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### Customer Information

**Operator:** Noble Energy  
1625 Broadway  
Suite 2200  
Denver, Colorado 80202

**Geologist:** Emerson Palmer  
Noble Energy Inc.

### Mud Logging Details

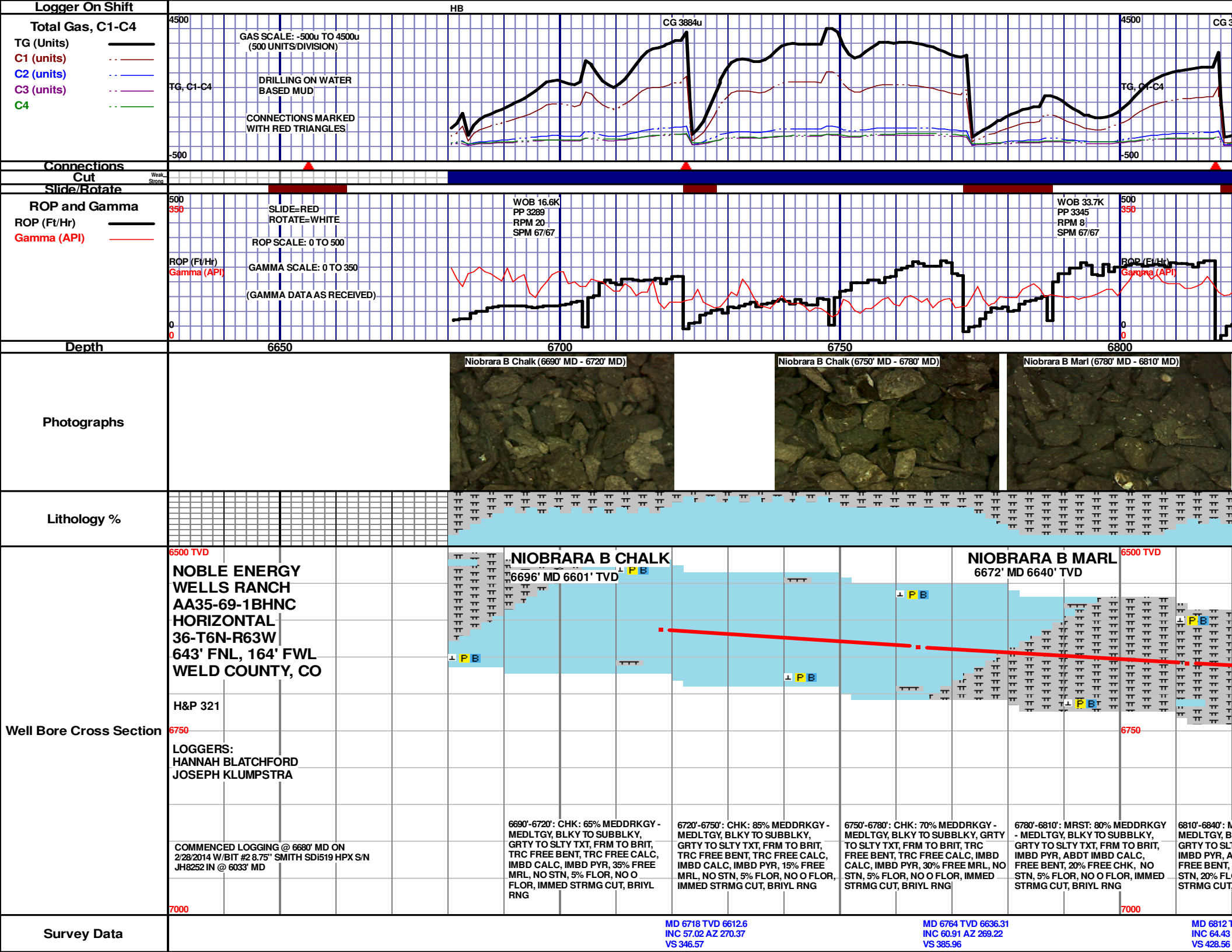
**Logger:** Hannah Blatchford &  
Joseph Klumpstra  
**Log Interval:** 6680' MD to 11322' MD  
**Start Date:** February 28, 2014  
**Release Date:** March 4, 2014

