Basic Well Completion Report rev1

OzDelta-1, EP128

South Georgina Basin
Northern Territory, Australia

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Basic Well Completion Report rev1 **OzDelta-1, EP128**		
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Document: Basic Well Completion Report

Well: OzDelta-1 Date: 18 Nov 2014

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Table of contents

Enclosures to OzDelta-1 Basic Well Completion Report (DVD)

OzDelta-1 Core images, white and UV light

Mudlog and gas recordings (pdf and LAS)

Openhole Wireline logs (pdf and LAS)

Core and Cuttings Sample Manifests

Cased Hole logs (pdf and LAS)

1 General Data

1.1 Well Objective

The OzDelta-1 exploration well was one of five 2014 Statoil wells drilled to de-risk the unconventional play in the Middle Cambrian carbonate deposits; the Arthur Creek Hot Shale and the Thorntonia Limestone (dolomitized) in the South Georgina Basin. The OzDelta-1 well was located in the south-eastern part of EP 128. Permeabilities in these formations are expected to be too low for conventional production methods and the most prospective wells are planned to be stimulated through hydraulic fracturing. OzDelta-1 was drilled and prepared as one of the candidates for stimulation. No commercial production rates can be expected from this vertical exploration well with the aim being to prove and sample any movable hydrocarbons. The results of testing will form the basis for future project planning and the acquired data will be vital input for future well designs and completion strategies.

The well was located at a tectonically undisturbed location to best assess the presence of hydrocarbons. Extensive coring and wireline logging were performed to better understand the rock properties and perform a hydrocarbon potential evaluation.

The drilling objective for the OzDelta-1 well included two hole sections. The upper section (12 ¼" hole and 9 5/8" surface casing) was designed to be cased and cemented to surface to:

- isolate the aquifers,
- achieve kick tolerance,
- ensure well integrity towards underlying potential hydrocarbon bearing zones.

The lower 7 7/8" drilling section included continuous coring through the basal Arthur Creek Hot Shale and into the underlying Thorntonia Limestone.

The final objective of the drilling phase was to run 4½" production casing to TD and cement to surface to provide isolation for hydraulic stimulation and testing in the next phase of operations.

The objective of the completions phase was to verify the well integrity for hydraulic fracturing operations and subsequently perform pre-fracture geomechanical diagnostic testing, single stage fracture stimulation, and production testing operations. Following production testing operations the well was to be plugged and abandoned as per the NT DME requirements.

1.2 Well Outcome

The conductor was preset at 15.2m MD and 12 ¼" hole was drilled to 357m MD RKB. 9 5/8" surface casing was run to 355m MD RKB and cemented to surface, isolating the aquifers. Kick tolerance and well integrity were confirmed with a formation integrity test of 13.7ppg EMW.

$7^{7}/_{8}$" production hole was then drilled to the pre-defined coring point at 722m MD RKB. $3^{1}/_{2}$" wireline retrieved coring was conducted using 18m core barrels. Good recovery was achieved through the lower Arthur Creek Formation and the Arthur Creek Hot Shale. On intersecting the Thorntonia Limestone, core recovery became poor. Broken core packed off the core barrel, resulting in only 0.3m to 1.6m of core recovered per run. Coring was terminated at 756.6m in the Thorntonia Limestone. Conventional drilling was resumed and drilling was terminated in metavolcanic basement at 840m MD RKB.

Wireline logging was conducted before production casing was run. OzDelta-1 was then temporarily suspended awaiting stimulation and production testing.

Once the completions operations commenced, cased hole wireline logging and casing pressure testing was performed, which verified the well integrity. Pre-frac diagnostic testing was carried out followed by the primary fracture stimulation of the target formation. Production testing was performed using a coiled tubing deployed jet pump and swabbing using coiled tubing. After completing the production testing operations the well was plugged and abandoned using coiled tubing and the wellhead cut-off using an abrasive jet cutter.

1.3 Well Summary Table

WELL SUMMARY			
Statoil	WELL NAME	OzDelta-1	
	OFFSET WELLS	Ross 1, Sandover 13, OzGamma-1	
	WELL CLASS	Exploration	
LOCATION DETAILS			
BASIN	Southern Georgina Basin	NORTHING	7613131.2mN
LICENCE	EP 128	EASTING	673579.21mE
LOCATION	Northern Territory	ZONE	53 S
SEISMIC SURVEY	PFC-12-101/PFC-12-108	LATITUDE	21°34'34.82"S
SEISMIC REF.	101: Trace 1960 / CDP 2059 / SP 6533 108: Trace 1452/ CDP 1551/ SP 177979	LONGITUDE	136°40'35.47"E
ELEVATIONS	Elevation: 272.5m, Kelly height: 4.2m	GRID	GDA'94
OPERATION DETAILS			
OPERATOR	Statoil Australia Theta B. V.	DRILLING RIG /	EDA Rig # 2
PRIMARY OBJECTIVE SECONDARY OBJECTIVE	Arthur Creek Formation 'Hot Shale' Thorntonia Limestone	SPUD DATE	20/06/2014
STRUCTURE	Unconventional Stratigraphic	RIG RELEASE	28/06/2014
WELL TYPE	Vertical	TD DATE OzDelta-1	27/06/2014
DRILLER TD	840.4 m MD	OPERATION DAYS	9
COMPLETION SERVICES	Weatherford wireline unit, Halliburton hydraulic fracturing, Halliburton coiled tubing, Farley Riggs production testing	WELL DIAGNOSTIC	5 – 21/09/2014
		STIMULATION	22 – 23/092014
		WELL TESTING	23/09 – 08/10/2014
OPERATION DAYS	16 (well diagnostic) + 15 (stim and test), total 31 days	PERMANENT P&A	8 – 9/10/2014

HOLE SUMMARY OzDelta-1				
HOLE SIZE	**HOLE DEPTH**	**CASING SIZE**	**SHOE DEPTH**	**CASING TYPE**
15" (381mm)	15.5 mMD	13 3/8"(340mm)	15 mMD	Conductor
12 ¼" (316mm)	357. mMD	9 5/8" (244mm)	355 mMD	36 ppf J-55 BTC
7 7/8" (200mm)	840.4 mMD	4 ½"(144mm)	837.6 mMD	13.5 ppf L-80 Tenaris Blue

MWD-LWD & LOGGING SUMMARY OzDelta-1				
RUN	**IN (mMD)**	**OUT (mMD)**	**TOOLS STRING**	**REMARKS**
1	840.4	700	MCG-CMI (image log)-CXD (sonic)	Image log (CMI) run separately. Max. BHT 47°C at TD.
1a	840.4	355	MCG-CMI (image log)-CXD (sonic)	Sonic log (CXD) to csg shoe
2	840.4	189.3	MCG-SGS-MDN-MPD-MLE-MMR High resolution (840.4 -652 m MD)	SuperCombo: spontaneous potential, gamma (to surface), spectral gamma, neutron, density, laterolog, microres.
2a	167	0	MCG-SGS-MDN-MPD-MLE-MMR	Missing data from 144.7-191 m MD due to power failure.

CORING: OzDelta-1			
RUN	**INTERVAL (mMDKB)**	**RECOVERY m (%)**	**COMMENT**
1-9	722.5 – 756.6	97.4%	Wireline retrieved coring

FORMATION TESTS	Lower part of Arthur Creek Hot Shale was stimulated and production tested

The OzDelta-1 well is located in the central part of the Southern Georgina Basin; see Figure 1 and Figure 2.

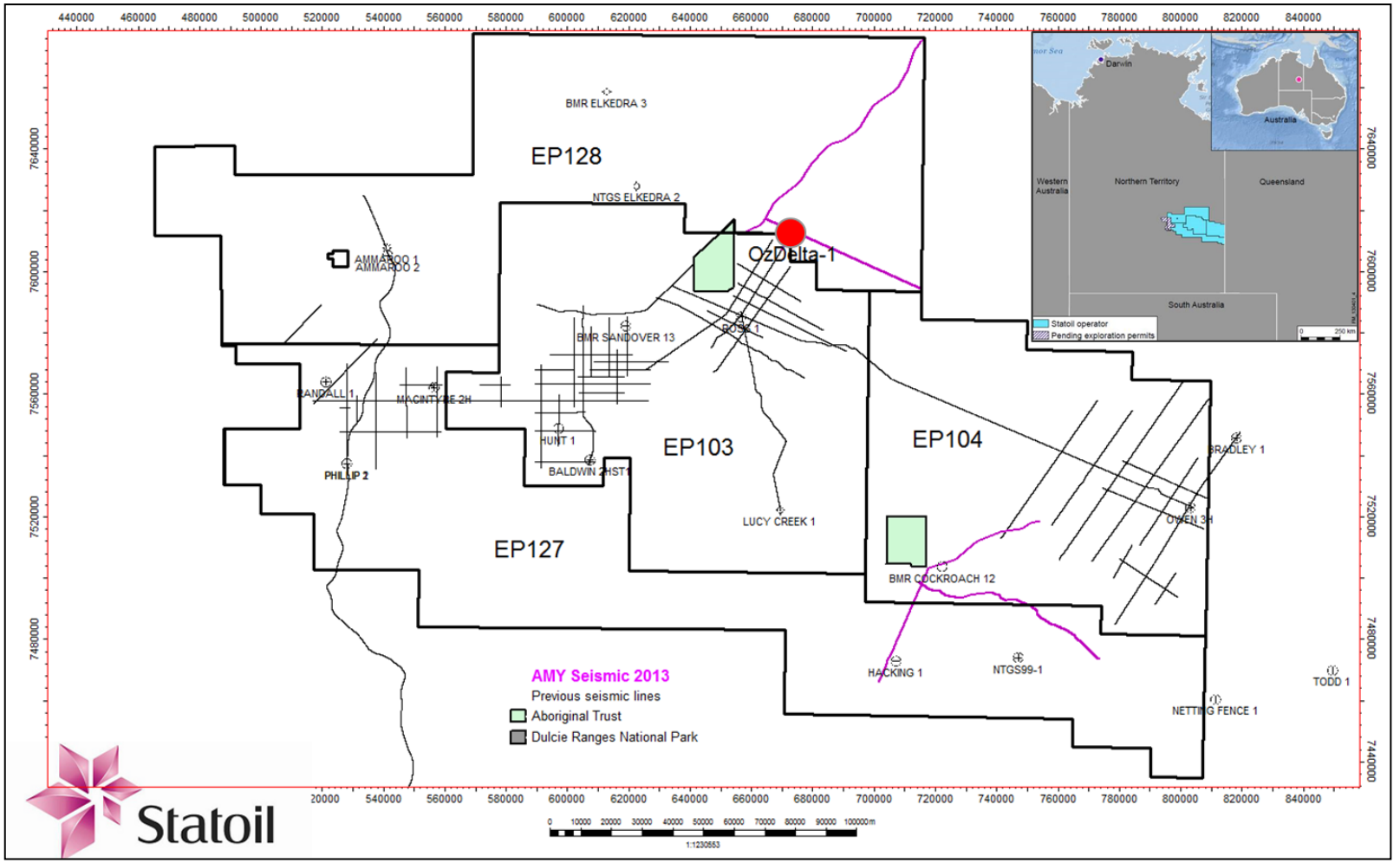


Figure 1 Map of the Statoil licenses area and position of the OzDelta-1 well location in EP128

