

Triclops-1

ATP 539

Cooper/Eromanga Basin Queensland

Well Completion Report

July 2013

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Well Data Card

<u>General</u>

Location:	Latitude GDA 94:	25°59'43.43"S	Operator	Drillsearch 1	00%		
Longitude GDA 94:		141°14′40.40″E	Status:	Plugged & Abandoned			
	GDA 94, Zone 54	524 475 E	Rig:	Ensign 918			
	GDA 94, Zone 54	7 124 803 N	Total Depth:	Driller:	1926.5 m		
	Seismic Survey	2012 Kaden 3D		Logger:	1927.0 m		
	Seismic Lines	Inline 3238					
		Crossline 2170	Plugs:	#1 1926	to 1826 m - 34.4 bbl		
Permit		ATP 539P		#2 1727	to 1604 m - 39.8 bbl		
Elevation:	GL (AMSL):	141.0 m		#3 1422	to 1315 m - 35.2 bbl		
	RT (AMSL):	146.2 m		#4 1633	to 1583 m - 100 bbl		
				#5 792 to	o 702 m - 26.7 bbl		
Мар:	1:250,000	Canterbury		#6 Surfac	ce - 6.3 bbl		
Date spudded:	14/01/2013	12:30 hrs	Casing	Size	Shoe		
Date rig release:	01/02/2013	11:00 hrs		9-5/8"	762.7 m		
Type Structure:	Fault-Rou	nded Anticline	Hole Size	12-1/4"	766.1 m MD		
Type Structure.	Fault-Bou			8-1/2"	1927m MD		

Stratigraphy

Age	Formation	Depth (m RT)	Elevation (m SS)	Thickness (m)
Recent - Late Cretaceous	Surficial & Winton Formation	5.2	141.0	636.3
	Mackunda Formation	641.5	-495.3	103.5
	Allaru Mudstone	745.0	-598.8	297.0
Early Cretaceous	Toolebuc Formation	1042.1	-895.8	46.3
	Wallumbilla Formation	1088.5	-942.1	228.6
	Cadna-Owie Formation	1317.2	-1170.7	82.0
Early Cret - Late Jurassic	Murta Formation	1399.2	-1252.7	23.0
	Namur Sandstone	1422.2	-1275.7	96.3
Late Jurassic	Westbourne Formation	1518.6	-1372.0	102.4
	Adori Sandstone	1621.0	-1474.4	15.1
Late to Middle Jurassic	Birkhead Formation	1636.1	-1489.5	91.4
Middle Jurassic	Hutton Sandstone	1727.5	-1580.9	199.0
Early Jurassic	Poolowanna Formation	1926.5	-1779.9	-
	Loggers TD	1927.0	-1780.4	

Wireline Logs

Log	Run	Interval	BHT / Time
ADT	1	TD to Surface Casing Shoe	
HRLA	1	TD to Surface Casing Shoe	130.6°C / 15.5 hours after final
PEX	1	TD to Surface Casing Shoe	circulation at 1899.6 m.
NGS	1	TD to Surface Casing Shoe	
MSIP	2	TD to Surface Casing Shoe	131 ⁰ C / 24.5hrs after final
GPIT	2	TD to Surface Casing Shoe	circulation

Drill Stem Tests

No	Interval / Formation (metres)	Periods (mins)	EMP IP/FP (psig)	EMP FSIP (psig)	Fluid To Surface (mins)	Max. Surface Press. (psia)	TC. mm	BC. mm	Rev Out	Result
				No drill	stem tests	conducted	d.			

Conventional Full Bore Cores

No.	Interval	Formation	Cut (m)	Rec.(m)			
	N/A No Cores Cut.						

Sidewall Cores

Depth	Formation	Recovered	Depth	Formation	Recovered				
	No SideWall Cores.								

Perforations

Interval	Formation	Shots / m	Interval	Formation	Shots / m		
Plugged and abandoned. Not cased.							

Log Interpretation

Interval (mRT)	Formation	Porosity (%)	Sw (%)	Vsh (%)	Net Pay (m)
1397.5 to 1424.5	Murta Formation	9.5	51	18.7	0.89
1424.5 to 1516.5	Namur Sandstone	9.8	49.9	14.8	1.19
1594.4 to 1634.4	Westbourne / Adori	10.6	53.2	9.5	5.44

1634.4 to 1726.9	Birkhead Formation	16.3	42	9.6	0.86
1726.9 to 1909.5	Hutton Sandstone	10.5	47.5	5.9	4.52

Core Analysis

Interval	Por.	Perm.	So	Sw	Interval	Por.	Perm.	So	Sw
	N/A No Cores Cut.								

Summary

The objectives of Triclops -1 were to

- Test the hydrocarbon prospectivity of a new play fairway within the "Inland Cook" region by demonstrating oil migration from the Yamma Yamma Depression into the western flank of the SWQ Eromanga Basin. Triclops-1 is the first closure encountered on the western flank of the depression.
- Evaluate the potential for economic oil within Triclops-1.

Triclops-1 is an oil exploration well in the central Eromanga Basin, 10 km northeast of Katta-1 and 8km southeast of Planet Downs-1 in ATP 539P, SW Queensland. It is located approximately 250km northeast of Moomba, 25km east of the Queensland/South Australia border (**Figure 1**).

The primary targets were the Hutton Sandstone and sands of the Birkhead Formation. Secondary targets were the Namur Sandstone and sands of the Poolowanna Formations, the Westbourne Formation and Adori Formation. The pre-drill structure was interpreted as a fault-related anticline with 15m of independent closure.

Participation interest in Triclops-1 was 100% Drillsearch Energy Limited.

Triclops-1 was spudded at 12:30hrs on the 14th January 2013 and surface hole (12-1/4") was drilled to 766.10m MDRT while taking teledrift surveys approximately every 3 stands drilled. Maximum measured deviation was 1.0° between 580m to 753m MDRT. The 9-5/8" surface casing was set at 762.61m MDRT. The shoe track was tagged at 741.00m MDRT, well displaced to water and the shoe track was drilled out prior to cleaning out rat hole to 769.00m MDRT. The well was displaced to 8.9ppg mud and a Leak-Off Test (LOT) was performed (**Appendix 4**). Leak-off at 16.7ppg EMW.

The Blow-Out-Preventer (BOP) was nippled up and the 8-1/2" production hole drilled to 1138m MDRT. Maximum measured deviation was 2.0° and because the angle was building a decision was made to Pull Out of the Hole (POOH) to change the Bottom Hole Assembly (BHA), and also to arrange for Measurement While Drilling (MWD) tools to arrive on site, in an attempt to control the angle. Drilling continued with a directional pendulum BHA while waiting on MWD tools to arrive on location. Drilling ahead continued to 1296m MDRT with maximum deviation reaching 3.5°. The direction pendulum BHA was POOH and replaced with MWD directional BHA. The BHA was RIH to 784m MDRT and MWD surveys taken every stand. The deviation was quickly reduced to less than 1.0° and maintained to approximately 1.0° (average) while drilling the remainder of the 8-1/2" hole. Drilling continued to 1926.50m MDRT when the ROP dropped significantly (0.3m/hr.) Since all the primary and secondary targets had been penetrated a decision was taken to stop drilling. The Total Depth (TD) of the well was reached on 28th February 2013 after 15 days drilling.

A normal Eromanga Basin sedimentary section (Cretaceous and Jurassic) was penetrated with Formation tops being from 30m low (Adori Sandstone) to 28m high (Mackunda Formation) to prognosis. The Hutton Sandstone primary target was 7.1m high to prognosis and drilling was terminated after penetrating the full thickness of the Hutton Sandstone and approximately 0.5m of Poolowanna Formation.

Hydrocarbon fluorescence was observed in the Murta Formation, Namur Sandstone, Westbourne Formation, Birkhead Formation and Hutton Sandstone are all interpreted as being residual oil shows. with no net pay interpreted from the petrophysical analysis.

Schlumberger wireline logging rigged up and the open hole was evaluated as per logging program (Dry Case scenario):

Run 1: ADT-HNGS-PEX-HRLA-SP. Run 2: MAST-GPIT.

Net pay interpreted from the Petrophysical analysis ranged from 0.86m to 5.44m through the Murta Member, the Namur, Westbourne, Adori, Birkhead and the Hutton Formations (**Table 4 and Appendix 11**).

Triclops-1 was plugged and abandoned (P&A) with the drilling rig Ensign 918 being released on 1st February 2013 and the drill site rehabilitated.

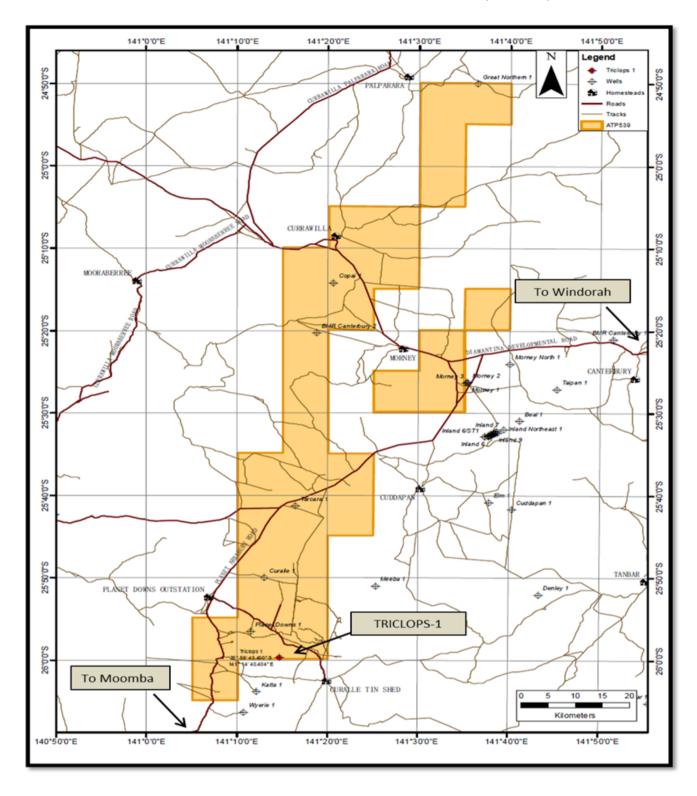


Figure 1: ATP 539: Location map with Triclops-1 Location

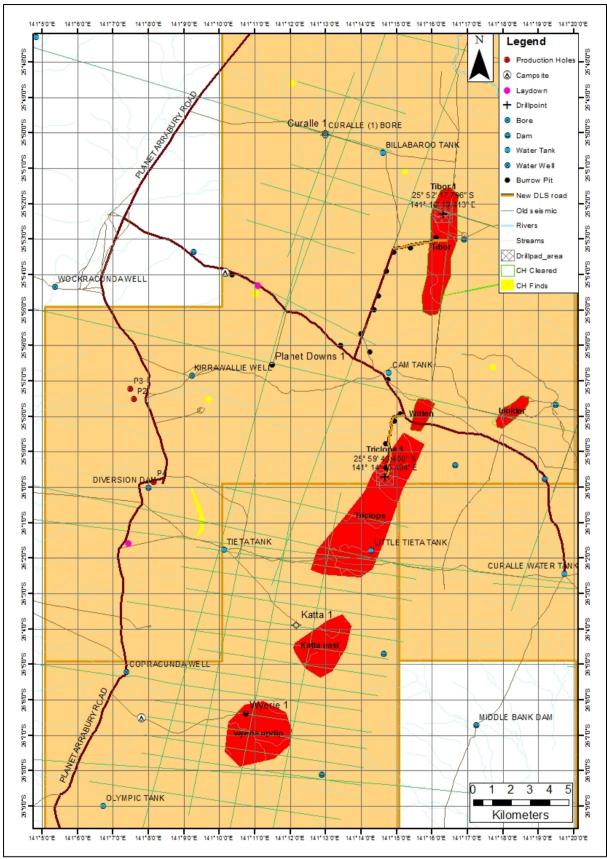


Figure 2: Water Bore Location

2.0 Drilling & Completion Data

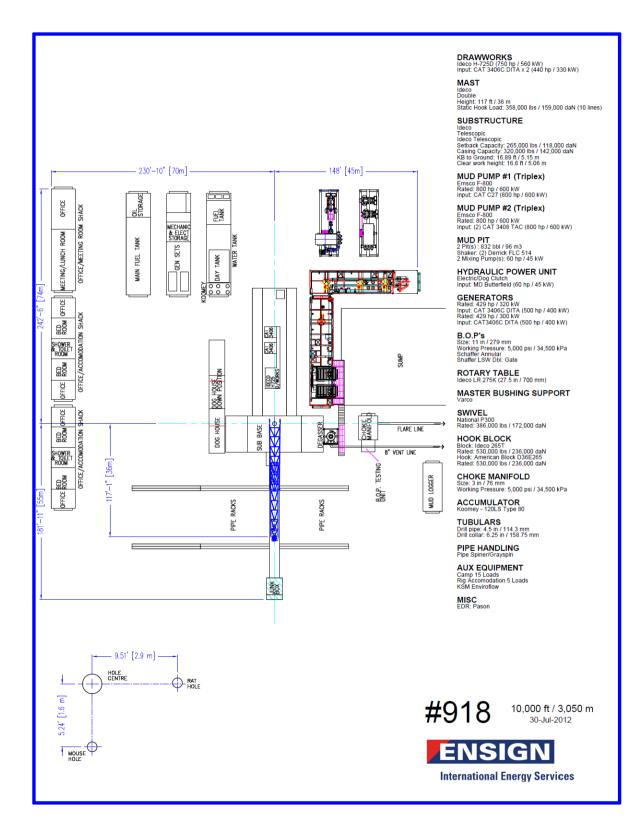
A well schematic is included in **Section 2.3**. A final time-depth curve is provided in **Section 2.4**.

The daily drilling reports are contained in **Appendix 1**. Daily Mud Reports are all included in **Appendix 2**.

A full Deviation Survey Report is included in **Appendix 3**. Drilling water for the well was supplied from Water Bore # 4 (P4 – **Figure 2**), located approximately 10kms west of Triclops-1. Water was transported by tanker.

Well Name		Triclops-1
Operator		DrillSearch (100%)
		55 Clarence Street
		Sydney NSW 2000
Permit		ATP – 539P, Cooper Basin, Queensland
Well Designation		Vertical Exploration
Location	Latitude	25 ⁰ 59'43.43041"S
	Longitude	141 ⁰ 14'40.40189"E
	Easting:	524 475m
	Northing:	7 124 803m
	Projection	MGA 54
	Spheroid	GRS 80
	Datum	GDA 94
	Seismic	Inline 3238
		Crossline 2170
Elevations	RT (mAMSL)	146.86
	GL (mAMSL)	141.86
Date Drilling Commenced		12:30 hrs. 14 th January 2013
Date drilling Completed		18:00 hrs. 28 th January 2013
Date Rig Released		11:00 hrs. 1 st February 2013
Total Depth	Driller	1926.5 m
	Logger	1927.0 m
Status		Plugged and Abandoned

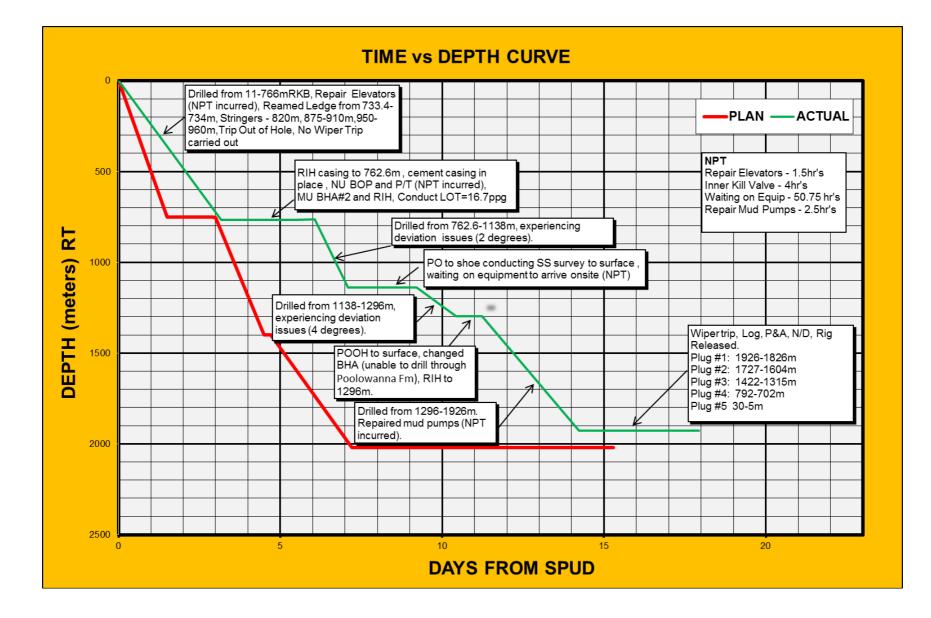
2.1 General



2.3 Well Schematic

Well: TRICLOPS-1	Block: ATP 539P	Date: April 201
.ocation: 527 256.65mE 7 '	138 506.19mN GL: 135m AMSL	RT: 5m RT-MSL: 140 r
Plug 5 Set from30mRKB - Surface Conductor Hole 20" Hole to 10.70mRKB (pre-drilled)		Conductor Casin 16", 53.55ppf, C350 set at 10.70mRKB (pre-installed)
Plug 5 12½° Hole to 766.10mRKB		
Plug 4 Set from 792mRKB - 663mRKB (tag	gged)	Surface Casin 9%", 36.00ppf, K55, set at 762.61mRKB (pre-installed)
Plug 3 Set from 1422mRKB - 1315mRKB		
Plug 2 Set from 1727mRKB - 1604mRKB		
Plug 1 Set from 1926mRKB - 1826mRKB		
Production Hole 8½" Hole to 1926.50mRKB		

Well Schematic_Triclops-1_ATP 539P_April 2013



2.4 Time vs Depth

2.5 Drilling Data Summary

The following is the daily operations summary for Triclops-1. It has been compiled from the daily drilling reports, all of which are contained in **Appendix 1**. The depths in the following summary are those reached at 24:00hrs on each day with the operations given for the previous 24 hour period.

Ray Millar and Guy Holmes provided onsite drilling supervision for Drillsearch Energy Ltd.

Date	Depth (m MDRT)	24 Hour Summary
03 Jan 2013		Rig down and prepare for rig move
04 Jan 2013		Rig down and prepare for rig move
05 Jan 2013		Loaded out the rig to the Triclops-1 location. Approximately 20% remains to be loaded out from Cypress-1 location.
06 Jan 2013		Loaded out the rig to the Triclops-1 location. Approximately 20% remains to be loaded out from Cypress-1 location
07 Jan 2013		Waited on daylight. Resumed rig move operations from Cypress 1 to Triclops-1.
08 Jan 2013		Continued rigging up on Triclops-1.
09 Jan 2013		Held PJSM and continued rigging up on Triclops 1. Inspected all lifting and hoisting equipment. Raised Dog House, spotted Centrifuge, Rigged up Turkey Nest pump, Mud Tanks. Installed new Bridal Line in derrick. Rigged up air and hydraulics.
10 Jan 2013		Raised the Derrick to half-mast. Continued rigging up the derrick and stringing line prior to raising the Derrick to full height. Installed handrails to Carrier and stairways. Conducted mast inspection. Lowered Monkey Board. Installed Centrifuge. Continued NDT inspection of rig equipment. Unspooled guy lines, winched and tong hanging lines.
11 Jan 2013		Held PJSM and continued rigging up. Repaired cracks in Monkey Board. Finished overhauling Drawworks Cat motor. Installed overhauled Cat motor onto Drawworks. Continued with NDT inspection of Ensign subs and fishing tools and pipe handling equipment (slips/elevators/dog collars). Installed rig lighting, ran mud pump cables. Installed Draw works brake linkages after NDT. Installed ESD lines from rig floor to Rig Office.
12 Jan 2013		Strung drilling line onto crown and blocks. Telescoped up the derrick. Raised the Substructure. Continued rigging up.

Date	Depth (m MDRT)	24 Hour Summary
13 Jan 2013		Completed rigging up.
14 Jan 2013	107.0	Completed rigging up - Conduct pre-spud checks - <u>Spud Triclops @ 12:30hrs</u> - drilling ahead
15 Jan 2013	421.1	Drilling 12-1/4" hole from 107m to 421m with surveys every 30m
16 Jan 2013	672.1	Drilling 12-1/4" hole from 421m to 672m with surveys.
17 Jan 2013	766.1	Drill 12-1/4" hole to 766m - Circulate hole clean - Pull out of hole to run 9- 5/8" casing
18 Jan 2013	766.1	Nipple down Riser joint and Flow line - Installed Landing base - Rigged up and run 9-5/8" casing. Cemented casing and land off same in cellar - Wait on cement to harden - Rigged down cementing equipment - Backed off Landing joint - Installed Bradenhead (Casing bowl) - Nipple up BOP's
19 Jan 2013	766.1	Nipple up BOP's - Flow lines - Install vent lines - Pressure test surface lines and valves - test BOP as per test schedule - Replace inner kill valve - Complete testing BOP. Making up BHA
20 Jan 2013	916.1	Complete tests on BOP- RIH with BHA #2 - Conduct Accumulator tests - Tag Plugs - Drill out Shoe track - Drill out Rat hole + 3m new hole - Conduct LOT - Drill 8-1/2" hole
21 Jan 2013	1,138.0	Drill 8-1/2" hole from 916m to 1138m - Deviation survey @ 1043 1.75 Deg Following survey @ 1120m = 2.0Deg, Rack kelly and pull out with check surveys every stand pulled.
22 Jan 2013	1,138.0	Pulling out of hole taking survey every stand pulled back from 831m to 328m. Survey film depleted. RIH to inside 9-5/8" casing shoe @ 740m. Monitor Annulus via trip tank. Wait on orders.
23 Jan 2013	1,168.0	Monitor well over trip tank - Circulate - Pull out and change BHA. RIH - Circulate and wash to bottom Drill from 1138m to 1166m - with surveys.

Date	Depth (m MDRT)	24 Hour Summary
24 Jan 2013	1,296.0	Drilling 8-1/2" hole from 1166m to 1296m - Ran deviation surveys every 20m drilled
25 Jan 2013	1,336.0	Trip out to change drilling assembly to directional assembly - RIH to 9-5/8" casing shoe - Take MWD surveys a intervals while continuing to running in hole - Slide and rotate while drilling 8-1/2" hole from 1296m to 1336m
26 Jan 2013	1,568.0	Drill 8-1/2" hole from 1336m to 1568m as directed by Pathfinder DD - MWD surveys taken on connections
27 Jan 2013	1,795.0	Directional drilling with mud motor from 1568m to 1795m. Slide and rotate as directed by Pathfinder.
28 Jan 2013	1,926.5	Drill 8-1/2" hole from 1795m 1926.50m - Circulate hole clean - Wiper trip to 1300m - Run back in hole to 1926.50 m TD - Circulate hole clean - Tripping out
29 Jan 2013	1,926.5	Tripping out of hole - Lay down MWD and Pathfinder directional tools - PJSM rigging up Schlumberger logging tools - Run Log #1 ADT-HRLA-PEX- HNGS-SP
30 Jan 2013	1,926.5	Schlumberger POOH after Log #2 and rigged down - RIH with BHA components from derrick - POOH and laid down BHA components - Picked up 2-7/8" cmt stinger - RIH and set #1 and #2 abandonment cement plugs.
31 Jan 2013	1,926.5	Pump P&A Plug 3: 1315m -1422m and Plug 4: 702m - 792m. Pull back and lay out drill pipe. RIH to 617m and tag top of cement @ 663m. Pressure test cement to 1600psi, 10min Test. POOH and lay out drill pipe. RIH with stinger and place Plug 5 from 30m MDRT to GL.
01 Feb 2013	1,926.5	Lay out cementing tools and rig down cementers. Layout handling gear and clear drill pipe from racks. Flush BOP, Kill and Choke manifold. Open doors and clean BOP cavities and bolt doors. Rig down flowline, kill and choke lines. Nipple down BOPs and mount on stump. Cut Casing head above cellar floor and cap well. Clean tanks. RIG RELEASED 11:00 Hrs.

3.0 Formation Sampling, Evaluation and Testing

3.1 Wellsite Geologist

Andrew James provided onsite geological supervision for Drillsearch Energy Ltd and he prepared the Well Composite Log included as **Appendix 8**.

3.2 Mudlogging

Geoservices Overseas S.A provided mudlogging services. Cuttings gas was monitored from surface conductor shoe to TD using a FID gas chromatograph. A mudlog recording lithology, penetration rate, mud gas and other data was prepared and along with the drill Log, 24hr TimeLog, digital mudlogging drill and gas data and the sample manifest is included in **Appendix 12**

3.3 Ditch Cutting Samples

Three sets (each 150-200gms) of washed and air-dried cuttings were collected and described from 10m to 1926.5m MDRT. They were stored in suitably labelled plastic bags with one set preserved in Samplex trays.

The sampling frequency was every 10m from 10m to 1300m, and every 3m from 1300m to 1926.5m TD.

All samples were delivered to *Challenger Geological Services, 13-17 Weaver Street, Edwardstown 5039, South Australia* for distribution.

Set 1 was despatched to the Queensland Government Regulator in Brisbane.

Sets 2 and 3 (Samplex) were retained for Drillsearch at Challenger Geological in Adelaide.

3.4 Conventional Coring

No cores were obtained from Triclops-1

3.5 Sidewall Cores

No sidewall coring was conducted in Triclops-1

3.6 Mud Gas Sampling

No Isotubes or Isojars were collected for Mud Gas Isotope Logging

3.7 Cuttings Lithology Descriptions

Descriptions for each individual ditch cuttings sample (collected at 3m and 10m intervals) are included in **Appendix 9**

3.8 Hydrocarbon Shows

Total gas was recorded and analysed (chromatograph) from surface to TD. All ditch cuttings were checked for hydrocarbon fluorescence. Hydrocarbon fluorescence was recorded in sandstones of the Murta Member and the Namur, Westbourne, Adori, Birkhead and Hutton Formations from 1401m to 1760m MDRT. Descriptions of hydrocarbon fluorescence observed in the drill cuttings are included in **Section 4.4**.

3.9 LWD Logging

MWD/LWD was not utilised on Triclops-1

3.10 Wireline Logging

Wireline logs were run by Schlumberger. The full details of the wireline runs along with the digital data files are included in **Appendix 10**. Andrew James (Wellsite Geologist) and Rothi Hamza (AfriQA) were the wireline witnesses. In Run 2 the GR and Sonic were continued through the 9-5/8" casing to surface.

Run #	Type log	Type log Name				
1	EDTC/SP/HGNS/PEX-TLD / HRLA/ADT	Laterolog, Compensated Z-Density, Compensated Neutron Log, Spectral Gamma Ray Log, Dielectric, Spontaneous potential	725 – 1926.5			
2	ERCD/EDTC/PPC/MAST/GPIT	Power positioning caliper, Sonic Scanner, Geometric position inclination tool	0 – 1926.5			

 Table 1: Wireline logs suite for Triclops-1

3.11 Temperature

The following maximum temperatures (Table 2) were recorded from wireline logs (logger depth).

Run	Temperature	Time Since Circ. stopped			
EDTC/SP/HGNS/PEX-TLD / HRLA/ADT	130 Deg C at 1920m MDRT	15.66 hours			
EDTC/PPC/MAST/GPIT	131 Deg C at 1905m MDRT	24 .5 hours			

 Table 2: Maximum temperatures recorded for Triclops-1

The extrapolated bottom-hole temperature is calculated at 132.8 deg C (Figure 3)

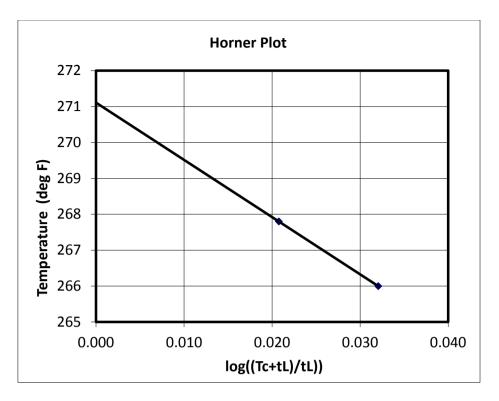


Figure 3: Horner Plot for Triclops-1

3.12 Velocity Survey

A Velocity Survey was not run.

4.0 Geology

4.1 Reasons for Drilling

Triclops-1 was proposed as an exploration well to test the hydrocarbon potential of a four-way dip closure (a fault related anticline with approximately 15m of independent closure) on the Curalle anticline on the northern flank of the Cooper/Eromanga basin.

The primary targets were the Middle Jurassic Hutton Sandstone and sands of the Late Jurassic Birkhead Formation. Secondary targets were sands of the Late Jurassic Namur Sandstone and Early Jurassic Poolowanna Formation. Stacked pay was anticipated as mapping indicated that the closure extends from the Top of the Early Cretaceous Murta Formation to the Basal Jurassic Poolowanna Formation. Sands of the Westbourne Formation and the Adori Sandstone were also considered to have potential to be hydrocarbon bearing if porosity is preserved.

The closest wells to Triclops-1 are Curalle-1 in the north and Wyerie-1 & Katta-1 in the south. The Inland Oil Field, a Hutton oil producer, is located 60 km to the northeast, and the Cook oilfield, a Hutton oil producer as well, is approximately 85 km to the south.

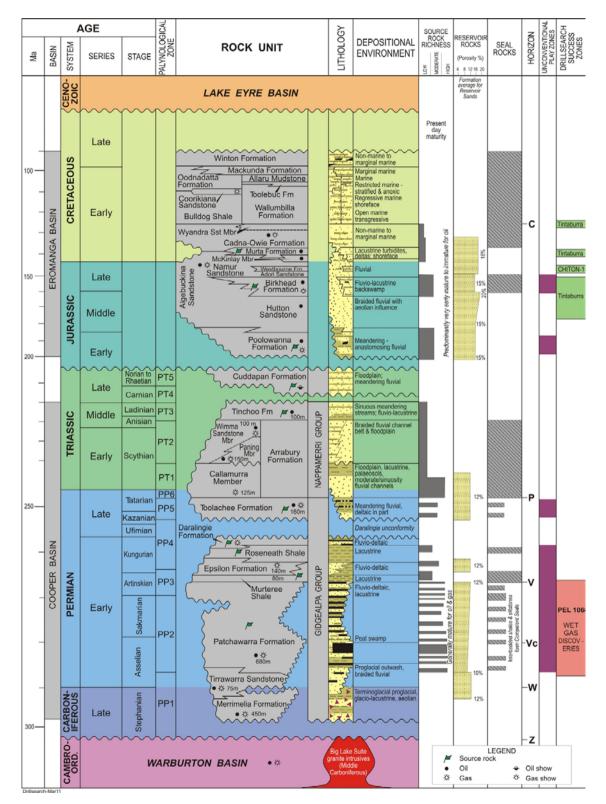
4.2 Stratigraphy - Formation Tops

The stratigraphic prognosis for Triclops-1 was made utilising the results of surrounding wells and interpretation of the 3D seismic data. The well penetrated a stratigraphic section comprising approximately 1926.5 metres of surficial, Eromanga Basin sediments and terminating in the top of the Poolowanna Sandstone (**Table 3**).

Formation	Actua	I	Pred	icted	High / Low (m)	
Formation	mSS	m MD	mSS	m MD		
Winton	141.0	5.2				
Mackunda	-495.3	641.5	-524	670	28.7	high
Allaru Mudstone	-598.8	745.0	-587	733	11.8	low
Toolebuc	-895.8	1042.1	-898	1044	2.2	high
Wallumbilla	-942.1	1088.5	-944	1090	1.9	high
Cadna-owie	-1170.7	1317.2	-1176	1322	5.3	high
Murta Formation	-1252.7	1399.2	-1255	1401	2.3	high
Namur Sst	-1275.7	1422.2	-1285	1431	9.3	high
Westbourne	-1372.0	1518.6	-1377	1523	5.0	high
Adori Sst	-1474.4	1621.0	-1445	1591	30.6	low
Birkhead	-1489.5	1636.1	-1494	1640	4.5	high
Hutton Sst	-1580.9	1727.5	-1588	1730	7.1	high
Poolowanna	-1779.9	1926.5	-1784	1930	5.9	low

 Table 3: Triclops-1, Formation Tops Actual vs. Prognosed

4.3 Stratigraphy



The stratigraphic section encountered in Triclops-1 is briefly described below.

Figure 4: Generalised Stratigraphic Column: Eromanga and Cooper Basins

Detailed lithology descriptions of the section encountered in Triclops-1 are presented in **Appendix 8** -Composite Well Log and **Appendix 9** – Cuttings Descriptions

The following stratigraphic description is a summary of the lithologies seen in the well, based on their broad lithostratigraphic subdivisions. All depths are measured and referenced to the rotary table.

There have been no biostratigraphic studies performed and any ages referred to are inferred.

Surficial & Winton Formation

Depth: 5.2 – 641.5m MDRT

The Winton Formation is a very argillaceous sequence characterised by interbedded argillaceous sandstone, sandstones, claystones and siltstone with abundant carbonaceous laminae.

SANDSTONE: light grey to very light green grey, very fine to fine, sub-angular to angular, well sorted, friable to moderately hard, weak siliceous cement to locally strong calcareous cement, very light grey argillaceous matrix, occasionally 10-40% argillaceous supported matrix, 10-20% grey lithic fragments, trace carbonaceous detritus, trace micro-mica, very poor visible porosity, no hydrocarbon fluorescence.

CLAYSTONE: green grey to olive grey becoming yellow grey to light brown with depth, very light grey in parts, sub-blocky, soft to firm, 5-10% quartz silt increasing up to 30% with depth, trace carbonaceous detritus, trace micro-mica.

SILTSTONE: light olive grey to pale brown, minor very light grey, sub-blocky to blocky, soft to dominantly firm, 10% very fine quartz grains, 10% lithic fragments, trace micro-mica, trace very fine uniformly distributed carbonaceous detritus, rare fine coaly laminations.

Mackunda Formation

Depth: 641.5 -745.0m MDRT

The Mackunda Formation is represented by siltstones with strongly calcareous sandstone.

SILTSTONE: olive grey to light brown grey, sub-blocky, firm to moderately hard in part, 10% clay, trace very fine carbonaceous detritus.

SANDSTONE: mottled white, light grey and green grey, very fine to fine grained, sub-angular to dominantly sub-rounded, sub-spherical, well sorted, friable to locally hard, strong calcareous cement, 5-10% argillaceous matrix, 5-10% fine lithic and feldspar fragments, trace carbonaceous wisps, very poor to no visible porosity, no hydrocarbon fluorescence.

<u>Allaru Mudstone</u>

Depth: 745.0 - 1042.1m MDRT

The Allaru Mudstone is characterised by siltstones with minor interbedded strongly calcareous sandstones and rare dolomite.

SILTSTONE: medium light grey to dominantly medium dark grey, sub-blocky to dominantly subfissile, minor fissile, firm to moderately hard, 10-20% very fine quartz grains rarely grading to arenaceous siltstone, generally uniformly textured, trace micro-mica, trace carbonaceous specks.

Thickness: 103.5m

Thickness: 297.1m

Thickness: 636.3m

SANDSTONE: light grey to medium grey, , very fine grading to silty sandstone in parts, very well sorted, sub-angular to angular, sub-spherical, moderately hard, strong calcareous cement, 5-10% very fine to fine lithic and feldspar fragments, trace carbonaceous specks, no visible porosity, no hydrocarbon fluorescence.

DOLOMITE: olive grey to brown grey, crypto- to micro-crystalline, sub-fissile to fissile, very hard, generally homogenous – trace very fine carbonaceous / black mineral specks (?) and isolated pyrite grains.

Toolebuc Formation

Depth: 1042.1 - 1088.5m MDRT

The Toolebuc Formation is represented by strongly calcareous siltstone.

SILTSTONE: grey black to olive black becoming medium dark grey to dark grey with depth, sub-fissile to fissile, firm to moderately hard, strongly calcareous, very finely arenaceous, 5% Inoceramus fragments in upper beds, trace micro-mica, trace pyrite.

Wallumbilla Formation

Depth: 1088.5 – 1317.2m MDRT

The Wallumbilla Formation is represented by siltstone, commonly grading into silty, strongly calcareous sandstone.

SILTSTONE: medium dark grey becoming dominantly dark grey, sub-blocky to sub-fissile, locally very finely arenaceous grading to silty sandstone, firm to moderately hard, trace-minor micro-mica, trace pyritic streaks, trace very fine glauconite.

SANDSTONE: medium light grey to medium grey increasing to mottled white, very light grey with depth, , very fine to minor fine, well sorted, sub-angular to sub-rounded, sub-spherical, friable to dominantly hard, strong calcareous cement, common white fine lithic fragments, very poor visible porosity, no hydrocarbon fluorescence.

Cadna-Owie Formation

Depth: 1317.2 – 1399.2m MDRT

Thickness: 82.0m

The Cadna-Owie Formation is characterised by siltstone, occasionally grading into calcareous sandstone.

SILTSTONE: dusky yellow brown to brown grey progressing into predominantly dark grey with depth, sub-fissile to dominantly fissile, generally uniformly textured – very finely arenaceous grading to arenaceous siltstone, firm to dominantly moderately hard, trace carbonaceous specks, trace to locally minor micro-mica.

SANDSTONE: dark yellow brown to dusky yellow brown becoming white to very light grey with depth, , very fine, very well sorted, sub-angular, sub-spherical, hard to very hard, in part strong calcareous cement, white lithic fragments, very poor to no visible porosity, no hydrocarbon fluorescence.

Thickness: 228.7m

Thickness: 50.4m

Murta Formation

Depth: 1399.2 - 1422.2m MDRT

The Murta Formation is characterised by a series of interbedded sandstone and siltstone.

SANDSTONE: light grey to medium light grey, very fine, very well sorted, sub-angular to angular, subspherical, grades to silty sandstone in part, moderately hard to hard, weak calcareous cement, trace black mineral / carbonaceous specks, no visible porosity, no hydrocarbon fluorescence. SILTSTONE: dark grey, , sub-blocky to dominant sub-fissile, firm to moderately hard in part, minor very fine lithic fragments, trace carbonaceous detritus and micro-mica.

Namur Sandstone

Depth: 1422.2 – 1518.6m MDRT

The Namur Sandstone is comprised of calcareous sandstone with minor finely arenaceous siltstone laminations.

SANDSTONE: very light to pale brown aggregates, dominantly dis-aggregated translucent to clear grains, fine to dominantly medium, rarely coarse, well sorted, sub-angular to minor sub-rounded, sub-spherical to sub-elongate, friable, weak to strong calcareous cement with depth, trace to 5% argillaceous matrix, poor to fair porosity, 5-70% dull green pinpoint fluorescence generally no cut but occasionally with very slow diffuse crush cut in tight sandstone aggregates in the upper most units decreasing with depth, no visible residue.

SILTSTONE: brown grey to olive grey transitioning to grey black with depth, sub-fissile to minor fissile, firm to moderately hard, very finely arenaceous, moderate to very carbonaceous, trace micro-mica.

Westbourne Formation

Depth: 1518.6 - 1621.0m MDRT

The Westbourne Formation is an interbedded and interlaminated sandstone and siltstone sequence.

SILTSTONE: yellow brown becoming dominantly brown grey, firm to moderately hard, sub-blocky to sub-fissile, 40-50% very fine quartz grains grading to silty sandstone, non-calcareous, trace carbonaceous specks, minor micro-mica.

SANDSTONE: light grey to pale yellow becoming very white to very light grey with depth, , very fine to fine, well sorted, sub-angular to dominantly sub-rounded, sub-spherical to spherical, friable to moderately hard, weak calcareous in part, strong siliceous cement, minor white argillaceous matrix, fair inferred to no visible porosity, *trace pinpoint dull to moderately bright green to 100% solid bright yellow green, slow diffuse cut to instant green white crush cut, green white residual ring of variable thickness, no visible residue.*

<u>Adori Sandstone</u>

Depth: 1621.0 – 1636.1m MDRT

The Adori Sandstone is medium to coarse sandstone with minor siltstone beds.

Thickness: 102.4m

siltstone

Thickness: 96.4m

Thickness: 23.0m

Thickness: 15.1m

SANDSTONE: very light grey, fine, dominantly medium to coarse, moderately to well sorted, angular - common broken coarse grains, sub-spherical to sub-elongated, hard, moderate to locally strong siliceous cement with occasional quartz overgrowths, poor visible porosity, minor very pale brown staining

SILTSTONE: brown black, firm, sub-fissile to fissile, moderately arenaceous, uniformly carbonaceous, trace micro-mica.

Birkhead Formation

Depth: 1636.1 - 1727.5m MDBRT

The Birkhead Formation is characterised by finely arenaceous siltstone with minor interbedded sandstone.