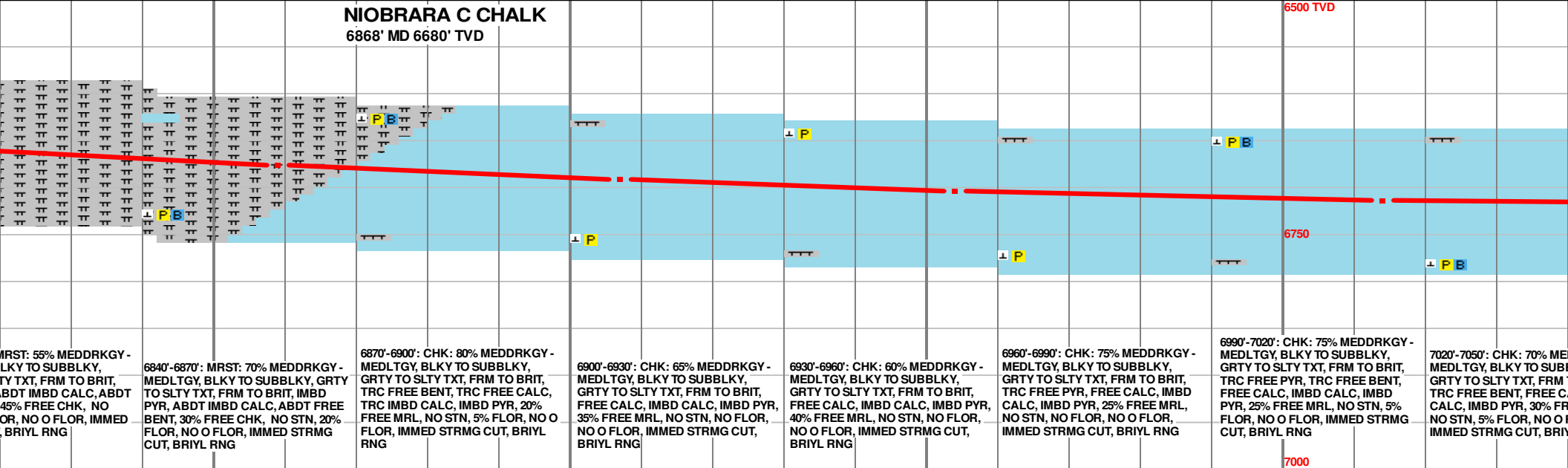
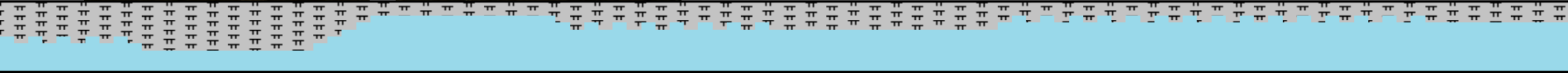
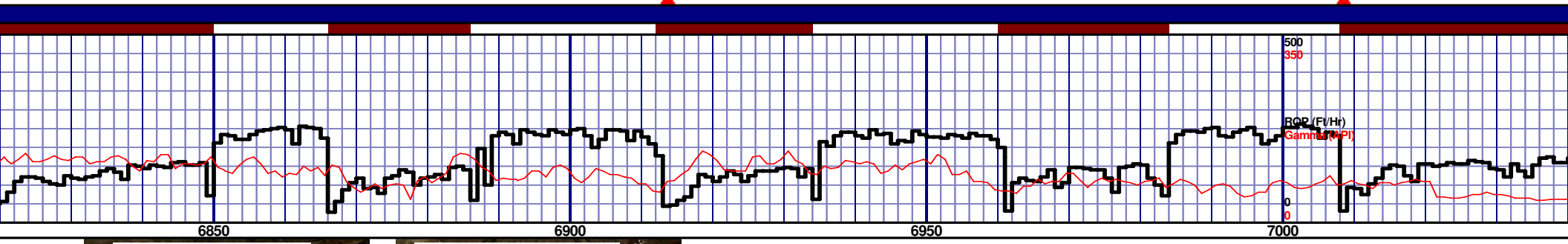
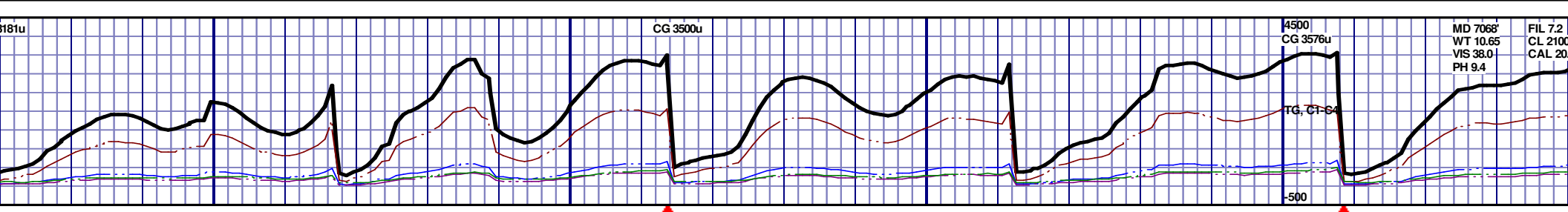
### Well Information

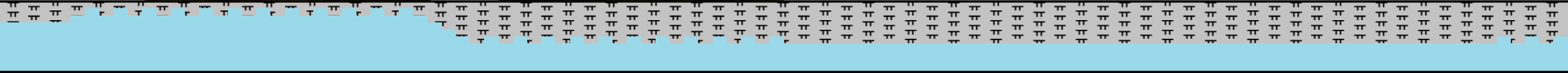
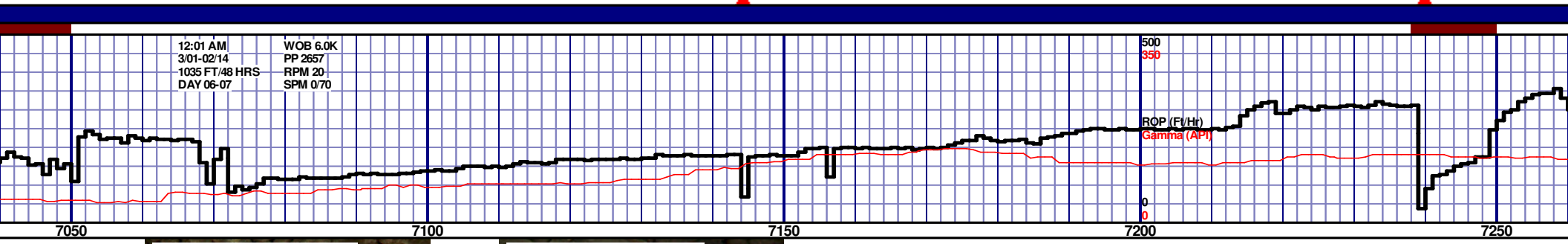
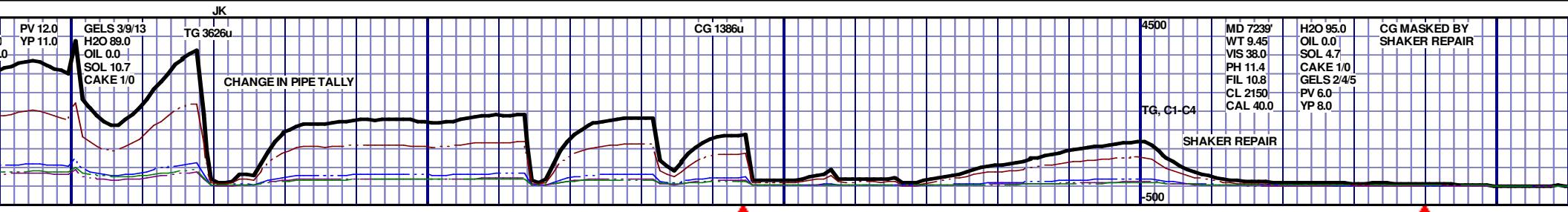
**Well Name:** Wells Ranch  
AA35-69-1BHNC Horizontal  
**Location:** 36-T6N-R63W  
643' FNL, 164' FWL

