



EWR Electromagnetic Wave Resistivity

Gamma

Rate Of Penetration

1 : 240

County : Barber	Company : Shell Exploration & Production	
Field : Arrowhead	Rig : Nabors 102	
Location : Lat: 37° 8' 19.91" North Long: 98° 21' 45.26" West	Well : Circle Industries 3310 #25-1SWD	
Well : Circle Industries 3310 #25-1SWD	Company : Shell Exploration & Production	
Company : Shell Exploration & Production	Rig : Nabors 102	
Rig : Nabors 102	Well : Circle Industries 3310 #25-1SWD	
LOCATION Latitude : 37° 8' 19.91" North Longitude : 98° 21' 45.26" West UTM Easting = 2,040,062.34 ft UTM Northing = 171,965.45 ft		
Permanent Datum : Ground Level	Elevation : 1380.00 ft	Elev. KB N/A
Log Measured From : Drill Floor	25.76 ft Above Permanent Datum	DF 1405.76 ft
Drilling Measured From : Drill Floor	MD LOG	GL 1380.00 ft
Depth Logged : 4,400.00 ft To 5,270.00 ft	Unit No. : PP 46	WD N/A
Date Logged : 23-Apr-12 To 23-Apr-12	Plot Type : Final	
Total Depth MD : 5,270.00 ft TVD : 5,270.00 ft	Plot Date : 25-Apr-12	
Spud Date : 13-Apr-12		
Run No. : 1	Size : 8.750 in	From : 4,400.00 ft To : 5,270.00 ft
	Size : 8.885 in	From : SURFACE To : 808.00 ft

WELL INFORMATION

MWD Run Number	100		
Date run completed	23-Apr-12		
Rig Bit Number	1		
Bit Size (in)	8.750		
Tool Nominal OD (in)	6.750		
Log Start Depth (MD, ft)	4,400.00		
Log End Depth (MD, ft)	5,270.00		
Drill or Wipe	Wipe		
Drill/Wipe Start Date and Time	23-Apr-12 04:50		
Drill/Wipe End Date and Time	23-Apr-12 17:10		
Min Inc (deg) @ Depth (MD, ft)	.37 @ 5,085.00		
Max Inc (deg) @ Depth (MD, ft)	1.08 @ 4,701.00		
Bit TFA(in2) / Bit Type	5.50 / PDC		
Flow Rate (gpm)	302.00		
Max AV (fpm) / CV (fpm) @ MWD	238.0 / 679.0		
Fluid Type	Native/Spud Mud		
Density (ppg) / Viscosity (spqt)	9.00 / 47.00		
Filtrate CL (ppm)	10,000.00		
pH / Fluid Loss (mptm)	10.00 / 7		
PV (cP) / YP (lbf2)	10 / 14.00		
% Solids / % Sand	3.50 / 0.50		
% Oil / Oil:Water Ratio	N/A / N/A		
Rm @ Measured Temp (degF)	.640 @ 78.00		

Rmf @ Measured Temp (degF)	.450 @ 78.00			
Rmc @ Measured Temp (degF)	1.000 @ 78.00			
Max Tool Temp (degF) / Source	106.16 / HCIM			
Rm @ Max Tool Temp (degF)	.4804 @ 106.16			
Lead MWD Engineer	John Blair			
Customer Representative	Dave Cooper			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM			
Software Version	88.47			
Sub Serial Number	11251500			
Insert Serial Number	999			
Date and Time Initialized	23-Apr-12 01:17			
Date and Time Read	23-Apr-12 22:57			
ECMB SW Version	N/A			

Gamma Ray Sensor Information

Tool Type	DGR			
Distance From Bit (ft)	23.94			
Recorded Sample Period (sec)	12			
Software Version	N/A			
Sub Serial Number	11138309			
Insert/Sonde Serial Number	999			

Resistivity Sensor Information

Tool Type	EWR-P4			
Distance From Bit (ft)	14.03			
Recorded Sample Period (sec)	12			
Software Version	1.50			
Sub Serial Number	134753			
Receiver Insert Serial Number	11108069			
Transmitter Insert Serial Number	10765263			
Receiver Orientation	Down			

DDSr-DGR Sensor Information

Tool Type	DDSr-DGR			
Distance From Bit (ft)	22.91			
Recorded Sample Period (sec)	12			
Software Version	10.72			
Sub Serial Number	11138309			
Insert Serial Number	11661819			
Sensor ID Number	8197			

