BAKER HUGHES INTEQ

Company : Santos
Well : Henry-2
Interval : 598.00 - 1833.71 meters
Created : 11/Sep/2008 3:06:45 PM

HENRY-2 FORMATION EVALUATION LOG

WOB
10 | 20 | 30 | 40
klbf
ROP
200 | 20
m/hr

MD meters 1:500

LITHOLOGY %

INTERPRETED LITHOLOGY

RESISTIVITY

CHROMATOGRAPH
Total Gas
1 | 10 | 100 | 1000
unit
Methane
Ethane
Propane
i-Butane
n-Butane
i-Pentane
n-Pentane
100 | 1000 | 10000 | 100000
ppm

DIRECT FLUORESCENCE
PFG

CUT FLUORESCENCE
PFG

CALC
Calcite
0 100
Dolomite
100 0

REMARKS

600
610
620
630
640
650
660
670
680
690
700
710
720
730
740
750

WOB: 21-55klbs
RPM: 116-144
GPM: 1092-1100
SPP: 2270-3110psi

27/08/08-06/09/08

NB 3 HUGHES MXL-1X
311mm (12-1/4") 1x16;3x18 jets
In: 657m Out: 1560m
Drilled 903m In 33.3hrs
4-3-ER-A-E-1/4" BHA

WOB: 5-40klbs
RPM: 82-148
GPM: 555-1103
SPP: 920-2890psi

WOB: 10-46klbs
RPM: 70-155
GPM: 690-855
SPP: 1230-1690psi

Drill with seawater and PHG sweeps.
Returns to seafloor.

Henry-2 reached
445mm(17-1/2") hole section
TD @ 657m on 27/08/08

Set 340mm (13-3/8") Casing at 652m

Drill 12.25" Hole with 1.03sg (8.6ppg)
Seawater/Pac-R mud

LOT @ 660m MW: 1.03sg
EMW: 2.21sg (18.4ppg)

CALCAREOUS SILTSTONE: m-dk brn, occ pl brn, off wh, com arg, grd CALCAREOUS CLAYSTONE i/p, com foss frags, occ forams & cor, frm-mod hd, mnr sft, blky-sblky

Survey at 681.58m
Inc: 0.29°
Azi:157.36° TVD: 681.50m

CALCAREOUS SILTSTONE: m-dk brn, occ pl brn, off wh, com arg, grd CALCAREOUS CLAYSTONE i/p, com foss frags, occ forams & cor, frm-mod hd, mnr sft, blky-sblky

SANDSTONE: m-dk orng, rr off wh, m-dom v crs, pr srt, sbrnd-rndd, wk sil cmt, rr off wh arg mtrx, com orng Fe stn, lse, mnr fri-mod hd, gd-v gd inf por, no fluor

SANDSTONE: m-dk orng, rr off wh, m-dom v crs, pr srt, sbrnd-rndd, wk sil cmt, rr off wh arg mtrx, com orng Fe stn,

WOB: 15-53klbs
RPM: 95-148
GPM: 610-880
SPP: 940-1790psi

WOB: 10-54klbs
RPM: 120-145
GPM: 695-875
SPP: 1235-1760psi

WOB: 6-32klbs
RPM: 120-133
GPM: 680-860
SPP: 1225-1745psi

WOB: 6-42klbs
RPM: 52-133
GPM: 650-780
SPP: 925-2058psi
07/09/08

760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970

lse, mnr fri-mod hd, gd-v gd inf por, no fluor

Survey at 768.28m
Inc: 0.83º
Azi:157.79º TVD: 768.20m

SILTSTONE: pl-m grn, pl gy, gy grn, off wh, arg, mnr glauc gr, rr pyr nods, frm-mod hd, disp i/p, sbblky, mnr amor

MW: 1.19 FV: 75 PV: 21 YP: 31
GELS: 9/15/21 SOL: 5.22
pH: 8.5 Ck: 8.5 CL: 66000

SANDSTONE: off wh-pl gy, clr-trnsl, crs-v crs, m i/p, mod srt, sbang-rndd, wk sil cmt, occ off wh arg mtrx, occ pyr nods, lse gr, mnr fri, fr-gd inf por, no fluor

