366.03	A$ 35,834.45

WATER-BASED MUD REPORT No. 10

Date	25/08/2005	**Depth/TVD**	925 m / 925 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	POOH

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 1/32"		20in @16m (16TVD)	203.1	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	771 m	9.625in @496m (496TVD)	304.9	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
2.875 in	154 m	in @2070m (2069TVD)	508	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
in	m		62	Circulating Pressure		

MUD PROPERTIES

Sample From		Active@08:00	
Flow Line Temp	°C	n/a	
Depth/TVD	m	1389/1371	
Mud Weight	sp.gr.	1.12	
Funnel Viscosity	s/qt	52	
Rheology Temp	°C	49	
R600/R300		65/46	
R200/R100		39/28	
R6/R3		8/6	
PV	cP	19	
YP	lb/100ft²	27	
10s/10m/30m Gel	lb/100ft²	7/9/10	
API Fluid Loss	cc/30 min	6.4	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	6.5	
Oil/Water	%Vol	/93.5	
Sand	%Vol	0.75	
MBT	lb/bbl	6.25	
pH		9.5	
Alkal Mud (Pm)		0.2	
Pf/Mf		0.3/1.0	
Chlorides	mg/l	18000	
Hardness Ca	mg/l	100	
KCl	%	4	
Excess Sulphite	mg/L	100	
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
M-I BAR	25 KG BG	65.00
GLUTE 25	25 LT CN	1.00
DUOTEC	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	3
DFE Shaker 2	140	3
D-Sander	2 x 12"	1
D-Silter	10 x 6"	0

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Added premix to active for volume and built slug for POOH. Built hi-vis pills to support cement plugs.
No cement seen at shakers, but dumped pH contaminated mud before POOH.

REMARKS

After working pipe, hole conditions appeared to be deteriorating. Decision was made to POOH. Rigged up and RIH with open ended tubing as cement stinger. Pumped hi-vis slug(1200m-1180m) and set cement plug to 1100m. Pulled back and spotted second hi-vis slug (1045m-1025m) and set another cement plug to 925m. Pulled above cement and reverse circ'd cement out of string, dumping contaminated mud, POOH

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	7.5	Oil Added	0	NaCl	./ .2	np/na Values	0.499/0.439
Drilling		Water Added	26	KCl	1.3/ 12.3	kp/ka (lb•s^n/100ft²)	2.187/3.127
Tripping	10.5	Mud Received	0	Low Gravity	4.2/ 38.5	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Formation	0	Bentonite	.3/ 2.5	Bit HHP (hhp / HSI)	/ 1
Condition Hole	4	Tripping	35	Drill Solids	3.7/ 34.	Bit Jet Vel (m/s)	
Cementing	2	Desander	4	Weight Material	.9/ 13.8	Ann. Vel DP (m/min)	
Dir Survey		Dumped	40	Chemical Conc	- / 2.	Ann. Vel DC (m/min)	
		Shakers	8	Inert/React	4.8351	Crit Vel DP (m/min)	122
		Left in Hole	51	Average SG	2.89	Crit Vel DC (m/min)	111
				Carb/BiCarb (m mole/L)	6./ 9.5	ECD @ 925 (sp.gr.)	1.12

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper 0415 845 672			A$ 883.63	A$ 36,718.08

WATER-BASED MUD REPORT No. 11

Date	26/08/2005	**Depth/TVD**	958 m / 958 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling ahead

Operator : Origin Energy
Report For : Seton Porter / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M704VC			
Nozzles 18x3 / 1/32"			
Drill Pipe Size	Length		
4.5 in	734 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	167 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
188.5	
Active Pits	
292.5	
Total Circulating Vol	
481	
In Storage	
42	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	75@97%	75@97%
Flow Rate	454 gal/min	
Bottoms Up	13.7 min	2062 stk
Total Circ Time	44.5 min	6675 stk
Circulating Pressure	1150 psi	

MUD PROPERTIES

Sample From		Active@22:00	
Flow Line Temp	°C	35	
Depth/TVD	m	950/950	
Mud Weight	sp.gr.	1.12@32°C	
Funnel Viscosity	s/qt	54	
Rheology Temp	°C	49	
R600/R300		64/47	
R200/R100		39/29	
R6/R3		7/5	
PV	cP	17	
YP	lb/100ft²	30	
10s/10m/30m Gel	lb/100ft²	6/9/10	
API Fluid Loss	cc/30 min	6.6	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	6.5	
Oil/Water	%Vol	/93.5	
Sand	%Vol	1	
MBT	lb/bbl	6.25	
pH		10	
Alkal Mud (Pm)		0.5	
Pf/Mf		0.3/0.9	
Chlorides	mg/l	17000	
Hardness Ca	mg/l	120	
KCl	%	3.5	
Excess Sulphite	mg/L	100	
PHPA	ppb		

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CITRIC ACID	25 KG BG	5.00
DEFOAM A	25 LT CN	1.00
Polyplus Powder	25 KG BG	2.00
POLYPAC UL	25 KG BG	2.00
OS-1	25 KG BG	2.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	4
DFE Shaker 2	140	4
D-Sander	2 x 12"	1
D-Silter	10 x 6"	1

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Dumped 40bbls of solids and heavy mud from sand trap and degasser pit. Added citric acid to active to treat high pH from cement job and Defoam A to reduce aeration. Lost some mud when power shut down to shakers and pits.

REMARKS

POOH to surface. Waited on cement. R/U 8.5" tricone bit and MWD and RIH. Tagged cement at 944m. Sliding for directional work to 958m.

TIME DISTR

	Last 24 Hrs
Rig Up/Service	6.5
Drilling	3.5
Tripping	10
Non-Productive Tim	
Condition Hole	
Wait on Cement	4
Dir Survey	

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	49
Mud Received	0
Formation	0
Tripping	54
Desander	12
Dumped	0
Shakers	31
Left in Hole	0

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.1/ .9
KCl	1.1/ 10.7
Low Gravity	4.4/ 39.8
Bentonite	.3/ 2.3
Drill Solids	3.9/ 35.5
Weight Material	.9/ 13.3
Chemical Conc	- / 2.
Inert/React	5.0541
Average SG	2.87
Carb/BiCarb (m mole/L)	5.9/ 3.

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.445/0.501
kp/ka (lb•s^n/100ft²)	3.118/2.355
Bit Loss (psi / %)	11492 / 1
Bit HHP (hhp / HSI)	3044 / 1
Bit Jet Vel (m/s)	357
Ann. Vel DP (m/min)	65.22
Ann. Vel DC (m/min)	127.09
Crit Vel DP (m/min)	123
Crit Vel DC (m/min)	163
ECD @ 958 (sp.gr.)	1.24

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer				
Nick Cooper 0415 845 672			A$ 917.14	A$ 37,635.22

WATER-BASED MUD REPORT No. 12

Date	27/08/2005	**Depth/TVD**	1131 m / 1131 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M704VC			
Nozzles 18x3 / 1/32"			
Drill Pipe Size	Length		
4.5 in	907 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	167 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
225.2	
Active Pits	
329.8	
Total Circulating Vol	
555	
In Storage	
42	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	90@97%	90@97%
Flow Rate	545 gal/min	
Bottoms Up	13.7 min	2459 stk
Total Circ Time	42.8 min	7699 stk
Circulating Pressure	1650 psi	

MUD PROPERTIES

		PIT@12:00	PIT@23:30
Sample From			
Flow Line Temp	°C	37	39
Depth/TVD	m	1005/1005	1131/1131
Mud Weight	sp.gr.	1.08@37°C	1.08@39°C
Funnel Viscosity	s/qt	57	55
Rheology Temp	°C	49	49
R600/R300		66/47	64/45
R200/R100		38/28	36/27
R6/R3		7/5	7/5
PV	cP	19	19
YP	lb/100ft²	28	26
10s/10m/30m Gel	lb/100ft²	6/8/11	5/8/13
API Fluid Loss	cc/30 min	6.4	6.2
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	4.5	4.5
Oil/Water	%Vol	0/95.5	0/95.5
Sand	%Vol	1	1
MBT	lb/bbl	7.5	7.5
pH		9.5	9
Alkal Mud (Pm)		0.4	0.3
Pf/Mf		0.25/0.8	0.2/0.6
Chlorides	mg/l	20000	19000
Hardness Ca	mg/l	220	200
KCl	%	3.5	3.5
Excess Sulphite	mg/L	100	100
PHPA	ppb	1.3	1.3

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CITRIC ACID	25 KG BG	6.00
SODIUM BICARBONATE	25 KG BG	8.00
M-I BAR	25 KG BG	80.00
POTASSIUM CHLORIDE	25 KG BG	30.00
DEFOAM A	25 LT CN	3.00
Polyplus Powder	25 KG BG	6.00
DUOTEC	25 KG BG	5.00
POLYPAC UL	25 KG BG	8.00
OS-1	25 KG BG	2.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140	24
DFE Shaker 2	140	24
D-Sander	2 x 12"	16
D-Silter	10 x 6"	16

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	35 - 50
Filtrate	<7

REMARKS AND TREATMENT

Continue treating for cement contamination of mud with sodium bicarbonate and citric acid. Add Pac UL for fluid loss control, Duotec for low enf rheology. Adding defoamer as required to minimise aeration of mud. Installed 2 x 110 mesh screens to lower shaker bed angle as poor removal of cuttings from screens was casuing high screen elevation and short screen life. Shall replace with 140 mesh screens when conditions permit.

REMARKS

Continue drilling sidetrack to 1131 meters as per DD's instructions for straight hole.