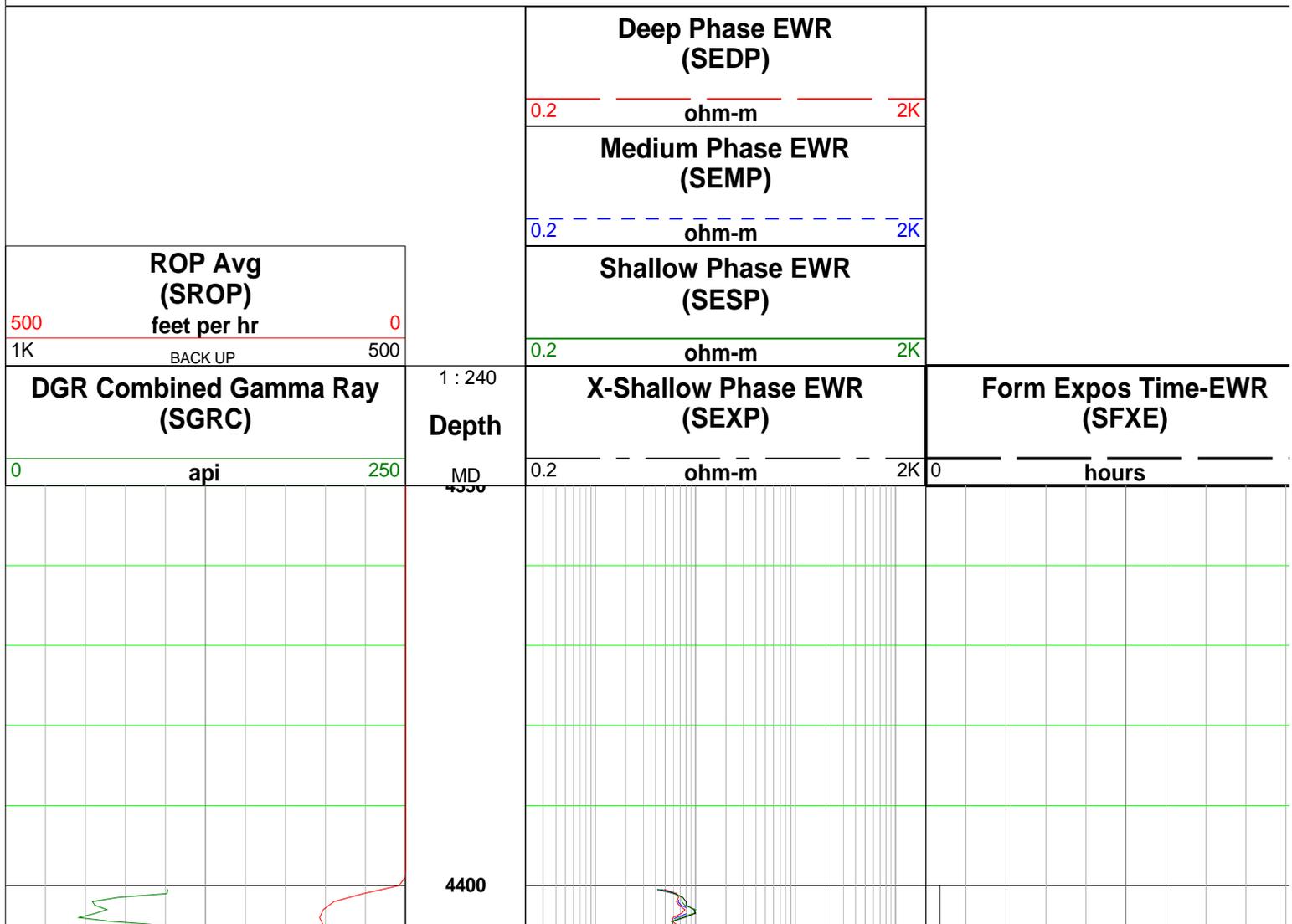
REMARKS

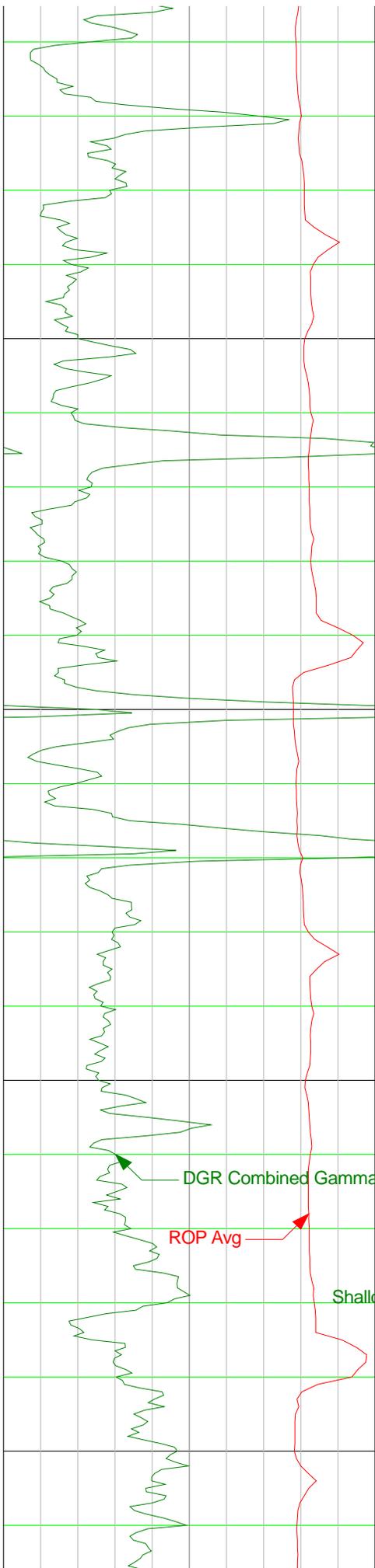
1. All depths are calibrated to the driller's pipe tally and are measured from the rotary table.
2. No depth corrections have been made for pipe stretch or compression.

3. All data presented is recorded (memory data) unless otherwise stated.
4. The following smoothing parameters have been applied to the data:
