

1 : 1200 / 1 : 240

| WELL INFORMATION | | | | | |
|----------------------------------|------------------|------------------|------------------|--|--|
| MWD Run Number | 100 | 200 | 300 | | |
| Date run completed | 22-Jun-11 | 23-Jun-11 | 29-Jun-11 | | |
| Rig Bit Number | 3 | 4 | 5 | | |
| Bit Size (in) | 8.750 | 8.750 | 6.130 | | |
| Tool Nominal OD (in) | 6.750 | 6.750 | 4.760 | | |
| Log Start Depth (TVD, ft) | 5,558.35 | 5,977.17 | 6,219.92 | | |
| Log End Depth (TVD, ft) | 5,977.17 | 6,219.92 | 6,218.93 | | |
| Drill or Wipe | Drill | Drill | Drill | | |
| Drill/Wipe Start Date and Time | 20-Jun-11 17:00 | 22-Jun-11 16:30 | 25-Jun-11 04:00 | | |
| Drill/Wipe End Date and Time | 22-Jun-11 13:00 | 23-Jun-11 12:30 | 28-Jun-11 15:40 | | |
| Min Inc (deg) @ Depth (TVD, ft) | 1.97 @ 5,535.38 | 35.16 @ 5,950.75 | 88.33 @ 6,217.37 | | |
| Max Inc (deg) @ Depth (TVD, ft) | 35.16 @ 5,950.75 | 86.60 @ 6,218.85 | 92.13 @ 6,216.73 | | |
| Bit TFA(in2) / Bit Type | .86 / PDC | .86 / PDC | .55 / PDC | | |
| Flow Rate (gpm) | 435.00 | 420.00 | 230.00 | | |
| Max AV (fpm) / CV (fpm) @ MWD | 357.0 / 360.0 | 331.9 / 331.4 | 375.3 / 237.1 | | |
| Fluid Type | Fresh Water Gel | Fresh Water Gel | Fresh Water Gel | | |
| Density (ppg) / Viscosity (spqt) | 9.50 / 46.00 | 9.50 / 46.00 | 8.70 / 37.00 | | |
| Filtrate CL (ppm) | 1,500.00 | 1,500.00 | 1,100.00 | | |
| pH / Fluid Loss (mptm) | 9.10 / 6 | 9.10 / 6 | 8.60 / 7 | | |
| PV (cP) / YP (Ihf2) | 16 / 18.00 | 16 / 18.00 | 8 / 8.00 | | |
| % Solids / % Sand | 5.9 / .03 | 5.9 / .03 | 2.2 / 0.25 | | |
| % Oil / Oil:Water Ratio | N/A / N/A | N/A / N/A | N/A / 0/97.5 | | |
| Rm @ Measured Temp (degF) | 4.500 @ 70.00 | 4.500 @ 70.00 | N/A @ N/A | | |
| Rmf @ Measured Temp (degF) | 4.000 @ 70.00 | 4.000 @ 68.00 | N/A @ N/A | | |
| Rmc @ Measured Temp (degF) | 3.600 @ 70.00 | 3.600 @ 68.00 | N/A @ N/A | | |
| Mud Temp (in) F / C | 111.21 / 44.00 | 115.52 / 46.96 | 125.12 / 52.00 | | |

| | | | | | |
|-------------------------------|-----------------|-----------------|--------------|--|--|
| Max Tool Temp (degF) / Source | 144.94 / HCIM | 155.53 / HCIM | 205.16 / PCM | | |
| Rm @ Max Tool Temp (degF) | 2.2771 @ 144.94 | 2.1286 @ 155.53 | N/A @ 205.16 | | |
| Lead MWD Engineer | J. Huckleby | J. Huckleby | B. Cristian | | |
| Customer Representative | R. Hoffman | R. Hoffman | R. Hoffman | | |

SENSOR INFORMATION

Downhole Processor Information

| | | | | | |
|---------------------------|-----------------|-----------------|-----------------|--|--|
| Tool Type | HCIM | HCIM | PCM | | |
| Software Version | 88.47 | 88.47 | 5.76 | | |
| Sub Serial Number | 90283213 | 90283213 | 11432611 | | |
| Insert Serial Number | 11603378 | 11603378 | 11400882 | | |
| Date and Time Initialized | 20-Jun-11 10:01 | 22-Jun-11 12:44 | 24-Jun-11 06:57 | | |
| Date and Time Read | 22-Jun-11 03:56 | 23-Jun-11 21:44 | 29-Jun-11 01:13 | | |
| ECMB SW Version | N/A | N/A | N/A | | |

Directional Sensor Information

| | | | | | |
|------------------------|----------|----------|----------|--|--|
| Tool Type | PCDC | PCDC | PCDC | | |
| Distance From Bit (ft) | 31.09 | 31.09 | 50.00 | | |
| Software Version | 6.21 | 6.21 | 6.21 | | |
| Sub Serial Number | 11677158 | 11677158 | 11432611 | | |
| Sonde Serial Number | 11297623 | 11297623 | 11478078 | | |
| Sensor ID Number | N/A | N/A | N/A | | |
| Toolface Offset (deg) | 288.10 | 288.10 | 44.80 | | |

Gamma Ray Sensor Information

| | | | | | |
|------------------------------|----------|----------|----------|--|--|
| Tool Type | DGR | DGR | PCG | | |
| Distance From Bit (ft) | 53.92 | 53.92 | 53.05 | | |
| Recorded Sample Period (sec) | 12 | 12 | 10 | | |
| Software Version | N/A | N/A | 8.15 | | |
| Sub Serial Number | 10806511 | 10806511 | 11432611 | | |
| Insert/Sonde Serial Number | 90283213 | 90283213 | 11579783 | | |

Resistivity Sensor Information

| | | | | | |
|----------------------------------|----------|----------|-----|--|--|
| Tool Type | EWR-P4 | EWR-P4 | N/A | | |
| Distance From Bit (ft) | 44.06 | 44.06 | N/A | | |
| Recorded Sample Period (sec) | 12 | 12 | N/A | | |
| Software Version | 1.50 | 1.50 | N/A | | |
| Sub Serial Number | 90283213 | 90283213 | N/A | | |
| Receiver Insert Serial Number | 90283213 | 90283213 | N/A | | |
| Transmitter Insert Serial Number | 90283213 | 90283213 | N/A | | |
| Receiver Orientation | Down | Down | N/A | | |

Pulser Controller Sensor Information

| | | | | | |
|---------------------------|----------|----------|----------|--|--|
| Tool Type | PCM | PCM | PCM | | |
| Software Version | 8.04 | 8.04 | 5.76 | | |
| PIC Software Version | N/A | N/A | 1.30 | | |
| Sub/HOC Serial Number | 11608312 | 11608312 | 11432611 | | |
| Insert/Probe/Module SN | 11227486 | 11227486 | 11400882 | | |
| Battery Serial Number | N/A | N/A | N/A | | |
| Valve Insert SN | N/A | N/A | N/A | | |
| DC Insert Serial Number | N/A | N/A | N/A | | |
| Choke Size (32nd) | N/A | N/A | N/A | | |
| Driver Current (amps) | N/A | N/A | N/A | | |
| Driver SMI Current (amps) | N/A | N/A | N/A | | |

