



## DAILY GEOLOGICAL REPORT

**WELL:** Shenandoah #1 **REPORT No.:** 37 **DAYS FROM SPUD:** 37 **DATE:** 06/09/07  
**PEL:** EP 98 **00:00 DEPTH:** 1434mKB **LAST 24hr DEPTH:** 1299mKB **24 hr Progress:** 135m  
**LOCATION:** Beetaloo Basin **RIG:** Century Rig 7 **KB: (Final Survey)** 232.55m **13<sup>3/8</sup>" Csg:** 312m  
**GEOLOGIST:** J Hulse **GL: (Final Survey)** 226.75m **PTD:** 2,900m

**NEARBY WELLS:** Balmain #1 (Twin)

**06:00 Depth/Operation:** 1463mKB / Drill ahead in 12 1/4" Kyalla Shale.

**Operations 00:00 to 06:00:** Drill ahead 12 1/4" hole in Kyalla Shale.

**Previous 24 Hours Operations:** Drill ahead 12 1/4" hole in Kyalla Shale.

| Formation Tops            | Actual Depths (m) |       |        | Prognosed Depths (m) |        |         | Diff to Prog.<br>H/L | Thickness<br>(m) |
|---------------------------|-------------------|-------|--------|----------------------|--------|---------|----------------------|------------------|
|                           | MDKB              | TVD   | TVDSS  | MDKB                 | TVD    | TVDSS   |                      |                  |
| Undifferentiated Tertiary | 5.8               | 5.8   | +227   | 5.8                  | 5.8    | +227    | -                    | 45.7             |
| Jinduckin Formation       | 51.5              | 51.5  | +181.3 | 54.8                 | 54.8   | +178    | 3.3H                 | 32.7             |
| Tindall Limestone         | 84.2              | 84.2  | +148.6 | 83.8                 | 83.8   | +149    | 0.4L                 | 178.8            |
| Antrim Volcanics          | 263.0             | 263.0 | -30.5  | 265.3                | 265.3  | -32.5   | 2.0H                 | 85.0             |
| Bukalara Sandstone        | 348.0             | 348.0 | -115.5 | 348.3                | 348.3  | -115.5  | 0.0                  | 58.0             |
| Hayfield Mudstone         | 406.0             | 406.0 | -173.5 | 406.3                | 406.3  | -173.5  | 0.0                  | 375.9            |
| Hayfield Sand             | 782.5             | 782.3 | -549.7 | 782.2                | 782.2  | -549.4  | 0.3L                 | (10.5)           |
| Jamison Sandstone         | 855.0             | 854.8 | -622.2 | 856.3                | 856.3  | -623.5  | 1.3H                 | 85.0             |
| Kyalla Formation          | 940.0             | 939.8 | -707.2 | 940.8                | 940.8  | -708.0  | 0.8H                 |                  |
| Moroak Sandstone          |                   |       |        | 1551.8               | 1551.8 | -1319   |                      |                  |
| Velkerri Formation        |                   |       |        | 1641.8               | 1641.8 | -1409   |                      |                  |
| Bessie Creek Sandstone    |                   |       |        | 2481.8               | 2481.8 | -2249   |                      |                  |
| Total Depth               |                   |       |        | 2900.0               | 2900.0 | -2667.2 |                      |                  |

### Remarks:

| Interval (m)<br>ROP (min/m) | Lithology Description | Gas/B'ground<br>Breakdown<br>C1/C2/C3/C4/C5 |
|-----------------------------|-----------------------|---|
|-----------------------------|-----------------------|---|