**County:** Weld  
**State:** Colorado

**Drilling Rig:** H&P 321  
**Total Depth:** 11322' MD  
**TD Date:** March 4, 2014  
**Formation:** Niobrara C Chalk  
**KB Elevation:** 4839'  
**GR Elevation:** 4809'  
**API Number:** 05-123-38662-0000







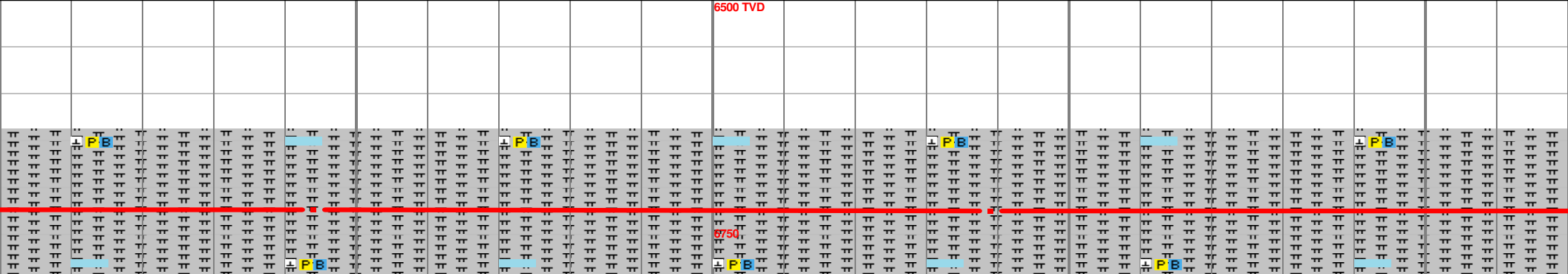
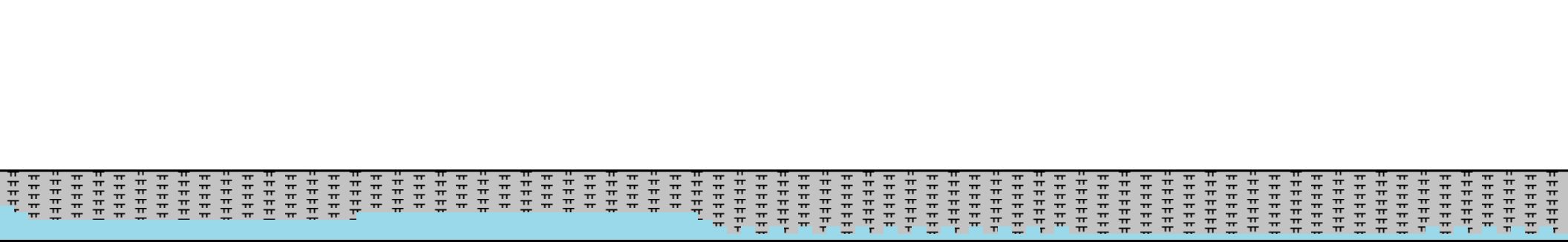
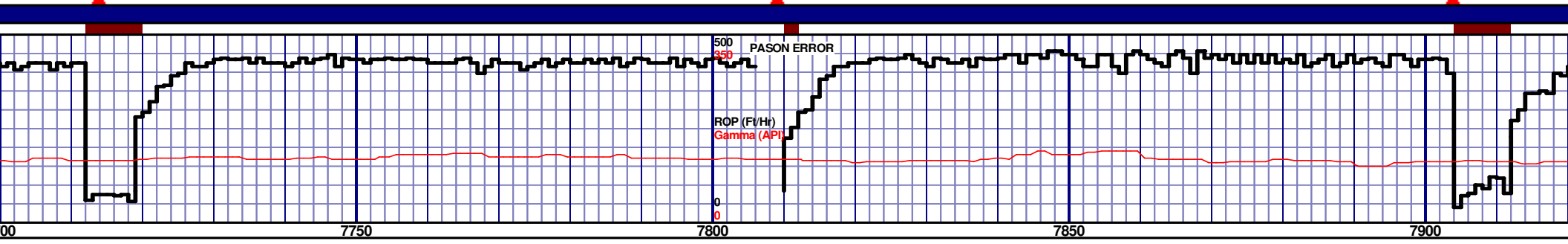
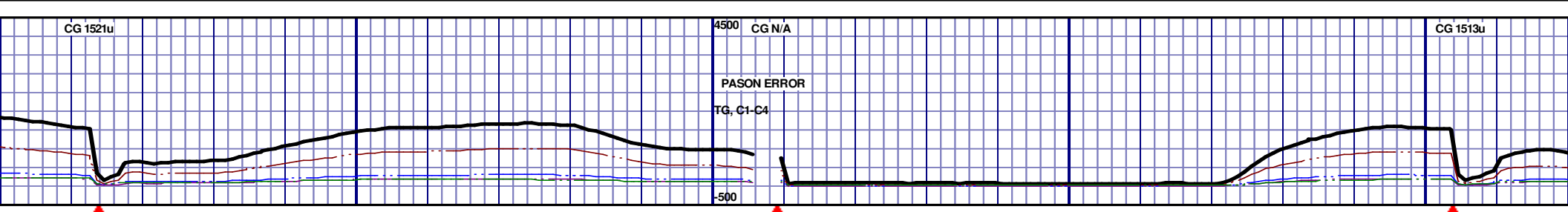
<p>TOOH @ 2:00 PM ON 02/28/14 @ 7068' MD FOR INTERMEDIATE CASING OPERATIONS. TIH @ 8:30PM ON 03/01/14. DRILLING AHEAD @ 2:00AM ON 03/02/14 W/ BIT #3 6.125' SMITH SDI513 UBPX S/N JH9104 IN @ 7068' MD.</p>	<p><b>NIOBRARA C MARL</b> 7138' MD 6719' TVD</p>				<p>6500 TVD</p>
<p>50'</p>	<p>50'</p>	<p>50'</p>	<p>50'</p>	<p>50'</p>	<p>50'</p>
<p>7050'-7100': CHK: 85% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, FREE CALC, IMBD CALC, IMBD PYR, 15% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7100'-7150': MRST: 55% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CALC, 45% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>50'</p>	<p>7150'-7200': MRST: 60% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CALC, 40% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7200'-7250': MRST: 60% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CALC, 40% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7250'-7300': MRST: 60% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CALC, 40% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>

