

Schlumberger

Company: **Essential Petroleum Resources Limited**

Well: Findra-1

Field: PEP 159

Rig: **Hunt Rig #2**
Country: **Australia**

Rig:	Hunt Rig #2
Field:	PEP 159
Location:	Otway Basin PEP 159
Well:	Findra-1
Company:	Essential Petroleum Resources Ltd.

HALS-BHC-PEX-HNGS					
HNGS Print					
Scale 1:500					
State: Victoria	Max. Well Deviation 2 deg	LOCATION		Elev.:	K.B. 60.95 m
		Otway Basin PEP 159		G.L. 57 m	
		602241.4 E		D.F. 60.95 m	
		5768896.5 N			
		Permanent Datum:	<u>MEAN SEA LEVEL</u>	Elev.:	<u>0 m</u>
		Log Measured From:	<u>DRILL FLOOR</u>	61.0 m	above Perm. Datum
		Drilling Measured From:	<u>DRILL FLOOR</u>		

Longitude	Latitude
142° 10' 04.90" E	38° 13' 19.58" S

[illegible]

Logging Date	30-Jun-2004				
Run Number	1				
Depth Driller	889 m				
Schlumberger Depth	879 m				
Bottom Log Interval	876.71 m				
Top Log Interval	150 m				
Casing Driller Size @ Depth	9.625 in @ 150 m			@	
Casing Schlumberger	150 m				
Bit Size	8.500 in				
Type Fluid In Hole	KCl-Polymer-PHPA				
Density	1.1 g/cm3		39 s		
Fluid Loss	6.8 cm3		8.8		
Source Of Sample	PIT				
RM @ Measured Temperature	0.254 ohm.m		@ 12 degC	@	
RMF @ Measured Temperature	0.205 ohm.m		@ 12 degC	@	
RMC @ Measured Temperature	0.281 ohm.m		@ 12 degC	@	
Source RMF	RMC		PRESS		
RM @ MRT	RMF @ MRT		0.123 @ 48 0.099 @ 48	@	@
Maximum Recorded Temperatures	48 degC		48	48	
Circulation Stopped	30-Jun-2004		Time	6:00	
Logger On Bottom	30-Jun-2004		Time	17:50	
Unit Number	Location		3170	QEA	
Recorded By	Herdy Nizar / G. Jonsson				
Witnessed By	G. Wakelin-Kling				

Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth		@		
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density	Viscosity			
Fluid Loss	PH			
Source Of Sample				
RM @ Measured Temperature		@		
RMF @ Measured Temperature		@		
RMC @ Measured Temperature		@		
Source RMF	RMC			
RM @ MRT	RMF @ MRT	@	@	@
Maximum Recorded Temperatures				
Circulation Stopped	Time			
Logger On Bottom	Time			
Unit Number	Location			
Recorded By				
Witnessed By				

Date Created: 30-JUN-2004 20:20:16

Logging Cable

Type:	7-42V-XS
Serial Number:	78197
Length:	4500.07 M
Conveyance Method:	Wireline
Rig Type:	LAND

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	60.39 M
Rig Up Length At Bottom:	60.32 M
Rig Up Length Correction:	0.07 M
Stretch Correction:	0.20 M
Tool Zero Check At Surface:	0.50 M

1. This is first run in hole
2. Schlumberger depth control procedures were followed
3. IDW is the primary depth control
4. Z chart is the secondary depth control
- 5.
- 6.

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES2
OS1:
OS2:
OS3:
OS4:
OS5:

Density corrected for bit size and mud weight

Maximum recorded temperature of 48 degC from thermometers in LEH-QT					
Caliper check in casing reads 8.83 from ASCII and 8.834 expected.					
Additional mud information:					
Chloride: 19000 mg/L, Calcium: 40mg/L, Potassium: 21,076 mg/L, KCL: 3.9%					
Barite present in mud					