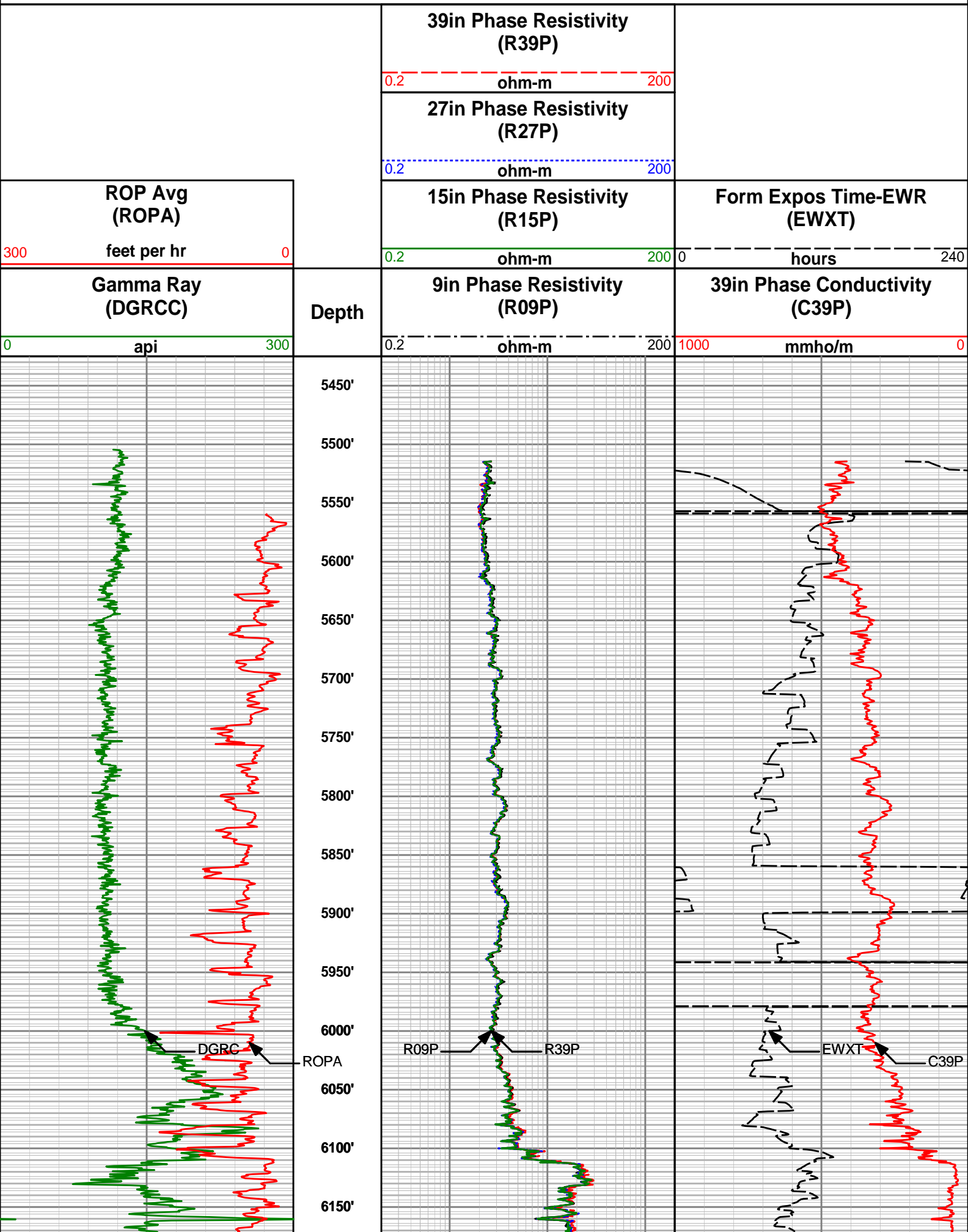
| | | | | | |
|------------------------------------|----------|----------|----------|--|--|
| Boot Strap Version | N/A | N/A | 4,130.00 | | |
| DDSr-DGR Sensor Information | | | | | |
| Tool Type | DDSr-DGR | DDSr-DGR | N/A | | |
| Distance From Bit (ft) | 52.93 | 52.93 | N/A | | |
| Recorded Sample Period (sec) | 12 | 12 | N/A | | |
| Software Version | 10.72 | 10.72 | N/A | | |
| Sub Serial Number | 10806511 | 10806511 | N/A | | |
| Insert Serial Number | 90283213 | 90283213 | N/A | | |
| Sensor ID Number | 5548 | 5548 | N/A | | |

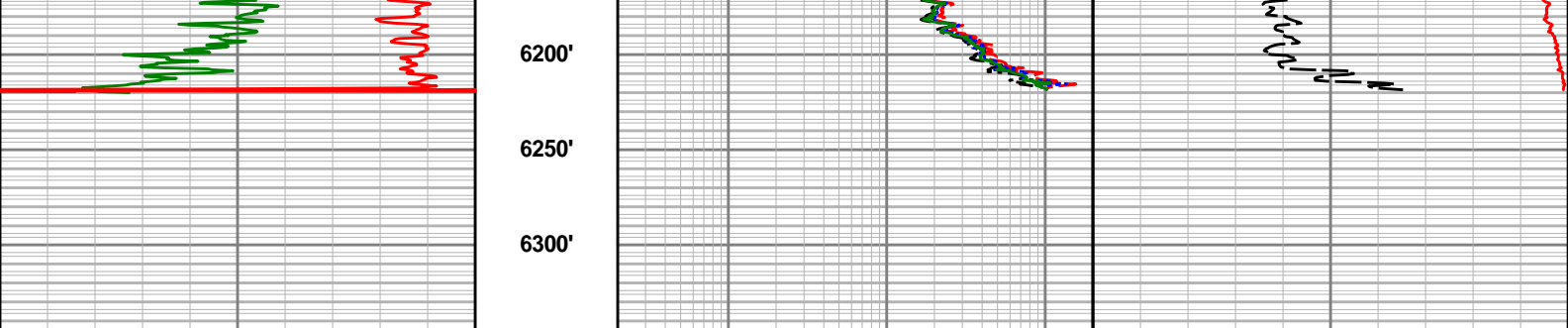
| REMARKS | | | | | |
|--|--|--|--|--|--|
| <p>1. All depths are measured bit depths, referenced to the Driller's pipe tally and are measured from the Kelly Bushing, unless otherwise specified.</p> <p>2. No depth corrections have been made for pipe stretch or compression.</p> <p>3. Critical annular velocities are calculated using the "Power Law" model for water based fluids and the "Bingham Plastic" model for oil and synthetic based fluids.</p> <p>4. All data presented is recorded data unless otherwise specified</p> <p>5. The following smoothing parameters have been applied to the data:</p> <p>ROPA (Average Rate of Penetration):</p> <p style="padding-left: 40px;">Interval Resolution: 0.5 ft</p> <p style="padding-left: 40px;">Interval Distance: 1.2 ft</p> <p style="padding-left: 40px;">Gap Fill : 3.0 ft</p> <p>All other data:</p> <p style="padding-left: 40px;">Interval Resolution: 0.5 ft</p> <p style="padding-left: 40px;">Interval Distance: 0.6 ft</p> <p style="padding-left: 40px;">Gap Fill: 3.0 ft</p> <p>6. INSITE version 7.2.4 Build 03</p> | | | | | |

| WARRANTY | | | | | |
|---|--|--|--|--|--|
| <p>HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.</p> | | | | | |