MD 7091 TVD 6718.69  
INC 89.14 AZ 271.25  
VS 698.74

MD 7175 TVD 6720.51  
INC 88.37 AZ 270.49  
VS 782.72







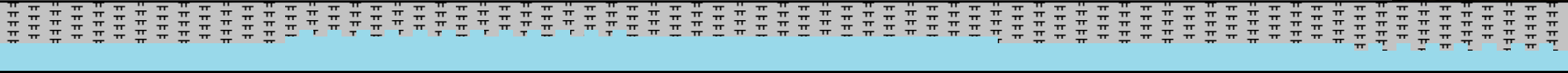
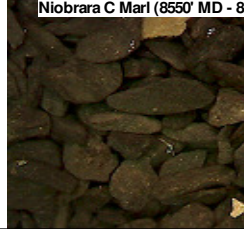
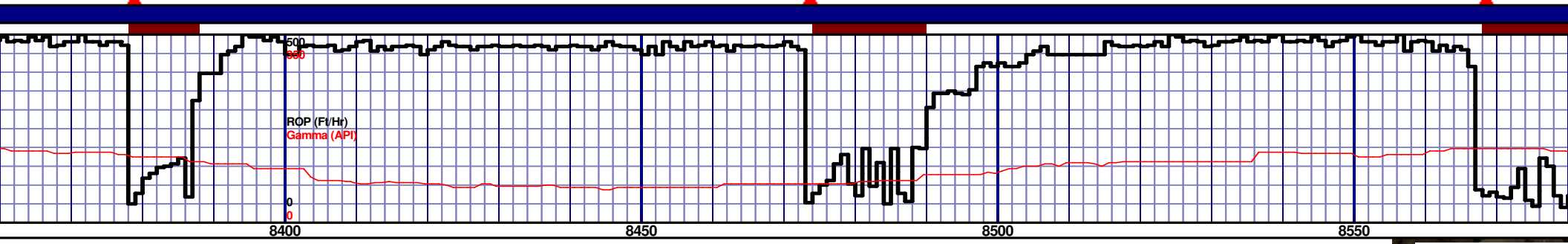
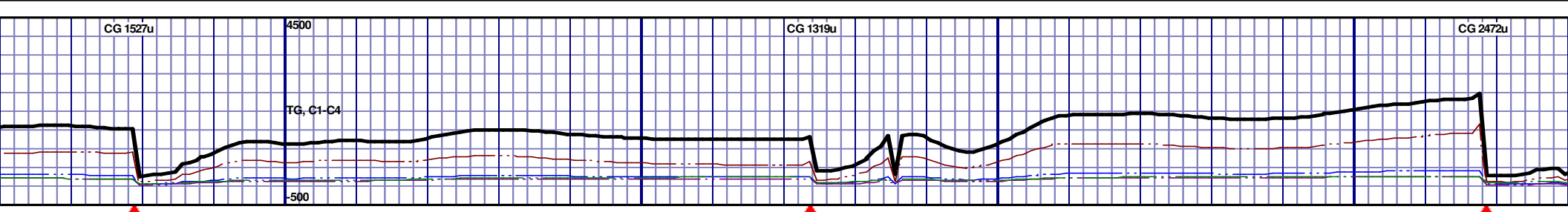
<p>7700'-7750': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE PYR, TRC FREE BENT, TRC FREE CALC, 30% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7750'-7800': MRST: 60% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE PYR, FREE BENT, TRC FREE CALC, 40% FREE CHK, NO STN, 10% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7800'-7850': MRST: 85% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE PYR, TRC FREE BENT, TRC FREE CALC, 15% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7850'-7900': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE PYR, TRC FREE BENT, TRC FREE CALC, 10% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>7900'-7950': MRST: 85% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE PYR, FREE BENT, TRC FREE CALC, 10% FREE CHK, NO STN, 10% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>
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MD 7744 TVD 6724.03  
 INC 89.05 AZ 269.6  
 VS 1351.45