SANDSTONE: off wh-pl gy, clr-trnsl, crs-v crs, m i/p, mod srt, sbang-rndd, wk sil cmt, occ off wh arg mtrx, occ pyr nods, lse grs, mnr fri, fr-gd inf por, no fluor

SANDSTONE: off wh-pl gy, clr-trnsl, crs-v crs, m i/p, mod srt, sbang-rndd, wk sil cmt, occ off wh arg mtrx, occ pyr nods, lse grs, mnr fri, fr-gd inf por, no fluor

Survey at 883.67m@
Inc: 3.87º
Azi: 140.62º TVD: 883.50m

SANDSTONE: lt brnsh gy i/p, clr-trnsl, f- crs, pr srt, sbang-sbrndd, nil cmt, rr lt brnsh gy arg mtrx, rr nod pyr, tr mic, tr liths, pred lse qtz grs, gd inf por, no fluor

Displace Hole with 1.19sg (9.9ppg) KCL/Glycol mud

SANDSTONE: lt brnsh gy i/p, clr-trnsl, f- crs, pr srt, sbang-sbrndd, nil cmt, rr lt brnsh gy arg mtrx, rr nod pyr, tr mic, tr liths, pred lse qtz gr, gd inf por, no fluor

WOB: 5-50klbs
RPM: 55-164
GPM: 660-850
SPP: 1665-2353psi

980
990
1000
1010
1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180

100/--

SANDSTONE: lt brnsh gy i/p, clr-trnsl, f- crs, pr srt, sbang-sbrndd, nil cmt, rr lt brnsh gy arg mtrx, rr nod pyr, tr mic, tr liths, pred lse qtz gr, gd inf por, no fluor

Survey at 998.24m
Inc: 13.64°
Azi: 148.11° TVD: 996.90m

WOB: 16-55klbs
RPM: 61-145
GPM: 693-1012
SPP: 1670-3194psi

SILTSTONE: m brn, m brnsh gy, arg, loc vf aren, tr f carb spks, tr vf glauc, sft-frm, disp i/p, sblky

SILTSTONE: m brn, m brnsh gy, arg, loc vf aren, mnr carb spks, tr vf glauc, sft-frm, sblky

WOB: 30-55klbs
RPM: 90-145
GPM: 592-1003
SPP: 1371-3224psi

100/-

SANDSTONE: off wh, lt brnsh gy, clr-trnsl, f-m gr, tr crs, pr srt, sbang-sbrndd, mnr wk calc cmt, mnr lt brnsh gy arg mtrx, tr liths, tr carb spks, p-fr inf por, no fluor

Survey at 1112.80m
Inc: 24.41°
Azi: 135.23° TVD: 1104.90m

WOB: 17-55klbs
RPM: 92-102
GPM: 740-1038
SPP: 2054-3427psi

SANDSTONE: lt gy, lt brnsh gy, grnsh gy, clr-trnsl, vf-f gr, rr m-crs, sbang-sbrndd, pr srt, rr sil cmt, com nod pyr, tr liths, fri-mod hd vf agg, lse-m crs gr, pr inf por, no fluor

WOB: 15-48klbs
RPM: 46-152
GPM: 690-1010
SPP: 1780-3315psi

SANDSTONE: lt gy, lt brnsh gy, grnsh gy, clr-trnsl, vf-f gr, rr m-crs, sbang-sbrndd, pr srt, rr sil cmt, com nod pyr, tr liths, fri-mod hd vf agg, lse-m crs gr, pr inf por, no fluor

SANDSTONE: lt gy, lt brnsh gy, grnsh gy, clr-trnsl, vf-f gr, rr m-crs, sbang-sbrndd, pr srt, rr sil cmt, com nod pyr, tr liths, fri-mod hd vf agg,

lse-m crs gr, pr inf por, no fluor

Survey at 1198.94m
Inc: 28.27°
Azi: 128.23° TVD: 1182.00m

SILTSTONE: m-dk brn gy, arg, mnr lith, disp-v sft, occ frm, amor, occ sblky

WOB: 5-50klbs
RPM: 80-150
GPM: 942-1038
SPP: 2960-3476psi

100/-

SANDSTONE: lt gy, lt brnsh gy, grnsh gy, clr-trnsl, vf-f gr, rr m-crs, sbang-sbrndd, pr srt, rr sil cmt, com nod pyr, tr liths, fri-mod hd vf agg, lse-m crs gr, pr inf por, no fluor