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TVD Detail Log 1:1200



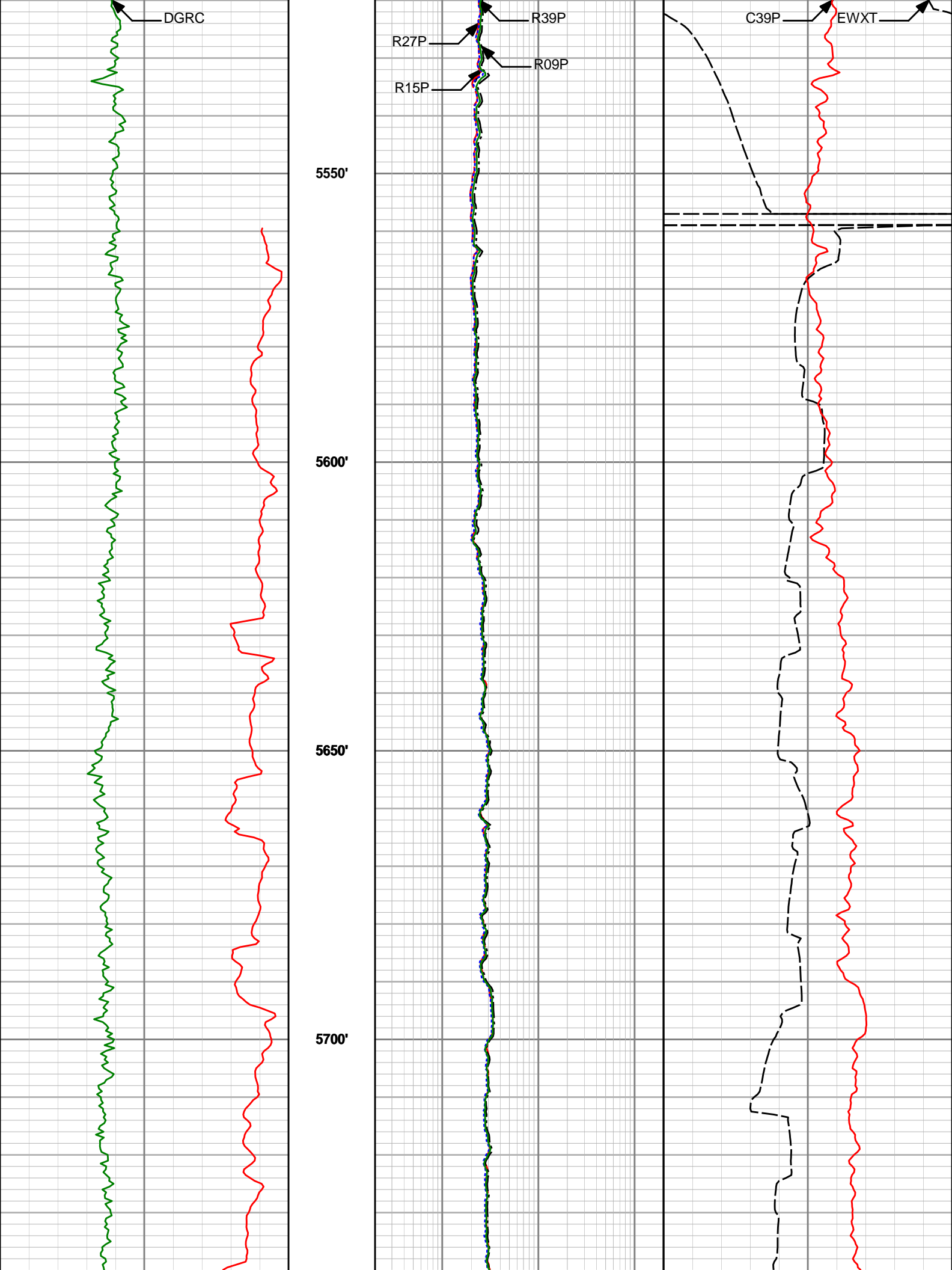


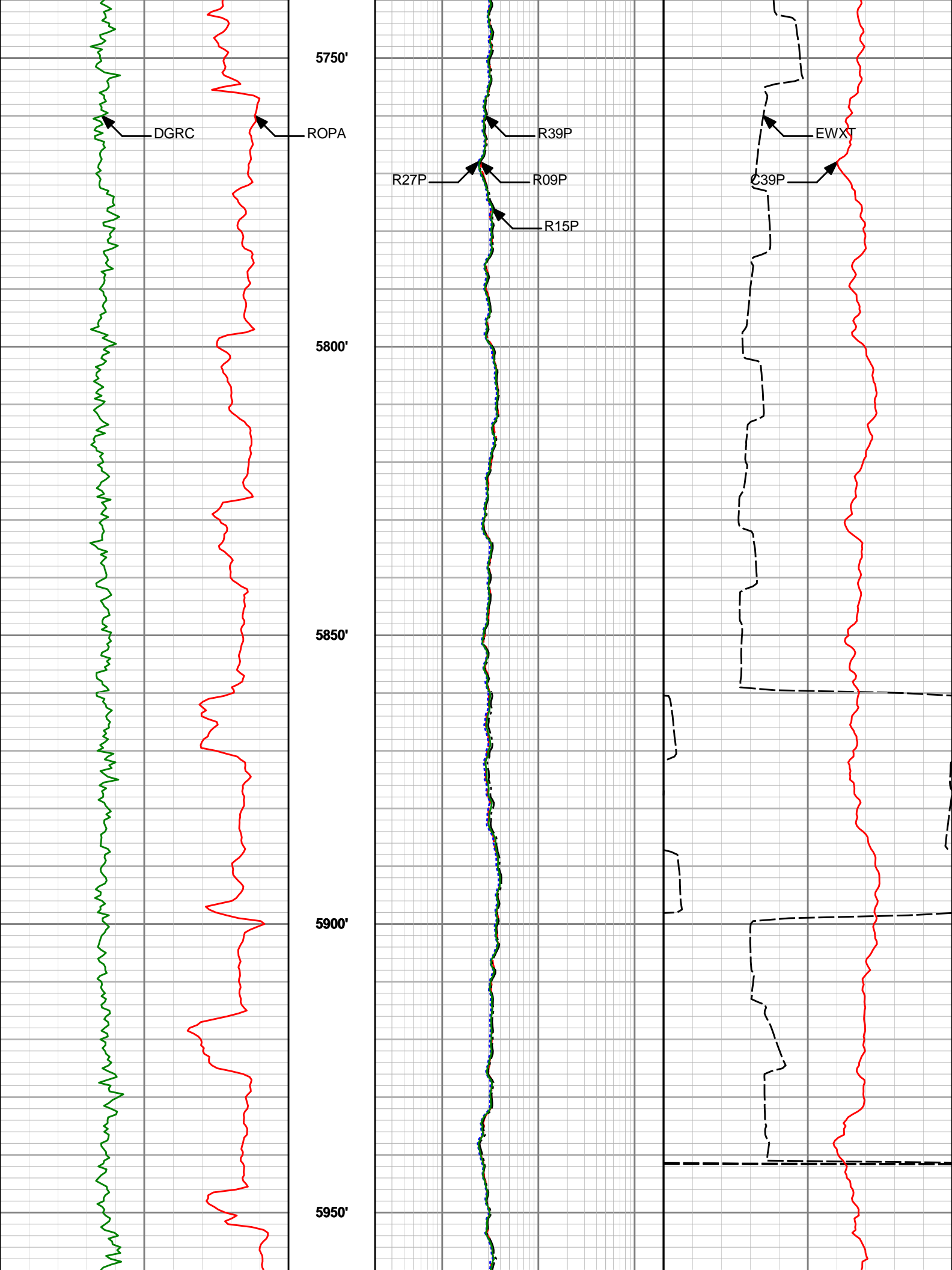
| Gamma Ray (DGRCC) | Depth | 9in Phase Resistivity (R09P) | 39in Phase Conductivity (C39P) |
|-------------------------|-------|----------------------------------|-----------------------------------|
| 0 api 300 | | 0.2 ohm-m 200 | 1000 mmho/m 0 |
| ROP Avg (ROPA) | | 15in Phase Resistivity (R15P) | Form Expos Time-EWR (EWXT) |
| 300 feet per hr 0 | | 0.2 ohm-m 200 | 0 hours 240 |
| | | 27in Phase Resistivity (R27P) | |
| | | 0.2 ohm-m 200 | |
| | | 39in Phase Resistivity (R39P) | |
| | | 0.2 ohm-m 200 | |