MD 7839 TVD 6725.12  
 INC 89.63 AZ 270.74  
 VS 1446.42







<p>6500 TVD</p> <p>6750</p> <p>7000</p>	<p>8400'-8450': CHK: 55% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, FREE CALC, FREE PYR, IMBD PYR, 45% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>8450'-8500': CHK: 50% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, FREE CALC, FREE PYR, IMBD PYR, 50% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>8500'-8550': MRST: 60% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CALC, 40% FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>8550'-8600': MRST: 65% MEDDRKGY - M... SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD PYR, TRC FREE BENT, FREE CA... STN, 5% FLOR, NO O FLOR, IMMED ST...</p>
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MD 8407 TVD 6725.71  
 INC 90.09 AZ 268.29  
 VS 2013.54

MD 8502 TVD 6726.32  
 INC 89.17 AZ 269.09  
 VS 2108.43



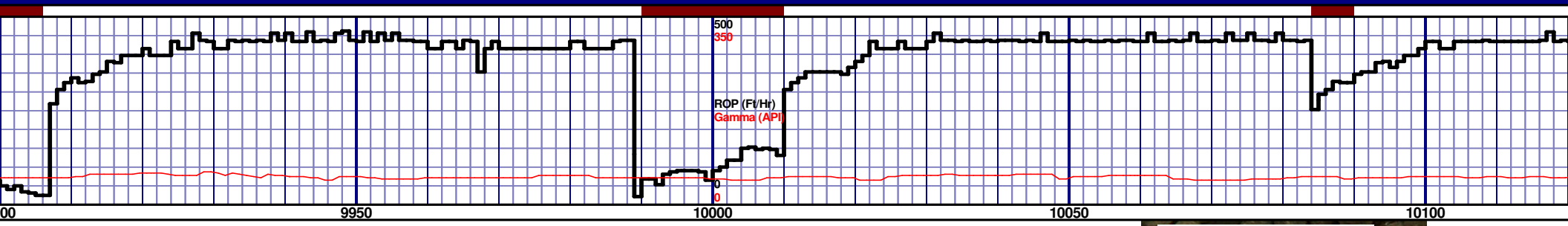
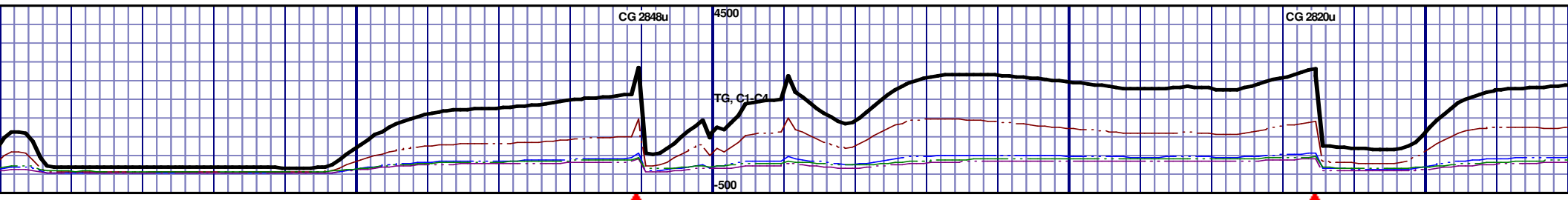










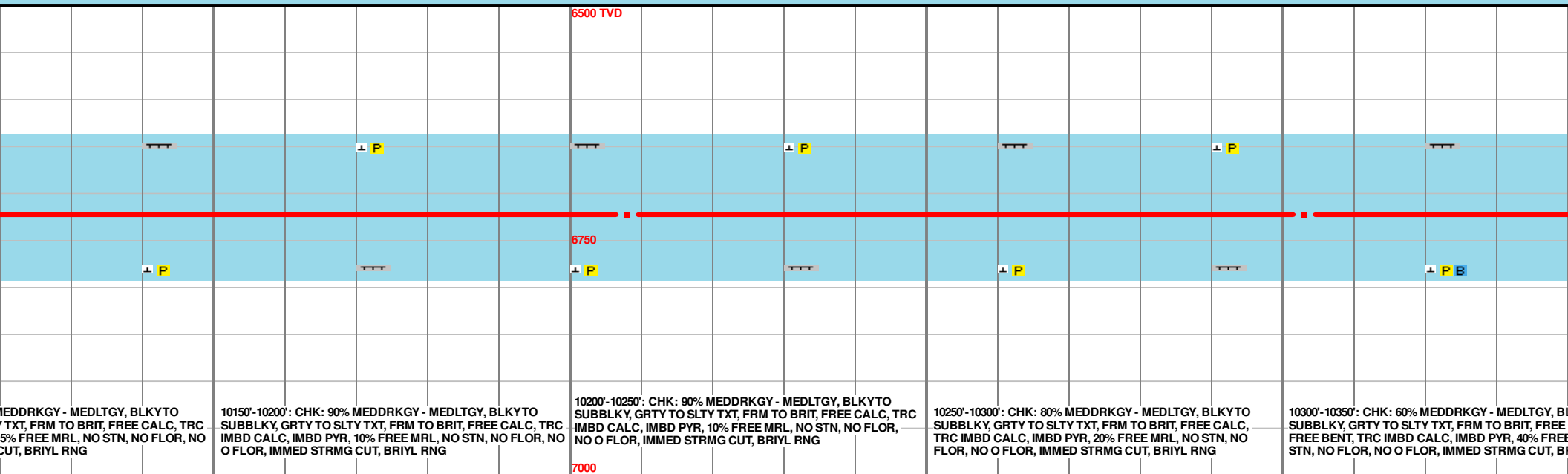
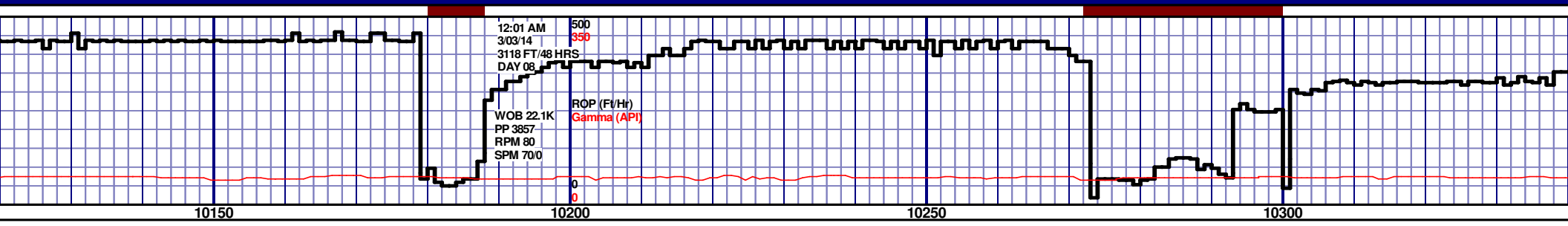
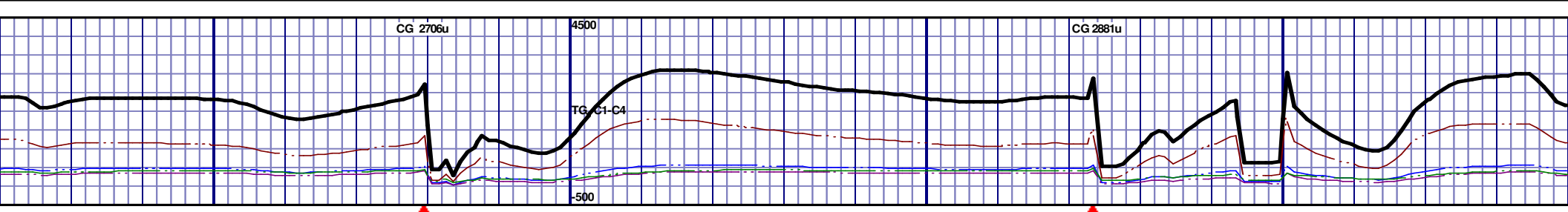