 ROP: 1.0 ft interval, 3.0 ft coercion distance.
 GAMMA: 0.5 ft interval, 0.6 ft coercion distance.
 Resistivity: 0.5 ft interval, 0.6 ft coercion distance.
5. Logging run was wiper trip. No footage drilled, and no directional surveys.

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4450

4500

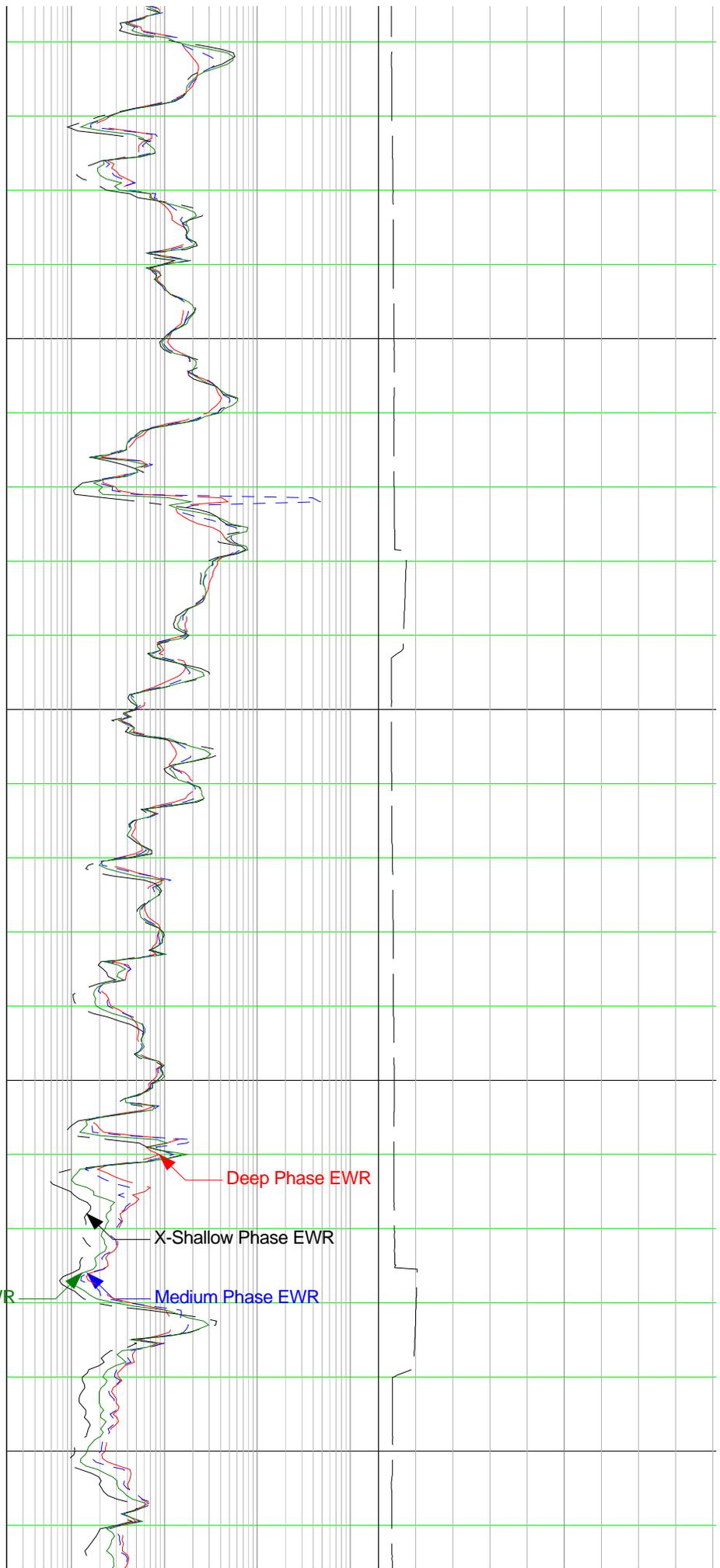
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4600