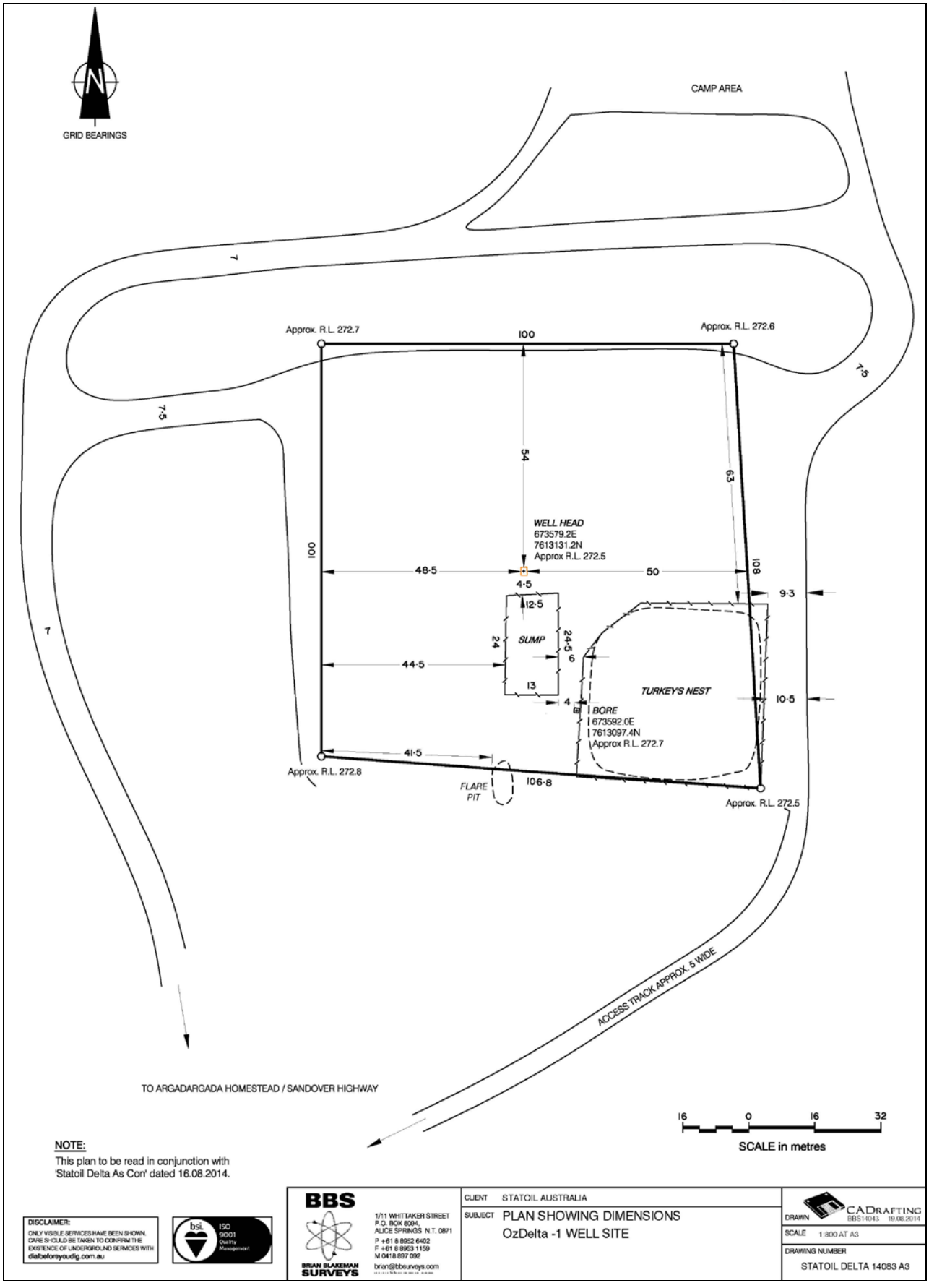


Figure 2 Survey certificate

2 Drilling

All depths in this section are measured depths to the Kelly bushing height (4.2m AGL), unless otherwise stated.

2.1 Drilling Summary

OzDelta-1 was spudded June 20th 2014 and took a total of 9 days to complete the drilling, logging and running/cementing production casing. The well was temporarily suspended awaiting potential stimulation and testing operations and the rig was released on June 28th 2014.

15" top hole (0 – 15.5m)
15" tophole was pre drilled by Western Auger Drilling to 15.5m and the 13 3/8" conductor set at 15.2m.

12 ¼" surface hole (15.5m to 357m)
The 12 1/4" hole was drilled from 15.5 m whilst taking returns from the cellar to the shakers/mud system. At 62m the mud system was switched over to flocculate in the sump and drilling continued towards the surface hole planned total depth at 357m. From approximately 300m losses of 5-10bbl/hr were registered. Single shot magnetic surveys were performed as per plan every 200m.

The 9 5/8" J55 BTC casing was run to 355m and cementing operations took place with full returns. Cement was observed at surface.

The BOP was nippled up and function tested. Whilst installing the wear bushing on the pup joint, 1.5hrs of down time was incurred when the assembly turned in the wrong direction on the bushing and started to back out of the joints. The connections were tightened with the iron rough neck so that the wear bushing could be released and re-set.

7 $^{7}/_{8}$" production hole (357m – 840m)
After drilling 3.5m of new formation below surface casing shoe to 360.5m, a FIT was successfully performed to 13.7ppg EMW.

Drilling resumed and reached the planned coring depth of 722m with no issues. A CorePro 7 $^{7}/_{8}$" coring assembly with wireline retrieved 18m core barrel for 3 ½" core was run in the hole and coring commenced. On the second coring run top Thorntonia Limestone was intersected 27m shallow to prognosis and the core packed off halfway into the run. Seven more attempts were made to core the Thorntonia Limestone, with only 0.3 – 1.6m recovery. The interconnected vugs and weak zones in the Thorntonia Limestone were believed to be the cause for the core breaking up and jamming inside the core barrel, resulting in short trips and core material of very poor quality. Conventional drilling was recommenced at 756.6m and TD was called at 840m after observing metavolcanic basement in cuttings from 812 m.

The wireline logging operation experienced several problems due to a malfunctioning wireline unit and there was a total of 4 hours of down time. The required logging runs were performed and the logging coverage was almost complete, except for the loss of 47m of data from 144 – 191m due to a power failure on the rig whilst logging the surface casing section.

4 ½" L80 Tenaris Blue production casing was run to 837.6m. Cement was not seen at surface and a top up cement job was performed with 16bbls of cement. Cement returns was observed on surface after 12bbl were pumped.

A casing mandrel hanger / pack-off tool was installed and tested successfully, the BPV installed, and the BOP was nippled down. The well head adapter was installed and nippled up and the seals were pressure tested successfully after 2 attempts to land the pack off assembly. The well was suspended awaiting for later stimulation and testing operations.

A time overview for the OzDelta-1 activities can be seen in Table 2-1.

Table 2-1 Summary of operations for OzDelta-1

Section	Start time	End time	Rig name
AU OZDELTA-1 Move-In, Rig Up	12.Jun.2014 03:45	20.Jun.2014 06:00	EDA 2
AU OZDELTA-1 Drilling, Surface	20.Jun.2014 06:00	21.Jun.2014 22:00	EDA 2
AU OZDELTA-1 Casing, Surface	21.Jun.2014 22:00	23.Jun.2014 09:15	EDA 2
AU OZDELTA-1 Drilling, Production	23.Jun.2014 09:15	27.Jun.2014 07:30	EDA 2
AU OZDELTA-1 Formation evaluation, Production	27.Jun.2014 07:30	27.Jun.2014 23:15	EDA 2
AU OZDELTA-1 Casing, Production	27.Jun.2014 23:15	28.Jun.2014 22:00	EDA 2
AU OZDELTA-1 Rig Down	28.Jun.2014 22:00	29.Jun.2014 02:00	EDA 2

2.1.1 Non-productive time summary

Table 2-2 Summary of the non-productive time for OzDelta-1

Well	Date	Incident	Category	Company	Hours
OzDelta-1	27.Jun.2014	EWL-E01 Primary mechanical	Formation Evaluation	Weatherford	4
OzDelta-1	22.Jun.2014	XMAS-03 Procedure not followed	Casing, Surface	FMC	1.5
OzDelta-1	28.Jun.2014	XMAS-01 Procedure	Casing, production	FMC	1.5
				Total hours :	7

2.1.2 Time versus Depth Curve

The time versus depth illustration with explanatory remarks can be seen in **Figure 3** on the next page.

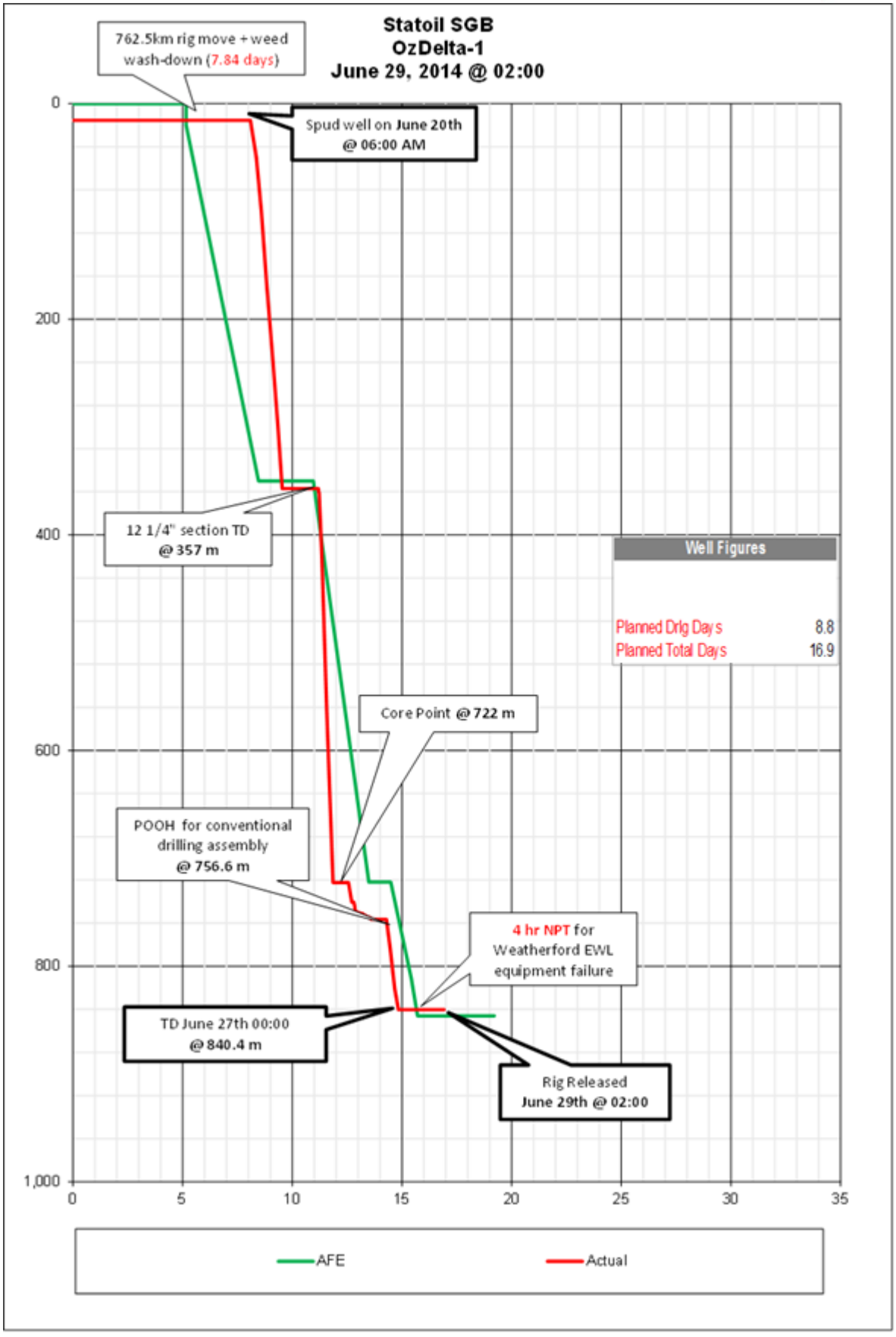


Figure 3 Time versus depth curve for OzDelta-1

2.2 Casings

The overview of the run casings in OzDelta-1 is presented in the table below.