TIME DISTR

TIME DISTR	Last 24 Hrs
Rig Up/Service	
Drilling	24
Tripping	
Non-Productive Tim	
Condition Hole	
Wait on Cement	
Dir Survey	

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	240
Mud Received	0
Formation	0
Tripping	0
Desander	115
Dumped	40
Shakers	20
Left in Hole	0

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.2/ 2.3
KCl	1.2/ 11.3
Low Gravity	2.8/ 25.1
Bentonite	.6/ 5.6
Drill Solids	1.9/ 17.5
Weight Material	.3/ 5.1
Chemical Conc	- / 2.
Inert/React	2.0783
Average SG	2.78
Carb/BiCarb (m mole/L)	5./ 7.9

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.490/0.491
kp/ka (lb•s^n/100ft²)	2.364/2.394
Bit Loss (psi / %)	15969 / 1
Bit HHP (hhp / HSI)	5078 / 1
Bit Jet Vel (m/s)	429
Ann. Vel DP (m/min)	78.3
Ann. Vel DC (m/min)	152.56
Crit Vel DP (m/min)	124
Crit Vel DC (m/min)	162
ECD @ 1131 (sp.gr.)	1.2

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 4,959.69	A$ 42,594.91

WATER-BASED MUD REPORT No. 13

Date	28/08/2005	**Depth/TVD**	1473 m / 1472.5 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M704VC			
Nozzles 18x3 / 1/32"			
Drill Pipe Size	Length		
4.5 in	1249 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	167 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
309.2	
Active Pits	
344.8	
Total Circulating Vol	
654	
In Storage	
42	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	89@97%	89@97%
Flow Rate	539 gal/min	
Bottoms Up	19.1 min	3401 stk
Total Circ Time	51 min	9071 stk
Circulating Pressure	1940 psi	

MUD PROPERTIES

		F/L@23:00	F/L@12:00
Sample From			
Flow Line Temp	°C	41	40
Depth/TVD	m	1462/1461.5	1295/1295
Mud Weight	sp.gr.	1.12	1.12@40°C
Funnel Viscosity	s/qt	54	52
Rheology Temp	°C	49	49
R600/R300		69/49	67/46
R200/R100		42/31	41/30
R6/R3		8/6	7/5
PV	cP	20	21
YP	lb/100ft²	29	25
10s/10m/30m Gel	lb/100ft²	6/10/14	5/9/13
API Fluid Loss	cc/30 min	6.5	6.4
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	6.7	6.6
Oil/Water	%Vol	0/93.3	0/93.4
Sand	%Vol	0.75	0.75
MBT	lb/bbl	7.5	7.5
pH		9	9
Alkal Mud (Pm)		0.3	0.3
Pf/Mf		0.15/1.2	0.15/1
Chlorides	mg/l	19000	19500
Hardness Ca	mg/l	420	380
KCl	%	3.5	3.5
Excess Sulphite	mg/L	80	100
PHPA	ppb	1.3	1.3

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	5.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
POTASSIUM CHLORIDE	25 KG BG	80.00
Polyplus Powder	25 KG BG	10.00
DUOTEC	25 KG BG	5.00
POLYPAC UL	25 KG BG	10.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	24
D-Silter	10 x 6"	24

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Adding premix as required to maintain volume and control build up of LGS/mud weight. Running desander and desilter 24 hours to minimise solids. Adding extra Polyplus to maintain PHPA concentration. Adding OS-1 oxygen scavenger for corrosion control

REMARKS

Continue drilling to 1473 meters, following DD's insructions to maintain straight hole. Driller reports hole to be in good conditon.

TIME DISTR

	Last 24 Hrs
Rig Up/Service	
Drilling	24
Tripping	
Non-Productive Tim	
Condition Hole	
Wait on Cement	
Dir Survey	

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	250
Mud Received	0
Formation	0
Tripping	0
Desander	95
Dumped	45
Shakers	20
Left in Hole	0

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.1/ 1.7
KCl	1.2/ 11.
Low Gravity	4.7/ 42.9
Bentonite	.4/ 3.6
Drill Solids	3.9/ 35.3
Weight Material	.7/ 9.9
Chemical Conc	- / 4.
Inert/React	4.1803
Average SG	2.8
Carb/BiCarb (m mole/L)	3./ 15.

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.494/0.468
kp/ka (lb•s^n/100ft²)	2.404/2.982
Bit Loss (psi / %)	16198 / 1
Bit HHP (hhp / HSI)	5094 / 1
Bit Jet Vel (m/s)	424
Ann. Vel DP (m/min)	72.4
Ann. Vel DC (m/min)	132.88
Crit Vel DP (m/min)	128
Crit Vel DC (m/min)	162
ECD @ 1473 (sp.gr.)	1.22

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 5,632.52	A$ 48,227.43

WATER-BASED MUD REPORT No. 14

Date	29/08/2005	**Depth/TVD**	1613.2 m / 1612.7 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Tripping

Operator : Origin Energy
Report For : Chris Dann / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M704VC		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 18x3 / 1/32"		20in @16m (16TVD)	345.1(Tot)/283.9(Bit)	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	1136 m	9.625in @496m (496TVD)	359.9	Pump stk/min	89@97%	87@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	533 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	643.8	Bottoms Up	17.7 min	3123 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	50.7 min	8928 stk
6.75 in	167 m		42	Circulating Pressure	1925 psi	

MUD PROPERTIES

Sample From		PIT@23:00	PIT@12:00
Flow Line Temp	°C	44	42
Depth/TVD	m	1613.2/1612.7	1568/1567
Mud Weight	sp.gr.	1.10@44°C	1.12@42°C
Funnel Viscosity	s/qt	51	51
Rheology Temp	°C	49	49
R600/R300		61/41	65/43
R200/R100		34/29	35/26
R6/R3		7/5	8/5
PV	cP	20	22
YP	lb/100ft²	21	21
10s/10m/30m Gel	lb/100ft²	5/11/17	6/12/18
API Fluid Loss	cc/30 min	6.2	6
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	5.8	6.6
Oil/Water	%Vol	0/94.2	0/93.4
Sand	%Vol	0.5	0.5
MBT	lb/bbl	7.5	7.5
pH		9.5	9.3
Alkal Mud (Pm)		0.35	0.3
Pf/Mf		0.15/1.4	0.11/1.2
Chlorides	mg/l	22000	21000
Hardness Ca	mg/l	220	260
KCl	%	3.8	3.8
Excess Sulphite	mg/L	100	80
PHPA	ppb	1.3	1.3

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	8.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
M-I BAR	25 KG BG	40.00
POTASSIUM CHLORIDE	25 KG BG	150.00
GLUTE 25	25 LT CN	2.00
Polyplus Powder	25 KG BG	8.00
DUOTEC	25 KG BG	5.00
POLYPAC UL	25 KG BG	8.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	20
D-Silter	10 x 6"	20

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Using recycled water from sump for premix make-up water. Treating with Glute biocide and extra caustic to prevent bacterial contamination.
Dumped sand trap and possum belly as required to allow for dilution additions. Running shakers at lowered elevation to ensure prompt removal of cuttings.

REMARKS

Continue drilling to 1613.2 meters. Circulate hole clean, pump slug and make wiper trip. Hole sticky, ream back to bottom and circulate again.
Note: Cumulative cost now includes cost for citric acid previously used.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.2/ 2.4	np/na Values	0.573/0.501
Drilling	19	Water Added	235	KCl	1.3/ 12.4	kp/ka (lb•s^n/100ft²)	1.226/2.355
Tripping	3	Mud Received	0	Low Gravity	4./ 36.2	Bit Loss (psi / %)	15556 / 1
Non-Productive Tim		Formation	0	Bentonite	.5/ 4.4	Bit HHP (hhp / HSI)	4837 / 1
Condition Hole	2	Tripping	0	Drill Solids	3.1/ 27.8	Bit Jet Vel (m/s)	419
Wait on Cement		Desander	110	Weight Material	.3/ 4.3	Ann. Vel DP (m/min)	71.6
Dir Survey		Dumped	50	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	131.4
		Shakers	40	Inert/React	3.2957	Crit Vel DP (m/min)	123
		Left in Hole	0	Average SG	2.71	Crit Vel DC (m/min)	159
				Carb/BiCarb (m mole/L)	3./ 4.7	ECD @ 1360 (sp.gr.)	1.2

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 6,954.93	A$ 55,182.36

WATER-BASED MUD REPORT No. 15

Date	30/08/2005	**Depth/TVD**	1613.2 m / 1612.7 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Tripping

Operator : Origin Energy
Report For : Chris Dann / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M704VC		
Nozzles 18x3 / 1/32"		
Drill Pipe Size	Length	
4.5 in	463 m	
Drill Pipe Size	Length	
4.5 in	37 m	
Drill Collar Size	Length	
6.75 in	167 m	

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
357(Tot)/133.1(Bit)	
Active Pits	
352	
Total Circulating Vol	
485.1	
In Storage	
42	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	84@97%	84@97%
Flow Rate	509 gal/min	
Bottoms Up	8.7 min	1468 stk
Total Circ Time	40 min	6724 stk
Circulating Pressure	1275 psi	

MUD PROPERTIES

Sample From		Pit@23:00	Pit@12:00
Flow Line Temp	°C	n/a	n/a
Depth/TVD	m	687/687	769/769
Mud Weight	sp.gr.	1.12@35°C	1.12@37°C
Funnel Viscosity	s/qt	52	51
Rheology Temp	°C	49	49
R600/R300		60/40	61/41
R200/R100		34/27	35/29
R6/R3		8/5	7/5
PV	cP	20	20
YP	lb/100ft²	20	21
10s/10m/30m Gel	lb/100ft²	4/12/18	5/11/17
API Fluid Loss	cc/30 min	5	5.2
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	2/	2/
Solids	%Vol	6.5	6.5
Oil/Water	%Vol	0/93.5	0/93.5
Sand	%Vol	0.5	0.5
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.35	0.35
Pf/Mf		0.15/1.5	0.15/1.5
Chlorides	mg/l	26000	26000
Hardness Ca	mg/l	240	220
KCl	%	4.7	4.7
Excess Sulphite	mg/L	80	80
PHPA	ppb	1.3	1.3

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	4.00
M-I BAR	25 KG BG	30.00
POTASSIUM CHLORIDE	25 KG BG	50.00
Polyplus Powder	25 KG BG	4.00
POLYPAC UL	25 KG BG	9.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	8
D-Silter	10 x 6"	8

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Increase KCl concentration and lower fluid loss to try and help improve hole conditions.
Barite used for slugs.
Make extra premixes to mainatin volume while pumping out of the hole.

