



WELL DATA

WELL DATA CARD

WELL: SHENANDOAH-1A (Re-entry, completion and testing)		WELL TYPE: GAS EXPLORATION	
BLOCK/STATE: EP98 / NORTHERN TERRITORY		STATUS: PLUGGED & ABANDONED	
TYPE STRUCTURE: DEEP BASIN AXIS		TOTAL DEPTH: 2703mMDRT, 2702.9mTVDRT, Drl	
LONGITUDE: 133° 34' 38.22" E LATITUDE: 16° 37' 22.16" S (GDA 94, GRS80 Ellipsoid)	EASTING: 348248m NORTHING: 8161624m (MGA 94, Zone 53k South)	RE-ENTRY COMMENCED: 12:00 hrs, 14/09/2011 TD REACHED: 05:00 hrs, 18/09/2011 RIG RELEASED: 24:00 hrs, 22/09/2011	
ELEVATIONS (AHD): GROUND: 226.8m RT: 231m		PROGNOSED TOTAL DEPTH: 2714.3m MDRT (-2483.3mSS)	

CASING SIZE	SHOE DEPTH	TYPE
244mm (9.625")	1555m Driller & Logger	36 LB/FT K55, BT&C
114.3mm (4.5")	2714m Driller & logger	15.1 LB/FT, Vam Top

AGE	FORMATION TOPS*	LOGGER'S DEPTH (m)			TRUE THICK	HIGH (H)	LOW
		MDRT	TVDRT	SSTVD	(m)	(m)	(m)
M. PROTEROZOIC	ROPER GROUP MAIWOK SUBGROUP	LOWER KYALLA FM (1)	1489.0	1488.4	-1257.4	227.9	5.1 H
M. PROTEROZOIC		MOROAK SANDSTONE (1)	1717.0	1716.3	-1485.3	482.9	7.2 H
M. PROTEROZOIC		UPPER VELKERRI FM (1)	2200.0	2199.2	-1968.2	514.4	70.7 L
M. PROTEROZOIC		VELKERRI 'A' BED	2400.0	2399.1	-2168.1	51.0	9.4H
M. PROTEROZOIC		(LOWER VELKERRI 'A' BED)	2451.0	2450.1	-2219.1	N/A	N/P
M. PROTEROZOIC		VELKERRI 'B' BED	2470.0	2469.1	-2238.1	33.0	59.4H
M. PROTEROZOIC		(LOWER VELKERRI 'B' BED)	2503.0	2502.1	-2271.1	N/A	N/P
M. PROTEROZOIC		VELKERRI 'C' BED	Absent	Absent	Absent	N/A	N/A
M. PROTEROZOIC		LOWER VELKERRI FM (1)	2558.0	2557.1	-2326.1	156.5+	N/P
M. PROTEROZOIC		BESSIE CREEK SANDSTONE (1)	not penetrated	not penetrated	not penetrated	N/A	not penetrated
		TOTAL DEPTH	2714.5	2713.6	-2482.6	N/A	534.9 H

N/P = NOT PROGNOSED, N/A = NOT APPLICABLE. (1) Primary gas objectives. * Nomenclature changed since well proposal was completed.

CASING SUMMARY

Size	Depth	Weight	Grade	Connection	ID	Drift	Burst	Collapse	Tension
	(m)	#/ft			(in)	(in)	(psi)	(psi)	(lbs)
20"	20	94	H-40	BTC	19.124	18.936	1391	472	443,000
13 3/8"	420	54.5	K-55	BTC	12.615	12.459	2482	1027	497,000
9 5/8"	1553	47	K-55	BTC	8.681	8.525	4290	3528	678,000
4 1/2"	2714	15.1	P-110	Vam Top	3.826	3.70	14,420	14340	485,000

PERFORATION / STIMULATION SUMMARY

	Wireline Perforations (meter MDRT)					DFIT		Stimulation Treatment		
	Top	Base	Interval	Type	Density	Water	HCL%	Total Fluid	Silica Sand	Silica Sand
	(m)	(m)	(m)	SDP	(shots/m)	(bbls)	(bbls)	(bbls)	100 mesh	40/70 mesh
Stage 1							36			
	2547	2548	1	3/3/8"	20	212	@15%	6,654	52,912 lbs	148,815 lbs
CIBP	2529	2530	1	3/3/8"	20					
1	2522									
Stage 2							47			
	2497.5	2498.5	1	3/3/8"	20	320	@15%	7,575	76,061 lbs	125,666 lbs
CIBP	2481	2482	1	3/3/8"	20					
2	1952									
Stage 3							32			
	1900	1910	10	2 3/4"	10	12.6	@13.5%	44.6	N.A.	N.A.
	1860	1870	10	2 3/4"	10					
	1850	1860	10	2 3/4"	10					
CIBP	1837	1843	6	2 3/4"	10					
3	1815									
Stage 4						No DFIT	28.2			
	1774	1780	6	2 7/8"	10		@15%	135.2	N.A.	N.A.
	1755	1760	5	2 3/4"	5					
	1745	1755	10	2 7/8"	10					
CIBP	1728	1740	12	2 7/8"	10					
4	1660									
Stage 5						No DFIT	32			
	1648	1649	1	3/3/8"	20		@15%	7,866	69,447 lbs	158,736 lbs
	1641	1642	1	3/3/8"	20					
CIBP	1631	1632	1	3/3/8"	20					
5	1610									
CIBP	1575									
6										