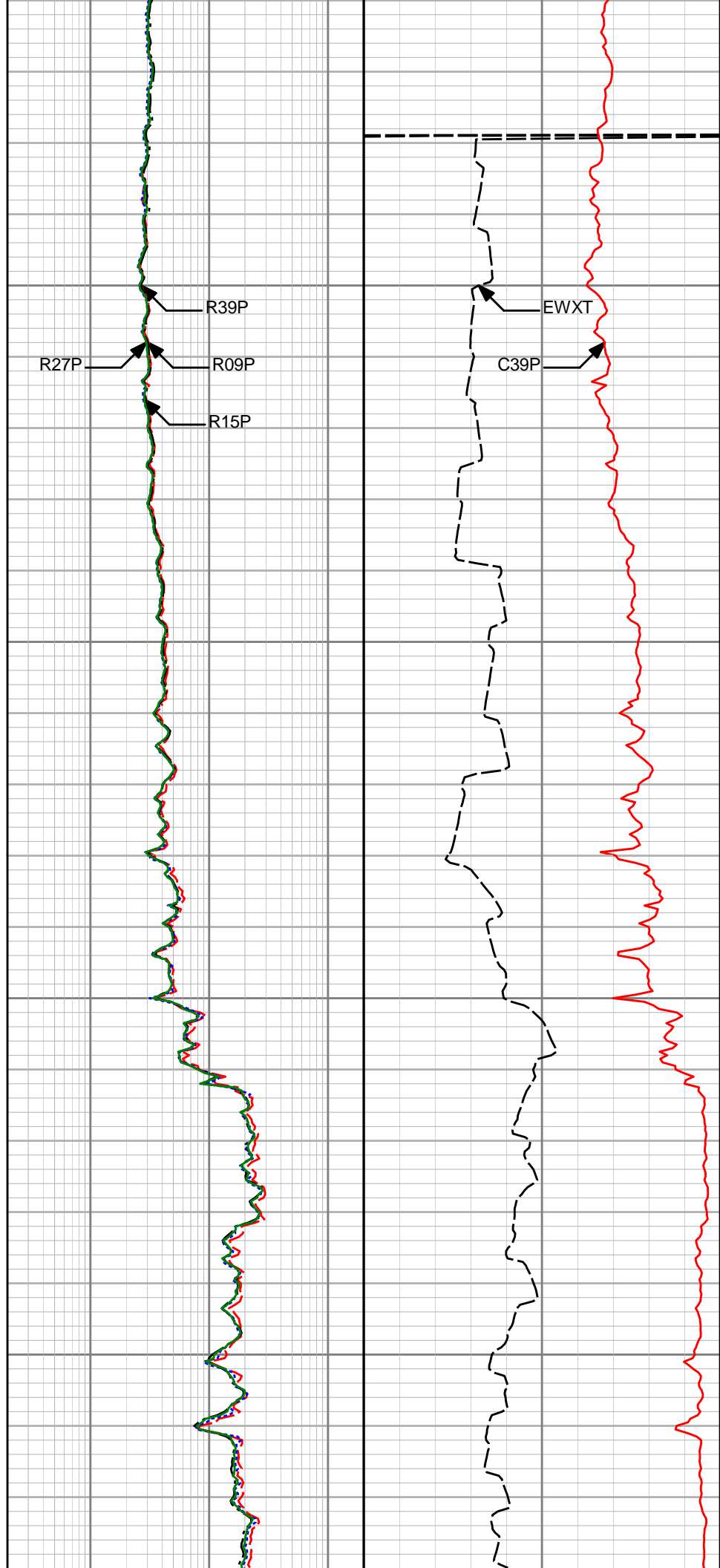
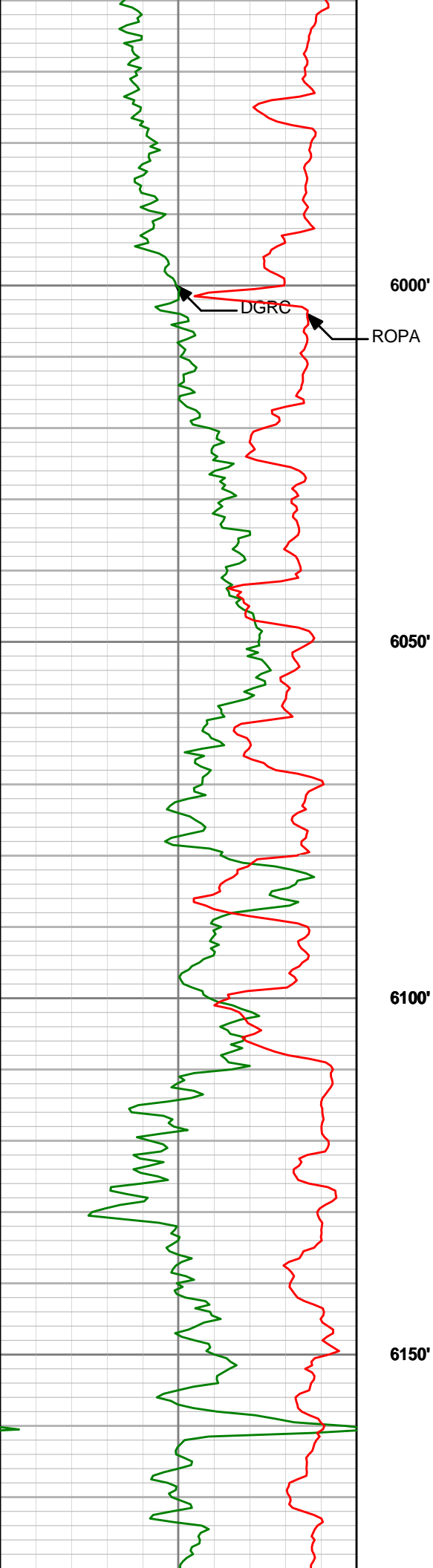
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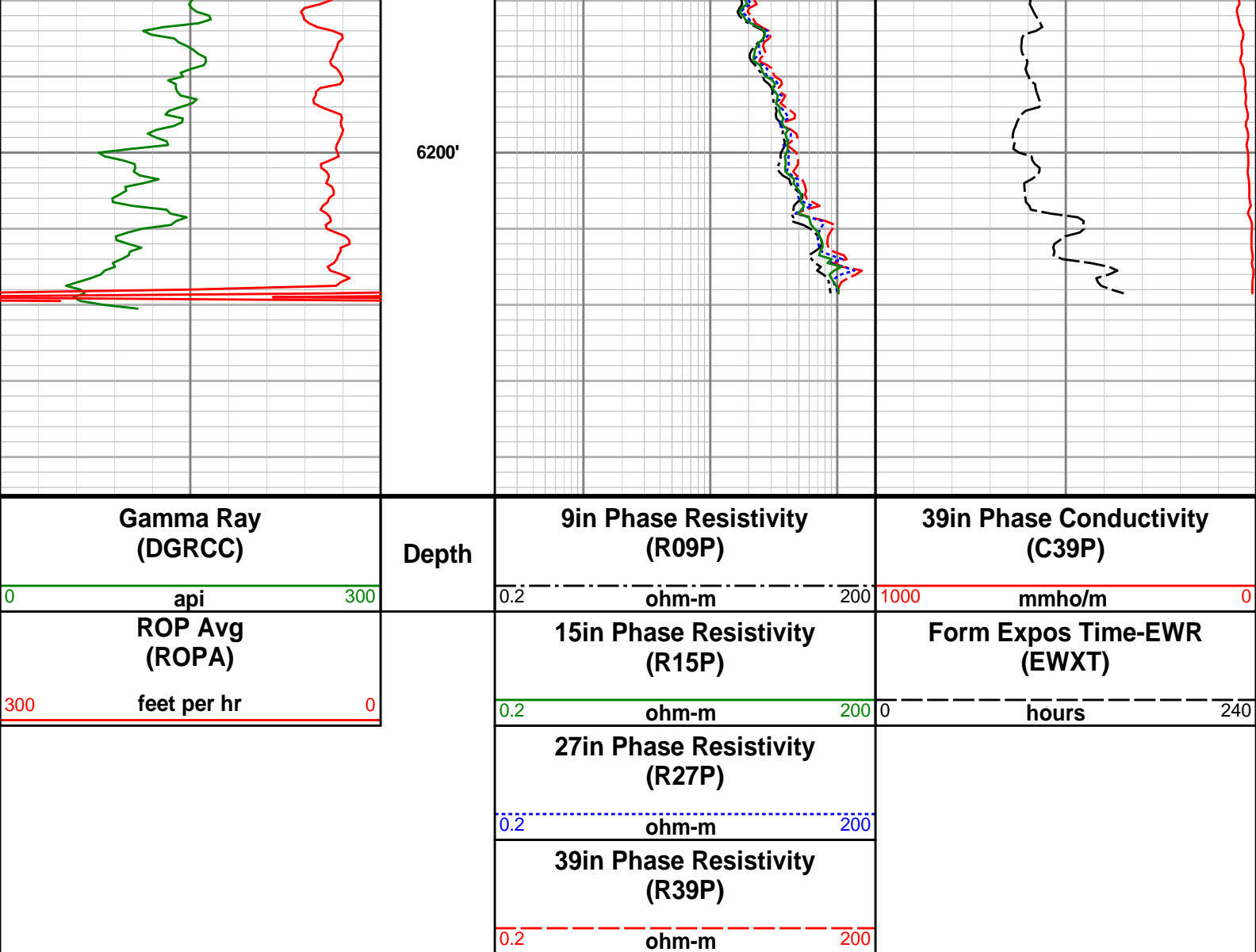
TVD Detail Log 1:240