				6500 TVD					
<p>9900'-9950': CHK: 95% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC FREE BENT, TRC IMBD CALC, IMBD PYR, 5% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>		<p>9950'-10000': CHK: 95% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC FREE BENT, TRC IMBD CALC, IMBD PYR, 5% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>		<p>10000'-10050': CHK: 90% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC IMBD CALC, IMBD PYR, 10% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>		<p>10050'-10100': CHK: 80% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC IMBD CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>		<p>10100'-10150': CHK: 85% M... SUBBLKY, GRTY TO SLTY... IMBD CALC, IMBD PYR, 1... O FLOR, IMMED STRMG C...</p>	
				6750					
				7000					

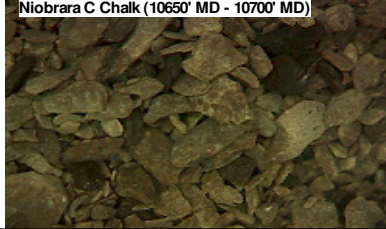
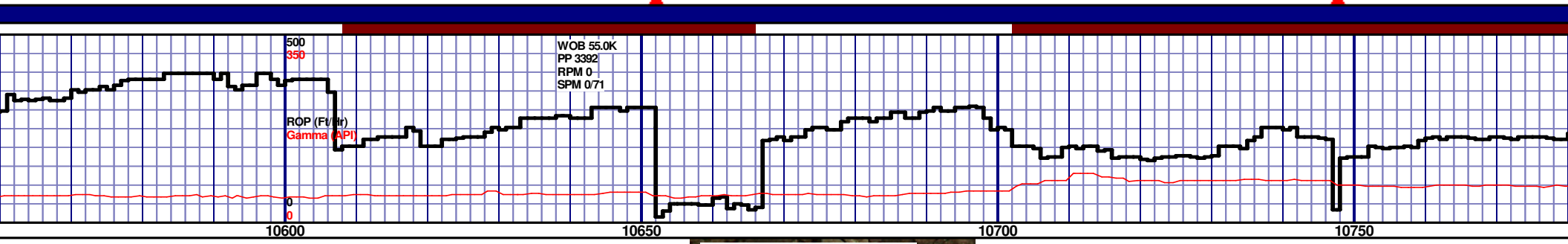
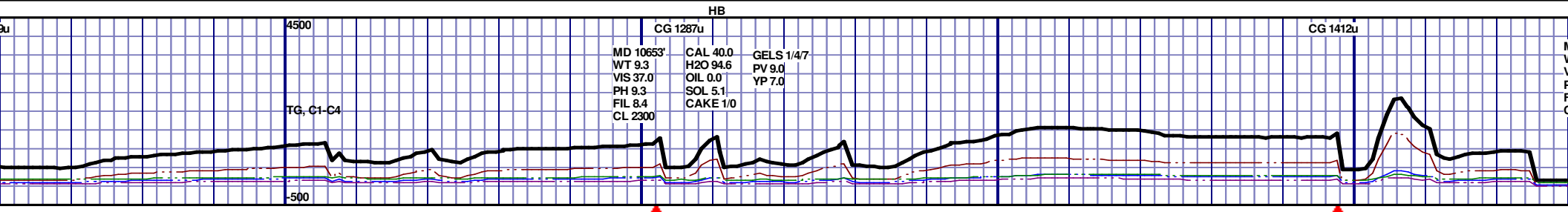
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INC 90.15 AZ 268.74  
VS 3529.1

MD 10019 TVD 6723.32  
INC 90.37 AZ 270.7  
VS 3624.06

MD 101...  
INC 90...  
VS 3715...