DGR Combined Gamma Ray

ROP Avg

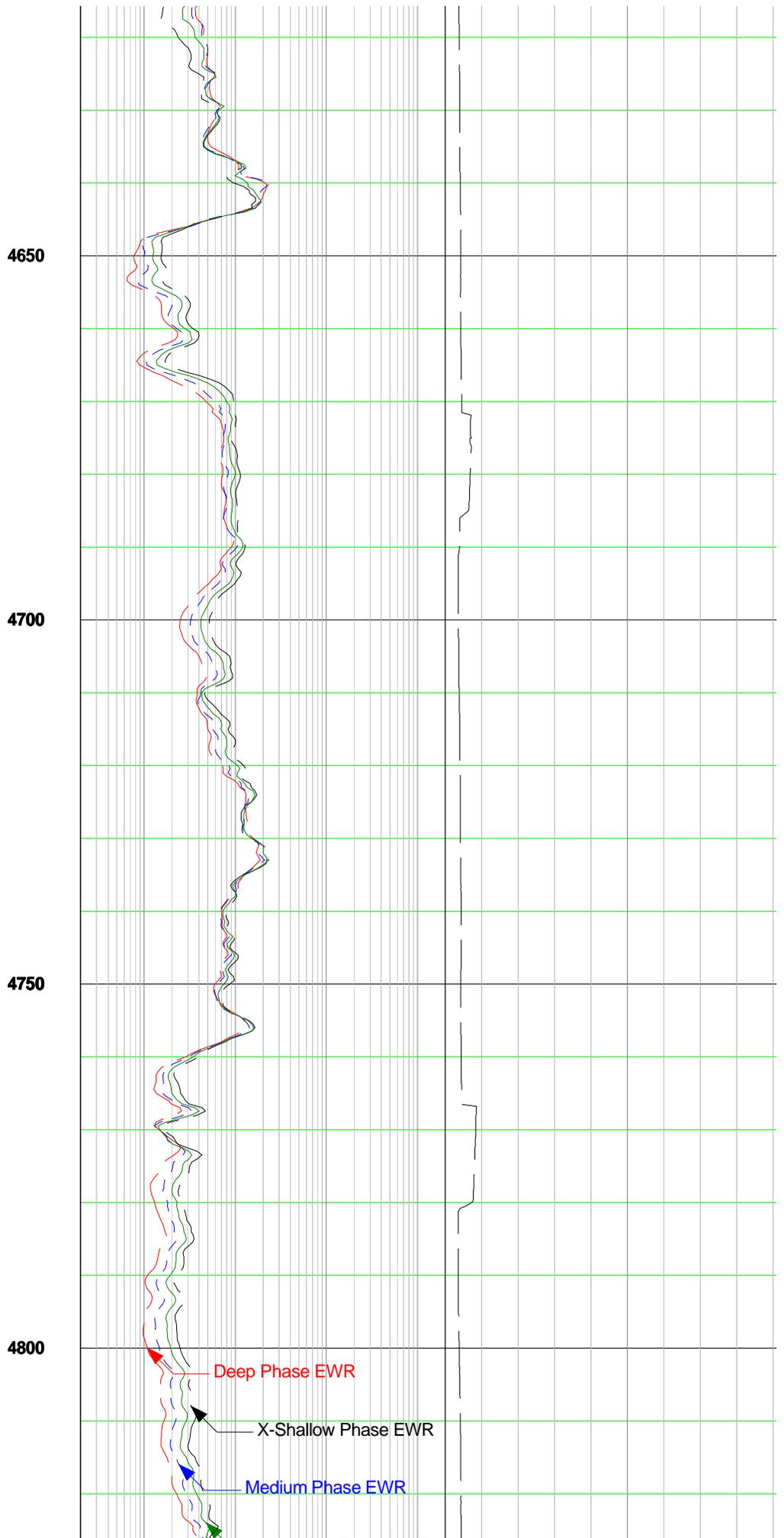
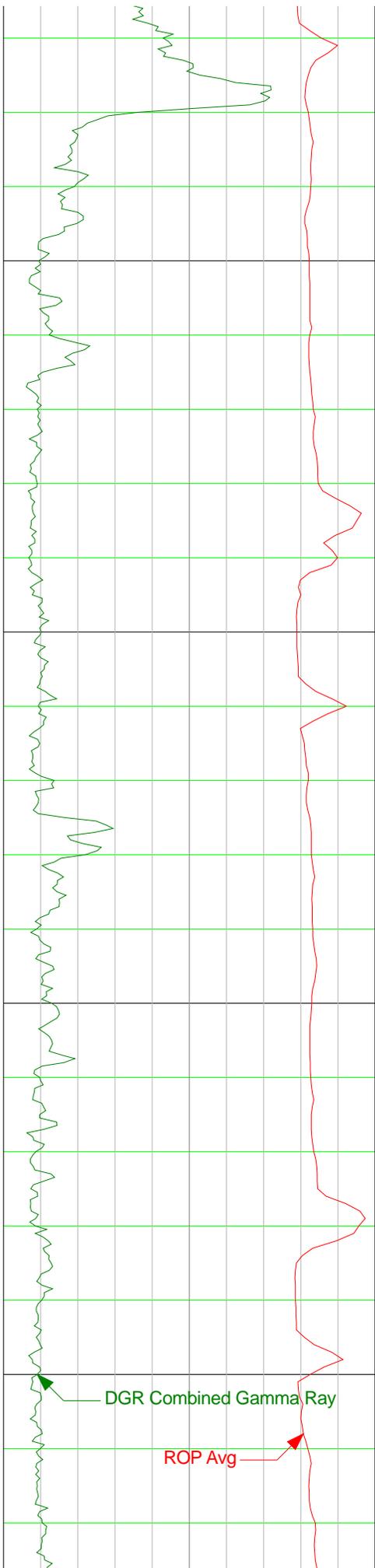
Shallow Phase EWR