| | | 39in Phase Resistivity (R39P) | |
|-------------------------|-------|----------------------------------|-----------------------------------|
| | | 0.2 ohm-m 200 | |
| | | 27in Phase Resistivity (R27P) | |
| | | 0.2 ohm-m 200 | |
| ROP Avg (ROPA) | | 15in Phase Resistivity (R15P) | Form Expos Time-EWR (EWXT) |
| 300 feet per hr 0 | | 0.2 ohm-m 200 | 0 hours 240 |
| Gamma Ray (DGRCC) | Depth | 9in Phase Resistivity (R09P) | 39in Phase Conductivity (C39P) |
| 0 api 300 | | 0.2 ohm-m 200 | 1000 mmho/m 0 |
| | 5500' | | |









HALLIBURTON

DIRECTIONAL SURVEY REPORT

Bonanza Creek Energy, Inc

Antelope 11-2HZ

Wattenburg

Weld Colorado

USA

CA-MJ-0008259296

Survey at 11216 ft. MD it's a projection to the bit.

| Measured Depth (feet) | Inclination (degrees) | Direction (degrees) | Vertical Depth (feet) | Latitude (feet) | Departure (feet) | Vertical Section (feet) | Dogleg (deg/100ft) |
|-----------------------|-----------------------|---------------------|-----------------------|-----------------|------------------|-------------------------|--------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 N | 0.00 E | 0.00 | TIE-IN |
| 517.00 | 0.40 | 123.70 | 517.00 | 1.00 S | 1.50 E | 1.80 | 0.08 |
| 915.00 | 1.40 | 149.60 | 914.94 | 5.97 S | 5.12 E | 7.66 | 0.27 |
| 1069.00 | 1.10 | 153.00 | 1068.91 | 8.91 S | 6.74 E | 10.71 | 0.20 |
| 1161.00 | 1.40 | 154.20 | 1160.88 | 10.70 S | 7.63 E | 12.50 | 0.33 |
| 1252.00 | 1.90 | 160.50 | 1251.85 | 13.13 S | 8.62 E | 14.73 | 0.58 |
| 1403.00 | 2.10 | 147.10 | 1402.75 | 17.81 S | 10.96 E | 19.40 | 0.34 |
| 1466.00 | 0.40 | 166.40 | 1465.74 | 18.99 S | 11.64 E | 20.64 | 2.74 |
| 1530.00 | 0.70 | 180.00 | 1529.73 | 19.60 S | 11.69 E | 21.05 | 0.51 |
| 1593.00 | 0.50 | 95.90 | 1592.73 | 20.01 S | 11.96 E | 21.51 | 1.30 |
| 1685.00 | 0.30 | 133.10 | 1684.73 | 20.22 S | 12.54 E | 22.10 | 0.35 |
| 1805.00 | 0.30 | 187.20 | 1804.73 | 20.75 S | 12.73 E | 22.56 | 0.23 |
| 1901.00 | 0.10 | 144.60 | 1900.73 | 21.06 S | 12.74 E | 22.77 | 0.25 |