100/-

SILTSTONE: m-dom dk brn, mnr brn gy, arg i/p, mnr mic, occ carb spks & frags, v sft-disp, amor, sblky i/p

Survey at 1257.97m
Inc: 31.15°
Azi: 125.30° TVD: 1233.20m

WOB: 10-55klbs
RPM: 40-160
GPM: 930-1040
SPP: 2680-3460psi

100/-

SANDSTONE: mnr pl brn-pl gy, clr-trnsl, f-m, mnr crs, mod srt, sbang-sbrndd, wk sil cmt, mnr off wh arg mtrx, com pyr nods, lse cln gr, mnr fri, fr inf por, pr vis por, no fluor

MW: 1.19 FV: 75 PV: 21 YP: 31
GELS: 9/15/21 SOL: 5.22
pH: 8.5 Ck: 0.5 CL: 66000

SANDSTONE: off wh, clr-trnsl, f-crs, mnr v crs, mod srt, sbang-sbrndd, wk sil cmt, mnr off wh arg mtrx, rr pyr nods, lse cln gr, mnr fri, fr inf por, pr vis por, no fluor

WOB: 14-55klbs
RPM: 75-161
GPM: 804-1404
SPP: 2282-4769psi

08/09/08

SILTSTONE: m-brnsh gy, mnr dk brn gy, arg i/p, rr carb spks, sft-frm, sblky-blky

100/-

SANDSTONE: lt gy, off wh, clr-trnsl, f-m gr, mod srt, sbang-sbrndd, wk calc & sil cmt, mnr lt gy-off wh arg mtrx, mnr nod pyr, tr f gr glauc, fri f gr agg, fr inf por, no fluor

WOB: 10-48klbs
RPM: 91-158
GPM: 658-1006
SPP: 1725-3485psi

100/-

Survey at 1374.02m
Inc: 39.86°
Azi: 112.30° TVD: 1326.70m

SILTSTONE: m gy, arg, vf aren, mnr nod pyr, tr liths, disp i/p, sblky-blky

1190 1200 1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320 1330 1340 1350 1360 1370 1380 1390 1400

1410
1420
1430
1440
1450
1460
1470
1480
1490
1500
1510
1520
1530
1540
1550
1560
1570
1580
1590
1600
1610
1620

WOB: 11-53klbs
RPM: 98-128
GPM: 730-968
SPP: 2090-3330psi

97/2/1

99/1/tr

WOB: 35-55klbs
RPM: 85-135
GPM: 705-955
SPP: 1980-3430psi

97/2/1/tr

WOB: 30-60klbs
RPM: 85-100
GPM: 850-995
SPP: 2340-3770psi

09/09/08-10/09/08

NB 5 HUGHES MXL-1X
311mm (12-1/4") 1x14;3x20 jets
In: 1560m Out: xxxxm
Drilled xxxm in xxxxhrs
XXXXXXXXXXX

WOB: 10-64klbs
RPM: 41-140
GPM: 600-960
SPP: 2400-3700psi

97/2/1

SANDSTONE: lt gy, clr-trnsl, vf-m gr, sbang-sbrndd, mod srt, rr wk sil cmt, mnr lt gy arg mtrx, com nod pyr, tr f gr glauc, fri agg, pred lse, fr inf por, no fluor

SILTSTONE: m brnsh gy, lt gy, occ dk gy, arg, rr nod pyr, com glauc, frm, disp, sblky-blky

Survey at 1460.30m
Inc: 38.67°
Azi: 109.79° TVD: 1393.20m

SANDSTONE: off wh-pl gy, clr trnsl, f-m, mnr crs, mod srt, dom sbang, occ sbrndd, wk sil cmt, mnr off wh arg mtrx, rr glauc grs, lse, rr fri agg, fr inf por, p-fr vis por, no fluor

SILTSTONE: pl-occ m brn, mnr pl gn, com arg, occ-com glauc gr, mnr carb spks, dis-v sft, frm i/p, gen amor, occ sblky-blky

Survey at 1519.61m
Inc: 38.21°
Azi: 109.48° TVD: 1439.90m

SANDSTONE: off wh-pl gy, clr trnsl, f-m, mnr crs, mod srt, dom sbang, occ sbrndd, wk sil cmt, mnr off wh arg mtrx, rr glauc grs, lse, rr fri agg, fr inf por, p-fr vis por, no fluor

SILTSTONE: pl-occ m brn, mnr pl grn, com arg, occ-com glauc gr, mnr carb spks, dis-v sft, frm i/p, gen amor, occ sblky-blky

Bit 4 unable to pass 88m, POOH layout BHA.

