

Mud Resistivity Record				Surface			BHCT	Downhole		
Date / Time	Run No.	Measured Depth (ft)	Surface Temp (degF)	Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)		Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
2018-11-20 05:16	1	10694.00	136.0	100.000	N/A	N/A	220.0	100.000	N/A	N/A
2018-11-20 12:00	1	11591.00	158.0	100.000	N/A	N/A	240.0	100.000	N/A	N/A
2018-11-21 00:00	1	13740.00	162.0	100.000	N/A	N/A	250.0	100.000	N/A	N/A
2018-11-21 12:00	1	16100.00	164.0	100.000	N/A	N/A	260.0	100.000	N/A	N/A
2018-11-22 00:00	1	17915.00	158.0	100.000	N/A	N/A	263.0	100.000	N/A	N/A

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	AutoTrak Curve Steering Unit	14381997	Near Bit VSS	5.93	6.93	7.000	4.330
1	AutoTrak Curve Steering Unit	14381997	Near Bit Inclination	5.93	6.93	7.000	4.330
1	AutoTrak Curve MWD	14381968	Gamma (single)	2.74	13.10	7.000	3.250
1	AutoTrak Curve MWD	14381968	Directional (mag)	12.26	22.62	7.000	3.250
1	OnTrak	12004344	Pressure	1.17	10782.92	6.750	0.000
1	OnTrak	12004344	Gamma (double)	2.06	10783.81	6.750	0.000
1	OnTrak	12004344	Resistivity (4tx)	6.10	10787.85	6.750	0.000
1	OnTrak	12004344	Directional (mag)	11.89	10793.64	6.750	0.000

Service and Tool Mnemonics

Mnemonic	Name	Description
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM
OTK	OnTrak	Sensor Sub (Inc, Azi, Temp, Azimuthal GR, Res, AP, VSS), OnTrak Platform
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform

Comments

- Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes, a GE Company (BHGE). Due to the lack of control by BHGE logging engineers, depth calibrations and measurements could not be independently verified.
- BHGE LWD run 1 utilized 6.75 inch NaviGamma Services (Gamma Ray and Directional) and Ontrak Services (Multiple Propagation Resistivity) behind a 8.5 inch bit and Rotary steerable assembly from 2205 to 17915 feet MD (2205 to 7949 feet TVD).

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	2205.00	8.500	1	BHGE logging services began at 2205 feet MD (2205 feet TVD) per customer request.
2	17915.00	8.500	1	The interval from 17902 to 17915 feet MD (7949 feet TVD) was not logged due to sensor to bit offset at TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 10 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 3 ft Average	API
TCDM	Downhole Temperature	degF





























