Run No. | Borehole Record (MD)
---|---
4B | 24.000 ft

casing Record (MD)
---|---
425.000 ft | 222.000 ft

Weight From | To
---|---
36.000 in | 746.00 lb

Unit No. | Job No.
---|---
1 | 1AK-XX-0901604700

Plot Type | Plot Date
---|---
Final | 31-Oct-15

Depth Logged | To
---|---
222.00 ft | 1,512.00 ft

Date Logged | To
---|---
30-Jul-15 | 24-Aug-15

Total Depth MD | TVD
---|---
1,512.00 ft | 1,511.97 ft

Spud Date
---|---
30-Jul-15

Location
---|---
PosY 6912

Well
---|---
OCS-Y-2321 BJ001 ST00BP00

Company
---|---
Shell Gulf of Mexico Inc.

Rig
---|---
Polar Pioneer

API Number | Job Number
---|---
55-352-00004-00 | 257.00 ft

Final UTM Easting = 565.034.550 m
Final UTM Northing = 7,897.425.308 m

Location
---|---
71° 10' 24.06" North
163° 28' 18.67" West

Latitude | Longitude
---|---
71° 10' 24.06" | 163° 28' 18.67"

Other Services
---|---
ADR, DGR, EWR
ALD, CTN, XBAT

Mean Sea Level
---|---
0.00 ft

Drill Floor
---|---
76.00 ft

Elev.KB | N/A
---|---
WD | N/A
GL | 146.00 ft

Min Inc (deg) @ Depth (MD, ft)
---|---
0.00 @ 957.99

Max Inc (deg) @ Depth (MD, ft)
---|---
0.99 @ 495.25

Bit TFA (in2) / Bit Type
---|---
1.12 / Tricone

Flow Rate (gpm)
---|---
1,100.00

Max AV (tpm) / CV (tpm) @ MWD
---|---
51.0 / 636.0

Fluid Type
---|---
Sea Water

Density (ppg) / Viscosity (spqt)
---|---
8.55 / 27.00

Filtrate CL (ppm)
---|---
35,000.00

pH / Fluid Loss (mptm)
---|---
8.50 / 0

PV (cP) / YP (lhf2)
---|---
17 / 31.00

% Solids / % Sand
---|---
0.1 / .01

% Oil / Oil:Water Ratio
---|---
0 / 0:100

Rm @ Measured Temp (degF)
---|---
N/A @ N/A

Rmf @ Measured Temp (degF)
---|---
N/A @ N/A

Rmc @ Measured Temp (degF)
---|---
N/A @ N/A

Max Tool Temp (degF) / Source
---|---
46.10 / DDSr-HCIM

ROP Rate of Penetration
---|---
Time Log

DDS Drillstring Dynamics
---|---
PWD Pressure While Drilling

MWD Run Number | 401

Date run completed | 20-Aug-15

Rig Bit Number | 4B

Bit Size (in) | 26.000

Tool Nominal OD (in) | 8.000

Log Start Depth (MD, ft) | 425.00

Log End Depth (MD, ft) | 1,512.00

Drill or Wipe | Drill

Drill/Wipe Start Date and Time
---|---
19-Aug-15 00:27

Drill/Wipe End Date and Time
---|---
20-Aug-15 06:22

Min Inc (deg) @ Depth (MD, ft)
---|---
0.00 @ 957.99

Max Inc (deg) @ Depth (MD, ft)
---|---
0.99 @ 495.25

Bit TFA (in2) / Bit Type
---|---
1.12 / Tricone

Flow Rate (gpm)
---|---
1,100.00

Max AV (tpm) / CV (tpm) @ MWD
---|---
51.0 / 636.0

Fluid Type
---|---
Sea Water

Density (ppg) / Viscosity (spqt)
---|---
8.55 / 27.00

Filtrate CL (ppm)
---|---
35,000.00

pH / Fluid Loss (mptm)
---|---
8.50 / 0

PV (cP) / YP (lhf2)
---|---
17 / 31.00

% Solids / % Sand
---|---
0.1 / .01

% Oil / Oil:Water Ratio
---|---
0 / 0:100

Rm @ Measured Temp (degF)
---|---
N/A @ N/A

Rmf @ Measured Temp (degF)
---|---
N/A @ N/A

Rmc @ Measured Temp (degF)
---|---
N/A @ N/A

Max Tool Temp (degF) / Source
---|---
46.10 / DDSr-HCIM

ROP Rate of Penetration
---|---
Time Log

DDS Drillstring Dynamics
---|---
PWD Pressure While Drilling
### SENSOR INFORMATION

#### Downhole Processor Information

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### REMARKS

1. ALL DEPTHS ARE MEASURED DEPTHS (MD), UNLESS OTHERWISE NOTED. THESE DEPTHS ARE BIT DEPTHS AND ARE CALIBRATED TO THE DRILLERS PIPE TALLY. NO DEPTH CORRECTIONS HAVE BEEN MADE FOR PIPE STRETCH OR COMPRESSION.