Table 2-3 Casing summary for OzDelta-1

Category/String type			Diameters	RKB hanger m MD	Air gap m MD	From depth m MD	To depth m MD	Date	Description
Conductor			13 3/8"	4.2	4.2	4.2	15.2	15/06/14	
Item type	**No. of joints**	**Diam. inch**	**Grade**	**Coupling**	**Weight lbs/ft**	**From depth m MD**	**To depth m MD**	**Remarks**	
Casing	2	13 3/8"	J55	API5B BTC	54.5	4.2	15.2	Pre-installed by Western Auger Drilling	

Category/String type			Diameters	RKB hanger m MD	Air gap m MD	From depth m MD	To depth m MD	Date	Description
Casing, surface			9 5/8"	4.2	4.2	5.2	355.4	22/06/14	
Item type	**No. of joints**	**Diam. inch**	**Grade**	**Coupling**	**Weight lbs/ft**	**From depth m MD**	**To depth m MD**	**Remarks**	
Hanger	1	9 5/8"	J55	API5B BTC	36.0	4.2	5.2		
Casing	30	9 5/8"	J55	API5B BTC	36.0	5.2	343.0		
Float Collar	1	9 5/8"	J55	API5B BTC	36.0	343.0	343.3		
Casing	1	9 5/8"	J55	API5B BTC	36.0	343.3	355.0		
Shoe	1	9 5/8"	J55	API5B BTC	36.0	355.0	355.4		

Category/String type			Diameters	RKB hanger m MD	Air gap m MD	From depth m MD	To depth m MD	Date	Description
Casing, production			4 ½"	5.4	4.2	4.4	837.1	28/06/14	
Item type	**No. of joints**	**Diam. inch**	**Grade**	**Coupling**	**Weight lbs/ft**	**From depth m MD**	**To depth m MD**	**Remarks**	
Hanger	1	4 ½"	L-80	TSH Blue	13.5	4.2	4.4		
Casing	71	4 ½"	L-80	TSH Blue	13.5	4.4	813.5	Hanger landed at 4.4	
Float Collar	1	4 ½"	L-80	TSH Blue	13.5	813.5	813.7		
Casing	2	4 ½"	L-80	TSH Blue	13.5	813.7	836.6		
Shoe	1	4 ½"	L-80	TSH Blue	13.5	836.6	837.1		

2.3 Well Path - Directional Data

The well inclination was monitored with single shot surveys. See App A for the inclination measured from the single shot surveys. The verticality analysis from the dipole sonic run shows that the well was turning towards an azimuth of 50deg at 360m MD and back towards 350deg at TD.

2.4 BHA Records

All the bottom hole assemblies utilized in the OzDelta-1 can be viewed on the next pages.

WELLBORE: AU OZDELTA-1
BHA NO: 1
RUN TYPE: Drilling run
DESCRIPTION: 12 1/4" PDC Assy
RUN NAME: 1

String component	OD in	ID in	Length m	Acc length m
BIT	12.250	2.750	0.41	0.41
BIT SUB	8.000	2.000	0.92	1.33
SHOCK SUB	8.125	2.500	2.92	4.25
DRILL COLLAR	8.000	3.000	9.05	13.30
STABILIZER	12.250	2.870	2.46	15.76
DRILL COLLAR	8.000	3.000	9.04	24.80
X-OVER	8.000	2.120	0.25	25.05
X-OVER	7.000	2.120	0.38	25.43
DRILL COLLAR	6.250	2.120	92.33	117.76
X-OVER	7.500	2.500	0.21	117.97

BHA NO: 2
RUN TYPE: Drilling run
DESCRIPTION: 7 7/8" PDC Assy
RUN NAME: 2

String component	OD in	ID in	Length m	Acc length m
BIT	7.875	2.250	0.26	0.26
MUD MOTOR	6.750	1.500	8.15	8.41
FLOAT SUB		2.250	0.69	9.10
X-OVER	6.620	2.250	0.60	9.70
STABILIZER	7.750	2.870	1.86	11.56
X-OVER	6.500	2.250	0.38	11.94
DRILL COLLAR	6.250	2.250	101.79	113.73
JAR	6.250	2.250	9.07	122.80
X-OVER	6.250	2.500	0.30	123.10

BHA NO: 3
RUN TYPE: Coring run
DESCRIPTION: 6 Blade core head 18m barrel
RUN NAME: 1

String component	OD in	ID in	Length m	Acc length m
BIT	7.875	3.500	0.47	0.47
CORE BARREL		4.600	8.23	8.70
STABILIZER		4.600	0.91	9.61
CORE BARREL		4.600	8.24	17.85
STABILIZER		4.600	0.91	18.76
COREBARREL		4.600	0.73	19.49
COREBARREL		4.600	0.72	20.21
DRILL COLLAR		4.600	94.08	114.29

BHA NO: 4

RUN TYPE: Drilling run
DESCRIPTION: 7 7/8" Tri-cone Assy
RUN NAME: 3

String component	OD in	ID in	Length m	Acc length m
BIT	7.875		0.24	0.24
MUD MOTOR	6.750	1.500	8.15	8.39
FLOAT SUB	6.625	2.250	0.69	9.08
DRILL COLLAR	6.250	2.250	9.28	18.36
DRILL COLLAR	6.250	2.250	9.30	27.66
X-OVER	6.500	2.188	0.81	28.47
STABILIZER	7.750	2.870	1.86	30.33
X-OVER	6.500	2.250	0.88	31.21
DRILL COLLAR	6.250	2.250	83.22	114.43
JAR	6.500	2.250	9.08	123.51
DRILL COLLAR	6.250	2.250	9.11	132.62
X-OVER	6.500	2.375	0.59	133.21
HW DRILL PIPE	6.500	3.000	55.90	189.11
X-OVER		2.250	1.21	190.32
X-OVER		2.250	0.60	190.92

2.5 Cementing Summary

Cementing of the 9 5/8" surface casing:
Operation summary: Pumped 10bbl of 8.33ppg spacer, 4.4bbl/min/ 105psi. Pressure test surface lines to 600/3100psi for 5min. Pumped 10bbl of 8.33ppg spacer, 4.4bbl/min/ 105psi, dropped bottom plug. Mixed and pumped 104bbl of 13.5ppg cement slurry. Dropped top plug and displaced with 87bbl 8.33ppg water to bump plug with 300psi. Increase pressure to 770psi for 5min to confirm bump. Bleed off 0.75bbl and the floats held. Good returns throughout the cement job with 27bbl of cement to surface.

Table 2-4 Cementing summary for OzDelta-1 Surface casing

Fluids pumped	Type	Density ppg	Volume bbl	Pump Rate gal/min	Pump Press psi	Return
Spacer before	Fresh Water	8.33	20.0	4	105	F
Lead	Cement Slurry	13.50	104.0	5	160	F
Displacement	Fresh Water	8.33	87.0	5	300	F

Cementing of the 4 1/2" production casing:
Cement 4 1/2" casing. Pumped 10bbl of 8.33ppg spacer, 5bbl/min/ 135psi. Pressure tested surface lines to 380/5080psi. Pumped 10bbl spacer, 5bbl/min 135psi, dropped bottom plug. Mixed and pumped 111.9bbl of 11.9ppg lead cement slurry, 5bbl/min. Mixed and pumped 44.4bbl of 14.8ppg tail cement. Displaced the cement with 40bbl 2% KCL water with 5PPB idcide/ 5PPB Ancor to bump plug at 2BPM 680psi. Pressure test casing to 1600psi for 10min. Bleed off 0.4bbl., floats held. Good returns while pumping cement, intermittent returns while displacing cement. Approximately 12 bbl pre flush to surface with no cement to surface. Top up cement job with 16bbl 14.2ppg cement, cement to surface after 12bbl pumped, pumped additional 4bbls for a total of 16bbls of cement for top out job.

Table 2-5 Cementing summary for OzDelta-1 Production casing

Fluids pumped	Type	Density ppg	Volume bbl	Pump Rate gal/min	Pump Press psi	Return
Preflush	Spacer	8.33	20.0	5	135	F
Displacement	Displacement	8.40	40.0	6	680	P
Lead	Cement Slurry	11.90	111.9	5	117	F
Tail	Cement Slurry	14.80	44.4	4	126	F

2.6 Bit Records

OzDelta-1 bit records can be seen in the tables below.

Tables 2-6 Bit records for OzDelta-1 bit runs

Run no	Bit size	Bit no	BHA no	Bit type	IADC code	Bit manufacturer
1	12 1/4"	1	1	MMD65DH	M324	Halliburton
2	7 7/8"	2RR	2	DSH616M		NOV
3	7 7/8"	3	3	DC613Q		Corepro
4	7 7/8"	4	4	EQH44D2R		Halliburton

					Nozzles (n/32")	
Run no	Bit size	Bit no	BHA no	Serial no	no x n	Flow area in2
1	12 1/4"	1	1	12243841	9 x 24	3.9770
2	7 7/8"	2RR	2	A154443	6 x 18	1.4920
3	7 7/8"	3	3	1519	6 x 12	0.6630
4	7 7/8"	4	4	11555552	3 x 32	2.3570

Run no	Bit size	Pump rate gal/min	Pump press psi	Depth in mMD	Depth out mMD	Form drld m	Total drld m	Drld hrs	Circ hrs	ROP m/hr
1	12 1/4"	750.0	800.0	15.50	357	341.50	341.50	33.8	35.0	10.1
2	7 7/8"	500.0	1275.0	357	722	365	365	15.5	17.0	23.5
3	7 7/8"	250.0	500.0	722.50	756.60	34.10	34.10	11.0	16.0	3.1
4	7 7/8"	560.0	810.0	756.60	840.40	83.80	13	13.0	13.5	6.4

Run no	Bit size	Min WOB kips	Max WOB kips	Min RPM	Max RPM	Torque Min ft*lbf	Torque Max ft*lbf	Con drag Min 1000 kips	Con drag Max 1000 kips
1	12 1/4"	24.492	28.499	90	100	8750	10000	2.00	5.00
2	7 7/8"	34.0	34.99	50	180	7999	9000	4.0	6.0
3	7 7/8"	6.0	7.99	50	60	5000	6000	1.00	2.00
4	7 7/8"	31.99	34.99	55	60	6.00	7.00		

Run no	Bit size	I	O	DC	L	B	G	OC	RP
1	12 1/4"	4	1	BT	C	X	I	BT	TD
2	7 7/8"	2	4	BT	S	X	0	CT	CP
3	7 7/8"	1	1	BT	C	X	I	NO	BHA
4	7 7/8"	2	3	BT	G	2	I	CT	TD

Run no	Bit size	Remarks
1	12 1/4"	12 1/4" PDC Assy
2	7 7/8"	7 7/8" PDC Assy
3	7 7/8"	6 Blade core head 18m barrel
4	7 7/8"	7 7/8" Tri-cone Assy

2.7 Drilling Fluids

The OzDelta-1 well was drilled with water based mud. The water to fill the turkeys nest was partially supplied from the Delta water bore drilled on the OzDelta-1 well site, the Mulga bore and from a government bore 21km south of the Argadargada turn-off along the Sandover Highway. A short summary of the mud properties is given in the table below:

Table 2-7 Drilling fluids summary

Hole Section	Fluid Type	Mud Weight (ppg)	Viscosity (sec/qt)	PV (cp)	YP (lb/100 ft^2)	Fluid Loss (ml/30 min)	pH
Surface	Spud Mud	8.4-8.6	26	1	1	15-20	8.4-8.5
Production	Polymer Mud	8.5-8.8	32-38	4-8	7-17	15-20	8.5-11

3 Completions Operations

3.1 Completions Summary

Two months after the drilling rig completed and suspended the OzDelta-1 exploration well, a completions unit consisting of a Weatherford wireline unit, a crane, a Halliburton coiled tubing unit and a Halliburton fracturing spread returned to the OzDelta-1 site to commence the planned well completions activities. These operations included well integrity and geomechanical diagnostics, stimulation and production testing designed to demonstrate movable hydrocarbons.