REMARKS

POH to 1089, tight hole, pick up weight = 125Klb and down weight = 110Klb. Pick up kelly and work pipe, pump out singles. Lost approx 2 bbls per hour while pumping out of the hole.
Cumulative price now includes costs for DeFoam A, previously omitted.

TIME DISTR	Last 24 Hrs
Rig Up/Service	
Drilling	
Tripping	24
Non-Productive Tim	
Condition Hole	
Wait on Cement	
Dir Survey	

MUD VOL ACCTG	(bbl)
Oil Added	0
Water Added	110
Mud Received	0
Formation	48
Tripping	0
Desander	30
Dumped	20
Shakers	15
Left in Hole	0

SOLIDS ANALYSIS (%/lb/bbl)	
NaCl	.4/ 4.6
KCl	1.3/ 12.3
Low Gravity	4./ 36.8
Bentonite	.8/ 7.2
Drill Solids	2.8/ 25.6
Weight Material	.8/ 11.1
Chemical Conc	- / 4.
Inert/React	2.2772
Average SG	2.85
Carb/BiCarb (m mole/L)	3./ 4.7

MUD RHEOLOGY & HYDRAULICS	
np/na Values	0.585/0.481
kp/ka (lb•s^n/100ft²)	1.111/2.435
Bit Loss (psi / %)	14445 / 1
Bit HHP (hhp / HSI)	4290 / 1
Bit Jet Vel (m/s)	401
Ann. Vel DP (m/min)	69
Ann. Vel DC (m/min)	125.49
Crit Vel DP (m/min)	117
Crit Vel DC (m/min)	148
ECD @ 687 (sp.gr.)	1.24

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 2,978.96	A$ 58,161.32

WATER-BASED MUD REPORT No. 16

Date	31/08/2005	**Depth/TVD**	1613.2 m / 1612.7 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	RIH

Operator : Origin Energy
Report For : Chris Dann / Bryan Webb
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 6x12 /14 / 1/32"		20in @16m (16TVD)	356.1(Tot)/145(Bit)	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	516 m	9.625in @496m (496TVD)	352.9	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
4.5 in	37 m	in @2070m (2069TVD)	497.9	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
6.75 in	167 m		42	Circulating Pressure		

MUD PROPERTIES

Sample From		PIT@23:00	PIT@12:00
Flow Line Temp	°C	n/a	n/a
Depth/TVD	m	1613/1612	1613/1612
Mud Weight	sp.gr.	1.12@32°C	1.12@32°C
Funnel Viscosity	s/qt	51	50
Rheology Temp	°C	49	49
R600/R300		59/39	60/40
R200/R100		31/25	31/26
R6/R3		7/5	7/5
PV	cP	20	20
YP	lb/100ft²	19	20
10s/10m/30m Gel	lb/100ft²	6/14/20	5/14/21
API Fluid Loss	cc/30 min	5	5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	2/	2/
Solids	%Vol	6.5	6.5
Oil/Water	%Vol	0/93.5	0/93.5
Sand	%Vol	0.5	0.5
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.35	0.35
Pf/Mf		0.15/1.5	0.15/1.5
Chlorides	mg/l	26000	26000
Hardness Ca	mg/l	240	240
KCl	%	4.7	4.7
Excess Sulphite	mg/L	80	80
PHPA	ppb	1.3	1.3

PRODUCTS USED LAST 24 HRS

Products	Size	Amt

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	14
DFE Shaker 2	140/140/110	14
D-Sander	2 x 12"	0
D-Silter	10 x 6"	0

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

None required.

REMARKS

Wash and ream with singles from 695 to 723m. RIH to 1126m. Wash to 1285m. Back ream with string stabiliser from 627 to 626m. Cont wash and ream from 1285 to 1332m. POH, tight spot at 768m. Cont POH, change bit and RIH.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.4/ 4.6	np/na Values	0.597/0.459
Drilling		Water Added	0	KCl	1.3/ 12.3	kp/ka (lb•s^n/100ft²)	1.004/2.523
Tripping	24	Mud Received	0	Low Gravity	4./ 36.8	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Formation	0	Bentonite	.8/ 7.2	Bit HHP (hhp / HSI)	/ 1
Condition Hole		Tripping	0	Drill Solids	2.8/ 25.6	Bit Jet Vel (m/s)	
Wait on Cement		Desander	0	Weight Material	.8/ 11.1	Ann. Vel DP (m/min)	
Dir Survey		Dumped	0	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	
		Shakers	0	Inert/React	2.2772	Crit Vel DP (m/min)	111
		Left in Hole	0	Average SG	2.85	Crit Vel DC (m/min)	140
				Carb/BiCarb (m mole/L)	3./ 4.7	ECD @ 740 (sp.gr.)	1.12

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 0.00	A$ 58,161.32

WATER-BASED MUD REPORT No. 17

Date	1/09/2005	**Depth/TVD**	1867 m / 1866 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M90			
Nozzles 6x12 /14 / 1/32"			
Drill Pipe Size	Length		
4.5 in	1643 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	167 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
397.4	
Active Pits	
374.6	
Total Circulating Vol	
772	
In Storage	
22	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	80@97%	62@97%
Flow Rate	430 gal/min	
Bottoms Up	30.8 min	4370 stk
Total Circ Time	75.4 min	10707 stk
Circulating Pressure	2050 psi	

MUD PROPERTIES

Sample From		F/L@23:00	F/L@12:00
Flow Line Temp	°C	50	47
Depth/TVD	m	1860/1859	1689/1687
Mud Weight	sp.gr.	1.14@40°C	1.15@37°C
Funnel Viscosity	s/qt	45	46
Rheology Temp	°C	49	49
R600/R300		56/37	58/38
R200/R100		31/25	32/25
R6/R3		7/5	8/6
PV	cP	19	20
YP	lb/100ft²	18	18
10s/10m/30m Gel	lb/100ft²	6/11/19	7/13/21
API Fluid Loss	cc/30 min	5.4	5.7
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	2/	2/
Solids	%Vol	7.5	8
Oil/Water	%Vol	/92.5	/92
Sand	%Vol	0.5	0.5
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.35	0.3
Pf/Mf		0.15/1.8	0.1/1.6
Chlorides	mg/l	26000	25000
Hardness Ca	mg/l	220	240
KCl	%	4	4
Excess Sulphite	mg/L	100	80
PHPA	ppb	1.5	1.4

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	10.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
POTASSIUM CHLORIDE	25 KG BG	92.00
GLUTE 25	25 LT CN	1.00
Polyplus Powder	25 KG BG	6.00
POLYPAC UL	25 KG BG	6.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	18
D-Silter	10 x 6"	18

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Continue adding premix as required to maintain volume. Turned off desander and desilter at 21:00 hrs as discharge density too low (desander 9.8ppg and desilter 10.2 ppg). Using recycled mud from sump for make up water. Treat with caustic and biocide to prevent bacterial degradation.
Initial high mud weight from slugs in system.

REMARKS

RIH, tag fill at 1549 meters. Wash to 1594 meters, continue drilling to 1875 meters at midnight.

TIME DISTR

	Last 24 Hrs
Rig Up/Service	
Drilling	20
Tripping	2
Non-Productive Tim	
Reaming	2
Wait on Cement	
Dir Survey	

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	191
Mud Received	0
Shakers	20
Left in Hole	0
Formation	0
Tripping	0
Desander	97
Dumped	40

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.3/ 3.5
KCl	1.5/ 13.5
Low Gravity	4.7/ 42.8
Bentonite	.7/ 6.4
Drill Solids	3.6/ 32.4
Weight Material	1.1/ 15.5
Chemical Conc	- / 4.
Inert/React	2.8805
Average SG	2.89
Carb/BiCarb (m mole/L)	3./ 4.7

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.598/0.459
kp/ka (lb•s^n/100ft²)	0.948/2.523
Bit Loss (psi / %)	245 / 1
Bit HHP (hhp / HSI)	61 / 1
Bit Jet Vel (m/s)	52
Ann. Vel DP (m/min)	57.76
Ann. Vel DC (m/min)	106.01
Crit Vel DP (m/min)	110
Crit Vel DC (m/min)	138
ECD @ 1867 (sp.gr.)	1.21

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 3,620.98	A$ 61,782.30

WATER-BASED MUD REPORT No. 18

Date	2/09/2005	**Depth/TVD**	1985 m / 1983 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Smith M90		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 6x12 /14 / 1/32"		20in @16m (16TVD)	423.9	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	1761 m	9.625in @496m (496TVD)	350.1	Pump stk/min	85@97%	86@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	518 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	774	Bottoms Up	27.2 min	4658 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	62.8 min	10731 stk
6.75 in	167 m		47	Circulating Pressure	2075 psi	

