



Precision Directional Services, Inc.

27610 Commerce Oaks Drive
Oak Ridge North, TX 77385
(713) 435-6250

DL1922

2":100' - TVD

10/23/2013 2:24:17 AM

Oper. Company: Carrizo Oil and Gas, Inc.

Country: USA

State / Province: Colorado

County / Parish: Weld

Started: 10/13/2013 07:00 PM

API/UWI: 05-123-38239

Field: Niobrara CONZ'83

Well: Nelson Ranches 4-27-10-59

Rig: Xtreme 19

Ended: 10/22/2013 10:00 PM

Personnel

Day Hand: Paul Brown

Night Hand: Neil LaRubbio

Comp. Emp: Joe Covington

Location

Latitude: 40.8043305555556

Longitude: -103.981222222222

Elev. GL: 5210'

Elev. DF: 5227'

Elev. KB: 17'

Hole Data

Size	From	To
12 1/4	0	1428
8 3/4	1428	6470
6 1/8	6470	13202

Casing Data

Size	From	To
9 5/8	0	1408
7	0	6450
4.5	6450	13202

Bit Sizes

Size	From	To
12 1/4	0	1428
8 3/4	1428	6470
6 1/8	6470	13202

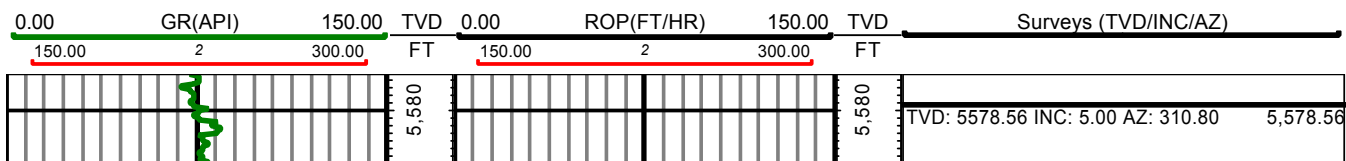
Mud Data

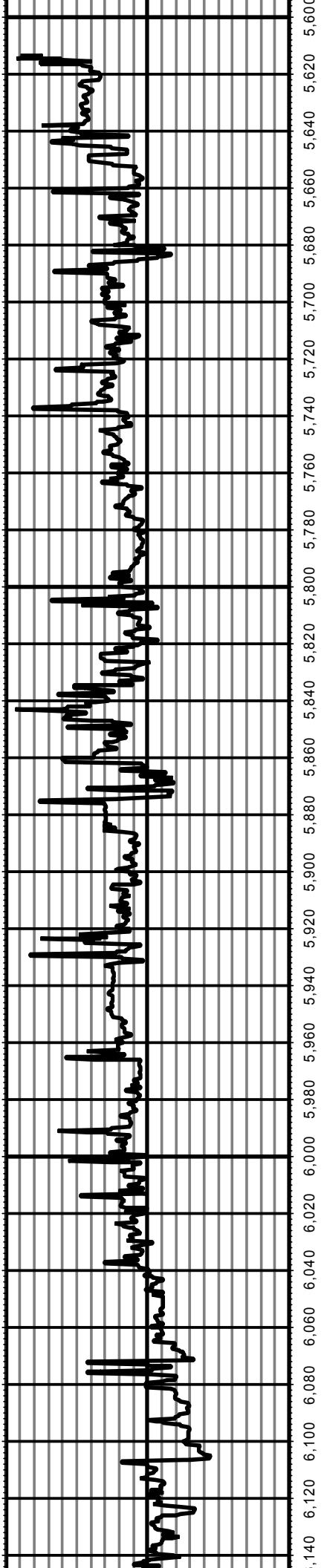
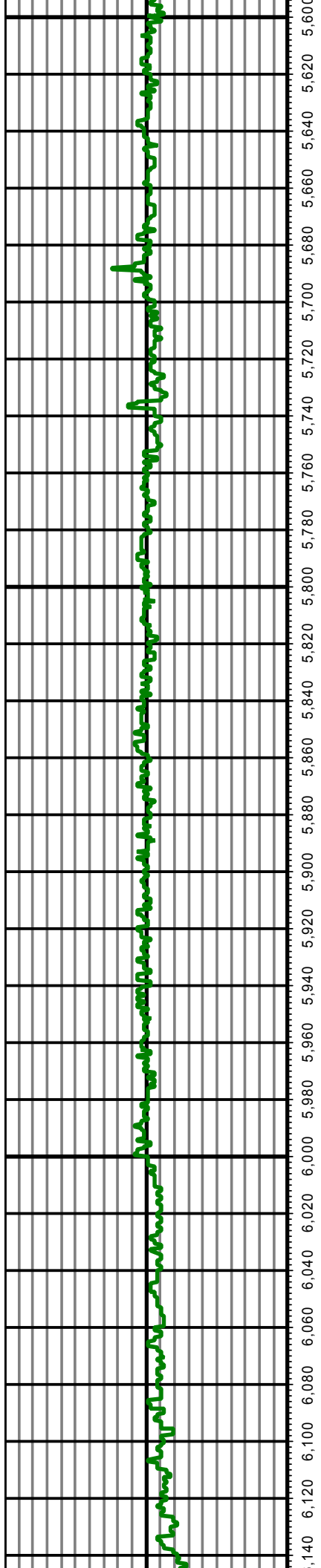
Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
WBM	8.4	8.4	40-44	N/A	N/A	N/A	0	1428
WBM	8.4-9.0	8.4-9.0	30-40	N/A	N/A	N/A	1428	5650
WBM	9.0-9.5	9.0-9.5	28-30	N/A	N/A	N/A	5650	6470
WBM	9.5-9.7	9.5-9.7	42-45	N/A	N/A	N/A	6470	12300
WBM	9.7-9.8	9.7-9.8	38-40	N/A	N/A	N/A	12300	13202