Survey at 1577.82m
Inc: 39.48°
Azi: 111.06° TVD: 1485.5m

SANDSTONE: off wh-pl gy, clr-trnsl, f-v crs, pr srt, sbang-sbrndd, wk sil cmt, mnr off wh arg mtrx, mnr pyr nod, lse, fr inf por, no fluor

Ran Carbide @ 1596.00m
Hole In Gauge

MW: 1.32 FV: 89 PV: 34 YP: 58
GELS: 14/29/39 SOL: 11.62
pH: 8.5 Ck: 1 CL: 58000

SILTSTONE: pl-occ m brn, mnr pl grn, com arg, occ glauc gr & carb spks, dis-v sft, frm i/p,

WOB: 13-47klbs
RPM: 132-143
GPM: 420-900
SPP: 2720-3679psi

1630

1640

1650

1660

98/1/1

98/2/tr

WOB: 20-54klbs
RPM: 92-150
GPM: 692-976
SPP: 2292-3748psi

1670

1680

98/2/tr

11/09/08

1690

1700

1710

97/2/1/tr

WOB: 35-70klbs
RPM: 125-135
GPM: 957-1007
SPP: 2807-3817psi

1720

1730

1740

1750

97/2/1/tr

WOB: 29-59klbs
RPM: 103-144
GPM: 555-845
SPP: 2365-3610psi

1760

1770

1780

1790

96/3/1

1800

1810

1820

1830

amor, sblky

Survey at 1634.98m
Inc: 43.80°
Azi: 113.39° TVD: 1528.30m

SANDSTONE: off wh, clr-trnsl, f-occ m, vf i/p, mod srtd, sbang-sbrndd, mod calc cmt, com off wh arg mtrx, mnr liths, lse cln grs, fri, pr inf & vis por, no fluor

SILTSTONE: pl-occ m brn, mnr pl grn, com arg, occ glauc gr & carb spks, dis-v sft, frm i/p, amor, sblky

SANSTONE: off wh, clr-trnsl, f-m, rr crs gr, sbang-occ sbrndd, mod wl srt, tr wk calc cmt, tr f gr glauc, pred lse f gr qtz, pr inf por, no fluor

Survey at 1720.65m
Inc: 49.49°
Azi: 115.31° TVD: 1587.30m

SANDSTONE: v lt gy-lt gy, wh, clr-trnsl, vf-f gr, sbang-sbrndd, wl srt, mod calc cmt, rr f gr glauc, rr nod pyr, mod hd agg, v pr vis por, no flour

Survey at 1751.51m
Inc: 52.16°
Azi: 116.21° TVD: 1606.50m

SILTSTONE: m gy, m brnsh gy, arg, vf aren i/p, tr f gr glauc, frm, disp i/p, blky

Survey at 1779.21m
Inc: 54.97°
Azi: 116.68° TVD: 1623.20m

SILTSTONE: m gy-m dk gy, m brnsh gy, arg with clay content easily washed from samples, loc vf aren, rr liths, tr glauc, frm, disp i/p, blky

SILTSTONE: pl brn, pl-m brn gy, gen arg, occ carb spks, mnr glauc grs, mnr micro mic, disp-v sft, frm i/p, amor sblky

HENRY-2 FORMATION EVALUATION LOG

WOB
10 | 20 | 30 | 40
klbf
ROP
200 | 20
m/hr

MD meters 1:500

LITHOLOGY %

INTERPRETED LITHOLOGY

RESISTIVITY

CHROMATOGRAPH
Total Gas
1 | 10 | 100 | 1000
unit
Methane
Ethane
Propane
i-Butane
n-Butane
i-Pentane
n-Pentane
100 | 1000 | 10000 | 100000
ppm

DIRECT FLUORESCENCE
PFG

CUT FLUORESCENCE
PFG

CALC
Calcite
0 100
Dolomite
100 0

REMARKS