MUD PROPERTIES

Sample From		F/L@23:00	F/L@12:00
Flow Line Temp	°C	52	51
Depth/TVD	m	1980/1978	1928/1927
Mud Weight	sp.gr.	1.14@47°C	1.14@46°C
Funnel Viscosity	s/qt	45	47
Rheology Temp	°C	49	49
R600/R300		52/35	54/36
R200/R100		30/25	31/26
R6/R3		7/5	7/5
PV	cP	17	18
YP	lb/100ft²	18	18
10s/10m/30m Gel	lb/100ft²	5/10/16	5/11/17
API Fluid Loss	cc/30 min	5	5.2
HTHP FL Temp	cc/30 min	n/a@n/a°C	n/a@n/a°C
Cake API/HTHP	1/32"	1/n/a	1/n/a
Solids	%Vol	7.5	7.5
Oil/Water	%Vol	0/92.5	0/92.5
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.3	0.3
Pf/Mf		0.15/1.8	0.15/1.9
Chlorides	mg/l	30000	28000
Hardness Ca	mg/l	200	220
KCl	%	4	4
Excess Sulphite	mg/L	100	100
PHPA	ppb	1.5	1.5

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
M-I BAR	25 KG BG	40.00
POTASSIUM CHLORIDE	25 KG BG	90.00
GLUTE 25	25 LT CN	1.00
Polyplus Powder	25 KG BG	6.00
POLYPAC UL	25 KG BG	8.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	18
D-Silter	10 x 6"	18

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Take water from sump for make up water. Treat with Glute 25 biocide to prevent bacterial contamination. Diluting as required to minimise low gravity solids build-up. Running desander and desilter to control solids.

REMARKS

Drill to 1911 meters, make wiper trip to 1714 meters, RIH, no fill. Continue drilling to 1985 meters at midnight.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.5/ 5.6	np/na Values	0.571/0.459
Drilling	20	Water Added	180	KCl	1.5/ 13.5	kp/ka (lb•s^n/100ft²)	1.060/2.523
Tripping	4	Mud Received	0	Low Gravity	4.6/ 41.9	Bit Loss (psi / %)	356 / 1
Non-Productive Tim		Left in Hole	0	Bentonite	.7/ 6.5	Bit HHP (hhp / HSI)	107 / 1
Reaming		Formation	0	Drill Solids	3.4/ 31.4	Bit Jet Vel (m/s)	62
Wait on Cement		Tripping	0	Weight Material	1./ 14.3	Ann. Vel DP (m/min)	69.58
Dir Survey		Desander	93	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	127.71
		Dumped	40	Inert/React	2.7879	Crit Vel DP (m/min)	110
		Shakers	30	Average SG	2.88	Crit Vel DC (m/min)	138
				Carb/BiCarb (m mole/L)	3./ 4.7	ECD @ 1985 (sp.gr.)	1.22

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 4,051.63	A$ 65,833.93

WATER-BASED MUD REPORT No. 19

Date	3/09/2005	**Depth/TVD**	1988 m / 1986 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	POH

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Ben Hale

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Smith M90		
Nozzles 6x12 /14 / 1/32"		
Drill Pipe Size	Length	
4.5 in	783 m	
Drill Pipe Size	Length	
4.5 in	37 m	
Drill Collar Size	Length	
6.75 in	167 m	

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
442(Tot)/204.8(Bit)	
Active Pits	
280	
Total Circulating Vol	
484.8	
In Storage	
89	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	85@97%	86@97%
Flow Rate	518 gal/min	
Bottoms Up	13.2 min	2255 stk
Total Circ Time	39.3 min	6722 stk
Circulating Pressure	2075 psi	

MUD PROPERTIES

Sample From		PIT@23:00	PIT@12:00
Flow Line Temp	°C	n/a	n/a
Depth/TVD	m	1988/1986	1988/1986
Mud Weight	sp.gr.	1.15@40°C	1.14@40°C
Funnel Viscosity	s/qt	48	47
Rheology Temp	°C	49	49
R600/R300		54/36	55/37
R200/R100		32/26	33/27
R6/R3		7/4	8/5
PV	cP	18	18
YP	lb/100ft²	18	19
10s/10m/30m Gel	lb/100ft²	6/12/18	6/13/19
API Fluid Loss	cc/30 min	5	5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	8	7.5
Oil/Water	%Vol	0/92	0/92.5
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.3	0.3
Pf/Mf		0.15/1.9	0.15/1.8
Chlorides	mg/l	30000	30000
Hardness Ca	mg/l	220	200
KCl	%	4	4
Excess Sulphite	mg/L	80	100
PHPA	ppb	1.5	1.5

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	2.00
SODIUM BICARBONATE	25 KG BG	1.00
M-I BAR	25 KG BG	75.00
POTASSIUM CHLORIDE	25 KG BG	20.00
GLUTE 25	25 LT CN	1.00
Polyplus Powder	25 KG BG	1.00
POLYPAC UL	25 KG BG	2.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	24
DFE Shaker 2	140/140/110	24
D-Sander	2 x 12"	7
D-Silter	10 x 6"	7

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Dump and clean out possum belly and sand trap. Mud weight observed to be increasing due to barite slugs (3). Prepare new premix in premix tank.

REMARKS

Continue drilling to 1988 meters. ROP decreased, circulate hole clean, pump barite slug and POH for new bit. Hole very tight. Pump up kelly and circulate as required. Three slugs pumped.

TIME DISTR

	Last 24 Hrs
Rig Up/Service	
Drilling	5
Tripping	16
Non-Productive Tim	
Reaming	
Wait on Cement	
Dir Survey	
Condition Hole	3

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	55
Mud Received	0
Left in Hole	0
Formation	0
Tripping	0
Desander	20
Dumped	40
Shakers	10

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.5/ 5.6
KCl	1.4/ 13.4
Low Gravity	5./ 45.4
Bentonite	.7/ 6.1
Drill Solids	3.9/ 35.3
Weight Material	1.1/ 16.1
Chemical Conc	- / 4.
Inert/React	3.1372
Average SG	2.89
Carb/BiCarb (m mole/L)	3./ 4.7

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.585/0.534
kp/ka (lb•s^n/100ft²)	1.000/1.787
Bit Loss (psi / %)	359 / 1
Bit HHP (hhp / HSI)	108 / 1
Bit Jet Vel (m/s)	62
Ann. Vel DP (m/min)	69.58
Ann. Vel DC (m/min)	127.71
Crit Vel DP (m/min)	110
Crit Vel DC (m/min)	145
ECD @ 1007 (sp.gr.)	1.25

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0415 845 672			A$ 1,555.14	A$ 67,389.07

WATER-BASED MUD REPORT No. 20

Date	4/09/2005	**Depth/TVD**	1993 m / 1992 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Hughes GT-09			
Nozzles 3x14 / 1/32"			
Drill Pipe Size	Length		
4.5 in	1796 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	160 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
428.5	
Active Pits	
339.5	
Total Circulating Vol	
768	
In Storage	
29	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	72@97%	72@97%
Flow Rate	436 gal/min	
Bottoms Up	32.7 min	4711 stk
Total Circ Time	74 min	10653 stk
Circulating Pressure	1725 psi	

MUD PROPERTIES

		F/L@23:00	PIT@12:00
Sample From			
Flow Line Temp	°C	48	n/a
Depth/TVD	m	1993/1992	1988/1986
Mud Weight	sp.gr.	1.15@44°C	1.15@40°C
Funnel Viscosity	s/qt	46	50
Rheology Temp	°C	49	49
R600/R300		53/36	55/37
R200/R100		31/26	34/27
R6/R3		7/5	7/5
PV	cP	17	18
YP	lb/100ft²	19	19
10s/10m/30m Gel	lb/100ft²	6/14/19	7/14/20
API Fluid Loss	cc/30 min	4.8	5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	8	8
Oil/Water	%Vol	0/92	0/92
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.3	9.5
Alkal Mud (Pm)		0.25	0.3
Pf/Mf		.1/1.4	0.15/1.9
Chlorides	mg/l	30000	30000
Hardness Ca	mg/l	260	220
KCl	%	4	4
Excess Sulphite	mg/L	100	80
PHPA	ppb	1.5	1.5

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CAUSTIC SODA (DRY)	25 KG DM	1.00
SODIUM BICARBONATE	25 KG BG	1.00
GLUTE 25	25 LT CN	1.00
Polyplus Powder	25 KG BG	1.00
POLYPAC UL	25 KG BG	2.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	140/140/110	12
DFE Shaker 2	140/140/110	12
D-Sander	2 x 12"	6
D-Silter	10 x 6"	6

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Continue taking water from sump for premix additions. Running desander and desilte to try and reduce low gravity solids. Mud properties stable after bit trip.

REMARKS

Continue POH, change bit, RIH to 1067m, break circulation. RIH to 1434m, break circulation. RIH to 1931m, wash and ream to bottom, drill ahead to 1993 meters at midnight.
Trip gas = 78.4 units.

TIME DISTR

	Last 24 Hrs
Rig Up/Service	2
Drilling	5
Tripping	15
Non-Productive Tim	
Reaming	2
Wait on Cement	
Dir Survey	
Condition Hole	

MUD VOL ACCTG (bbl)

Oil Added	0
Water Added	55
Mud Received	0
Left in Hole	0
Formation	0
Tripping	0
Desander	40
Dumped	20
Shakers	10

SOLIDS ANALYSIS (%/lb/bbl)

NaCl	.5/ 5.6
KCl	1.4/ 13.4
Low Gravity	5./ 45.4
Bentonite	.7/ 6.1
Drill Solids	3.9/ 35.3
Weight Material	1.1/ 16.1
Chemical Conc	- / 4.
Inert/React	3.1372
Average SG	2.89
Carb/BiCarb (m mole/L)	2./ 5.