| | | | | | | | |
|---------|-------|--------|---------|----------|----------|--------|-------|
| 1995.00 | 0.50 | 244.30 | 1994.73 | 21.31 S | 12.42 E | 22.65 | 0.56 |
| 2088.00 | 0.90 | 196.20 | 2087.72 | 22.19 S | 11.85 E | 22.72 | 0.73 |
| 2182.00 | 1.20 | 211.60 | 2181.70 | 23.73 S | 11.13 E | 23.06 | 0.44 |
| 2309.00 | 0.80 | 136.20 | 2308.69 | 25.51 S | 11.05 E | 24.04 | 0.99 |
| 2473.00 | 1.20 | 229.80 | 2472.67 | 27.44 S | 10.53 E | 24.77 | 0.90 |
| 2600.00 | 0.70 | 238.60 | 2599.66 | 28.70 S | 8.85 E | 24.17 | 0.41 |
| 2727.00 | 1.20 | 222.50 | 2726.64 | 30.09 S | 7.29 E | 23.74 | 0.44 |
| 2854.00 | 0.70 | 198.90 | 2853.62 | 31.80 S | 6.14 E | 23.84 | 0.49 |
| 2981.00 | 1.10 | 221.10 | 2980.60 | 33.45 S | 5.09 E | 23.97 | 0.41 |
| 3108.00 | 0.70 | 187.20 | 3107.59 | 35.14 S | 4.19 E | 24.25 | 0.51 |
| 3235.00 | 0.90 | 227.50 | 3234.58 | 36.59 S | 3.36 E | 24.44 | 0.46 |
| 3362.00 | 1.10 | 244.40 | 3361.56 | 37.79 S | 1.52 E | 23.68 | 0.28 |
| 3489.00 | 1.80 | 243.80 | 3488.52 | 39.19 S | 1.37 W | 22.19 | 0.55 |
| 3616.00 | 2.10 | 239.40 | 3615.44 | 41.26 S | 5.16 W | 20.37 | 0.26 |
| 3712.00 | 1.90 | 234.10 | 3711.39 | 43.09 S | 7.96 W | 19.20 | 0.28 |
| 3743.00 | 2.20 | 241.20 | 3742.37 | 43.68 S | 8.90 W | 18.80 | 1.27 |
| 3775.00 | 1.70 | 261.80 | 3774.35 | 44.04 S | 9.91 W | 18.20 | 2.67 |
| 3838.00 | 1.40 | 259.90 | 3837.32 | 44.31 S | 11.59 W | 17.01 | 0.48 |
| 3870.00 | 1.30 | 290.00 | 3869.32 | 44.25 S | 12.32 W | 16.39 | 2.21 |
| 3902.00 | 1.60 | 297.30 | 3901.31 | 43.92 S | 13.06 W | 15.60 | 1.10 |
| 3966.00 | 2.20 | 289.40 | 3965.27 | 43.11 S | 15.01 W | 13.54 | 1.02 |
| 4030.00 | 1.90 | 304.00 | 4029.23 | 42.10 S | 17.05 W | 11.31 | 0.94 |
| 4093.00 | 2.70 | 322.60 | 4092.18 | 40.34 S | 18.81 W | 8.84 | 1.72 |
| 4125.00 | 2.20 | 333.50 | 4124.15 | 39.19 S | 19.55 W | 7.57 | 2.13 |
| 4156.00 | 2.80 | 328.50 | 4155.12 | 38.01 S | 20.21 W | 6.34 | 2.06 |
| 4220.00 | 2.50 | 342.70 | 4219.05 | 35.35 S | 21.44 W | 3.76 | 1.12 |
| 4283.00 | 2.20 | 347.40 | 4282.00 | 32.86 S | 22.11 W | 1.74 | 0.57 |
| 4315.00 | 1.80 | 7.90 | 4313.98 | 31.76 S | 22.18 W | 1.04 | 2.54 |
| 4347.00 | 1.50 | 7.00 | 4345.97 | 30.85 S | 22.06 W | 0.59 | 0.94 |
| 4379.00 | 1.80 | 24.50 | 4377.95 | 29.97 S | 21.80 W | 0.28 | 1.82 |
| 4411.00 | 1.60 | 23.10 | 4409.94 | 29.11 S | 21.41 W | 0.07 | 0.64 |
| 4442.00 | 2.00 | 43.70 | 4440.92 | 28.32 S | 20.87 W | 0.04 | 2.43 |
| 4474.00 | 1.80 | 38.30 | 4472.91 | 27.52 S | 20.17 W | 0.13 | 0.84 |
| 4537.00 | 2.40 | 45.10 | 4535.86 | 25.81 S | 18.62 W | 0.36 | 1.03 |
| 4569.00 | 2.00 | 46.00 | 4567.84 | 24.95 S | 17.75 W | 0.55 | 1.25 |
| 4664.00 | 1.90 | 31.60 | 4662.79 | 22.46 S | 15.73 W | 0.69 | 0.52 |
| 4759.00 | 1.20 | 19.80 | 4757.75 | 20.18 S | 14.57 W | 0.27 | 0.81 |
| 4883.00 | 1.50 | 10.20 | 4881.72 | 17.36 S | 13.84 W | -0.82 | 0.30 |
| 4976.00 | 1.70 | 26.70 | 4974.68 | 14.93 S | 13.01 W | -1.59 | 0.54 |
| 5069.00 | 1.90 | 39.90 | 5067.64 | 12.51 S | 11.40 W | -1.73 | 0.49 |
| 5162.00 | 2.30 | 56.40 | 5160.57 | 10.30 S | 8.85 W | -1.00 | 0.78 |
| 5255.00 | 1.60 | 72.40 | 5253.52 | 8.87 S | 6.06 W | 0.40 | 0.95 |
| 5348.00 | 1.90 | 80.40 | 5346.48 | 8.22 S | 3.30 W | 2.23 | 0.42 |
| 5515.00 | 1.80 | 89.90 | 5513.39 | 7.76 S | 2.05 E | 6.26 | 0.19 |
| 5537.00 | 1.97 | 95.36 | 5535.38 | 7.79 S | 2.77 E | 6.86 | 1.14 |
| 5569.00 | 3.90 | 118.07 | 5567.34 | 8.36 S | 4.28 E | 8.41 | 6.92 |
| 5601.00 | 7.35 | 123.88 | 5599.18 | 10.01 S | 6.94 E | 11.53 | 10.90 |
| 5632.00 | 10.56 | 123.60 | 5629.80 | 12.69 S | 10.95 E | 16.35 | 10.37 |
| 5664.00 | 13.28 | 124.77 | 5661.10 | 16.41 S | 16.41 E | 22.95 | 8.52 |
| 5696.00 | 15.93 | 126.38 | 5692.07 | 21.11 S | 22.97 E | 31.02 | 8.39 |
| 5728.00 | 17.99 | 126.20 | 5722.67 | 26.63 S | 30.49 E | 40.35 | 6.43 |
| 5759.00 | 20.10 | 127.35 | 5751.98 | 32.69 S | 38.59 E | 50.46 | 6.92 |
| 5791.00 | 22.17 | 126.44 | 5781.82 | 39.61 S | 47.82 E | 62.00 | 6.55 |
| 5823.00 | 23.64 | 126.84 | 5811.30 | 47.04 S | 57.81 E | 74.45 | 4.60 |
| 5855.00 | 25.25 | 127.00 | 5840.43 | 55.00 S | 68.40 E | 87.69 | 5.03 |
| 5886.00 | 26.97 | 126.51 | 5868.27 | 63.16 S | 79.33 E | 101.33 | 5.61 |
| 5918.00 | 29.26 | 125.91 | 5896.49 | 72.06 S | 91.49 E | 116.41 | 7.20 |
| 5950.00 | 31.75 | 127.16 | 5924.06 | 81.73 S | 104.54 E | 132.65 | 8.03 |
| 5982.00 | 35.16 | 127.22 | 5950.75 | 92.39 S | 118.59 E | 150.28 | 10.66 |
| 6013.00 | 38.28 | 125.60 | 5975.60 | 103.39 S | 133.51 E | 168.82 | 10.55 |
| 6045.00 | 40.81 | 125.71 | 6000.27 | 115.26 S | 150.06 E | 189.19 | 7.89 |
| 6076.00 | 43.60 | 125.22 | 6023.24 | 127.34 S | 167.02 E | 210.00 | 9.07 |
| 6108.00 | 46.45 | 124.38 | 6045.85 | 140.26 S | 185.61 E | 232.63 | 9.12 |
| 6140.00 | 49.20 | 124.62 | 6067.33 | 153.69 S | 205.15 E | 256.33 | 8.61 |
| 6172.00 | 51.27 | 125.30 | 6087.80 | 167.78 S | 225.31 E | 280.92 | 6.67 |
| 6203.00 | 53.79 | 124.73 | 6106.65 | 181.90 S | 245.46 E | 305.51 | 8.25 |
| 6235.00 | 56.63 | 124.78 | 6124.91 | 196.88 S | 267.05 E | 331.78 | 8.89 |
| 6267.00 | 59.20 | 125.34 | 6141.91 | 212.45 S | 289.24 E | 358.88 | 8.17 |
| 6299.00 | 62.80 | 125.81 | 6157.42 | 228.74 S | 312.00 E | 386.86 | 11.32 |
| 6331.00 | 65.88 | 125.88 | 6171.27 | 245.62 S | 335.38 E | 415.70 | 9.62 |
| 6362.00 | 68.94 | 126.18 | 6183.17 | 262.46 S | 358.52 E | 444.32 | 9.92 |
| 6394.00 | 72.10 | 126.63 | 6193.84 | 280.36 S | 382.80 E | 474.48 | 9.94 |
| 6425.00 | 75.06 | 127.34 | 6202.61 | 298.25 S | 406.55 E | 504.22 | 9.82 |
| 6457.00 | 77.86 | 126.98 | 6210.10 | 317.04 S | 431.34 E | 535.32 | 8.81 |