2. ALL VERTICAL DEPTHS ARE TRUE VERTICAL DEPTHS (TVD), UNLESS OTHERWISE NOTED. ONLY INVERTED / REVERTED SECTIONS GREATER THAN 30' TVD ARE PRESENTED.

3. ALL DATA PRESENTED IS RECORDED DATA UNLESS OTHERWISE STATED.

4. LWD RUN 1 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).
5. RUN 200 WAS A 36” HOLE OPENING RUN, NO MWD TOOLS WERE PRESENT THEREFORE IT IS NOT PRESENTED.
6. RUN 300 WAS A 42” HOLE OPENING RUN, NO MWD TOOLS WERE PRESENT THEREFORE IT IS NOT PRESENTED.
7. RUN 400 WAS A CLEANOUT RUN TO DRILL OUT THE SHOE TRACK AND 30’ OF NEW FORMATION, NO MWD TOOLS WERE PRESENT THEREFORE IT IS NOT PRESENTED.
8. RUN 401 WAS A 26” HOLE OPENING RUN UTILIZING DIRECTIONAL, DRILL STRING DYNAMICS SENSOR AND PRESSURE WHILE DRILLING. NO LOGGING SENSORS WERE PRESENT.
9. MWD RUN 500 WAS A 17.5” DRILLING RUN UTILIZING DIRECTIONAL, DRILL STRING DYNAMICS SENSOR AND PRESSURE WHILE DRILLING. NO LOGGING SENSORS WERE PRESENT.
10. LWD RUN 6 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, ELECTROMAGNETIC WAVE RESISTIVITY PHASE 4 (EWR-P4), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).
11. LWD RUN 7 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).
12. OVER THE COURSE OF THE 12.25” HOLE SECTION THERE ARE SEVERAL INSTANCES WHERE THE BOREHOLE RUGOSITY HAS CREATED “SPIKES” IN THE RESISTIVITY DATA. THIS IS DUE TO ONE RECIEVER READING THE HIGH SALINITY BOREHOLE FLUID (WASHOUT) AND THE OTHER READING THE FORMATION. THERE ARE ALSO AREAS ACROSS THE LOGGED INTERVAL THAT SHOW AN UNDERGAUGE HOLE.
13. RUNS 1-7 REPRESENT THE OCS-Y-2321 BJ001 ST00BP0 WELL WITH AN API# OF 55-352-00004-00. THIS WELL REACHED A TOTAL DEPTH OF 6,800'MD / 6,795'TVD

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**Notes:**
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- 18-Aug-15: 18:00 - 19:00
- 18-Aug-15: 19:00 - 20:00
- 18-Aug-15: 20:00 - 21:00
- 18-Aug-15: 21:00 - 21:30

**Events:**
- PICK UP BHA 400B
- CONFIDENCE TEST MWD TOOLS
- DOWNLOAD MWD TOOLS
- PICK UP REMAINING BHA
17:00 - FINISH LAYING DOWN BHA
16:30 - FINISH MWD TOOLS
14:30 - READ MWD TOOLS
20-Aug-15
14:00 - READ MWD TOOLS
13:30 - FLUSH MWD TOOLS
13:00 - FLUSH MWD TOOLS
12:30 - FLUSH MWD TOOLS
12:00 - FLUSH MWD TOOLS
10:00 - FLUSH MWD TOOLS
08:00 - FLUSH MWD TOOLS
06:00 - FLUSH MWD TOOLS
04:00 - FLUSH MWD TOOLS
02:00 - FLUSH MWD TOOLS
20-Aug-15
12:00 - FLUSH MWD TOOLS
11:30 - FLUSH MWD TOOLS
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02:30 - FLUSH MWD TOOLS
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01:30 - FLUSH MWD TOOLS
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### DIRECTIONAL SURVEY REPORT

Shell Gulf of Mexico Inc.  
OCS-Y-2321 BJ001 ST00BP00  
Posey 6912  
Alaska  
USA  
AK-XX-0901604700  

Final Survey is projected to well TD

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**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 0.00 DEGREES (GRID)

A TOTAL CORRECTION OF 10.95 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.**

HORIZONTAL DISPLACEMENT (CLOSURE) AT 6800.00 FEET IS 183.78 FEET ALONG 40.42 DEGREES (GRID)

Map System: NAD 83 UTM Zones  
Geo Datum: North American Datum of 1983  
Map Zone: Universal Transverse Mercator Zone 03N

Date Printed: 31 October 2015