MUD RHEOLOGY & HYDRAULICS

np/na Values	0.558/0.470
kp/ka (lb•s^n/100ft²)	1.184/2.478
Bit Loss (psi / %)	826 / 1
Bit HHP (hhp / HSI)	210 / 1
Bit Jet Vel (m/s)	95
Ann. Vel DP (m/min)	58.57
Ann. Vel DC (m/min)	107.49
Crit Vel DP (m/min)	112
Crit Vel DC (m/min)	142
ECD @ 1993 (sp.gr.)	1.22

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0427 331725	0282 08690		A$ 604.12	A$ 67,993.19

WATER-BASED MUD REPORT No. 21

Date	5/09/2005	**Depth/TVD**	2023 m / 2022 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Drilling

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY

Bit Size 8.5 in Hughes GT-09			
Nozzles 3x14 / 1/32"			
Drill Pipe Size	Length		
4.5 in	1826 m		
Drill Pipe Size	Length		
4.5 in	37 m		
Drill Collar Size	Length		
6.75 in	160 m		

CASING

Surface	
20in @16m (16TVD)	
Intermediate	
9.625in @496m (496TVD)	
Intermediate	
in @2070m (2069TVD)	
Production or Liner	

MUD VOLUME (bbl)

Hole	
435.2	
Active Pits	
360.8	
Total Circulating Vol	
796	
In Storage	
2	

CIRCULATION DATA

Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Pump Size	6 X 8.5in	6 X 8.5in
Pump Cap	3.027 gal/stk	3.027 gal/stk
Pump stk/min	74@97%	74@97%
Flow Rate	448 gal/min	
Bottoms Up	32.3 min	4786 stk
Total Circ Time	74.6 min	11045 stk
Circulating Pressure	1760 psi	

MUD PROPERTIES

		F/L@23:00	F/L@12:00
Sample From			
Flow Line Temp	°C	53	51
Depth/TVD	m	2022/2021	2009/2008
Mud Weight	sp.gr.	1.14@47°C	1.15@45°C
Funnel Viscosity	s/qt	47	46
Rheology Temp	°C	49	49
R600/R300		54/37	53/36
R200/R100		31/25	32/24
R6/R3		7/5	6/4
PV	cP	17	17
YP	lb/100ft²	20	19
10s/10m/30m Gel	lb/100ft²	4/8/15	4/9/16
API Fluid Loss	cc/30 min	4.5	4.6
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	7.5	8
Oil/Water	%Vol	0/92.5	0/92
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.5	9.3
Alkal Mud (Pm)		0.35	0.25
Pf/Mf		0.2/2.2	0.15/1.8
Chlorides	mg/l	31000	30000
Hardness Ca	mg/l	200	240
KCl	%	4	4
Excess Sulphite	mg/L	100	80
PHPA	ppb	1.6	1.5

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CAUSTIC SODA (DRY)	25 KG DM	1.00
SODIUM BICARBONATE	25 KG BG	5.00
Trugel 13A	25 KG BG	1.00
POTASSIUM CHLORIDE	25 KG BG	10.00
Polyplus Powder	25 KG BG	4.00
DUOTEC	25 KG BG	2.00
POLYPAC UL	25 KG BG	8.00
OS-1	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	3 x 210	24
DFE Shaker 2	2 x 210. 1X175	24
D-Sander	2 x 12"	22
D-Silter	10 x 6"	22

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Lost 25 bbls mud at shakers due to power failure. Due to slow ROP, fine (210 mesh) screens could be installed on the shakers. This resulted in the mud weight being reduced from 1.15 to 1.14 sg.
Make up water was sucked from the sump, reclaiming polymers and salt.
Dumped and cleaned out sand trap while making survey.

REMARKS

Continue drilling to 2023 meters.
Survey at 2005 meters = 5.25 degrees.

TIME DISTR	Last 24 Hrs
Rig Up/Service	1
Drilling	22
Tripping	
Non-Productive Tim	
Dir Survey	1
Wait on Cement	
Dir Survey	
Condition Hole	

MUD VOL ACCTG	(bbl)
Oil Added	0
Water Added	178
Mud Received	0
Left in Hole	0
Formation	0
Tripping	95
Desander	0
Dumped	60
Shakers	25

SOLIDS ANALYSIS (%/lb/bbl)	
NaCl	.5/ 6.2
KCl	1.5/ 13.5
Low Gravity	4.6/ 41.6
Bentonite	.7/ 6.5
Drill Solids	3.4/ 31.1
Weight Material	.9/ 14.
Chemical Conc	- / 4.
Inert/React	2.7638
Average SG	2.87
Carb/BiCarb (m mole/L)	4./ 6.3

MUD RHEOLOGY & HYDRAULICS	
np/na Values	0.545/0.459
kp/ka (lb•s^n/100ft²)	1.316/2.523
Bit Loss (psi / %)	865 / 1
Bit HHP (hhp / HSI)	226 / 1
Bit Jet Vel (m/s)	97
Ann. Vel DP (m/min)	60.18
Ann. Vel DC (m/min)	110.45
Crit Vel DP (m/min)	110
Crit Vel DC (m/min)	138
ECD @ 2023 (sp.gr.)	1.21

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0427 331725	0282 08690		A$ 2,487.21	A$ 70,480.40

WATER-BASED MUD REPORT No. 22

Date	6/09/2005	**Depth/TVD**	2070 m / 2069 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Wiper trip

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in Hughes GT-09		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 3x14 / 1/32"		20in @16m (16TVD)	445.7	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	3.027 gal/stk	3.027 gal/stk
4.5 in	1873 m	9.625in @496m (496TVD)	350.3	Pump stk/min	72@97%	72@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	436 gal/min	
4.5 in	37 m	in @2070m (2069TVD)	796	Bottoms Up	34 min	4900 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	76.7 min	11042 stk
6.75 in	160 m		52	Circulating Pressure	1800 psi	

MUD PROPERTIES

Sample From		F/L@21:30	F/L@12:00
Flow Line Temp	°C	53	52
Depth/TVD	m	2070/2069	2053/2052
Mud Weight	sp.gr.	1.14	1.15
Funnel Viscosity	s/qt	45	44
Rheology Temp	°C	49	49
R600/R300		50/35	49/34
R200/R100		30/26	29/24
R6/R3		6/4	5/4
PV	cP	15	15
YP	lb/100ft²	20	19
10s/10m/30m Gel	lb/100ft²	3/7/12	3/6/11
API Fluid Loss	cc/30 min	4.4	4.5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	7.5	8
Oil/Water	%Vol	/92.5	/92
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.35	0.35
Pf/Mf		0.2/2.4	0.2/2.3
Chlorides	mg/l	32000	31000
Hardness Ca	mg/l	220	200
KCl	%	4	4
Excess Sulphite	mg/L	100	80
PHPA	ppb	1.5	1.5

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
SODA ASH	25 KG BG	3.00
CAUSTIC SODA (DRY)	25 KG DM	1.00
M-I BAR	25 KG BG	30.00
POTASSIUM CHLORIDE	25 KG BG	30.00
GLUTE 25	25 LT CN	1.00
Polyplus Powder	25 KG BG	3.00
DUOTEC	25 KG BG	1.00
POLYPAC UL	25 KG BG	6.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	3 x 210	22
DFE Shaker 2	2 x 210. 1X175	22
D-Sander	2 x 12"	10
D-Silter	10 x 6"	20

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

Continue add premix to control mud weight and low gravity solids build up. Taking water from sump for premixes. Add biocide to mud before tripping to prevent bacterial degradation. Desilter working well with discharge underflow of 10.7 ppg. Desander less efficient, running intermittently. Lost 20 bbls cleaning sandtrap and possum belly.

REMARKS

Continue drilling to TD at 2070 meters. Circulate hole clean, pump barite pill. POH for wiper trip. Make 10 stand wiper trip, RIH to circulate and condition mud for wireline logs.
Survey at 2033 meters = 3 degrees.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	1	Oil Added	0	NaCl	.6/ 6.7	np/na Values	0.515/0.534
Drilling	19	Water Added	145	KCl	1.5/ 13.5	kp/ka (lb•s^n/100ft²)	1.509/1.787
Tripping	2	Mud Received	0	Low Gravity	4.5/ 41.4	Bit Loss (psi / %)	819 / 1
Non-Productive Tim		Left in Hole	0	Bentonite	.7/ 6.6	Bit HHP (hhp / HSI)	208 / 1
Dir Survey	1	Formation	0	Drill Solids	3.4/ 30.8	Bit Jet Vel (m/s)	95
Wait on Cement		Tripping	0	Weight Material	.9/ 13.7	Ann. Vel DP (m/min)	58.57
Dir Survey		Desander	70	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	107.49
Condition Hole	1	Dumped	20	Inert/React	2.7393	Crit Vel DP (m/min)	110
		Shakers	10	Average SG	2.87	Crit Vel DC (m/min)	146
				Carb/BiCarb (m mole/L)	4./ 6.3	ECD @ 2070 (sp.gr.)	1.21

M-I ENGR / PHONE		RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer	0427 331725	0282 08690		A$ 2,425.65	A$ 72,906.05

WATER-BASED MUD REPORT No. 23

Date	7/09/2005	**Depth/TVD**	2070 m / 2069 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	Logging

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 1/32"		20in @16m (16TVD)	462.9	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	2070 m	9.625in @496m (496TVD)	319.1	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
4.5 in	m	in @2070m (2069TVD)	782	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
6.75 in	m		52	Circulating Pressure		

MUD PROPERTIES

Sample From		PIT@23:00	PIT@12:00
Flow Line Temp	°C	n/a	n/a
Depth/TVD	m	2070/2069	2070/2069
Mud Weight	sp.gr.	1.14@40°C	1.14@40°C
Funnel Viscosity	s/qt	46	47
Rheology Temp	°C	49	49
R600/R300		54/37	56/38
R200/R100		31/24	31/25
R6/R3		7/5	7/5
PV	cP	17	18
YP	lb/100ft²	20	20
10s/10m/30m Gel	lb/100ft²	3/7/12	3/8/13
API Fluid Loss	cc/30 min	4.5	4.5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	7.5	7.5
Oil/Water	%Vol	0/92.5	0/92.5
Sand	%Vol	0.3	0.3
MBT	lb/bbl	10	10
pH		9.5	9.5
Alkal Mud (Pm)		0.35	0.35
Pf/Mf		0.2/2.3	0.2/2.3
Chlorides	mg/l	31000	31000
Hardness Ca	mg/l	200	200
KCl	%	4	4
Excess Sulphite	mg/L	100	100
PHPA	ppb	1.6	1.6

PRODUCTS USED LAST 24 HRS

Products	Size	Amt
M-I BAR	25 KG BG	80.00
Trugel 13A	25 KG BG	56.00
POLYPAC UL	25 KG BG	1.00

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	3 x 210	0
DFE Shaker 2	2 x 210. 1X175	0
D-Sander	2 x 12"	0
D-Silter	10 x 6"	0

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

None required.
Barite used for slugs.
Trugel is for product used in 12.25" hole but not charged off.
Pipe Lax was delivered in initial order but not entered in inventory.
Dump and clean sand trap.