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

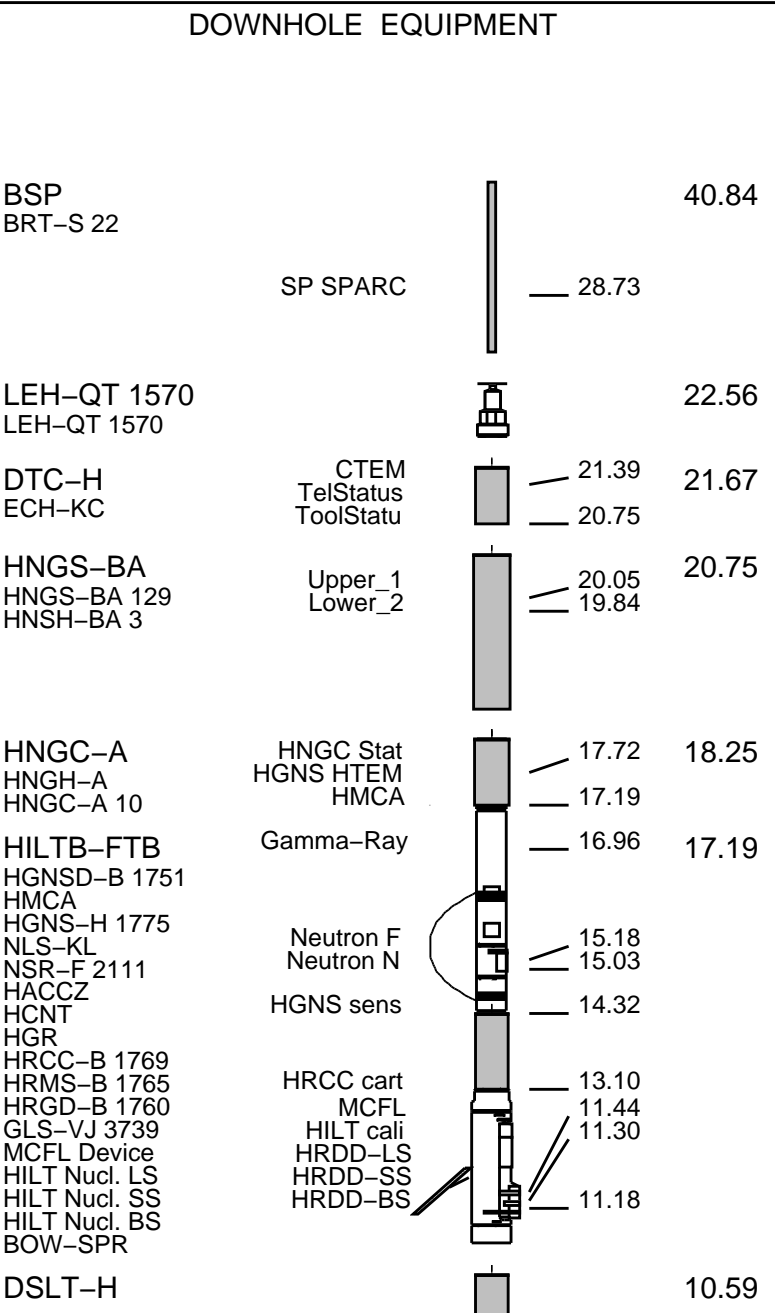
RUN 1

RUN 2

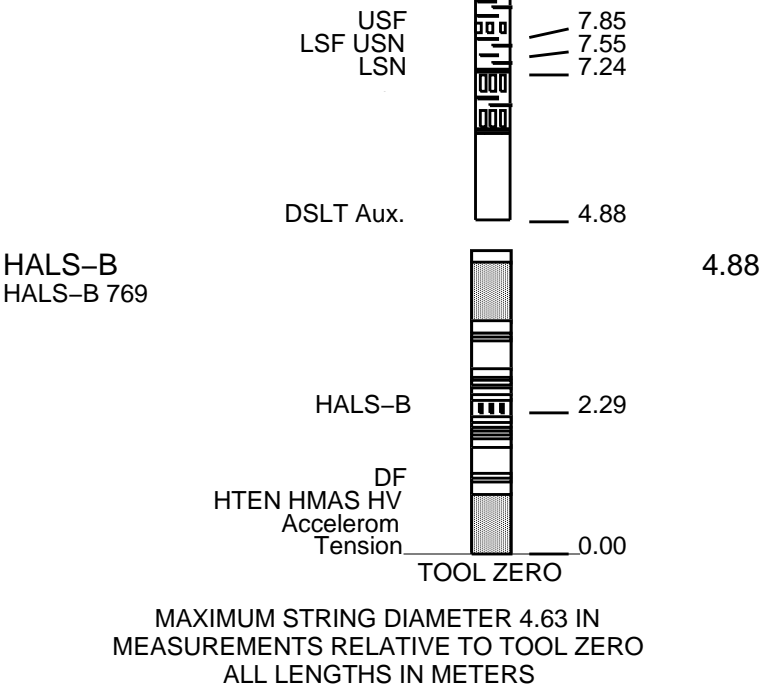
SURFACE EQUIPMENT

LCM-AA 2747
GSR-U/Y
NCT-B
CNB-AB

NCS-VB
GSR-U
WITM (DTS)-A



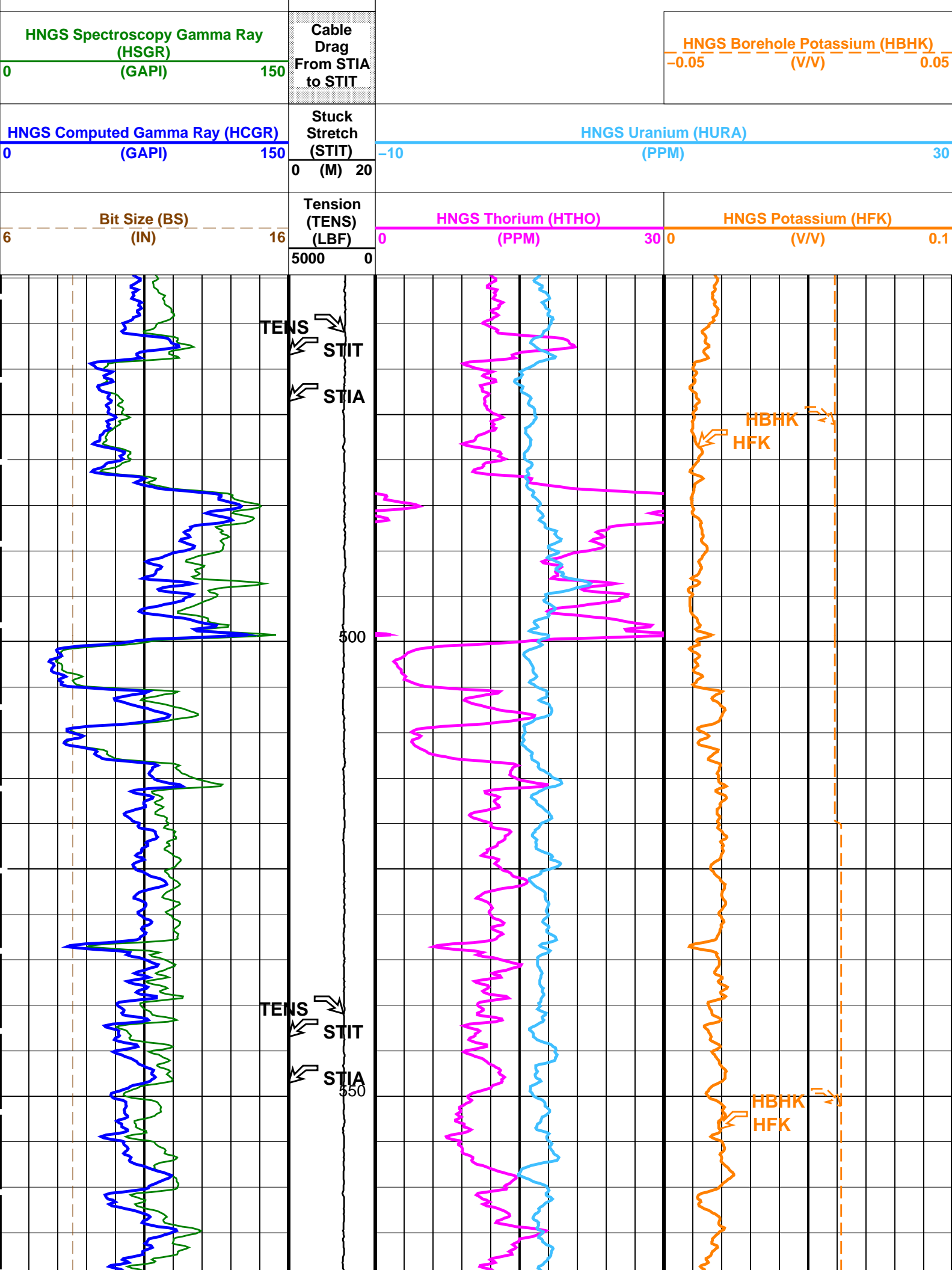
DSL-C-HA 8223
ECH-KH 8273
SLS-C 299

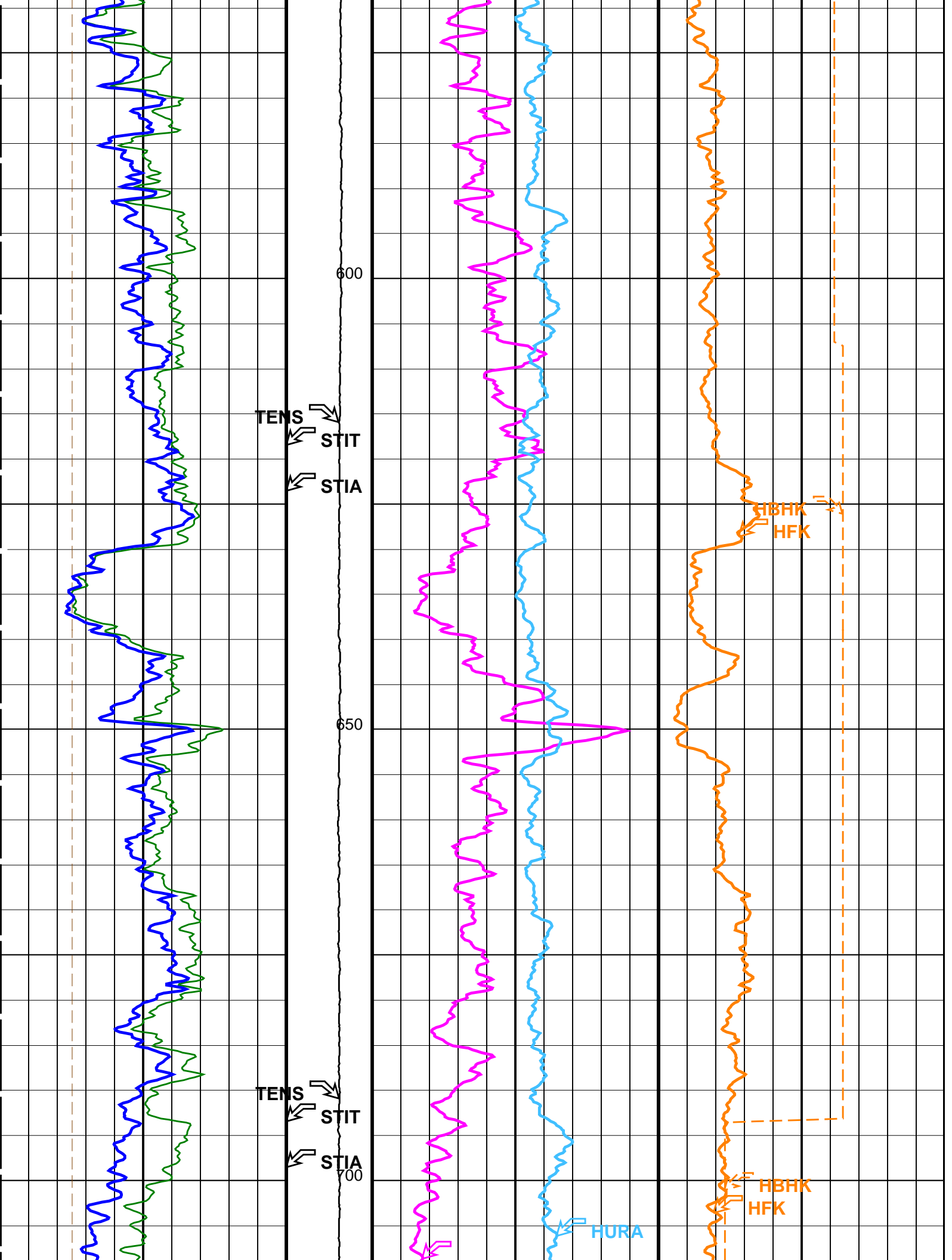


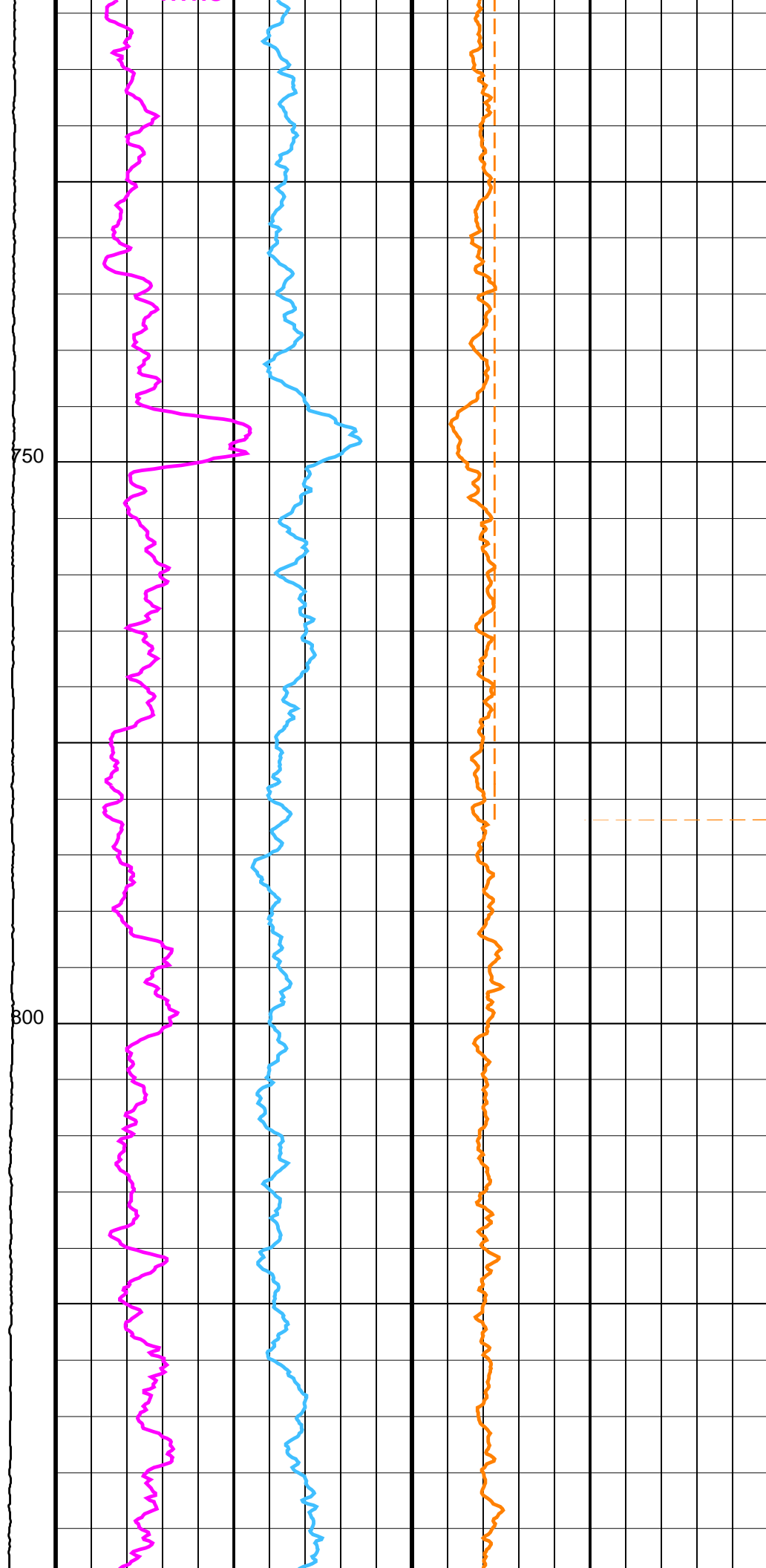