The wireline unit rigged up on the OzDelta-1 well and tagged cement at 786.7m MD, the float collar being at 813.5m MD. The casing was pressure tested satisfactorily to 7,500psi and an SBT cement evaluation log was run with 3,500psi applied pressure. 3m of perforations were shot in the Thorntonia formation with top shot at 773m MD. These perforations were broken down after several attempts. Following subsequent acidization, the perforated interval went on vacuum and took fluid so readily that a meaningful stress test was not achievable. These perforations were then squeezed with cement and a permanent bridge plug set at 765m MD for isolation purposes. The frac target was then perforated by jetting holes with a HydraJet abrasive tool at 737.5m MD and 736.0m MD (3 holes at each depth). A diagnostic fracture injection test (DFIT) was conducted and a bridge plug with downhole pressure gauges fitted below the element was set immediately following the DFIT. The downhole pressure fall off below the bridge plug was recorded from 13/9/14 to 20/9/14 when the bridge plug and downhole gauges were pulled using coiled tubing. A single stage fracture stimulation was then conducted. From 25/9/14 until 6/10/14 the well was production tested using a jet pump and packer configuration conveyed on coiled tubing. From 7/10/14 until 8/10/14 the well was swabbed using coiled tubing conveyed swab mandrel, at which time the decision was made to cease testing. No hydrocarbons were produced during the testing. An abandonment cement plug was spotted on the bridge plug at 765m MD. After tagging the cement, the well was circulated to inhibited water. On 9/10/2014 a surface cement plug was set to complete the in-wellbore abandonment process in accordance with the NTDME requirements. Finally the wellhead was cut off using a hydraulic abrasive jet cutter and the lease restored to its original condition. These earthworks were completed in late October 2014.

Table 3-1 Summary of completions operations for OzDelta-1

Section	Start time	End time	Contractor name
AU OZDELTA-1 Wellbore preparation	05.Sep.2014 00:00	21.Sep.2014 13:30	Weatherford wireline Halliburton Coiled Tubing
AU OZDELTA-1 Stimulation	21.Sep.2014 13:30	23.Sep.2014 18:00	Weatherford wireline Halliburton Frac and Halliburton Coiled Tubing
AU OZDELTA-1 Production testing	23.Sep.2014 18:00	08.Oct.2014 06:00	Farley Riggs Halliburton Coiled Tubing
AU OZDELTA-1 Abandonment	08.Oct.2014 06:00	09.Oct.2014 15:30	Halliburton Coiled Tubing

3.1.1 Non-productive time summary

A summary of the non-productive time for OzDelta-1 completions operation can be seen below.

Table 3-2 Summary of the non-productive time for completions operations on OzDelta-1

Date	Description	Company	Hours
4.9.2014	Stimulation	Halliburton	6.5
13.9.2014	Plug	Halliburton	6.0
14.9.2014	Operator delay	Statoil	2.5
22.9.2014	Stimulation	Halliburton	7.0
23.9.2014	Stimulation	Halliburton	9.5
25.9.2014	Stimulation	Halliburton	1.0
25.9.2014	Operator delay	Statoil	2.5
29.9.2014	Operator delay	Statoil	6.5
6.10.2014	Coiled tubing	Halliburton	3.2
7.10.2014	Coiled tubing	Halliburton	5.3
8.10.2014	Coiled tubing	Halliburton	1.5
		Total hours	51.5

3.2 Wellbore Preparation

The wellbore preparation operations consisted of ensuring well integrity through cement evaluation logging and casing pressure tests, as well as gathering accurate data and analysis for the stimulation operations. The pre-stimulation data acquisition operations consisted of a lower boundary stress test and a diagnostic fracture injection test (DFIT) in the target zone.

The suspension cap that was installed at the completion of drilling was removed and the 4-1/2" 10,000psi FMC frac tree was installed and pressure tested to 7,500psi. The wireline unit was rigged up and tagged cement at 786.7m MD, the float collar being at 813.5m MD. The casing was pressure tested satisfactorily to 7500psi after which an SBT cement evaluation log was run at 3500psi applied pressure on the casing. 3m MD of 20 spm, 0.43 EHD perforations at 60 degree phasing were shot in the Thorntonia formation from 773 to 776m MD. The perforating was done with 4780psi pressure applied at surface and a small pressure drop to 4415psi was observed immediately after perforating. These perforations were subjected to an injectivity breakdown test in order to assess the rock stress for input to the fracture design. After 2 attempts during which pressures reached the maximum allowable pressure of 7000psi without the formation breaking, break down was achieved on the third attempt and pressures were monitored overnight. The perfs were washed with acid and subjected to another injectivity test but after a short time the well went on vacuum yielding useless data and the stress test was aborted. Two more injectivity tests were performed next day and both resulted in the well going on vacuum very quickly. The perforations were squeezed off with a total of 7.4bbl of cement. After waiting on cement the well was circulated clean to 770m MD in order to set a permanent bridge plug. No cement was observed in the returns. The following day, cement was tagged at 769m MD. An EZ SV bridge plug was set at 765m MD and pressure tested to 7500psi. The frac target was then perforated by jetting holes with a HydraJet abrasive tool at 737.5m MD and 736m MD (3 holes at each depth). Coil tubing was used to convey the HydraJet tool and 100 mesh sand was

used as the abrasive material. A bridge plug with gauges fitted below the element was run on e-line and positioned, but not set, at 727m MD. A diagnostic fracture injection test (DFIT) was conducted with breakdown at 4,371psi and average treating pressure of 4400psi at 2.3bpm; ISIP was 3477psi. The bridge plug was set immediately after recording ISIP. The downhole pressure fall off was recorded from 13/9/14 to 20/9/14 when the bridge plug and downhole gauges were pulled using coiled tubing. This data was analysed and the fracturing model updated prior to the stimulation.

3.3 Fracture Stimulation

On 22/9/14 a single stage fracture stimulation was commenced but aborted due to a problem with the crosslink additive.

Table 3-3 Summary of the 1st Attempt of the Fracture Stimulation on OzDelta-1 (unsuccessful)

Surface Breakdown Pressure psi	Acid Spearhead Rate bbl/min	Avg Surface Treating Pressure psi	Max Surface Treating Pressure psi	Breakdown Rate bbl/min	Acid Qty bbl
3,762	5	3,371	4,577	0.96	17
Avg Treating Rate bbl/min	**Max Treating Rate bbl/min**	**Clean Volume bbl**	**Slurry Volume bbl**		
7.9	15.3	250	250		
100 Mesh Sand lb	**20/40 Proppant lb**	**Total Proppant lb**	**Max Proppant Concentration lb/gal**		
0	0	0	0		

After resolving the crosslinker problem, a single stage frac was pumped as follows on 23/9/14.

Table 3-4 Summary of the 2nd Attempt of the Fracture Stimulation on OzDelta-1 (successful)

Surface Breakdown Pressure psi	Acid Spearhead Rate bbl/min	Avg Surface Treating Pressure psi	Max Surface Treating Pressure psi	Breakdown Rate bbl/min	Acid Qty bbl
2,715	NA	2,819	3,072	2.88	NA
Avg Treating Rate bbl/min	**Max Treating Rate bbl/min**	**Clean Volume bbl**	**Slurry Volume bbl**		
13.5	15.5	768	803		
100 Mesh Sand lb	**20/40 Proppant lb**	**Total Proppant lb**	**Max Proppant Concentration lb/gal**		
3,307	33,070	36,377	4.27		

3.4 Production Testing

After rigging aside the frac equipment, the production test commenced. The testing package consisted of 3 phase separator, manifold, H_2S treatment unit, storage tanks, flare stack, light plants and generators. Initially the well was flowed back on a small choke. A jet pump and packer assembly were RIH on coiled tubing to 723m MD and the packer was set at 720m MD. On 25/9/14 jet pumping commenced using the Halliburton coiled tubing pump for pumping power fluid with all returns being taken through the testing and H_2S treatment equipment. H_2S readings were around 3 – 4 ppm. The jet pump and packer were pulled late on 26/9/14 with considerable overpull. The jet pump was then re-run on 27/9/14 and pumping and testing operations were resumed. On 29/9/14 the H_2S reading rose to 40ppm at which time the pump was shut in to treat and sweeten the return fluid. Pumping resumed and by 4/10/14 the H_2S reading was zero. On 6/10/14 the jet pump was pulled and removed from the coiled tubing. A swab mandrel was made up to the coil tubing and RIH. Over the following two days eleven swabs were pulled, all from 732m MD except for the 11th swab which was pulled from below the perforations at 748m MD. Two of the swab runs returned no fluids and the swab cups were changed out after the 4th swab run. No further testing was conducted after swabbing.

The test results are summarized below.

Table 3-5 Summary of the Production Testing on OzDelta-1

Cum gas Produced MMcf	Cum oil Produced bbl	Cum Water Net bbl	Cum Produced Water bbl
0	0	1,085.0	36.5
Total Load Fluid to Recover bbl	Calculated Load Fluid Left to Recover bbl	Calculated Load Fluid Production	Maximum H_2S Reading ppm
1048.5	0	104%	61

3.5 Permanent Plug and Abandonment

On 9/10/14, at the conclusion of the production testing, the coil tubing unit commenced operations to permanently plug and abandon the well.

The well was flushed clean and then a 6.0bbl Class G cement plug was spotted on the bridge plug set to isolate the perfs used for the lower stress test. After waiting on cement the plug was tagged at 650m MD after which the well was circulated over to water treated with Ancor 1 corrosion inhibitor. A surface cement plug was placed from 45m MD (45m below surface) up to surface using a gel plug as a base. After waiting on cement to harden, the plug was tagged at 6.7m MD (2.5m below ground). The CTU and testing package were then rigged down.

The cellar was excavated and removed and the wellhead and cemented casing strings were cut off using a hydrajet abrasive cutter. A signpost was installed on 10 October 2014 and the lease was restored to original condition in accordance with the Environmental Management Plan.

The final well schematics after the permanent plug and abandonment operations can be seen in Appendix B and the final well barriers as left is shown in Appendix D.

3.5.1 Plugging

The details of the cement plugs for the permanent plug and abandonment can be seen in the tables below.

Table 3-6 Lower cement plug

Plug top MD	Plug bottom MD	Company	Plug No.	Plug type	Job objective
650	738	Halliburton	1	Cement in Casing	Permanent P&A
Measured plug top MD	**Measured by**	**Hole size**	**Casing size**	**Placement method**	
650	Tagging	3 13/16""	4 ½"	Spotted by coil tubing	
Remarks: Class G cement placed on EZ SV bridge plug					
Fluids pumped	**Type**	**Density ppg**	**Volume bbl**	**Pump rate bbl/min**	**Pump pressure psi**
Slurry	Blended cement	15.8	6.0	0.5	2300

Table 3-7 Surface abandonment cement plug

Plug top MD	Plug bottom MD	Company	Plug No.	Plug type	Job objective
6.7	45	Halliburton	2	Cement in Casing	Permanent P&A
Measured plug top MD	**Measured by**	**Hole size**	**Casing size**	**Placement method**	
6.7	Tagging	3 13/16"	4 ½"	Spotted by coil tubing	
Remarks: Spotted gel plug from 85 to 45 m MD then spotted cement surface plug on gel. 38 m of cement					
Fluids pumped	**Type**	**Density ppg**	**Volume bbl**	**Pump rate l/min**	**Pump pressure psi**
Slurry	Blended cement	15.8	2.2	NA	NA

4 Well Evaluation Logs

One suite of openhole logs was recorded from TD to the casing shoe (GR to surface). The openhole logging was carried out to provide information on lithology, rock properties (por/perm), fluid content, parameters to develop stress models, selection of stress test depths and perforation intervals, and imaging of stress directions (breakouts, drilling induced fractures) and natural fracturing.

Lithology and fluid identification tools:

- Spectral-GR
- High Resolution Resistivity
- Density
- Neutron

These logs will provide measurements for clay volume estimation, porosity and saturation calculation and identifying the TOC level (SGR).

The following logs will provide input for stress modelling, stress direction and for the seismic tie/calibration:

- Multiple P&S (waveforms) sonic tool
- Image Scanning Tool combined with Multi-arm caliper for bore hole ovality to estimate the direction of the minimum horizontal stress (σmin)

Table 4-1 Logging runs with Weatherford's open hole wireline tools

Run no	Logging Company	Logged Interval (m MD)	Tools	Temp tool (deg C)	Remarks
1	Weatherford	700-840.4	MCG-CMI-CXD	47	Image log (CMI) run separately
1a	Weatherford	355-840.4	MCG-CMI-CXD	47	Sonic log (CXD) to csg shoe
2	Weatherford	189.3-840.4	MCG-SGS-MDN-MPD-MLE-MMR High resolution (840.4 -652)	47	SuperCombo: spontaneous potential, gamma (to surface), spectral gamma, neutron, density, laterolog, microres.
2a	Weatherford	0-167	MCG-SGS-MDN-MPD-MLE-MMR	47	Missing data from 144.7-191 m MD due to power failure.