#### Formation: Kyalla Shale

|                     |   |  |
|---------------------|---|--|
| 1300-1323mKB        | Distinct lithological change from overlying samples, dark grey – dark brown shaly mudstone dominates.<br><b>Mudstone (100%):</b> Dark grey - dark brown, hard – very hard, abundant sub fissile, minor splintery, micromicaceous, weakly – moderately laminar, common – abundant carbonaceous laminae, minor – common silty. Minor light grey green mudstone, soft – firm, massive, trace carbonaceous filaments.   | <u>1306mKB</u><br>Tg max 2.5 unit<br>Bkg gas <1 unit<br>91/5/3/1/- |
| <b>Fluorescence</b> | Nil   |  |
| <b>Gas Flaring</b>  | Nil   |  |
| 1323-1329mKB        | <b>Mudstone (100%):</b> Dark grey - dark brown, hard – very hard, abundant sub fissile, minor splintery, micromicaceous, weakly – moderately laminar, common – abundant carbonaceous laminae, minor – common silty. Minor light grey green mudstone, soft – firm, massive, trace carbonaceous filaments.<br><b>Siltstone (Trace):</b> Light grey, hard, siliceous, weakly laminar, trace carbonaceous specks, arenaceous in part.<br><b>Sandstone (Trace):</b> Light grey, very fine, quartzose, well consolidated, abundant siliceous cement, trace carbonaceous specks, grading to siltstone in part, nil visible porosity, no shows. | <u>1327.5mKB</u><br>Tg max 2.4 unit<br>Bkg gas 1 unit<br>80/11/7/2 |
| <b>Fluorescence</b> | Nil   |  |
| <b>Gas Flaring</b>  | Nil   |  |



## DAILY GEOLOGICAL REPORT

|                     |   |  |
|---------------------|---|--|
| 1329-1340mKB        | <b>Mudstone (100%):</b> Dark grey – dark grey brown, hard, sub blocky, micromicaceous, common sub fissile, common – abundant carbonaceous fragments, minor – common carbonaceous laminae, common silty, trace pyrite, trace grey green mudstone.  | <u>1330mKB</u><br>Tg max 2.0 unit<br>Bkg gas 1 unit<br>63/23/13/1/-  |
| <b>Fluorescence</b> | Nil   |  |
| <b>Gas Flaring</b>  | Nil   |  |
| 1340-1355mKB        | <b>Mudstone (100%):</b> Dark – chocolate brown, carbonaceous, weakly laminar, common micromicaceous, trace – common carbonaceous laminae and fragments, trace – minor grey green mudstone.<br><b>Sandstone: (Trace):</b> Medium grey – medium green grey, fine, argillaceous matrix, moderately well consolidated, massive, nil visible porosity and no shows.  | <u>1354mKB</u><br>Tg max 1.5 unit<br>Bkg gas <1 unit<br>78/16/6/tr/- |
| <b>Fluorescence</b> | Nil   |  |
| <b>Gas Flaring</b>  | Nil   |  |
| 1355-1434mKB        | <b>Mudstone (100%):</b> Dark brown, carbonaceous, hard, sub blocky, common sub fissile – fissile, trace - common micromicaceous, finely laminar, common splintery fracture, trace weakly crenulated surface, trace sub conchoidal fracture. Minor grey green – minor reddish brown mudstone.<br><b>Sandstone: (Trace):</b> Off white – light brown, very fine – fine, trace medium – coarse loose quartz, moderately well consolidated, abundant siliceous cement, massive, trace mica, trace brown carbonaceous flecks, nil visible porosity and no shows. | <u>1384mKB</u><br>Tg max 3.5 unit<br>Bkg gas <1 unit<br>87/9/4/-/-   |
| <b>Fluorescence</b> | Nil   |  |
| <b>Gas Flaring</b>  | Nil   |  |

### 06:00 AM Summary

#### Formation: KYALLA SHALE

|                     |  |  |
|---------------------|--|--|
| 1434-1463mKB        | <b>Mudstone (90-100%):</b> Medium – dark grey brown (70-95%), carbonaceous, common mica, weakly laminar, minor – common carbonaceous fragments. Grey green (5-30%), massive – weakly laminar, minor micromicaceous, trace micaceous layers.<br><b>Siltstone (Trace – 10%):</b> Dark brown grey – medium grey – dark grey, micromicaceous, common – abundant mica flakes, sub blocky – sub fissile, argillaceous in part.<br><b>Sandstone (Trace):</b> Light grey – grey brown, very fine, siliceous cement, common argillaceous matrix, trace carbonaceous specks, nil visible porosity, no shows. | <u>1459mKB</u><br>Tg max 6.2 unit<br>Bkg gas 1 unit<br>79/10/5/3/3 |
| <b>Fluorescence</b> | Nil  |  |
| <b>Gas Flaring</b>  | Nil  |  |