| | | | | | | | |
|----------|-------|--------|---------|-----------|-----------|---------|-------|
| 6489.00 | 82.01 | 126.32 | 6215.69 | 335.84 S | 456.62 E | 566.82 | 13.11 |
| 6521.00 | 86.66 | 126.51 | 6218.85 | 354.74 S | 482.23 E | 598.66 | 14.56 |
| 6554.00 | 89.60 | 125.70 | 6219.92 | 374.17 S | 508.88 E | 631.63 | 9.23 |
| 6590.00 | 89.54 | 124.81 | 6220.20 | 394.96 S | 538.27 E | 667.62 | 2.48 |
| 6621.00 | 89.41 | 125.21 | 6220.48 | 412.74 S | 563.66 E | 698.61 | 1.34 |
| 6652.00 | 89.45 | 125.59 | 6220.79 | 430.70 S | 588.93 E | 729.61 | 1.22 |
| 6683.00 | 90.00 | 124.49 | 6220.94 | 448.50 S | 614.31 E | 760.60 | 3.96 |
| 6714.00 | 89.51 | 124.72 | 6221.07 | 466.10 S | 639.82 E | 791.58 | 1.76 |
| 6745.00 | 90.15 | 125.14 | 6221.16 | 483.85 S | 665.24 E | 822.57 | 2.49 |
| 6776.00 | 90.52 | 125.53 | 6220.98 | 501.78 S | 690.53 E | 853.56 | 1.73 |
| 6807.00 | 91.17 | 124.61 | 6220.52 | 519.59 S | 715.89 E | 884.55 | 3.62 |
| 6838.00 | 91.54 | 124.93 | 6219.79 | 537.27 S | 741.35 E | 915.53 | 1.57 |
| 6869.00 | 91.85 | 125.35 | 6218.87 | 555.10 S | 766.69 E | 946.50 | 1.68 |
| 6900.00 | 91.97 | 125.32 | 6217.84 | 573.02 S | 791.97 E | 977.48 | 0.40 |
| 6931.00 | 92.13 | 125.12 | 6216.73 | 590.89 S | 817.28 E | 1008.45 | 0.83 |
| 6962.00 | 91.64 | 125.62 | 6215.71 | 608.82 S | 842.54 E | 1039.43 | 2.27 |
| 7024.00 | 91.51 | 125.45 | 6214.00 | 644.84 S | 892.98 E | 1101.40 | 0.34 |
| 7086.00 | 90.43 | 126.22 | 6212.95 | 681.13 S | 943.24 E | 1163.39 | 2.14 |
| 7147.00 | 89.85 | 125.87 | 6212.81 | 717.02 S | 992.56 E | 1224.38 | 1.12 |
| 7208.00 | 89.82 | 126.06 | 6212.99 | 752.84 S | 1041.93 E | 1285.38 | 0.31 |
| 7270.00 | 89.75 | 125.91 | 6213.22 | 789.27 S | 1092.10 E | 1347.38 | 0.26 |
| 7332.00 | 89.48 | 126.03 | 6213.64 | 825.69 S | 1142.28 E | 1409.37 | 0.49 |
| 7394.00 | 90.06 | 126.55 | 6213.89 | 862.38 S | 1192.25 E | 1471.37 | 1.27 |
| 7456.00 | 90.34 | 127.56 | 6213.67 | 899.74 S | 1241.73 E | 1533.37 | 1.68 |
| 7517.00 | 90.65 | 126.81 | 6213.15 | 936.61 S | 1290.32 E | 1594.36 | 1.32 |
| 7579.00 | 90.99 | 127.51 | 6212.26 | 974.06 S | 1339.73 E | 1656.35 | 1.24 |
| 7642.00 | 90.77 | 127.78 | 6211.29 | 1012.53 S | 1389.61 E | 1719.33 | 0.55 |
| 7705.00 | 90.15 | 127.91 | 6210.79 | 1051.18 S | 1439.36 E | 1782.31 | 1.00 |
| 7769.00 | 89.14 | 126.57 | 6211.18 | 1089.90 S | 1490.30 E | 1846.30 | 2.62 |
| 7832.00 | 89.07 | 127.06 | 6212.16 | 1127.65 S | 1540.73 E | 1909.29 | 0.79 |
| 7896.00 | 89.29 | 126.85 | 6213.08 | 1166.12 S | 1591.87 E | 1973.28 | 0.47 |
| 7959.00 | 89.32 | 126.90 | 6213.84 | 1203.93 S | 1642.26 E | 2036.27 | 0.10 |
| 8023.00 | 89.38 | 127.66 | 6214.56 | 1242.69 S | 1693.18 E | 2100.26 | 1.19 |
| 8087.00 | 89.57 | 127.64 | 6215.15 | 1281.78 S | 1743.85 E | 2164.25 | 0.29 |
| 8150.00 | 89.97 | 127.95 | 6215.40 | 1320.39 S | 1793.64 E | 2227.23 | 0.80 |
| 8214.00 | 90.37 | 127.76 | 6215.22 | 1359.66 S | 1844.17 E | 2291.21 | 0.69 |
| 8277.00 | 91.27 | 128.99 | 6214.32 | 1398.77 S | 1893.55 E | 2354.17 | 2.42 |
| 8341.00 | 90.18 | 128.57 | 6213.51 | 1438.85 S | 1943.44 E | 2418.11 | 1.81 |
| 8404.00 | 90.92 | 128.97 | 6212.90 | 1478.30 S | 1992.55 E | 2481.05 | 1.34 |
| 8468.00 | 91.85 | 128.92 | 6211.35 | 1518.52 S | 2042.31 E | 2544.97 | 1.45 |
| 8531.00 | 90.71 | 128.57 | 6209.94 | 1557.94 S | 2091.43 E | 2607.91 | 1.90 |
| 8595.00 | 90.43 | 128.84 | 6209.30 | 1597.96 S | 2141.38 E | 2671.85 | 0.60 |
| 8658.00 | 90.28 | 128.63 | 6208.91 | 1637.37 S | 2190.52 E | 2734.80 | 0.41 |
| 8722.00 | 90.46 | 128.88 | 6208.50 | 1677.44 S | 2240.43 E | 2798.75 | 0.48 |
| 8785.00 | 90.49 | 127.67 | 6207.98 | 1716.46 S | 2289.88 E | 2861.71 | 1.92 |
| 8849.00 | 89.57 | 127.15 | 6207.94 | 1755.34 S | 2340.72 E | 2925.70 | 1.66 |
| 8912.00 | 90.09 | 127.22 | 6208.13 | 1793.41 S | 2390.91 E | 2988.70 | 0.84 |
| 8976.00 | 91.11 | 127.63 | 6207.46 | 1832.31 S | 2441.73 E | 3052.69 | 1.71 |
| 9039.00 | 90.40 | 127.19 | 6206.63 | 1870.57 S | 2491.77 E | 3115.67 | 1.33 |
| 9103.00 | 90.46 | 126.70 | 6206.14 | 1909.03 S | 2542.92 E | 3179.67 | 0.77 |
| 9166.00 | 89.69 | 126.53 | 6206.06 | 1946.61 S | 2593.49 E | 3242.67 | 1.25 |
| 9230.00 | 89.66 | 125.89 | 6206.42 | 1984.41 S | 2645.13 E | 3306.66 | 1.00 |
| 9293.00 | 89.44 | 126.31 | 6206.91 | 2021.53 S | 2696.03 E | 3369.66 | 0.75 |
| 9356.00 | 89.85 | 126.22 | 6207.30 | 2058.79 S | 2746.83 E | 3432.66 | 0.65 |
| 9420.00 | 89.97 | 125.91 | 6207.41 | 2096.47 S | 2798.56 E | 3496.66 | 0.52 |
| 9483.00 | 89.94 | 125.75 | 6207.46 | 2133.36 S | 2849.64 E | 3559.65 | 0.26 |
| 9547.00 | 90.46 | 125.86 | 6207.23 | 2170.80 S | 2901.54 E | 3623.65 | 0.83 |
| 9610.00 | 90.55 | 125.92 | 6206.67 | 2207.73 S | 2952.58 E | 3686.64 | 0.17 |
| 9674.00 | 90.19 | 125.88 | 6206.26 | 2245.25 S | 3004.42 E | 3750.64 | 0.58 |
| 9737.00 | 90.49 | 125.98 | 6205.89 | 2282.22 S | 3055.43 E | 3813.63 | 0.51 |
| 9801.00 | 90.43 | 125.78 | 6205.37 | 2319.73 S | 3107.28 E | 3877.63 | 0.33 |
| 9864.00 | 90.46 | 126.78 | 6204.88 | 2357.01 S | 3158.07 E | 3940.63 | 1.59 |
| 9928.00 | 90.37 | 126.49 | 6204.41 | 2395.20 S | 3209.42 E | 4004.62 | 0.47 |
| 9991.00 | 90.31 | 127.15 | 6204.04 | 2432.95 S | 3259.86 E | 4067.62 | 1.05 |
| 10055.00 | 90.25 | 127.88 | 6203.73 | 2471.93 S | 3310.62 E | 4131.61 | 1.16 |
| 10118.00 | 90.37 | 128.38 | 6203.39 | 2510.83 S | 3360.17 E | 4194.58 | 0.81 |
| 10182.00 | 90.49 | 128.41 | 6202.91 | 2550.58 S | 3410.33 E | 4258.54 | 0.20 |
| 10245.00 | 89.72 | 127.60 | 6202.79 | 2589.37 S | 3459.97 E | 4321.52 | 1.77 |
| 10309.00 | 89.57 | 126.64 | 6203.19 | 2627.99 S | 3511.00 E | 4385.51 | 1.53 |
| 10372.00 | 90.28 | 126.75 | 6203.27 | 2665.64 S | 3561.52 E | 4448.51 | 1.14 |
| 10436.00 | 89.66 | 126.00 | 6203.31 | 2703.59 S | 3613.05 E | 4512.51 | 1.52 |
| 10499.00 | 89.26 | 126.40 | 6203.90 | 2740.80 S | 3663.88 E | 4575.51 | 0.90 |
| 10563.00 | 88.61 | 123.99 | 6205.09 | 2777.68 S | 3716.17 E | 4639.48 | 3.89 |
| 10626.00 | 88.40 | 124.08 | 6206.73 | 2812.92 S | 3768.36 E | 4702.40 | 0.37 |
| 10690.00 | 88.61 | 124.22 | 6208.40 | 2848.84 S | 3821.31 E | 4766.32 | 0.41 |

