



Gamma Ray

Scale: Company: Noble Energy

1:1200 MD Well: Wells Ranch BB11-667

Depth Reference: Field: Weld County

Driller's Depth County: WELD Country: United States

Status: State: Colorado

Final Print Surface Location: Other Services:

API No: 0512344968 Longitude: Wellbore Surveys

Job ID: 8701184 SEC: 11 TWN: 5N RGE: 63W

Permanent Datum (P.D.): Ground Level Elevation: 4685.00 ft Elev. KB: N/A

Log Measured From: Rig Floor Above P.D. 30.00 ft Elev. DF: 4715.00 ft

Dates Interval Logged Magnetic Field Reference

Date From: 2017-08-19 Top: (ft) 1933.00 Azi Reference North: Grid Dip Angle: (deg) 67.09

Date To: 2017-08-21 Bottom: (ft) 16713.00 Total Magnetic Field Strength: (nT) 52314

Spud Date: 2017-08-18 Mag to Reference North Correction: (deg) 7.27 E

Borehole Record Casing Record

Hole Size (in) From (ft) To (ft) Size (in) Weight (lb/ft) From (ft) To (ft)

8.500 1945.00 16705.00 9.625 36.00 30.00 1935.00

Mud Record Deviation Record

Type From (ft) To (ft) Hole Size (in) Interval (ft) Inc | Az (Start) Inc | Az (End)

Oil Based Mud 1945.00 16725.00 8.500 14780.00 0.09 | 141.33 90.09 | 87.15

Acquisition System Software Version Other

Baker Hughes Cadence RT4.1 Rig: H&P 524

Pilot Studio 4.1.7763.3 Contractor: Helmerich & Payne Drilling Co

District: RMD Unit: D&E

"These interpretations and analyses ("Interpretations") are opinions provided by Baker Hughes Oilfield Operations, Inc ("Baker Hughes"), based upon industry practice, empirical relationships, assumptions and measurements, (many of which may be provided by the customer). The Interpretations are not infallible and may be subject to different opinions. Vjwu."Dcmgt"JwiJgu"fqgu"pqv"ycttcpv"vjgkt"ceewtce{."eqttgevpguu."qt"eqorngvgpguu."qt"vjcv"vjg"ewuvqogtøu"cpflqt"cp{"vjktf"rctv{øu"tgncpeg"qp"uwej"Kpvgtrtgvcvkqpu"yknn"ceeqornkuJ"cp{"rctvkewnct"tguwnvu0"Vjg"ewuvqogt"cuuwogu"hwnn"responsibility for the use of the Interpretations and for decisions based thereon and the customer agrees to release, defend and indemnify Baker Hughes, its parent, subsidiaries and affiliated or related entities, and subcontractors, together with its and their officers, directors, employees, agents and invitees against, any and all claims, losses, damages, or expenses sustained by the customer or any third party arising out of reliance upon or use of the Interpretations, without regard to the cause(s) thereof, including without limitation any form of negligence on the part of Baker Hughes. Unless other contract terms have been agreed to by the parties, each party's liabilities and qdnkicvkqpu"ujcnn"dg"iqxgtpgf"d{"Dcmgt"JwiJgu"Kpeqtrqtcvgføu"Yqtnfykfg"Vgtou"cpf"Eqpfkvkqpu0\$""

Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	8.500	PDC	2.00	AutoTrak Curve	1933.00	8771.00	1945.00	8784.00	2017-08-19 09:55	2017-08-20 21:01	32.67
2	2	8.500	PDC	2.00	AutoTrak Curve	8771.00	16713.00	8784.00	16725.00	2017-08-21 05:04	2017-08-21 15:24	10.03

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
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