HYDRAULIC STIMULATION SUMMARY

	Stimulation Treatment Statistics						Stimulation Totals		
	Top	Base	Average	Average	BH	BH	Total	Silica Sand	Silica Sand
			Rate	Pressure	ISIP	Gradient	Fluid Load	100 mesh	40/70 mesh
	(m)	(m)	(bpm)	(psi)	(psi)	(psi/ft)	(bbls)	(lbs)	(lbs)
Stage 1	2529	2548	41.2	7,421	8,696	1.044	6,654	52,912	148,815
Stage 2	2481	2498.5	37.6	8,665	8,967	1.077	7,575	76,061	125,666
Stage 5	1631	1649	50.4	5,630	5,643	1.049	7,866	69,447	158,736

Stage 1,2&5; Maximum Sand Concentration = 2.0 ppg

Abbreviations; BH (Bottom Hole), ISIP (Instantaneous Shut In Pressure)

TEST RESULTS SUMMARY

	Hydrocarbon Reservoir Statistics						
	Net	Avg.	Avg.	Average	Pressure	Gas	Recovered
	Pay	Porosity	SW	Permeability	Gradient	Gravity	Stimulation
	(m)	(v/v)	(v/v)	(md)	(psi/ft)		Water
M Velkerri LB Stage 1	38.5	0.055	0.31	0.00026	0.66-0.57	0.63-0.70	37%
M Velkerri B Stage 2	18.5	0.073	0.3	0.125	0.65-0.56	0.6-0.70	50%
M Velkerri A Untested	21	0.69	0.36	0.095	NA	NA	NA
L Kyalla Stage 5	48	0.071	0.36	0.020	0.65-0.56	0.71	30%

Stage 3&4 Moroak Intervals; Low porosity and permeability - No hydrocarbons

BRIDGE PLUG SUMMARY

Each tested interval was isolated with cast iron bridge plug.						
Cast Iron Bridge Plug	Plug 1	Plug 2	Plug 3	Plug 4	Plug 5	Plug 6
Depth (mMDRT)	2522	1952	1815	1660	1610	1575
A 15 m long cement plug is set above Plug 6 and another 15 m cement plug at the surface.						

SUMMARY

Sweetpea Petroleum drilled the Shenandoah-1 well to a depth of 1,555 meters (KB) in EP 98 during 2007. The Shenandoah-1 well was an offset to the Balmain-1 well and was designed to test the concept of basin center unconventional hydrocarbons in the Beetaloo Basin. On August 23, 2009, the Shenandoah-1A well commenced drilling at the Shenandoah-1 location and the borehole was deepened to 2,714 m. Following wireline logging, 6 cement plugs were set in the borehole and the well was suspended for further evaluation as summarized in the Shenandoah-1A Interim Well Report which was attached to the 2009 Annual Report.

The well was re-entered on 14 September, 2011 and drilled out the six cement plugs in the wellbore. The rig then ran and cemented a 4.5 inch casing string to total depth at 2,714 meters. The rig was released and Halliburton stimulation equipment was brought on-site for testing operations.

Shenandoah-1A is a vertical well situated in the deepest part of the basin and natural gas was the expected hydrocarbon at the depths being tested. The well is the first to be tested in these unconventional targets, consequently the objectives of the tests were to determine whether the shale intervals could be fracture-stimulated, whether they could produce hydrocarbons, and to confirm rock, pressure and fluid properties. The operation succeeded in these objectives and the well was plugged and abandoned to the highest environmental standards.

The Shenandoah-1A tests were not designed for long-term testing with full clean-up of fluids, but rather to test for hydrocarbon production to surface over a period of four to six days and to gather the maximum information possible before moving on to the next interval according to program. For this reason and because these are shale zones in a vertical well with single stimulation treatments, high flow rates were not expected.

Five intervals were tested in accordance with the program. The gathered information is still to be fully interpreted for planning future appraisal and exploration operations; however the following preliminary comments can be made at this time:

- Three of the five intervals flowed gas while still recovering significant amounts of frac fluid.
- The most positive results came from the Middle Velkerri shales where there was no indication of formation water being produced. The sustained gas rates ranged between 50 and 100 mscfpd (thousand standard cubic feet per day), gas gravities ranged from 0.64 to 0.70 and the lower interval also yielded condensate with an API gravity of 43 degrees. Importantly this showed that that these rocks can be stimulated and are over pressured. Both Velkerri intervals will now be considered candidates for future testing, including horizontal drilling with multiple stimulation treatments to establish commerciality.
- The Lower Kyalla shale also produced gas to surface and will now be considered for further exploratory investigation.
- Two separate intervals were perforated in the Moroak sandstones. They were not stimulated but rather were conventional perforation tests, intended to find out if the rocks

were gas-bearing and to provide technical information. Little to no commercial hydrocarbons were present. The test did however provide valuable rock property information as the Moroak is target of interest elsewhere in the Beetaloo Basin as a conventional play.

- The Upper Kyalla shale is oil-bearing in Shenandoah-1 but was not tested due to wellbore configuration.

Further evaluation of the extensive information gathered in this wellbore is now required before considering follow-up vertical and horizontal exploration wells. In order to locate future wells optimally it is likely that some additional seismic lines will need to be acquired in the Shenandoah area.

The Shenandoah-1A was plugged and abandoned (P&A) on 7 November, 2011.