Company	Anadarko Exploration and Production LP
Well	Hamilton 16-21
Field	Wattenberg
County	Weld
State	Colorado
Location	Sec 21 T1N R67W
Elevation	KB: 5,116 ft GL: 5,091 ft
Survey Type	Triple Combo
Survey Date	12-Jun-2013
Run Number	1
Depth Driller	8,200 ft
Depth Logger	8,200 ft
Bottom Log Interval	8,200 ft
Top Log Interval	7,000 ft
Casing Driller	8 5/8 @ 1,000 ft
Casing Logger	1,000 ft
Bit Size	7.875 in
Type Fluid in Hole	Water Based Mud
Density / Viscosity	9.0 ppg / 28 s/qt
pH / Fluid Loss	10.0 / 6.0 cc
Source of Sample	Flowline
Rm @ Measured Temp	0.07 @ 70 °F
Rmf @ Measured Temp	0.05 @ 70 °F
Rmc @ Measured Temp	0.09 @ 70 °F
Source of Rmf / Rmc	Measured / Measured
Rm @ BHT	0.03 @ 180 °F
Time Since Circulation	12 hrs
Time on Bottom	12-Jun-2013 08:00
Max Recorded Temperature	180 °F
Equipment / Base	1317 / Greeley
Recorded By	Nathan Hill
Witnessed By	Mr. Rig Supervisor

PIONEER

GEOSTEERING DESIGN
COMPLETION DESIGN
PRODUCTION OPTIMIZATION

Pioneer Natural Resources USA, Inc. and Anadarko E&P Onshore LLC

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretations, and Pioneer Wireline Services, LLC shall not, except in the case of gross or wilful negligence on its 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 its officers, agents or employees.

Comments

Annular volume calculated for 4.5" casing
Energy Drilling Rig 522
Thank you for using Pioneer Energy Services

Database File: 10398.db
Dataset Pathname: final
Presentation Format: main
Dataset Creation: Sun Dec 15 23:26:22 2013
Charted by: Depth in Feet scaled 1:240

0	Density Caliper (in)	16	2	Deep Resistivity (Ohm-m) (RD) (R)	Density Porosity (pu) 0
16	Gamma Ray (GAPI)	116	2	Medium Resistivity (Ohm-m) (RM) (R)	Neutron Porosity (pu) 60
MD (ft)		(RR)	2	Shallow Resistivity (Ohm-m) (RS) (R)	
			2	Rt (Ohm-m)	(RE)

2.68 GS Matrix

2.68 GS Matrix

2.68 GS Matrix

Database File: 10398.db
Dataset Pathname: final
Presentation Format: main
Dataset Creation: Sun Dec 15 23:26:22 2013
Charted by: Depth in Feet scaled 1:240

0	Caliper (in)	16	2	Deep Resistivity (Ohm-m) (RD) (R)	Density Porosity (pu) 0
0	Gamma Ray (GAPI)	150	2	Medium Resistivity (Ohm-m) (RM) (R)	Neutron Porosity (pu) 60
MD (ft)		(RR)	2	Shallow Resistivity (Ohm-m) (RS) (R)	
			2	Rt (Ohm-m)	(RE)

2.71 LS Matrix

2.71 LS Matrix

Matrix Change @ 7230'

2.68 GS Matrix

Neutron Porosity

Gamma Ray

Density Porosity

Logged to TD: 7230'

Medium Resistivity

0	Caliper (in)	16	2	Deep Resistivity (Ohm-m) (RD) (R)	Density Porosity (pu) 0
0	Gamma Ray (GAPI)	150	2	Medium Resistivity (Ohm-m) (RM) (R)	Neutron Porosity (pu) 60
MD (ft)		(RR)	2	Shallow Resistivity (Ohm-m) (RS) (R)	
			2	Rt (Ohm-m)	(RE)