REMARKS

Continue POH, rig up and run wireline logs.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.5/ 6.2	np/na Values	0.545/0.447
Drilling		Water Added	0	KCl	1.5/ 13.5	kp/ka (lb•s^n/100ft²)	1.316/2.572
Tripping		Mud Received	0	Low Gravity	4.6/ 41.6	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Left in Hole	0	Bentonite	.7/ 6.5	Bit HHP (hhp / HSI)	/ 1
Dir Survey		Formation	0	Drill Solids	3.4/ 31.1	Bit Jet Vel (m/s)	
Wait on Cement		Tripping	0	Weight Material	.9/ 14.	Ann. Vel DP (m/min)	
Dir Survey		Desander	0	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	
Condition Hole		Dumped	20	Inert/React	2.7638	Crit Vel DP (m/min)	108
		Shakers	0	Average SG	2.87	Crit Vel DC (m/min)	108
				Carb/BiCarb (m mole/L)	4./ 6.3	ECD @ 2070 (sp.gr.)	1.14

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer 0427 331725	0282 08690		A$ 1,225.90	A$ 74,131.95

WATER-BASED MUD REPORT No. 24

Date	8/09/2005	**Depth/TVD**	2070 m / 2069 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	P and A

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 1/32"		20in @16m (16TVD)	499.7	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	m	9.625in @496m (496TVD)	282.3	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
4.5 in	m	in @2070m (2069TVD)	282.3	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
6.75 in	m		52	Circulating Pressure		

MUD PROPERTIES

Sample From		PIT@09:00	
Flow Line Temp	°C	n/a	
Depth/TVD	m	2070/2069	
Mud Weight	sp.gr.	1.14@37°C	
Funnel Viscosity	s/qt	47	
Rheology Temp	°C	49	
R600/R300		58/39	
R200/R100		31/26	
R6/R3		7/5	
PV	cP	19	
YP	lb/100ft²	20	
10s/10m/30m Gel	lb/100ft²	3/7/13	
API Fluid Loss	cc/30 min	4.5	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	7.5	
Oil/Water	%Vol	0/92.5	
Sand	%Vol	0.3	
MBT	lb/bbl	10	
pH		9.5	
Alkal Mud (Pm)		0.35	
Pf/Mf		0.2/2.3	
Chlorides	mg/l	31000	
Hardness Ca	mg/l	200	
KCl	%	4	
Excess Sulphite	mg/L	80	
PHPA	ppb	1.6	

PRODUCTS USED LAST 24 HRS

Products	Size	Amt

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	3 x 210	0
DFE Shaker 2	2 x 210. 1X175	0
D-Sander	2 x 12"	0
D-Silter	10 x 6"	0

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

None required.

REMARKS

Complete logging, RIH with DP and start P and A program.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.5/ 6.2	np/na Values	
Drilling		Water Added	0	KCl	1.5/ 13.5	kp/ka (lb•s^n/100ft²)	
Tripping		Mud Received	0	Low Gravity	4.6/ 41.6	Bit Loss (psi / %)	
Non-Productive Tim		Left in Hole	0	Bentonite	.7/ 6.5	Bit HHP (hhp / HSI)	
Dir Survey		Formation	0	Drill Solids	3.4/ 31.1	Bit Jet Vel (m/s)	
Wait on Cement		Tripping	0	Weight Material	.9/ 14.	Ann. Vel DP (m/min)	
Dir Survey		Desander	0	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	
Condition Hole		Dumped	0	Inert/React	2.7638	Crit Vel DP (m/min)	
		Shakers	0	Average SG	2.87	Crit Vel DC (m/min)	
				Carb/BiCarb (m mole/L)	4./ 6.3		

M-I ENGR / PHONE		RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer	0427 331725	0282 08690		A$ 0.00	A$ 74,131.95

WATER-BASED MUD REPORT No. 25

Date	9/09/2005	**Depth/TVD**	2070 m / 2069 m
Spud Date	16/08/2005	**Mud Type**	KCl/PHPA/Polymer
Water Depth		**Activity**	P and A

Operator : Origin Energy
Report For : Chris Dann / Quinton Cahill
Well Name : Peterborough -1/1ST1
Contractor : Century Resources
Report For : Wayne Crosthwaite

Field/Area : Onshore Otway Basin
Description : Exploration
Location : Victoria
M-I Well No. : 26104

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 8.5 in		Surface	Hole	Pump Make	NATIONAL 8P-80	NATIONAL 8P-80
Nozzles 1/32"		20in @16m (16TVD)	462	Pump Size	6 X 8.5in	6 X 8.5in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
4.5 in	2033 m	9.625in @496m (496TVD)	320	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
4.5 in	37 m	in @2070m (2069TVD)	782	Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
6.75 in	m		52	Circulating Pressure		

MUD PROPERTIES

Sample From		PIT@03:00	
Flow Line Temp	°C	37	
Depth/TVD	m	2070/2069	
Mud Weight	sp.gr.	1.14@37°C	
Funnel Viscosity	s/qt	48	
Rheology Temp	°C	49	
R600/R300		56/38	
R200/R100		31/25	
R6/R3		7/5	
PV	cP	18	
YP	lb/100ft²	20	
10s/10m/30m Gel	lb/100ft²	3/7/11	
API Fluid Loss	cc/30 min	4.5	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	
Solids	%Vol	7.5	
Oil/Water	%Vol	0/92.5	
Sand	%Vol	0.3	
MBT	lb/bbl	10	
pH		9.5	
Alkal Mud (Pm)		0.35	
Pf/Mf		0.2/2.2	
Chlorides	mg/l	31000	
Hardness Ca	mg/l	220	
KCl	%	4	
Excess Sulphite	mg/L	80	
PHPA	ppb	1.5	

PRODUCTS USED LAST 24 HRS

Products	Size	Amt

SOLIDS EQUIP	Size	Hr
DFE Shaker 1	3 x 210	0
DFE Shaker 2	2 x 210. 1X175	0
D-Sander	2 x 12"	0
D-Silter	10 x 6"	0

MUD PROPERTY SPECIFICATIONS

Weight	1.08-1.13
Viscosity	45-55
Filtrate	<7

REMARKS AND TREATMENT

REMARKS

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	.5/ 6.2	np/na Values	0.559/0.459
Drilling		Water Added	0	KCl	1.5/ 13.5	kp/ka (lb•s^n/100ft²)	1.238/2.523
Tripping		Mud Received	0	Low Gravity	4.6/ 41.6	Bit Loss (psi / %)	/ 1
Non-Productive Tim		Left in Hole	0	Bentonite	.7/ 6.5	Bit HHP (hhp / HSI)	/ 1
Dir Survey		Formation	0	Drill Solids	3.4/ 31.1	Bit Jet Vel (m/s)	
Wait on Cement		Tripping	0	Weight Material	.9/ 14.	Ann. Vel DP (m/min)	
Dir Survey		Desander	0	Chemical Conc	- / 4.	Ann. Vel DC (m/min)	
Condition Hole		Dumped	0	Inert/React	2.7638	Crit Vel DP (m/min)	110
		Shakers	0	Average SG	2.87	Crit Vel DC (m/min)	110
				Carb/BiCarb (m mole/L)	4./ 6.3	ECD @ 2070 (sp.gr.)	1.14

M-I ENGR / PHONE		RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Peter Dwyer	0427 331725	0282 08690		A$ 0.00	A$ 74,131.95

APPENDIX 13

COMPOSITE LOG

Peterborough 1/ST1
Composite Well Log

Well Location

Well Data Card

Well Name:	Peterborough 1/ST1
Operator:	Origin Energy
Region:	SNS Sub-Basin
Location:	Latitude: 52°21'21.18"N Longitude: 1°47'31.34"E Eastings: 611 477.00 mE Zone: 31N / 31 E
Elevations:	KB: 16.00 metres RT: 16.00 metres
Ionic attributes:	Density: 1.142 / 65 LSE Resistivity: 0.0 ohm.m
Core Samples:	14 Rib 2008 2008 Hours
Base Archive Diff:	34 Rib 2008 2008 Hours
Base Archive:	14 Rib 2008 2008 Hours
Petrophysical:	14 Rib 2008 2008 Hours
Base Petrophysical:	14 Rib 2008 2008 Hours
Base Hq Datasheet:	10 Rib 2008 2008 Hours
Type Structure:	None well dip (Above)
Status:	Plugged & Abandoned
Rig:	Century Rig 7