Table 4-2 Cased Hole Logging run with Weatherford's wireline tools

Run no	Logging Company	Logged Interval (m MD)	Tools	Temp at TD (°C)	Remarks
1	Weatherford	Surface – 798.7	CCL-GR-CBL-SBT	Not reported	Cement evaluation

5 Cores, Cuttings and samples

5.1 Coring, cores and samples

A continuous interval of up to 60 m of 3 ½" core was planned, and thus a wireline retrieved coring system was found beneficial. Coring commenced at the planned depth at 722m corresponding to 30m above prognosed top Arthur Creek Hot Shale. Full core coverage of the lower part of the Arthur Creek Formation, including the Hot Shale, and into Thorntonia Limestone was programmed.

High recovery and good progress was achieved throughout the lower Arthur Creek Formation and the Arthur Creek Hot Shale. 18m core barrels were utilized, and full recovery was obtained until problems appeared when intersecting the Thorntonia Limestone, with numerous pack-offs resulting in very short cores brought to surface. The quality of the cores was typically poor, being mostly gravel and hockey puck shaped slices. The core competency in this section was generally low, and only few intervals from the recovered material were suitable for physical and chemical analysis. After 7 short core runs in the Thorntonia, coring was terminated at 756.6m.

19 core plugs of typically 20-30cm length were selected at site. These were sealed in Mylar bags immediately after the cores were brought to surface.

The whole core has been slabbed and photographed in both normal and ultraviolet light.

Core details and preserved samples are listed in App F.

A rig site description of the cores is included at the end of App G.

5.2 Cuttings

Cuttings samples were collected at 10m intervals from surface to the 9-5/8" casing shoe and at 5m and 10m intervals depending on ROP from the surface casing shoe to core point and from cessation of coring to TD. The list of cuttings sampled and descriptions of the cuttings can be seen in App G.

6 Pore Pressures and Temperature

See the pore pressure and stress plot in parts per gallon (ppg) in App E.

6.1 Pore pressure and stress

No indications of pore pressure were given during drilling because the well was drilled in overbalance.

The formation integrity test at the surface casing shoe at 355m was done to 13.7ppg EMW, equivalent 0.71psi/ft or 1.64g/cm3.

6.2 Formation temperature

Formation temperature was obtained whilst openhole wireline logging and the temperature measured 47 ^{o}C at 840m MD, which equals a temperature gradient of 32^{o}C/km (assuming 20 ^{o}C at surface).

App A Directional Data – surveys

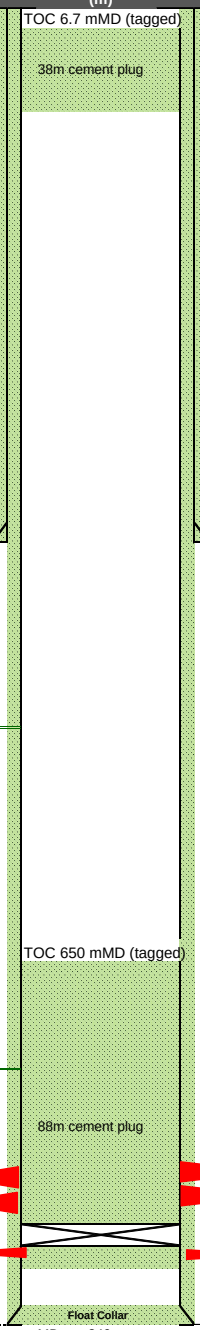
Well	Depth m MD RKB	Inclination (deg)	Survey Instrument
OzDelta-1	192.0	0.50	Single Shot
OzDelta-1	345.0	1.00	Single Shot
OzDelta-1	544.0	1.00	Single Shot
OzDelta-1	706.0	1.00	Single Shot
OzDelta-1	808.0	1.25	Single Shot

App B Well Schematics

South Georgina Basin - Completion Well Schematic (Abandonment)

Well Name:	OzDelta-1	GLE (m):	275	TVD(m):	840
Field Name:	South Georgina Basin	RKB (m):	4.2	TMD(m):	840
County/Block:	EP 128	SHL: Lat:	21°34'34.8 S	Profile:	Vertical
API #:	NA	Long:	136°40'35.5 E	WBS No.	T.OAU8A.AP.20204

Formations & Csg Points	Depth, m MD	TVD	SS	Form. Temp. (F)
Ninmaroo/Arrinthrunga	4.2	4.2	275	
Conductor	*20*	*20*	*259.2*	-
Delta Water Bore Data				
Water bearing beds encountered 75m				
Ground water salinity ~164ppm at 75m				
Water Aquifer	*75*	*75*	*204*	
Bore drilled to a total depth of 218m with no water encountered between 75m and 218m				
Max Potable Water Depth	*250*	*250*	*29*	
REGIONAL LEVEL				
Surface	*350*	*350*	*-70.8*	*85*
Hagen Member	434	434	-154.8	89
Arthur Creek	490	490	-210.8	91
Steamboat Sds				
Base Steamboat	524	524	-244.8	
Lwr Arthur Creek	611	611	-331.8	96
Begin Coring	*722*	*722*	*-442.8*	
AC hot shale	725	725	-445.8	101
Thorntonia	749	749	-469.8	102
Red Heart Dolomite	*806*	*806*	*-526.8*	
End Coring	812	812	-532.8	
Basement	812	812	-532.8	105
Production	*837*	*837*	*-557.8*	*106*
				-



Drilling Hole Size, Casing, and Cement

13-3/8" Conductor
Preset

12-1/4" Surface
Casing: 9-5/8 in 36 # J-55 BTC set @ ~ 350 MD/350 TVD
Cement: Class G, TOC Surface, 50% excess
Drilling Notes Circulated 27bbl of cement to surface

7-7/8" Production
FIT/LOT: 13.7 ppg EMW
Casing: 4-1/2 in 13.5# L-80 TSH Blue set at 837 m MD/837 m TVD.

OD (in):	4.50	ID (in)	3.920	Drift ID (in)	3.795
API Burst (psi)	9020	API Collapse (psi)	8540	API Yield Strength (klbf)	307

Cement: Class G, 11.9ppg lead, intermittent returns on displacemnt, 12 bbl pre-flush to surface. 16 bbl, 14.2 ppg top job performed with cement to surface after 12 bbl.
Plug Bump Pressure: 1600 psi (1000 psi above FCP)
Floats Held: Yes
Marker Joints: #1 357.4 m MD top set depth
#2 628.7 m MD top set depth
Drilling Notes

Wellhead
The wellhead shall be cut-off below ground level and removed for abandonment.

Logging and Coring
Core: 722m - 812m
Open Hole: Supercombo log tools (Lithology + Fluid + Sonic + Image Logs)
Cased Hole: SBT (cement integrity), TD to surface, performed on Sept. 9, 2014

Completion Operation Summary
Perforations for target zone: 736.0 and 737.5m MD abrasive jet perforations (3 x 120 deg x 0.80 hole diameter each = 6 holes total)
Permanent bridge plug set and tested to 7500 psi (765m MD)
Perforations for stress test of lower barrier (773-776m MD)
Cement job performed to squeeze off lower perforations. TOC at 770m MD.
Abandonment cement plugs as shown

Float Collar Depth 813.5 mMD
Current PBTD Surface mMD

Last Revision Date: 11/17/14
Revised by: JSG
Note: Depths are referenced to RKB
Note: Not Drawn to Scale
Cement Outside Casing
External Casing Packer

South Georgina Basin - Drilling Well Schematic

Well Name: OzDelta-1 | Azm: | GLE (m): 275 | TVD(m): 840
Field Name: South Georgina Basin | Op Area: | RKB (m): 4.2 | TMD(m): 840
County/Block: | BHL: X= Y= | Profile: Vertical
API #: | SHL: X= Y= | WBS No

Formations & Csg Points	Depth, m MD	TVD	SS	Form Temp (F)	Pore Press (EMW)	Frac Grad (EMW)	Planned MW
Arrinthrunga	4	4	275				
Conductor	15	15	264	-	-	-	-
							8.5
							8.5
Water Zone: Surface to 75 m (1500 PPM Salinity)							
							8.7
							8.8
						-	8.8
Surface	357	357	-78	85	- 8.1	-	8.9
						17.7	8.9
Hagen Member	434	434	-155	89			9
Arthur Creek	499	499	-220				9
Base of Sst	530	530	-251				
Lwr Arthur Creek	676	676	-397	99			9
Begin Coring	722	722	-443				9.0
AC hot shale	752	752	-473	102			9
Thorntonia	749	749	-470	102			9.0
End Coring	756	756	-477	102			
Production	840	840	-561	106	-	- 17.7	9.0
				-	-	-	-

Measure Depth (m RKB): 15; Inhibited Fluid; 357; FC @ 813.5m; MD: 840; TVD: 840

13-3/8" Conductor

Program: Preset

12-1/4" Surface

Details	
Profile:	Vertical
Bit Type:	12-1/4" PDC
BHA:	Rotary Assembly
Mud:	Spud Mud, 8.6 ppg
Surveys:	192m: 0.5° - 345m: 1°
Logging:	none
Casing:	9-5/8 in 36# J-55 BTC set @ ~ 357 m MD/357 m TVD
Centralizers:	1 every 4 joints
Cement:	Class: G TOC : SurfaceCirculated 27 bbl to surface
Potential Drilling Problems:	- None
Notes / Comments:	

FIT/LOT: 13.3 ppg EMW

7-7/8" Production

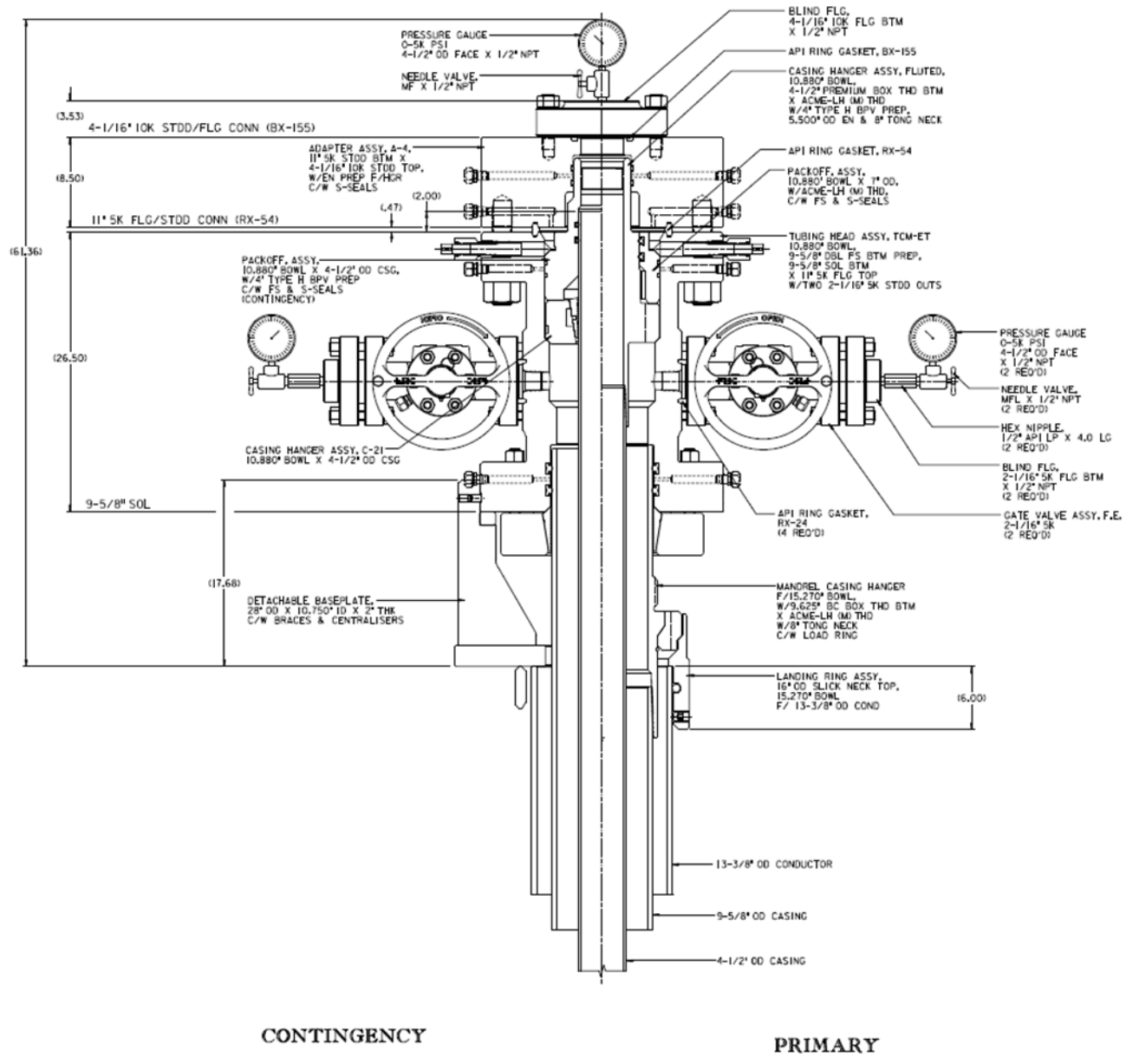
Details	
Profile:	Vertical
Bit Type:	7-7/8" PDC
BHA:	- PDC - Straight PDM - IBS - 6-1/4" DC
Mud:	LSND: 8.9 - 9.0 ppg
Surveys:	544m: 1° - 706m:1° - 808m: 1.25°
Logging:	Mud Logging the whole interval Coring: starts 30m above target and ends approx. top of Thorntonia OH Logs: Lithology + Fluid + Sonic + Image Logs
Casing/Liner:	4-1/2 in 13.5# L-80 Prm CNX set at 840 m MD/840 m TVD.
Liner Hanger:	N/A
Centralizers:	1 centralizer on float shoe + float collar 1 every 4 joints until surface casing point 1 centralizer every 5 joints to cellar
Cement:	Class: G TOC: Surface
Potential Drilling Problems:	-None
Notes / Comments:	Wireline retrievable coring operations from 722 m to 756 m