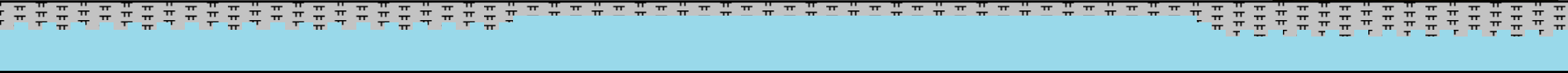
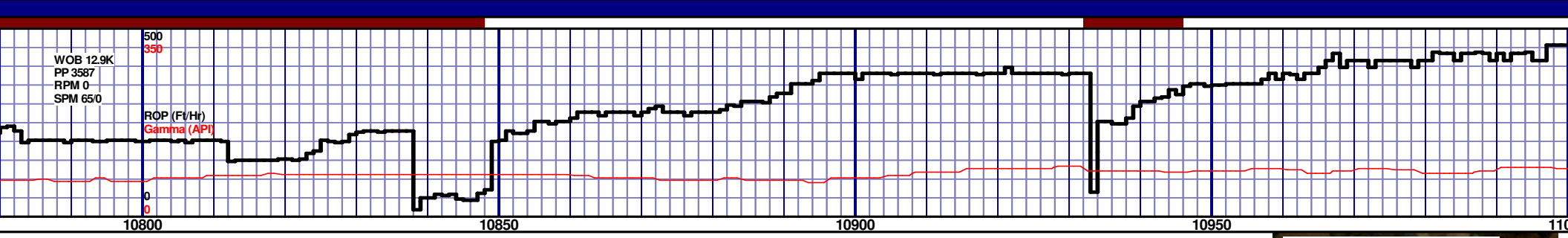
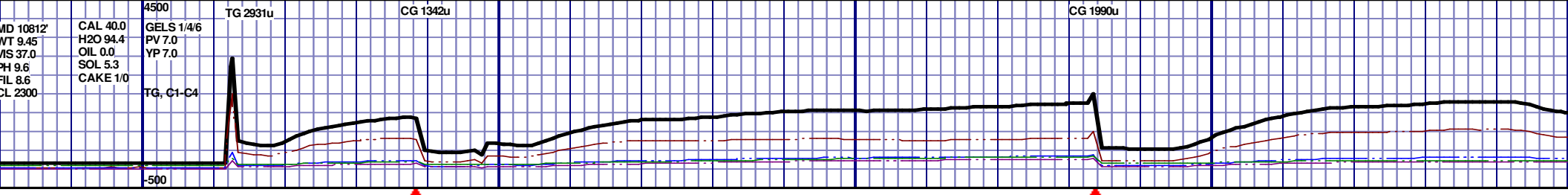


<p>CHK: 90% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC TRC IMBD CALC, IMBD PYR, 10% FREE MRL, NO STN, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10600'-10650': CHK: 95% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC FREE BENT, TRC IMBD CALC, IMBD PYR, 5% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10650'-10700': CHK: 95% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC FREE BENT, TRC IMBD CALC, IMBD PYR, 5% FREE MRL, NO STN, TRC FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10700'-10750': CHK: 85% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE CALC, TRC IMBD CALC, IMBD PYR, 15% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10750'-10800': CHK: 65% MEDDRKGY - SUBBLKY, GRTY TO SLTY TXT, FRM TO IMBD PYR, TRC FREE BENT, 35% FREE FLOR, NO O FLOR, IMMED STRMG CUT</p>
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MD 10587 TVD 6721.22  
INC 90.92 AZ 273.34  
VS 4191.89

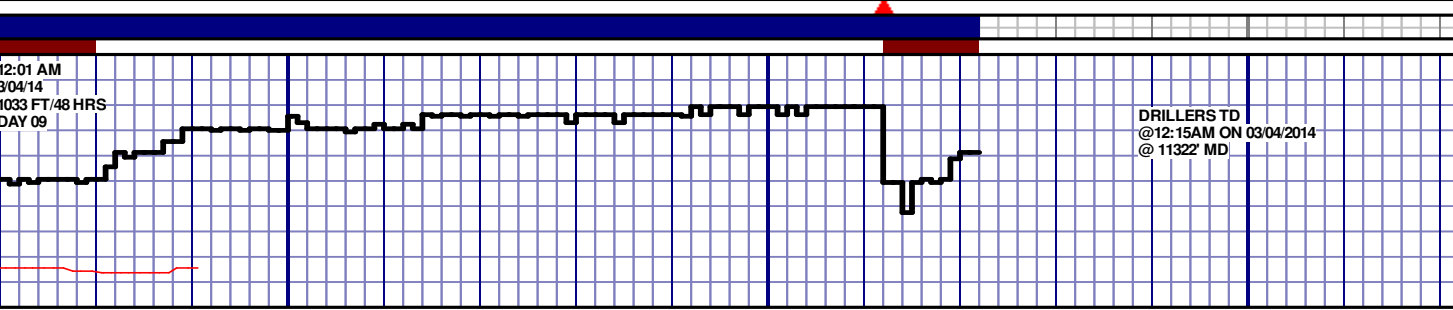
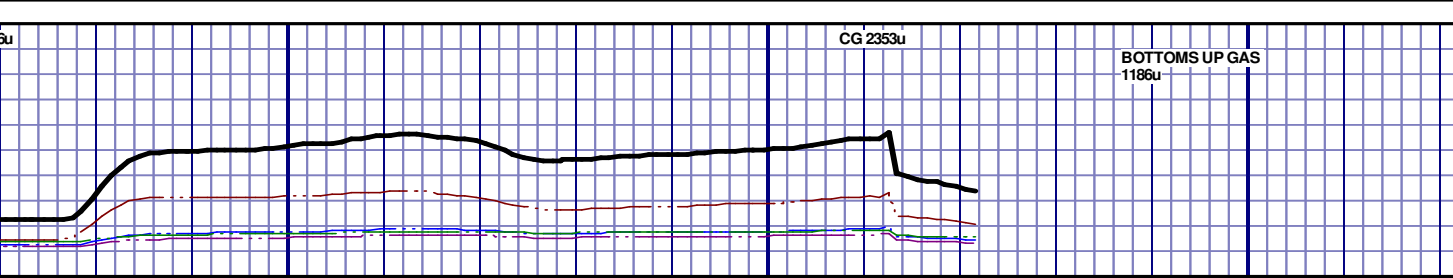
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VS 4286.87