Total Depths:	Driller: 2276 mts Logger: 2276 mts
Plugs:	1 @ 1997 mts 1 @ 1782 mts 1 @ 1400 mts 1 @ 1200 mts 1 @ 1000 mts
Casing:	Conductor: 16 mts Surface: 1000 mts
Casing:	Conductor: Grout Surface: Grout
Jet Surface:	20" set into: 400 mts

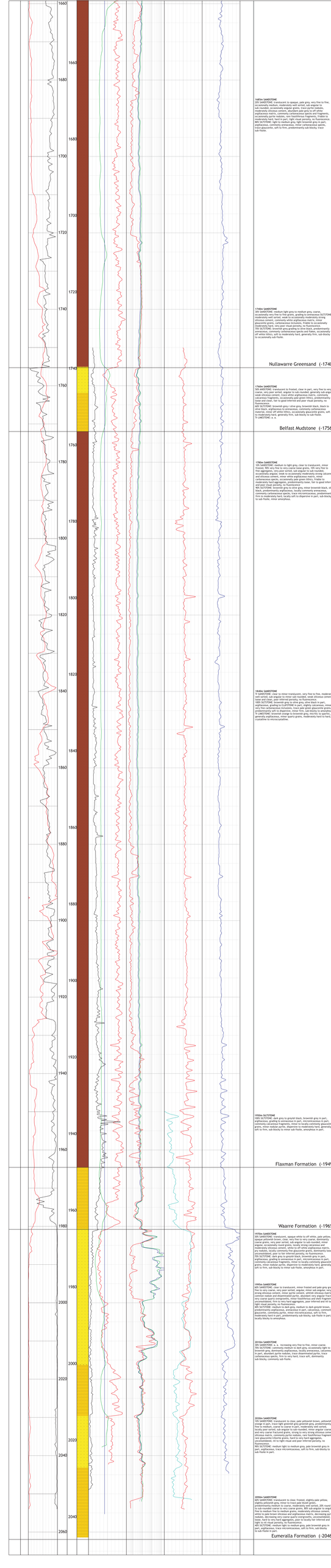
Wireline Log Runs

Run	Date	Hole Size (in)	Max Temp (°C)
Run 1 - Triple Combo with Sonic, VSP, Cores and Checkshots	14 Oct 2008	12.25	70.1
Run 2 - Triple Combo with Sonic, VSP, Cores and Checkshots	15 Oct 2008	8.5	70.1

Formation Tops

Age	Formation	Depth (mRT)	Elevation	Formation Attr
1. Holocene	Undifferentiated Quaternary	16.0	0.0	
2. Pleistocene	Undifferentiated Quaternary	16.0	0.0	
3. Pliocene	Undifferentiated Tertiary	16.0	0.0	
4. Miocene	Undifferentiated Tertiary	16.0	0.0	
5. Oligocene	Undifferentiated Tertiary	16.0	0.0	
6. Eocene	Undifferentiated Tertiary	16.0	0.0	
7. Paleocene	Undifferentiated Tertiary	16.0	0.0	
8. Cretaceous	Undifferentiated Cretaceous	16.0	0.0	
9. Cretaceous	Chalk Group	16.0	0.0	
10. Cretaceous	Hunstanton Formation	16.0	0.0	
11. Cretaceous	Carstone Member	16.0	0.0	
12. Cretaceous	Red Chalk Member	16.0	0.0	
13. Cretaceous	Hunstanton Formation	16.0	0.0	
14. Cretaceous	Bacton Group	16.0	0.0	
15. Cretaceous	Undifferentiated Cretaceous	16.0	0.0	
16. Cretaceous	Undifferentiated Cretaceous	16.0	0.0	
17. Cretaceous	Undifferentiated Cretaceous	16.0	0.0	

Pender Mudstone ~ 4130
Pebble Point Formation ~ 4325
Matsaura Shale ~ 4446
Pearaine Formation ~ 4775
Skull Creek Mudstone ~ 5440



1485m SANDSTONE
20% SANDSTONE: translucent to opaque, pale grey, very fine to fine, predominantly very fine, moderately well sorted, sub-angular to sub-rounded, occasionally angular grains, trace pyrite nodules, moderately siliceous cement, abundant pale grey to off white argillaceous matrix, common carbonaceous specks and fragments, occasionally pyrite nodules, rare fossiliferous fragment, friable to occasionally moderately hard, very poor visual porosity, no fluorescence
80% SILTSTONE: light to medium grey, locally dark grey, commonly argillaceous, commonly arenaceous, minor carbonaceous specks, trace glauconite, soft to firm, predominantly sub-blocky, trace sub-fissile.

1740m SANDSTONE
100% SANDSTONE: medium light grey to medium grey, coarse, occasionally very fine to fine grains, grading to arenaceous SILTSTONE, moderately well sorted, weak to occasionally moderately strong siliceous cement, common argillaceous matrix, commonly glauconite grains, carbonaceous inclusions, friable to occasionally moderately hard, very poor visual porosity, no fluorescence.
1760m SANDSTONE
100% ANHYDRITE: translucent to frosted, clear in part, very fine to very coarse, very poor sorted, angular to sub-rounded, generally sub-angular, trace argillaceous matrix, trace carbonaceous specks, trace calcareous fragments, occasionally pale green lithics, predominantly loose and clean, fair to good inferred and poor visual porosity, no fluorescence.

1780m SANDSTONE
100% SANDSTONE: translucent to light grey, clear to translucent, minor frosted, 90% very fine to very coarse loose grains, 10% very fine to fine aggregates, very poor sorted, sub-angular to sub-rounded, predominantly angular, trace argillaceous matrix, trace calcareous and siliceous cement, minor white argillaceous matrix, minor carbonaceous specks, occasionally pale green lithics, friable to occasionally moderately hard, predominantly loose, fair to good inferred and poor visual porosity, no fluorescence.
1840m SANDSTONE
100% SILTSTONE: brownish grey to olive grey, minor brownish black, olive black in part, argillaceous to arenaceous, commonly carbonaceous, commonly carbonaceous specks, trace micronlaceous, predominantly firm to moderately hard, locally soft to dispersive in part, sub-blocky to sub-fissile, minor amorphous.

1930m SILTSTONE
100% SILTSTONE: dark grey to grey/ish black, brownish grey in part, commonly argillaceous, arenaceous in part, micronlaceous in part, commonly calcareous fragments, minor to locally commonly glauconite grains, minor nodular pyrite, dispersive to moderately hard, generally soft to firm, sub-blocky to minor sub-fissile, amorphous in part.

1970m SANDSTONE
30% SANDSTONE: translucent, opaque white to off white, pale yellow, pale yellowish brown in part, clear in part, predominantly very fine to coarse grains, very poor sorted, sub-angular to sub-rounded, minor angular, occasionally round grains, locally strong calcareous and siliceous cement, minor argillaceous matrix, trace carbonaceous matrix, soy nodules, locally commonly fine glauconite grains, dominantly loose, unconsolidated, poor to fair inferred porosity, no fluorescence.
70% SILTSTONE: dark grey to grey/ish black, brownish grey in part, argillaceous, grading to arenaceous in part, micronlaceous in part, commonly calcareous fragments, minor to locally commonly glauconite grains, minor nodular pyrite, dispersive to moderately hard, generally soft to firm, sub-blocky to minor sub-fissile, amorphous in part.

1995m SANDSTONE
80% SANDSTONE: clear to translucent, minor frosted and pale grey grains, very fine to coarse grains, very poor sorted, sub-angular to sub-rounded, strong siliceous cement, minor pyrite cement, whitish siliceous matrix, common nodular and disseminated pyrite, abundant very angular fracture fragments, occasionally glauconite grains, predominantly loose, minor unconsolidated, firm to very hard aggregates, poor inferred and nil to fair visual porosity, no fluorescence.
20% SILTSTONE: dark grey to grey/ish, medium to dark grey/ish brown, predominantly argillaceous, arenaceous in part, calcareous, commonly glauconite, commonly pyrite, minor micronlaceous, soft to firm, commonly dispersive, predominantly sub-blocky, sub-fissile in part, locally blocky to amorphous.

2010m SANDSTONE
60% SANDSTONE: a. a. Increasing very fine to fine, minor coarse.
70% SILTSTONE: commonly medium to dark grey, occasionally light to medium grey, commonly argillaceous, trace micronlaceous, commonly in part, abundant pyrite nodules, trace disseminated pyrite, trace carbonaceous specks, firm to very hard, trace soft, dominantly sub-blocky, commonly sub-fissile.