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|----------|-------|--------|---------|-----------|-----------|---------|------|
| 10696.00 | 88.61 | 124.22 | 6208.40 | 2840.84 S | 3821.31 E | 4708.32 | 0.41 |
| 10753.00 | 88.70 | 124.18 | 6209.88 | 2884.24 S | 3873.40 E | 4829.26 | 0.16 |
| 10817.00 | 88.92 | 124.01 | 6211.20 | 2920.11 S | 3926.38 E | 4893.19 | 0.43 |
| 10881.00 | 88.67 | 124.52 | 6212.55 | 2956.13 S | 3979.27 E | 4957.13 | 0.89 |
| 10944.00 | 88.70 | 124.10 | 6213.99 | 2991.64 S | 4031.29 E | 5020.07 | 0.67 |
| 11008.00 | 88.43 | 124.21 | 6215.59 | 3027.56 S | 4084.23 E | 5084.00 | 0.47 |
| 11071.00 | 88.33 | 124.18 | 6217.37 | 3062.95 S | 4136.32 E | 5146.92 | 0.16 |
| 11134.00 | 89.57 | 125.20 | 6218.52 | 3098.80 S | 4188.11 E | 5209.88 | 2.54 |
| 11166.00 | 89.75 | 125.06 | 6218.71 | 3117.22 S | 4214.28 E | 5241.87 | 0.72 |
| 11216.00 | 89.75 | 125.06 | 6218.93 | 3145.94 S | 4255.21 E | 5291.85 | 0.01 |

CALCULATION BASED ON MINIMUM CURVATURE METHOD

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 126.46 DEGREES (TRUE)
A TOTAL CORRECTION OF 8.59 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 11216.00 FEET
IS 5291.85 FEET ALONG 126.48 DEGREES (TRUE)**

SURVEYS THROUGH 5515 MD ARE FROM ENSIGN DIRECTIONAL'S MWD TOOL.