MD  
INC  
VS

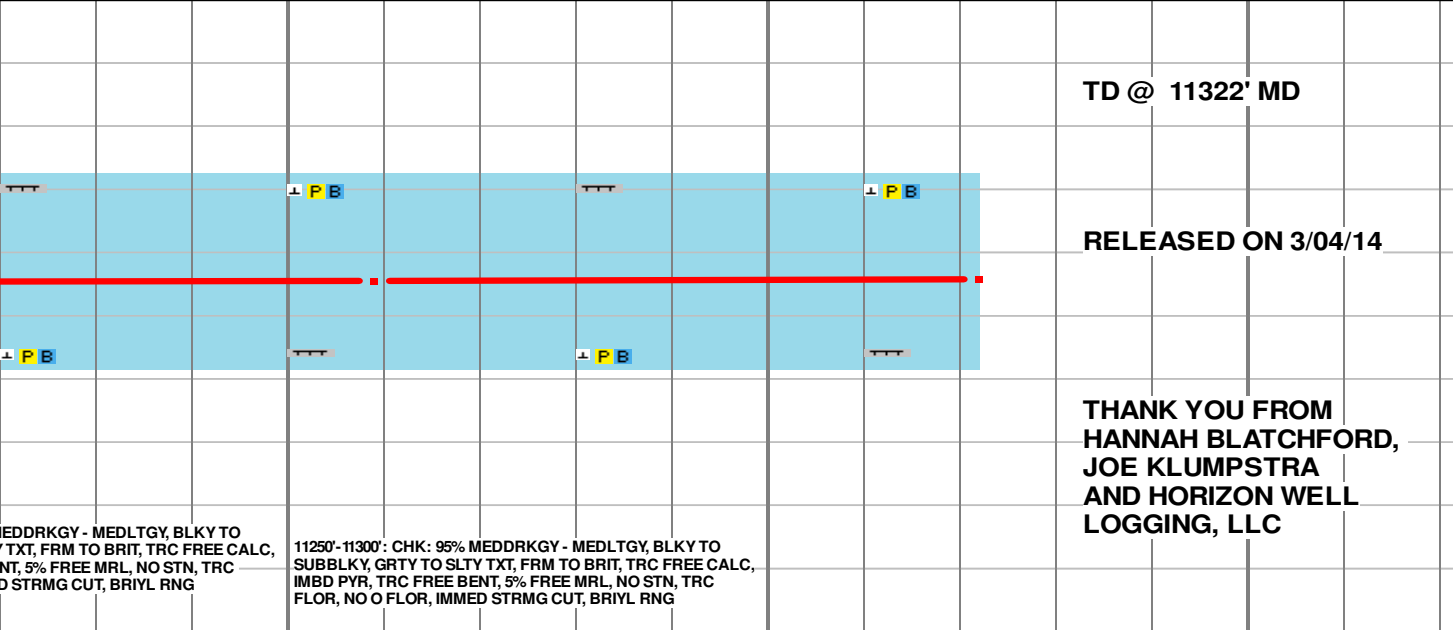
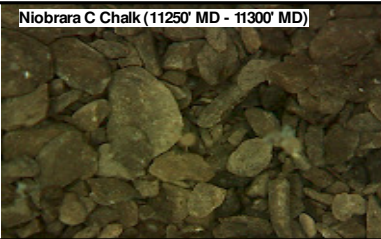


<p>TOOH @ 5:30 AM ON 03/03/14 @ 10812' MD FOR NEW MOTOR. TIH @ 2:00 PM ON 03/03/14. DRILLING AHEAD @ 8:30PM ON 03/03/14 W/ BIT #3 6.125" SMITH SDI513 UBXP S/N JH9104 IN @ 7068' MD.</p>	<p>6500 TVD</p> <p>10800'-10850': CHK: 65% MEDDRKGY - MEDLTGY, BLKYO TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, 35% FREE MRL, NO STN, TRC FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10850'-10900': CHK: 80% MEDDRKGY - MEDLTGY, BLKYO TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, 20% FREE MRL, NO STN, TRC FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10900'-10950': CHK: 80% MEDDRKGY - MEDLTGY, BLKYO TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, 20% FREE MRL, NO STN, TRC FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10950'-11000': CHK: 55% MEDDRKGY - MEDLTGY, BLKYO TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, 45% FREE MRL, NO STN, TRC FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>
<p>10777 TVD 6721.07 INC 89.26 AZ 269.94 4381.86</p>	<p>7000</p>	<p>MD 10872 TVD 6721.68 INC 89.26 AZ 269.58 VS 4476.82</p>	<p>MD 10967 TVD 6722.65 INC 89.57 AZ 269.08 VS 4571.75</p>	





11250 11300 11350



TD @ 11322' MD

RELEASED ON 3/04/14

THANK YOU FROM  
HANNAH BLATCHFORD,  
JOE KLUMPSTRA  
AND HORIZON WELL  
LOGGING, LLC

MEDDRKGY - MEDLTGY, BLKY TO  
TXT, FRM TO BRIT, TRC FREE CALC,  
NT, 5% FREE MRL, NO STN, TRC  
O STRMG CUT, BRIYL RNG

11250'-11300': CHK: 95% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE CALC,  
IMBD PYR, TRC FREE BENT, 5% FREE MRL, NO STN, TRC  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG