

**CATHEDRAL**

Cathedral Energy Services  
1949 Pyrite Road  
Casper, Wyoming, 82604

**135562**

5":100' - TVD

12/20/2013 1:08:21 PM

**Oper. Company:** Encana Oil & Gas**Country:** USA**State / Province:** Colorado**County / Parish:** Weld**Started:** 11/27/2013 02:00 AM**API/UWI:** 05-123-37789-00**Field:** DJ Basin**Well:** Lochbuie 2B-31H**Rig:** H&P 522**Ended:** 12/09/2013 08:00 AM**Personnel****Day Hand:** C. Van Oerle**Night Hand:** A. Stewart**Comp. Emp:** Cathedral Energy Service**Location****Latitude:** 40.014080**Longitude:** -104.712170**Elev. GL:** 5007**Elev. DF:** 30**Elev. KB:** 5037

Gamma Ray  
ROP  
TD 12,051'

**Hole Data**

Size	From	To
12.25	110	1504
8.75	1506	7784
6.13	7785	12051

**Casing Data**

Size	From	To
9 5/8	0	1594
7	1595	7784
4 1/2	0	12042

**Bit Sizes**

Size	From	To
12.25	110	1504
8.75	1505	7784
6.13	7785	12051

**Mud Data**

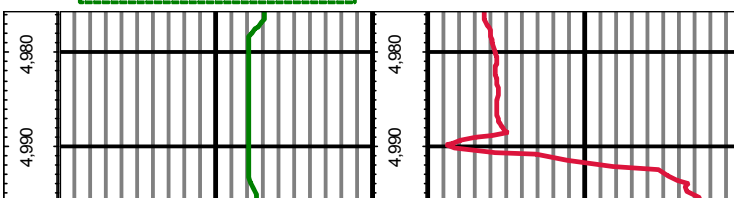
Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
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**Tool Run Data**

Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
1061	32.59	0	11/30/2013 1:00:23 PM	5000	12/1/2013 3:00:23 AM	6986
1061	32.59	0	12/1/2013 12:30:03 PM	6987	12/2/2013 11:00:03 AM	7784
1061	35.1	0	12/5/2013 8:00:19 PM	7785	12/7/2013 3:30:19 AM	7785
1061	35.1	0	12/10/2013 3:19:59 PM	7785	12/10/2013 3:19:59 PM	10643
1061	35.1	0	12/8/2013 1:00:58 PM	10644	12/9/2013 6:00:58 PM	12051

*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 interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.*

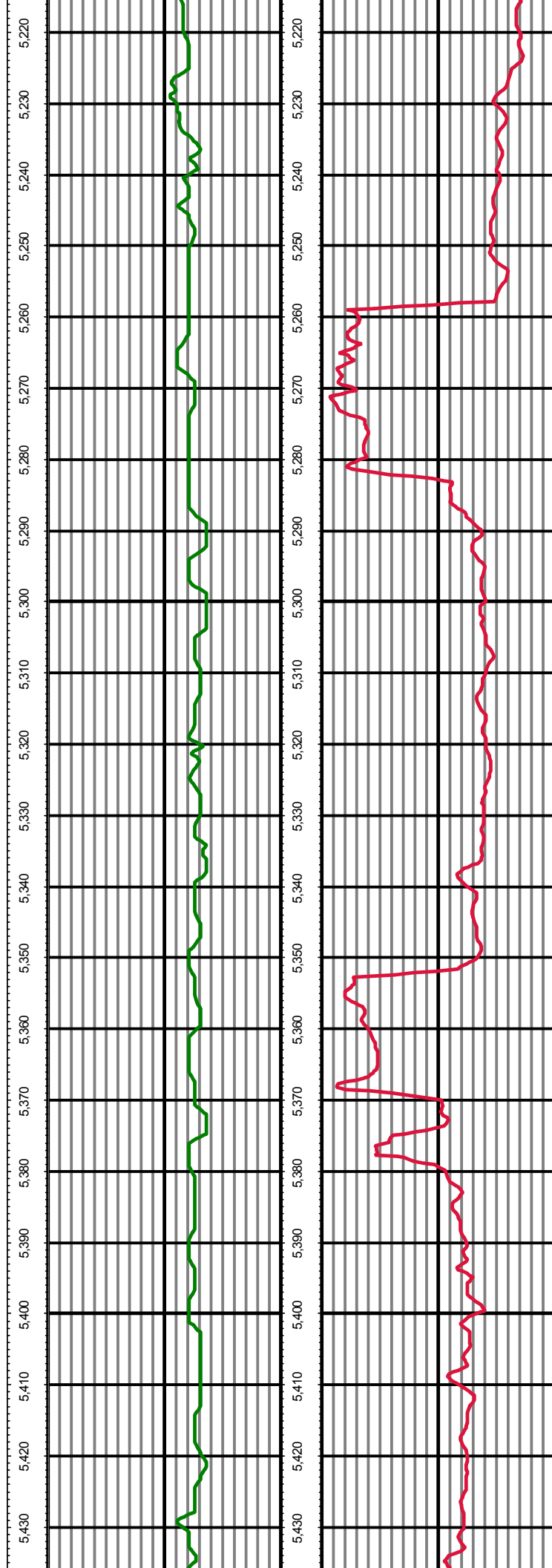
TVD 0.00 GR(API) 150.00 TVD 0.00 ROP(FT/HR) 800.00 Surveys (MD/INC/AZ)  
FT 150.00 2 300.00 FT