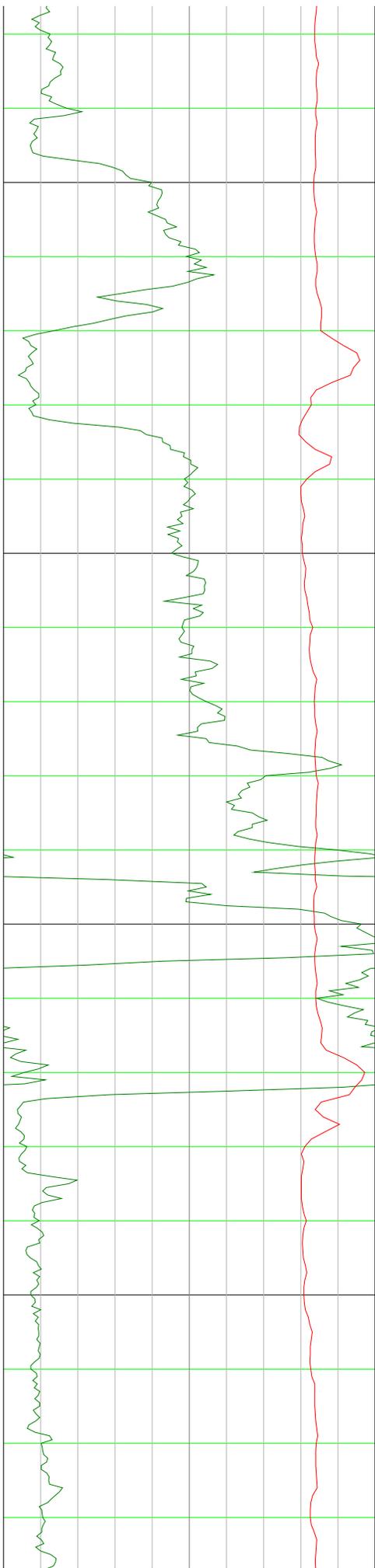


Deep Phase EWR

X-Shallow Phase EWR

Medium Phase EWR





4850

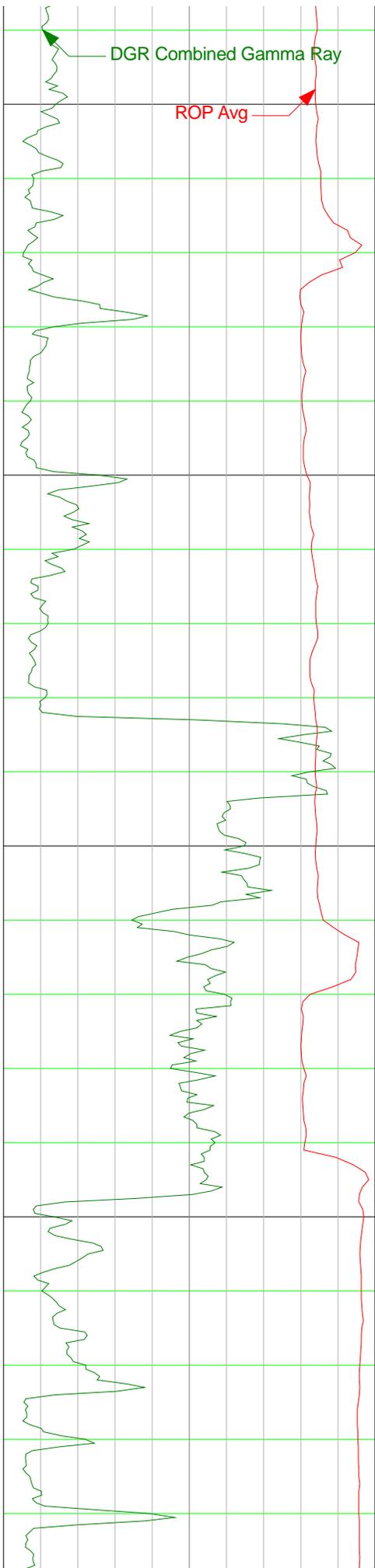