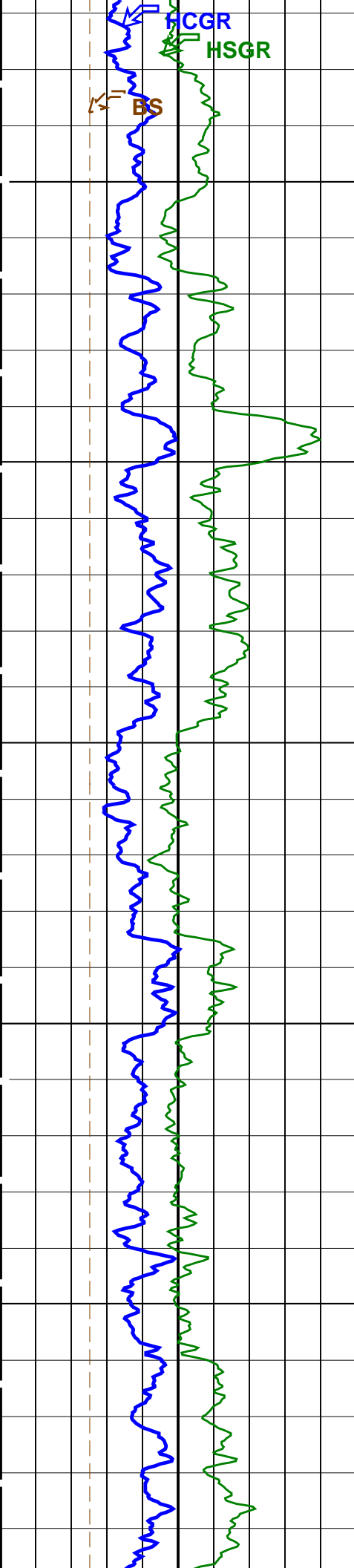
Client: Essential Petroleum Resources Limited
Well: Findra-1
Field: PRP 159
State: Victoria
Country: Australia

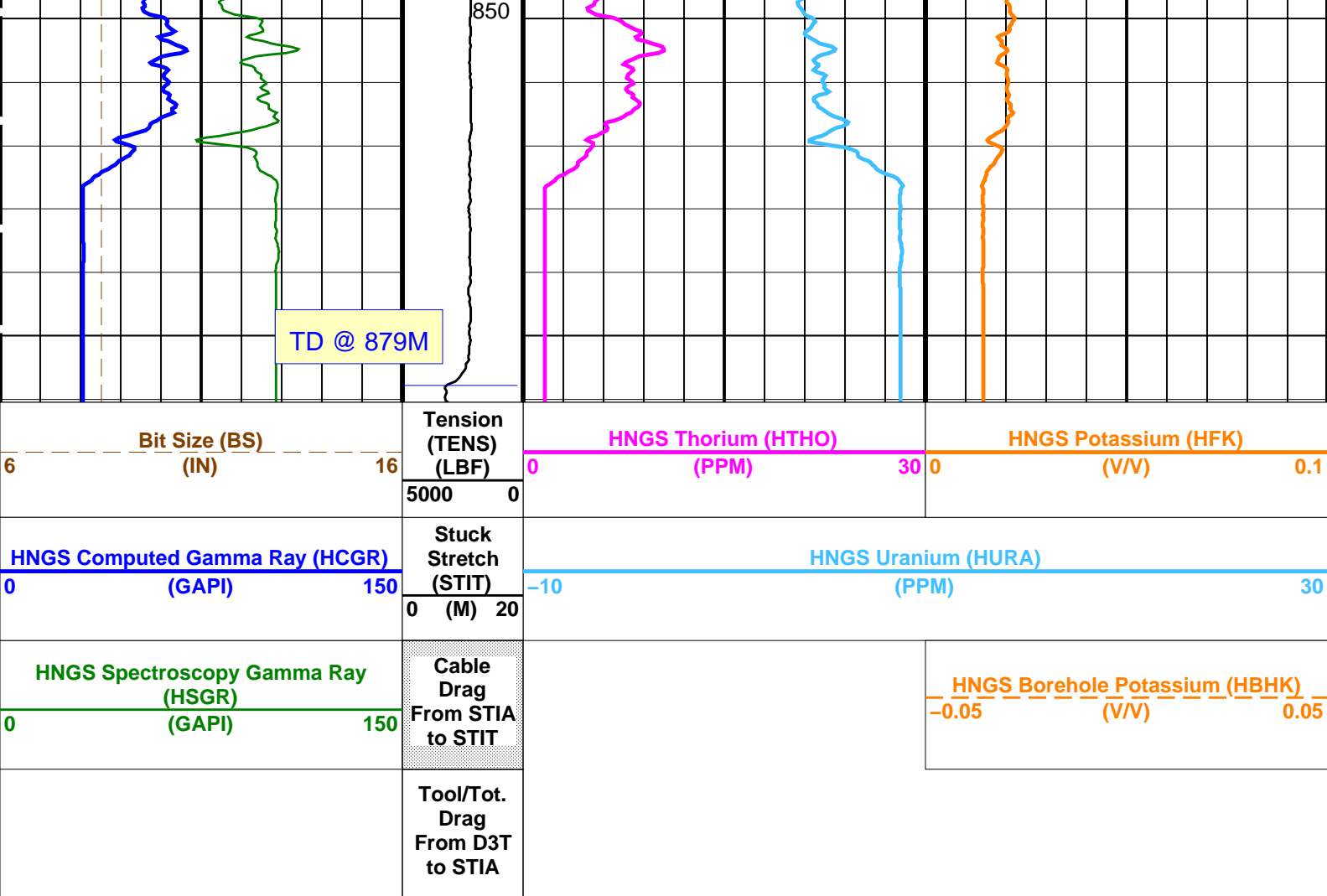
Rig Name: Hunt Rig # 2
Elevation: 61.0 m

Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	17.500		Borehole Segment
					61.0	13.375		Casing Shoe
					150.0	9.625		Casing Shoe









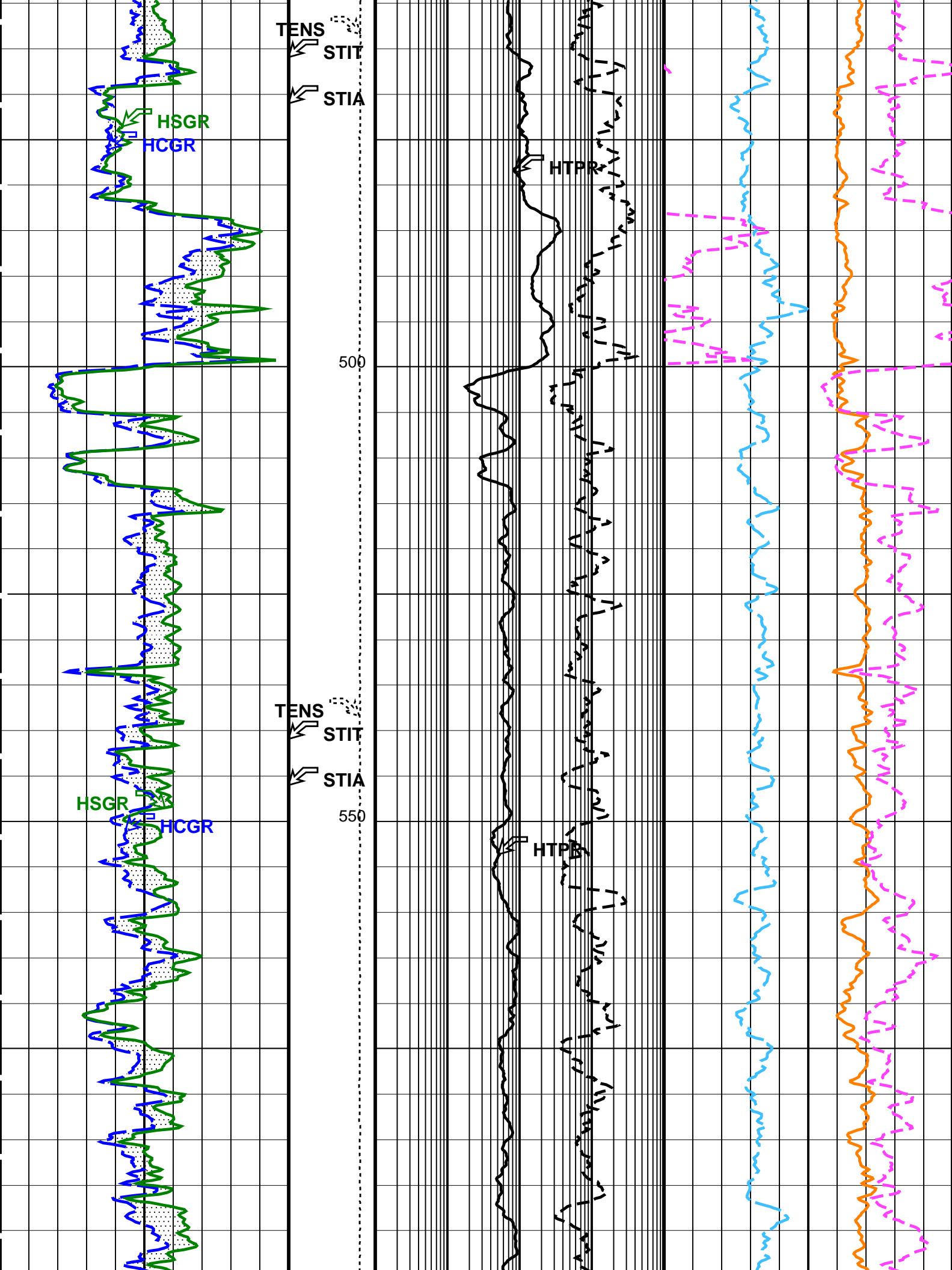
PIP SUMMARY

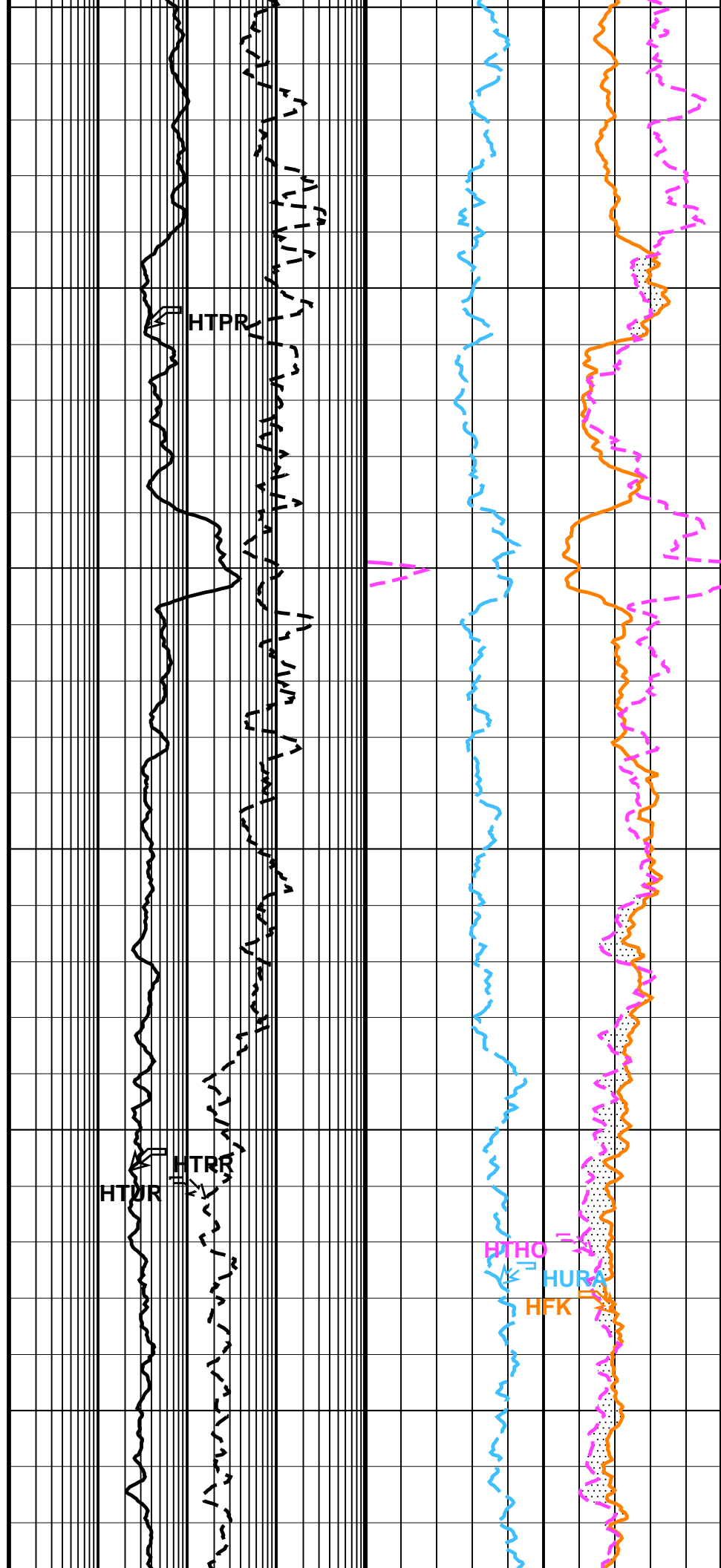
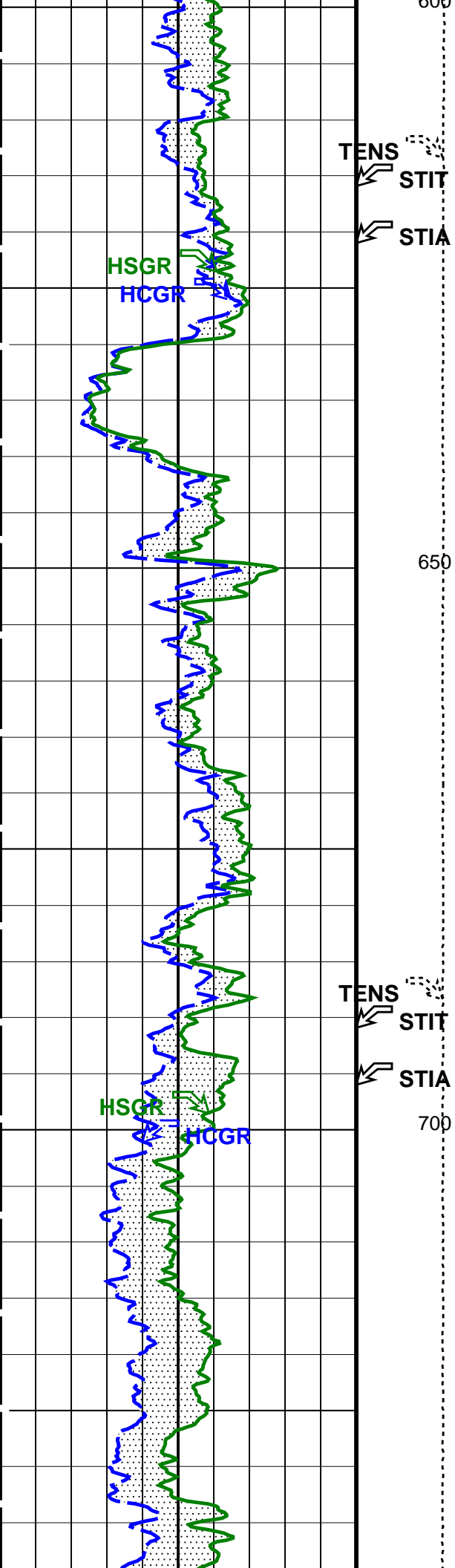
Time Mark Every 60 S

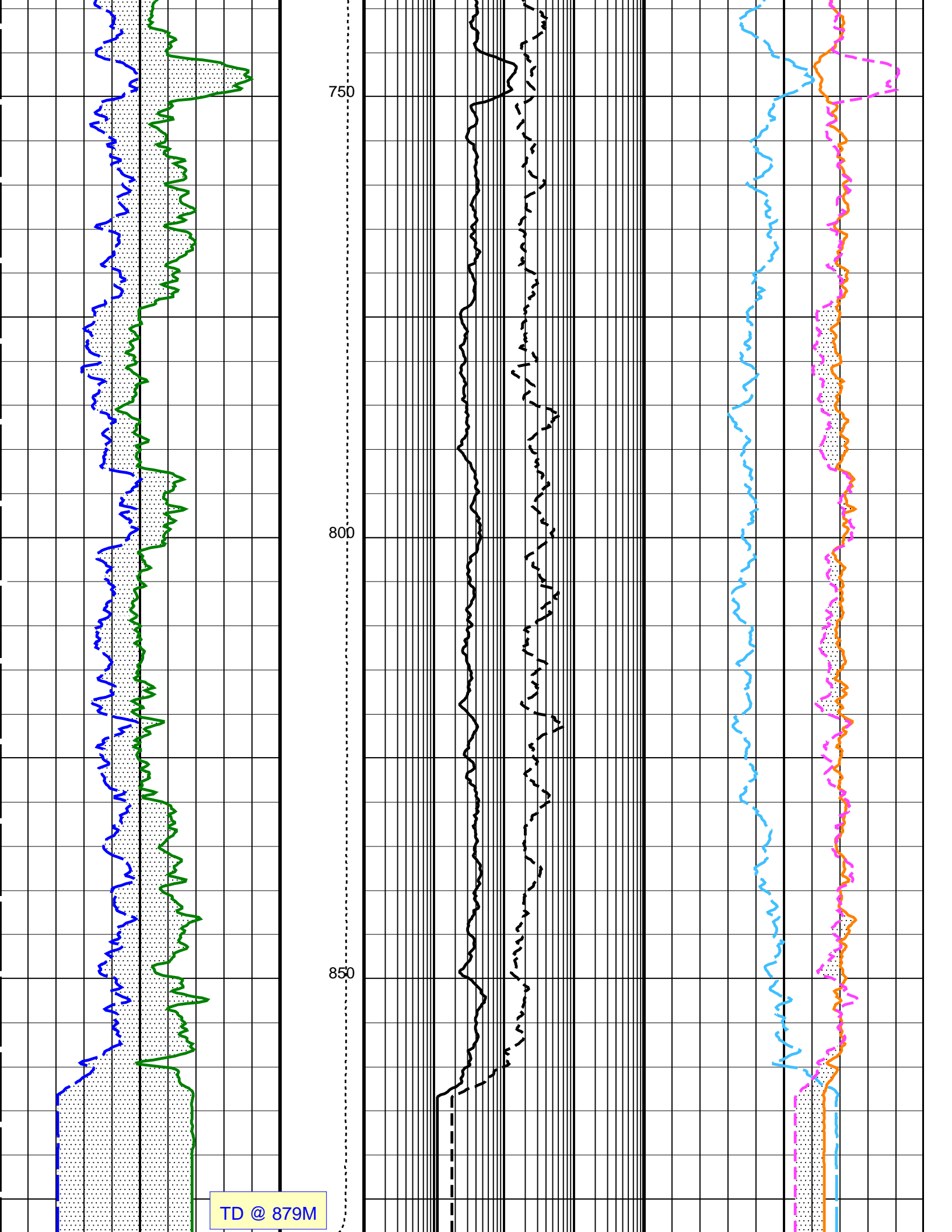
Parameters

DLIS Name	Description	Value
BHS	HALS-B: HILT Azimuthal Laterolog Sonde B	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
BHS	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
BAR1	HNGS-BA: Hostile Natural Gamma Ray Sonde	
BAR2	HNGS Detector 1 Barite Constant	0.949873
BHK	HNGS Detector 2 Barite Constant	0.954316
BHS	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
DBCC	HNGS Barite Constant Correction Flag	USER
GCSE	Generalized Caliper Selection	HCAL
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	0.00208055
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGS Processing Enable	YES
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	-999.25 CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25 CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.982575
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.994701
BHS	HOLEV: Integrated Hole/Cement Volume	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL

	Tool/Tot. Drag From D3T to STIA		Area2 From HTHO to HFK
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	Cable Drag From STIA to STIT		HNGS Thorium (HTHO) (PPM)
Area1 From HCGR to HSGR	Stuck Stretch (STIT) (M)	HNGS Thorium / Potassium Ratio (HTPR)	HNGS Uranium (HURA) (PPM)
HNGS Computed Gamma Ray (HCGR) (GAPI)	Tension (TENS) (LBF)	HNGS Thorium / Uranium Ratio (HTUR)	HNGS Potassium (HFK) (V/V)







PIP SUMMARY

Parameters		
DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
HNGB-B: Hostile Natural Gamma Ray Sonde		
BAR1	HNGB Detector 1 Barite Constant	0.949873
BAR2	HNGB Detector 2 Barite Constant	0.954316
BHK	HNGB Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
DBCC	HNGB Barite Constant Correction Flag	USER
GCSE	Generalized Caliper Selection	HCAL
H1P	HNGB Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGB Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGB Borehole Potassium Running Average	0.00208055
HALF	HNGB Alpha Filter Length	60 IN
HCRB	HNGB Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGB Processing Enable	YES
S1BI	HNGB Detector 1 Calibration Bismuth Count Rate	-999.25 CPS
S2BI	HNGB Detector 2 Calibration Bismuth Count Rate	-999.25 CPS
SGRC	HNGB Standard Gamma-Ray Correction Flag	YES
TPOS	Tool Position	ECCE
VBA1	HNGB Detector 1 Variable Barite Factor Running Average	0.982575
VBA2	HNGB Detector 2 Variable Barite Factor Running Average	0.994701
HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	0.762 M
TDD	Total Depth - Driller	889.00 M
TDL	Total Depth - Logger	879.00 M
System and Miscellaneous		
BS	Bit Size	8.500 IN
DFD	Drilling Fluid Density	1.10 G/C3
DO	Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

<p align="center">OP System Version: 10C0-306</p> <p align="center">MCM</p>			
HALS-B	OP10-KP1	DSLT-H	OP10-KP1
HILTB-FTB	OP10-KP1	HNGC-A	OP10-KP1

Before: 30-Jun-2004 16:22							
ZVM 1 Phase	0.000	N/A	0.224	N/A	N/A	3.800	DEG
ZVM 2 Phase	0.000	N/A	1.871	N/A	N/A	1.300	DEG
ZVM 3 Phase	0.000	N/A	1.002	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage gains							
Before: 30-Jun-2004 16:22							
ZVH 1 Gain	1.000	N/A	0.997	N/A	N/A	0.013	UV
ZVH 2 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
ZVH 3 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage Phases							
Before: 30-Jun-2004 16:22							
ZVH 1 Phase	0.000	N/A	0.109	N/A	N/A	3.800	DEG
ZVH 2 Phase	0.000	N/A	1.992	N/A	N/A	1.300	DEG
ZVH 3 Phase	0.000	N/A	0.993	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage gains							
Before: 30-Jun-2004 16:22							
ZVA 1 Gain	1.000	N/A	1.070	N/A	N/A	0.032	MV
ZVA 2 Gain	1.000	N/A	1.063	N/A	N/A	0.045	MV
ZVA 3 Gain	1.000	N/A	1.013	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage Phases							
Before: 30-Jun-2004 16:22							
ZVA 1 Phase	0.000	N/A	1.005	N/A	N/A	2.300	DEG
ZVA 2 Phase	0.000	N/A	0.153	N/A	N/A	0.800	DEG
ZVA 3 Phase	0.000	N/A	0.162	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 1							
Before: 30-Jun-2004 16:22							
ZVD 1 Gain	1.000	N/A	0.997	N/A	N/A	0.047	UV
ZVD 1 Phase	0.000	N/A	0.096	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 2							
Before: 30-Jun-2004 16:22							
ZVD 2 Gain	1.000	N/A	0.982	N/A	N/A	0.056	UV
ZVD 2 Phase	0.000	N/A	1.287	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3A							
Before: 30-Jun-2004 16:22							
ZVD 3A Gain	1.000	N/A	0.988	N/A	N/A	0.056	UV
ZVD 3A Phase	0.000	N/A	0.566	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3B							
Before: 30-Jun-2004 16:22							
ZVD 3B Gain	1.000	N/A	1.000	N/A	N/A	0.054	UV
ZVD 3B Phase	0.000	N/A	–0.039	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 1							
Before: 30-Jun-2004 16:22							
ZVV 1 Gain	1.000	N/A	0.997	N/A	N/A	0.022	UV
ZVV 1 Phase	0.000	N/A	0.163	N/A	N/A	2.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 2							
Before: 30-Jun-2004 16:22							
ZVV 2 Gain	1.000	N/A	0.985	N/A	N/A	0.036	UV
ZVV 2 Phase	0.000	N/A	2.626	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 1							
Before: 30-Jun-2004 16:22							
Az 1 Gain – 0	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 1	1.000	N/A	0.998	N/A	N/A	0.047	UV
Az 1 Gain – 2	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 3	1.000	N/A	0.994	N/A	N/A	0.047	UV
Az 1 Gain – 4	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 5	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 6	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 7	1.000	N/A	0.998	N/A	N/A	0.047	UV
Az 1 Gain – 8	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 9	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 10	1.000	N/A	1.001	N/A	N/A	0.047	UV
Az 1 Gain – 11	1.000	N/A	0.996	N/A	N/A	0.047	UV
AZ 1 Phase – 0	0.000	N/A	–0.001	N/A	N/A	3.800	DEG
AZ 1 Phase – 1	0.000	N/A	0.135	N/A	N/A	3.800	DEG
AZ 1 Phase – 2	0.000	N/A	0.098	N/A	N/A	3.800	DEG
AZ 1 Phase – 3	0.000	N/A	0.102	N/A	N/A	3.800	DEG
AZ 1 Phase – 4	0.000	N/A	0.211	N/A	N/A	3.800	DEG
AZ 1 Phase – 5	0.000	N/A	0.094	N/A	N/A	3.800	DEG
AZ 1 Phase – 6	0.000	N/A	0.065	N/A	N/A	3.800	DEG
AZ 1 Phase – 7	0.000	N/A	0.015	N/A	N/A	3.800	DEG
AZ 1 Phase – 8	0.000	N/A	0.129	N/A	N/A	3.800	DEG

AZ 1 Phase – 9	0.000	N/A	0.021	N/A	N/A	3.800	DEG
AZ 1 Phase – 10	0.000	N/A	0.126	N/A	N/A	3.800	DEG
AZ 1 Phase – 11	0.000	N/A	0.106	N/A	N/A	3.800	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 2

Before: 30–Jun–2004 16:22

Az 2 Gain – 0	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 1	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 2	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 3	1.000	N/A	0.979	N/A	N/A	0.056	UV
Az 2 Gain – 4	1.000	N/A	0.985	N/A	N/A	0.056	UV
Az 2 Gain – 5	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 6	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 7	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 8	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 9	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 10	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 2 Gain – 11	1.000	N/A	0.981	N/A	N/A	0.056	UV
Az 2 Phase – 0	0.000	N/A	1.350	N/A	N/A	1.300	DEG
Az 2 Phase – 1	0.000	N/A	1.308	N/A	N/A	1.300	DEG
Az 2 Phase – 2	0.000	N/A	1.317	N/A	N/A	1.300	DEG
Az 2 Phase – 3	0.000	N/A	1.304	N/A	N/A	1.300	DEG
Az 2 Phase – 4	0.000	N/A	1.333	N/A	N/A	1.300	DEG
Az 2 Phase – 5	0.000	N/A	1.344	N/A	N/A	1.300	DEG
Az 2 Phase – 6	0.000	N/A	1.368	N/A	N/A	1.300	DEG
Az 2 Phase – 7	0.000	N/A	1.363	N/A	N/A	1.300	DEG
Az 2 Phase – 8	0.000	N/A	1.382	N/A	N/A	1.300	DEG
Az 2 Phase – 9	0.000	N/A	1.336	N/A	N/A	1.300	DEG
Az 2 Phase – 10	0.000	N/A	1.398	N/A	N/A	1.300	DEG
Az 2 Phase – 11	0.000	N/A	1.280	N/A	N/A	1.300	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3A

Before: 30–Jun–2004 16:22

Az 3A Gain – 0	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 1	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 2	1.000	N/A	0.990	N/A	N/A	0.056	UV
Az 3A Gain – 3	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 3A Gain – 4	1.000	N/A	0.990	N/A	N/A	0.056	UV
Az 3A Gain – 5	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 6	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 7	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 8	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 9	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 10	1.000	N/A	0.992	N/A	N/A	0.056	UV
Az 3A Gain – 11	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Phase – 0	0.000	N/A	0.602	N/A	N/A	1.000	DEG
Az 3A Phase – 1	0.000	N/A	0.598	N/A	N/A	1.000	DEG
Az 3A Phase – 2	0.000	N/A	0.599	N/A	N/A	1.000	DEG
Az 3A Phase – 3	0.000	N/A	0.585	N/A	N/A	1.000	DEG
Az 3A Phase – 4	0.000	N/A	0.613	N/A	N/A	1.000	DEG
Az 3A Phase – 5	0.000	N/A	0.599	N/A	N/A	1.000	DEG
Az 3A Phase – 6	0.000	N/A	0.609	N/A	N/A	1.000	DEG
Az 3A Phase – 7	0.000	N/A	0.610	N/A	N/A	1.000	DEG
Az 3A Phase – 8	0.000	N/A	0.647	N/A	N/A	1.000	DEG
Az 3A Phase – 9	0.000	N/A	0.595	N/A	N/A	1.000	DEG
Az 3A Phase – 10	0.000	N/A	0.639	N/A	N/A	1.000	DEG
Az 3A Phase – 11	0.000	N/A	0.565	N/A	N/A	1.000	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3B

Before: 30–Jun–2004 16:22

Az 3B Gain – 0	1.000	N/A	1.007	N/A	N/A	0.054	UV
Az 3B Gain – 1	1.000	N/A	1.002	N/A	N/A	0.054	UV
Az 3B Gain – 2	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 3	1.000	N/A	0.999	N/A	N/A	0.054	UV
Az 3B Gain – 4	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 5	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 6	1.000	N/A	1.005	N/A	N/A	0.054	UV
Az 3B Gain – 7	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 8	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 9	1.000	N/A	1.003	N/A	N/A	0.054	UV
Az 3B Gain – 10	1.000	N/A	1.010	N/A	N/A	0.054	UV
Az 3B Gain – 11	1.000	N/A	0.997	N/A	N/A	0.054	UV
Az 3B Phase – 0	0.000	N/A	0.232	N/A	N/A	1.000	DEG
Az 3B Phase – 1	0.000	N/A	0.167	N/A	N/A	1.000	DEG
Az 3B Phase – 2	0.000	N/A	0.106	N/A	N/A	1.000	DEG
Az 3B Phase – 3	0.000	N/A	0.121	N/A	N/A	1.000	DEG
Az 3B Phase – 4	0.000	N/A	0.061	N/A	N/A	1.000	DEG
Az 3B Phase – 5	0.000	N/A	0.181	N/A	N/A	1.000	DEG
Az 3B Phase – 6	0.000	N/A	0.111	N/A	N/A	1.000	DEG
Az 3B Phase – 7	0.000	N/A	0.192	N/A	N/A	1.000	DEG
Az 3B Phase – 8	0.000	N/A	0.136	N/A	N/A	1.000	DEG

Az 3B Phase – 9	0.000	N/A	0.131	N/A	N/A	1.000	DEG
Az 3B Phase – 10	0.000	N/A	0.190	N/A	N/A	1.000	DEG
Az 3B Phase – 11	0.000	N/A	–0.014	N/A	N/A	1.000	DEG
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary							
Before: 30–Jun–2004 16:18							
BS Window Ratio	1.011	N/A	1.012	N/A	N/A	N/A	
BS Window Sum	16100	N/A	16060	N/A	N/A	N/A	CPS
SS Window Ratio	0.4808	N/A	0.4806	N/A	N/A	N/A	
SS Window Sum	10970	N/A	10980	N/A	N/A	N/A	CPS
LS Window Ratio	0.2955	N/A	0.2944	N/A	N/A	N/A	
LS Window Sum	1160	N/A	1164	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations							
Before: 30–Jun–2004 16:18							
BS PM High Voltage (Command)	1495	N/A	1468	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1944	N/A	1923	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1839	N/A	1832	N/A	N/A	N/A	V
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration							
Before: 30–Jun–2004 16:18							
BS Crystal Resolution	12.17	N/A	12.12	N/A	N/A	N/A	%
SS Crystal Resolution	11.48	N/A	11.55	N/A	N/A	N/A	%
LS Crystal Resolution	9.283	N/A	9.483	N/A	N/A	N/A	%
High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration							
Before: 30–Jun–2004 16:19							
Raw B0 Resistivity	3875	N/A	3799	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3768	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3798	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration							
Before: 30–Jun–2004 16:15							
HILT Caliper Zero Measurement	8.000	N/A	8.215	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.39	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration							
Before: 30–Jun–2004 16:14							
Gamma Ray Background	30.00	N/A	26.47	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	174.8	N/A	174.8	N/A	N/A	15.89	GAPI
Gamma Ray (Calibrated)	160.0	N/A	160.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement							
Master: 15–Jun–2004 17:21 Before: 30–Jun–2004 16:15							
CNTC Background	32.30	32.30	30.57	N/A	N/A	4.845	CPS
CFTC Background	29.13	29.13	29.39	N/A	N/A	4.370	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration							
Before: 30–Jun–2004 16:17							
Z–Axis Acceleration	9.810	N/A	9.802	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results							
Master: 15–Jun–2004 11:26							
Rho Aluminum	2.596	2.599	---	---	---	---	G/C3
Rho Magnesium	1.686	1.688	---	---	---	---	G/C3
Pe Aluminum	2.570	2.561	---	---	---	---	
Pe Magnesium	2.650	2.615	---	---	---	---	
High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary							
Master: 15–Jun–2004 11:26							
BS Average Deviation	0	0.4141	---	---	---	---	%
BS Max Deviation	0	0.9721	---	---	---	---	%
SS Average Deviation	0	0.2442	---	---	---	---	%
SS Max Deviation	0	1.285	---	---	---	---	%
LS Average Deviation	0	0.4543	---	---	---	---	%
LS Max Deviation	0	0.9733	---	---	---	---	%
High resolution Integrated Logging Tool–DTS Master Calibration – Tank Measurement							
Master: 15–Jun–2004 17:21							
Thermal Near Corr. (Tank)	6031	5825	---	---	---	---	CPS
Thermal Far Corr. (Tank)	2793	2452	---	---	---	---	CPS
CNTC/CFTC (Tank)	2.159	2.376	---	---	---	---	
High resolution Integrated Logging Tool–DTS Master Calibration – Tank Measurement							
Master: 15–Jun–2004 17:21							
Thermal Near Corr. (Tank)	6031	5825	---	---	---	---	CPS
Thermal Far Corr. (Tank)	2793	2452	---	---	---	---	CPS
CNTC/CFTC (Tank)	2.159	2.376	---	---	---	---	
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 17–Jun–2004 21:58 Before: 30–Jun–2004 16:27							
Na 511 Peak Loc	40.00	40.64	39.64	N/A	N/A	1.000	