MD: 5045.00 INC: 5.90 AZ: 311.10 5,020.43

MD: 5140.00 INC: 6.20 AZ: 303.60 5,114.90

MD: 5234.00 INC: 5.00 AZ: 302.10 5,208.45



MD: 5329.00 INC: 5.50 AZ: 301.00 5,303.05

MD: 5424.00 INC: 5.70 AZ: 305.10 5,397.60

MD: 5518.00 INC: 6.70 AZ: 303.30 5,491.05

MD: 5613.00 INC: 7.10 AZ: 304.50 5,585.36

MD: 5708.00 INC: 5.80 AZ: 308.00 5,679.76

MD: 5802.00 INC: 5.00 AZ: 302.90 5,773.34

MD: 5897.00 INC: 4.40 AZ: 298.80 5,868.02

MD: 5991.00 INC: 4.60 AZ: 287.70 5,961.73

MD: 6086.00 INC: 4.40 AZ: 294.40 6,056.44

MD: 6181.00 INC: 3.90 AZ: 297.30 6,151.19

MD: 6275.00 INC: 3.60 AZ: 310.90 6,244.99

MD: 6370.00 INC: 2.90 AZ: 308.50 6,339.83

MD: 6464.00 INC: 2.20 AZ: 303.60 6,433.74

MD: 6559.00 INC: 1.50 AZ: 302.20 6,528.69

MD: 6654.00 INC: 0.80 AZ: 313.90 6,623.67

MD: 6748.00 INC: 0.40 AZ: 299.60 6,717.67

MD: 6843.00 INC: 0.30 AZ: 302.00 6,812.66

MD: 6937.00 INC: 0.20 AZ: 50.80 6,906.66

MD: 6972.00 INC: 0.20 AZ: 4.40 6,941.66

MD: 7003.00 INC: 1.40 AZ: 173.40 6,972.66

MD: 7035.00 INC: 4.60 AZ: 176.50 7,004.61

MD: 7066.00 INC: 8.30 AZ: 184.10 7,035.41

MD: 7098.00 INC: 10.50 AZ: 186.00 7,066.98

MD: 7129.00 INC: 13.60 AZ: 186.30 7,097.29

MD: 7161.00 INC: 16.80 AZ: 187.90 7,128.17

MD: 7192.00 INC: 20.10 AZ: 186.70 7,157.57

MD: 7224.00 INC: 23.60 AZ: 185.30 7,187.27

MD: 7255.00 INC: 27.60 AZ: 184.00 7,215.22

MD: 7287.00 INC: 31.40 AZ: 182.80 7,243.07

MD: 7318.00 INC: 34.70 AZ: 180.20 7,269.05

MD: 7350.00 INC: 38.20 AZ: 179.00 7,294.79

MD: 7382.00 INC: 42.50 AZ: 177.60 7,319.17

MD: 7413.00 INC: 46.40 AZ: 177.60 7,341.29

MD: 7445.00 INC: 50.00 AZ: 177.50 7,362.62

MD: 7476.00 INC: 53.10 AZ: 177.70 7,381.89

MD: 7508.00 INC: 56.30 AZ: 177.30 7,400.38

MD: 7539.00 INC: 59.30 AZ: 176.80 7,416.00