Last Revision Date: 01/07/14
Revised by: LDT

Note: Depths are referenced to RKB
Note: Not Drawn to Scale

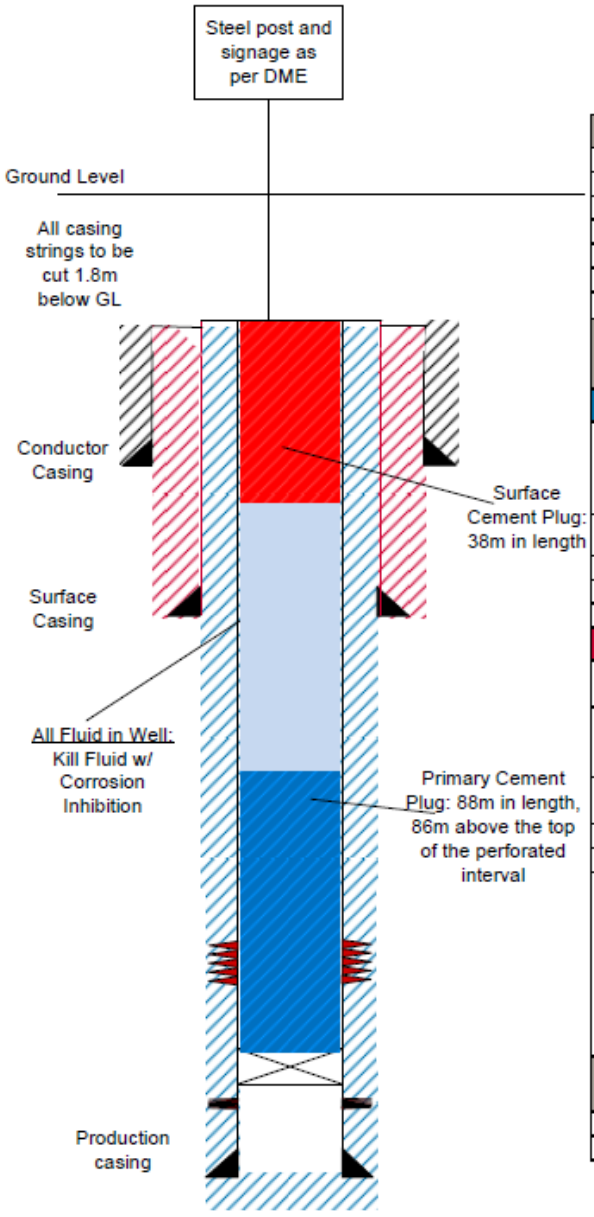
Cement Outside Casing
External Casing Packer

App C Wellhead



App D Well Barriers

Well Barrier Diagram: Abandonment



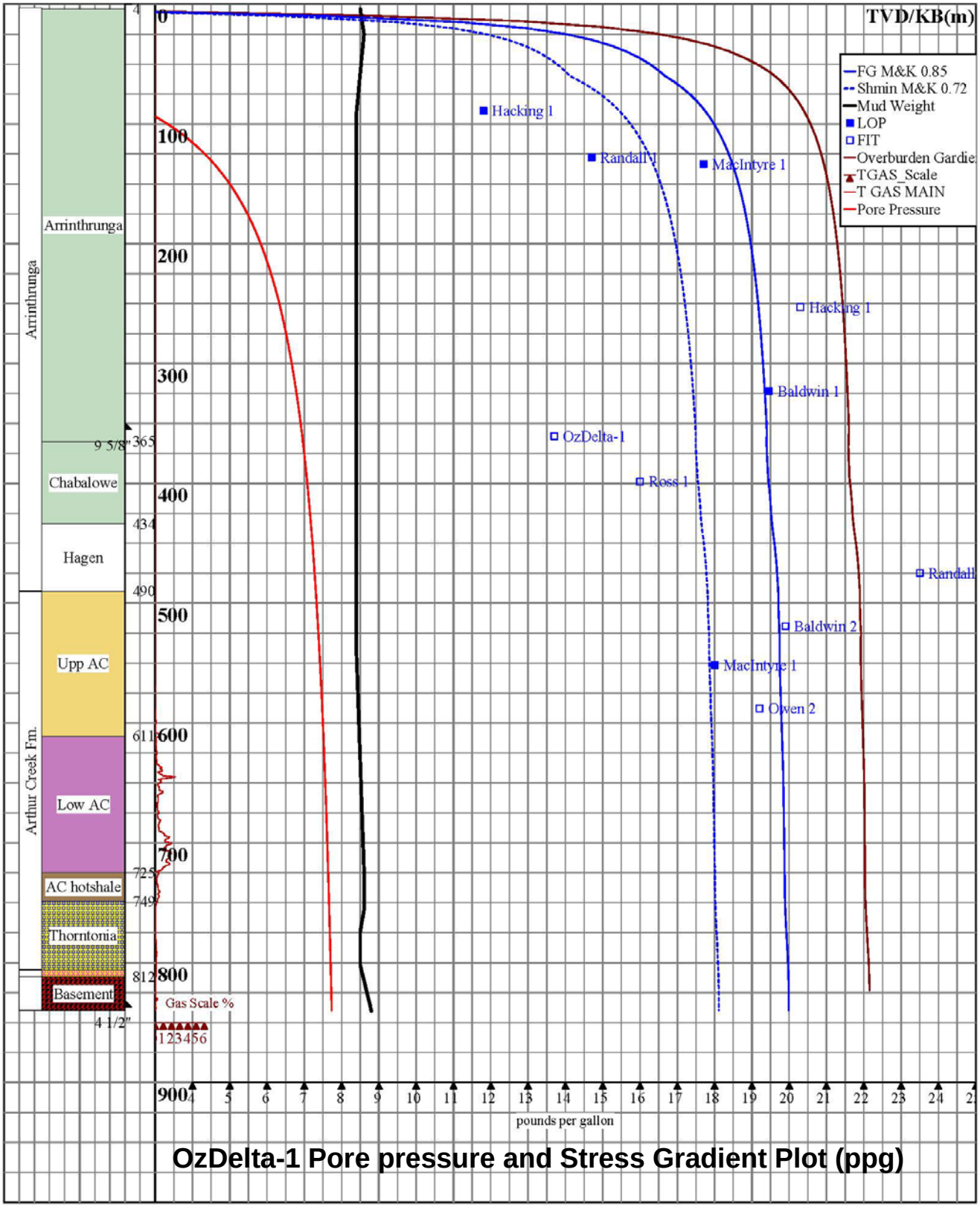
Well data			
Installation:	South Georgina Basin - Australia		
Well no:	OzDelta-1		
Well type:	SGB Exploration		
Revision no:	2	Date:	14.10.2014
Prepared:	Joel Gordon		
Verified:	Brad Ahlquist		

Well barrier elements	Ref. WBEAC tables	Verification of barrier elements
PRIMARY		
Production casing cement		SBT (cement integrity) log performed confirms TOC at 140m MD with surface casing shoe at 350m MD.
Primary Abandonment Plug		Tagged to verify integrity
SECONDARY		
Surface casing cement		TOC: TOC @ surface Method: volume control
Kill Weight Fluid		8.33ppg (0.433 psi/ft) placed above lower cement plug to surface
Production Casing		Pressure tested to 7,500psi prior to stimulation.
Surface Cement Plug		Tagged to verify integrity.

Pore Pressure ~0.42 psi/ft and the kill fluid (fresh water) has a hydrostatic gradient of 0.433 psi/ft.

Disp. no. well integrity issues	Comment
None	

App E Pore Pressure and Fracture Gradient Plot



App F Core Intervals and Preserved Samples

OzDelta-1 Core Interval and Preserved Samples												
Core nr	Bit no	Formation	Interval from MD(m)	Interval to MD(m)	Cut	Recovery (m)	Recovery %	Barrel length (m)	Barrel utilization %	Barrel type	Core company	Preserv. Method	Preserved samples *
1	3	Lower Arthur Creek / Arthur Creek Hot Shale	722.5	740.5	18.0	18	100	18	100.0	Aluminum	Corepro	Mylar	722.50 - 722.74 m, 726.83 - 727.16 m, 731.58 - 731.88 m, 737.27 - 737.47 m, 739.45 - 739.71 m
2	3	Arthur Creek Hot Shale / Thorntonia Lst	740.5	749.7	9.2	9.2	100	18	51.1	Aluminum	Corepro	Mylar	743.28 - 743.71 m, 747.35 - 747.62 m
3	3	Thorntonia Lst	749.7	750.7	1.0	1	100	18	5.6	Aluminum	Corepro	Mylar	751.68 - 751.90 m
4	3	Thorntonia Lst	750.7	751.4	0.7	0.7	100	18	3.9	Aluminum	Corepro		No suitable sample
5	3	Thorntonia Lst	751.4	753.0	1.6	1.6	100	18	8.9	Aluminum	Corepro		No suitable sample
6	3	Thorntonia Lst	753.0	754.0	1.0	0.7	70	18	3.9	Aluminum	Corepro		No suitable sample
7	3	Thorntonia Lst	754.0	754.6	0.6	0.5	83	18	2.8	Aluminum	Corepro		No suitable sample
8	3	Thorntonia Lst	754.6	755.2	0.6	0.3	50	18	1.7	Aluminum	Corepro		No suitable sample
9	3	Thorntonia Lst	755.2	756.6	1.4	1.2	86	18	6.7	Aluminum	Corepro		No suitable sample

* Some preserved samples may be shifted 1-10 cm compared to slabbed core photographs as the cores were re-stacked in core trays after slabbing.

App G Cuttings and Core Descriptions

From	To	%	Lith	OzDelta-1 Cuttings descriptions
15.5	20.0	90	Dol:	wh yel, microxln, hd, nil vis por
		10	Sst:	wh, pred clr, com red brn stnd grns, qtz, f-vf, pol - frost, sbang-sbrnd, pr srt, tr yel cly mtx, lse-v fri, gd-fr vis por .
20.0	30.0	60	Dol:	wh yel, brn yel, microxln, nil vis por
		10	Sst:	pa yel, wh, pred clr, qtz, vf, grdg slty, sbang-sbrnd, mod srt, sil cmt, vmn dol, hd, fr-pr vis por .
		30	Sltst:	lt brn, gry, blk, sl dol, hd, v aren, arg, vmn-com micromic, tr pyr, lam, nil vis por
30.0	40.0	60	Sltst:	lt brn, bl gry - gry, blk, hd, v aren, arg, sl micromic, tr pyr, lam, nil vis por
		20	Dol:	pa yel, wh, microxln, hd, nil vis por
		10	Sst:	wh, pred clr, qtz, med-vf, pol - frost, sbang-sbrnd, pr srt, sil sil cmt, fri-hd, nil-pr vis por
		10	Clst:	brn rd, grn yel, hd, vmn aren, vmn-com micromic, lam, nil vis por
40.0	50.0	40	Sst:	wh- pnk wh, pred clr, qtz, med-vf, pol - frost, sbang-sbrnd, mod srt, vmn sil cmt, vmn red arg mtx, fri-hd, gd-fr vis por .
		30	Clst:	brn rd, pnk, hd, vmn aren, vmn dol, lam, nil vis por
		20	Dol:	brn wh, gry wh, microxln, hd, tr slt, nil vis por
		10	Sltst:	lt brn, gry, blk, hd, v aren, arg, vmn micromic, vmn dol, lam, nil vis por
50.0	60.0	80	Dol:	wh, lt yel wh, microxln, hd, tr wh -lt yel chrt, nil vis por
		20	Sst:	wh, pred clr, qtz, f-vf, sbang-sbrnd, mod-wl srt, wh arg mtx, mod sil cmt, wk dol cmt, mod hd-fri, nil vis por
60.0	70.0	60	Dol:	wh - lt gry, microxln, hd, nil vis por
		20	Sst:	wh, gry wh, pred clr, qtz, f-vf, sbang-sbrnd, mod wl srt, wh arg mtx, mod sil cmt, vmn dol cmt,mod hd, nil vis por
		10	Sltst:	lt gry - dk gry, tr blk, arg, mod hd-hd, aren, vmn dol, nil vis por
		10	Clst:	lt-med gry, hd, vmn slty, lam, nil vis por
70.0	80.0	90	Dol:	wh - lt gry, vf-microxln, hd, nil vis por
		10	Sst:	gry wh, pred clr, qtz, vf, sbang-sbrnd, wl srt, wh arg mtx, mod sil cmt, vmn dol cmt,mod hd, nil vis por
80.0	90.0	80	Dol:	wh - lt gry - gry, vf-microxln, hd, slty, nil vis por
		10	Sst:	gry wh, pred clr, qtz, vf, sbang-sbrnd, wl srt, wh arg mtx, mod sil cmt, vmn dol cmt, mod hd, rr vf blk gr, nil vis por
		10	Sltst:	lt gry - blk gry, arg, mod hd-hd, aren, vmn dol, nil vis por
90.0	100.0	90	Dol:	wh - lt gry - gry, vf-microxln, hd, slty, nil vis por
		10	Sltst:	lt gry - blk gry, arg, mod hd-hd, aren, vmn dol, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
100.0	110.0	90	Dol:	wh - lt gry - gry, vf-microxln, hd, slty, nil vis por
		10	Sltst:	lt gry - blk gry, arg, mod hd-hd, aren, vmn dol, nil vis por
110.0	120.0	90	Dol:	wh - lt gry - gry, vf-microxln, hd, slty, nil vis por
		10	Sltst:	lt gry - blk gry, arg, mod hd-hd, aren, vmn dol, nil vis por
		tr	Sst:	gry wh, pred clr, qtz, vf, sbang-sbrnd, wl srt, wh arg mtx, mod sil cmt, vmn dol cmt, mod hd, rr vf blk gr, nil vis por
120.0	190.0	70	Dol:	lt gry - rd brn gry, vf-microxln, tr slty, hd, nil vis por
		30	Sltst:	lt gry - bl gn gry, gry, blk gry, arg, vmn dol, hd, aren, micromica, nil vis por
		20	Sltst:	red brn - dk brn, arg, vmn dol, hd, aren, micromica, nil vis por
120.0	130.0	50	Dol:	lt gry - rd brn gry, vf-microxln, hd, slty, nil vis por
		30	Sltst:	lt gry - blk gry, mod hd-hd, aren, arg, micromica, vmn dol, nil vis por
		20	Sltst:	red brn - dk brn, mod hd-hd, aren, arg, micromica, vmn dol, lam, nil vis por
130.0	140.0	60	Dol:	lt gry, lt brn gry, vf-microxln, mod hd-hd, slty, lam, nil vis por
		40	Sltst:	dk gry - bl gn gry, hd, aren, arg, micromica, vmn dol, nil vis por
140.0	150.0	70	Dol:	a/abl gry, gry, vf-microxln, mod hd-hd, slty, lam, nil vis por
		30	Sltst:	a/adk gry - bl gn gry, hd, aren, arg, micromica, vmn dol, nil vis por
150.0	160.0	70	Dol:	a/abl gry, gry, vf-microxln, mod hd-hd, slty, lam, nil vis por
		30	Sltst:	a/adk gry - bl gn gry, hd, aren, arg, micromica, vmn dol, nil vis por
160.0	170.0	70	Dol:	bl gry, gry, vf-microxln, mod hd-hd, slty, lam, nil vis por
		20	Sltst:	lt gry - blk gry, hd, aren, arg, micromica, vmn dol, nil vis por
		10	Sltst:	red brn - dk brn, mod hd-hd, slty, lam, nil vis por
170.0	180.0	80	Dol:	hd, aren, arg, micromica, vmn dol, nil vis por
		20	Sltst:	mod hd-hd, aren, arg, micromica, vmn dol, tr pyr, lam, nil vis por
180.0	190.0	80	Dol:	hd, slty, rr pyr, nil vis por
		20	Sltst:	mod hd-hd, aren, arg, micromica, vmn dol, tr pyr, lam, nil vis por
190.0	200.0	90	Dol:	lt gry - gry wh, vf-microxln, hd, slty, rr pyr, nil vis por
		10	Sltst:	gry -dk gry, mod hd-hd, aren, arg, micromica, vmn dol, tr pyr, lam, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
200.0	210.0	90	Dol:	lt gry - gry wh, vf-microxln, hd, slty, rr pyr, nil vis por
		10	Sltst:	gry -dk gry, mod hd-hd, aren, arg, micromica, vmn dol, tr pyr, lam, nil vis por
210.0	220.0	100	Dol:	lt gry - gry wh, vf-microxln, hd, slty, rr pyr, nil vis por
		tr	Sltst:	gry -dk gry, mod hd-hd, aren, arg, micromica, vmn dol, lam, nil vis por
220.0	230.0	100	Dol:	pa yel brn -lt gry, vf-microxln, hd, slty, nil vis por
		tr	Sltst:	gry -dk gry, rr brn, mod hd-hd, aren, arg, micromica, vmn dol, lam, nil vis por
230.0	240.0	90	Dol:	pa yel brn -lt gry, vf-microxln, hd, slty, nil vis por
		10	Sltst:	gry - dk gry- blk gry, mod hd-hd, aren, arg, micromica, vmn dol, lam, nil vis por
240.0	250.0	100	Dol:	pa yel brn -lt gry, vf-microxln, hd, slty, nil vis por
		tr	Sltst:	gry - dk gry- blk gry, rr brn, mod hd-hd, aren, arg, micromica, vmn dol, lam, nil vis por
250.0	260.0	100	Dol:	lt gry, vf-microxln, hd, nil vis por
		tr	Sltst:	gry, mod hd-hd, aren, arg, lam, nil vis por
260.0	270.0	100	Dol:	lt gry, vf-microxln, hd, nil vis por
		tr	Sltst:	gry, mod hd-hd, aren, arg, lam, nil vis por
270.0	280.0	100	Dol:	lt gry, vf-microxln, hd, nil vis por
		tr	Sltst:	gry, mod hd-hd, aren, arg, lam, nil vis por
280.0	290.0	90	Dol:	lt gry, gry, f-microxln, hd, nil vis por
		10	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
290.0	300.0	90	Dol:	lt gry, gry, mnr or gry - or brn,f-microxln, hd, sltynil vis por
		10	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
300.0	310.0	100	Dol:	lt gry, gry, mnr or gry - or brn,f-microxln, hd, slty, nil vis por
		tr	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
310.0	320.0	100	Dol:	lt gry, gry, or gry - or brn,f-microxln, hd, slty, nil vis por
		tr	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
320.0	330.0	80	Dol:	lt gry, gry, mnr or gry - or brn,f-microxln, hd, slty, nil vis por
		20	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
330.0	340.0	90	Dol:	lt gry, or gry - or brn,f-microxln, hd, slty, nil vis por
		10	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
340.0	350.0	60	Dol:	lt gry, or gry - or brn,f-microxln, hd, slty, nil vis por
		30	Sst:	wh, clr-trnsl, qtz, f-med, pol-frost, sbsph, sbang, mod wel srt, wh arg mtx, sil % dol cmt, fri-mod hd, fr-pr vis por .
		10	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
350.0	352.0	70	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
		30	Dol:	lt gry, f-microxln, hd, slty, nil vis por
		tr	sst	a/a
352.0	355.0	70	Lst:	pa brn gry -lt gry, rd brn gry, f-microxln, hd, slty, nil vis por
		20	Sltst:	or brn - brn, mod hd-hd, aren, arg, micromica, lam, nil vis por
		10	Dol:	lt gry, or gry - or brn,f-microxln, hd, slty, nil vis por
		tr	Sst	a/a
355.0	357.0	80	Lst;	pa brn gry -lt gry, rd brn gry, f-microxln, hd, slty, nil vis por
		10	Sltst:	or brn - brn, wh, mod hd-hd, aren, arg, micromica, lam, nil vis por
		10	Dol:	lt gry, or gry - or brn,f-microxln, hd, slty, nil vis por
350.0	357.0	60	Lst:	pa brn gry -lt gry, rd brn gry, f-microxln, hd, slty, nil vis por
		30	Sltst:	or brn - brn, wh, arg, mod hd-hd, aren, micromica, lam, nil vis por
		10	Dol:	lt gry, or gry - or brn,f-microxln, tr slty, hd, nil vis por
		tr	Sst:	wh, clr-trnsl, qtz, f-med, pol-fros, sbsph, sbang, mod wel srt, wh arg mtx, sil % dol cmt, fri-mod hd, fr-pr vis por .
340.0	357.0	70	Lst:	pa brn gry -lt gry, rd brn gry, f-microxln, hd, slty, nil vis por
		70	Sltst:	or brn - brn, wh, arg, mod hd-hd, aren, micromica, lam, nil vis por
		60	Dol:	lt gry, or gry - or brn,f-microxln, tr slty, hd, nil vis por
		30	Sst:	wh, qtz, f-med, clr-trnsl, pol-frost, sbsph, sbang, mod wel srt, wh arg mtx, sil % dol cmt, fri-mod hd, fr-pr vis por .
357.0	370.0	100	Lst:	wh -gry whf-microxln, hd, rr slty, nil vis por
		tr	Dol:	lt gry, f-microxln, hd, rr slty, nil vis por
370.0	380.0	70	Lst:	wh - lt gry, f-microxln, hd, rr slty, nil vis por
		20	Dol:	lt gry-lt rd brn, f-microxln, hd, rr slty, nil vis por
		10	Sltst:	gry-lt rd brn, arg, tr-mnr dol cmt, hd, aren, micromica, nil vis por
380.0	390.0	80	Lst:	wh - lt gry, f-microxln, hd, rr slty, nil vis por
		20	Sltst:	gry-lt rd brn, arg, tr-mnr dol cmt, hd, aren, micromica, nil vis por
390.0	400.0	90	Lst:	wh - lt gry, f-microxln, hd, rr slty, nil vis por
		10	Sltst:	gry - lt rd brn, arg, tr-mnr dol cmt, hd, aren, micromica, nil vis por
400.0	410.0	100	Lst:	wh-lt gry-lt gry brn, f-microxln, hd, rr slty, rr wh chrt, nil vis por
410.0	420.0	50	Lst:	wh-lt gry-lt gry brn, f-microxln, hd, rr slty, nil vis por
		50	Dol:	lt gry, f-microxln, hd, rr slty, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
420.0	430.0	80	Dol:	wh, lt gry, lt gry brn,f-microxln, rr arg,hd, rr slty, nil vis por
		20	Lst:	lt gry - wh, fxln, hd, nil vis por
430.0	440.0	100	Dol:	wh, lt gry, lt gry brn,f-microxln, rr arg,hd, rr slty, nil vis por
440.0	450.0	100	Dol:	wh, lt gry, lt gry brn,f-microxln, hd, rr slty, nil vis por
		tr	Sltst:	dk gry, blk gry, arg, hd, micromica, mnr aren, rr pyr, nil vis por
450.0	460.0	100	Dol:	wh, f-microxln, hd, rr slty, nil vis por
460.0	470.0	100	Dol:	wh, v lt brn gry, f-microxln, hd, rr slty, nil vis por
470.0	480.0	80	Dol:	wh, v lt brn gry, f-microxln, hd, rr slty, nil vis por
		20	Sst:	lt gry, lt gry brn, vf, sbrnd, sbsph, wl srt, mnr slty mtrx, wk-strg dol cmt, hd, tr vf blk grns, pr vis por .
480.0	490.0	70	Dol:	wh, v lt brn gry, f-microxln, hd, rr slty, nil vis por
		30	Sst:	lt gry, lt gry brn, vf, sbrnd, sbsph, wl srt, mnr slty mtrx, wk-strg dol cmt, hd, tr vf blk grns, pr vis por .
490.0	500.0	80	Sst:	lt gry brn, vf, sbrnd, sbsph, wl srt, mnr slty mtrx, wk-strg dol cmt, fri, hd, tr vf blk grns, fr-pr vis por .
		20	Dol:	wh, v lt brn gry, f-microxln, hd, rr slty, nil vis por
500.0	510.0	90	Sst:	lt gry brn, vf, sbrnd, sbsph, wl srt, mnr slty mtrx, wk-strg dol cmt, hd, tr vf blk grns, fr-pr vis por .
		10	Dol:	wh, v lt brn gry, f-microxln, hd, rr slty, nil vis por
		tr	Sltst:	dk gry, blk gry, arg, hd, micromica, mnr aren, rr pyr, nil vis por
510.0	520.0	90	Sst:	lt brn gry -brn gry, wh,vf, sbang-sbrnd, wl srt, slty, strg calc cmt, fri, hd, tr pyr, pr-nil por .
		10	Sltst:	dk gry, blk gry, arg, hd, micromica, mnr aren, rr pyr, nil vis por
520.0	530.0	60	Sst:	lt brn gry -brn gry, wh,vf, sbang-sbrnd, wl srt, slty, strg calc cmt, fri, hd, tr pyr, pr-nil por .
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		10	Lst:	lt gry - wh, fxln, hd, nil vis por
530.0	540.0	70	Sst:	lt brn gry -brn gry, wh,vf, sbang-sbrnd, wl srt, slty, strg calc cmt, fri, hd, tr pyr, pr-nil por, rr bit stn .
		20	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		10	Lst:	lt gry - wh, fxln, hd, nil vis por
540.0	550.0	80	Sst:	lt brn gry -brn gry, wh,vf, sbang-sbrnd, wl srt, slty, wk-strg calc cmt, fri, hd, tr pyr, pr-nil por, rr bit stn .
		10	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		10	Lst:	lt gry - wh, fxln, hd, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
550.0	560.0	60	Sst:	lt brn gry -brn gry, wh,vf, sbang-sbrnd, wl srt, slty, wk-strg calc cmt, fri, hd, tr pyr, pr-nil por, rr bit stn
		30	Lst:	lt gry - wh, fxln, hd, nil vis por
		10	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
560.0	570.0	70	Sst:	med bl gry, vf, sbang-sbrnd, wl srt, slty, wk-strg calc cmt, fri, hd, tr pyr, pr-nil por
		20	Lst:	lt gry - wh, fxln, hd, nil vis por
		10	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
570.0	580.0	40	Sst:	med bl gry, vf, sbang-sbrnd, wl srt, wk-strg calc cmt, hd, pr-nil por .
		30	Lst:	lt gry - wh, fxln, hd, nil vis por
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
580.0	590.0	60	Sst:	med bl gry-lt gry, vf, sbang-sbrnd, wl srt, wk-strg calc cmt, hd, pr-nil por .
		30	Lst:	lt gry - wh, fxln, hd, nil vis por
		10	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
590.0	600.0	50	Sst:	med bl gry-lt gry, vf, sbang-sbrnd, wl srt, wk-strg calc cmt, hd, pr-nil por .
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		20	Lst:	lt gry - wh, fxln, hd, nil vis por
600.0	605.0	40	Sst:	med bl gry-lt gry, vf, sbang-sbrnd, wl srt, wk-strg calc cmt, hd, pr-nil por .
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		20	Lst:	lt gry - wh, fxln, hd, nil vis por
		10	Sltst:	med gry-blk, arg, hd, micromic
605.0	610.0	40	Lst:	lt gry - wh, fxln, hd, nil vis por
		40	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		20	Sltst:	med gry-blk, arg, calc, hd, micromic
610.0	620.0	50	Lst:	lt gry - wh, fxln, hd, nil vis por
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		20	Sltst:	med gry-blk, arg, calc, hd, micromic
620.0	630.0	70	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		20	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		10	Sltst:	med gry-blk, arg, calc, hd, micromic
630.0	640.0	40	Lst:	lt gry - wh, fxln, hd, nil vis por
		30	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por
		20	Sltst:	med gry-blk, arg, calc, hd, micromic
		10	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por
640.0	650.0	40	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por
		30	Sltst:	med gry-blk, arg, calc, hd, micromic
		20	Lst:	lt gry - wh, fxln, hd, nil vis por
		10	Dol:	wh, v lt brn gry, f-microxln, hd, nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
650.0	660.0	60	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por
		30	Sltst:	med gry-blk, arg, calc, hd, micromic
		10	Lst:	lt gry - wh, fxln, hd, nil vis por
660.0	670.0	40	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		30	Sltst:	med gry-blk, arg, calc, hd, micromic
		30	Lst:	med bl gry, fxln, hd, nil vis por
670.0	680.0	40	Sst:	lt gry wh - bl gry, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		40	Lst:	med bl gry - lt gry, f-mxln, hd, nil vis por
		20	Sltst:	med bl gry, arg, calc, hd, micromic
680.0	690.0	60	Lst:	lt brn gry, f-mxln, hd, nil vis por
		30	Sst:	lt gry wh, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		10	Sltst:	med bl gry, arg, calc, hd, micromic
690.0	700.0	70	Lst:	lt brn gry, f-mxln, hd, nil vis por
		20	Sst:	lt gry wh, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		10	Sltst:	med bl gry-blk, arg, calc, hd, micromic .
700.0	710.0	70	Lst:	lt brn gry, f-mxln, hd, nil vis por
		20	Sst:	lt gry wh, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn .
		10	Sltst:	med bl gry-blk, arg, calc, hd, micromic
710.0	722.5	50	Lst:	lt brn gry, f-mxln, hd, nil vis por
		30	Sst:	lt gry wh, vf-f, sbrnd, wl srt, calc cmt, hd, r pyr, pr vis por, r bit stn
		20	Sltst:	med bl gry-blk, arg, calc, hd, micromic
				CORED SECTION. SEE LAST PAGE.
756.60	760.00	100	Dol:	wh - v lt gry, microxln, v hd, nil-pr vis por
760.00	765.00	80	Dol:	wh - v lt gry, microxln, v hd, nil-pr vis por
		20	Ls:	lt olv gry, , vf-microxln, hd - v hd, nil vis por
765.00	770.00	50	Ls:	lt olv gry, vf-microxln, v hd, rr slt, nil-pr vis por
		40	Dol:	wh -v lt gry- lt gry brn, vf-microxln, v hd, rr slt, nil-pr vis por
		10	Sst:	wh, vf, sbrnd, wl srt, slty, wk-mod strg dol & calc cmt, fri-mod hd, pr-fr por
770.00	775.00	60	Dol:	lt gry brn - olv gry,microxln, hd, tr gry - brn chrt, nil vis por
		40	Ls:	lt olv gry, microxln, hd, nil vis por
775.00	780.00	80	Ls:	lt gry brn - olv gry,microxln, hd, slty,nil vis por
		20	Dol:	olv gry, microxln, hd, slty,nil vis por
780.0	785.0	50	Ls:	gry brn - olv gry,microxln, hd, slty,nil vis por

From	To	%	Lith	OzDelta-1 Cuttings descriptions
		50	Dol:	brn blk, olv gry, microxln, hd, slty, tr chrt, nil vis por
785.0	790.0	40	Ls:	gry brn - olv gry,microxln, hd, ab f calc xls, slty,nil vis por
		40	Dol:	brn blk, olv gry, microxln, hd, slty, tr chrt, nil vis por
		20	Siltstone	blk, mnr-v aren, tr dol cmt, micromic, rr pyr, nil vis por
790.0	795.0	50	Ls	Gry brn-ol gry, microxln, hd, ab f calc xls,nil vis por,slty
		30	Sltst	Blk, mnr-v aren, tr dol cmt, micromic, rr pyr, nil vis por
		20	Dol	Brn blk, olv gry, microxln, hd, slty, tr chrt, nil vis por
795.0	800.00	70	Dol	M blgry-tn brn, microxln, hd, slty, nil vis por
		30	Sltst	M brn gry, mnr-v aren, tr dol cmt, micromic, rr pyr, nil vis por
800.0	805.0	80	Dol	M blgry-tn brn, microxln, hd, slty, nil vis por
		10	Sltst	M brn gry, mnr-v aren, tr dol cmt, micromic, rr pyr, nil vis por
		10	Lst	Wh-lt gry, microxln, v hd, nil vis por,slty
805.0	810.0	60	Dol	M blgry-tn brn, microxln, hd, slty, nil vis por
		30	Sltst	M brn gry, mnr-v aren, tr dol cmt, micromic, r pyr, nil vis por
		10	Lst	Wh-lt gry, microxln, v hd, nil vis por,slty
810.0	815.0	40	Dol	M blgry-tn brn, microxln, hd, slty, nil vis por
		40	Sst	brn gry, m-v crs, sb ang – ang, pr srt, hd,fr vis por
		20	Sltst	M brn gry, mnr-v aren, tr dol cmt, micromic, r pyr, nil vis por
815.0	823.4	80	Qtzt	brn gry, m-v crss, sb ang – ang, pr srt, hd,fr vis por
		10	Sltst	M brn gry, mnr-v aren, tr dol cmt, micromic, cmn pyr, tr musc, nil vis por
		10	Sch	Dk gry-dl grn,v hd, com musc, qtz, r biot
823.4	830.0	100	Sch	Dk gry-dl grn,v hd, com musc, qtz, r biot
830.0	840.0	100	Sch	Dk gry-dl grn,v hd, com musc, qtz, r biot

OzDelta-1 Core Chip Descriptions

From	To	Lith	OzDelta-1 Core chip descriptions
722.50	726.00	Lst:	lt brn gry, fxln, hd, ab sb mm lam, r cm lst lam, rr sft sed def, nil vis por
726.00	741.32	Dol:	dk olv gry, fxln, v hd, ab sb mm lam, r cm lam, rr m sb vert frac calc fld, nil vis por
741.32	748.84	Dol:	med gry, vfxln, v hd, cmn sb mm dk slt lam, nil vis por
748.84	749.33	Dol:	lt gry brn, microxln, v hd, nil vis por
749.33	750.70	Dol:	lt brn -lt gry,microxln, v hd, ab 1mm-5mm vug, pr vis por
750.70	751.40	Dol:	v lt gry,microxln, v hd, ab 1mm-5mm vug, pr vis por
751.40	753.00	Dol:	v lt gry, microxln, v hd, tr styol, ab 1mm-5mm vug, pr vis por
753.00	756.40	Dol:	v lt gry, microxln, v hd, tr styol, ab 1mm-5mm vug, pr vis por