Tool Run Data

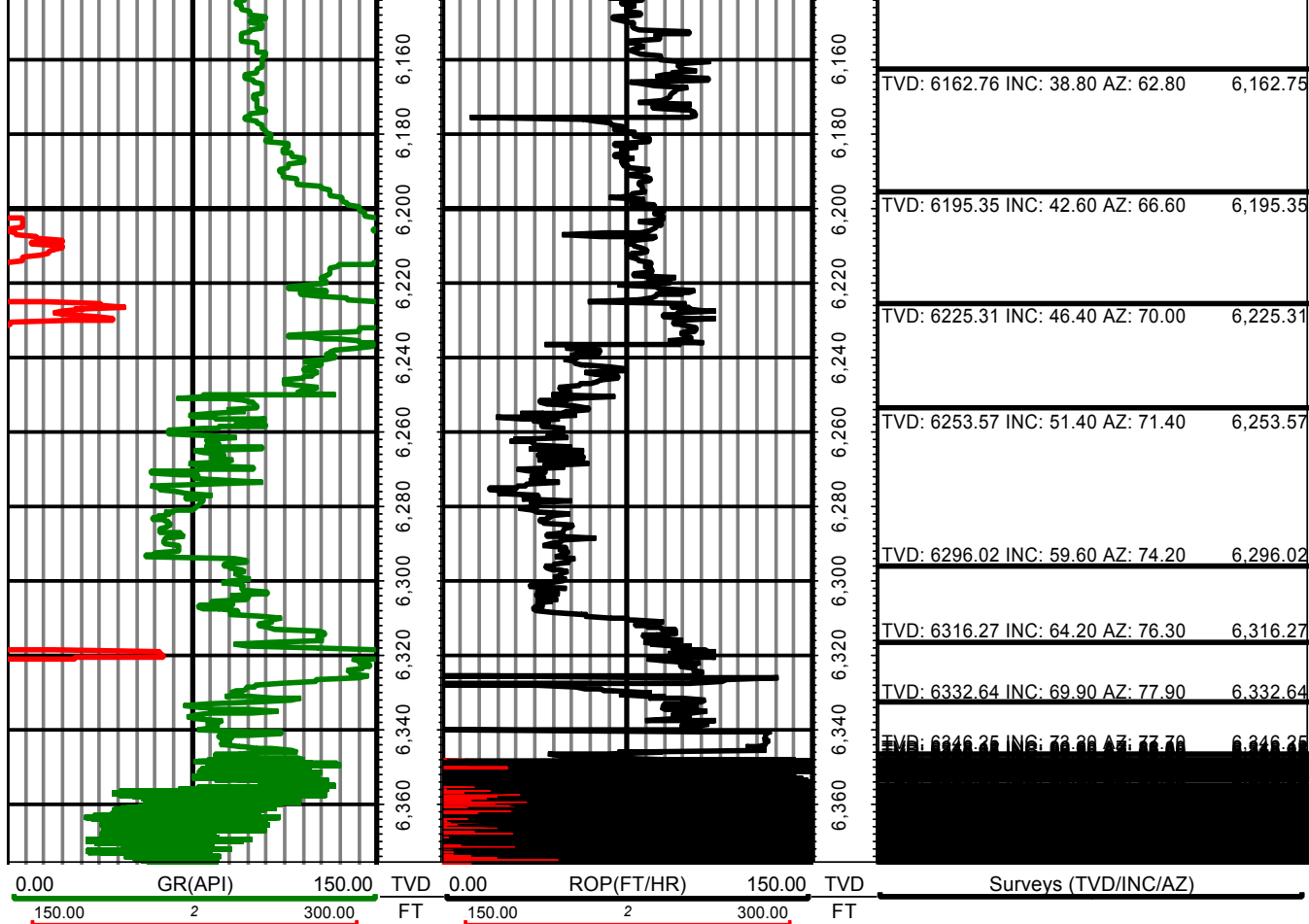
Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
G1744	43	0	10/13/2013 12:00:53 PM	5650	10/14/2013 9:30:53 PM	6470
G1744	50	0	10/15/2013 9:00:59 PM	6470	10/18/2013 7:30:59 PM	9522
G2110	50	0	10/18/2013 8:30:33 PM	9522	10/22/2013 10:00:33 PM	13202

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: 5620.41 INC: 4.80 AZ: 329.20	5,620.41
TVD: 5663.16 INC: 7.40 AZ: 347.70	5,663.16
TVD: 5705.63 INC: 10.60 AZ: 352.80	5,705.63
TVD: 5746.64 INC: 14.20 AZ: 354.40	5,746.64
TVD: 5787.09 INC: 17.00 AZ: 0.00	5,787.09
TVD: 5828.09 INC: 18.20 AZ: 10.50	5,828.09
TVD: 5868.61 INC: 20.90 AZ: 16.20	5,868.61
TVD: 5907.35 INC: 24.50 AZ: 17.60	5,907.35
TVD: 5946.22 INC: 26.20 AZ: 23.40	5,946.22
TVD: 5983.63 INC: 27.90 AZ: 31.10	5,983.63
TVD: 6021.43 INC: 29.10 AZ: 38.00	6,021.43
TVD: 6057.67 INC: 31.70 AZ: 45.00	6,057.67
TVD: 6093.92 INC: 33.40 AZ: 51.70	6,093.92
TVD: 6128.52 INC: 35.70 AZ: 57.80	6,128.52



TVD: 6162.76 INC: 38.80 AZ: 62.80 6,162.75

TVD: 6195.35 INC: 42.60 AZ: 66.60 6,195.35

TVD: 6225.31 INC: 46.40 AZ: 70.00 6,225.31

TVD: 6253.57 INC: 51.40 AZ: 71.40 6,253.57

TVD: 6296.02 INC: 59.60 AZ: 74.20 6,296.02

TVD: 6316.27 INC: 64.20 AZ: 76.30 6,316.27

TVD: 6332.64 INC: 69.90 AZ: 77.90 6,332.64

TVD: 6346.25 INC: 73.80 AZ: 77.70 6,346.25