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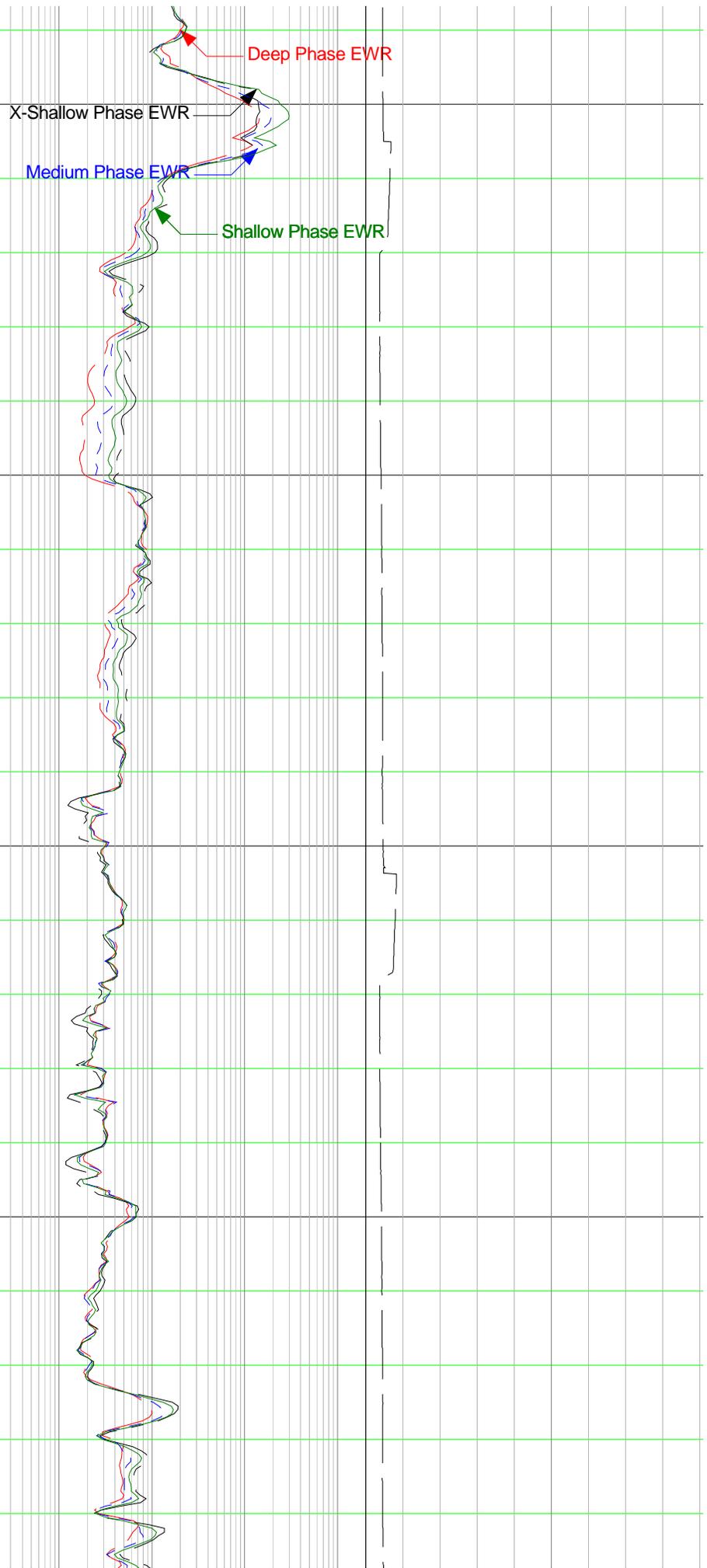
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Shallow Phase EWR



5050



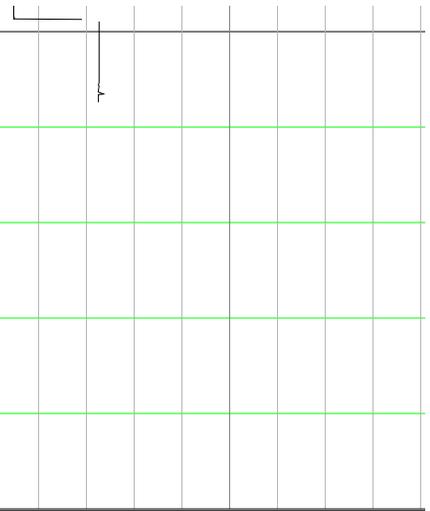
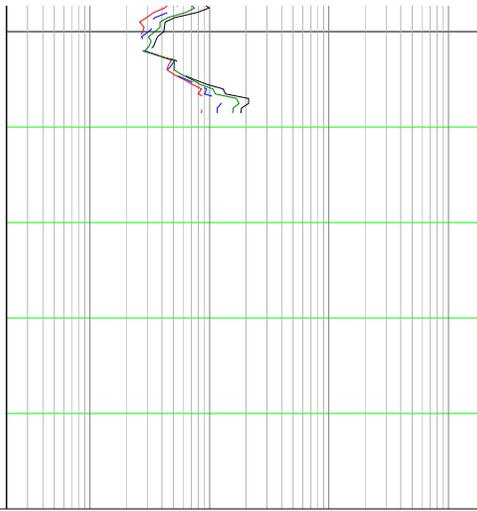
5100

5150

5200



5250



DGR Combined Gamma Ray (SGRC)		
0	api	250

5300

Depth

X-Shallow Phase EWR (SEXP)

Form Expos Time-EWR (SFXE)

500	ROP Avg (SROP)	0
1K	feet per hr	500
	BACK UP	

MD

0.2 ohm-m 2K

0 hours

Shallow Phase EWR (SESP)

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0.2 ohm-m 2K

Medium Phase EWR (SEMP)

0.2 ohm-m 2K

Deep Phase EWR (SEDP)

0.2 ohm-m 2K