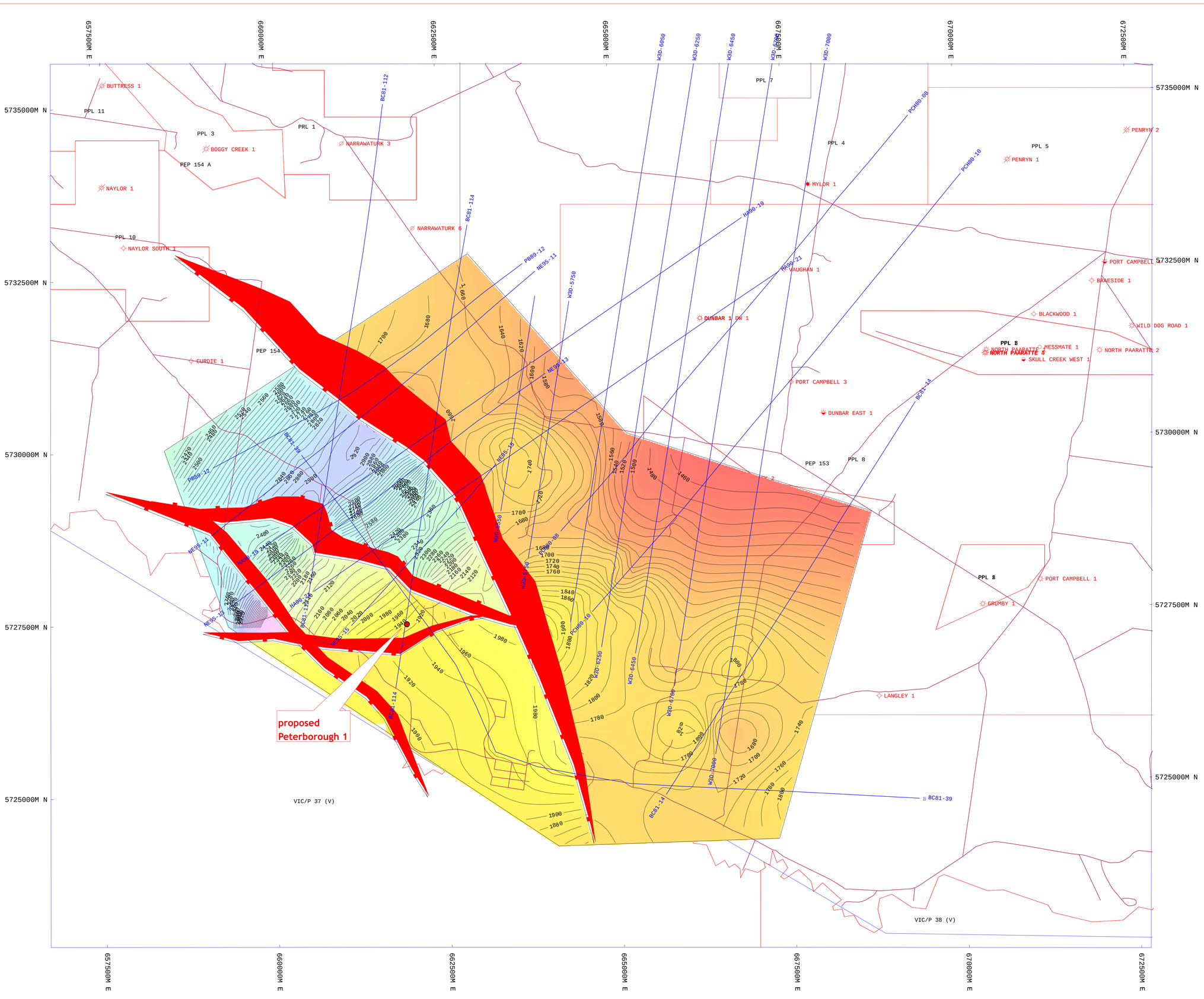
2030m SANDSTONE
50% SANDSTONE: translucent to clear, pale yellowish brown, yellowish orange in part, trace light greenish grey greenish grey, predominantly very fine to coarse grains, very poor sorted, sub-angular to sub-rounded, locally poor sorted, sub-angular to sub-rounded, minor angular coarse and very coarse fractured grains, strong to very strong siliceous cement, minor argillaceous matrix, common nodular and disseminated pyrite, fragments, rare glauconite/chlorite grains, hard to very hard aggregates, unconsolidated, nil to tight visual and poor inferred porosity, no fluorescence.
40% SILTSTONE: medium light to medium grey, pale brownish grey in part, argillaceous, trace micronlaceous, soft to firm, sub-blocky to sub-fissile in part.

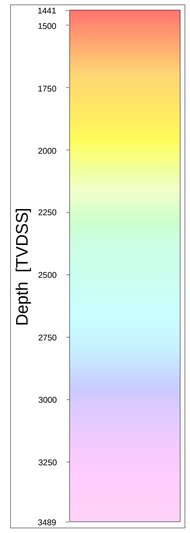
2050m SANDSTONE
60% SANDSTONE: translucent to clear, frosted, slightly pale yellow, predominantly very fine to fine, minor medium grains, predominantly medium to coarse, moderately well sorted, 20% round to sub-rounded coarse to very coarse grains, 80% sub-angular to angular grains, trace to locally abundant argillaceous matrix, commonly pale yellow to pale brown siliceous and argillaceous matrix, decreasing pyrite nodules, decreasing very coarse quartz overgrowths, unconsolidated, nil to tight visual and poor to locally fair inferred porosity, locally fair inferred and tight to nil visual porosity, no fluorescence.
40% SILTSTONE: medium light to medium grey, pale brownish grey in part, argillaceous, trace micronlaceous, soft to firm, sub-blocky to sub-fissile in part.

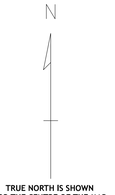
APPENDIX 14

DEPTH STRUCTURE

Peterborough Prospect
Waarre Formation
Depth Structure Map







1:25000

0 1 2

KILOMETRES

Origin energy

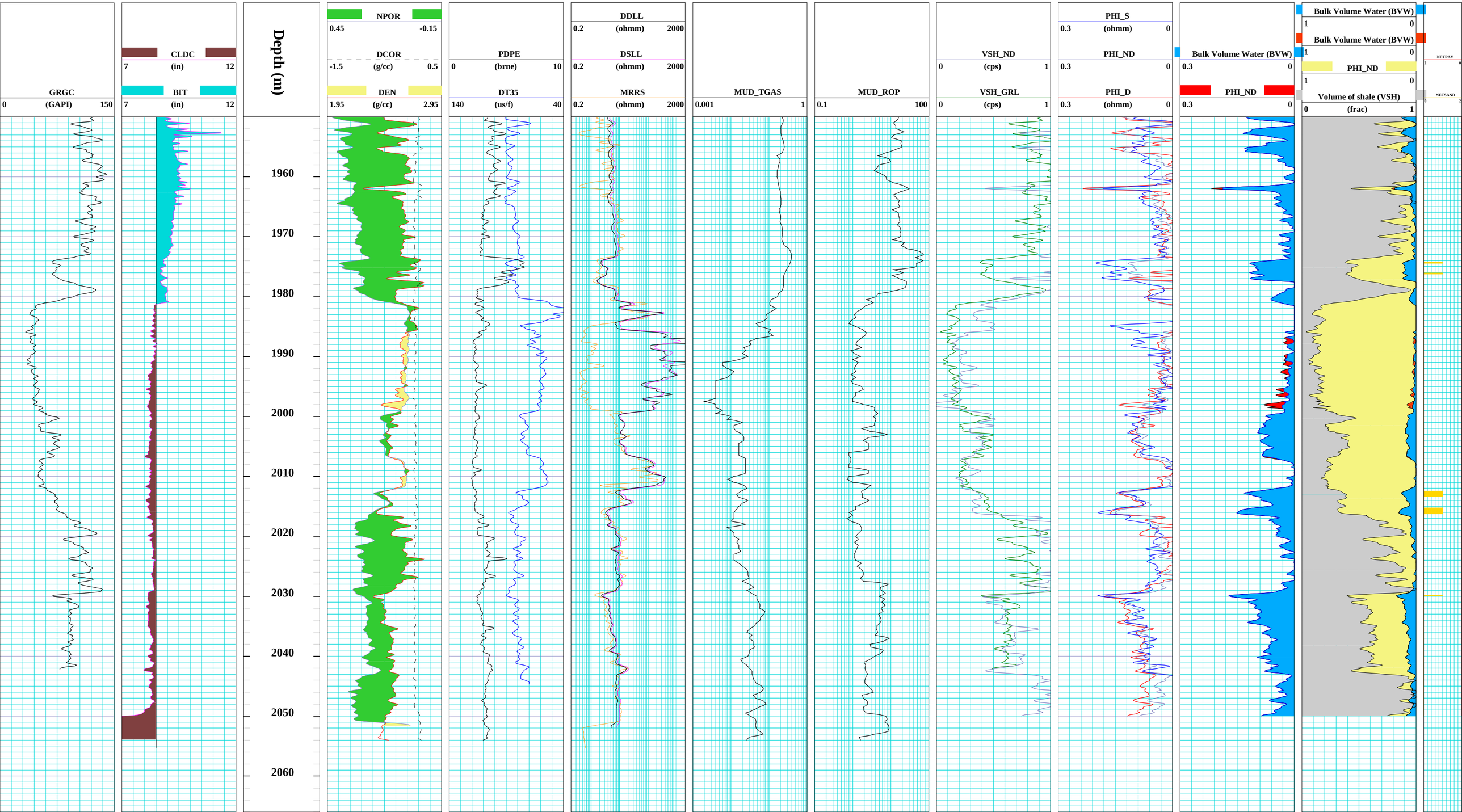
Peterborough 1

Depth Structural Map
Top Waarre Formation

Author: Kay Bierbrauer	Datum:	Encl No:
Date: 17/12/04	Contour Interval: 20m	1
Map File: Peterborough_Depth		
Map Sheet: PETERBOROUGH-1		

APPENDIX 15

PETROPHYSICAL PLOT

PETERBOROUGH - 1ST1

Permit: OTWAY BASIN	**RTE:** 14.9 m	**TD (logs):** 2066.0 m
Latitude :	**Bit Size:** 8.5 in	**BHT:** 74.0 degC
Longtitude :	**Rm:** 0.300 ohmm at: 22.2 degC	**Vertical Scale** 1:500 m
Easting :	**Rmf:** 0.530 ohmm at: 22.3 degC	**Interpreter :** Andy Hall
Northing :	**Rmc:** 0.120 ohmm at: 22.1 degC	
Datum :	**Plot created on:** 8/Sep/05 **at:** 13:35:48