Na 511 Peak Res	15.50	16.25	15.10	N/A	N/A	2.000	%
High Voltage	1150	1159	1163	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	145.9	143.2	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.737	8.315	N/A	N/A	2.000	%
Temperature	15.50	13.72	16.29	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	42.07	43.16	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 17–Jun–2004 21:58 Before: 30–Jun–2004 16:27

Na 511 Peak Loc	40.00	39.68	39.72	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.94	14.70	N/A	N/A	2.000	%
High Voltage	1150	1080	1085	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.0	141.9	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.683	8.147	N/A	N/A	2.000	%
Temperature	15.50	14.40	15.55	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	41.97	42.72	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2

Master: 17–Jun–2004 21:58 Before: 30–Jun–2004 16:27

Coincidence Count Rate Ratio	1.000	1.006	1.012	N/A	N/A	0.05000	
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Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration

Master: 17–Jun–2004 21:53

Na 511 Peak Set Point	40.00	42.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	7.826	--	--	--	--	%
Background Count Rate	142.5	140.0	--	--	--	--	CPS
Gain Ratio	1.000	0.9901	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration

Master: 17–Jun–2004 21:53

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	207.7	--	--	--	--	
Th Peak Res	7.000	7.127	--	--	--	--	%
Background Count Rate	142.5	133.6	--	--	--	--	CPS
Gain Ratio	1.000	0.9954	--	--	--	--	

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature 11.1 DEGC.
Thermal Housing Size 3.369 IN.

HILT Azimuthal Laterolog Sonde B / Equipment Identification

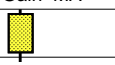

Primary Equipment:


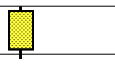
Auxiliary Equipment:


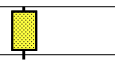
Laterolog Control Module



LCM – AA



2747

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Total current mode 1					
Itot 1 Gain MA		Value	Itot 1 Phase DEG		Value
		0.998			-0.000
0.926	1.000	1.081	-0.100	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux current mode 1					
Iaux 1 Gain MA		Value	Iaux 1 Phase DEG		Value
		0.994			-0.123
0.854	1.000	1.180	-4.600	0.000	4.600
(Minimum) (Nominal)		(Maximum)	(Minimum) (Nominal)		(Maximum)
Before: 30–Jun–2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux current mode 2					
Iaux 2 Gain MA		Value	Iaux 2 Phase DEG		Value
		0.974			0.000
0.816	1.000	1.232	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30–Jun–2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3A					
I0 3A Gain UA	Value	I0 3A Phase DEG	Value		
	0.983		-0.000		



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3B					
I0 3B Gain UA	Value	I0 3B Phase DEG	Value		
					




0.893 (Minimum)	1.000 (Nominal)	1.114 (Maximum)	-1.000 (Minimum)	0.000 (Nominal)	0.100 (Maximum)
Before: 30-Jun-2004 16:22					




0.893 (Minimum)	1.000 (Nominal)	1.114 (Maximum)	-1.000 (Minimum)	0.000 (Nominal)	0.100 (Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage gains					
Zvt 1 Gain MV	Value	Zvt 2 Gain MV	Value	Zvt 3 Gain MV	Value
	0.994		0.997		1.004
0.925 (Minimum)	1.000 (Nominal)	1.078 (Maximum)	0.865 (Minimum)	1.000 (Nominal)	1.153 (Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage Phases					
Zvt 1 Phase DEG	Value	Zvt 2 Phase DEG	Value	Zvt 3 Phase DEG	Value
	-0.102		0.006		-0.172
-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)	-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Upper Bridle Voltage mode 1					
Zvb 1 Gain MV		Value	Zvb 1 Phase DEG		Value
		0.994			-0.132
0.925 (Minimum)	1.000 (Nominal)	1.078 (Maximum)	-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage gains					
ZVM 1 Gain UV	Value	ZVM 2 Gain UV	Value	ZVM 3 Gain UV	Value
	0.996		0.993		0.991
0.895 (Minimum)	1.000 (Nominal)	1.117 (Maximum)	0.943 (Minimum)	1.000 (Nominal)	1.056 (Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage Phases					
ZVM 1 Phase DEG	Value	ZVM 2 Phase DEG	Value	ZVM 3 Phase DEG	Value
	0.224		1.871		1.002
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage gains					
ZVH 1 Gain UV	Value	ZVH 2 Gain UV	Value	ZVH 3 Gain UV	Value
	0.997		0.990		0.990
0.962 (Minimum)	1.000 (Nominal)	1.039 (Maximum)	0.864 (Minimum)	1.000 (Nominal)	1.154 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage Phases					
ZVH 1 Phase DEG	Value	ZVH 2 Phase DEG	Value	ZVH 3 Phase DEG	Value
	0.109		1.992		0.993
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage gains					
ZVA 1 Gain MV	Value	ZVA 2 Gain MV	Value	ZVA 3 Gain MV	Value
	1.070		1.063		1.013
0.905 (Minimum)	1.000 (Nominal)	1.103 (Maximum)	0.866 (Minimum)	1.000 (Nominal)	1.151 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage Phases					



ZVA 1 Phase DEG			Value	ZVA 2 Phase DEG			Value	ZVA 3 Phase DEG			Value
			1.005				0.153				0.162
-4.100 (Minimum)	0.000 (Nominal)	4.100 (Maximum)		-2.300 (Minimum)	0.000 (Nominal)	2.300 (Maximum)		-1.000 (Minimum)	0.000 (Nominal)	1.000 (Maximum)	
Before: 30-Jun-2004 16:22											



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 1					
ZVD 1 Gain UV	Value	ZVD 1 Phase DEG	Value		
	0.997		0.096		
0.874 (Minimum)	1.000 (Nominal)	1.147 (Maximum)	-6.300 (Minimum)	0.000 (Nominal)	6.300 (Maximum)
Before: 30-Jun-2004 16:22					

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*–A0** Diff. Voltage mode 2					
ZVD 2 Gain UV		Value	ZVD 2 Phase DEG		Value
		0.982			1.287
0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 30–Jun–2004 16:22					

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 3A					
ZVD 3A Gain UV		Value	ZVD 3A Phase DEG		Value
		0.988			0.566
0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 30-Jun-2004 16:22					













HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 3B					
ZVD 3B Gain UV	Value	ZVD 3B Phase DEG	Value		
	1.000		-0.039		
0.845 (Minimum)	1.000 (Nominal)	1.183 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 30-Jun-2004 16:22					













HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB vertical Voltage mode 1							
ZVV 1 Gain UV	Value	ZVV 1 Phase DEG	Value				
	0.997		0.163				
0.936 (Minimum)	1.000 (Nominal)	1.065 (Maximum)		-4.600 (Minimum)	0.000 (Nominal)	4.600 (Maximum)	
Before: 30-Jun-2004 16:22							

HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB vertical Voltage mode 2							
ZVV 2 Gain UV	Value	ZVV 2 Phase DEG	Value				
	0.985		2.626				
0.895 (Minimum)	1.000 (Nominal)	1.112 (Maximum)		-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)	
Before: 30-Jun-2004 16:22							

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 1					
Idx	Az 1 Gain UV	Value	Idx	Az 1 Phase DEG	Value
0		0.999	0		-0.001
1		0.998	1		0.135
2		0.999	2		0.098
3		0.994	3		0.102
4		0.999	4		0.211
5		0.999	5		0.094
6		0.997	6		0.065
7		0.998	7		0.015
8		0.997	8		0.129
9		0.997	9		0.021
10		1.001	10		0.126
11		0.996	11		0.106
	0.874 (Minimum)	1.000 (Nominal)	1.147 (Maximum)		
	-6.300 (Minimum)	0.000 (Nominal)	6.300 (Maximum)		
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 2					
Idx	Az 2 Gain UV	Value	Idx	Az 2 Phase DEG	Value
0		0.984	0		1.350
1		0.983	1		1.308
2		0.984	2		1.317
3		0.979	3		1.304
4		0.985	4		1.333
5		0.984	5		1.344
6		0.982	6		1.368
7		0.983	7		1.363
8		0.983	8		1.382
9		0.982	9		1.336
10		0.987	10		1.398
11		0.981	11		1.280
	0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)		
	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)		
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3A					
Idx	Az 3A Gain UV	Value	Idx	Az 3A Phase DEG	Value
0		0.989	0		0.602
1		0.988	1		0.598
2		0.990	2		0.599
3		0.984	3		0.585
4		0.990	4		0.613
5		0.989	5		0.599

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3B					
Idx	Az 3B Gain UV	Value	Idx	Az 3B Phase DEG	Value
0		1.007	0		0.232
1		1.002	1		0.167
2		1.006	2		0.106
3		0.999	3		0.121
4		1.006	4		0.061
5		1.006	5		0.181

6		0.999	6		0.999
7		0.989	7		0.610
8		0.988	8		0.647
9		0.987	9		0.595
10		0.992	10		0.639
11		0.987	11		0.565
0.842 (Minimum)		1.000 (Nominal)	-2.000 (Minimum)		2.000 (Maximum)
Before: 30-Jun-2004 16:22					

6		1.005	6		0.111
7		1.006	7		0.192
8		1.006	8		0.136
9		1.003	9		0.131
10		1.010	10		0.190
11		0.997	11		-0.014
0.845 (Minimum)		1.000 (Nominal)	-2.000 (Minimum)		2.000 (Maximum)
Before: 30-Jun-2004 16:22					

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:

HILT high-Resolution Mechanical Sonde
HILT Rxo Gamma-ray Device
HILT Nuclear Back-Scatter Detector
HILT Nuclear Short-Spacing Detector
HILT Nuclear Long-Spacing Detector
Micro Cylindrically Focused Log Device
GR Logging Source
HILT High Res. Control Cartridge

HRMS - B 1765
HRGD - B 1760
HILT -
HILT -
HILT -
MCFL -
GLS - VJ 3739
HRCC - B 1769

Auxiliary Equipment:

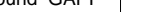


High resolution Integrated Logging Tool-DTS Wellsite Calibration																				
Stab Measurement Summary																				
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value						
Before				1.012	Before				0.4806	Before				0.2944						
0.9600 (Minimum)				1.011 (Nominal)	1.061 (Maximum)				0.4567 (Minimum)	0.4808 (Nominal)	0.5048 (Maximum)				0.2808 (Minimum)	0.2955 (Nominal)	0.3103 (Maximum)			
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value						
Before				16060	Before				10980	Before				1164						
15290 (Minimum)				16100 (Nominal)	16900 (Maximum)				10420 (Minimum)	10970 (Nominal)	11520 (Maximum)				1102 (Minimum)	1160 (Nominal)	1218 (Maximum)			
Before: 30-Jun-2004 16:18																				


High resolution Integrated Logging Tool-DTS Wellsite Calibration														
Photo-multiplier High Voltages Calibrations														
Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1468	Before				1923	Before				1832
1395 (Minimum)		1495 (Nominal)		1595 (Maximum)	1844 (Minimum)		1944 (Nominal)		2044 (Maximum)	1739 (Minimum)		1839 (Nominal)		1939 (Maximum)
Before: 30-Jun-2004 16:18														

High resolution Integrated Logging Tool–DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			12.12	Before			11.55	Before			9.483
11.17 (Minimum)		12.17 (Nominal)	13.17 (Maximum)	10.48 (Minimum)		11.48 (Nominal)	12.48 (Maximum)	8.283 (Minimum)		9.283 (Nominal)	10.28 (Maximum)
Before: 30–Jun–2004 16:18											







High resolution Integrated Logging Tool-DTS Wellsite Calibration														
MCFL Calibration														
Phase	Raw B0 Resistivity OHMM			Value	Phase	Raw B1 Resistivity OHMM			Value	Phase	Raw B2 Resistivity OHMM			Value
Before				3799	Before				3768	Before				3798
3565 (Minimum)		3875 (Nominal)		4185 (Maximum)	3524 (Minimum)		3830 (Nominal)		4136 (Maximum)	3524 (Minimum)		3830 (Nominal)		4136 (Maximum)
Before: 30-Jun-2004 16:19														

High resolution Integrated Logging Tool—DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value

High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background		GAPI	Value	Phase	Gamma Ray (Jig – Bkg)		GAPI	Value	Phase	Gamma Ray (Calibrated)		GAPI	Value
Before				26.47	Before				174.8	Before				160.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		158.9 (Minimum)	174.8 (Nominal)	190.7 (Maximum)			145.0 (Minimum)	160.0 (Nominal)	175.0 (Maximum)		
Before: 30–Jun–2004 16:14														

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S ²	Value
Before		9.802
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 30-Jun-2004 16:17

High resolution Integrated Logging Tool-DTS Master Calibration														
Deviation Summary														
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value
Master				0.4141	Master				0.2442	Master				0.4543
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)			-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)		
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value
Master				0.9721	Master				1.285	Master				0.9733
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)			-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)		
Master: 15-Jun-2004 11:26														

High resolution Integrated Logging Tool–DTS Master Calibration							
Tank Measurement							

Phase	Thermal Near Corr. (Tank)	CPS	Value	Phase	Thermal Far Corr. (Tank)	CPS	Value	Phase	CNTC/CFIC (Tank)	Value	
Master			5825	Master			2452	Master		2.376	
	5000 (Minimum)	6031 (Nominal)	7200 (Maximum)		2075 (Minimum)	2793 (Nominal)	3125 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 15-Jun-2004 17:21											

Hostile Natural Gamma Ray Cartridge – A / Equipment Identification

Primary Equipment:
HNGC Cartridge

HNGC – A 10

Auxiliary Equipment:
HNGC Housing

HNGH – A

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:
HNGS Sonde

HNGS – BA 129

Auxiliary Equipment:
HNGS Sonde Housing
Gamma Source Radioactive

HNSH – BA 3
GSR – U

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Na 511 Peak Loc			Value	Na 511 Peak Res %			Value	High Voltage V			Value
Master			40.64	Master			16.25	Master			1159
Before			39.64	Before			15.10	Before			1163
37.50 (Minimum)40.00 (Nominal)42.50 (Maximum)				12.00 (Minimum)15.50 (Nominal)19.00 (Maximum)				900.0 (Minimum)1150 (Nominal)1600 (Maximum)			
Na 1785 Peak Loc			Value	Na 1785 Peak Res %			Value	Temperature DEGC			Value
Master			145.9	Master			8.737	Master			13.72
Before			143.2	Before			8.315	Before			16.29
135.0 (Minimum)142.6 (Nominal)150.3 (Maximum)				7.000 (Minimum)8.500 (Nominal)11.00 (Maximum)				-28.89 (Minimum)15.50 (Nominal)60.00 (Maximum)			
Na Count Rate CPS			Value								
Master			42.07								
Before			43.16								
10.00 (Minimum)45.00 (Nominal)100.0 (Maximum)											

Master: 17-Jun-2004 21:58

Before: 30-Jun-2004 16:27



Hostile Natural Gamma Ray Sonde Wellsite Calibration






Detector 2 Check






Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value			
Master			39.68	Master			14.94	Master			1080			
Before			39.72	Before			14.70	Before			1085			
37.50 (Minimum)			40.00 (Nominal)	42.50 (Maximum)			12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)			900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value			
Master			143.0	Master			8.683	Master			14.40			
Before			141.9	Before			8.147	Before			15.55			
135.0 (Minimum)			142.6 (Nominal)	150.3 (Maximum)			7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)			-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS		Value											
Master			41.97											
Before			42.72											
10.00 (Minimum)			45.00 (Nominal)	100.0 (Maximum)										

Master: 17-Jun-2004 21:58

Before: 30-Jun-2004 16:27

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.006
Before		1.012
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 17-Jun-2004 21:58		
Before: 30-Jun-2004 16:27		

Hostile Natural Gamma Ray Sonde Master Calibration																										
Detector 1 Calibration																										
Phase	Na 511 Peak Set Point			Value	Phase	Th Peak Loc			Value	Phase	Th Peak Res %			Value												
Master				42.00	Master				211.5	Master				7.826												
38.00 (Minimum)				40.00 (Nominal)	42.00 (Maximum)				201.0 (Minimum)				209.6 (Nominal)	218.3 (Maximum)				5.000 (Minimum)				7.000 (Nominal)	9.000 (Maximum)			
Phase	Background Count Rate CPS			Value	Phase	Gain Ratio			Value																	
Master				140.0	Master				0.9901																	
20.00 (Minimum)				142.5 (Nominal)	265.0 (Maximum)				0.9400 (Minimum)							1.000 (Nominal)	1.060 (Maximum)									
Master: 17-Jun-2004 21:53																										

Hostile Natural Gamma Ray Sonde Master Calibration																	
Detector 2 Calibration																	
Phase	Na 511 Peak Set Point			Value	Phase	Th Peak Loc			Value	Phase	Th Peak Res %			Value			
Master				41.00	Master				207.7	Master				7.127			
38.00 (Minimum)				40.00 (Nominal)	42.00 (Maximum)	201.0 (Minimum)				209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)				7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS			Value	Phase	Gain Ratio			Value								
Master				133.6	Master				0.9954								
20.00 (Minimum)				142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)									1.000 (Nominal)	1.060 (Maximum)	
Master: 17-Jun-2004 21:53																	

Company:	Essential Petroleum Resources Limited	Schlumberger
Well:	Findra-1	
Field:	PEP 159	
Rig:	Hunt Rig #2	
Country:	Australia	
HALS-BHC-PEX-HNGS HNGS Print Scale 1:500		