SILTSTONE: brown grey to brown black, sub-blocky to dominantly sub-fissile, firm to moderately hard, finely arenaceous, and moderately carbonaceous, and trace micro-mica.

SANDSTONE: white to very light grey, translucent to clear, very fine to fine, very well sorted, subangular to sub-rounded, friable, loose, poorly cemented, trace to minor argillaceous matrix, trace lithic fragments, poor inferred porosity, 30-100% moderately bright dull green white fluorescence, slow dull blue white streaming cut, thin white blue residual ring, no visible residue.

Hutton Sandstone

Depth: 1727.5 – 1926.5m MDBRT

The Hutton Sandstone is comprised of translucent grained sandstone with minor interbedded siltstone.

SANDSTONE: very light grey, milky to translucent grains, medium to dominantly coarse, minor fine, well sorted, angular to sub-angular, minor sub-rounded, sub-spherical to dominate sub-elongate, dominantly dis-aggregated, weakly calcareous, friable to moderately hard in aggregates, weak to moderate siliceous cement with minor quartz overgrowths, poor to fair inferred porosity, *trace pinpoint dull to moderately bright yellow fluorescence, very slow dull blue white streaming cut, thin dull green residual ring, no visible residue*

SILTSTONE: olive black to dark grey with depth, , sub-block to sub-fissile, firm, finely arenaceous, trace lithic fragments, trace carbonaceous specks.

Poolowanna Formation

Depth: 1926.5 –TD m MDBRT

The Poolowanna Formation is represented by siltstone with minor coaly laminations.

SILTSTONE: grey black to brown black, firm to moderately hard, sub-fissile to fissile in part, trace very fine arenaceous material, locally moderately carbonaceous with trace to 5% coaly laminations / fragments, and trace micro-pyritic aggregates.

Thickness: unknown

Thickness: 91.4m

Thickness: 199.0m

4.4 Hydrocarbon Shows

Total gas and chromatographic analysis were recorded and analysed from surface to TD. All ditch cuttings were checked for hydrocarbon fluorescence. Descriptions of hydrocarbon shows observed in drill cuttings are detailed below.

Murta Formation

1401 to 1404m: Trace pinpoint moderately bright green yellow fluorescence in tight sandstone aggregates, very weak very slow diffuse dull green white cut, very thin residual ring fluorescence, no visible residue. Poor show - no associated gas peak.

1419 to 1424.5m: 100% patchy very dull orange mineral fluorescence with trace pinpoint / scattered green yellow fluorescence in tight sandstone aggregates with trace carbonaceous detritus (locally generated?), slow streaming dull to moderately bright blue white cut, moderately thick residual ring fluorescence, no visible residue. Poor show: broad gas peak 57 units on a 35 unit background

Namur Sandstone

1424.5 to 1435.5m: 30 to 10% very dull green patchy fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue. Poor show - no associated gas peak.

1435.5 to 1451m: 10% to 70% (from 1440 to 1443 m) dull green pinpoint to patchy fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue. Poor show - weak gas peaks of 45 units on a 30 unit background.

1460 to 1487m: 5% to trace dull green pinpoint fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue. Poor show - potentially largely cavings in lower part of section. Not supported by any elevated gas values.

1494 to 1503m: 20% to trace moderately bright green yellow scattered fluorescence in tight sandstone aggregates, slow diffuse dull blue white crush cut, very thin residual ring, no visible residue. Poor show - gas trap down over part of interval but not supported by any increase in gas levels.

Westbourne Formation

1516.5 to 1536m: trace to 70% pinpoint to patchy dull moderately to bright green yellow fluorescence, very weak slow dull blue white diffuse crush cut, very thin dull blue white residual ring, no visible residue. Poor show - 95 unit peak on 45 unit background.

1572.5 to 1574m: 100% decreasing to 15% solid to patchy bright yellow green fluorescence, slow diffuse green white cut - instant bright green white crush cut with secondary streaming grains, thick moderately bright green white residual ring, no visible residue. A fair show with a gas peak of 449 units on a 65 unit background. Chromatograph breakdown: 55/9/13/14/9. ROP break is neither fast nor distinct: 11 m/hr. on 9 m/hr.

1578 to 1594.5m: trace pinpoint yellow green fluorescence, slow diffuse green white cut - instant bright green white crush cut with secondary streaming grains, thin moderately bright green white residual ring, no visible residue. Poor show - no associated gas peak.

1604 to 1608m: 70% to 20% patchy bright green white fluorescence, instant diffuse dull green white cut - slow streaming moderately bright blue white cut, thick green white residual ring, no visible residue.

1614 to 1623m: 30 to 20% patchy moderately bright to dull yellow fluorescence, instant blue white crush cut, thick green residual ring, no visible residue. Mud sample collected at gas peak at 1616 m. When mixed with boiling water and placed in a cup under the fluoroscope, oil bubbles observed breaking out on surface - bright green yellow droplets and streaks. Gas peaks of 218, 602 and 461 units on a 35 unit background at 1604.5, 1615.5 and 1623 m respectively.

Birkhead Formation

1647 to 1649.5m: 50% patchy dull green fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. Poor show - no associated gas peak.

1674 to 1680m: 100% solid moderately bright to dull green white fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. Poor show - gas peak of 180 units on 90 unit background.

1702.5 to 1708m: 30 to 50% scattered very dull green white fluorescence in tight aggregates, slow very dull blue white crush cut, very thin residual ring, no visible residue. Poor show - 162 unit gas peak on 100 unit background.

Hutton Sandstone

1750 to 1760m: trace pinpoint dull to moderately bright yellow fluorescence, very slow dull blue white streaming cut, thin dull green residual ring, no visible residue. Very poor show - no significant gas peaks.

4.5 Petrophysical Evaluation and Core Analysis

4.5.1 Petrophysics

Net pay (interpreted with residual hydrocarbons) was identified from wireline logs in the Murta Formation, the Namur Sandstone, the Westbourne Formation, the Adori Sandstone, the Birkhead Formation and the Hutton Sandstone. The calculated petrophysical results are summarised in **Table 4**.

Interval	Formation	Porosity (%)	Sw (%)	Vsh (%)	Net Pay (m)
1397.5 to 1424.5	Murta Formation	9.5	51	18.7	0.89
1424.5 to 1516.5	Namur Sandstone	9.8	49.9	14.8	1.19
1594.4 to 1634.4	Westbourne / Adori	10.6	53.2	9.5	5.44
1634.4 to 1726.9	Birkhead Formation	16.3	42	9.6	0.86
1726.9 to 1909.5	Hutton Sandstone	10.5	47.5	5.9	4.52

The detailed Petrophysical Analysis Report is included as Appendix 11

 Table 4: Petrophysical Pay Summary

4.5.2 Coring

No cores were cut in Triclops-1

4.6 Prospect Evaluation

The differences between the predicted and actual depths of formation tops in Triclops-1 are given in the well card and as shown in **Table 3**

Pre- and post- drill depth interpretation maps of the top Hutton Formation are included as Figure 5

Pre- and post- drill seismic sections through the Triclops-1 location are presented in **Figures 6 and 7** respectively.

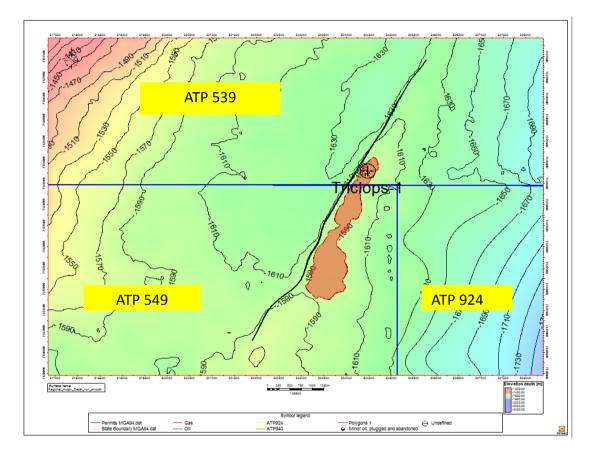


Figure 5: Triclops-1, Hutton Formation pre-drill (no change post-drill) depth structure map

4.6.1 Trap

Triclops-1 was drilled to test a four-way dip closure on the Curalle anticline, approximately 3.5km long and on average 0.5km in width.

4.6.2 Seal

The shales of the Birkhead Formation were predicted to act as a top seal for both the primary and secondary target sands. The shales were intersected as expected.

4.6.3 Reservoir

The porosity of sands of the Birkhead Formation was better than expected, however the porosity of the sands of the primary target, the Hutton Sandstone, were of a poorer quality than predicted predrill. The target sands were water wet with only a trace of hydrocarbon shows observed.

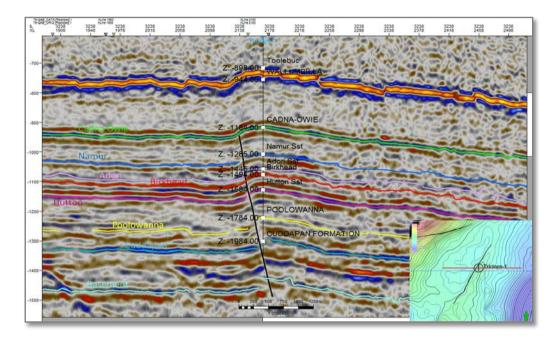


Figure 6: Triclops-1 Inline Seismic Section 3238 through the Triclops Structure showing wellpath, formation tops (pre-drill) and major bounding fault

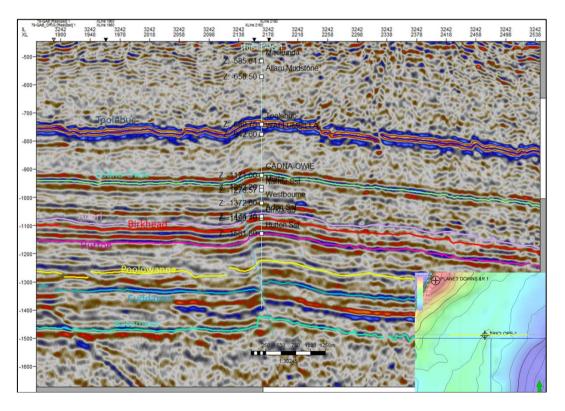


Figure 7: Triclops-1 Inline Seismic Section 3238 through the Triclops Structure showing wellpath, formation tops (post-drill) and major bounding fault

4.6.4 Charge

A trace to 100% fluorescence was observed in a number of tight argillaceous sandstones throughout the drilled sequence (**Section 4.4**). The shows are interpreted as residual oil caught in the poorest quality sands and siltstones.

Triclops-1 was the first mapped closure lying outside the nearby Windorah Trough. Prolific oil shows were observed in offset wells locally, however timing is considered a likely reason for failure at Triclops. The structure is interpreted as post-dating peak oil expulsion (~90mya).

4.7 Formation Testing

4.7.1 Wireline Pressures/Samples

No pressures or samples were obtained in Triclops-1

4.7.2 Drillstem Testing

A drillstem test was not conducted in Triclops-1

5.0 Conclusions and Contribution to Geological Understanding

The Triclops-1 well was designed as a vertical oil exploration well to test a four-way dip closure on the Curalle anticline on the northern flank of the Cooper/Eromanga Basin. The Basal Birkhead Formation and Hutton Sandstone were the primary targets of the well whilst the Namur Sandstone and Poolowanna Formation were considered secondary targets.

The well intersected the expected stratigraphic section with all primary and secondary targets penetrated. The well was terminated early, due to the necessity to change the drilling bit (ROP reduced to 0.3m/hr), with the well having already tested the primary basal Birkhead Formation and Hutton Sandstone objectives.

The primary targets, the Birkhead Formation and Hutton Sandstones, were both intersected high to prognosis, 4.5m and 7.1m respectively but well within the margins of error dictated by the seismic time/depth ties. They did not have significant hydrocarbon shows.

The secondary objective, the Namur Sandstone, was intersected approximately 9.3m high to prognosis, but again had insignificant oil shows. The Poolowanna Formation was probably tagged / penetrated at TD (causing the bit to cease drilling). No shows were recorded in the Poolowanna Formation.

Interpretation of the well data indicates the primary target sands were tighter than expected, and peak hydrocarbon migration likely pre-dated the timing of the structural closure. Wireline log analysis indicated small amounts of net pay (with residual hydrocarbons) in the Murta Formation, the Namur Sandstone, Adori Sandstone, Westbourne Formation, Birkhead Formation and Hutton Sandstone ranging from 0.86m to 5.44m **(Table 4)**.

Despite the formation tops coming in close to prognosis only limited quantities of net pay were present and although oil fluorescence was observed in the Murta Formation, Namur Sandstone, Westbourne Formation, Adori Sandstone, Birkhead Formation and Hutton Sandstone the well failed to intersect commercial quantities of unswept oil in these target zones.

Triclops-1 was subsequently plugged and abandoned as a dry well with oil shows. Ensign Rig 918 was released on 1st February 2013

6.0 Bibliography

- 1. *Drillsearch Energy Ltd., 6th December 2012:* ATP 539 Triclops-1 Well Proposal and Geological Program (unpub)
- Drillsearch Energy Ltd., 5th December 2012: ATP 539 Triclops-1 Drilling Program (unpub)

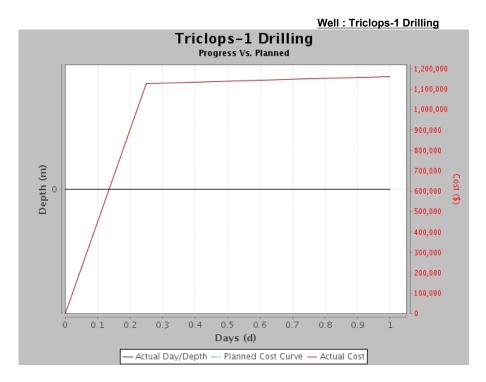
Appendix 1 – Daily Drilling Reports (DDR)



Well : Triclops-1 Drilling

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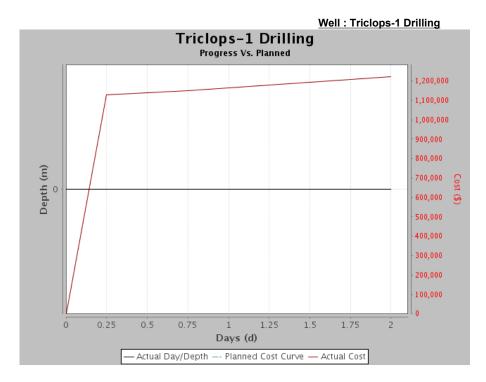
Drillsearch





Well : Triclops-1 Drilling

Triclops-	1 Drilling										
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Longitude	(East)	25° է	5° 59' 43.40" Wellsite Geologist:								
Well Data	1										
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Field:				red Depth			Casing MD:			Original AFE:	\$ 3,447,294
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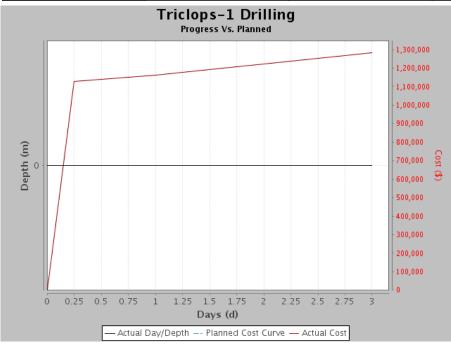


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Well Data Current Hole Size: Measured Depth: Rig: Casing OD: Easing MD: Casing TVD: Supp AFE No: Original AFE: S.20 m Plan TD (ND): AFE Number: S.20 m Days On Well: S.20 m Days Since Sput: FTIA.OT: Current Op @ 0600: Planned Op: Continue moving the fig and rig site camp to Triclops-1 AFE: Daily Cost: S.1.284.14 Last LTI Date: Days Since LTI: Current Op @ 0600: FTIA.OT: Current Op @ 0600: FTIA.OT: Current Op @ 0600: Planned Op: Continue moving the fig and rig site camp to Triclops-1 Daily Cost: S.1.284.14 Last LTI Date: Days Since LTI: Days Since LTI: Current Op @ 0600: FTIA.OT: FTIA.OT: FTIA.OT: Current Op @ 0600: Planned Op: Continue moving the fig and rig site camp to Triclops-1 Description Presume Triclops-1 Remarks Since Summary for Period 0000 Hrs to 2400 Hrs on 05 Jan 2013 Caded out the rig to the Triclops-1 location. HSE Summary Date of Last Since Days Since Pressure Pressure test wellhead to 1000pg Walkabout 0 S Jan 2013 06:30 0 0 Pressure Rig lease Pressure test wellhead to 1000pg Watch and advise on rig move operations Pre-Job Meetings 1 0 S Jan 2013 06:30 0 0 0 0 Pressure Match and advise on rig move operations Pressure test wellhead to 1000pg Watch and advise on rig move operations RMO P RM 0.0:00 0 0.0:00 0 0.0:00 0 0.0:00 0 0.0:00 0 0.0:00 0 0.0:00 0 0.0:00 0 <t< td=""><td>Latitude (S</td><td>outh)</td><td>14</td><td>1° 14' 40.40</td><td>" Night</td><td>Wellsit</td><td>e Represent</td><td>ative:</td><td></td><td>Kevin Gordon</td><td>Drillin</td><td>ig Company:</td><td>ENSIGN</td></t<>	Latitude (S	outh)	14	1° 14' 40.40	" Night	Wellsit	e Represent	ative:		Kevin Gordon	Drillin	ig Company:	ENSIGN
Country: Australia Current Hole Size: Casing OD: AFE Number: OPS-13-01 Field: Measured Depth: Casing MD: Original AFE: \$3.47.29 Ground Level: 141.0 m 24 HP Progress: TOL MD: Original AFE: \$3.47.29 Plan TD (MD): 2.021.0 m Days On Velt: 3.00 TOL TVD: AFE: \$3.47.29 Plan TD (MD): 2.021.0 m Last BOP Date: Inr Shoe MD: Days On Velt: \$1.284.14 Plan TD (MD): 2.021.0 m FifALOT: / / Current Op @ 0600: FifALOT: / Current Op @ 0600: FifALOT: / Days On Velt: Days On Velt: <td< td=""><td>Longitude</td><td>(East)</td><td>2</td><td>5° 59' 43.40</td><td>"</td><td></td><td></td><td></td><td></td><td></td><td>Wells</td><td>ite Geologist:</td><td></td></td<>	Longitude	(East)	2	5° 59' 43.40	"						Wells	ite Geologist:	
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RMOPRM06:0018:0012.00Continued rigging down. Prepared mud tanks for removal. (Pressure tested Tree against cement plug to 1,000 Psi. for 10 minutes.) Loaded out the Sub Base, BOP and Poorboy de-gasser, Mud Pump, Rig Carrier and Generator. Loaded out the Sub Base, BOP and Poorboy de-gasser, Mud Pump, Rig Carrier and Generator. Loaded out the Mud Tanks. As of 18:00 hrs. an estimated 20% of the rig (which includes the Rig Site Camp) remains on location to be moved tomorrow. This comprises the Pony Base, Electrician/Mechanic shacks and a few pipe bins/miscellanenous items, and of course the Rig Site Camp.RMOPRM18:0024:006.00Meret Site Camp.PHSECLSOPFromToHrsDepth (m)Activity DescriptionRMOPRM00:0006:006.00Waited on daylight to resume rigging down operations.PerformancePerformanceSummaryPerformanceSummaryPerformanceSummaryElectrician/MechanicShacks and a few pipe bins/miscellanenous items, and of course the Rig Site Camp.PHSECLSOPFromToHrsDepth (m)Activity DescriptionPHSECLSOPFromToHrsDepth (m)Activity DescriptionCumulative Well												ed to the Triclops-1	location. This
RMO P RM 18:00 24:00 6.00 Image: Figure Fi	DI 40	-		00.00	40.00	40.00		_					
RMO P RM 18:00 24:00 6.00 Waited on daylight to resume rig move operatons. PHSE CLS OP From To Hrs Depth RMO P RM 00:00 6.00 Waited on daylight to resume rig move operatons. PHSE CLS OP From To Hrs Depth RMO P RM 00:00 6.00 Waited on daylight to resume rig move operatons. PHSE CLS OP From To Hrs Depth RMO P RM 00:00 6.00 Cumulative Well	RMO	Р	RIVI	06:00	18:00	12.00				• ·			•
RMO P RM 18:00 24:00 6.00 Marked particular of the regular of the									-		-		
RMO P RM 18:00 24:00 6.00 of the rig (which includes the Rig Site Camp) remains on location to be moved tomorrow. This comprises the Pony Base, Electrician/Mechanic shacks and a few pipe bins/miscellanenous items, and of course the Rig Site Camp. RMO P RM 18:00 24:00 6.00 Waited on daylight to resume rig move operatons. Operations for Period U000 HTM to VBU HTM to VBU HTM to VBU HTM to Period U000 HTM to VBU HTM to Period U000 HTM to Period U0000 HTM to Period U000 HTM to Period U000 HTM to Perio													-
RMO P RM 18:00 24:00 6.00 Moved tomorrow. This comprises the Pony Base, Electrician/Mechanic shacks and a few pipe bins/miscellanenous items, and of course the Rig Site Camp. RMO P RM 18:00 24:00 6.00 Waited on daylight to resume rig move operatons. Operations for Period U000 Hrs to 06000 Hrs to													
Image: RMOPRMImage: RMOPRM18:0024:006.00Makes and a few pipe bins/miscellanenous items, and of course the Rig Site Camp.Operations for Period UOD Fractory Bottlement Store St											-		
RMOPRMI8:0024:006:00Site Camp. Waited on daylight to resume rig move operatons.Operations for Period UDDD Interview UDDDD Interview UDDD Inte													
Operations for Period 0000 Hrs to 0600 Hrs to 06 Jan 2013 PHSE CLS OP From To Hrs Depth (m) Activity Description RMO P RM 00:00 06:00 6.00 Waited on daylight to resume rigging down operations. Performance Summary Daily Cumulative Well													
PHSE CLS (RC) OP From To Hrs Depth (m) Activity Description RMO P RM 00:00 06:00 6.00 Waited on daylight to resume rigging down operations. Performance Summary Cumulative Well	RMO	P	RM	18:00	24:00	6.00		Waite	d on dayl	light to resume r	rig move	e operatons.	
(RC) (m) RMO P RM 00:00 6:00 Waited on daylight to resume rigging down operations. Performance Summary Daily Cumulative Well	•			rs to 0600 I	Irs On 0	6 Jan 20	013						
Performance Summary Daily Cumulative Well	PHSE		OP	From	То	Hrs				Ac	tivity De	escription	
Daily Cumulative Well	RMO	Р	RM	00:00	06:00	6.00		Waite	d on day	light to resume r	igging o	lown operations.	
	Performan	ce Summa	iry										
Hrs % Hrs %						Dai	ly					Cumulative Well	
				ŀ	Irs			%		F	lrs		%
P 24.0 100.0 72.0 100.0	P			2	4.0			100.0		7	2.0		100.0

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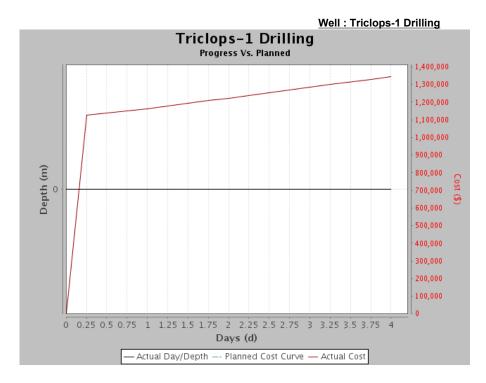


Performance Summary				
	Da	aily	Cumulat	tive Well
	Hrs	%	Hrs	%
Undefined	0.0	0.0	0.0	0.0
Total	24.0	100.0	72.0	100.0



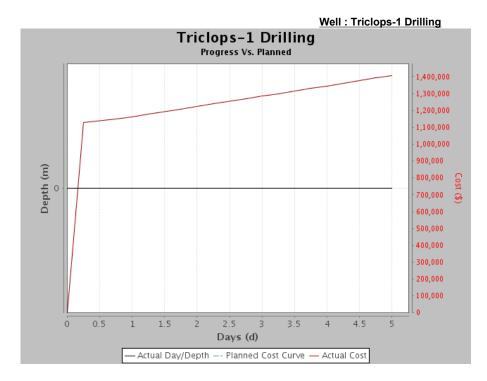


Triclops-1	Drilling											
Report Nu		4 Day Wellsite F 141° 14' 40.40" Night Wellsite 25° 59' 43.40"				•		Ray C. Miller	Rig Manager:	Scott Cameron		
Latitude (S	,			0	Wellsite	e Represent	ative:	Kevin Gordon	Drilling Compan Wellsite Geolog	•		
Longitude	(East)	25 :	59 43.40						Weilsite Geolog	JISI.		
Well Data			-				1					
Country:		Australia		Hole Siz			Casing OD:		AFE Num			
Field:		Ensign 010					Casing MD		Original A			
Rig:	vol	Ensign 918			•		Casing TVE TOL MD:	J:	Supp AFE			
Ground Le RT to GL	vei.			-		4			Orig. & Su AFE:	up. \$ 3,447,294		
Plan TD (N	יחו				ud.		00 TOL TVD. 00 Lnr Shoe M	חו	Daily Cos	it: \$ 61,141		
Plan TD (I	,	,				0.	Lnr Shoe T		Cum. Cos			
1 1011 10 (1	VD).	2,021.0111	0 m 24 Hr Progress: 0 m Days On Well: 0 m Days Since Spud: 0 m Last BOP Date: FIT/LOT: rs to 2400 Hrs on 06 Jan 2013 Hrs to 2400 Hrs On 06 Jan 2013 From To Hrs Deptr (m) 1 00:00 06:00 6.00				/	VD.	Last LTI D			
		141.0 m 24 Hr Progress: 5.20 m Days On Well: 2,021.0 m Days Since Spud: 2,021.0 m Last BOP Date: FIT/LOT: FIT/LOT: od 0000 Hrs to 2400 Hrs on 06 Jan 2013 riod 0000 Hrs to 2400 Hrs On 06 Jan 2013 OP From To Hrs Deg (r RM 00:00 06:00 6.00 6.00					1		Days Since			
Current Or	0 @ 0600 [.]		21.0 m Last BOP Date: FIT/LOT: 9 Hrs to 2400 Hrs on 06 Jan 2013 00 Hrs to 2400 Hrs On 06 Jan 2013 00 Hrs to 2400 Hrs On 06 Jan 2013 OP From RM 00:00 06:00				I					
Planned O	ations for Period 0000 Hrs to 2400 Hrs on 06 Jan BE CLS OP From To H (RC)											
	summary for Period 0000 Hrs to 2400 Hrs on 06 Jan 2					3						
Guinnary			2400 1113	5 011 00 0	201	0						
Operation	s for Perio	od 0000 Hrs 1	to 2400 H	rs On 06	6 Jan 20	013						
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity Description			
	(RC)					(m)						
RMO	Р	RM	00:00	06:00	6.00			aited on daylight to resume rigging down operations.				
RMO	Р	RM	06:00	18:00	12.00		Loaded up the	oaded up the Carrier Pony Base. Loaded out the Mechanic and				
								Electrician's shacks, matting, Pipe Racks, and Pipe Bins and all oth				
								-	Camp and loaded			
RMO	Р	RM	18:00	24:00	6.00		Waited on dayli	ight to resume r	ig move operation	IS.		
Operation	s for Perio	od 0000 Hrs 1	0 Hrs to 0600 Hrs On 07 Jan 2013									
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity Description			
	(RC)					(m)						
RMO	Р	RM	00:00	06:00	6.00		Waited on dayl	ight to resume r	ig move operation	IS.		
Performar	nce Summ	ary										
					Dai	ly			Cumulative	e Well		
			Hrs %				%	Н	Irs	%		
Р			24	24.0 100.0			100.0	96	6.0	100.0		
Undefined			0	.0			0.0	0	0.0	0.0		
			24.0						6.0	100.0		



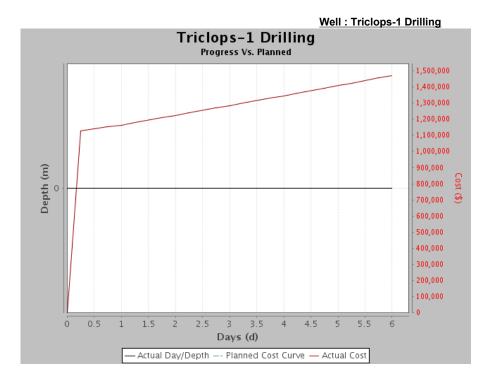


Triclops-1	Drilling										
Report Nu			5	-		Representa		Ray C. Miller	Rig Manager:		Scott Cameron
Latitude (,		14' 40.40'	5	Wellsite	Represent	ative:	Kevin Gordon	Drilling Compa	•	ENSIGN
Longitude		25° (59' 43.40'						Wellsite Geolo	ogist:	
Well Data			1								
Country:		Australia		Hole Siz			Casing OD:		AFE Nu		OPS-13-015
Field:				ed Depti			Casing MD:		Original		\$ 3,447,294
Rig:		-			•		Casing TVD):	Supp Al		• • • • = • • •
Ground Le	evel:			0		_	TOL MD:		Orig. &	Sup.	\$ 3,447,294
RT to GL	vel: 141.0 m 24 Hr Progress: 5.20 m Days On Well: ID): 2,021.0 m VD): 2,021.0 m Last BOP Date: FIT/LOT: @ 0600: Period 0000 Hrs to 2400 Hrs on 07 Jan 2013 daylight. Resumed rig move operations from Cypress					00 TOL TVD:		AFE:		* • • • • • • •	
•	,	5.20 m 2,021.0 m 2,021.0 m 2,021.0 m Holding PJSM before beginnin Rig move. 1 0000 Hrs to 2400 Hrs on 07 Jan 2013 Resumed rig move operations from Cypress 1 Dod 0000 Hrs to 2400 Hrs On 07 Jan 2013 OP From To Hrs De					00 Lnr Shoe M		Daily Co		\$ 61,941
Plan TD (1	VD):	141.0 m 24 Hr Progress: 5.20 m Days On Well: 2,021.0 m Days Since Spud: 2,021.0 m Last BOP Date: FIT/LOT: FIT/LOT: Holding PJSM before beginning Rig move. 0000 Hrs to 2400 Hrs on 07 Jan 2013 esumed rig move operations from Cypress 1 for C					Lnr Shoe T	VD:	Cum. C		\$ 1,407,225
	GL 5.20 m Days On Well: D (MD): 2,021.0 m Days Since Spud: D (TVD): 2,021.0 m Last BOP Date: FIT/LOT: FIT/LOT: t Op @ 0600: Holding PJSM before beg d Op: Rig move. ary for Period 0000 Hrs to 2400 Hrs on 07 Jan 2013 on daylight. Resumed rig move operations from Cypre tions for Period 0000 Hrs to 2400 Hrs On 07 Jan 2013 e CLS OP From To Hrs (RC) P RM 00:00 06:00 6.00					/		Last LT			
Current O	Op @ 0600: Holding PJSM before be Rig move. Op: Rig move. y for Period 0000 Hrs to 2400 Hrs on 07 Jan 2013 n daylight. Resumed rig move operations from Cypr				alaninia ria	mayo operations		Days Si	nce LTI:		
	-		-		erore be	iginninig rig	move operations				
			Ű								
Waited on	daylight. F	lesumed rig n	nove oper	ations fro	om Cypr	ess 1 to Tri	clops 1.				
Operation	s for Perio	od 0000 Hrs 1	to 2400 H	rs On 07	7 Jan 20	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Descriptior	ı	
	(RC)					(m)					
RMO	Р	RM	00:00	06:00	6.00		Waited on daylight to resume rig move operations.				
RMO	Р	RM	06:00	18:00	12.00		Loaded out the	remaining load	s from Cypress	1 to Triclops	s-1. Fuel tank,
							Generator Shad	ck, 20' containe	r, Mud Pump, G	eologgers c	ontainer, Pipe
							Bins and racks.				
RMO	Р	RM	18:00	24:00	6.00		Waited on dayli	ight ro resume o	operatons.		
Operations for Period 0000 Hrs to 0600 Hrs On 08 Jan 2013											
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity Descriptior	ı	
	(RC)					(m)					
RMO	Р	RM	00:00	06:00	6.00		Waited on dayli	ight to resume r	ig move operation	ons.	
Performa	nce Summ	ary									
					Dail	у			Cumulat	ive Well	
			Н	rs			%	Н	Irs		%
Р	24.0 10				100.0	12	0.0		100.0		
Undefined			0	.0			0.0	0	0.0		0.0
Total			24	1.0			100.0	12	0.0		100.0



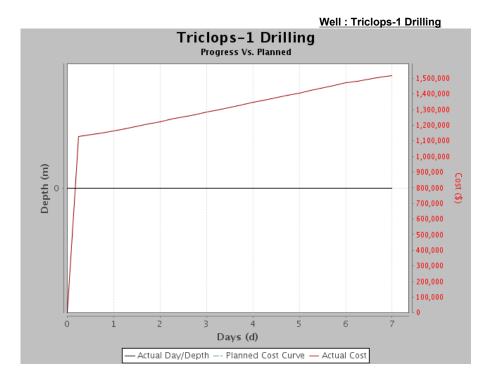


Triclops-1	l Drilling											
Report Nu Latitude(1110	6 '14' 40.40	-		Representat e Representa		Ray C. Miller Kevin Gordon	Rig Manager Drilling Com		Scott Cameron ENSIGN	
Longitude			59' 43.40'	0	vvensite	Representa	alive.	Kevin Goldon	Wellsite Geo		ENSIGN	
Well Data	. ,									•		
Country:		Australia	Current	Hole Siz	ze:		Casing OD:		AFE N	lumber:	OPS-13-015	
Field:			Measur	ed Depth	ו:		Casing MD:		Origina	al AFE:	\$ 3,447,294	
Rig:		Ensign 918	1	ertical De	pth:		Casing TVD	1	Supp /	AFE No:		
Ground Le	evel:	141.0 m	24 Hr F	rogress:			TOL MD:		Orig. 8	& Sup.	\$ 3,447,294	
RT to GL		5.20 m	Days O	n Well:		6.0	0 TOL TVD:		AFE:			
Plan TD (I	MD):	2,021.0 m	Days S	ince Spu	d:	0.0	0 Lnr Shoe M	D:	Daily C	Cost:	\$ 62,941	
Plan TD (1	ΓVD):	2,021.0 m	Last BC	OP Date:			Lnr Shoe T	/D:	Cum. (Cost:	\$ 1,470,166	
			FIT/LO	T:			1		Last L	TI Date:		
									Days S	Since LTI:		
Current O	p @ 0600:		Holding	JSA pric	or to dai	ly operations	entailing rigging	up.				
Planned C)p:		Continu	e rigging	up.							
Summary	for Period	0000 Hrs to	2400 Hrs	s on 08 J	lan 201	3						
Continued	rigging up	on Triclops 1										
Operation	Operations for Period 0000 Hrs to 2400 Hrs On 08 Jan 2013											
PHSE												
	(RC)					(m)						
RMO	Р	RM	00:00	06:00	6.00		Waited on daylig	ght to resume r	ig move opera	tions.		
RMO	Р	RM	06:00	18:00	12.00		Continued riggin	ntinued rigging up on Tirclops-1. Spotted Carrier and Sub base. N				
							Tanks, Choke Manifold and Poorboy Degasser, Dog House, Catwalk.					
							Installed the De	rrick onto the C	arrier. Installe	d Koomey U	nit in place,	
							Generator Shac	k, 62,000 liter f	uel tank, seco	nd mud pum	p. Flanged up	
							both pumps to s	suction lines.				
RMO	Р	RM	18:00	24:00	6.00		Waited on daylig	ght to resume r	ig move opera	tions.		
Operation	s for Perio	d 0000 Hrs 1	to 0600 Hrs On 09 Jan 2013									
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Description	on		
	(RC)	1				(m)						
RMO	Р	RM	00:00	06:00	6.00		Waited on daylig	ght to resume r	ig move opera	tions.		
Performa	nce Summ	ary										
					Dai	ly				ative Well		
				rs							%	
Р			24	1.0		1	00.0	14	4.0		100.0	
Undefined			0	.0			0.0	0	.0		0.0	
Total			24	1.0		1	00.0	14	4.0		100.0	





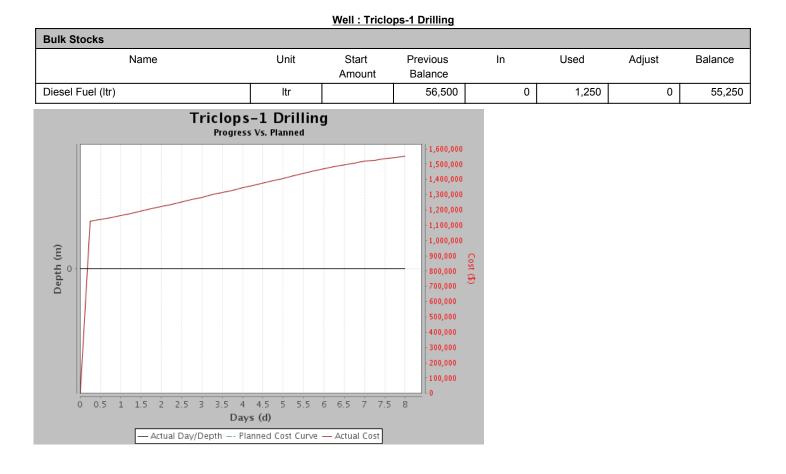
Triclops-1	Drilling										
Report Nui Latitude (S	South)		7 14' 40.40'	' Night		Representat e Representa		Ray C. Miller Kevin Gordon	Rig Manager: Drilling Comp	any:	ave Dougherty. ENSIGN
Longitude	(East)	25°	59' 43.40'	1					Wellsite Geol	ogist:	
Well Data			-								
Country:		Australia	Curren	t Hole Siz	ze:		Casing OD:		AFE Nu	umber:	OPS-13-015
Field:				red Depth			Casing MD:		Origina		\$ 3,447,294
Rig:		Ensign 918		ertical De	•		Casing TVD):	Supp A		
Ground Le	vel:	141.0 m		Progress:			TOL MD:		Orig. &	Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C		а.	7.0		D.	AFE:	4	• 40 404
Plan TD (N		2,021.0 m 2,021.0 m		ince Spu DP Date:	a:	0.0	0 Lnr Shoe M		Daily C Cum. C		\$ 48,191 © 1 518 257
Plan TD (T	VD).	2,021.0 11	FIT/LO				/ Lin Shoe IV	VD.	Last LT		\$ 1,518,357
				1.			7			ince LTI:	
Current Op	0600:		Holding	PJSM b	efore re	suming oper	ation.				
Planned O	p:		Continu	ie rigging	up, rais	se the derrick					
Summary	for Period	0000 Hrs to	2400 Hr	s on 09 J	lan 201	3					
Held PJSM	I and contir	nued rigging	up on Trie	clops 1. I	nspecte	d all lifting ar	d hoisting equip	ment. Raised D	og House, spot	tted Centrifuge	, Rigged up
							ed up air and hyd		0 1	Ū	
Operation	s for Perio	d 0000 Hrs	to 2400 H	lrs On 09	Jan 20	013					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Descriptio	n	
	(RC)					(m)					
RMO	Р	RM	00:00	06:00	6.00		Waited on dayli	ght to resume r	ig move operati	ions.	
RMO	Р	RM	06:00	18:00	12.00		Held PJSM and	continued rigg	ing up on Triclo	ps 1. Inspecte	d all lifting
							and hoisting eq	•	-	•	
							up Turkey Nest	• •	nks. Installed ne	ew Bridal Line	in derrick.
5140	-		10.00				Rigged up air a	-			
RMO	Р	RM	18:00	24:00	6.00		Waited on dayli	ght to resume c	operations.		
Operation	s for Perio	d 0000 Hrs	to 0600 H	lrs On 10) Jan 20	013					
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		Ac	tivity Description	n	
RMO	P	RM	00:00	06:00	6.00		Waited on dayli	ght to resume c	operations.		
Performar	nce Summ	ary	•								
					Dai	ly				tive Well	
			-	lrs			%		lrs		%
Р			24	4.0		1	00.0	16	8.0	1(0.0
Undefined			0	.0			0.0	0	.0	().0
Total			24	4.0		1	00.0	16	8.0	10	0.0
Bulk Stoc	ks										
	Nar	me		Un	it	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fue	el (ltr)			ltr		56,500		0	0	0	56,500





Triclops-1	Drilling										
Report Nu	-		8	Day V	Vellsite	Representativ	/e:	Ray C. Miller	Rig M	lanager:	Dave Dougherty.
Latitude (S	South)	141°	14' 40.40'	-		e Representat		Kevin Gordon		g Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'						Wells	ite Geologist:	
Well Data											
Country:		Australia	Current	Hole Siz	ze:		Casing OD:			AFE Number:	OPS-13-015
Field:				ed Depth			Casing MD:			Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De	•		Casing TVD):		Supp AFE No:	
Ground Le	vel:	141.0 m		rogress:			TOL MD:			Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m				8.00				AFE:	
Plan TD (N	,	2,021.0 m	,	ince Spu	d:	0.00				Daily Cost:	\$ 35,391
Plan TD (T	VD):	2,021.0 m)P Date:			Lnr Shoe T	VD:		Cum. Cost:	\$ 1,553,748
			FIT/LO	1:			/			Last LTI Date: Days Since LTI:	
Current Op	0 @ 0600:		Holding	PJSM b	efore re	suming riggin	g up.		I	Days Office LTI.	
Planned O	-		-				and continue ri	gging up.			
Summary	for Period	0000 Hrs t	2400 Hrs	s on 10 J	lan 201	3					
Raised the	Derrick to	half mast.	Continued	rigging u	p the de	errick and strir	nging line prior to	o raising the De	errick to	full height. Installe	ed handrails to
										T inspection of rig	
Unspooled	guy lines,	winched an	d tong han	ging line:	s.						
Operation	s for Perio	d 0000 Hrs	to 2400 H	rs On 10) Jan 2()13					
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity De	escription	
	(RC)				-	(m)					
RMO	Р	RM	00:00	06:00	6.00		Waited on dayli	ght to resume o	operatio	ns.	
RMO	Р	RM	06:00	10:30	4.50		Continued riggin	ng up. Prepareo	d to rais	e the Derrick to 1/2	2 Mast. (not
DMO	Р		10.00	10.00	7 50		telescoped up)	ulate to the fill on a s	4.0	and simplify a set of the	a damiala and
RMO	Р	RM	10:30	18:00	7.50					nued rigging up th k to full height. Ins	
							•••	-		at inspection. Lowe	
								•		I NDT inspection o	•
								-		g hanging lines.	
RMO	Р	RM	18:00	24:00	6.00		Waited on dayli				
Operation	s for Perio	d 0000 Hrs	to 0600 H	rs On 11	I Jan 20)13					
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity De	escription	
	(RC)				-	(m)			-		
RMO	Р	RM	00:00	06:00	6.00		Waited on dayli	ght to resume o	operatio	ns.	
Performar	nce Summ	ary									
					Dai	•				Cumulative Well	
				rs			%		lrs		%
Р				.0		10	0.0		2.0		100.0
Undefined			0	.0		().0	0	.0		0.0
Total			24	.0		10	0.0	19	2.0		100.0
Personnel	On Board										
	Job Title	1		Pe	ersonne		(Company		F	Pax
							ENSIGN				20
							Drillsearch				3
							3rd Party Nat				11
							Oil Industry C	atering Service			4
									Total		38





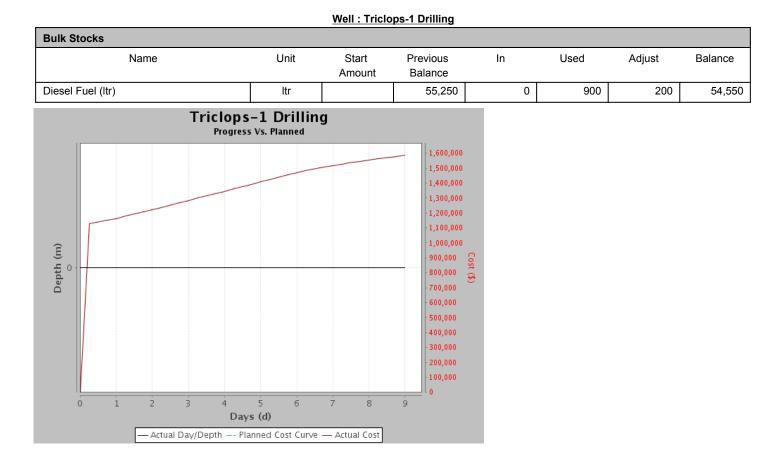
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Triclops-1	Drilling								1			
Report Nu			9	-		Representati		Ray C. Miller	Rig Manager		Dave Dough	-
Latitude (South)	141°	14' 40.40"	Night	Wellsite	Representa	tive:	Don Castles.	Drilling Comp	bany:	ENS	SIGN
Longitude	(East)	25°	59' 43.40"						Wellsite Geol	logist:		
Well Data												
Country:		Australia	Current	Hole Siz	ze:		Casing OD:		AFE Nu	umber:	OPS-13	3-015
Field:			Measur	ed Deptł	า:		Casing MD:	:	Origina	I AFE:	\$ 3,447	',294
Rig:		Ensign 918	True Ve	ertical De	epth:		Casing TVD	D:	Supp A	FE No:		
Ground Le	vel:	141.0 m	24 Hr P	rogress:			TOL MD:		Orig. &	Sup.	\$ 3,447	',294
RT to GL		5.20 m	Days O	n Well:		9.0	0 TOL TVD:		AFE:			
Plan TD (N	/ID):	2,021.0 m	Days S	ince Spu	d:	0.0	0 Lnr Shoe M	D:	Daily C	ost:	\$ 34	1,391
Plan TD (1	VD):	2,021.0 m		P Date:			Lnr Shoe T	VD:	Cum. C	Cost:	\$ 1,588	3,139
	,		FIT/LO	Г:			1		Last LT	I Date:		
									Days S	ince LTI:		
Current Op	o @ 0600:		Holding	PJSM p	rior to re	suming oper	ations.		• -			
Planned C	p:		String d	rilling lin	e. Teles	cope up the i	mast and continu	ue to rig up.				
Summary	for Period	0000 Hrs to	2400 Hrs	s on 11 J	Jan 2013	3						
Held P.ISM	A and con	tinued riggin	un Ren	aired cra	cks in M	onkey Board	. Finished overh	auling Drawwo	rks Cat motor I	nstalled or	verhauled Cat	
							d fishing tools a					
							kages afte NDT.					-).
motalieu m	g lighting, i			notalieu	Blainte							
Operation	s for Peric	od 0000 Hrs	to 2400 H	rs On 11	1 Jan 20	13						
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity Description	n		
	(RC)					(m)						
RMO	Р	RM	00:00	06:00	6.00		Waited on dayli	aht to resume o	operations.			
RMO	Р	RM	06:00	18:00	12.00		Held PJSM and	-		ed cracks	in Monkey Boa	ard.
							Finished overha	-	· ·		-	
						1 1	motor onto Drav	-				\$
						1 1	and fishing tools				-	
						1 1	collars). Installe				-	ks
							brake linkages					
RMO	Р	RM	18:00	24:00	6.00		Waited on dayli			- 5 -	. .	
Operation	s for Poric	od 0000 Hrs		re On 11	2 Jan 20	12	y	0				
•												
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		AC	tivity Description	n		
DC	(RC) P	RM	00:00	06:00	6.00		Maited on dayli	abt to require a	norationa			
PS			00.00	06:00	6.00		Waited on dayli					
Performa	nce Summ	ary										
					Dail	,				tive Well		
				rs			%		lrs		%	
Р			24	.0		1	00.0	21	6.0		100.0	
Undefined			0	.0			0.0	0	.0		0.0	
Total			24	.0		1	00.0	21	6.0		100.0	
Personne	I On Board							•				
1 croonine				Dr	mannal			Compony			Day	_
	Job Title	;		Pe	ersonnel			Company	I	ł	Pax	
							ENSIGN					21
							Drillsearch					3
							3rd Party Nat					10
							Oil Industry C	Catering Service	s			4
									Total			38







Triclops-1	Drilling										
Report Nu	mber :		10	Day V	Vellsite	Representat	ive:	Ray C. Miller	Rig Manager:	:	Dave Dougherty.
Latitude (S		141°	14' 40.40'	-		e Representa		Don Castles.	Drilling Comp		ENSIGN
Longitude	(East)	25°	59' 43.40'	-		·			Wellsite Geol	•	
Well Data				•					•		
Country:		Australia	Current	t Hole Siz	ze:		Casing OD:		AFE Nu	umber:	OPS-13-015
Field:			Measu	ed Depth	ו:		Casing MD:		Origina	AFE:	\$ 3,447,294
Rig:		Ensign 918	True Ve	ertical De	pth:		Casing TVD		Supp A	FE No:	
Ground Le	vel:	141.0 m		rogress:			TOL MD:		Orig. &		\$ 3,447,294
RT to GL		5.20 m	Days C	0		10.0			AFE:	1	, , , , -
Plan TD (N	<i>۱</i> D).	2,021.0 m	-	ince Spu	٩.	0.0		D.	Daily C	ost.	\$ 35,391
Plan TD (T		2,021.0 m	-	DP Date:	u.	0.0	Lnr Shoe T		Cum. C		\$ 1,623,530
	vD).	2,021.0111	FIT/LO					<i>v</i> D.	Last LT		ψ 1,023,330
				1.			1				
Current Or			Cantin		الثعرام مردين	flaan aan inna			Days 5	ince LTI:	
Current Op	-					floor equipm					On well in an estimation
Planned O							Istall the Riser, In	istall mouse noi	e and rat hole.	Begin Pre-	Spud inspection.
Summary	for Period	0000 Hrs to	2400 Hrs	s on 12 J	lan 201	3					
Strung drill	ling line ont	to crown and	blocks. T	elescope	ed up th	e derrick. Ra	ised the Substrue	cture. Continue	d rigging up.		
Operation	s for Perio	od 0000 Hrs	to 2400 H	rs On 12	2 Jan 2	013					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Description	n	
	(RC)					(m)					
PS	Р	RM	00:00	06:00	6.00		Waited on dayli	aht to resume c	perations.		
PS	P	RM	06:00	12:30	6.50		Held PJSM befo	•	•	ed up Mon	key Board for
	•				0.00		derrick extensio	-			-
							crown. Installed		-	-	•
PS	Р	RM	12:30	24:00	11.50			-			ntinued rigging up
	•		12.00	24.00	11.00		on drill floor. Ad				
							valves on mud l	-	to note center.	installeu i	light pressure
							valves on muu i	ine at ng noor.			
							Broke tour. Both	o orowo off until	midnight when	one erow	will come back
							on tour.	I CIEWS OII UIIIII	munight when	one crew	
Oneration	a far Daria				lan 2	042					
-		od 0000 Hrs							ii ii ta Deceminatio		
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Description	11	
	(RC)					(m)					
PS	Р	RM	00:00	06:00	6.00		[In Progress] Co				
							Standpipe. Insta			0 0	
							false floor plate	s and derrick ac	cess ladder. R	an Pason o	cables and
							instrumentation	lines. Picked u	p Kelly swivel a	ind installe	d wash pipe.
							Repaired leakin	g water line to l	Dwks. brake dru	um cooling	system. Began
							mixing spud mu	d. Installed Mu	d Riser and flov	v line. Insta	alled shock hose
							to standpipe line				
							Held Icebreake		-		
Performar	nce Summ	ary									
					Dai	ily			Cumula	tive Well	
				rs			%		rs		%
Р			24	4.0		1	00.0		0.0		100.0
Undefined			0	.0			0.0	0	.0		0.0
Total			24	1.0		1	00.0	24	0.0		100.0

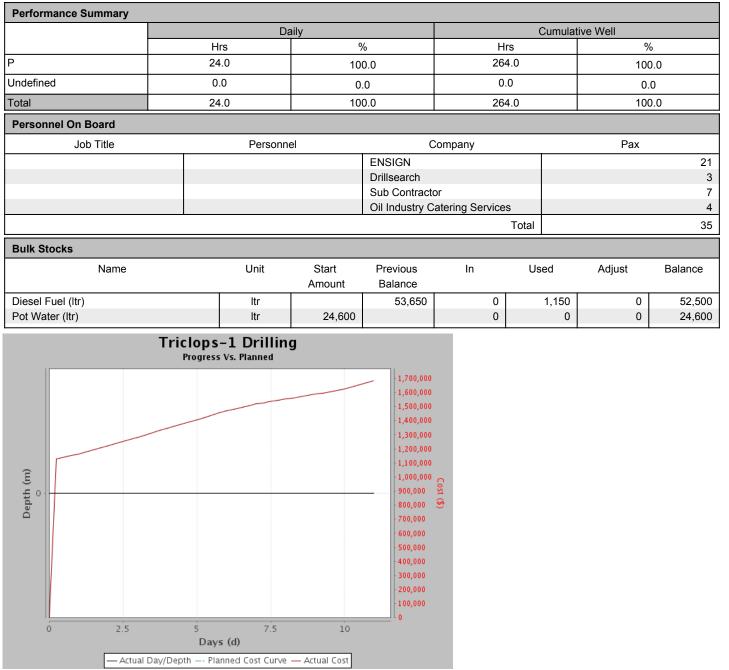






Triclops-1	I Drilling											
Report Nu Latitude (Longitude	South)		11 4' 40.40 59' 43.40	-		Representat Representa			Ray C. Miller Don Castles.	Drill	Manager: ing Company: isite Geologist:	Dave Dougherty. ENSIGN
Well Data												
Country: Field: Rig: Ground Le RT to GL Plan TD (N Plan TD (1	MD):	Australia Ensign 918 141.0 m 5.20 m 2,021.0 m 2,021.0 m	Current Measur True Ve 24 Hr P Days O Days Si Last BC FIT/LO	ed Depth rtical De rogress: n Well: nce Spu P Date:	n: epth:	11.0 0.0	I	Casing OD: Casing MD Casing TVI TOL MD: TOL TVD: Lnr Shoe M Lnr Shoe T	:): ID:		AFE Number: Original AFE: Supp AFE No: Orig. & Sup. AFE: Daily Cost: Cum. Cost: Last LTI Date: Days Since LTI:	OPS-13-015 \$ 3,447,294 \$ 3,447,294 \$ 62,146 \$ 1,685,676
Current O Planned C	-					12 1/4" bit a on and spu		oit sub, BHA	to spud in.			
Summary	for Period	d 0000 Hrs to	2400 Hrs	on 13 J	Jan 2013	·						
Completed	d rigging up).										
Operation	s for Perio	od 0000 Hrs t	o 2400 H	rs On 13	3 Jan 201	13						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)			Ac	tivity D	Description	
PS	P	RM	00:00	12:00	12.00		kill de Pic line Ins	line elbow. (rrick access sked up Kelly e to Dwks. bu stalled Mud F stalled false f	Continue dressi ladder. Ran Pas / swivel and inst rake drum coolin Riser and flow lin loor on Rig floo	ng rig son ca alled v ng sys ne. Ins	n shock hose to Sta floor . Installed false bles and instrumen wash pipe. Repaired tem. Began mixing talled shock hose to rews at 12:00 hrs.	e floor plates and tation lines. d leaking water spud mud.
PS	Р	RM	12:00	24:00	12.00		Pre drii Sc buy po to Te Re Se an sw kel su	espud Icebre Ilsearch rep's omi checking ggy onto esc orboy to muc shakers. kill st Hydromati place draw-v t pipe racks d cleaning. H ivel. Held PJ Iy and rat ho o, installed ro	eaker meeting w s completed at 2 g unit is operatio cape line at mon d tanks. Continu line, fillup line, ju ic water line on works covers, To and load joints of leld PJSM prior ISM prior to pick ole, Installed bail otary bushings	ith dril (2:30. onal. F key bo e mixi et line compl est all of 9.5// to pic sing up	ling crews, third par Continue rigging up Cun survey line and bard. Installed return ng spud mud. Instal installed on to riser etion of repairs for p ESD units, all units B" surface csg, insta king up kelly hose a b and installing kelly . Make up lower kel uct Dropped objects	 Pason cables. install Geronimo n line from lled riser, flowline r joint. possible leaks OK. shut down OK. all BHA for strap and installing to to swivel. Install ly cock and saver
Operation	s for Perio	od 0000 Hrs t	o 0600 H	rs On 14	1 Jan 20 1	13						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)			Ac	tivity D	escription	
SH	Ρ	DA	00:00	06:00	6.00		Re flov de ou	paired H2o I w line. Held I rrick. Tested t BHA compo	ine to dwks brai Ice-Breaker mee ESD to all engi	ke dru eting v nes. F	lade up kelly and ke ms. Mixed mud. Ins vith both crews. Rar inished pre-spud in de up Bit and subs	talled Riser and survey line up spection list. Laid







Triclops-1	l Drilling										
Report Nu	mber :			2 Day	Wellsite	Representa	tive: F	Ray C. Miller	Rig I	Manager:	Dave Dougherty
Latitude (South)	1	41° 14' 40.4	0" Nigh	t Wellsite	e Represent	ative:	Don Castles	Drilli	ng Company:	ENSIGN
Longitude	(East)		25° 59' 43.4	0"					Well	site Geologist:	Andrew James
Well Data											
Country:		Austr		nt Hole Si		12.250	in Casing OD:			AFE Number:	OPS-13-015
Field:				ured Dept		107.0	v v			Original AFE:	\$ 3,447,294
Rig:		Ensign		Vertical De	•	107.0		:		Supp AFE No:	
Ground Le	evel:	141.0		Progress	:	95.0				Orig. & Sup.	\$ 3,447,294
RT to GL				On Well:		12.				AFE:	
Plan TD (N	,	2,021.		Since Spu		0.	48 Lnr Shoe MI			Daily Cost:	\$ 73,789
Plan TD (1	rvd):	2,021.0		BOP Date:			Lnr Shoe T	/D:		Cum. Cost:	\$ 1,759,465
			FIT/L	DT:			/			Last LTI Date: Days Since LTI:	
Current O	p @ 0600:		I Drillin	g through	182 met	ers				Days Since LTI.	
Planned C	-						30m intervals				
Summary	for Period	d 0000 H	rs to 2400 F	rs on 14	Jan 201	3					
Completed	d rigging up	o - Condu	ict pre-spud	checks - S	Spud Tri	clops @ 12.	30hrs - Drilling ah	ead			
Operation	s for Peri	od 0000 l	Hrs to 2400	Hrs On 1	4 Jan 20)13					
PHSE	CLS	OP	P From	То	Hrs	Depth		Ac	tivity D	escription	
	(RC)					(m)	i				
SH	Р	DA	00:00	12:30	12.50			• • •	•	and kelly hose. Rep	
										led Riser and flow I n survey line up der	
										ection list. Laid out	
							-			and subs for spud i	
							meeting on rig f		ир Ыі		
SH	Р	DA	12:30	14:00	1.50		Spudded in Tric	lops 1 at 12:30	hrs. D	rilled ahead in 12 1	/4" hole from 7
							meters (being 1				
SH	Р	DA	14:00	14:45	0.75			and install elev	/ators ·	- PJSM - Picked up	2 x 8 1/2" drill
SH	Р	DA	14:45	17:00	2.25		collars. Pickup kelly - Di	rill 12-1/4" hole	from 1	5m to 35m	
SH	P	DA		17:45	0.75					- PJSM - Picked up	2 x 8 1/2" drill
							collars.		atoro		
SH	Р	DA	17:45	24:00	6.25		Pickup Kelly and	d Drill 12 1/4" h	ole fro	m 35m to 107m	
							Ran surveys @	79m and 103m	0.25 0	dea	
Operation	s for Peri	od 0000 bo	Hrs to 0600	Hrs On 1	5 Jan 20)13					
PHSE	CLS	OP		To	Hrs	Depth		Ac	tivity D	escription	
	(RC)					(m)		, 10	, 0		
SH	Р	DA		02:15	2.25		Drilling 12 1/4" h	nole from 107m	to 135	ōm	
SH	Р	SV			0.25		Run Survey # 5		-		
SH	Р	DA			1.75		Drilling 12 1/4" h			3m	
SH	P	SV			0.25		Survey # 6 @ 1		•		
SH	P	DA	04:30	06:00	1.50		Drilling 12 1/4" h	noie from 163m	to 191	IM.	
Performa	nce Summ	hary			Dei	b.					
		H		Hrs	Dai	iy	%		rs	Cumulative Well	%
P				HIS 24.0			% 100.0		8.0		
' Undefined				0.0							100.0
Undenned				0.0			0.0	0	.0		0.0



Performance S	Summary								
			Daily				Cumul	ative Well	
		Hrs		%		Hrs	3		%
Total		24.0		100.0)	288	.0		100.0
WBM Data								Cost Today:	
Mud Desc:	4KPP	API FL:		CI:	1,950	% Solids:	3.7 %	Glycol:	
Check Depth:	60.0 m	Filter-Cake:	2 /32nd"	KCI:	4.0	% H2O:	96 %	Viscosity:	38 s/qt
Time:	21:00	HTHP-FL:		Hard/Ca:	500.00 m	g/L Sand:	0.2 %	PV:	8 cP
Weight:	8.80 ppg	HTHP-Cake:		MBT:		pH:	10	YP:	4 lbf/100ft ²
Temp:	30.0 °C	HTHP-Temp:		Pm:		PHPA:	0.18 ppb	Gel 10s:	4 lbf/100ft ²
		HTHP-Press:		Pf:		Mf:		Gel 10m:	7 lbf/100ft ²
Comment:								RPM	Reading

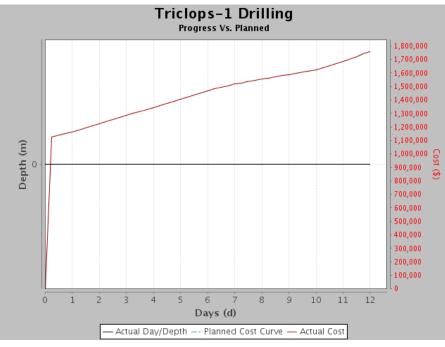
Pump	S										
				Pump d	ata - Last 2	4 Hrs				Slow Pu	np Data
No	Туре		Liner	SPM	Eff.	Flow	SPP	Depth	MW	SPM	SPP
			(in)		(%)	(galUS/min)	(psi)	(m)	(ppg)		
1	F800 Ensco		5.500	78	97		185		8.70		
2	F800 Emsco		5.500	80	97		185		8.70		
BHA #	:1						•				
BHA T	ype:				Pendulum	Total Weight Wet:					42 klb
Depth	In/Out:			12.5 r	m/766.1 m	Weight Below Jar	Wet:				32 klb
Date Ir	n/Out:	#12 (14	4 Jan 2013)	#15 (17	Jan 2013)						
Total L	.ength:				179.6 m						
BHA C	Description:	12.25"	PDC - Bit sı	ub - Teleo	drift - 1x 8" [DC - 1 x 12.25" Sta	b - 3 x 8" DC	- 1 x x/o - 1	x 6.25" Mon	el DC	
		7 x 6.2	5" DC - 1 x 6	6" Jar - 2	x 6.25" DC	- 4 x 4.5" HWDP					
BHA F	Run Comment:	Surface	e Hole asser	mbly							



BHA Daily Summa	ry									
Pickup Weight:		41 k	b Torque (max):		4 ft-lbs	D.C. (1) Ann V	elocity:		0 ft/s
Slack-Off Weight:		39 k				2 ft-lbs	D.C. (2) Ann V	elocity:		0 ft/s
String Weight:		40 k	b Torque Avg.	On Bottom:		3 ft-lbs	H.W.D.P. Ann.	•		0 ft/s
Jars Hours Logged:							D.P. Ann. Velo	city:		0 ft/s
Summary:										
BHA Component										
Equipmen	ıt		Description		Length (m)	OE (in		Serial #	ŧ	Hours
Bit		PDC Bit			0.3	9 12.	250	7032698		
Bit Sub					0.9	5 8.	500 3.062	ENS 002		
		Teledrift Sur	vey Tool		2.6	3 8.	780 2.781			
8" DC					8.8	7 8.	780 3.125			
Stab					1.3	2 8.	780 2.750	12017-0		11.50
8" DC					8.8		750 2.906	ODE 34		
8" DC					9.4		063 2.906	16376		
8" DC					9.0		875 2.844	ODE 33		
X-Over					0.7		813 2.969	XOS 18-03		
NMDC					9.1		531 2.844	JFC BT 15		
Drill Collars					63.3		219 2.938			
6 1/2" Hydraulic Jar					9.3		375 3.094	D1 004		
Drill Collar		6.1/4" DC			8.4		156 3.156	GP59		
Drill Collar		6.1/4" DC			9.3		250 3.156	29.013		
Heavy Weight		4.1/2" HWDF			37.8	2 6.	250 2.938			
Directional Data			- F				1			
Slide Time:			Rotate Time:				Circ. Time:			
Slide (%):			Rotate (%):				Circ. (%):			
Total Slide Time:		0.00		Time:		0.00 h	Total Circ. Tim	e:		0.00 h
Total Revs:			HSI:		0.0)0 hp/in ²			Nozzle	-
Bit #1 Size:	311 m	ım (12 1/4")	Гуре:		PDC	IADC #:				
Manufacturer:			/odel:		FC519	TFA:	1.052	in ² #	SIZ	e (/32nd")
			Bit Wear:	1-1-ER-S-X-I		Cost:	1.002	" <u>1</u>	(14
Serial #:		7032698				0000			(14
								1 >	(14
								1 >	(14
								1 >	(14
									(14
									(14
Bit Run Comment:									•	
Bit Wear Comment		inor erosion -in	ner cutter area							
Survey										
MD	Incl.	Corr. Az	TVD	'V' Sect		gleg	N/S	E/W	Т	ool Type
(m)	(°)	(°)	(m)	(m)	(deg	J/30m)	(m)	(m)		
33.0	0.5	0.00								
61.0	0.5	0.00								
79.0	0.5	0.00								



Formations							
Name					Top (m)		
Winton Formation							5.2
Personnel On Board							
Job Title	Personn	el	(Company		Pax	
			ENSIGN				22
			Drillsearch				5
			Sub Contract	or			8
			Oil Industry C	atering Service	S		4
					Total		39
Bulk Stocks							
Name	Unit	Start	Previous	In	Used	Adjust	Balance
		Amount	Balance			-	
Diesel Fuel (Itr)	ltr	52,500		24,700	1,250	0	75,950
Pot Water (ltr)	ltr	20,000		0	0	0	20,000





Triclops-1													
•				_					1				
Latitude (O			13	-		Representativ		ay C. Miller	Rig Mai		Dave Dougherty		
Latitude (So			14' 40.40'	0	Wellsite	Representati	ve:	Don Castles	-	Company:	ENSIGN		
Longitude (East)	25° :	59' 43.40'	'					Wellsite	e Geologist:	Andrew James		
Well Data													
Country:		Australia	Current	t Hole Siz	ze:	12.250 in	Casing OD:		A	FE Number:	OPS-13-015		
Field:				ed Depth		421.1 m	· ·			Driginal AFE:	\$ 3,447,294		
Rig:	E	Ensign 918		ertical De	pth:	421.1 m	-	:		Supp AFE No:			
Ground Leve	el:	141.0 m		rogress:		326.0 m			Drig. & Sup.	\$ 3,447,294			
RT to GL		5.20 m	Days C			13.00		_		FE:			
Plan TD (MI		2,021.0 m		ince Spu	d:	1.48				aily Cost:	\$ 73,939		
Plan TD (TV	/D):	2,021.0 m		OP Date:			Lnr Shoe TV	/D:		Cum. Cost:	\$ 1,833,404 05 Feb 2012		
			FIT/LO	1:		I	/ Last LTI Date: 05 Days Since LTI:						
Current On	@ 0000		Drilling 12.1/4" hole through 489 m								345		
Planned Op													
	Summary for Period 0000 Hrs to 2400 Hrs on 15 Jan 2013												
Drilling 12.1	/4" hole fro	m 107m to	421m with	n surveys	every 30	Эm							
Operations	for Period	1 0000 Hrs 1	to 2400 H	rs On 15	5 Jan 201	13							
PHSE													
	(RC)					(m)			, <u> </u>				
SH	Р	DA	00:00	02:15	2.25		Drilling 12 1/4" h	ole from 107m	to 135m				
SH	Р	SVY	02:15	02:30	0.25		Run Survey # 5						
SH	Р	DA	02:30	04:15	1.75		Drilling 12 1/4" h		-				
SH	Р	SVY	04:15	04:30	0.25		Survey # 6 @ 1	59m - Inc 0.5de	eg				
SH	Р	DA	04:30	06:00	1.50	[Drilling 12 1/4" h	ole from 163m	to 191m.				
SH	Р	DA	06:00	18:30	12.50	[Drilled 12 1/4" h	ole from 191m	to 354 m	eters surveying e	each 30 meters.		
							nclination rema	ined at less tha	in 1/2deg	. Ran Singleshot	at 187m, inc.		
						(0.25deg/S-60-W	/:					
								out 9.0: RPM=1	07: GPM	I=434 ROP Ave.=	=30 to 38M/hr.		
SH	Р	RS	18:30	19:00	0.50		Rig Service						
SH	Р	DA	19:00	24:00	5.00					th surveys every			
							• •			ination at less the	an 1/2deg		
							Nud wt 9.0 - Rp	m: 110 - Gpm :	435, Rop	p : 30 to 37M/hr			
Operations	for Period	1 0000 Hrs 1	to 0600 H	rs On 16	5 Jan 201	13							
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity Desc	cription			
	(RC)					(m)							
SH	Р	DA	00:00	01:00	1.00	450.1 [Drilling 12.1/4" h	ole from 421m	to 450m				
SH	Р	SVY	01:00	01:30	0.50								
SH	Р	DA	01:30	06:00	4.50	508.1 [508.1 [In Progress] Drilled ahead from 450m to 508m.						
Performanc	ce Summa	ry											
					Daily	/			Cı	umulative Well			
			Н	rs		9	6	Н	rs		%		
Р			24	4.0	.0 10		0.0	31	2.0		100.0		
Undefined			0	0.0		.0	0	.0		0.0			
				1.0			0.0	04	2.0		100.0		



WBM Data								Cost Today:	\$ 11,793
Mud Desc:	4KPP	API FL:		CI:		Solids:		Glycol:	
Check Depth:	361.0 m	Filter-Cake:	2 /32nd"	KCI:	4.0 %	H2O:	94 %	Viscosity:	40 s/qt
Time:	20:00	HTHP-FL:		Hard/Ca:		Sand:	1.5 %	PV:	4 cP
Weight:	8.90 ppg	HTHP-Cake:		MBT:		pH:	9	YP:	23 lbf/100ft ²
Temp:	31.0 °C	HTHP-Temp:	31.0 °C	Pm:	0.14 m³	PHPA:	0.15 ppb	Gel 10s:	5 lbf/100ft ²
		HTHP-Press:		Pf:	0.25	Mf:	0.80 m³	Gel 10m:	7 lbf/100ft ²
Comment:								RPM	Reading

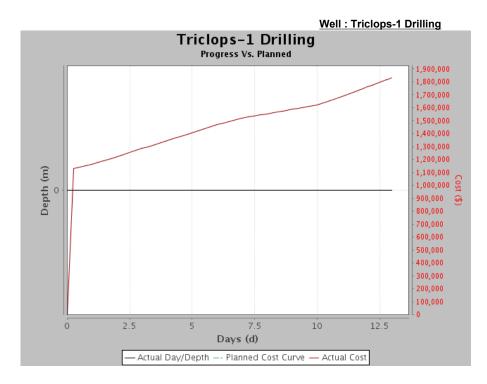
Pump	s										
			Pump d	ata - Last 2	4 Hrs				Slow Pu	mp Data	
No	Туре	Liner	SPM	Eff.	Flow	SPP	Depth	MW	SPM	SPP	
		(in)		(%)	(galUS/min)	(psi)	(m)	(ppg)			
1	F800 Ensco	5.50	0 80	97		220		9.00			
2 F800 Emsco 5.500 82 97 220 9.00											
BHA #	! 1			·		·		· · ·			
BHA T	ype:			Pendulum	Total Weight Wet:					42 klb	
Depth	In/Out:		12.5	m/766.1 m	Weight Below Jar	Wet:				32 klb	
Date Ir	n/Out:	#12 (14 Jan 20	13)/#15 (17	Jan 2013)							
Total L	ength:			179.6 m							
BHA D	BHA Description: 12.25" PDC - Bit sub - Teledrift - 1x 8" DC - 1 x 12.25" Stab - 3 x 8" DC - 1 x x/o - 1 x 6.25" Monel DC										
	7 x 6.25" DC - 1 x 6" Jar - 2 x 6.25" DC - 4 x 4.5" HWDP										
BHA F	HA Run Comment: Surface Hole assembly										



BHA Daily Summary										
Pickup Weight:	69	klb To	orque (max):		3 ft-lbs	D.C	. (1) Ann Ve	locity:		2 ft/s
Slack-Off Weight:	67	klb To	orque Avg. Off Bottom:		2 ft-lbs	D.C	. (2) Ann Ve	locity:		2 ft/s
String Weight:	67	klb To	orque Avg. On Bottom:		3 ft-lbs	H.W	/.D.P. Ann. \	Velocity:		1 ft/s
Jars Hours Logged:	22.0	00 h				D.P	. Ann. Veloc	ity:		1 ft/s
Summary:										
BHA Component										
Equipment		De	escription	Length	n Ol	D	ID	Seria	al #	Hours
				(m)	(ii	ר)	(in)			
Bit	PDC Bit			0.3	39 12	.250		7032698		
Bit Sub				0.9	95 8	.500	3.062	ENS 002		
	Teledrift St	urvey To	ol	2.0	63 8	.780	2.781			
8" DC				8.8	37 8	.780	3.125			
Stab				1.3	32 8	.780	2.750	12017-0		11.50
8" DC				8.8	34 7	.750	2.906	ODE 34		
8" DC				9.4	13 8	.063	2.906	16376		
8" DC				9.0	03 7	.875	2.844	ODE 33		
X-Over				0.1	74 7	.813	2.969	XOS 18-0)3	
NMDC				9.1	18 6	.531	2.844	JFC BT 1	5	
Drill Collars				63.3	34 6	.219	2.938			
6 1/2" Hydraulic Jar				9.3	31 6	.375	3.094	D1 004		
Drill Collar	6.1/4" DC			8.4	16 6	.156	3.156	GP59		
Drill Collar	6.1/4" DC			9.3	30 6	.250	3.156	29.013		
Heavy Weight	4.1/2" HWI	DP		37.8	32 6	.250	2.938			
Directional Data										
Slide Time:		R	otate Time:			Circ	. Time:			
Slide (%):		R	otate (%):			Circ	:. (%):			
Total Slide Time:	0.0	00 h To	otal Rotate Time:		0.00 h	Tota	al Circ. Time	:		0.00 h
Total Revs:	113 Kr	evs H	SI:	0	36 hp/in ²					
Bit #1									Noz	zles
Size:	311 mm (12 1/4")	Type:		PDC	IADC #			#		Size (/32nd")
Manufacturer:	BHI (Hughes	Model:		FC519	TFA:		1.052 in	1 ² 1	x	14
	Christensen)	Bit We	ar: 1-1-ER-S	S-X-I-ER-TD	Cost:		:	\$		
Serial #:	7032698							1	х	14
								1	х	14
								1	х	14
								1	х	14
								1	х	14
								1	х	14
Bit Run Comment:					·					
Bit Wear Comment:	Minor erosion -	inner cu	itter area							



Drilling Param	neters								
BHA Run #1									
Top Depth:				12.5 m	PWD ECD:				9.00 kg/m³
Bottom Depth:		i		421.1 m					
			Min			Avg		Max	
Flow			426 galUS/	/min		3 galUS/min		445 galUS/	
Surface RPM			100 rpm	า		100 rpm		100 rpn	ו
Downhole RPN	Ν		100 rpm	า		100 rpm		100 rpn	ı
Pressure			424 psi	i		489 psi		554 psi	
Torque			2 ft-lbs			2 ft-lbs		2 ft-lbs	
WOB			4 klbs			9 klbs		14 klbs	
ROP			15.50 m/	/h	2	0.63 m/h		16.00 m/	'n
Survey									
MD	Incl.	Corr. Az	TVD	'V' S	ect Do	ogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)) (r	n) (de	g/30m)	(m)	(m)	
105.0	0.5	0.00							
137.0	0.5	240.00							тотсо
159.0	0.5	0.00							
187.0	0.5	0.00							
216.0	0.5	0.00							
244.0	0.5	0.00							
273.0	0.5	0.00							
303.0	0.5	0.00							
330.0	0.5	0.00							
360.0	0.5	0.00							
398.0	0.5	335.00							тотсо
417.1	0.5	0.00							
Formations					-		-		
		Name					Top (m)		
Winton Format	lion								5.2
Personnel On	Board								
Jo	ob Title		Personne	el	0	Company		Pax	
					ENSIGN				22
					Drillsearch				5
					Sub Contract	or			9
					Oil Industry C	atering Service	es		4
							Total		40
Bulk Stocks									
	Name		Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fuel (Itr)		ltr		75,950	0	2,250	-6,800	66,900
Pot Water (Itr)			ltr		20,000	10,500	0	0	30,500





Triclops-	1 Drilling										
Report Nu	Imber :		14	Day \	Nellsite	Representa	ative:	Ray C. Miller	Rig N	Manager:	Dave Dougherty
Latitude (South)	141°	14' 40.40'	Night	Wellsit	e Represen	tative:	Don Castles	Drillin	ng Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'						Wells	site Geologist:	Andrew James
Well Data	l										
Country:		Australia	Current	Hole Siz	ze:	12.250) in C	asing OD:		AFE Number:	OPS-13-015
Field:			Measu	ed Depti	n:	672.1	1 m C	asing MD:		Original AFE:	\$ 3,447,294
Rig:		Ensign 918	True Ve	ertical De	epth:	672.1	Im C	asing TVD:		Supp AFE No:	
Ground Le	evel:	141.0 m	24 Hr F	rogress:		251.0) m T(OL MD:		Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C	n Well:		14	.00 то	OL TVD:		AFE:	
Plan TD (I	MD):	2,021.0 m	Days S	ince Spu	d:	2	.48 Lr	nr Shoe MD:		Daily Cost:	\$ 85,369
Plan TD (TVD):	2,021.0 m	Last BC	OP Date:			Lr	nr Shoe TVD:		Cum. Cost:	\$ 1,918,773
			FIT/LO	T:			1			Last LTI Date:	05 Feb 2012
										Days Since LTI:	346
	p @ 0600:		-	through							
Planned C	Dp:			1/4"hole	to secti	on TD - Circ	culate h	ole clean - Spot High Vis	mud pi	II - Check trip -Pull	out to run 9.5/8"
			csg.								
-	Summary for Period 0000 Hrs to 2400 Hrs on 16 Jan 2013										
Drilling 12	.1/4" hole fr	rom 421m to	672m with	n surveys	S.						
Operation	ns for Peric	od 0000 Hrs	to 2400 H	rs On 10	6 Jan 20)13					
PHSE CLS OP From To Hrs Depth Activity Description (RC) (m)											
SH	Р	DA	00:00	01:00	1.00	450.1	Drillin	g 12.1/4" hole from 421n	n to 450)m	
SH	Р	SVY	01:00	01:30	0.50	450.1		Single Shot Survey at 39			
SH	Р	DA	01:30	08:00	6.50	508.1	Drille	d ahead from 450m to 50	8m.	-	
SH	Р	CMD	08:00	08:45	0.75	508.1		rift recorder malfunctione y at 455m.	ed. Circ	ulated before runni	ng Single Shot
SH	Р	SVY	08:45	09:00	0.25	508.1		Single Shot Survey at 45 I D/C) 0.5deg. N 20 W.	ōm. (be	ing depth of survey	instrument in
SH	Р	DA	09:00	12:00	3.00	537.1	MW	d ahead from 508m to 53 in 8.9 MW out 9.0 RPM= Pump Psi.= 515.		PM=434: ROP avg.	=10m to 15m
SH	Р	DA	12:00	24:00	12.00	672.1		g 12.1/4" hole from 537n	n to 672	2m	
OIT	'	DA	12.00	24.00	12.00	072.1		0.1 - Vis : 43 - Rpm: 140			
								rift Surveys @ 535m - 59	•		ding 0.5 Deg
Operation	ns for Perio	od 0000 Hrs	to 0600 H	rs On 17	7 Jan 20	013					<u> </u>
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity D	escription	
	(RC)	1				(m)	-		-	-	
SH	Р	DA	00:00	06:00	6.00	730.1	[In Pr	ogress] Drilled 12 1/4" ho	ble from	672m to 730m.	
Performa	nce Summ	ary									
					Dai	ly				Cumulative Well	
				rs			%		Irs		%
Р			24	1.0			100.0	33	36.0		100.0
Undefined			0	.0			0.0	(0.0		0.0
Total			24	1.0			100.0	33	36.0		100.0
General C	Comments	for Period 0	000 Hrs t	o 2400 H	Irs on 1	6 Jan 2013	;				
C	Category							Comments			
General C	omment	Hall	iburton C	ementers	s and ce	menting eq	uipment	arrived on site at 14:45	hrs.		



WBM Data								Cost Today:	\$ 17,866
Mud Desc:	4KPP	API FL:		CI:	43,000 %	Solids:	7.8 %	Glycol:	
Check Depth:	614.1 m	Filter-Cake:	2 /32nd"	KCI:	4.0 %	H2O:	92 %	Viscosity:	44 s/qt
Time:	20:00	HTHP-FL:		Hard/Ca:		Sand:	2.0 %	PV:	6 cP
Weight:	9.10 ppg	HTHP-Cake:		MBT:		pH:	10	YP:	25 lbf/100ft ²
Temp:	31.0 °C	HTHP-Temp:		Pm:		PHPA:	1.00 ppb	Gel 10s:	8 lbf/100ft ²
		HTHP-Press:		Pf:	0.15	Mf:	0.60 m³	Gel 10m:	10 lbf/100ft ²
Comment:				-				RPM	Reading

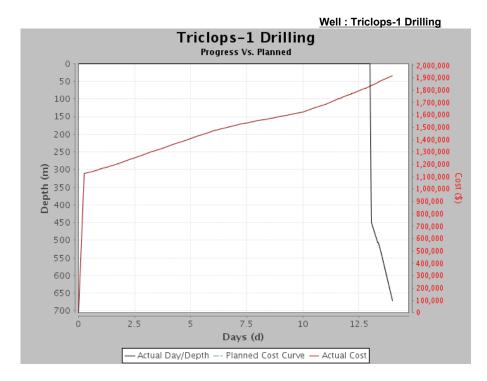
Pump	s										
				Pump da	ata - Last 2	4 Hrs				Slow Pu	mp Data
No	Туре		Liner	SPM	Eff.	Flow	SPP	Depth	MW	SPM	SPP
			(in)		(%)	(galUS/min)	(psi)	(m)	(ppg)		
1	F800 Ensco		5.500	82	97		250		9.10		
2 F800 Emsco 5.500 82 97 250 9.10											
BHA #	ž1										
BHA T	уре:				Pendulum	Total Weight Wet:					42 klb
Depth	In/Out:			12.5 n	n/766.1 m	Weight Below Jar	Wet:				32 klb
Date I	n/Out:	#12 (14 J	Jan 2013)/	#15 (17	Jan 2013)						
Total L	_ength:				179.6 m						
BHA [BHA Description: 12.25" PDC - Bit sub - Teledrift - 1x 8" DC - 1 x 12.25" Stab - 3 x 8" DC - 1 x x/o - 1 x 6.25" Monel DC										
	7 x 6.25" DC - 1 x 6" Jar - 2 x 6.25" DC - 4 x 4.5" HWDP										
BHA F	HA Run Comment: Surface Hole assembly										



BHA Daily Summary											
Pickup Weight:	83	klb	Torque (max):		3 ft-	-lbs	D.C. (1) Ann Ve				2 ft/s
Slack-Off Weight:	77	klb	Torque Avg. Off Bottom:			-lbs	D.C. (2) Ann Ve	elocity:			2 ft/s
String Weight:	80	klb	Torque Avg. On Bottom:		2 ft-	-lbs	H.W.D.P. Ann.	Velocity:			1 ft/s
Jars Hours Logged:	24.0	0 h					D.P. Ann. Velo	city:			1 ft/s
Summary:											
BHA Component											
Equipment			Description	Length	I	OD	ID	Sei	ial #		Hours
				(m)		(in)	(in)				
Bit	PDC Bit			0.3	39	12.2	:50	7032698	}		
Bit Sub				0.9	95	8.5	3.062	ENS 002	2		
	Teledrift Su	urvey	Tool	2.6	63	8.7	80 2.781				
8" DC				8.8	37	8.7	80 3.125				
Stab				1.3	32	8.7	80 2.750	12017-0			11.50
8" DC				8.8	34	7.7	2.906	ODE 34			
8" DC				9.4	13	8.0	63 2.906	16376			
8" DC				9.0)3	7.8	2.844	ODE 33			
X-Over				0.7			2.969	XOS 18-		_	
NMDC				9.1		6.5		JFC BT	15		
Drill Collars				63.3		6.2				_	
6 1/2" Hydraulic Jar				9.3			3.094	D1 004			
Drill Collar	6.1/4" DC			8.4			56 3.156	GP59		_	
Drill Collar	6.1/4" DC			9.3			3.156	29.013			
Heavy Weight	4.1/2" HWI	76		37.8	32	6.2	2.938				
Directional Data											
Slide Time:			Rotate Time:				Circ. Time:				
Slide (%):			Rotate (%):				Circ. (%):				
Total Slide Time:		0 h	Total Rotate Time:			00 h	Total Circ. Time	9:			0.00 h
Total Revs:	111 Kr	evs	HSI:	0.	36 hp	o/in²					
Bit #1									No	zzles	
Size:	311 mm (12 1/4")	Туре		PDC)C #:		#		Size	(/32nd")
Manufacturer:	BHI (Hughes	Mod		FC519	TFA		1.052 i	1 1	х		14
	Christensen)	Bit V	Vear: 1-1-ER-S	S-X-I-ER-TD	Cos	st:		\$ 1	x		14
Serial #:	7032698										
								1	Х		14
								1	Х		14
								1	х		14
								1	х		14
								1	х		14
Bit Run Comment:											
Bit Wear Comment:	Minor erosion -	inner	cutter area								



Drilling Parame	eters											
BHA Run #1												
Top Depth:				12.5 m	PWD ECD:					14.92 kg/m³		
Bottom Depth:				672.1 m								
	Min					Avg			Max			
Flow			418 galUS/m	nin	43	0 galUS/mi	n	442 galUS/min				
Surface RPM			115 rpm			129 rpm			142 rpr			
Downhole RPM			115 rpm			129 rpm		142 rpm				
Pressure			456 psi			523 psi			589 ps			
Torque			1 ft-lbs			2 ft-lbs			2 ft-lbs			
WOB			1 klbs			2 klbs			3 klbs			
ROP			1.00 m/h			27.48 m/h			55.00 m	/h		
Survey												
MD	Incl.	Corr. Az	TVD	'V' S	ect D	ogleg	N/S		E/W	ТооІ Туре		
(m)	(°)	(°)	(m)	(n	n) (de	eg/30m)	(m)		(m)			
137.0	0.3	240.00	0.0				0.0		0.0	тотсо		
398.0	0.5	355.00	261.0	0.3	312	1.767	0.3		-0.6	тотсо		
446.1	0.5	0.00										
455.0	0.5	340.00	318.0	0.8	353	1.152	0.9		-0.2	тотсо		
455.1	0.5	340.00								тотсо		
477.1	0.5	0.00										
535.1	0.5	0.00										
593.1	0.5	0.00										
624.1	0.5	0.00										
624.1	1.0	0.00										
652.1	0.5	0.00										
652.1	1.0	0.00										
680.1	0.8	375.00								тотсо		
Formations		•		·	· ·				·			
		Name			Top (m)							
Winton Formation	on									5.2		
Mackunda Form										641.5		
Personnel On I	Board											
Jo	b Title		Personnel			Company		Pax				
					ENSIGN					22		
					Drillsearch					5		
				Sub Contrac		8						
				Oil Industry	Catering Se	4						
							Total			39		
Bulk Stocks												
	Name		Unit	Start Amount	Previous Balance	In	U	sed	Adjust	Balance		
Diesel Fuel (Itr)			ltr		66,900		0	2,950	0	63,950		
Pot Water (Itr)			ltr		30,500		0	0	0	30,500		





Triclops-1	Drilling						-								
Report Nur	mber :		15	5 Day \	Vellsite F	Representa	tive:	Ray C. Miller	Rig	Manager:	Dave Dougherty				
Latitude (S	South)	141°	14' 40.40" Night Wellsite Representa					e: Don Castles	ing Company:	ENSIGN					
Longitude	(East)	25° ;	59' 43.40'	•					Well	site Geologist:	Andrew James				
Well Data															
Country:		Australia	Current	t Hole Siz	ze:	12.250	in	Casing OD:		AFE Number:	OPS-13-015				
Field:			Measu	red Depth	า:	766.1	m	Casing MD:		Original AFE:	\$ 3,447,294				
Rig:		Ensign 918	True Ve	ertical De	epth:	766.1	m	Casing TVD:		Supp AFE No:					
Ground Le	vel:	141.0 m	24 Hr F	rogress:		94.0	m	TOL MD:		Orig. & Sup.	\$ 3,447,294				
RT to GL		5.20 m		n Well:		15.	00	TOL TVD:		AFE:					
Plan TD (N	1D):	2,021.0 m		ince Spu	d:		48	Lnr Shoe MD:		Daily Cost:	\$ 65,221				
Plan TD (T	,	2,021.0 m		DP Date:				Lnr Shoe TVD:		Cum. Cost:	\$ 1,983,994				
- (,	,	FIT/LO				1			Last LTI Date:	05 Feb 2012				
										Days Since LTI:	347				
Current Op	@ 0600:		Runnin	g surface	casing										
Planned O	-			-	-	g - Land ca	asino	g on landing plate after spaci	ng out	- Circulate hole cor	ntent - Cement				
			casing			<u> </u>			<u> </u>						
Summary	for Period	1 0000 Hrs to	2400 Hrs	s on 17 J	lan 2013										
Drill 12.1/4	" hole to 76	66m - Circula	te hole cl	ean - Pul	l out of h	ole to run 9	9.5/8	s" casing							
Operations for Period 0000 Hrs to 2400 Hrs On 17 Jan 2013															
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity D	escription					
	(RC)					(m)			-						
SH	Р	DA	00:00	07:45	7.75	730.1	Dr	Drilled 12 1/4" hole from 672m to 730m.							
SH	Р	CMD	07:45	08:00	0.25	730.1	Circulated bottoms up prior to running Single Shot survey on wire line.								
SH	Р	SVY	08:00	08:15	0.25	730.1		an Single Shot survey on wir							
SH	Р	DA	08:15	10:30	2.25	730.1	Drilled from 730meters to 740 meters.								
SH	P	RW	10:30	11:30	1.00	740.1	Reamed ledge from 733.4m to 734m. Unable to pass the ledge with								
							rotation. Finally made a connection and rotated past the ledge with 5k								
							W	OB and rotated with the Kelly	y Spini	ner.					
SH	Р	DA	11:30	14:30	3.00	766.1	Drilled ahead from 740 meters to 766 meters, being hole section TE								
							in	9.1 MW out 9.0: RPM=152:	GPM=	462: ROP ave.=10:	Pump Psi.=633.				
SH	Р	CMD	14:30	15:15	0.75	766.1	Ρι	umped a 10 barrel high visco	sity slu	ug and circulated the	e hole twice until				
								ean at the Shakers prior to p	-	-					
SH	Р	RS	15:15	15:45	0.50	766.1									
SH	Р	CCMD	15:45	16:00	0.25	766.1	Ci	- rculate and pumped 25Bbl o	f Hi Vis	s mud and spot on b	oottom				
SH	Р	CCMD	16:00	16:30	0.50	766.1		un wire line deviation survey							
SH	Р	то	16:30	19:00	2.50	766.1		DOH from 758m to 180m	•	Ū					
SH	Р	REPR	19:00	20:30	1.50	766.1		epair elevators - Retainer pin	s not ł	nolding main pin in p	place.				
SH	Р	то	20:30	21:45	1.25	766.1		ontinue trip-out of hole from '							
-		_			-			Indling and layout of drill coll							
SH	Р	то	21:45	24:00	2.25	766.1		DOH from 42m to surface lay		wn 4ea 8" DC - 1 x	12 1/4" stab - Bit				
					0			b - 12.1/4" bit							
								ear drill floor and prepare for	riaain	a down flow line.					
Operation	s for Peric	od 0000 Hrs 1	o 0600 H	lrs On 18	3 Jan 201	13	<u> </u>			<u> </u>					
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity D	escription					
	(RC)	. .				(m)		7.0							
SH	P	RRC	00:00	00:30	0.50	766.1	Co	omplete clearing rig floor of a	ll non	required equipment	for casing run.				
SH	Р	RRC	00:30	03:00	2.50	766.1		ISM - Nipple down Dresser s			-				
								Riser joint and Flow line							
								pple down Flowline and rem	ove ris	er pipe from cellar	Prep out cellar				
								ea and cut off conductor pipe							
								abbing board, Install 9.5/8" c	-						
									Joing						

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Mud Desc: 4KPP API FL: Cl: 35,500 % Solids: 5.8 % Glycol: Check Depth: 766.1 m Filter-Cake: 2 / 32nd" KCl: 3.3 % H2O: 94 % Viscosity: 49 s. Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 15 d. Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/100							vve		ciops-i Drilling										
OK, makeup Float collar and joint #2., (Thread locked connections), Filled with mud and checked float funtion - OK - Installed Bow centralizers as per programme. Continue running 9.5/8" Surface casing Performance Summary Daily Cumulative Well Hrs % Hrs % P 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 0.0 0.0 VBM Data Cost Today: \$ 3.0 Mud Desc: 4 KPP API FL: Cl: 35,500 % Solids: 5.8 % Glycol: Time: 20:00 HTHP-FL: Cl: 35,500 % Solids: 5.8 % Glycol: 49 s Time: 20:00 HTHP-FL: Cl: 35,500 % Solids: 5.8 % Glycol: 49 s Time: 20:00 HTHP-FL: Cl: 35,500 % Solids: 5.8 % Glycol: 49 s Time: 20:00 HTHP-FL: Cl: 3.3 % H2C: 9.4 % Viscosity: 49 s Temp: 43.0 °C HTHP-Temp: PH: 0.10 m² PHA: 1.00 pb Gel 1	SH	Р	RF	RC 03:00 03:30 0.50			0 7	766.1								fety related			
Filled with mud and checked float funtion - OK - Installed Bow centralizers as per programme. Continue running 9.5/8" Surface casing Performance Summary Performance Summary Cumulative Well Hrs % Hrs % P 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 0.0 Total 24.0 100.0 360.0 Undefined 0.0 0.0 0.0 MBM Data Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Cost Today: \$ 3.0 Time: 20.00 <th c<="" td=""><td>SH</td><td>Р</td><td>R</td><td colspan="4">G 03:30 06:00 2.50</td><td>766.1</td><td colspan="9">[In Progress] Pick up Shoe joint fill with mud and check float function -</td></th>	<td>SH</td> <td>Р</td> <td>R</td> <td colspan="4">G 03:30 06:00 2.50</td> <td>766.1</td> <td colspan="9">[In Progress] Pick up Shoe joint fill with mud and check float function -</td>	SH	Р	R	G 03:30 06:00 2.50				766.1	[In Progress] Pick up Shoe joint fill with mud and check float function -									
Verformance Summary Daily Cumulative Well Hrs % Hrs % P 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 0.0 0.0 Total 24.0 100.0 360.0 100.0 0.0 Well Cost Today: \$ 3.0 \$ 3.0 100.0 100.0 WB Data Ci: 35.500 % Solids: 5.8 % Glycol: Cfext Dopth: 5.8 % Glycol: 4.8 % Viscosity: 49 s 100.0 Mud Desc: 4KPP API FL: CI: 35.500 % Solids: 5.8 % Glycol: Cfext Dopth: 7.6 in Filter-Cake: 2/32nd* KCI: 3.3 % H2O: 9.4 % Viscosity: 49 s Hard/Ca: 1.600.00 mg/L Sand: 1.5 % PV: 15 Weight: 8.90 ppg HTHP-FL: MBT: PH: 10 YP: 25 lob/100 Temp: 43.0 °C HTHP-Temp: Pm: 0									OK , makeup F										
Performance Summary Daily Cumulative Well Hrs % P 24.0 100.0 360.0 Undefined 0.0 0.0 0.0 Total 24.0 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 WBM Data Cost Today: \$ 3.0 Mud Desc: 4KPP API FL: Check Depth: 766.1 m Filter-Cake: 2 /32nd* KCI: 3.3 % H2O: 94 % Viscosity: 49 s Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 95 bif/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m² PHPA: 1.00 m² Gel 10m: Hard/Ca: 9.20 Mf: 1.00 m² Gel 10m: 14 lbf100 Comment: RPM Pumps Sl									Filled with mud	and ch	ecked	I float funtion	n - Ol	K - Insta	alled Bow	centralizers			
Daily Cumulative Well Hrs % Hrs % P 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 0.0 0.0 Total 24.0 100.0 360.0 100.0 0.0 Well 24.0 100.0 360.0 100.0 0.0 Mud Desc: 4KPP API FL: CI: 35.500 % Solids: 5.8 % Glycol: Check Depth: 766.1 m Filter-Cake: 2 /32nd" KCI: 3.3 % H2O: 94 % Viscosity: 49 s Time: 20:00 HTHP-FL: MBT: pH: 10 YP: 25 lbf/10C Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/10C Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/10C Comment: Pump data - Last 24 Hrs Slow Pump Data Slow Pump Data Slow Pump									as per program	ime. Co	ntinue	e running 9.8	5/8" ;	Surface casing					
Hrs % Hrs % P 24.0 100.0 360.0 100.0 Undefined 0.0 0.0 0.0 0.0 Total 24.0 100.0 360.0 100.0 WBM Data 24.0 100.0 360.0 100.0 Mud Desc: 4KPP API FL: CI: 35,500 % Solids: 5.8 % Glycol: Check Depth: 766.1 m Filter-Cake: 2 /32nd" KCI: 3.3 % H2O: 94 % Viscosity: 49 s Time: 20.00 HTHP-FL: MBT: pH: 10 YP: 25 lbf/100 Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/10C Comment: Pump data - Last 24 Hrs Slow Pump Data Slow Pump Data Slow Pump Data No Type Liner SPM Eff. F	Performance Summary																		
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Undefined 0.0 0.0 0.0 0.0 0.0 Total 24.0 100.0 360.0 100.0 WBM Data Cost Today: \$ 3,0 Mud Desc: 4KPP API FL: CI: 35,500 % Solids: 5.8 % Glycol: Check Depth: 766.1 m Filter-Cake: 2 /32nd* KCI: 3.3 % H2O: 94 % Viscosity: 49 s Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 15 r Weight: 8.90 pp HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m ³ PHPA: 1.00 pb Gel 10s: 10 lbf/100 Comment: Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPP 1 F800 Ensco 5.500 90 </td <td></td> <td></td> <td></td> <td></td> <td>Hrs</td> <td></td> <td></td> <td></td> <td>%</td> <td></td> <td></td> <td>Hrs</td> <td></td> <td></td> <td>%</td> <td></td>					Hrs				%			Hrs			%				
Total 24.0 100.0 360.0 100.0 WBM Data Cost Today: \$ 3,0 Mud Desc: 4KPP API FL: Cl: 35,500 % Solids: 5.8 % Glycol: Check Depth: 766.1 m Filter-Cake: 2 / 32nd" KCI: 3.3 % H2O: 94 % Viscosity: 49 s. Time: 20:00 HTHP-FL: MBT: pH: 10 YP: 25 lbf/100 Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/100 Comment: Pump data - Last 24 Hrs RPM Reading Viscosity: (in) CP Glouly/min (psi) (m) (ppg) I F800 Ensco 5.500 90 97 261 9.10 9.10	Р			24.0					100.0			360.0			100	.0			
WBM Data Cost Today: \$ 3,0 Mud Desc: 4KPP API FL: Cl: 35,500 % Solids: 5.8 % Glycol: 4000000000000000000000000000000000000	Undefine	ed			0.0				0.0			0.0			0.0				
Mud Desc: 4KPP API FL: Cl: 35,500 % Solids: 5.8 % Glycol: 49 s. Check Depth: 766.1 m Filter-Cake: 2 /32nd" KCl: 3.3 % H2O: 94 % Viscosity: 49 s. Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 15 % Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Prm: 0.10 m³ PHPA: 1.00 pb Gel 10s: 10 lbf/100 MTHP-Press: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Comment: Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPM SPP (in) (%) (galUS/min) (psi) (m) (ppg) SPM SPP	Total				24.0 100.0							360.0			.0				
Check Depth: 766.1 m Filter-Cake: 2 /32nd" KCI: 3.3 % H2O: 94 % Viscosity: 49 s. Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 15 % Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 pb Gel 10s: 10 lbf/100 MET: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Comment: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 MBT: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Comment: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 MO Type Liner SPM Eff. Flow SPP Depth MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10 Im Im	WBM Data Cost Today:								\$ 3,075										
Time: 20:00 HTHP-FL: Hard/Ca: 1,600.00 mg/L Sand: 1.5 % PV: 15 % Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/100 Comment: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Pumps Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPP 1 F800 Ensco 5.500 90 97 261 9.10 0	Mud Desc):	4KPP	API FL:			CI:	:	35	5,500 %	Solids:	5	5.8 %	Glycol:					
Weight: 8.90 ppg HTHP-Cake: MBT: pH: 10 YP: 25 lbf/100 Temp: 43.0 °C HTHP-Temp: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/100 Comment: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Pumps Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10 0 0	Check De	pth:	766.1 m	Filter-Cak	ke:	2 /3	2nd" KC	CI:		3.3 %	H2O:		94 %	Viscosity	/:	49 s/qt			
Temp: 43.0 °C HTHP-Temp: HTHP-Press: Pm: 0.10 m³ PHPA: 1.00 ppb Gel 10s: 10 lbf/100 Comment: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Pumps Pump data - Last 24 Hrs Slow Pump Data No Type Liner (in) SPM Eff. (%) Flow (galUS/min) SPP Depth (m) MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10 1	Time:		20:00	HTHP-FL	.:		На	ard/Ca:	1,600.0	00 mg/L	Sand:	1	.5 %	PV:		15 cP			
HTHP-Press: Pf: 0.20 Mf: 1.00 m³ Gel 10m: 14 lbf/100 Comment: Pumps Pumps Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPP SPP 1 F800 Ensco 5.500 90 97 261 9.10 1	Weight:		8.90 ppg	HTHP-Ca	ake:		ME	BT:			pH:		10	YP:		25 lbf/100ft ²			
Comment: RPM Reading Pumps Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPP SPP 1 F800 Ensco 5.500 90 97 261 9.10	Temp:		43.0 °C	HTHP-Te	emp:		Pm	n:		0.10 m³	PHPA:	1.00) ppb	Gel 10s:		10 lbf/100ft ²			
Pumps Slow Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10				HTHP-Pre	ess:		Pf:	:		0.20	Mf:	1.0	00 m³	Gel 10m	:	14 lbf/100ft ²			
Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10	Comme	nt:												R	PM	Reading			
Pump data - Last 24 Hrs Slow Pump Data No Type Liner SPM Eff. Flow SPP Depth MW SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10																			
No Type Liner (in) SPM (%) Eff. (galUS/min) Flow (psi) SPP (m) Depth (ppg) MW (ppg) SPM SPP 1 F800 Ensco 5.500 90 97 261 9.10	Pumps	;																	
(in) (%) (galUS/min) (psi) (m) (ppg) 1 F800 Ensco 5.500 90 97 261 9.10		Pump data - Last 24 Hrs													Slow F	ump Data			
1 F800 Ensco 5.500 90 97 261 9.10	No		Туре		Liner	SPM	Eff	f.	Flow	SP	Р	Depth	Ν	٨W	SPM	SPP			
					(in)		(%)	(galUS/min)	(ps	i)	(m)	(p	pg)					
2 F800 Emsco 5.500 90 97 261 9.10	1	F800 Ensc	0		5.500	90		97			261			9.10					
	2	F800 Emso	0		5.500	90		97			261			9.10					

BHA #1										
BHA Type:		I	Pendulum	Total Weight Wet:					42 klb	
Depth In/Out:					32 klb					
Date In/Out:	#12 (14 Jan 2013)	/#15 (17 .	Jan 2013)							
Total Length:			179.6 m							
BHA Description:	12.25" PDC - Bit si	12.25" PDC - Bit sub - Teledrift - 1x 8" DC - 1 x 12.25" Stab - 3 x 8" DC - 1 x x/o - 1 x 6.25" Monel DC								
	7 x 6.25" DC - 1 x 6" Jar - 2 x 6.25" DC - 4 x 4.5" HWDP									
BHA Run Comment:	Surface Hole assembly									

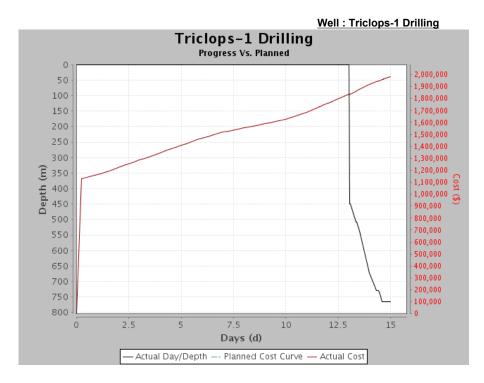


BHA Daily Summary												
Pickup Weight:	90	klb [.]	Torque (max):		3,1	100 ft-lb	s D.C	. (1) Ann Ve	elocity:			2 ft/s
Slack-Off Weight:	86	klb '	Torque Avg. Off I	Bottom:	2,2	200 ft-lb		. (2) Ann Ve				2 ft/s
String Weight:	88	klb '	Torque Avg. On I	Bottom:	2,5	500 ft-lb	s H.W	.D.P. Ann.	Velocity:			1 ft/s
Jars Hours Logged:	14.5	0 h					D.P	. Ann. Veloc	city:			1 ft/s
Summary:												
BHA Component												
Equipment		[Description		Length		OD	ID	Seri	al #		Hours
					(m)		(in)	(in)				
Bit	PDC Bit				0.3	· 98	12.250		7032698			
Bit Sub					0.9	95	8.500	3.062	ENS 002			
	Teledrift Su	irvey T	ool		2.6	3	8.780	2.781				
8" DC					8.8	37	8.780	3.125				
Stab					1.3	32	8.780	2.750	12017-0			11.50
8" DC					8.8	34	7.750	2.906	ODE 34			
8" DC					9.4	3	8.063	2.906	16376			
8" DC					9.0	3	7.875	2.844	ODE 33			
X-Over					0.7	'4	7.813	2.969	XOS 18-0	03		
NMDC					9.1	8	6.531	2.844	JFC BT 1	5		
Drill Collars					63.3	34	6.219	2.938				
6 1/2" Hydraulic Jar					9.3	31	6.375	3.094	D1 004			
Drill Collar	6.1/4" DC				8.4		6.156	3.156	GP59			
Drill Collar	6.1/4" DC				9.3		6.250	3.156	29.013			
Heavy Weight	4.1/2" HWE)P			37.8	32	6.250	2.938				
Directional Data												
Slide Time:			Rotate Time:				Circ	. Time:				
Slide (%):			Rotate (%):				Circ	. (%):				
Total Slide Time:	0.0	0 h '	Total Rotate Time	e:		0.00	h Tota	al Circ. Time	:			0.00 h
Total Revs:	79 Kre	evs	HSI:		0.4	42 hp/ir	1 ²					
Bit #1										No	ozzles	
Size:	311 mm (12 1/4")	Type:	:		PDC	IADC	#:		#		Size	(/32nd")
Manufacturer:	BHI (Hughes	Mode	el:		FC519	TFA:		1.052 ir	1 ² 1	х		14
	Christensen)	Bit W	'ear:	1-1-ER-S-X-I-	ER-TD	Cost:			\$			
Serial #:	7032698								1	Х		14
									1	х		14
									1	х		14
									1	х		14
									1	х		14
									1	х		14
Bit Run Comment:												
Bit Wear Comment:	Minor erosion -	inner c	cutter area									



Drilling Param	eters								
BHA Run #1									
Top Depth:				12.5 m	PWD ECD:			1	,116.77 kg/m³
Bottom Depth:				766.1 m					
			Min			Avg		Max	
Flow			426 galUS/r	min	450	6 galUS/min		485 galUS	'min
Surface RPM			95 rpm			125 rpm		156 rpn	
Downhole RPM			95 rpm			125 rpm		156 rpn	
Pressure			519 psi			618 psi		716 ps	
Torque			2,200 ft-lb	S	2	,650 ft-lbs		3,100 ft-l	os
WOB			3 klbs			5 klbs		6 klbs	
ROP			1.40 m/h		2	45.67 m/h		34.20 m	'n
Survey									
MD	Incl.	Corr. Az	TVD	'V' S	ect D	ogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(n	n) (de	eg/30m)	(m)	(m)	
716.1	0.8	15.00							тотсо
Formations									
		Name					Top (m)		
Winton Formati	on								5.2
Mackunda Forn	nation								641.5
Allaru Mudstone	9								745.0
Personnel On	Board								
Jo	b Title		Personne	9	(Company		Pax	
					ENSIGN				23
					Drillsearch				5
					Sub Contract	tor			10
					Oil Industry C	Catering Service	es		4
							Total		42
Bulk Stocks									
	Name		Unit	Start	Previous	In	Used	Adjust	Balance
				Amount	Balance			,	
Diesel Fuel (ltr)			ltr		63,950	0	2,750	0	61,200
Pot Water (Itr)			ltr		30,500	0	0		30,500
							250		

Drillsearch



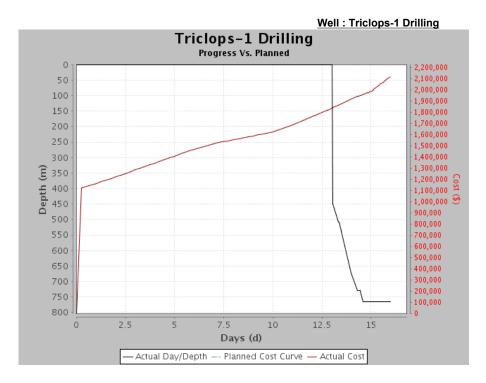


Triclops-1	Drilling						•	-				
Report Nu	mber :		16	Day V	Nellsite F	Representat	tive:	Guy L. H		Rig	Manager:	Dave Dougherty
Latitude (S			14' 40.40'	0	Wellsite	Representa	ative:	Don C			ing Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'	'					· ·	Wel	site Geologist:	Andrew James
Well Data											•	
Country:		Australia		Hole Siz		12.250		ng OD:	9.625		AFE Number:	OPS-13-015
Field:				ed Depti		766.1		ng MD:	762.7		Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De		766.1		ng TVD:	762.7	m	Supp AFE No:	
Ground Le	vel:	141.0 m		rogress:			TOL				Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days O			16.0					AFE:	<u> </u>
Plan TD (N	,	2,021.0 m		ince Spu		4.4		Shoe MD:			Daily Cost:	\$ 134,054
Plan TD (T	VD):	2,021.0 m)P Date:			, Lnrs	shoe TVD:			Cum. Cost:	\$ 2,118,048
			FIT/LO	1.			1				Last LTI Date: Days Since LTI:	05 Feb 2012 348
Current Op	0.000.		Prepare	to test r	nud lines	and BOP					Days Since LTI.	340
Planned O	-		•				e equipme	ent. Strap and r	oickup BH	Aa	nd run in to drill out	cement - Drill
	p.				-	inue drilling						
Summarv	for Period	0000 Hrs to	2400 Hrs	s on 18 J	Jan 2013							
							in and run	9.5/8" casing				
					-		•	-	na equinm	ent	- Backed off Landin	a joint - Installed
	-	bowl) - Nippl			Jii cemen		- Nggeu	down cementii	ig equipin	ent		g joint - installed
		d 0000 Hrs			2 Jan 201	12						
									Activi	њ. Г) a continution	
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)					escription	
SH	Р	RRC	00:00	00:30	0.50	766.1					required equipment	-
SH	Р	RRC	00:30	03:00	2.50	766.1				eve	, turnbuckle, and ch	ains connected
							-	oint and Flow I			an nina frans asllar	
											er pipe from cellar. up casing tongs, pic	
											Landing base in cell	
SH	Р	RRC	03:00	03:30	0.50	766.1	-			-	unning procedures a	
	•			00100			items.			.9		
SH	Р	RCG	03:30	09:45	6.25	766.1		-			heck float function -	
								-			cked connections), F	
											alled Bow centralize	rs as per
									-		Surface casing	
SH	Р	RCG	09:45	10:15	0.50	766.1		nstall swage a	nd 2" circı	ulati	ng assembly - Picke	ed up Landing
							joint.					
							•	landing joint a	nd back o	ut 1	turn of collar on las	t joint of 9.5/8"
SH	Р	RCG	10:15	12:00	1.75	766.1	casing	oulation and w	ach ta hai	tom	I - Confirm correct s	nana aut far
51	Р	RUG	10.15	12.00	1.75	/00.1					late 2 times casing	•
							-				ith oncoming crew a	
SH	Р	СМТ	12:00	15:00	3.00	766.1			•		ement head and put	
								-	-		o 3,000Psi/ 10min - I	
											s Lead slurry @ 11.8	
											5.80ppg - Dropped	
									-	_	np plug @ 2800psi -	
								n - Good test.			- •	
							Bleed of	pressure and r	ig down H	lallil	ourton cementing lin	es -Clean out
							cellar- Se	et casing slips	and land	9.5/	8"casing in landing	plate
SH	Р	WOC	15:00	19:00	4.00	766.1	Wait on o	cement - Layou	it cement	hea	d and Halliburton m	anifold



Operation	s for Period	I 0000 H	Irs to 2400 H	irs On 18	3 Jan 2	013						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		A	ctivity Description	on		
SH	Р	RDC	19:00	21:00	2.00		Backout 9.5/8" I top of flange at		nd top casing c	ollar - Install Brad	denhead with	
SH	Р	NUB	21:00	24:00	3.00	766.1	Skid BOP over	wellhead - Ins	tall spacer spoo	and land BOP	on wellhead	
Operation	s for Period	I 0000 H	Irs to 0600 H	irs On 1۹	Jan 2	013						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		А	ctivity Description	on		
PH0	Р	NUB	00:00	02:30	2.50		Torque bolts up					
PH0	Р	NUB	02:30	05:30	3.00		Change out spa hard line from H			same and flow li	ne - Install	
PH0	Р	NUB	05:30	06:00	0.50		testing, Install K	loomey hydra	ulic to BOP's, C	rough surface lin entre BOP with c	· ·	
							rotary. Install Bl	oole line and	Vent line to Cho	oke.		
Performa	nce Summa	Daily Cumulative Well										
		- 17	Daily Cumulative Well Hrs %								6	
P				4.0			0.0		84.0		0.0	
Undefined			0	0.0			0.0		0.0	0		
Total			24	4.0			0.0	0 384.0 100.0				
WBM Dat	а	-							Cost Today:	\$ 1,089		
Mud Desc:		4PHB A	PI FL:			CI:	32,	,000 % Solids:	7.8 %	Glycol:		
Check Depth	: 76		Iter-Cake:		2 /32r	nd" KCI:		3.0 % H2O:		Viscosity:	49 s/qt	
Time:		08:00 H				Hard/Ca:	1,500.0	0 mg/L Sand:	2.0 %		10 cP	
Weight:	9.1		THP-Cake:			MBT:		pH:	10	YP:	29 lbf/100ft ²	
Temp:			THP-Temp: THP-Press:			Pm: Pf:	ŭ	0.10 m ³ PHPA:	0.70 m ³	Gel 10s:	10 lbf/100ft ² 14 lbf/100ft ²	
Comment:		<u></u>	Inp-pless.			P1.		0.20 Mf:	0.70 III-	Gel 10m: RPM	Reading	
											liouunig	
Casing												
ousing	OD		L	ЭТ		F	=IT	Casing	Shoe (MD)	Casing St	noe (TVD)	
	406 mm	(16")							11.0 m	-	11.0 m	
	244 mm (9	5/8")		16.7	0 ppg				762.7 m		762.7 m	
Formation	าร											
			Name						Top (m)			
Winton Fo	rmation										5.2	
Mackunda Allaru Muc	Formation										641.5 745.0	
Bulk Stoc											110.0	
	Nam	e		Un	it	Start Amount	Previous Balance	In	Used	Adjust	Balance	
Diesel Fue	el (ltr)			ltr	.		61,200	(1,200	0	60,000	
Pot Water	. ,			ltr	-		30,500	(30,500	
Camp Fue	el (ltr)			ltr	-		5,400	(250	0	5,150	

Drillsearch





Triclops-1	Drilling										
Report Nu	mber :		17	Day \	Nellsite F	Representativ	e: Guy L	. Holmes	Rig	Manager:	Dave Dougherty
Latitude (141°	14' 40.40"			Representati		Castles	-	ing Company:	ENSIGN
Longitude			59' 43.40"	0						site Geologist:	Andrew James
-									1.1.0.		
Well Data											
Country:		Australia		Hole Siz		12.250 in	· ·		25 in	AFE Number:	OPS-13-015
Field:				ed Deptl		766.1 m	· ·		2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De	•	766.1 m	-	762	2.7 m	Supp AFE No:	
Ground Le	evel:	141.0 m		rogress:		0.0 m				Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days O			17.00	TOL TVD:			AFE:	
Plan TD (N		2,021.0 m	Days S	ince Spu	d:	5.48	Lnr Shoe MD:			Daily Cost:	\$ 63,097
Plan TD (1	TVD):	2,021.0 m	Last BC	P Date:		19 Jan 2013	Lnr Shoe TVD:			Cum. Cost:	\$ 2,181,145
			FIT/LO	Г:		1				Last LTI Date:	05 Feb 2012
										Days Since LTI:	349
Current Op	o @ 0600:		Comple	te Accur	nulater T	est - Recharg	e Final pressure.				
Planned O	p:		Tag cer	nent plug	gs - Drill o	out plugs and	shoe track - Drill rat	hole and	3m of	new hole - Displace	e to new mud -
			Circulat	e until m	ud even	in and out - C	conduct and record L	.OT - Drill	8.1/2"	hole	
Summary	for Period	l 0000 Hrs to	2400 Hrs	on 19	lan 2013						
				ies - Pre	ssure tes	t surface line	s and valves - test B	OP as per	r test s	chedule - Replace i	nner kill valve -
Complete	testing BO	P. Making up	BHA								
Operation	s for Perio	od 0000 Hrs 1	to 2400 H	rs On 19) Jan 201	13					
PHSE	CLS	OP									
PHOE		UP	From	То	Hrs	Depth		AC	uvity L	escription	
	(RC)					(m)					
PH0	Р	NUB	00:00	02:30	2.50		Forque bolts up on s				
PH0	Р	NUB	02:30	05:30	3.00		Change out spacers				ow line - Install
	_						hard line from HCR to				
PH0	Р	NUB	05:30	06:15	0.75		Pickup kelly and pur		-		-
						1 1	Koomey hydraulic to			BOP with drill floor re	otary. Install
	_						Blooie line and Vent				
PH0	Р	PTB	06:15	09:00	2.75		Pressure test surface	e lines and	hose	s to 250Psi Low for	5min 5,000Psi
	_						high for 10min				
PH0	Р	PTB	09:00	15:00	6.00	I I	Breakout surface tes				-
							and testing tool set to	ool in well	nead -	Backout drill pipe f	rom combination
							ool and pull out.				
							Pressure up Koomey		ly hos	es - Function test B	OP's - Fill
							annulus in BOP with				
							Festing against test p	-			Kill line valves -
							250Psi Low for 5min		•		
PH0	TP	SRV	15:00	19:00	4.00		Attempt to repair inne		e - uns	successful change o	ut with new
DUIA	(RE)	DTD	10.00	00.00	4.00		Vellhead 2.1/16 valv				
PH0	Р	PTB	19:00	20:00	1.00		Continue testing BOF	- s - Annu	iar to 2	2004si Low t/5min 3	ouursi nign t/
							IOmin				
							Pipe ram 300 low f/5		si higł	n f/10min - Test Inne	er Kill valve as per
							procedures to 5,000F				
							Conducted Accumula	ator function	on test	and remote panel f	unction check -
PHIC	_			00.03			DK	, .			
PH0	Р	WB	20:00	22:00	2.00		Pull combination test	-			-
	_						and set in wellhead -				
PH0	Р	PTB	22:00	23:15	1.25		Pressure test Blind ra				valve and HCR to
							300 Psi f/5min 2,000	-	10min		
PH0	Р	HBH	23:15	24:00	0.75	766.1 S	Start picking up 8.1/2	2" BHA			
Operation	s for Perio	od 0000 Hrs 1	to 0600 H	rs On 20) Jan 201	13					
operation											



PHSE	CLS (RC)	O	P F	rom	То	Hrs	Depth (m)			Activi	ty Descriptio	n	
PH0	(1(C) P	PT	во	0:00	00:15	0.25	766.1	Test repairs pre	evious	lev made to	Blind Ram h	inge pin sea	I - Test with
	•			0.00	00.10	0.20		3,000Psi High		•		ingo pin oou	
PH0	Р	HE	вн о	0:15	01:00	0.75	766.1	Making up 8.1/		21		d 6.50" Stabi	lizers while
								making up drilli			•		
PH0	Р	Т	1 0	1:00	01:45	0.75	766.1	RIH with 6.50"					
PH0	Р	Т		1:45	02:30	0.75	766.1	PJSM - Pickup	additio	onal 6.50" D	C from racks	and RIH to	154m
PH0	Р	Т	1 0	2:30	04:00	1.50	766.1	RIH with DP f/1				singles back	to 635m -
	-							Continue RIH v		P f/635m to	711m		
PH0	Р	SC		4:00	05:30	1.50	766.1	Slip and cut dri					
PH0	Р	01	H O	5:30	06:00	0.50	766.1	Complete Accu	imulate	er test - Rec	harge final p	ressure build	dup.
Performan	ice Summa	ry											
						Dail	y				Cumula	tive Well	
				F	Irs			%		Hrs			%
Р				20	0.0			83.3		404.)		99.0
TP				4	.0			16.7		4.0			1.0
Undefined				0	.0			0.0		0.0			0.0
Total				24	4.0			100.0		408.)		100.0
WBM Data	1										C	Cost Today:	\$ 951
Mud Desc:		4PHB	API FL:				CI:			Solids:	6.5 % (Glycol:	
Check Depth:			Filter-Cak	ke:		2 /32nd	I" KCI:		3.0 %	H2O:	94 %	/iscosity:	46 s/qt
Time:		16:00	HTHP-FL	.:			Hard/Ca	: 520.0)0 mg/L	Sand:	1.5 % F	PV:	9 cP
Weight:	9.	00 ppg	HTHP-Ca	ake:			MBT:			pH:	10	YP:	30 lbf/100ft ²
Temp:			HTHP-Te	emp:			Pm:	1	0.20 m³	³ PHPA:	C	Gel 10s:	10 lbf/100ft ²
			HTHP-Pr	ess:			Pf:		0.24	Mf:	1.80 m³ (Gel 10m:	17 lbf/100ft ²
Comment:												RPM	Reading
Casing													
	OD			L	ЭТ			FIT		Casing Sho	e (MD)	Casing	Shoe (TVD)
	406 mm	(16")									11.0 m		11.0 m
	244 mm (9	· /			16.70) ppg					762.7 m		762.7 m
BHA #2													
BHA Type:						F	Packed	Total Weight Wet:					41 klb
Depth In/O	ut:				766	.1 m/1,1	38.0 m	Weight Below Jar	Wet:				32 klb
Date In/Ou	t:		#18 (20) Jan 2	2013)/#21	(23 Jar	n 2013)						
Total Lengt	th:						91.9 m						
BHA Desc	ription:		8.1/2"P	DC bit	t - 8.1/2"N	IB - x/o -	Teledrift	-x/o-8.1/2"Stab-NM	NDC- 8	8.1/2"Stab -	12 x 6.50 D0	C's - Jar -2 x	6.50 DC's - 4 x

BHA Run Comment:

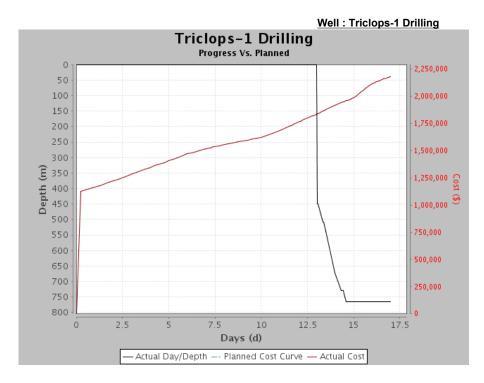
4.50" HWDP

Production Hole Section



BHA Daily Summary									
Pickup Weight:		Torque	(max):			D.C	C. (1) Ann Ve	locity:	0 ft/s
Slack-Off Weight:		Torque	Avg. Off Bottom:			D.C	C. (2) Ann Ve	locity:	0 ft/s
String Weight:		Torque	Avg. On Bottom:			н.v	V.D.P. Ann. V	/elocity:	0 ft/s
Jars Hours Logged:						D.F	. Ann. Veloc	ity:	0 ft/s
Summary:									
BHA Component									
Equipment		Descript	tion	Length)	ID	Serial #	Hours
				(m)	(in)	(in)		
Bit	Hughes PD	DC		0.3	35 8.	500		7033845	0.00
Near Bit Stab				1.2	28 6.	500		T3660-0	
X/O				0.7	78 6.	188	2.500	L5-59	
	Teledrift Su	urvey tool		2.8	32 6.	500		2158/1896	
X/O				0.4	45 6.4	406	2.781	R16 30 -002	
String Stabiliser				1.5	55 6.	500	2.937	T3310-10	
NM Drill Collar				9.1		531	2.844	JFC BT 15	
String Stab				1.5		500	2.844	T 3308.0	
6 1/2" DC	#59 2226 -	GP 5922-9/ 30).2.21 / 30.2.2/922			250	3.312		
			9/29.013/GP 3837						
	29.004/29.								
6 1/2" HE Hydra-Jar				9.5	53 6	375	2.500		
6-1/2" DC	S26 132 - 1	10 / 29 008		18.4		313	2.500		
HWDP		58 730/ A58 7	16/A58 720	37.8		250	2.875		
Directional Data	1								
		Datata 7	r !			0.1			
Slide Time:		Rotate 1					c. Time:		
Slide (%):		Rotate (· ·		0.00 h		C. (%):		0.00 h
Total Slide Time:	0.0		otate Time:	0	0.00 h		al Circ. Time	:	0.00 h
Total Revs:		HSI:		0.	00 hp/in ²				
Bit #2 Size: 216		Turner		DDC			M22	Noz	
	mm (8 1/2")	Type: Model:		PDC Q505F	IADC #: TFA:			- "	Size (/32nd")
, v	Christiansen		4 2 67 6 1				0.552 in	1 1 X	12
Serial #:	7033845	Bit Wear:	1-2-01-5-2	K-I-WT-BHA	Cost:			\$ 1 x	12
								1 x	12
								1 x	12
								1 x	12
Bit Run Comment: 8	.50" Productic	on hole						•	
Bit Wear Comment:									
Formations									
	Name						Top (m)		
Winton Formation									5.2
Mackunda Formation									641.5
Allaru Mudstone									745.0
Bulk Stocks									
Name		Unit	Start	Previous	In		Used	Adjust	Balance
			Amount	Balance				-,	
Diesel Fuel (Itr)		ltr		60,000		0	1,90	0 0	58,100
Pot Water (ltr)		ltr		30,500		0	21,40		9,100
Camp Fuel (Itr)		ltr		5,150		0	21,40		4,900
				5,150	1	0	1 23	~ 1 0	7,500

Drillsearch





Triclops-1	Drilling						
Report Nur	nber :		18	B Day V	Vellsite F	Representa	tive: Guy L. Holmes Rig Manager: Dave Dougher
Latitude (S	South)	141°	14' 40.40'	' Night	Wellsite	Represent	ative: Don Castles Drilling Company: ENSIG
Longitude	(East)	25° :	59' 43.40'				Wellsite Geologist: Andrew Jame
Well Data			-				
Country:		Australia		t Hole Siz		8.500	
Field:			Measu	red Depth	ו:	916.1	
Rig:		Ensign 918		ertical De	•	916.1	o
Ground Lev	vel:	141.0 m		rogress:		150.0	
RT to GL		5.20 m	Days C			18.	
Plan TD (M		2,021.0 m		ince Spu	d:	6.	
Plan TD (T	VD):	2,021.0 m		OP Date:		19 Jan 20	
			FIT/LO	T:		/16.72 p	pg Last LTI Date: 05 Feb 20 Days Since LTI: 35
Current Op	@ 0600·		Drilling	8 1/2" ho	le throug	h 1015m	Days Since LTI. 5:
Planned Op	-		Drilling			11 10 1511	
Summary	for Period	0000 Hrs to	2400 Hrs	s on 20 J	lan 2013		
							Tag Plugs - Drill out Shoe track - Drill out Rat hole + 3m new hole -
Conduct LC							
Operations	s for Peric	od 0000 Hrs t	to 2400 H	lrs On 20) Jan 20 [,]	13	
PHSE	CLS	OP	From	То	Hrs	Depth	Activity Description
	(RC)	-				(m)	
PH0	Р	PTB	00:00	00:15	0.25	766.1	Test repairs previousley made to Blind Ram hinge pin seal - Test with
DUID	-		00.45	04.00	0 75	700.4	3,000Psi High pressure on Bypass
PH0	Р	HBH	00:15	01:00	0.75	766.1	Making up 8.1/2" Bit and BHA - Gauge Bit and 6.50" Stabilizers while making up drilling assembly
PH0	Р	TI	01:00	01:45	0.75	766.1	RIH with 6.50" drill collars from derrick to 89m
PH0	Р	TI	01:45	02:30	0.75	766.1	PJSM - Pickup additional 6.50" DC from racks and RIH to 154m
PH0	Р	TI	02:30	04:00	1.50	766.1	RIH with DP f/154m to 683m - Layout 6 x DP singles back to 635m -
							Continue RIH with DP f/635m to 711m
PH0	Р	SCL	04:00	05:30	1.50	766.1	Slip and cut drill line
PH0	Р	OTH	05:30	06:00	0.50	766.1	Complete Accumulater test - Recharge final pressure buildup.
PH0	Р	TI	06:00	07:00	1.00	766.1	Pickup kelly -RIH and tag top of cement @ 741m
PH0	P	DFS	07:00	11:15	4.25	766.1	Drill out Plugs, Float @ 750.25m and shoe to 762.4m
PH0	Р	DFS	11:15	12:00	0.75	766.1	Drill out Rat hole and 3.0m of new formation @ 769m
PH0	Р	DFS	12:00	13:00	1.00	766.1	Condition mud and circulate even properties in and out - Pull back into shoe
PH0	Р	FLOT	13:00	15:00	2.00	766.1	Rig up and proform leakoff test - M/WT 8.9ppg - Leak off pressure 1010P
							EMW 16.7Ppg
PH0	Р	SCR	15:00	15:30	0.50	769.1	Break circulation and perform SCR @769m with 8.9 Ppg mud
PH0	Р	DA	15:30	19:45	4.25	849.1	Drilling 8.50" Production hole from 769m to 849m Wob: 4K - Rpm : 90/135 Rop: 20/30 m/hr Spp : 1,000Psi
PH0	Р	RS	19:45	20:15	0.50	849.1	Rig Service
PH0	P	DA	20:15	23:15	3.00	907.1	Drilling 8.1/2" hole from 849m to 907m
PH0	P	SVY	23:15	23:30	0.25	907.1	Circulate - Perform SCR @ 906mWt 8.9Ppg - Teledrift survey @ 906m
							0.5 Deg
							SCR @ 907m Mwt: 8.9 - Pump#1 / #2 @ 40 Spm 180Psi / 60 Spm 210Ps
PH0	Р	DA	23:30	24:00	0.50	916.1	Drill 8.1/2" hole from 907m to 916m
							Wob: 4K Rpm:135 - Rop: 22/30m/hr - Spp:1050
		od 0000 Hrs 1	to 0600 H	lrs On 21			
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)	Activity Description
	(10)					(11)	



								Well: T	riclops-1 Drilling	9						
PH0		Р	D	A 0	0:00	06:00	0 6.00	916.0) [In Progress]	Drilling	8.1/2" h	ole from 916	Sm to	o 1061m		
									Wob: 4-5K R	2pm: 130	Spp 11	190Psi Rop:	15 -	25 m/hr		
Perform	nance	e Summa	ry													
							Da	aily				Cu	mula	ative We	11	
					F	lrs			%			Hrs			%	
Р					24	4.0			100.0			428.0			99.1	
TP					C	0.0			0.0			4.0			0.9	
Undefine	ed				C	0.0			0.0			0.0			0.0	
Total					24	4.0			100.0			432.0			100.0	
WBM D	Data							-						Cost Too	lay:	\$ 2,051
Mud Desc	:		4PHB	API FL:				CI:			Solids:	6.	3 %	Glycol:		
Check De	pth:	8	49.1 m	Filter-Cak	e:		2 /32	nd" KCI:		4.0 %	H2O:	g	4 %	Viscosity	:	45 s/q
Time:			20:00	HTHP-FL	:			Hard/C	a: 55	0.00 mg/L	Sand:	2.	0 %	PV:		11 cF
Weight:		8.	90 ppg	HTHP-Ca	ke:			MBT:			pH:		10	YP:		27 lbf/100ft
Temp:				HTHP-Te	mp:			Pm:		0.10 m	PHPA:			Gel 10s:		10 lbf/100ft ²
				HTHP-Pre	ess:			Pf:		0.20	Mf:	0.9) m³	Gel 10m:		15 lbf/100ft
Comme	nt:													RP	M	Reading
Pumps	;															
						F	Pump dat	ta - Last 2	24 Hrs						Slow Pu	mp Data
No		Ту	ре		Lin	er	SPM	Eff.	Flow	S	PР	Depth	Ν	ЛW	SPM	SPP
					(in	ı)		(%)	(galUS/min)	(p	si)	(m)	(r	opg)		(psi)
1	F800) / Ensco			5	.500	83	97			1,100	907.1		9.00		
2	F800)/Ensco			5	.500	83	97		· · ·	1,100	907.1		9.00	60	210
															40	180
Casing																
	C	D			L	ТС			FIT		Casing	Shoe (MD)			asing Shoe	(TVD)
	-	406 mm	• •										0 m			11.0 m
	24	l4 mm (9	5/8")			16	6.70 ppg					762.	7 m			762.7 m
BHA #2	2															
ВНА Ту	/pe:							Packed	Total Weight W	et:						41 klb
Depth I	n/Out:						′66.1 m/1	,	Weight Below J	ar Wet:						32 klb
Date In				#18 (20) Jan 2	2013)/#	#21 (23 Ja									
Total Le	ength:							191.9 m								
BHA D	escrip	otion:		8.1/2"P	DC bi	t - 8.1/2	2"NB - x/c	o - Teledri	ft -x/o-8.1/2"Stab-	NMDC-	3.1/2"S	tab - 12 x 6.8	50 D	C's - Jar	-2 x 6.50 E)C's - 4 x

U				
BHA Description:	8.1/2"PDC bit - 8.1/2"NB - x/o - Teledrif	t -x/o-8.1/2"Stab-NMDC- 8	3.1/2"Stab - 12 x 6.50 DC's - J	lar -2 x 6.50 DC's - 4 x
	4.50" HWDP			
BHA Run Comment:	Production Hole Section			



BHA Daily Summary								
Pickup Weight:	91 klb	Torque (max):	3,	254 ft-lbs	D.C. (1) A	nn Vel	locity:	4 ft/s
Slack-Off Weight:	89 klb	Torque Avg. Off Bottom	ı: 2,	656 ft-lbs	D.C. (2) A	nn Vel	locity:	0 ft/s
String Weight:	90 klb	Torque Avg. On Bottom	ı: 2,	181 ft-lbs	H.W.D.P.	Ann. V	/elocity:	2 ft/s
Jars Hours Logged:	14.75 h				D.P. Ann.	Veloci	ity:	2 ft/s
Summary:								
BHA Component								
Equipment		Description	Length				Serial #	Hours
	1		(m)	(ir	<u> </u>)		
Bit	Hughes PDC		0.3		.500		7033845	0.00
Near Bit Stab			1.3		.500		T3660-0	
X/O			0.1			500	L5-59	
	Teledrift Surve	ey tool	2.8		.500		2158/1896	
X/O			0.4			781	R16 30 -002	
String Stabiliser			1.			937	T3310-10	
NM Drill Collar			9.			844	JFC BT 15	
String Stab			1.			844	T 3308.0	
6 1/2" DC	/29018/EDC 0	5922-9/ 30.2.21 / 30.2.2/9 3231/GP59/29.013/GP 383		18 6	.250 3.	312		
	29.004/29.007		0	-	275 0			
6 1/2" HE Hydra-Jar 6-1/2" DC	S26 132 - 10	20.008	9.			500 500		
HWDP		730/ A58 716/A58 720	37.5			875		
	A56 / 15/ A56	730/A36710/A36720	37.0		.250 2.	075		
Directional Data		1						
Slide Time:		Rotate Time:			Circ. Time	:		
Slide (%):		Rotate (%):			Circ. (%):			
Total Slide Time:	0.00 h			0.00 h	Total Circ.	Time	:	0.00 h
Total Revs:	43 Krevs	HSI:	1	02 hp/in ²				
Bit #2							Nozz	les
		ype:	PDC	IADC #:		M223	· // U	ize (/32nd")
-		odel:	Q505F	TFA:	0.9	552 in	1 1 X	12
Serial #:	7033845 B	it Wear: 1-2-CT-S	-X-I-WT-BHA	Cost:		9	\$	12
							1 x	12
							1 x	12
							1 x	12
	.50" Production I	nole						
Bit Wear Comment:						_		
Drilling Parameters								
BHA Run #2		700.4						4 40 4 / 2
Top Depth:		766.1 m	PWD ECD:					1.10 kg/m ³
Bottom Depth:		916.1 m		A		-	Max	
Flow		Min 184 galUS/min	21.	Avg I galUS/m	in		Max 443 galUS/m	vin
Surface RPM		67 rpm		104 rpm			443 gal05/fi 140 rpm	
Downhole RPM		67 rpm		104 rpm 104 rpm			140 rpm	
Pressure		•						
		415 psi		764 psi ,718 ft-lbs			1,112 psi	
		2,181 ft-lbs	2				3,254 ft-lbs	•
WOB ROP		2 klbs 6.30 m/h	5 klbs 7 klbs 17.65 m/h 43.70 m/h					
		0.30 11/11		1.00 m/n			43.70 m/n	



Survey										
MD	Incl.	Corr. Az	TVD	'V' S	Sect	Dogleg		N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(r	m)	(deg/30r	n)	(m)	(m)	
907.1	0.5	0.00								
Formations										
		Name						Top (m)		
Winton Format										5.2
Mackunda For										641.5
Allaru Mudstor										745.0
Personnel On										
J	ob Title		Personne	1		Comp	any		Pax	
					ENSIGN Drillsear					22 5
					Sub Cor					4
							ng Services	;		4
								Total		35
Bulk Stocks										
	Name		Unit	Start Amount	Previo Balan		In	Used	Adjust	Balance
Diesel Fuel (Itr)		ltr			,100	0	1,700	0	56,400
Pot Water (Itr)			ltr			,100	24,500	0		33,600
Camp Fuel (Itr))		ltr		4	,900	0	250	0	4,650
	Т	riclops-1 Progress Vs		1						
50					2,2	50,000				
100 150 200					- 2,0	00,000				
250					- 1,7	50,000				
350 -					- 1,5	00,000				
400 - 450 - 500 - 550 -					- 1,2	50,000 g				
d 550 600					- 1,0	00,000 😌				
650 - 700 -					- 75	0,000				

500,000

250,000

0

17.5

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2.5

5

7.5

10

Days (d) – Actual Day/Depth –- Planned Cost Curve – Actual Cost

12.5

15

750

800 850

900 · 950 ·

ó



Triclops-1	l Drilling									
Report Nu			19	-		Representa			Manager:	Dave Dougherty
Latitude (14' 40.40'	0	Wellsite	Represent	ative: Don Castles		ing Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'	'				Wel	site Geologist:	Andrew James
Well Data			-						-	
Country:		Australia		t Hole Siz		8.500	-	625 in	AFE Number:	OPS-13-015
Field:				red Deptl		1,138.0	U U	2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De		1,138.0	-	2.7 m	Supp AFE No:	
Ground Le	evel:	141.0 m		Progress:		222.0			Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	-	on Well:		19.			AFE:	* 4 4 4 6 6 4
Plan TD (N		2,021.0 m		ince Spu		7.4			Daily Cost:	\$ 141,991
Plan TD (1	IVD):	2,021.0 m		DP Date:		19 Jan 20			Cum. Cost:	\$ 2,388,888
			FIT/LO	1.		/16.72 p			Last LTI Date: Days Since LTI:	05 Feb 2012 351
Current Op	p @ 0600:		Pull out	conduct	ina Surv	evs ever 1	stand pulled - Current depth 599	m		
Planned O	-				-	-	running surveys - Condition mi		displace mud in pip	e every 5 stands.
	•						ia trip tank.			,
Summary	for Period	1 0000 Hrs to	2400 Hr	s on 21 .	Jan 2013	3				
Drill 8.1/2"	hole from	916m to 1138	3m - Devi	ation sur	vey @ 10	043 1.75 De	g Following survey @ 1120m =	2.0De	g, Rack kelly and p	ull out with check
	very stand p									
Operation	s for Peric	od 0000 Hrs	to 2400 H	lrs On 2′	1 Jan 20	13				
PHSE	CLS	OP	From	То	Hrs	Depth	Ad	tivity D	escription	
	(RC)					(m)				
PH0	Р	DA	00:00	08:45	8.75	916.0	Drilling 8.1/2" hole from 916m	to 106	1m	
							Wob: 4-5K Rpm: 130 Spp 119	0Psi R	op: 15 - 25 m/hr	
PH0	Р	CMD	08:45	09:00	0.25	1,061.0	Circulate hole clean and botto	ms up		
PH0	Р	SVY	09:00	09:45	0.75	1,061.0	Run deviation survey with Tel	edrift / I	Run Single shot sur	vey @ 1043m to
							confirm 1.75 deviation			
DUIG		54	00.45	40.45	0.50	1 1 1 0 0	S15E	4440		
PH0	P	DA	09:45	13:15	3.50	1,119.0	Drill 8.1/2" hole from 1061m to			
PH0	Р	SVY	13:15	13:30	0.25	1,119.0	Wob: 10 K -Rpm : 130/140 - S Circulate / Run Teledrift surve			
PH0	P	SVY	13:30	14:00	0.23	1,119.0	Totco Deviation survey @ 110		-	
PH0	P	DA	14:00	14:45	0.75	1,125.0	Drilling 8.1/2" hole from 1119r		-	
		Dirt		11.10		1,120.0	Wob: 5K - Rpm: 135 - Spm 72			
PH0	Р	RS	14:45	15:15	0.50	1,125.0	Rig Service			
PH0	Р	DA	15:15	15:45	0.50	1,138.0	Drilling 8.1/2" hole from 1125r	n to 11	38m	
PH0	Р	SCR	15:45	16:15	0.50	1,138.0	Circulate 1.50 times bottoms			Pumps's 1&2 @
							40spm			
							100Psi / 60spm 200Psi			
PH0	Р	SVY	16:15	16:45	0.50	1,138.0	Deviation survey @ 1120m =	-		
PH0	Р	SVY	16:45	24:00	7.25	1,138.0	Rack kelly - Flow check - Pull			
							surveys every stand pulled from			, 1004m, 985m,
							966m, 945m, 927m, 908m, 88	9m, 86	9m, 850m,	
Operation	s for Peric	od 0000 Hrs	to 0600 H	lrs On 22	2 Jan 20	13				
PHSE	CLS	OP	From	То	Hrs	Depth	Ad	tivity D	escription	
	(RC)					(m)				
PH0	Р	CMD	00:00	00:15	0.25	1,138.0	Circulate and condition mud a			
PH0	Р	CMD	00:15	00:30	0.25	1,138.0	Run Wire line deviation surve	@ 83	1m 0.5deg S 75 E	



						Well : Tric	lops-1 Drilling			
PH0	Р	SVY (00:30	06:00	5.50	1,138.0	[In Progress] Pull out	•	•	•
							from 811m, 792m, 77	3m, 753m, 734m, 715 560m,541m, 522m, 50	, ,	
							406m, 386m, 367m, 3		, ,	+111, 444111 425,
							40011, 30011, 30711, 3			
							Break circulation after	r every 5 stands pulled	l	
Performa	nce Summary									
					Daily	,		Cumi	lative Well	
			Н	lrs			%	Hrs		%
Р			24	4.0			100.0	452.0		99.1
TP			0	.0			0.0	4.0		0.9
Undefined			0	.0			0.0	0.0		0.0
Total			24	4.0			100.0	456.0		100.0
General C	Comments for I	eriod 000	0 Hrs t	o 2400 H	rs on 21	Jan 2013				
(Category						Comments			
General C	Comment	Deviat	tion whi	le drilling	producti	on hole wit	h packed BHA increase	ed to 2 degrees at 114	3m was asses	ed as too high
							bly hit the target. Direc	tion drilling equipment	and personne	l mobilised.
		Meanv	while th	e hole is	surveyed	l at 20m in	tervals back to surface.			
WBM Dat	ta					_			Cost Today:	\$ 2,606
Mud Desc:	4P	IB API FL:				CI:		Solids: 7.0 %	6 Glycol:	
Check Depth	n: 1,134.0	m Filter-Ca	ike:		2 /32nd	KCI:	5.0 %	H2O: 93 %	6 Viscosity:	48 s/qt
Time:		00 HTHP-FI				Hard/Ca:	450.00 mg/L	Sand: 2.0 %	6 PV:	9 cP
Weight:	9.00	pg HTHP-C	ake:			MBT:		pH: 1	0 YP:	27 lbf/100ft ²
Temp:		HTHP-Te	emp:			Pm:	0.10 m³	PHPA:	Gel 10s:	17 lbf/100ft ²
		HTHP-P	ress:			Pf:	0.16	Mf: 0.60 m	³ Gel 10m:	23 lbf/100ft ²
									RPM	Reading

Pumps	S									
			Pump da	ata - Last 2	4 Hrs				Slow Pur	np Data
No	Туре	Liner (in)	SPM	Eff. (%)	Flow (galUS/min)	SPP (psi)	Depth (m)	MW (ppg)	SPM	SPP (psi)
1 2	F800 / Ensco F800/Ensco	5.500 5.500		97 97		1,350 1,350	907.1 907.1	9.00 9.00	60 40	250 200
Casing	9									
	OD	LOT			FIT	Casing	g Shoe (MD)	(Casing Shoe	(TVD)
	406 mm (16") 244 mm (9 5/8")		16.70 ppg					.0 m .7 m		11.0 m 762.7 m
BHA #	2					·				
BHA T	ype:			Packed	Total Weight Wet:					41 klb
Depth	In/Out:		766.1 m/	1,138.0 m	Weight Below Jar	Wet:				32 klb
Date Ir	n/Out:	#18 (20 Jan 2013)/#21 (23	Jan 2013)						
Total L	ength:			191.9 m						
BHA D	Description:	8.1/2"PDC bit - 8. 4.50" HWDP	1/2"NB - x	/o - Teledrif	t -x/o-8.1/2"Stab-NM	1DC- 8.1/2"S	tab - 12 x 6.	50 DC's - Ja	ar -2 x 6.50 D	C's - 4 x
BHA R	Run Comment:	Production Hole S	Section							

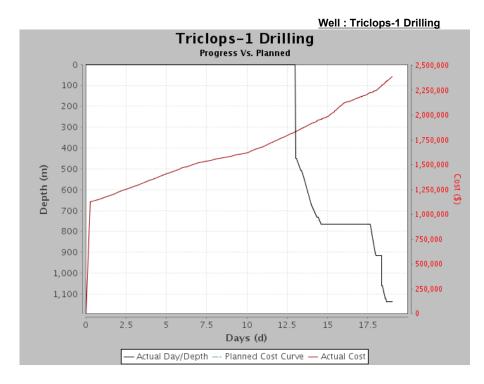


BHA Daily Summary								
Pickup Weight:	98 klb	Torque (max):	3,	427 ft-lbs	D.C. (1) A	nn Ve	locity:	6 ft/s
Slack-Off Weight:	97 klb	Torque Avg. Off Bottom	: 1,	995 ft-lbs	D.C. (2) A	nn Vel	locity:	0 ft/s
String Weight:	98 klb	Torque Avg. On Bottom	: 2,	593 ft-lbs	H.W.D.P.	Ann. \	/elocity:	3 ft/s
Jars Hours Logged:	13.50 h				D.P. Ann.	Veloci	ity:	3 ft/s
Summary:								
BHA Component								
Equipment		Description	Lengt	n Ol	D ID)	Serial #	Hours
			(m)	(ir	n) (in	ı)		
Bit	Hughes PDC		0.	35 8	.500		7033845	0.00
Near Bit Stab			1.	28 6	.500		T3660-0	
X/O			0.	78 6	.188 2.	.500	L5-59	
	Teledrift Surve	y tool	2.	32 6	.500		2158/1896	
X/O			0.4		.406 2.	.781	R16 30 -002	
String Stabiliser			1.	55 6	.500 2.	.937	T3310-10	
NM Drill Collar			9.	18 6	.531 2.	.844	JFC BT 15	
String Stab			1.	55 6	.500 2.	.844	T 3308.0	
6 1/2" DC		5922-9/ 30.2.21 / 30.2.2/92 3231/GP59/29.013/GP 383		18 6	.250 3.	.312		
	29.004/29.007							
6 1/2" HE Hydra-Jar			9.			.500		
6-1/2" DC	S26 132 - 10 /		18.4			.500		
HWDP	A58 715/ A58 7	730/ A58 716/A58 720	37.	36 6	.250 2.	.875		
Directional Data								
Slide Time:		Rotate Time:			Circ. Time	:		
Slide (%):		Rotate (%):			Circ. (%):			
Total Slide Time:	0.00 h	Total Rotate Time:		0.00 h	Total Circ.	Time	:	0.00 h
Total Revs:	117 Krevs	HSI:	2	.66 hp/in²				
Bit #2				i			Nozzle	es
	m (8 1/2") Ty		PDC	IADC #:		M223	- " 012	ze (/32nd")
Manufacturer: Hughes Ch	ristiansen Mc	del:	Q505F	TFA:	0.	552 in	² 1 X	12
Serial #:	7033845 Bit	Wear: 1-2-CT-S	-X-I-WT-BHA	Cost:		5	\$	
							1 x	12
							1 x	12
							1 x	12
							1 x	12
Bit Run Comment: 8.5	0" Production ho	ble						
Bit Wear Comment:								
Drilling Parameters								
BHA Run #2			B145					
Top Depth:		766.0 m	PWD ECD:					9.20 kg/m ³
Bottom Depth:		1,138.0 m				-		
Flow		Min 260 goll JS/min	404	Avg	in		Max	
Flow		369 galUS/min	430) galUS/m	111		490 galUS/mi	11
Surface RPM		114 rpm		130 rpm			145 rpm	
Downhole RPM		114 rpm		130 rpm			145 rpm	
Pressure		869 psi		1,155 psi			1,440 psi	
Torque		1,995 ft-lbs	2	,711 ft-lbs			3,427 ft-lbs	
WOB		1 klbs		6 klbs			11 klbs	
ROP		11.70 m/h		2.89 m/h			45.10 m/h	



				Well : Triclo	ops-1 Drilling				
Survey									
MD	Incl.	Corr. Az	TVD	'V' \$	Sect D	ogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(m) (de	eg/30m)	(m)	(m)	
850.0	1.0	115.00	713.	0 4.	679 (0.813	4.7	0.9	тотсо
869.0	1.3	140.00	732.	0 4.	444 (0.912	4.4	1.2	TOTCO
889.0	1.8	130.00			068 (0.850	4.1	1.6	TOTCO
908.0	1.5	140.00				0.655	3.7	2.0	TOTCO
927.0	1.5	145.00	789.	9 3.		0.207	3.3	2.3	тотсо
945.0	1.5	150.00	807.	9 2.		0.218	2.9	2.5	TOTCO
966.0	1.5	195.00	828.	9 2.	391 ·	1.639	2.4	2.6	тотсо
985.0	1.5	165.00	847.	9 1.	910	1.225	1.9	2.6	тотсо
1,004.0	1.5	175.00	866.	9 1.	422 (0.413	1.4	2.7	тотсо
1,023.0	1.5	170.00	885.	9 0.	930 (0.207	0.9	2.8	тотсо
1,043.0	1.8	165.00							тотсо
1,043.0	1.8	165.00	905.	9 0.	369 (0.499	0.4	2.9	тотсо
1,062.0	1.8	170.00	906.	2 -11	.931 2	73.372	-11.9	5.3	тотсо
1,081.0	2.0	185.00	906.	6 -24	.422 2	73.125	-24.4	6.6	тотсо
1,101.0	2.0	185.00							TOTCO
1,101.0	2.0	185.00				000.0	-25.1	6.5	тотсо
1,120.0	2.0	175.00	945.	6 -25	5.778 (0.550	-25.8	6.5	TOTCO
Formations									
		Name					Top (m)		
Winton Formati	on								5.2
Mackunda Forr	nation								641.5
Allaru Mudston	е								745.0
Toolebuc Form	ation								1,038.0
Wallumbilla For	mation								1,094.0
Personnel On	Board								
Jo	b Title		Personne	el	(Company		Pax	
					ENSIGN				22
					Drillsearch				4
					Sub Contract	tor			7
					Oil Industry 0	Catering Service	es		4
							Total		37
Bulk Stocks							ł		
	Name		Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fuel (Itr)			ltr		56,400	0	3,500	0	52,900
Pot Water (Itr)			ltr		33,600	11,400	0	0	45,000
Camp Fuel (Itr)			ltr		4,650	0	250	0	4,400
,									

Drillsearch





							<u> </u>				
Triclops-1	Drilling										
Report Nur	mber :		20	Day V	Vellsite F	Representat	tive: G	uy L. Holmes	Rig I	Manager:	Dave Dougherty
Latitude (S	South)	141°	14' 40.40'	' Night	Wellsite	Represent	ative:	Don Castles	Drilli	ng Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'	'					Well	site Geologist:	Andrew James
Well Data											
Country:		Australia	Current	t Hole Siz	ze:	8.500	in Casing OD:	9.6	25 in	AFE Number:	OPS-13-015
Field:			Measur	ed Deptr	า:	1,138.0	m Casing MD:		2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De	•	1,138.0		: 762	2.7 m	Supp AFE No:	
Ground Le	vel:	141.0 m		rogress:		0.0				Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days O			20.0				AFE:	
Plan TD (N	,	2,021.0 m		ince Spu	d:	8.4				Daily Cost:	\$ 63,398
Plan TD (T	VD):	2,021.0 m		OP Date:		19 Jan 20		D:		Cum. Cost:	\$ 2,452,287
			FIT/LO	T:		/16.72 pj	pg			Last LTI Date: Days Since LTI:	05 Feb 2012 352
Current Op	0.000.		Wait on	orders						Days Since LTI.	352
Planned O	-				ı regardiı	ng way forw	vard.				
Summary	for Period	0000 Hrs to	2400 Hrs	s on 22 J	lan 2013	;					
-							28m. Survey film	depleted. RIH 1	o insid	de 9.5/8" casing sho	e @ 740m.
		rip tank. Wai									
Operation	s for Perio	od 0000 Hrs	to 2400 H	rs On 22	2 Jan 20	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity D	escription	
	(RC)					(m)			-		
PH0	Р	CMD	00:00	00:15	0.25	1,138.0	Circulate and co	ndition mud at	839m		
PH0	Р	CMD	00:15	00:30	0.25	1,138.0	Run Wire line de	eviation survey	@ 83	1m 0.5deg S 75 E	
PH0	Р	SVY	00:30	11:30	11.00	1,138.0	Pull out by stand	and recover s	urveys	s for each stand pul	led from 811m,
							792m, 773m, 75	3m, 734m, 715	5m, 69	5m, 674m, 657m, 6	37m, 618m,
							599m, 580m, 56	0m,541m, 522	m, 502	2m, 483m, 464m, 44	14m 425, 406m,
							386m, 367m, 34	8m, 328m, Use	ed all a	available film.	
	_						Break circulation		stands	pulled	
PH0	Р	TI	11:30	12:45	1.25	1,138.0	Run back in hole				
PH0	P	TI	12:45	13:15	0.50	1,138.0	Circulate full DP	•	ntent		
PH0	Р	WOR	13:15	19:15	6.00	1,138.0	Wait on Directio				
PH0	Р	RS	10.15	10:45	0.50	1 1 2 2 0	Monitor well ove	•		u a ati a u	
PH0	Р	WOR	19:15 19:45	19:45 22:15	0.50 2.50	1,138.0 1,138.0	Rig service / Dro Wait on Directio		astins	spection	
FIIU	Г	WOR	19.45	22.15	2.50	1,130.0	Monitor well ove				
PH0	Р	то	22:15	22:30	0.25	1,138.0			r com	formation on BHA c	hange
PH0	P	TI	22:30	22:45	0.25	1,138.0				in hole from 644m to	
PH0	P	CMD	22:45	23:15	0.50	1,138.0	Circulate pipe a				
PH0	Р	WOR	23:15	24:00	0.75	1,138.0			-	on further orders	
Operation	s for Perio	od 0000 Hrs	to 0600 H	rs On 23	3 Jan 20	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	tivity D	escription	
	(RC)					(m)					
PH0	U	WOTE	00:00	06:00	6.00	1,138.0			ip tanl	k inside shoe. Wait	on Pathfinder
							directional drillin	g package.			
Performan	nce Summ	ary									
					Dail	y				Cumulative Well	
		1									
P				rs 1.0			% 100.0		rs 6.0		% 99.2

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Perfor	mance Summary											
				Dail	ly				Cur	nulative	Well	
			Hrs			%			Hrs		%	
TP			0.0			0.0			4.0		3.0	
Undefin	ed		0.0			0.0			0.0		0.0	
Total			24.0			100.0			480.0		100	0
WBM	Data	- -		· · ·						Cost	Today:	\$ 253
Mud Des	c: 4PHB	API FL:			CI:			Solids:	6.3	% Glyco	ol:	
Check De	epth: 1,134.0 m	Filter-Cak	e:	2 /32n	d" KCI:		4.0 %	H2O:	94	% Visco	sity:	45 s/qt
Time:	18:00	HTHP-FL	:		Hard/Ca	. 500.0	00 mg/L	Sand:	2.0) % PV:		8 cP
Weight:	8.90 ppg	HTHP-Ca	ke:		MBT:			pH:		10 YP:		28 lbf/100ft ²
Temp:		HTHP-Te	mp:		Pm:		0.10 mª	PHPA:		Gel 1	0s:	13 lbf/100ft ²
		HTHP-Pre	ess:		Pf:		0.20	Mf:	0.70	m³ Gel 1	0m:	19 lbf/100ft ²
Comme	ent:										RPM	Reading
Pumps	5			Pump data	a - Last 24	4 Hrs					Slow P	ump Data
No	Туре		Liner	SPM	Eff.	Flow	51	 ЭР	Depth	MW	SPM	SPP
110	Type		(in)		(%)	(galUS/min)		si)	(m)	(ppg)		(psi)
1	F800 / Ensco		5.500	0	97			0	0.0	9.00)	
2	F800/Ensco		5.500	0	97			0	0.0	9.00	60	250
											40	200
Casing	3											
	OD		LOT			FIT		Casing	Shoe (MD)		Casing Sho	e (TVD)
	406 mm (16")								11.() m		11.0 m
	244 mm (9 5/8")		1	6.70 ppg					762.7	'm		762.7 m
BHA #	2											
BHA T	уре:				Packed	Total Weight Wet						41 klb
Depth				766.1 m/1,1		Weight Below Jar	Wet:					32 klb
Date Ir		#18 (20) Jan 2013)	/#21 (23 Ja								
Total L	-				191.9 m							
BHA D	escription:	8.1/2"P 4.50" H		/2"NB - x/o	- Teledrift	: -x/o-8.1/2"Stab-NI	MDC- 8	3.1/2"St	tab - 12 x 6.5	0 DC's -	Jar -2 x 6.50	DC's - 4 x
	<u> </u>											

Production Hole Section

BHA Run Comment:



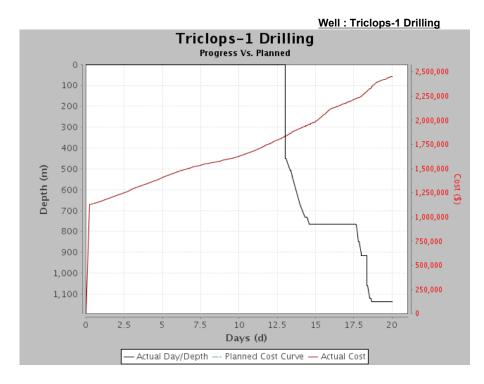
BHA Daily Summ	ary				_					
Pickup Weight:			Torque (max):			D.C. (1) Ann V	elocity:		0 ft/s
Slack-Off Weight:			Torque A	Avg. Off Bottom:			D.C. (2) Ann V	elocity:		0 ft/s
String Weight:			Torque A	Avg. On Bottom:			H.W.D.P. Ann.	•		0 ft/s
Jars Hours Logge	d:						D.P. Ann. Velo	city:		0 ft/s
Summary:										
BHA Component										
Equipme	ent		Descripti	ion	Lengtł (m)	n OE (in		Seri	al #	Hours
Bit		Hughes PI	DC		0.3	35 8.	500	7033845		0.00
Near Bit Stab					1.:	28 6.	500	T3660-0		
X/O					0.1	78 6.	188 2.500	L5-59		
		Teledrift Se	urvey tool		2.	82 6.	500	2158/189	6	
X/O					0.4	45 6.	406 2.781	R16 30 -0	002	
String Stabiliser					1.	55 6.	500 2.937	T3310-10)	
NM Drill Collar					9.		531 2.844	JFC BT 1	5	
String Stab					1.	55 6.	500 2.844	T 3308.0		
6 1/2" DC				.2.21 / 30.2.2/922.2 /29.013/GP 3837/	108.	18 6.	250 3.312			
		29.004/29.	007							
6 1/2" HE Hydra-J	ar				9.		375 2.500			
6-1/2" DC			10 / 29.008		18.4		313 2.500			
HWDP		A58 715/ A	58 730/ A58 7	16/A58 720	37.	86 6.	250 2.875			
Directional Data										
Slide Time:			Rotate T				Circ. Time:			
Slide (%):			Rotate (,			Circ. (%):			
Total Slide Time:		0.0		tate Time:		0.00 h	Total Circ. Time	e:		0.00 h
Total Revs:			HSI:		0	.00 hp/in ²				
Bit #2						-				zles
Size:		mm (8 1/2")	Type:		PDC	IADC #:	M22	- "		Size (/32nd")
Manufacturer:	Hughes C	Christiansen	Model:		Q505F	TFA:	0.552 i	1 1	х	12
Serial #:		7033845	Bit Wear:	1-2-CT-S-X-I	WT-BHA	Cost:		\$ 1	х	12
								1	x	12
								1	х	12
								1	х	12
Bit Run Commen	t: 8.	50" Productio	on hole			1		I		
Bit Wear Comme	nt:									
Survey										
MD	Incl.	Corr. Az	TVD	'V' Sect	D	ogleg	N/S	E/W		Tool Type
(m)	(°)	(°)	(m)	(m)	(de	eg/30m)	(m)	(m)		
328.0	0.3	330.00	191.	0 0.183	(0.067	0.2	-0.7		тотсо
348.0	0.3	325.00			(0.039	0.3	-0.7		тотсо
367.0	0.3	130.00				0.939	0.3	-0.7		тотсо
386.0	0.5	85.00	249.	0 0.255	(0.564	0.3	-0.6		тотсо
406.0	0.8	40.00	269.			2.135	0.4	-0.5		тотсо
425.0	0.8	40.00	288.			0.000	0.6	-0.4		тотсо
444.0	0.5	30.00	307.			0.504	0.8	-0.2		тотсо
464.0	0.8	48.00	327.			2.560	0.9	-0.2		тотсо
						0.804	1.1	-0.1		тотсо
483.0	0.5	10.00	346.	0 1.102		J.004	1.1	-0.1		10100

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				Well : Triclo	ops-1 Drilling				
Survey									
MD	Incl.	Corr. Az	TVD	'V' S	Sect Do	ogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(m) (de	g/30m)	(m)	(m)	
522.0	0.5	20.00	385.	0 1.	534 (0.666	1.5	-0.1	тотсо
541.0	0.8	20.00	404.	0 1.	737 (0.473	1.7	0.0	тотсо
580.0	1.0	350.00	443.	0 2.	328 (0.388	2.3	0.0	тотсо
599.0	1.0	30.00	462.	0 2.		1.080	2.6	0.1	тотсо
618.0	1.0	60.00	481.			0.817	2.9	0.3	тотсо
657.0	1.0	340.00	520.	0 3.	351 (0.988	3.4	0.5	тотсо
674.0	1.0	85.00	537.			2.799	3.5	0.6	тотсо
680.0	0.8	355.00	543.			6.400	3.5	0.6	тотсо
695.0	0.5	300.00	558.			1.313	3.7	0.6	тотсо
715.0	1.0	305.00	578.			0.755	3.8	0.3	тотсо
716.0	0.8	15.00	579.			1.347	3.8	0.3	тотсо
734.0	1.0	5.00	597.			0.422	4.1	0.4	тотсо
753.0	1.0	45.00	616.			1.080	4.4	0.5	тотсо
773.0	0.5	355.00	636.			1.168	4.6	0.6	тотсо
792.0	0.5	310.00	655.			0.604	4.7	0.6	TOTCO
811.0	0.3	95.00	674.			1.208	4.8	0.6	TOTCO
831.0	0.5	105.00	694.	0 4.	770 ().317	4.8	0.7	TOTCO
Formations									
		Name					Top (m)		
Winton Format	ion								5.2
Mackunda Fori	mation								641.5
Allaru Mudston									745.0
Toolebuc Form									1,038.0
Wallumbilla Fo	rmation								1,094.0
Personnel On	Board								
Jo	ob Title		Personne	el	(Company		Pax	
					ENSIGN				22
					Drillsearch				4
					Sub Contract	or			7
					Oil Industry C	Catering Service	es		4
							Total		37
Bulk Stocks									
	Name		Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fuel (Itr)		ltr		52,900	0	1,150) 0	51,750
Pot Water (ltr)			ltr		45,000	0	(45,000
Camp Fuel (Itr))		ltr		4,400	0	250	0 0	4,150
. ,						L	I	1	

Drillsearch





Triclops-1	Drilling										
Report Nu	mber :		21	Day \	Nellsite F	Representat	tive:	Guy L. Holn	nes Rig	Manager:	Dave Dougherty
Latitude (South)	141°	14' 40.40	" Night	Wellsite	Representa	ative:	Don Cast	les Drill	ing Company:	ENSIGN
Longitude	(East)	25° :	59' 43.40	•					Wel	lsite Geologist:	Andrew James
Well Data											
Country:		Australia	Curren	t Hole Siz	ze:	8.500		ing OD:	9.625 in	AFE Number:	OPS-13-015
Field:				red Depth		1,168.0		ing MD:	762.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De		1,168.0		ing TVD:	762.7 m	Supp AFE No:	
Ground Le	vel:	141.0 m		Progress:		28.0	-	MD:		Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	-	n Well:		21.0		TVD:		AFE:	
Plan TD (N	,	2,021.0 m	-	ince Spu		9.4		Shoe MD:		Daily Cost:	\$ 89,234
Plan TD (T	VD):	2,021.0 m		DP Date:		19 Jan 201		Shoe TVD:		Cum. Cost:	\$ 2,541,521
			FIT/LO	1:		/16.72 pp	bg			Last LTI Date: Days Since LTI:	05 Feb 2012 353
Current Op	0 @ 0600:		Drilled	to 1202m	ı - Ran sı	urvey @ 11	86m 3.0	Dea		Days Since LTI.	555
Planned O	-							out to run directiona	l assembl	у.	
Summary	for Period	0000 Hrs to	2400 Hr	s on 23 J	Jan 2013						
Monitor we	ell over trip t	tank - Circula	ate - Pull	out and c	hange Bl	HA. RIH - C	irculate a	and wash to bottom	Drill from	1138m to 1166m -	With surveys.
HSE Sum	mary										
	Events		Num.		Date of I	Last	Days	Descripti	on	Rei	narks
			Event	٤			Since				
Environme	ental Inspec	tion Check	1	23 Ja	in 2013 0	8:00	0	Driver had no W	eed	Vehicle transpor	
								Delaration		from Dalby Qld f	
											down and obtain
										a Weed declarat	tion prior to
										journey.	
Operation	s for Perio	d 0000 Hrs 1	to 2400 H	Irs On 23	3 Jan 201	13					
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)			Activity E	Description	
PH0	U	WOTE	00:00	08:30	8.50	1,138.0		well via trip tank in backage.	side shoe	. Wait on Pathfinder	directional
PH0	U	WOTE	08:30	09:30	1.00	1,138.0	-	e and condition mu	d at shoe		
PH0	U	то	09:30	14:00	4.50	1,138.0				n drilling assembly.	
								ring stabiliser, nea	bit stabili	ser and Teledrift sub	o. All tools in
51.10				1= 00			gauge.			5 W 4 11	
PH0	U	ТІ	14:00	17:00	3.00	1,138.0	Make u shoe.	p BHA No:3 8 1/2	' Pendulur	n Drilling Assembly	and run in hole to
PH0	Р	RS	17:00	17:30	0.50	1,138.0	Rig Ser				
PH0	Р	ТІ	17:30	19:00	1.50	1,138.0	Continu 1138m	e run in hole with c	rill pipe.Pi	ckup kelly and wash	to bottom @
PH0	Р	DA	19:00	21:00	2.00	1,152.0	-	8.1/2" hole from 11			0.10.11
DUIA		0.07	04.00	04.00	0.50	4.450.0				58 - Spp:970Psi - Ro	op: 3 /9m/hr
PH0	U	SVY	21:00	21:30	0.50	1,152.0		re line deviation su		(/	
PH0	U	DA	21:30	23:00	1.50	1,161.0	-	8.1/2" hole from 11		61m 158 - Spp: 975Psi - I	Don: 5/10m/br
PH0	U	SVY	23:00	23:30	0.50	1,161.0				48m 2.75Deg S10E	
PH0 PH0	U	DA	23:00	23.30	0.50	1,161.0		8.1/2" hole from 11		•	
	5		20.00	24.00	0.00	1,100.0	•			Spp:975Psi - Rop:	8-11m/hr
Operation	s for Perio	d 0000 Hrs 1	to 0600 H	Irs On 24	4 Jan 201	13					
PHSE	CLS	OP	From	То	Hrs	Depth			Activity D	Description	
	(RC)	-		-	-	(m)			· ·· / =		
	. /					· /					

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Time: Weight: Temp: Comment:		.00 ppg	HTHP-FL. HTHP-Cake: HTHP-Temp: HTHP-Press:			MBT: Pm: Pf:		Ū	pH: PHPA:	9	YP: Gel 10s: Gel 10m:	19 lbf/100ft ² 6 lbf/100ft ² 11 lbf/100ft ² Reading
Weight:	9.	.00 ppg	HTHP-Cake: HTHP-Temp:			MBT: Pm:		0.10 m³	pH: PHPA:	9	YP: Gel 10s:	19 lbf/100ft ² 6 lbf/100ft ²
	9.							•				
Time:		20:00						5	ouna	1.0 /0	· •.	
		00.00	HTHP-FL:			Hard/Ca:	450.00	0 mg/L	Sand [.]	1.5 %	P\/·	5 cP
Check Depth	h: 1,1	40.0 m	Filter-Cake:		2 /32nd"	KCI:		4.0 %	H2O:	94 %	Viscosity:	41 s/qt
Mud Desc:		4PHB	API FL:	12.5	cm³/30min	CI:			Solids:	6.5 %	Glycol:	
WBM Dat	ta										Cost Today:	\$ 707
Total				24.0			100.0		504.0			100.0
Undefined				0.0			0.0		0.0			0.0
U			:	20.0			83.3		20.0			4.0
TP				0.0			0.0		4.0			0.8
Р				4.0			16.7		480.0			95.2
				Hrs			%		Hrs			%
					Daily	,				Cumul	ative Well	
Performa	ance Summa	ary										
PH0	U	SV	Y 05:30	06:00	0.50	1,200.0	Deviation Surve	y @ 1	186m. 3 degi	rees, S2	20 E	
PH0	U	CM		05:30	0.25	1,200.0	Circulate prior to					
PH0	P	D		05:15	2.25	1,181.0	Drilling 8.1/2" ho	, 0	,	0 /		
PH0	U	SV	Y 02:30	03:00	0.50	1,181.0	WOB: 2-3klb RF Deviation Surve			01 /	1 /	ROP: 7-14m/hr
PH0	P	DA	A 01:15	02:30	1.25	1,181.0	Drill from 1171m					
PH0	U	SV	Y 00:45	01:15	0.50	1,171.0	Deviation Surve	y @ 1	158m, 2.5 de	egrees, S	5 15 E	
PH0	Р	SC	R 00:30	00:45	0.25	1,171.0	Circulate and re	cord S	CR pressure	s @ 1171	lm Mwt 9.0pp	g
PH0	U	SV	R 00:30 Y 00:45	01:15	0.50	1,171.0	Deviation Surve	cord S y @ 1	SCR pressures 158m, 2.5 de	s @ 1171		

			Pump c	lata - Last 2	4 Hrs				Slow Pun	np Data
No	Туре	Liner (in)	SPM	Eff. (%)	Flow (galUS/min)	SPP (psi)	Depth (m)	MW (ppg)	SPM	SPP (psi)
1	Contnental Emsco /	F-800 5.50	0 77	97		949	1,171.0	9.00		
2	Continental Emsco / 800	F- 5.50	0 77	97		949	1,171.0	9.00	60 40	200 100
Casin	g									
	OD	LOT			FIT	Casin	g Shoe (MD)		Casing Shoe	(TVD)
	406 mm (16")						11	.0 m		11.0 m
	244 mm (9 5/8")		16.70 ppg	1			762	.7 m		762.7 m
BHA #	#2					·				
BHA T	уре:			Packed	Total Weight Wet:					41 klb
Depth	In/Out:		766.1 m	/1,138.0 m	Weight Below Jar	Wet:				32 klb
Date I	n/Out:	#18 (20 Jan 20	13)/#21 (23	Jan 2013)						
Total L	_ength:			191.9 m						
BHA [Description:	8.1/2"PDC bit -	8.1/2"NB - :	k/o - Teledrit	ft -x/o-8.1/2"Stab-NN	/IDC- 8.1/2"S	Stab - 12 x 6.	50 DC's - Ja	ar -2 x 6.50 D	C's - 4 x
		4.50" HWDP								
	Run Comment:	Production Hole	Section							



BHA Daily Summary										
Pickup Weight:	103 klb	Torque (max):		5,5	85 ft-lbs		. (1) Ann Ve			0 ft/s
Slack-Off Weight:	100 klb	Torque Avg. Off Bo		4,4	45 ft-lbs		. (2) Ann Ve			0 ft/s
String Weight:	100 klb	Torque Avg. On Bo	ottom:	2,7	16 ft-lbs		D.P. Ann. \	•		0 ft/s
Jars Hours Logged:	4.50 h					D.P.	Ann. Veloc	ity:		0 ft/s
Summary:										
BHA Component										
Equipment		Description		Length (m)	OE (in		ID (in)	Serial #		Hours
Bit	Hughes PDC			0.35	5 8.	500		7033845		0.00
Near Bit Stab				1.28	3 6.	500		T3660-0		
X/O				0.78	3 6.	188	2.500	L5-59		
	Teledrift Surve	/ tool		2.82	2 6.	500		2158/1896		
X/O				0.45	5 6.	406	2.781	R16 30 -002		
String Stabiliser				1.58	5 6.	500	2.937	T3310-10		
NM Drill Collar				9.18	3 6.	531	2.844	JFC BT 15		
String Stab				1.58	5 6.	500	2.844	T 3308.0		
6 1/2" DC		5922-9/ 30.2.21 / 30.2 231/GP59/29.013/GF		108.18	3 6.	250	3.312			
6 1/2" HE Hydra-Jar				9.53	3 6.	375	2.500			
6-1/2" DC	S26 132 - 10 / 2	29.008		18.4 <i>°</i>	1 6.	313	2.500			
HWDP	A58 715/ A58 7	'30/ A58 716/A58 720	C	37.86	6.	250	2.875			
Directional Data										
Slide Time:		Rotate Time:				Circ	. Time:			
Slide (%):		Rotate (%):				Circ	. (%):			
Total Slide Time:	0.00 h	Total Rotate Time:			0.00 h	Tota	al Circ. Time	e -		0.00 h
Total Revs:	0 Krevs	HSI:		0.0	0 hp/in ²					
Bit #2									Nozzle	s
	mm (8 1/2") Tyj			PDC	IADC #:		M223	1 "	Siz	e (/32nd")
-		del:		Q505F	TFA:		0.552 in	I 1 X		12
Serial #:	7033845 Bit	Wear: 1-2-0	CT-S-X-I-W	T-BHA	Cost:		:	\$ 1 x		12
								1 x		12
								1 x		12
								1 x		12
Bit Run Comment: 8.	50" Production ho	ble						•		
Bit Wear Comment:										
BHA #3										
BHA Type:		Pendulum	Total Wei	ght Wet:						
Depth In/Out:	1	,138.0 m/1,296.0 m	Weight Be	elow Jar V	Vet:					
Date In/Out: #	#21 (23 Jan 2013)	/#23 (25 Jan 2013)								
Total Length:		185.9 m								
-		Sub (Float & Totco E 4 x 4 1/2" HWDP,	3affle), 6 1/2	2" NMDC,	8 1/2" St	tring S	tabiliser, 12	x 6 1/2" DC, 6	6 1/2" C	Drilling
BHA Run Comment: F	Pendulum assemb	ly to correct deviatior	<u>ו</u>							

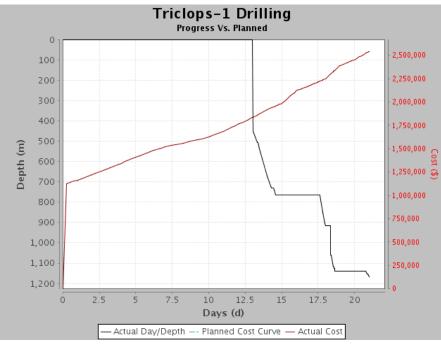


	mary										
Pickup Weight:		105 klb	Torque (max):		,	85 ft-lbs	D.C. (1) A	nn Vel	ocity:		5 ft/s
Slack-Off Weight	t:	100 klb	Torque Avg. Off	f Bottom:	2,7	16 ft-lbs	D.C. (2) A	nn Velo	ocity:		0 ft/s
String Weight:		103 klb	Torque Avg. On	Bottom:	4,4	45 ft-lbs	H.W.D.P.	Ann. V	elocity:		3 ft/s
Jars Hours Logg	ed:	33.25 h					D.P. Ann.	Velocit	ty:		3 ft/s
Summary:											
BHA Componer	nt										
Equipm	nent		Description		Length (m)	OE (in) 1)	Serial	#	Hours
Bit	Н	uahes Christi	an PDC Bit 2 RR1		0.4	`	.500	·/	7033845		
Bit Sub		-	es with ported float					.844	GUW02427	7	
Dir Oub		nding baffle							001102121		
NM Drill Collar					9.1	8 6.	.438 2	.844	JFCBT15		
8-1/2" String Stal	b				1.5	5 6.	.500 2	.844	T3308.0		
6 1/2" DC	S	N: 592226, G	P5922-9, 30-2-21,	, 30-2-2, 92	22 108.1	7 6.	.188 2	.938			
	-2	, 29018, EDO	03231, GP5922-9	9, 29013,							
	G	P3837.3, 290	04, 29007,								
6 1/2" Hydraulic	Jar Bi	ico Hydro-Me	chanical		9.5	3 6.	.375 2	.500	004.		
									BD003.135	398	
6 1/2" DC	S	N: S26132.10), 29008		18.4	1 6.	.313 2	.938			
HWDP	S	N: A5875, A5	8730, A58716, A5	68720	37.8	2 6.	.250 2	.875			
Directional Data	a										
Slide Time:			Rotate Time:				Circ. Time	e:			
Slide (%):			Rotate (%):				Circ. (%):				
Total Slide Time:	:	0.00 h	Total Rotate Tin	ne:		0.00 h	Total Circ	. Time:			0.00 h
Total Revs:		20 Krevs	HSI:		2.1	17 hp/in²					
Bit #2RR1										Nozzle	s
Size:	216 mm	(8 1/2") Ty	pe:		PDC	IADC #:		M223	#	Siz	e (/32nd")
Manufacturer:	BHI (I	Hughes Mo	del:		Q505F	TFA:	0	.552 in²	5	х	12
	Christ	tensen) Bit	Wear: 1	-2-CT-S-X-	LVA/T DUIA	Cost:		\$		^	12
Carial #	erine.				-I-WI-BHA				'		
Serial #:		033845			-I-WI-BHA						
Serial #: Bit Run Comme	ent:										
	ent: eent: Chipp	ed cutter attri	bute to difficulties ed by ditch magne			gs and sh	ioe track, hi	gh errat		arge qu	antity of
Bit Run Comme	ent: ent: Chipp steel s	ed cutter attri				gs and sh	oe track, hi	gh errat		.arge qu	antity of
Bit Run Comme Bit Wear Comm	ent: ent: Chipp steel s	ed cutter attri				gs and sh	ioe track, hi	gh errat		.arge qu	antity of
Bit Run Comme Bit Wear Comm Drilling Parame	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne		ed drilling plu	gs and sh	ioe track, hij	gh errat			antity of 9.24 kg/m³
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne	ets	ed drilling plu	gs and sh	ioe track, hi	gh errat			
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3 Top Depth:	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne	ets 66.0 m P	ed drilling plu	gs and sh	ioe track, hi	gh errat	tic torque. L		
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3 Top Depth:	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne	ets 66.0 m P	ed drilling plu			gh errat	tic torque. L		9.24 kg/m³
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3 Top Depth: Bottom Depth:	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg		gh errat	tic torque. L	Max alUS/mir 3 rpm	9.24 kg/m³
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Flow	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi		gh errat	tic torque. L	Max alUS/mir	9.24 kg/m³
Bit Run Comme Bit Wear Comm Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1) Min 393 galUS/min 95 rpm	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi 14 rpm		gh errat	lic torque. L 410 g 13 13	Max alUS/mir 3 rpm	9.24 kg/m³
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1(Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs	in	gh erral	tic torque. L 410 g 13 13 99	Max alUS/mir 3 rpm 3 rpm	9.24 kg/m³
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1(Min 393 gaIUS/min 95 rpm 95 rpm 900 psi	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs 3 klbs	in	gh erral	tic torque. L 410 g 13 13 99 5,58 5	Max alUS/mir 3 rpm 3 rpm 3 psi 13 psi 15 ft-lbs klbs	9.24 kg/m³
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1(Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs	in	gh errat	tic torque. L 410 g 13 13 99 5,58 5	Max alUS/mir 3 rpm 3 rpm 3 psi 15 ft-lbs	9.24 kg/m³
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1) Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs 1 klbs	ets 66.0 m P	ed drilling plu PWD ECD: 402	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs 3 klbs	in	gh errat	tic torque. L 410 g 13 13 99 5,58 5	Max alUS/mir 3 rpm 3 rpm 3 psi 13 psi 15 ft-lbs klbs	9.24 kg/m³
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP	ent: ent: Chipp steel s	ed cutter attri	ed by ditch magne 7(1,1) Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs 1 klbs	ets 66.0 m P	ed drilling plu PWD ECD: 402 4, 16	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs 3 klbs	in	gh erral	tic torque. L 410 g 13 13 99 5,58 5	Max alUS/mir 3 rpm 3 rpm 3 psi 5 ft-lbs klbs 50 m/h	9.24 kg/m³
Bit Run Comme Bit Wear Comme Bit Wear Comme BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey	7(pent: Chipp steel s ters	ed cutter attri	ed by ditch magne 7(1,1) Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs 1 klbs 3.00 m/h	66.0 m P 66.0 m 2 66.0 m	ed drilling plu PWD ECD: 402 4, 16 t Do	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs 3 klbs 60.00 m/h	in	gh errat	tic torque. L 410 g 13 13 99 5,58 5 28.	Max alUS/mir 3 rpm 3 rpm 3 psi 5 ft-lbs klbs 50 m/h	9.24 kg/m³ 1
Bit Run Comme Bit Wear Comme Drilling Parame BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey MD	rent: Chipp steel s ters	ed cutter attri swarf recover	ed by ditch magne 74 1,11 Min 393 galUS/min 95 rpm 95 rpm 900 psi 2,716 ft-lbs 1 klbs 3.00 m/h TVD	66.0 m P 66.0 m	ed drilling plu PWD ECD: 402 4, 16 t Do	Avg galUS/mi 14 rpm 14 rpm 947 psi 151 ft-lbs 3 klbs 0.00 m/h gleg	in	gh errat	tic torque. L 410 g 13 13 99 5,58 5 28.1 E/W	Max alUS/mir 3 rpm 3 rpm 33 psi 35 ft-lbs klbs 50 m/h T	9.24 kg/m³ 1

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Survey										
MD	Incl.	Corr. Az	TVD) 'V' S	Sect D	ogleg	N/S	3	E/W	Tool Type
(m)	(°)	(°)	(m)) (m) (de	eg/30m)	(m	ו)	(m)	
1,148.0	2.8	0.00								тотсо
1,148.0	2.8	170.00	973	.5 -26	.938 (0.885	-26	6.9	6.7	TOTCO
1,158.0	2.5	0.00								TOTCO
1,158.0	2.5	165.00	983	.5 -27	.389	1.135	-27	′.4	6.8	TOTCO
1,168.0	2.8	162.00	993	.5 -27	.832 (0.991	-27	′.8	6.9	TOTCO
1,186.0	3.0	0.00								TOTCO
Formations										
		Name					٦	Гор (m)		
Winton Formati	on									5.2
Mackunda Form	nation									641.5
Allaru Mudston										745.0
Toolebuc Form										1,038.0
Wallumbilla For	mation									1,094.0
Personnel On	Board									
Jo	b Title		Personn	el	(Company			Pax	
					ENSIGN					22
					Drillsearch					4
					Sub Contract					6
					Oil Industry 0	Catering Ser	vices			4
							To	tal		36
Bulk Stocks										
	Name		Unit	Start Amount	Previous Balance	In		Used	Adjust	Balance
Diesel Fuel (Itr)			ltr		51,750		0	0	0	51,750
Pot Water (Itr)			ltr		45,000		0	0	0	45,000
Camp Fuel (Itr)			ltr		4,150		0	0	0	4,150



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Triclops-1	Drilling							
Report Nu	mber :		22	Day \	Vellsite F	Representat	ve: Guy L. Holmes Rig Manager: Dav	ve Dougherty
Latitude (South)	141° ′	14' 40.40'	-		Represent		ENSIGN
Longitude	(East)	25° \$	59' 43.40'	•			Wellsite Geologist: A	ndrew James
Well Data								
Country:		Australia	Current	t Hole Siz	ze:	8.500	n Casing OD: 9.625 in AFE Number:	OPS-13-015
Field:			Measu	ed Depti	า:	1,296.0	n Casing MD: 762.7 m Original AFE:	\$ 3,447,294
Rig:		Ensign 918	True Ve	ertical De	epth:	1,296.0	n Casing TVD: 762.7 m Supp AFE No:	
Ground Le	evel:	141.0 m	24 Hr F	rogress:		130.0	n TOL MD: Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C	n Well:		22.0	0 TOL TVD: AFE:	
Plan TD (N	/ID):	2,021.0 m	Days S	ince Spu	d:	10.4	8 Lnr Shoe MD: Daily Cost:	\$ 76,330
Plan TD (T	TVD):	2,021.0 m	Last BC	OP Date:		19 Jan 20	3 Lnr Shoe TVD: Cum. Cost:	\$ 2,617,850
			FIT/LO	T:		/16.72 pj	g Last LTI Date:	05 Feb 2012
							Days Since LTI:	354
Current Op	o @ 0600:		Making	up Direc	tional too	ols and RIH		
Planned O	p:						g assemby. Check survey every stand from shoe to drilled de	pth. Drill
			directio	nal 8 1/2	" hole fro	m 1296m to	TD correcting well path to intersect target.	
Summary	for Period	0000 Hrs to	2400 Hrs	s on 24 J	lan 2013			
Drilling 8.1	/2" hole fro	m 1166m to	1296m - I	Ran devia	ation surv	veys every	Om drilled	
Operation	s for Peric	od 0000 Hrs t	o 2400 H	rs On 24	1 Jan 20′	13		
PHSE	CLS	OP	From	To	Hrs	Depth	Activity Description	
THOL	(RC)	01	110111	10	1110	(m)	Adding Decemption	
PH0	Р	DA	00:00	00:30	0.50	1,171.0	Drill 8.1/2" hole from 1168m to 1171m	
PH0	Р	SCR	00:30	00:45	0.25	1,171.0	Circulate and record SCR pressures @ 1171m Mwt 9.0ppg	
PH0	U	SVY	00:45	01:15	0.50	1,171.0	Deviation Survey @ 1158m, 2.5 degrees, S 15 E	
PH0	P	DA	01:15	02:30	1.25	1,181.0	Drill from 1171m to 1181m	
							WOB: 2-3klb RPM: 100-120 Flow: 425gpm, SPP: 980psi, ROF	P: 7-14m/hr
PH0	U	SVY	02:30	03:00	0.50	1,181.0	Deviation Survey @ 1168m, 2.75 degrees, S 18 E	
PH0	Р	DA	03:00	05:15	2.25	1,200.0	Drilling 8.1/2" hole from 1181m to 1200m	
PH0	U	CMD	05:15	05:30	0.25	1,200.0	Circulate prior to running survey @ 1186m	
PH0	U	SVY	05:30	06:00	0.50	1,200.0	Deviation Survey @ 1186m. 3 degrees, S 20 E	
PH0	Р	DA	06:00	09:15	3.25	1,219.0	Drill ahead to 1219m	
PH0	U	SVY	09:15	09:45	0.50	1,219.0	Deviation Survey @ 1207m. 3.5 degrees, S 5 E	
PH0	Р	DA	09:45	14:00	4.25	1,239.0	Drill ahead to 1239m	
PH0	U	SVY	14:00	14:30	0.50	1,239.0	Deviation Survey @ 1226m. 3 degrees, S 10 E	
PH0	Р	DA	14:30	16:45	2.25	1,258.0	Drill ahead to 1258m	
PH0	U	SVY	16:45	17:15	0.50	1,258.0	Deviation Survey@ 1245m. 2.75 Deg S15E	
PH0	Р	DA	17:15	18:15	1.00	1,268.0	Drill ahead from 1258 to 1268m	
PH0	Р	RS	18:15	18:45	0.50	1,268.0	Rig Service	
PH0	Р	DA	18:45	19:45	1.00	1,277.0	Drill ahead from 1268m to 1277m	
PH0	U	DEV	19:45	20:15	0.50	1,277.0	Run deviation survey @ 1264m.	
PH0	Р	DA	20:15	23:30	3.25	1,296.0	Drill from 1277m to 1296m	
PH0	U	CMD	23:30	24:00	0.50	1,296.0	Circulate hole clean over shakers	
Operation	s for Peric	od 0000 Hrs t	to 0600 H	rs On 2	5 Jan 20′	13		
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)	Activity Description	
PH0	U	DEV	00:00	00:15	0.25	1,296.0	Run deviation survey @ 1284m 3 Deg S 20 E	
PH0	Р	SCR	00:15	00:30	0.25	1,296.0	Circulate - Perform SCRs @ 1296m Pump # 1 & 2 at 40/60sp 200Psi Mud Wt 9.0ppg	om 100Psi -
PH0	U	то	00:30	04:30	4.00	1,296.0	Pumped 10Bbl weighted pill - Racked Kelly. Flow check - Pull out to change BHA and run Mud motor and I tools	Directional

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							Well : Tri	iclops-1 Drillin	g						
PH0	U	HE	зн (04:30 0	05:00	0.50	1,296.0	Clean and c	lear too	ls and	d 8 1/2" bit f	rom dril	l floor		
PH0	U	HE	зн (05:00 0	00:00	1.00	1,296.0	Move subs a	and Mu	d mot	or to cat-wa	lk - Picł	kup 6.3/4'	' motor and	l make up
								BHA No:4 D	irectior	al As	sembly.				
Perform	mance Sur	nmary													
						Daily	/					Cumu	lative We		
				Hrs				%			Hrs		_	%	
Р				19.8				82.3			499.8			94.6	
TP				0.0				0.0			4.0			0.8	
U				4.2				17.7			24.2			4.6	
Undefine	ed			0.0				0.0			0.0			0.0	
Total				24.0				100.0			528.0			100.0)
WBM [Data												Cost Too	lay:	\$ 1,803
Mud Deso	o:	4PHB	API FL:		12.5 c	m³/30mir	n CI:			So	lids:	6.5 %	Glycol:		
Check De	epth:	1,277.0 m	Filter-Ca	ke:		2 /32nd'	" KCI:		4.0	% H2	0:	94 %	Viscosity	:	44 s/qt
Time:		20:00	HTHP-FI	L:			Hard/Ca:	45	50.00 m	g/L Sa	nd:	1.5 %	PV:		9 cP
Weight:		9.00 ppg	НТНР-С	ake:			MBT:			pН	:	ç	YP:		21 lbf/100ft2
Temp:		60.0 °C	HTHP-T	emp:			Pm:		0.10	m³ PH	IPA:		Gel 10s:		12 lbf/100ft ²
			HTHP-P	ress:			Pf:		0.	20 Mf:	:	0.70 m ²	³ Gel 10m:		16 lbf/100ft ²
Comme	nt:												RP	M	Reading
Pumps	5														
					Pum	p data	- Last 24	Hrs						Slow Pu	Imp Data
No		Туре		Liner	SP	М	Eff.	Flow		SPP	Depth		MW	SPM	SPP
				(in)			(%)	(galUS/min)		(psi)	(m)	((ppg)		(psi)
1	Continen	tal Emsco/	F-800	5.50	0	77	97			94	,		9.00		
2	Continen	tal Emsco/	F-800	5.50	0	77	97			94	9 1,171	.0	9.00	60 40	200 100
Casing													1		
	OD			LOT				FIT		Ca	sing Shoe (N	MD)	С	asing Shoe	e (TVD)
	406	mm (16")										11.0 n	n		11.0 m
	244 mr	m (9 5/8")			16.70	ppg						762.7 n	n		762.7 m
BHA #	3														
BHA Ty						Pen		Total Weight W							
Depth I	n/Out:				1,138.0) m/1,29	96.0 m	Weight Below	Jar Wet	:					
Date In			#21 (2	3 Jan 20'	13)/#23	•	· · ·								
Total L	ength:					18	35.9 m								

8 1/2" PDC Bit, Bit Sub (Float & Totco Baffle), 6 1/2" NMDC, 8 1/2" String Stabiliser, 12 x 6 1/2" DC, 6 1/2" Drilling

Jar, 2 x 6 1/2" DC, 4 x 4 1/2" HWDP,

Pendulum assembly to correct deviation

BHA Description:

BHA Run Comment:



Γ

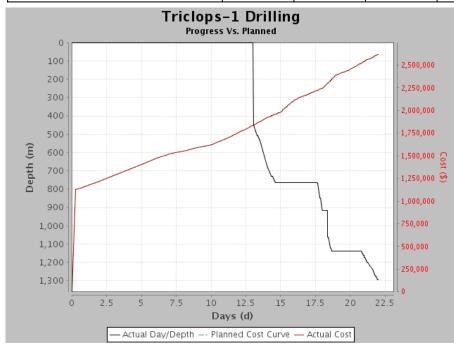
Well : Triclops-1 Drilling

BHA Daily Summar	У										
Pickup Weight:		110 klb	Torque (max):		5,585	ft-lbs	D.C. (1) An				5 ft/s
Slack-Off Weight:		108 klb	Torque Avg. Off Bottor	า:	2,398	ft-lbs	D.C. (2) An	n Velo	city:		0 ft/s
String Weight:		110 klb	Torque Avg. On Bottor	า:	4,181	ft-lbs	H.W.D.P. A	nn. Ve	locity:		3 ft/s
Jars Hours Logged:		20.00 h					D.P. Ann. V	elocity/	/:		3 ft/s
Summary:											
BHA Component											
Equipment			Description	L	_ength (m)	OD (in)	ID (in)		Serial	#	Hours
Bit		aboe Christi	an PDC Bit 2 RR1		0.40	8.5	,	- 1-	7033845		
Bit Sub		-	es with ported float and T	oteo	0.40	6.4			GUW0242	7	
		ding baffle	s with ported float and T							/	
NM Drill Collar					9.18	6.4			JFCBT15		
8-1/2" String Stab					1.55	6.5			Г3308.0		
6 1/2" DC	-2,		P5922-9, 30-2-21, 30-2-2 :03231, GP5922-9, 2901 04, 29007,		108.17	6.1	88 2.9	38			
6 1/2" Hydraulic Jar	Bic	o Hydro-Me	chanical		9.53	6.3	2.5		004. 3D003.135	5398	
6 1/2" DC	SN	: S26132.10	, 29008		18.41	6.3	2.9				
HWDP	SN	: A5875, A5	8730, A58716, A58720		37.82	6.2	250 2.8	75			
Directional Data											
Slide Time:			Rotate Time:				Circ. Time:				
Slide (%):			Rotate (%):				Circ. (%):				
Total Slide Time:		0.00 h	Total Rotate Time:		C).00 h	Total Circ.	Time:			0.00 h
Total Revs:		106 Krevs	HSI:		2.17	hp/in²					
Bit #2RR1										Nozzl	es
Size:	216 mm (8	8 1/2") Typ	be:	ŀ	PDC IA	ADC #:		M223	#	-	ze (/32nd")
Size: Manufacturer:	216 mm (8 BHI (H Christe	ughes Mo	del:		505F T	ADC #: FA:		M223 52 in² \$	# 5	-	
	BHI (H Christe	ughes Mo	del:	Q5	505F T	FA:		52 in²		Siz	ze (/32nd")
Manufacturer:	BHI (H Christe	ughes Mo ensen) Bit	del:	Q5	505F T	FA:		52 in²		Siz	ze (/32nd")
Manufacturer: Serial #:	BHI (H Christe 70 : Chippe	ughes Mo ensen) Bit 33845 d cutter attri	del:	Q5 S-X-I-RR-I	505F T BHA C	FA: cost:	0.5	52 in² \$	5	Siz	ze (/32nd") 12
Manufacturer: Serial #: Bit Run Comment:	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri	del: Wear: 1-2-CT- bute to difficulties experie	Q5 S-X-I-RR-I	505F T BHA C	FA: cost:	0.5	52 in² \$	5	Siz	ze (/32nd") 12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment:	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri	del: Wear: 1-2-CT- bute to difficulties experie	Q5 S-X-I-RR-I	505F T BHA C	FA: cost:	0.5	52 in² \$	5	Siz	ze (/32nd") 12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets	Q5 S-X-I-RR-I	505F T BHA C ing plugs	FA: cost:	0.5	52 in² \$	5	Siz	ze (/32nd") 12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets	Q5 S-X-I-RR-I	505F T BHA C ing plugs	FA: cost:	0.5	52 in² \$	5	Siz	ze (/32nd") 12 uantity of
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth:	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD:	FA: iost: and sho	0.5 be track, high	52 in² \$	5 c torque.	Siz x Large qu Max	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Flow	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A 402 ga	FA: iost: and sho	0.5 be track, high	52 in² \$	5 c torque. I 410 g	Siz x Large qu Max JalUS/m	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A02 ga 112	FA: iost: and sho wg IUS/min rpm	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14	Si: x Large qu Max alUS/mi 2 rpm	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m 1,296.0 m Min 393 galUS/min 82 rpm 82 rpm	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A02 ga 112 112	FA: sost: and sho wg IUS/min 2 rpm 2 rpm	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14 14	Si: x Large qu Max alUS/mi 2 rpm 2 rpm	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m 1,296.0 m 82 rpm 82 rpm 82 rpm 900 psi	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A02 ga 112 112 974	FA: iost: and sho wg IUS/min 2 rpm 2 rpm 4 psi	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14 14 14	Si: x Large qu Max galUS/mi 2 rpm 12 rpm 12 rpm 148 psi	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m 1,296.0 m 82 rpm 82 rpm 82 rpm 900 psi 2,398 ft-lbs	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A02 ga 112 112 974 4,048	FA: iost: and sho wg IIUS/min 2 rpm 2 rpm 4 psi 3 ft-lbs	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14 14 14 1,0 5,65	Si: x Large qu Max galUS/mi l2 rpm l2 rpm l2 rpm l48 psi 98 ft-lbs	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm 82 rpm 900 psi 2,398 ft-lbs 1 klbs	Q5 S-X-I-RR-I	505F T BHA C ing plugs CCD: A 402 ga 112 974 4,048 6 l	FA: iost: and sho wg IUS/min 2 rpm 4 psi 3 ft-lbs klbs	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14 14 1, 5,69 10	Si: x Large qu Max JalUS/mi l2 rpm J2 rpm J48 psi J8 ft-lbs 0 klbs	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP	BHI (H Christe 70 : Chippe steel st	ughes Mo ensen) Bit 33845 d cutter attri warf recover	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m 1,296.0 m 82 rpm 82 rpm 82 rpm 900 psi 2,398 ft-lbs	Q5 S-X-I-RR-I	505F T BHA C ing plugs CCD: A 402 ga 112 974 4,048 6 l	FA: iost: and sho wg IIUS/min 2 rpm 2 rpm 4 psi 3 ft-lbs	0.5 be track, high	52 in² \$	5 c torque. 1 410 g 14 14 1, 5,69 10	Si: x Large qu Max galUS/mi l2 rpm l2 rpm l2 rpm l48 psi 98 ft-lbs	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey	BHI (H Christe 70 : Chippe steel sv	ughes Mo ensen) Bit 33845 d cutter attri warf recovere	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm 82 rpm 900 psi 2,398 ft-lbs 1 klbs 2.50 m/h	Q5 S-X-I-RR-I	505F T BHA C ing plugs CD: A 402 ga 112 974 4,048 6 l 22.0	FA: iost: and sho wg IUS/min 2 rpm 4 psi 3 ft-lbs klbs 8 m/h	0.5	52 in² \$	5 c torque. 1 410 g 14 14 1,c 5,66 10 28.	Si: x Large qu Max JalUS/mi l2 rpm l2 rpm l2 rpm J48 psi J8 ft-lbs 0 klbs 50 m/h	ze (/32nd") 12 Jantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey MD	BHI (H Christe 70 : Chippe steel sv	ughes Mo ensen) Bit 33845 d cutter attri warf recovered corr. Az	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm 82 rpm 900 psi 2,398 ft-lbs 1 klbs 2.50 m/h	Q5 S-X-I-RR-I Inced drilli	505F T BHA C ing plugs CCD: A 402 ga 112 974 4,048 6 l 22.0 Dogle	FA: cost: and sho and sho uUS/min 2 rpm 2 rpm 4 psi 3 ft-lbs klbs 8 m/h	0.5 be track, high	52 in² \$	5 c torque. I 410 g 14 14 1,0 5,69 10 28. E/W	Si: x Large qu Max JalUS/mi l2 rpm l2 rpm l2 rpm J48 psi J8 ft-lbs 0 klbs 50 m/h	ze (/32nd") 12 Juantity of 9.23 kg/m ³
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey MD (m)	BHI (H Christe 70 : Chippe steel sv	ughes Mo ensen) Bit 33845 d cutter attri warf recovered corr. Az (°)	del: Wear: 1-2-CT- bute to difficulties experie ed by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm 900 psi 2,398 ft-lbs 1 klbs 2.50 m/h TVD 'V' (m) v'	Q5 S-X-I-RR-I I PWD E	505F T BHA C ing plugs ing plugs iCD: A02 ga 112 112 974 4,048 6 l 22.0 Dogle (deg/3	FA: iost: and sho wg IUS/min 2 rpm 2 rpm 2 rpm 2 rpm 3 ft-lbs klbs 8 m/h eg 0m)	0.5 pe track, high	52 in² \$	5 c torque. 1 410 g 14 14 14 1,0 5,69 10 28. E/W (m)	Siz x Large qu Max JalUS/mi 2 rpm 12 rpm 12 rpm 12 rpm 12 rpm 12 rpm 13 ft-lbs 50 m/h	ze (/32nd") 12 Jantity of 9.23 kg/m ³ in
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #3 Top Depth: Bottom Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque WOB ROP Survey MD	BHI (H Christe 70 : Chippe steel sv	ughes Mo ensen) Bit 33845 d cutter attri warf recovered corr. Az	del: Wear: 1-2-CT- bute to difficulties experie de by ditch magnets 766.0 m 1,296.0 m Min 393 galUS/min 82 rpm 900 psi 2,398 ft-lbs 1 klbs 2.50 m/h TVD 'V' (m) 0 1,011.5 -24	Q5 S-X-I-RR-I Inced drilli	505F T BHA C ing plugs CCD: A 402 ga 112 974 4,048 6 l 22.0 Dogle	FA: oost: and sho and sho uUS/min 2 rpm 2 rpm 4 psi 3 ft-lbs klbs 8 m/h eg 0m) 3	0.5 be track, high	52 in² \$	5 c torque. I 410 g 14 14 1,0 5,69 10 28. E/W	Siz x Large qu Max JalUS/mi 2 rpm 2 rpm 22 rpm 248 psi 28 ft-lbs 0 klbs 50 m/h	ze (/32nd") 12 Jantity of 9.23 kg/m ³

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Survey										
MD	Incl.	Corr. Az	TVD	'V' \$	Sect D	ogleg	1	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(m) (d	eg/30m)		(m)	(m)	
1,226.0	3.0	170.00	1,051	.4 -30).915	0.906	-	-30.9	7.6	TOTCO
1,245.0	2.8	165.00	1,070	.4 -31	1.853	0.509	-	-31.9	7.8	тотсо
1,264.0	2.8	160.00	1,089	.4 -32	2.738	0.385	-	-32.7	8.1	тотсо
1,284.0	3.0	160.00	1,109	.3 -33	3.689	0.300	-	-33.7	8.4	TOTCO
Formations										
		Name						Top (m)		
Winton Formati	on									5.2
Mackunda Forn	nation									641.5
Allaru Mudstone	e									745.0
Toolebuc Forma										1,038.0
Wallumbilla For	rmation									1,094.0
Personnel On	Board				·					
	Board bb Title		Personne	el		Company			Pax	
			Personne	el	ENSIGN	Company			Pax	22
			Personne	el	-	Company			Pax	22 5
			Personne	el	ENSIGN Drillsearch Sub Contrac	ctor			Pax	
			Personne	əl	ENSIGN Drillsearch	ctor	ervices		Pax	5
			Personne	el	ENSIGN Drillsearch Sub Contrac	ctor		Total	Pax	5 13
			Personne	el 	ENSIGN Drillsearch Sub Contrac	ctor			Pax	5 13 4
Jo			Personne	el Start Amount	ENSIGN Drillsearch Sub Contrac	ctor			Pax	5 13 4
Jo	bb Title			Start	ENSIGN Drillsearch Sub Contrac Oil Industry Previous	ctor Catering Se		Total	Adjust	5 13 4 44 Balance
Jo Bulk Stocks	bb Title		Unit	Start	ENSIGN Drillsearch Sub Contrac Oil Industry Previous Balance	ctor Catering Se		Total Used	Adjust	5 13 4 44 Balance 45,305



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Well : Triclops-1 Drilling

Triclops-1	Drilling										
Report Nui	mber :		23	Day \	Vellsite F	Representat	tive:	Guy L. Holmes	Rig I	Manager:	Dave Dougherty
Latitude (S	South)	141° ′	14' 40.40"	Night	Wellsite	Represent	ative:	Don Castles	Drilli	ng Company:	ENSIGN
Longitude	(East)	25° (59' 43.40"						Well	site Geologist:	Andrew James
Well Data											
Country:		Australia	Current	Hole Siz	ze:	8.500	in Casi	ng OD: 9.6	25 in	AFE Number:	OPS-13-015
Field:			Measur	ed Depth	า:	1,336.0	m Casi	ing MD: 762	2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918	True Ve	ertical De	epth:	1,336.0	m Casi	ng TVD: 762	2.7 m	Supp AFE No:	
Ground Le	evel:	141.0 m		rogress:		170.0		MD:		Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days O			23.0		TVD:		AFE:	
Plan TD (N	,	2,021.0 m	-	ince Spu		11.4		Shoe MD:		Daily Cost:	\$ 73,884
Plan TD (T	־VD):	2,021.0 m		P Date:		19 Jan 20		Shoe TVD:		Cum. Cost:	\$ 2,691,734
			FIT/LO	Γ:		/16.72 pj	pg			Last LTI Date:	05 Feb 2012 355
Current Op	n @ 0600 [.]		Drilling	8 1/2" hc	le with di	irectional to	ols throu	nh 1413m		Days Since LTI:	305
Planned O	-		-					rrect well path			
Summary	for Period	0000 Hrs to	2400 Hrs	s on 25 J	lan 2013						
-							8" casino	shoe - Take MWD surv	/evs a	intervalls while con	tinuing to running
		te while drill					e caeg				landing to ranning
HSE Sum	mary										
	Events		Num. Events		Date of I	Last	Days Since	Description		Rei	marks
Non Confo			1		n 2013 0		0	Transport failed to su Weed and Seed declaration. Washdo not carried out.		on his own part carry out the rec held at laydown	ximately 13: have washdown e and d not have eed 7 Seed iver had been ucted prior to form the task and decided not to quirement. Truck and later er blacklisted from
		d 0000 Hrs t	o 2400 H	rs On 2	5 Jan 201						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		Act	tivity D	escription	
PH0 PH0	U P	DEV SCR	00:00 00:15	00:15 00:30	0.25 0.25	1,296.0 1,296.0		riation survey @ 1284n e - Perform SCRs @ 12		-)/60spm 100Psi -
								Mud Wt 9.0ppg I 10Bbl weighted pill - F	Rackec	l Kelly.	
PH0		то	00:30	04:30	4.00	1,296.0	Flow che tools	eck - Pull out to change	BHA	and run Mud motor	and Directional
۱ <u> </u>	U										
PH0	U	НВН	04:30	05:00	0.50	1,296.0	Clean a	nd clear tools and 8 1/2		om drill floor	
PH0 PH0	U U	HBH	04:30 05:00	05:00 06:00	0.50 1.00	1,296.0 1,296.0	Move su	nd clear tools and 8 1/2 lbs and Mud motor to c :4 Directional Assembl	at-wal		otor and make up
PH0 PH0	U U U	HBH TI	05:00 06:00	06:00 11:00	1.00 5.00	1,296.0 1,296.0	Move su BHA No Run in h	ibs and Mud motor to c :4 Directional Assembl iole to to 765m	at-wal y.		otor and make up
РН0 РН0 РН0	U U U U	HBH TI MWD	05:00 06:00 11:00	06:00 11:00 11:30	1.00 5.00 0.50	1,296.0 1,296.0 1,296.0	Move su BHA No Run in h Fill pipe	bs and Mud motor to c :4 Directional Assembl ole to to 765m and function test MWE	at-wal y.) Tool	k - Pickup 6.3/4" m	otor and make up
PH0 PH0	U U U	HBH TI	05:00 06:00	06:00 11:00	1.00 5.00	1,296.0 1,296.0	Move su BHA No Run in h Fill pipe Continue	ibs and Mud motor to c :4 Directional Assembl iole to to 765m	at-wal y.) Tool	k - Pickup 6.3/4" m	otor and make up

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Operati	ions for Perio	od 0000	Hrs to	2400 H	lrs Or	25 Jan	201	3								
PHSE	CLS (RC)	O	P	From	То	Hr	s	Depth (m)				Activity Des	cripti	on		
PH0	U	Т	I	12:00	14:0	0 2.0	0	1,296.0	Run in hole fror Surveys taken					survey	on each sta	and -
PH0	U	Т	1	14:00	19:0	0 5.0	0	1,296.0	Continue run in every second s 900m, 919m, 9 1230m, 1268m Layout last 2 jo	tand @ 59m, 9) 97m, 1	1036m, 107	5m, 1	1113m,		-
PH0	U	Т	1 ·	19:00	20:0	0 1.0	0	1,296.0					•		m	
PH0	P	DI		20:00	24:0		_	1,336.0		Slideir and rot	ng) 8.1 ate as	/2" hole with instructed b	Muc	I motor f	from 1296m	
Operati	ions for Perio	od 0000	Hrs to	0600 H	lrs Or	26 Jan	201	3								
PHSE	CLS (RC)	O	P	From	То	Hr	s	Depth (m)				Activity Des	cripti	on		
PH0 PH0	P	RE		00:00 00:30	00:3 06:0		_	1,336.0 1,461.0		rill 8.1/ instruc	'2" hole tions -	e from 1336 MWD surve	m to eys at	: 1336m		
Perform	mance Summ	arv					<u> </u>									
		-				C	Daily					С	umul	ative We	ell	
				Н	lrs				%			Hrs			%	
Р				4	.2				17.7			504.0			91.3	
TP				0	.0				0.0			4.0			0.7	
U				19	9.8				82.3			44.0			8.0	
Undefine	ed			0	.0				0.0			0.0			0.0	
Total				24	4.0				100.0			552.0			100.0)
WBM C	Data													Cost To	day:	\$ 357
Mud Desc	o:	4PHB	API FL:					CI:			Solids	: 7	7.3 %	Glycol:		
Check De	epth: 1,	297.0 m	Filter-Ca	ake:		2 /3	2nd"	KCI:		4.0 %	H2O:		93 %	Viscosity	/:	41 s/qt
Time:		20:00	HTHP-F	L:				Hard/Ca:	500.0)0 mg/L	Sand:		1.5 %	PV:		6 cP
Weight:	ç	9.10 ppg	HTHP-C	ake:				MBT:			pH:		9	YP:		27 lbf/100ft ²
Temp:		58.0 °C	HTHP-T	emp:				Pm:	(0.10 m³	PHPA			Gel 10s:		12 lbf/100ft ²
			HTHP-P	ress:				Pf:		0.20	Mf:	0.7	70 m³	Gel 10m	:	16 lbf/100ft ²
Comme	nt:													RI	PM	Reading
Pumps	3															
						Pump d	ata -	Last 24	Hrs						Slow Pu	ump Data
No	T	/pe		Line (in		SPM		Eff. (%)	Flow (galUS/min)		рр si)	Depth (m)		MW opg)	SPM	SPP (psi)
1	Continental I	Emsco/I	F-800	5.	500	86		97		1	,683	1,171.0		9.10		
	Continental				-00 I	00		07		L 4	000	4 474 0		0.40	00	200

 Casing
 40
 100

 OD
 LOT
 FIT
 Casing Shoe (MD)
 Casing Shoe (TVD)

 406 mm (16")
 11.0 m
 11.0 m
 11.0 m

1,683

1,171.0

9.10

60

97

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Continental Emsco/F-800

5.500

86

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Casing													
OD	LOT			FIT			Casir	ng Shoe	e (MD)	С	asing S	Shoe (T	
244 mm (9 5/8"))	16.70 ppg							762.7 r	n			762.7 m
BHA #3				-									
BHA Type:		Pe	ndulum	Total Wei	-								
Depth In/Out:	1	,138.0 m/1,2	296.0 m	Weight Be	elow Jar V	Wet:							
Date In/Out:	#21 (23 Jan 2013)/#23 (25 Jai	n 2013)										
Total Length:			85.9 m										
BHA Description:	8 1/2" PDC Bit, Bi Jar, 2 x 6 1/2" DC	``		Baffle), 6 1/2	2" NMDC	C, 8 1	I/2" Stri	ng Sta	biliser, 12	x 6 1/2" E	DC, 6 1	/2" Dril	ing
BHA Run Comment:	Pendulum assem	bly to correct	deviatio	n									
BHA Daily Summary													
Pickup Weight:	110 klb	Torque (m	nax):		5,5	585 f	ft-lbs	D.C. (1) Ann Ve	locity:			0 ft/s
Slack-Off Weight:	108 klb	Torque Av	/g. Off Bo	ottom:	2,3	398 f	ft-lbs	D.C. (2	2) Ann Ve	locity:			0 ft/s
String Weight:	-						ft-lbs	H.W.D	.P. Ann. \	/elocity:			0 ft/s
Jars Hours Logged:	20.00 h		-					D.P. A	nn. Veloc	ity:			0 ft/s
Summary:													
BHA Component													
Equipment		Descriptio	n		Length (m)	1	OD (in)		ID (in)	Ser	ial #		Hours
Bit	Hughes Christ	ian PDC Bit 2	2 RR1		0.4	10	8.5	00	()	7033845			
Bit Sub	Float sub com			nd Totco	0.9		6.4		2.844	GUW024			
NM Drill Collar	Ũ				9.1	18	6.4	38	2.844	JFCBT1	5		
8-1/2" String Stab					1.5	55	6.5	00	2.844	T3308.0			
6 1/2" DC	SN: 592226, G -2, 29018, ED GP3837.3, 29	C03231, GP5			108.1	17	6.1	88	2.938				
6 1/2" Hydraulic Jar	Bico Hydro-Me				9.5	53	6.3	75	2.500	004. BD003.1	35398		
6 1/2" DC	SN: S26132.1	0, 29008			18.4	11	6.3	13	2.938				
HWDP	SN: A5875, A5	8730, A5871	16, A587	20	37.8	32	6.2	50	2.875				
Directional Data													
Slide Time:		Rotate Tir	ne:					Circ. T	ime:				
Slide (%):		Rotate (%):					Circ. (%):				
Total Slide Time:	0.00 h		ate Time:			0.	00 h	Total (Circ. Time	:			0.00 h
Total Revs:	106 Krevs	HSI:			0.	00 h	p/in²						
Bit #2RR1						_					No	zzles	
Size: 2	216 mm (8 1/2") Ty	pe:			PDC	IAI	DC #:		M223	3 #		Size	(/32nd")
Manufacturer:		odel: Wear:	1-2-	CT-S-X-I-R	Q505F R-BHA	TF Co	A: st:		0.552 in	² 5	х		12
Serial #:	7033845												
Bit Run Comment:	·												
Bit Wear Comment:	Chipped cutter attr steel swarf recover			perienced d	rilling plu	igs a	ind sho	e track	, high erra	atic torque	. Larg	e quan	tity of

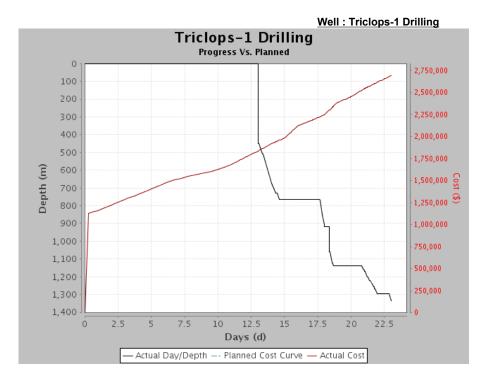


BHA #4											
BHA Type:		Directional	Total Wei	ght Wet:							
Depth In/Out:		1,296.0 m/1,926.5 m	Weight Be	-	Vet:						
Date In/Out:	#23 (25 Jan 201	3)/#27 (29 Jan 2013)	_								
Total Length:		196.2 m									
BHA Description:	8 1/2" PDC Bit, 6	6 3/4" Mud Motor, 8" St	tabiliser, 6 3	3/4" Float	Sub (with	float)	, 6 3/4" HDS	SI Collar, X	/O, X/	0, 12	x 6 1/2"
		g Jar, 2 x 6 1/2" DC, 4				,					
BHA Run Comment:		run to correct deviatior			to target	centr	e.				
BHA Daily Summary											
Pickup Weight:	115 kl	b Torque (max):		2,9	77 ft-lbs	D.C	. (1) Ann Ve	locity:			5 ft/s
Slack-Off Weight:	113 kl	b Torque Avg. Off Bo	ottom:	1,6	07 ft-lbs		. (2) Ann Ve	-			0 ft/s
String Weight:	114 kl			2,4	02 ft-lbs	н.м	/.D.P. Ann. \	Velocity:			3 ft/s
Jars Hours Logged:	77.25	h				D.P	. Ann. Veloc	ity:			3 ft/s
Summary:											
BHA Component											
Equipment		Description		Length	OE)	ID	Seri	al #		Hours
				(m)	(in)	(in)				
Bit	Baker Hughe	es Christian PDC 5 Bla	de, Bit	0.3	5 8.	500		7033541			
	No: 3										
Mud Motor	Standard Pat	hfinder motor 7 stator/8	8 rotor,	7.8	5 3.	750	3.000	F67270			
	1.15degree b	end. bit to bend 1.98 c	degrees								
Stabilizer	J J		0	1.7	8 6.	750	2.750 B 67T135				
Float Sub	Float sub cor	nes with ported float		1.0	2 6.	865	2.750				
NM Drill Collar	HDS1 Collar	·		9.1	6 6.	750	2.750				
X-Over	NC50 Box 5	1/2" FH Pin		0.9	8 6.	.875	3.000	D67CX63	37		
X-Over	NC46 Box N	C50 Pin		1.1		500	2.750	B65X053	А		
6 1/2" DC	SN: 592226,	GP5922-9, 30-2-21, 30)-2-2, 922	108.2	0 6.	188	2.938				
	-2, 29018, ED)C03231, GP5922-9, 2	29013,								
	GP3837.3, 29	9004, 29007,									
6 1/2" Hydraulic Jar	Bico Hydro-M			9.5	3 6.	375	2.500	004.			
								BD003.1	35398	,	
6 1/2" DC	SN: S26132.	10, 29008		18.4	1 6.	.313	2.938				
HWDP	SN: A5875, A	58730, A58716, A587	20	37.8	2 6.	250	2.875				
Directional Data											
Slide Time:		Rotate Time:			2.90 h	Circ	. Time:				8.00 h
Slide (%):		Rotate (%):					:. (%):				
Total Slide Time:	0.00				2.90 h		al Circ. Time	:			8.00 h
Total Revs:	10 Krev	s HSI:		3.	14 hp/in²						
Bit #3									No	ozzles	\$
Size:	216 mm (8 1/2") T	уре:		PDC	IADC #:		M22	3 #		Size	e (/32nd")
Manufacturer:	BHI (Hughes N	Nodel:		Q505F	TFA:		0.552 ir	1 ² 5	х		12
	Christensen) E	Bit Wear: 1-2-	-CT-S-X-I-R	R-BHA	Cost:			\$ 5	^		14
Serial #:	7033541										
Bit Run Comment:											
Bit Wear Comment:											



Drilling Parameter	ers								
BHA Run #4									
Top Depth:			1,2	296.0 m P	WD E	CD:			9.41 kg/m³
Bottom Depth:				336.0 m					Ũ
· · · ·			Min			Avg		Ма	x
Flow			33 galUS/min			453 galUS/mi	n	472 gall	JS/min
Surface RPM			45 rpm			53 rpm		60 rp	
Downhole RPM			125 rpm			160 rpm		195 r	
Pressure			1,495 psi			1,660 psi		1,824	
Torque			1,607 ft-lbs			2,292 ft-lbs		2,977	
WOB			3 klbs			6 klbs		8 kll	
ROP			8.60 m/h			10.00 m/h		30.70	
Survey									
MD	Incl.	Corr. Az	TVD	'V' Sect		Dogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(m)		(deg/30m)	(m)	(m)	
792.0	0.7	94.85	792.0	-		0.520	4.3	1.3	MWD
				7,124,798	.651				
801.6	0.4	347.27	801.6	-		2.827	4.4	1.3	MWD
				7,124,798	.62:				
811.3	0.3	355.57	811.3	-		0.346	4.4	1.3	MWD
				7,124,798	.565				
830.7	0.3	2.96	830.7	-		0.060	4.5	1.3	MWD
				7,124,798	.464				
850.0	0.4	124.82	850.0	-		0.954	4.5	1.4	MWD
				7,124,798	.452				
888.7	1.2	133.38	888.7	-		0.625	4.2	1.8	MWD
				7,124,798	.807				
908.0	1.4	141.98	907.9	-		0.433	3.9	2.1	MWD
				7,124,799	.132				
946.5	1.4	159.55	946.4	-		0.333	3.1	2.5	MWD
				7,124,799	.94:				
985.0	1.5	169.95	984.9	-		0.219	2.1	2.8	MWD
				7,124,800	.88(
1,023.4	1.4	175.36	1,023.3	-		0.132	1.2	2.9	MWD
				7,124,801	.842				
1,062.2	1.7	178.22	1,062.1	-		0.239	0.1	2.9	MWD
1 400 0	0.0	405.00	4 400 7	7,124,802	.890	0.000			
1,100.8	2.0	185.30	1,100.7	-	100	0.293	-1.1	2.9	MWD
1,139.4	2.4	177.39	1,139.3	7,124,804	.13:	0.389	-2.6	2.9	MWD
1,139.4	2.4	177.59	1,139.5	7,124,805	611	0.369	-2.0	2.9	
1,178.1	2.4	177.09	1,177.9	7,124,005	.01	0.010	-4.2	2.9	MWD
1,170.1	2.4	111.03	1,177.5	7,124,807	220	0.010	-4.2	2.5	
1,216.8	3.4	177.71	1,216.6	-	.22	0.775	-6.2	3.0	MWD
1,210.0	0.1		1,210.0	7,124,809	185	0.110	0.2	0.0	
1,255.3	2.8	173.33	1,255.0	-		0.502	-8.3	3.2	MWD
,			,	7,124,811	.26(-	
1,274.6	2.7	168.62	1,274.3	-		0.384	-9.2	3.3	MWD
				7,124,812	.174				
1,294.0	2.6	163.33	1,293.7	-		0.408	-10.0	3.6	MWD
				7,124,813	.044				
1,303.6	1.9	158.99	1,303.3	-		2.249	-10.4	3.7	MWD
				7,124,813	.401				

Survey UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU <t< th=""><th></th><th></th><th></th><th></th><th>Well : Triclop</th><th>IS-T Drining</th><th></th><th></th><th></th><th></th></t<>					Well : Triclop	IS-T Drining				
(n) (·) (·) (·) (·) (·) (·) (·) 1,313.2 1.2 151.31 1.312.9 7.124.813.637 · - - 1.05 - 3.8 MWD 1,32.2 0.9 12.33 1.312.9 · - 6.62 - 1.0 MVD 1,332.6 0.7 132.53 1.31.9 · 7.124.813.89 · - 6.62 -11.0 4.0 MVD 1,342.9 0.5 12.53 1.31.9 · - 0.612 -11.0 4.0 MVD 1,351.9 0.2 123.62 1.351.9 · 1.7124.813.05? - - 1.10 4.1 MVD 1.30.9 0.4 93.29 1.390.4 - 0.612 -11.0 4.1 MVD 1.400.3 0.4 91.70 1.400.0 - 0.612 -11.0 4.2 MVD 1.400.3 0.6 97.59 1.41.90	Survey									
1.313.2 1.2 151.31 1.312.9 . 7.124,813.837 . 2.276 10.6 3.8 MWD 1.322.9 0.9 142.34 1.322.6 7.124,813.837 1.055 10.8 3.9 MWD 1.322.6 0.7 139.31 1.322.3 1.055 10.8 3.9 MWD 1.342.2 0.5 132.53 1.341.9 0.662 11.0 4.0 MWD 1.351.9 0.2 123.62 1.351.6 0.119 11.0 4.1 MWD 1.380.9 0.4 93.29 1.380.6 0.612 11.0 4.2 MWD 1.390.7 0.2 93.86 1.390.4 7.124,814.032 0.612 11.0 4.2 MWD 1.400.3 0.4 9170 1.400.0 0.626 11.0 4.3 MWD 1.419.6 0.5 92.36 1.419.3 0.556 11.0 </td <td>MD</td> <td>Incl.</td> <td>Corr. Az</td> <td>TVD</td> <td>'V' Se</td> <td>ect De</td> <td>ogleg</td> <td>N/S</td> <td>E/W</td> <td>Tool Type</td>	MD	Incl.	Corr. Az	TVD	'V' Se	ect De	ogleg	N/S	E/W	Tool Type
1.322.9 0.9 142.34 1.322.6 $-$ 1.055 -10.8 3.9 NWD 1.332.6 0.7 1.39.31 1.332.6 $ -$	(m)	(°)	(°)	(m)	(m) (de	eg/30m)	(m)	(m)	
1.332.60.7139.311.332.37.124.813.86-0.6324.0MWD1.342.20.50132.521.351.6-0.6620.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.662-0.6620.6620.6620.6620.6620.6620.6620.6620.6620.6620.6620.6620.6620.662- <td>1,313.2</td> <td>1.2</td> <td>151.31</td> <td>1,312.9</td> <td></td> <td></td> <td>2.276</td> <td>-10.6</td> <td>3.8</td> <td>MWD</td>	1,313.2	1.2	151.31	1,312.9			2.276	-10.6	3.8	MWD
1,342.20.61.21.27,124,813.86.0.6626.106.106.606.106.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.006.007.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0267.124,814.0	1,322.9	0.9	142.34	1,322.6			1.055	-10.8	3.9	MWD
1.351.90.01.23.01.23.07.124,813.06: 7.124,814.0020.94.0-1.104.1MWD1.371.30.2101.481.371.0-0.119-11.04.1MWD1.380.90.493.291.380.6-0.637-11.04.2MWD1.390.70.2-0.83.61.390.4-0.637-11.04.2MWD1.400.30.493.291.380.6-0.612-11.04.2MWD1.400.30.692.361.419.3-0.626-11.04.2MWD1.419.60.592.361.419.3-0.340-11.04.5MWD1.429.30.687.591.429.3-0.340-11.04.5MWD1.429.30.687.591.429.3-0.340-11.04.5MWD1.429.30.687.591.429.3-0.340-11.04.5MWD1.429.30.687.591.429.3-0.340-11.04.5MWD1.429.30.687.591.429.311.04.5MWD1.429.30.687.591.429.31.429.30.687.591.429.31.429.30.687.591.429.4	1,332.6	0.7	139.31	1,332.3			0.632	-10.9	4.0	MWD
Image: Normal and the second of th	1,342.2	0.5	132.53	1,341.9			0.662	-11.0	4.0	MWD
1.371.3 1.380.90.2 1.01.481.371.0 1.380.71.371.4 7.124.814.03 7.124.814.030.11.9 1.380.7-11.0 4.2 4.2 7.124.814.03MWD1.390.7 1.390.70.2 9.38 $3.390.7$ 9.38 $3.390.7$ 7.124.814.03 7.124.814.03 0.612 7.124.814.03 7.124.814.03 -11.0 9.612 4.2 9.4.2MWD1.400.3 1.400.70.4 9.7.7 $1.400.7$ 7.124.814.03 0.612 9.128 -11.0 9.4.3 4.4 9.4.4MWD1.419.6 1.419.60.5 9.2.36 $9.2.36$ 9.7.7 $1.419.7$ 7.124.814.04 0.156 7.124.814.04 -11.0 9.30 4.4 9.4.4MWD1.419.7 1.419.7 0.150 7.124.814.04 -11.0 9.30 4.4 9.30 MWD 1.419.7 1.419.7 0.150 7.124.814.04 -11.0 9.30 4.4 9.30 MWD 1.419.8 1.419.9 0.5 9.37 0.150 7.124.814.04 -11.0 9.30 4.4 9.30 MWD 1.419.9 1.419.9 0.5 9.37 0.150 7.124.814.04 -11.0 9.30 4.5 9.30 MWD 1.419.9 1.419.9 0.5 9.37 0.150 9.38 -11.0 9.30 4.5 9.30 MWD 1.419.9 1.419.9 0.129 9.38 0.150 9.38 0.150 <	1,351.9	0.2	123.62	1,351.6			0.940	-11.0	4.1	MWD
1.380.9 0.4 93.29 1.380.6 - 0.637 -11.0 4.2 MWD 1.390.7 0.2 93.86 7.124,814.037 - 0.612 -11.0 4.2 MWD 1.400.3 0.4 91.70 1.400.0 - 0.612 -11.0 4.2 MWD 1.400.3 0.4 91.70 1.400.0 - 0.612 -11.0 4.3 MWD 1.419.6 0.5 92.36 1.419.3 - 0.566 -11.0 4.4 MWD 1.429.3 0.6 87.59 1.429.0 - 0.340 -11.0 4.5 MWD 1.429.3 0.6 87.59 1.429.0 - 0.340 -11.0 4.5 MWD Mackunda Formation - - 0.340 -11.0 4.5 MWD 4.5 MWD Valumbilis Formation - - 0.340 -11.0 4.5 1.94.0 4.5 Valumbilis Formation - - - - - - - - - -	1,371.3	0.2	101.48	1,371.0) –	(0.119	-11.0	4.1	MWD
1.390.7 0.2 93.86 1,390.4 - 0.612 -11.0 4.2 MWD 1,400.3 0.4 91.70 1,400.0 - 0.62 -11.0 4.3 MVD 1,410.6 0.5 92.36 1,419.3 - 0.56 -11.0 4.3 MVD 1,419.6 0.5 92.36 1,419.3 - 0.56 -11.0 4.3 MVD 1,429.3 0.6 87.59 1,429.0 - 0.340 -11.0 4.5 MVD 1,429.3 0.6 87.59 1,429.0 7,124,814.04 0.340 -11.0 4.5 MVD Total state Total state - 1.0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	1,380.9	0.4	93.29	1,380.6	; –	(0.637	-11.0	4.2	MWD
IndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependenceIndependence<	1,390.7	0.2	93.86	1,390.4			0.612	-11.0	4.2	MWD
$ \begin{array}{c c c c } 1,229.3 \\ 1,229.3 \\ 0.6 \\ 87.59 \\ \hline 1,249.1 \\ 0.30 \\ 87.59 \\ \hline 1,249.1 \\ 0.30 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\ -11.0 \\$	1,400.3	0.4	91.70	1,400.0			0.626	-11.0	4.3	MWD
FormationWinton FormationMarkunda FormationAllaru MudstoneOtolebuc FormationMarkunda FormationUnite AnalysisValumbilia FormationGadna-Owie FormationJob TitlePersonnel On BoardJob TitlePersonnel ContractorJob TitlePerson = UnitSub ContractorJob TitlePerson = UnitSub ContractorJob TitleTitleVander ContractorJob TitleTotal LabelLabel ContractorJob TitleLabel ContractorLabel ContractorLabel Contr	1,419.6	0.5	92.36	1,419.3			0.156	-11.0	4.4	MWD
Name Top (m) Winton Formation I 5.2 Mackunda Formation I 641.5 Allaru Mudstone I 745.0 Toolebuc Formation I 745.0 Vallumbilla Formation I 745.0 Cadna-Owie Formation I 1,038.0 Cadna-Owie Formation I 1,094.0 Cadna-Owie Formation I 1,094.0 Gadna-Owie Formation I 1,094.0 Job Title Personnel 1,094.0 Sub Contractor 01 1,000 Balance 1,094.0 Dilsel Fuel (Itr)	1,429.3 0.6 87.59 1,429.0						0.340	-11.0	4.5	MWD
Winton Formation 5.2 Mackunda Formation 641.5 Allaru Mudstone 745.0 Toolebuc Formation 1,038.0 Wallumbilla Formation 1,094.0 Cadna-Owie Formation 1,094.0 Cadna-Owie Formation 1,311.0 Personnel On Board Company Pax Job Title Personnel Company Pax Job Title Personnel On Board 1,311.0 Personnel On Board ENSIGN 22 Job Title Personnel Sub Contractor 1,311.0 Balance 0il Industry Catering Services 4 Sub Contractor 13 14 Manount Balance 4 Diesel Fuel (Itr) Itr 45,305 0 2,393 0 42,912 Pot Water (Itr) Itr 41,000 3,500 0 0 44,500	Formations									
Mackunda Formation 641.5 Allaru Mudstone 745.0 Toolebuc Formation 1,038.0 Wallumbilia Formation 1,038.0 Cadna-Owie Formation 1,038.0 Cadna-Owie Formation 1,038.0 Cadna-Owie Formation 1,038.0 Personnel On Board 1,038.0 Personnel On Board ENSIGN Job Title Personnel Or Source Job Title Sub Contractor Oil Industry Catering Services 4 Sub Contractor 1,038.0 Balance			Name					Top (m)		
Allaru Mudstone	Winton Formati	ion								5.2
Toolebuc Formation Image: Start Amount Image: Start Amount </td <td></td>										
Wallumbilla Formation 1,094.0 Cadna-Owie Formation 1 Personnel On Board Job Title Personnel Organy Pax Job Title Personnel Organy Pax Sub Datter Internation Pax 22 Drillsearch Sub Contractor 13 Oil Industry Catering Services 13 Oil Industry Catering Services 43 Bulk Stocks Start Amount Previous Balance Adjust Balance Diesel Fuel (ltr) Itr 45,305 0 2,393 0 42,912 Pot Water (ltr) Itr 41,000 3,500 0 0 0 44,500	Allaru Mudston	е								745.0
Wallumbilla Formation 1,094.0 Cadna-Owie Formation 1 Personnel On Board Job Title Personnel Organy Pax Job Title Personnel Organy Pax Sub Datter Internation Pax 22 Drillsearch Sub Contractor 13 Oil Industry Catering Services 13 Oil Industry Catering Services 43 Bulk Stocks Start Amount Previous Balance Adjust Balance Diesel Fuel (ltr) Itr 45,305 0 2,393 0 42,912 Pot Water (ltr) Itr 41,000 3,500 0 0 0 44,500	Toolebuc Form	ation								1,038.0
Personnel On Board Company Pax Job Title Personnel Company Pax Image: Company Pax 22 Drillsearch Image: Company Pax Image: Company Pax 22 Drillsearch Image: Company Image: Company 13 Image: Company Sub Contractor Image: Company 13 Image: Company Image: Company Image: Company 13 Image: Company Imag	Wallumbilla For	rmation								1,094.0
$\begin{tabular}{ c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Cadna-Owie Fo	ormation								1,311.0
ENSIGN22DrillsearchDrillsearch4Sub Contractor 3 4Oil Industry Catering Services 3 Oil Industry Catering Services 4 TotalBulk StocksNameUnitStart AmountPrevious BalanceInUsedAdjust AdjustBalanceDiesel Fuel (ltr)Itr $45,305$ 02,393042,912Pot Water (ltr)Itr $41,000$ 3,50000044,500	Personnel On	Board								
DrillsearchDrillsearch 4 Sub ContractorSub Contractor13Oil Industry Catering Services $$	Jc	b Title		Personnel		(Company		Pax	
Sub ContractorSub ContractorServicesSecondationOil Industry Catering ServicesOil Industry Catering ServicesTotal $$										22
Image: I						Drillsearch				4
Total43Bulk StocksUnitStart AmountPrevious BalanceInUserAdjustBalanceDiesel Fuel (ltr)Itr45,30502,393042,912Pot Water (ltr)Itr41,0003,500 \cdots 0044,500						Sub Contract	tor			13
Bulk Stocks Name Unit Start Amount Previous Balance In Used Adjust Balance Diesel Fuel (ltr) Itr 45,305 0 2,393 0 42,912 Pot Water (ltr) Itr 41,000 3,500 0 0 44,500						Oil Industry O	Catering Servi			
NameUnitStart AmountPrevious BalanceInUsedAdjustBalanceDiesel Fuel (ltr)Itr45,30502,393042,912Pot Water (ltr)Itr41,0003,5000044,500								Total		43
Amount Balance Diesel Fuel (ltr) Itr 45,305 0 2,393 0 42,912 Pot Water (ltr) Itr 41,000 3,500 0 0 44,500	Bulk Stocks									
Pot Water (ltr) ltr 41,000 3,500 0 0 44,500		Name		Unit			In	Used	Adjust	Balance
)		ltr						
Camp Fuel (ltr) Itr 3,900 0 300 0 3,600				ltr			3,500	0	0 0	
	Camp Fuel (Itr)			ltr		3,900	(30	0 0	3,600





Triclops-1	I Drilling											
Report Nu	mber :		24	Day V	Vellsite F	Representa	tive: Guy L. H		Rig Manager:	Dave Dougherty		
Latitude (14' 40.40'	0	Wellsite	Represent	ative: Don 0		Drilling Company:	ENSIGN		
Longitude	(East)	25°	59' 43.40'	'				· · · · · · · · · · · · · · · · · · ·	Wellsite Geologist:	Andrew James		
Well Data							1					
Country:		Australia		t Hole Siz		8.500	, v	9.625				
Field:				red Depth		1,568.0	0	762.7	U V			
Rig:		Ensign 918		ertical De	•	1,568.0	-	762.7	1			
Ground Le	evel:	141.0 m		Progress:		232.0			Orig. & Sup.	\$ 3,447,294		
RT to GL		5.20 m	Days C	ince Spu	d.	24.0 12.4			AFE:	\$ 76,065		
Plan TD (N Plan TD (1	,	2,021.0 m 2,021.0 m	-	DP Date:		19 Jan 20			Daily Cost: Cum. Cost:	\$ 76,065		
	IVD).	2,021.0111	FIT/LO			/16.72 p			Last LTI Date			
				••		, 10.1 - P	-9		Days Since L			
Current O	p @ 0600:		Drilled	to 1609 n	nMD							
Planned C	-					/ Pathfinde	r DD to return well path t	o target.				
Summary	for Period	0000 Hrs to	2400 Hr	s on 26 J	lan 2013							
Drill 8,1/2"	hole from	1336m to 156	68m as di	rected by	Pathfind	ler DD - M\	VD surveys taken on cor	nnections				
Operation	s for Peric	d 0000 Hrs	to 2400 H	lrs On 26	6 Jan 20′	13						
PHSE	CLS	OP	From	То	Hrs	Depth		Activ	ty Description			
	(RC)					(m)						
PH0	U	REPR	00:00	00:30	0.50	1,336.0	Repair Mud pump #2 -					
PH0	Р	DM	00:30	09:15	8.75	1,461.0	461.0 Drill 8.1/2" hole from 1336m to 1461m - Slide and rotate as per Pathfin					
							instructions - MWD sur	•	36m,1345m, 1355i	m, 1365m, 1374m,		
							1394m, 1413m,1432m					
PH0	U	RRP	09:15	10:00	0.75	1,461.0	Repair mud pump No:2			tata an una Dath fuada a		
PH0	Р	DM	10:00	10:45	0.75	1,464.0	Drill 8.1/2" hole from 14 instructions - MWD sur			otate as per Pathlinder		
PH0	U	RRP	10:45	12:00	1.25	1,464.0	Repair mud pump No:2	,				
						.,	Take SCRs @ 1464m)psi, 60spm @ 300psi		
PH0	Р	DM	12:00	12:45	0.75	1,473.0	Drill 8.1/2" hole from 14					
							instructions					
PH0	U	REPR	12:45	15:00	2.25	1,473.0	Repair Mud pump # 2 ·					
PH0	P	DM	15:00	19:30	4.50	1,519.0	Drill 8.1/2" hole from 14	473m to 15	519m - Slide and ro	otate as instructed by		
							Pathfinder.			500		
PH0	Р	RS	19:30	20:00	0.50	1 510.0	Surveys taken by MWI	-	n, 1479m,1498m,1	508m.		
PH0 PH0	P	DM	20:00	20:00	4.00	1,519.0 1,568.0	Service Rig equipment Drill 8.1/2" hole from 19		568m Slide and rot	ate as instructed by		
1110		Dim	20.00	21.00	1.00	1,000.0	Pathfinder DD					
						Wob:7-10K Rpm: 176 Dh/ 51Sfc Spp: 1689Psi Rop: 19 / 23M/hr.						
							Surveys taken by MWD @ 1518m, 1528m, 1547m, 1566m.					
		d 0000 Hrs										
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		Activi	ty Description			
PH0	Р	DM	00:00	04:15	4.25	1,596.0	Drilling ahead in 8.1/2"		1568m to 1596m -	Slide and rotate as		
							per Pathfinder DD instr	ructions.				
							MWD Surveys @ 1586	m 1589m	1505m			
PH0	Р	SCR	04:15	04:30	0.25	1,596.0	Circulate and Perform			9 1 Pumps 1 & 2		
1 110		COR	01.10	04.00	0.20	1,000.0		-	-			
							40spm @ 300Psi 60spm @ 400psi					

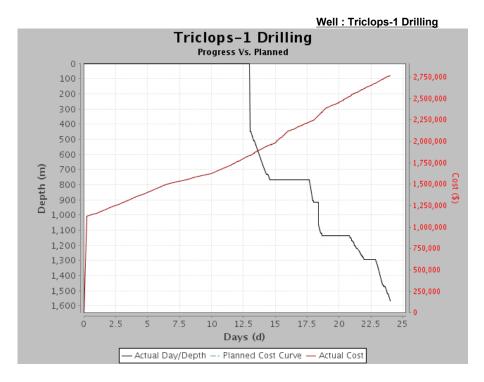


							<u>Well : Tr</u>	iclops-1 Drilling							
PH0	P		OM 0	04:30	06:00	1.50	1,673.0	[In Progress] Di rotate as per Pa				n 159	6m to 1	673m. Slid	e and
								MWD Surveys	@ 162	4m, 16	44m, 1663r	n,			
Perform	nance Su	mmary													
						Daily	4				Cı	umula	ative We		
				Hrs	-			%			Hrs			%	
P				19.				80.2			523.2			90.8	
TP				0.0				0.0			4.0			0.7	
U				4.8	3			19.8			48.8			8.5	
Undefine	ed			0.0)			0.0			0.0			0.0	
Total				24.	0			100.0			576.0			100.0	
WBM D	Data												Cost Too	lay:	\$ 1,538
Mud Desc	-		API FL:		13.5	cm³/30mi				Solids:			Glycol:		
Check De	pth:		Filter-Cal			2 /32nd		450.0	4.0 %			93 % .5 %	Viscosity	:	43 s/qt
Time: Weight:			HTHP-FL				Hard/Ca: MBT:	450.0	0 mg/L	pH:	1		PV: YP:		9 cP 22 lbf/100ft ²
Temp:			HTHP-Te				Pm:	ſ		PHPA:	0.25		Gel 10s:		10 lbf/100ft ²
		0110	HTHP-Pr				Pf:	·	0.18				Gel 10m:		14 lbf/100ft ²
Comme	nt:		1										RP	M	Reading
Pumps															
					Pu	mp data	- Last 24	Hrs						Slow Pu	mp Data
No		Туре		Line	r S	PM	Eff.	Flow	SF	P	Depth	Ν	ΛW	SPM	SPP
				(in)			(%)	(galUS/min)	(ps		(m)	(p	opg)		(psi)
1		ital Emsco		5.5		84	97			,570	1,171.0		9.10		
2	Continer	ital Emsco	/F-800	5.5	00	84	97		1	,570	1,464.0		9.10	60 40	300 200
Casing									1						
	OD			LO	т			FIT		Casing	Shoe (MD))	С	asing Shoe	: (TVD)
		mm (16")										.0 m			11.0 m
	244 m	m (9 5/8")			16.70) ppg					762	2.7 m			762.7 m
BHA #4	Ļ														
ВНА Ту							ectional	Total Weight Wet:							
Depth I						.0 m/1,9	I	Weight Below Jar	Wet:						
Date In/			#23 (2	5 Jan 20)13)/#27	7 (29 Jar 1									
Total Le	ength: escriptior		8 1/2" [6 3/4"		96.2 m	biliser, 6 3/4" Float	Sub (with flo	at) 6 3/4" H	ופחו	Collar \		2 x 6 1/2"
								4 1/2" HWDP.	. Jub (with no	ac), 0 0/4 11	1001	Jonai, 7	, <i>N</i> .O, 1	
BHA R	un Comm	ent:						and return well pat	h to ta	rget ce	ntre.				



BHA Daily Summary										
Pickup Weight:	128	klb Torque (n	nax):	4,63	35 ft-lbs	D.C. (1) A	nn Ve	locity:		5 ft/s
Slack-Off Weight:	126	klb Torque Av	/g. Off Bottom:	1,96	62 ft-lbs	D.C. (2) A	nn Ve	locity:		0 ft/s
String Weight:	127	klb Torque Av	/g. On Bottom:	2,84	19 ft-lbs	H.W.D.P.	Ann. ۱	/elocity:		3 ft/s
Jars Hours Logged:	9.2	25 h				D.P. Ann.	Veloc	ity:		3 ft/s
Summary:										
BHA Component										
Equipment		Descriptio	n	Length (m)	OD (in)			Ser	ial #	Hours
Bit	Baker Hug No: 3	ghes Christian P	DC 5 Blade, Bit	0.35	8.5	500		7033541		
Mud Motor		Pathfinder motor e bend. bit to be	7 stator/8 rotor, nd 1.98 degrees	7.85	3.7	750 3.	.000	F67270		
Stabilizer				1.78	6.7	750 2.	.750	B 67T13	5	
Float Sub	Float sub o	comes with porte	d float	1.02	. 6.8	365 2.	.750	D67F742	2	
NM Drill Collar	HDS1 Coll	ar		9.16	6.7	750 2.	.750			
X-Over	NC50 Box	5 1/2" FH Pin		0.98	6.8	375 3.	.000	D67CX6	37	
X-Over	NC46 Box	NC50 Pin		1.10	6.5	500 2.	.750	B65X053	BA	
6 1/2" DC	-2, 29018,	6, GP5922-9, 30 EDC03231, GP 29004, 29007,	108.20	6.1	188 2.	.938				
6 1/2" Hydraulic Jar	Bico Hydro	o-Mechanical	9.53	6.3	375 2.	.500	004. BD003.1	35398		
6 1/2" DC	SN: S2613	2.10, 29008		18.41	6.3	313 2.	.938			
HWDP	SN: A5875	, A58730, A587	16, A58720	37.82	6.2	250 2.	.875			
Directional Data										
Slide Time:		Rotate Tir	ne:			Circ. Time	:			
Slide (%):		Rotate (%	o):			Circ. (%):				
Total Slide Time:		0 h Total Rota	ate Time:		2.90 h	Total Circ.	. Time	:		8.00 h
Total Revs:	55 Kr	evs HSI:		3.1	5 hp/in²					
Bit #3		_							Nozz	
Size:	216 mm (8 1/2")	Type:			IADC #:		M22	1 "	S	Size (/32nd")
Manufacturer:	BHI (Hughes	Model:	0 7 DO O V	Q505F	TFA:	0.	552 in	1 5	х	12
Serial #:	Christensen) 7033541	Bit Wear:	2-7-RO-S-X-	-I-BT-PR	Cost:		:	\$		
Bit Run Comment:										
Bit Wear Comment:										
Drilling Parameters										
BHA Run #4			1							
Top Depth:				/D ECD:						9.35 kg/m ³
Bottom Depth:			1,568.0 m							
		Min 402 galUS/n			Avg		1		Max	
Flow			galUS/mir i3 rpm	ı			galUS/r	nin		
Surface RPM		45 rpm							60 rpm	
Downhole RPM		130 rpm	168 rpm					206 rpm		
Pressure		1,516 psi		1,954 psi						
		1,078 psi								
Torque		1,962 ft-lbs	6	3,2	99 ft-lbs			4,	635 ft-lb	
			6	3,2				4,		s

	Well :										
Survey				-	-						
MD	Incl.	Corr. Az	TVD	'V' Sect		ogleg	N/S	E/W	Tool Type		
(m)	(°)	(°)	(m)	(m)	(de	g/30m)	(m)	(m)			
1,448.6	0.4	78.86	1,448.3	- 7,124,814		0.332	-11.0	4.7	MWD		
1,458.2	0.4	72.88	1,457.9		0	0.130	-11.0	4.8	MWD		
1,467.9	0.4	64.01	1,467.6		0	0.191	-11.0	4.8	MWD		
1,477.6	0.6	20.79	1,477.2		1	.275	-10.9	4.9	MWD		
1,487.7	0.7	348.40	1,487.3		1	.114	-10.8	4.9	MWD		
1,496.7	1.2	338.58	1,496.3		1	.746	-10.7	4.8	MWD		
1,515.8	1.4	334.75	1,515.4		0	0.342	-10.3	4.7	MWD		
1,535.0	1.4	326.88	1,534.6		0	0.300	-9.9	4.4	MWD		
1,554.3	1.3	322.23	1,553.9		0	0.230	-9.5	4.2	MWD		
1,573.5	1.3	319.45	1,573.1		0	0.098	-9.2	3.9	MWD		
Formations		ł		ł				·			
		Name					Top (m)				
Winton Formati	on								5.2		
Mackunda Forr	nation								641.		
Allaru Mudston	e								745.		
Toolebuc Form	ation								1,038.		
Wallumbilla For									1,094.		
Cadna-Owie Fo									1,311.		
Murta Formatio									1,397.		
Namur Sandsto									1,424.		
Westbourne Fo									1,516.		
Personnel On	Board										
Jo	b Title		Personnel			Company		Pax			
					NSIGN				2		
					rillsearch						
					Sub Contractor 13 Oil Industry Catering Services 4						
				0	il Industry C	atering Servic	es Total		4		
Bulk Stocks											
	Name		Unit		Previous Balance	In	Used	Adjust	Balance		
Diesel Fuel (Itr)			ltr		42,912	0	6,727	0	36,18		
Pot Water (ltr)			ltr		44,500	5,000	0	0	49,50		
Camp Fuel (Itr)			ltr		3,600	0	400	-1,600	1,600		
		I		I				-			





Tricland	Drilling												
Triclops-1													
Report Nu				25			Representa		uy L. Holmes		Manager:	Dave Dougherty	
Latitude (41° 14' 4		Night	Wellsite	Represent	ative:	Don Castles	1	ng Company:	ENSIGN	
Longitude	(East)		25° 59' 4	3.40"						Well	site Geologist:	Andrew James	
Well Data											•		
Country:		Austr	ralia Cu	urrent l	Hole Siz	ze:	8.500	in Casing OD:	9.6	25 in	AFE Number:	OPS-13-015	
Field:					ed Depth		1,795.0	v v		2.7 m	Original AFE:	\$ 3,447,294	
Rig:		Ensign			rtical De	•	1,795.0		. 762	2.7 m	Supp AFE No:		
Ground Le	evel:	141.			ogress:		227.0				Orig. & Sup.	\$ 3,447,294	
RT to GL				ays On			25.		_		AFE:	• • · - · •	
Plan TD (N	,	2,021.			nce Spu	d:	13.4				Daily Cost:	\$ 84,716	
Plan TD (1	VD):	2,021.			P Date:		19 Jan 20		D:		Cum. Cost:	\$ 2,852,514	
				T/LOT	•		/16.72 p	bg			Last LTI Date: Days Since LTI:	05 Feb 2012 357	
Current Op	n @ 0600·		Dri	illina th	hrough '	1830m					Days Since LTI.		
Planned O	-			-	-		e motor as	instructed by dire	ctional driller.				
-	for Period												
Directiona	l drilling wit	h mud m	notor from	1568	m to 17	95m. Slic	le and rota	te as directed by F	Pathfinder.				
Operation	s for Peric	od 0000	Hrs to 24	400 Hr	s On 27	' Jan 201	13						
PHSE	CLS	OF	P Fro	om	То	Hrs	Depth		Act	tivitv D	escription		
	(RC)	0.		••••			(m)		10		compact		
PH0	P	DN	1 00	:00	04:15	4.25	1,596.0	Drilling ahead in	8.1/2" hole fro	m 156	8m to 1596m - Slid	e and rotate as	
-							,	per Pathfinder D					
								MWD Surveys @	🕑 1586m, 1588	8m, 15	95m.		
PH0	Р	SC	R 04	:15	04:30	0.25	1,596.0	Circulate and Pe	erform SCR @	1596r	n Mud Weight: 9.1,	Pumps 1 & 2	
								40spm @ 300Ps		•			
PH0	Р	DN	/ 04	:30	17:30	13.00	1,673.0			96m to	o 1673m. Slide and	rotate as per	
								Pathfinder DD ir	istructions				
								MWD Surveys @	9 1624m 1644	m 16	63m		
PH0	Р	RS	3 17	:30	18:00	0.50	1,673.0	Rig service	y 1024111, 1044	in, io	0311,		
PH0	P	DN			24:00	6.00	1,075.0		8 1/2" hole fro	m 167	3m to 1795m. Slide	/ Rotate as per	
1110					21.00	0.00	1,100.0	Pathfinder DD ir					
										m, 17	30m, 1740m, 1759ı	n.	
Operation	s for Peric		Hrs to 06	500 Hr	s On 28	lan 201	13	-	-				
-									A				
PHSE	CLS (RC)	OF	P FR	om	То	Hrs	Depth (m)		Aci		escription		
PH0	(RC) P	DN	4 00		02.15	2.25	, ,	Drilling 9 1/2" ba	la fram 170Em	to 10	08m. Slide and rota	to op instructed	
PHU	Р			:00	02:15	2.25	1,808.0	by Pathfinder.	ne nom 1795m	10 10	uom. Silue anu rola	le as instructed	
								MWD surveys @	0 1798m 1808	m.			
PH0	Р	SC	R 02	:15	02:30	0.25	1,808.0				m Mwt: 9.10 M/P 18	&2 40Spm :	
								300Psi					
								60Spm : 400Psi					
PH0	Р	DN	/ 02	:30	06:00	3.50	1,926.5	[In Progress] Dri	ll 8.1/2" hole fr	om 18	08m to 1926.50m.	MDTD	
) 1818m, 1837	m, 18	56m, 1875m, 1885r	n, 1894m, 1904m,	
								1923m					
Performa	nce Summ	ary											
						Daily	/				Cumulative Well		
				Hrs	s			%	Н	rs		%	
Р				24.	0			100.0	54	7.2		91.2	
Copyright ID						I					I		

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Performance \$	Summary								
			Daily	,			Cumula	ative Well	
		F	łrs	%		Н	rs		%
TP		0	0.0	0.0		4	.0		0.7
U		0).0	0.0		48	3.8		8.1
Undefined		0).0	0.0		0	.0		0.0
Total		24	4.0	100.0		60	0.0		100.0
WBM Data								Cost Today:	\$ 11,189
Mud Desc:	4PHB	API FL:	13.0 cm ³ /30min	CI:		Solids:	7.3 %	Glycol:	
Check Depth:	1,521.0 m	Filter-Cake:	2 /32nd'	KCI:	4.0 %	6 H2O:	93 %	Viscosity:	43 s/qt
Time:	20:00	HTHP-FL:		Hard/Ca:	450.00 mg/	L Sand:	1.5 %	PV:	10 cP
Weight:	9.10 ppg	HTHP-Cake:		MBT:	0.60 %	6 pH:	9	YP:	19 lbf/100ft ²
Temp:	64.0 °C	HTHP-Temp:		Pm:	0.10 m	³ PHPA:	0.25 ppb	Gel 10s:	10 lbf/100ft ²
		HTHP-Press:		Pf:	0.1	B Mf:	0.60 m³	Gel 10m:	14 lbf/100ft ²
Comment:								RPM	Reading

Pumps	6											
				Pump da	ita - Last 2	4 Hrs				Slow Pu	mp Data	
No	Туре	Lin	er	SPM	Eff.	Flow	SPP	Depth	MW	SPM	SPP	
		(ir	ר)		(%)	(galUS/min)	(psi)	(m)	(ppg)		(psi)	
1	Continental Emsco/F	-800 5	.500	80	97		1,532	1,624.0	9.10			
2	Continental Emsco/F	-800 5	.500	80	97		1,532	1,624.0	9.10	60	400	
										40	300	
Casing	asing											
OD LOT FIT Casing Shoe (MD) Casing Shoe									(TVD)			
	406 mm (16")							11	.0 m		11.0 m	
	244 mm (9 5/8")		10	6.70 ppg				762	.7 m		762.7 m	
BHA #	4				·		·					
BHA T	ype:			D	irectional	Total Weight Wet:						
Depth	In/Out:	I,926.5 m	m Weight Below Jar Wet:									
Date In/Out: #23 (25 Jan 2013)/#27 (29 Jan 2013						3)						
Total Length: 196.2 m						n						
BHA D	escription:	8 1/2" PDC B	Bit, 6 3	/4" Mud N	Notor, 8" Sta	abiliser, 6 3/4" Float	Sub (with flo	oat), 6 3/4" H	IDSI Collar,	X/O, X/O, 12	x 6 1/2"	
		DC, 6 1/2" Di	rilling 、	Jar, 2 x 6	1/2" DC, 4	x 4 1/2" HWDP.						
BHA R	Run Comment:	Directional B	HA rur	n to corre	ct deviation	and return well path	h to target ce	entre.				



BHA Daily Summary													
Pickup Weight:	139	klb	Torque (max):		3,54	42 ft-lbs	D.C.	(1) Ann Ve	elocity	:			5 ft/s
Slack-Off Weight:	135	klb	Torque Avg. Off Bottom:		1,02	25 ft-lbs	D.C.	(2) Ann Ve	elocity	<i>'</i> :			0 ft/s
String Weight:	137	klb	Torque Avg. On Bottom:		2,84	43 ft-lbs	H.W.	D.P. Ann.	Veloc	ity:			3 ft/s
Jars Hours Logged:	23.2	25 h					D.P.	Ann. Veloc	city:				3 ft/s
Summary:													
BHA Component													
Equipment			Description		Length (m)	OD (in		ID (in)		Seria	al #		Hours
Bit	Baker Hug No: 3	ghes (Christian PDC 5 Blade, Bi	it	0.35	`	, 500	()	703	3541			
Mud Motor	Standard F		nder motor 7 stator/8 rotor d. bit to bend 1.98 degree	·	7.85	5 3.	750	3.000	F67	270			
Stabilizer					1.78	6.	750	2.750	B 6	7T135			
Float Sub	Float sub c	comes	with ported float		1.02	2 6.	865	2.750	D67	'F742			
NM Drill Collar	HDS1 Colla				9.16	6.	750	2.750					
X-Over	NC50 Box	5 1/2	" FH Pin		0.98	6.	875	3.000	D D67CX637				
X-Over	NC46 Box	NC50) Pin		1.10) 6.	500	2.750	B65	X053/	4		
6 1/2" DC	-2, 29018,	SN: 592226, GP5922-9, 30-2-21, 30-2-2, 92 -2, 29018, EDC03231, GP5922-9, 29013, GP3837.3, 29004, 29007, Disc livels, Machanical) 6.	188	2.938					
6 1/2" Hydraulic Jar	Bico Hydro	Bico Hydro-Mechanical				6.	375	2.500	004 BD0	003.13	5398		
6 1/2" DC	SN: S2613	2.10,	29008		18.41	6.	313	2.938					
HWDP	SN: A5875	i, A58	730, A58716, A58720		37.82	2 6.	250	2.875					
Directional Data													
Slide Time:			Rotate Time:				Circ.	Time:					
Slide (%):			Rotate (%):				Circ.						
Total Slide Time:		0 h	Total Rotate Time:			2.90 h	Total	Circ. Time	e:				8.00 h
Total Revs:	128 Kr	evs	HSI:		2.7	9 hp/in²							
Bit #3											No	zzles	
											NOZ		
	6 mm (8 1/2")	Тур				IADC #:		M22		#			(/32nd")
Size: 21 Manufacturer:	BHI (Hughes	Moc	lel:		Q505F	TFA:		0.552 ir	² ר	#			(/32nd") 12
		Moc			Q505F			0.552 ir					
Manufacturer:	BHI (Hughes Christensen)	Moc	lel:		Q505F	TFA:		0.552 ir	² ר				
Manufacturer: Serial #:	BHI (Hughes Christensen)	Moc	lel:		Q505F	TFA:		0.552 ir	² ר				
Manufacturer: Serial #: Bit Run Comment:	BHI (Hughes Christensen)	Moc	lel:		Q505F	TFA:		0.552 ir	² ר				
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4	BHI (Hughes Christensen)	Moc	lel: Wear: 2-7-RO-	-S-X-I-	Q505F BT-PR	TFA:		0.552 ir	² ר			Size	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth:	BHI (Hughes Christensen)	Moc	lel: Wear: 2-7-RO-	-S-X-I-	Q505F	TFA:	_	0.552 ir	² ר			Size	
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4	BHI (Hughes Christensen)	Moc	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m	-S-X-I-	Q505F BT-PR	TFA: Cost:	_	0.552 ir	² ר		x	Size	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth:	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min	-S-X-I-	Q505F BT-PR	TFA: Cost:		0.552 ir	² ר	5	X	Size	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min	-S-X-I-	Q505F BT-PR 9 ECD: 435 (TFA: Cost: Avg galUS/mi	n	0.552 ir	² ר	493	x Max galUS	Size	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min 40 rpm	-S-X-I-	Q505F BT-PR) ECD: 435 (TFA: Cost: Avg galUS/mi I5 rpm	n	0.552 ir	² ר	5 493	X Max galUS, 50 rpm	Size 9 /min	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min 40 rpm 109 rpm	-S-X-I-	Q505F BT-PR 0 ECD: 435 (4	TFA: Cost: Avg galUS/mi 5 rpm 48 rpm		0.552 ir	² ר	5 493	X Max galUS, 50 rpm 87 rpn	Size 9 /min 1	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min 40 rpm 109 rpm 1,376 psi	-S-X-I-	Q505F BT-PR) ECD: 435 9 4 1, 1,	TFA: Cost: Avg galUS/mi I5 rpm 48 rpm 624 psi	n	0.552 ir	² ר	5 493 5 1 1,	X Max galUS, 50 rpm 87 rpn 872 ps	Size 9 /min n si	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min 40 rpm 109 rpm 1,376 psi 1,025 ft-lbs	-S-X-I-	Q505F BT-PR 0 ECD: 435 9 4 1, 2,2	TFA: Cost: Avg galUS/mi I5 rpm 48 rpm 624 psi 84 ft-lbs	n	0.552 ir	² ר	5 493 (1 1, 3,5	X Max galUS 50 rpm 87 rpn 872 ps 542 ft-l	9 //min n si bs	12
Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure	BHI (Hughes Christensen)	Moc Bit V	lel: Wear: 2-7-RO- 1,296.0 m 1,795.0 m Min 77 galUS/min 40 rpm 109 rpm 1,376 psi	-S-X-I-	Q505F BT-PR 0 ECD: 435 9 4 1, 2,2 1	TFA: Cost: Avg galUS/mi I5 rpm 48 rpm 624 psi	n	0.552 ir	² ר	5 493 (1 1, 3,5 1	X Max galUS, 50 rpm 87 rpn 872 ps	9 //min n si bs	12

			We	ell : Triclops-1 Dri	lling			
Survey								
MD	Incl.	Corr. Az	TVD	'V' Sect	Dogleg	N/S	E/W	Tool Type
(m)	(°)	(°)	(m)	(m)	(deg/30m)	(m)	(m)	
1,583.1	1.3	320.67	1,582.7	- 7,124,811.991	0.086	-9.0	3.8	MWD
1,592.6	1.4	322.46	1,592.2	- 7,124,811.81{	0.343	-8.8	3.6	MWD
1,611.7	1.1	302.07	1,611.3	- 7,124,811.53	0.835	-8.5	3.3	MWD
1,631.0	0.9	306.20	1,630.6	- 7,124,811.34	0.330	-8.3	3.0	MWD
1,650.2	1.1	315.80	1,649.8	- 7,124,811.124	0.406	-8.1	2.8	MWD
1,659.9	0.9	316.77	1,659.5	- 7,124,811.002	0.620	-8.0	2.7	MWD
1,669.6	1.0	331.96	1,669.2	- 7,124,810.871	0.835	-7.9	2.6	MWD
1,679.3	1.1	334.98	1,678.9	- 7,124,810.712	0.353	-7.7	2.5	MWD
1,698.7	1.4	336.32	1,698.3	- 7,124,810.327	0.466	-7.3	2.3	MWD
1,718.0	1.3	329.29	1,717.6	- 7,124,809.922	0.300	-6.9	2.1	MWD
1,727.7	1.3	323.97	1,727.3	- 7,124,809.73§	0.373	-6.7	2.0	MWD
1,747.0	1.4	319.25	1,746.6	- 7,124,809.38	0.232	-6.4	1.7	MWD
1,766.2	1.2	307.68	1,765.8	- 7,124,809.08	0.514	-6.1	1.4	MWD
1,785.6	1.1	300.71	1,785.2	- 7,124,808.86	0.266	-5.9	1.1	MWD
1,795.4	1.3	300.39	1,795.0	- 7,124,808.75§	0.612	-5.8	0.9	MWD
Formations								
		Name				Top (m)	
Winton Formatio	on							5.2
Mackunda Form	nation							641.5
Allaru Mudstone	е							745.0
Toolebuc Forma	ation							1,038.0
Wallumbilla For	mation							1,094.0
Cadna-Owie Fo	ormation							1,311.0
Murta Formation	n							1,397.5
Namur Sandsto	ne							1,424.5
Westbourne For	rmation							1,516.5
Adori Sandstone	е							1,594.5
Birkhead Forma	ation							1,634.5
Hutton Sandsto	ne							1,727.0
Personnel On I	Board							
Jo	b Title		Personnel		Company		Р	ах
				ENSIG				22
				Drillsea				4
					ontractor			12
				Oil Indu	ustry Catering Se	rvices		4

Page 4







Triclops-1	-										
Report Nu			26	-		Representat		iuy L. Holmes	۳ I	lanager:	Dave Dougherty
Latitude (S	,		14' 40.40'	0	Wellsite	Represent	ative:	Don Castles		ng Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'	'					Wells	site Geologist:	Andrew James
Well Data											
Country:		Australia	Current	t Hole Siz	ze:	8.500	in Casing OD:	9.6	25 in	AFE Number:	OPS-13-015
Field:				red Depth		1,926.5	, v		2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De	•	1,926.5		: 762	2.7 m	Supp AFE No:	
Ground Le	vel:	141.0 m		rogress:		132.0				Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	-			26.0		_		AFE:	<u> </u>
Plan TD (M		2,021.0 m	1 1	ince Spu		14.4				Daily Cost:	\$ 85,575
Plan TD (T	VD):	2,021.0 m		DP Date:		19 Jan 20		D:		Cum. Cost:	\$ 2,938,089
			FIT/LO	1:		/16.72 pj	pg			Last LTI Date: Days Since LTI:	05 Feb 2012 358
Current Op	0600·		Pulling	out of ho	le and ha	andling BHA	I			Days Since LTI.	550
Planned O	-		-			-		ctional tools - R	tig up S	Schlumberger Logg	ing - Logging well
Summary	for Period	1 0000 Hrs to	2400 Hrs	s on 28 J	Jan 2013						
Drill 8.1/2" Tripping ou		1795m 1926	.50m - Cir	culate ho	le clean	- Wiper trip	to 1300m - Run b	back in hole to	1926.5	0 m TD - Circulate	hole clean -
Operation	s for Perio	od 0000 Hrs	to 2400 H	lrs On 28	3 Jan 20 [.]	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	ivity D	escription	
	(RC)	0.				(m)					
PH0	P	DM	00:00	02:15	2.25	1,808.0	Drilling 8.1/2" hc	ble from 1795m	to 180	8m. Slide and rota	te as instructed
							by Pathfinder.				
							MWD surveys @) 1798m, 1808	m.		
PH0	Р	SCR	02:15	02:30	0.25	1,808.0	Circulate and pe	erforn SCR's @	1808r	n Mwt: 9.10 M/P 18	&2 40Spm :
							300Psi				
							60Spm : 400Psi				
PH0	Р	DM	02:30	18:00	15.50	1,926.5	Drill 8.1/2" hole t				
							MWD surveys @ 1923m	g 1818m, 1837	m, 185	6m, 1875m, 1885n	n, 1894m, 1904m,
PH0	Р	CMD	18:00	19:00	1.00	1,926.5	Circulate and co	ndition mud un	til aloo	n over ebekere	
PH0 PH0	P	WT	19:00	21:00	2.00	1,926.5				ole (Wiper Trip) fro	om 1922m to
FIIU	Г	VVI	19.00	21.00	2.00	1,920.5	1300m - Flow ch				511 192211110
PH0	Р	WT	21:00	22:30	1.50	1,926.5			n 1300	m to TD 1926.50m	- Hole condition
						.,	(Good) Nil fill on				
PH0	Р	CMD	22:30	23:30	1.00	1,926.5	. ,		volume	until clean over sh	akers - Take
							mud sample for	Schlumberger.			
PH0	Р	ТО	23:30	24:00	0.50	1,926.5	Rack back kelly	- Pull out from	1922m	n to 1823m	
Operation	s for Perio	od 0000 Hrs	to 0600 H	lrs On 29	9 Jan 20 [.]	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Act	ivity D	escription	
	(RC)					(m)					
PH0	Р	ТО	00:00	04:30	4.50	1,926.5			n to lay	out Directional /M	ND tools and
							conduct Wireline				
PH0	U	то	04:30	05:00	0.50	1,926.5	Flow check - Mix				
PH0	Р	то	05:00	06:00	1.00	1,926.5	[In Progress] Co directional tools.			n481m to surface la sh DH motor.	aying down
Performar	nce Summ	arv									
					Daily	/				Cumulative Well	
			H	Irs			%	H	rs		%
		1									
P				4.0		1	100.0		1.2		91.5

Printed on 5 February 2013 01:51 PM (GMT+08:00)



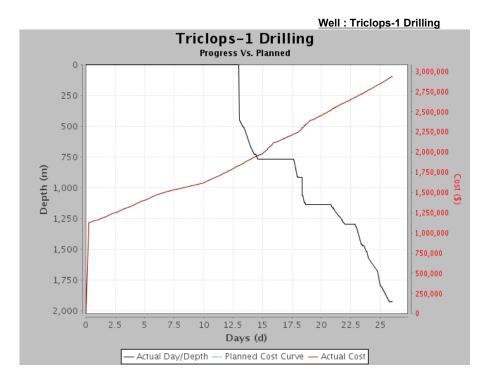
- -

Performance Summary											
		Dai	ly				Cı	ımula	tive We	1	
	Hrs			%			Hrs			%	
TP	0.0			0.0			4.0			0.6	
U	0.0			0.0			48.8			7.8	
Undefined	0.0			0.0			0.0			0.0	
Total	24.0			100.0		6	624.0			100.0	
General Comments for Peri	od 0000 Hrs to 24	00 Hrs on 2	8 Jan 20	13							
Category				Com	ments						
Lessons Learned	motor to lower RP particuarly couple	PM failed to r d with a dow	nake a si ⁄n hole m	f the Poolawanna at gnificant inproveme otor is not an option ation tricone for this	nt, 0.3r ı to drill	m/h. D I the for	rilling the Po	oolaw	anna wi	th the this	PDC,
WBM Data								(Cost Tod	ay:	\$ 7,715
Mud Desc: 4PHB	API FL:	8.0 cm ³ /30m	in CI:			Solids:	7	.3 %	Glycol:		
Check Depth: 1,926.0 m	Filter-Cake:	1 /32n	d" KCI:		3.0 %	H2O:	ç	92 %	Viscosity:		42 s/qt
Time: 20:00	HTHP-FL:		Hard/Ca	a: 400.0	0 mg/L	Sand:	1	.5 %	PV:		9 cP
Weight: 9.10 ppg	HTHP-Cake:		MBT:		0.30 %	pH:		9`	YP:		20 lbf/100ft2
Temp: 64.0 °C	HTHP-Temp:		Pm:	(0.10 m³	PHPA:			Gel 10s:		9 lbf/100ft ²
	HTHP-Press:		Pf:		0.15	Mf:	0.5	0 m³ (Gel 10m:		14 lbf/100ft2
Comment:									RP	м	Reading
Pumps											
		Pump data	a - Last 2	4 Hrs						Slow Pu	mp Data
No Type	Liner	SPM	Eff.	Flow	SP	P	Depth	N	IW	SPM	SPP
	(in)		(%)	(galUS/min)	(ps	si)	(m)	(p	pg)		(psi)
1 Continental Emsco/F	-800 5.500	80	97		1.	,532	1,808.0		9.10		
2 Continental Emsco/F	-800 5.500	80	97		1,	,532	1,808.0		9.10	60	400
										40	300
Casing											
OD	LOT			FIT	. (Casing	Shoe (MD)		Ca	asing Shoe	e (TVD)
406 mm (16")							11	.0 m			11.0 m
244 mm (9 5/8")		16.70 ppg					762	.7 m			762.7 m
BHA #4											
BHA Type:		Dir	ectional	Total Weight Wet:							
Depth In/Out:	1	,296.0 m/1,9	926.5 m	Weight Below Jar	Wet:						
Date In/Out:	#23 (25 Jan 2013)/#27 (29 Ja	n 2013)								
Total Length:			196.2 m								
BHA Description:				abiliser, 6 3/4" Float x 4 1/2" HWDP.	t Sub (v	with flo	at), 6 3/4" H	DSI	Collar, X	/O, X/O, 1	2 x 6 1/2"
BHA Run Comment:				and return well pat	h to tar	raet ce	ntre.				



BHA Daily Summary												
Pickup Weight:	145	klb Torque	(max):	4,6	55 ft-lbs	D.C. ((1) Ann Ve	locity:				5 ft/s
Slack-Off Weight:	141	klb Torque	Avg. Off Bottom:	1,0	95 ft-lbs	D.C. ((2) Ann Ve	locity:				0 ft/s
String Weight:	143	klb Torque	Avg. On Bottom:	2,9	88 ft-lbs	H.W.C	D.P. Ann. V	Velocit	ty:			3 ft/s
Jars Hours Logged:	17.7	′5 h				D.P. A	Ann. Veloc	ity:				3 ft/s
Summary:												
BHA Component												
Equipment		Descrip	tion	Length (m)	OE (in		ID (in)		Seria	l #		Hours
Bit	Baker Hug No: 3	ghes Christian	PDC 5 Blade, Bit	0.3	5 8.	500	. ,	7033	3541			
Mud Motor			or 7 stator/8 rotor, bend 1.98 degrees	7.8	5 3.	750	3.000	F672	270			
Stabilizer	3			1.7	8 6.	750	2.750	B 67	T135			
Float Sub	Float sub o	omes with po	rted float	1.0	2 6.	865	2.750	D671	F742			
NM Drill Collar	HDS1 Colla	ar		9.1	6 6.	750	2.750	D671	F742			
X-Over	NC50 Box	5 1/2" FH Pin		0.9	8 6.	875	3.000	D670	CX637	7		
X-Over	NC46 Box			1.1		500	2.750	B65)	X053A	۱.		
6 1/2" DC	-2, 29018,		30-2-21, 30-2-2, 92 P5922-9, 29013, 7,	22 108.2	0 6.	188	2.938					
6 1/2" Hydraulic Jar	Bico Hydro	-Mechanical		9.5	3 6.	375	2.500	004. BD0	03.13	5398		
6 1/2" DC	SN: S2613	2.10, 29008		18.4	1 6.	313	2.938					
HWDP	SN: A5875	, A58730, A58	3716, A58720	37.8	2 6.	250	2.875					
Directional Data												
Slide Time:		Rotate	Time:			Circ. ⁻	Time:					
Slide (%):		Rotate	(%):			Circ. (. ,					
Total Slide Time:			otate Time:		2.90 h	Total	Circ. Time	:				8.00 h
Total Revs:	180 Kr	evs HSI:		2.4	12 hp/in ²			_			_	
Bit #3										Noz	zles	
	216 mm (8 1/2")	Туре:		PDC	IADC #:		M22		#	5	Size	(/32nd")
Manufacturer:	BHI (Hughes	Model:		Q505F	TFA:		0.552 in		5	х		12
Serial #:	Christensen) 7033541	Bit Wear:	2-7-RO-S-	-X-I-BT-PR	Cost:			\$				
Bit Run Comment:												
Bit Wear Comment:												
Drilling Parameters												
BHA Run #4												
Top Depth:				WD ECD:							9.	43 kg/m³
Bottom Depth:			1,926.5 m									
		Min			Avg					Max		
Flow		369 galUS			galUS/mi	n			-	galUS/	min	
Surface RPM		40 rpn			44 rpm					7 rpm		
Downhole RPM		118 rpi			44 rpm					69 rpm		
Pressure		1,401 p			,565 psi					728 ps		
Torque WOB		1,095 ft-			875 ft-lbs					55 ft-lk)S	
I WUB												
ROP		4 klbs 0.50 m			11 klbs 5.03 m/h					8 klbs .50 m/	h	

			<u></u>	ell : Triclops-1 Dr					
Survey									
MD (m)	Incl. (°)	Corr. Az (°)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/' (r	W n)	Tool Type
1,805.1	1.4	300.93	1,804.7	- 7,124,808.643	0.312	-5.6	0	.7	MWD
1,824.4	1.3	299.88	1,824.0	- 7,124,808.411	0.130	-5.4	0	.3	MWD
1,843.4	1.1	293.37	1,843.0	- 7,124,808.227	0.359	-5.2	-0).1	MWD
1,862.8	1.0	298.57	1,862.4	- 7,124,808.071	0.301	-5.1	-0).4	MWD
1,872.5	1.1	302.83	1,872.1	- 7,124,807.984	0.363	-5.0	-().5	MWD
1,882.0	1.1	302.87	1,881.6	- 7,124,807.88{	0.002	-4.9	-0).7	MWD
1,891.7	1.1	305.89	1,891.3	- 7,124,807.787	0.173	-4.8	-0	0.8	MWD
1,911.0	1.1	300.99	1,910.6	- 7,124,807.59(0.141	-4.6	-1		MWD
1,914.8	1.0	301.81	1,914.4	- 7,124,807.55{	0.719	-4.6	-1		MWD
1,927.1	1.0	301.81	1,926.6	- 7,124,807.44€	0.000	-4.4	-1	1.3	MWD
Formations									
		Name				Тор	(m)		
Mackunda Form	ation								641.5
Allaru Mudstone	9								745.0
Toolebuc Forma	ation								1,038.0
Wallumbilla Forr	mation								1,094.0
Cadna-Owie For	rmation								1,311.0
Murta Formation	า								1,397.5
Namur Sandstor	ne								1,424.5
Westbourne For	mation								1,516.5
Adori Sandstone	9								1,594.5
Birkhead Forma									1,634.5
Hutton Sandstor									1,727.0
Poolowanna For	rmation		_			_			1,926.5
Personnel On E									
Job	b Title		Personnel	FUO	Company			Pax	
				ENSI					22
				Drillse					4
					ontractor lustry Catering S	ervices			19 4
						Total			49
Bulk Stocks									
	Name			Start Prev mount Bala		Use	ed ,	Adjust	Balance
Diesel Fuel (Itr)			ltr		80,182		3,521	0	26,661
Pot Water (Itr)			ltr	5	53,400	0	0	0	53,400
Camp Fuel (Itr)			ltr		1,450	0	450	2,000	3,000





						wen . mci	ops-1 Drilling				
Triclops-	1 Drilling										
Report Nu	imber :		27	7 Day \	Vellsite	Representati	ive: G	uy L. Holmes	Rig N	/lanager:	Dave Dougherty
Latitude (South)	141°	14' 40.40	" Night	Wellsite	Representa	ative:	Don Castles	Drillin	ng Company:	ENSIGN
Longitude	(East)	25°	59' 43.40	"					Wells	site Geologist:	Andrew James
Well Data	l										
Country:		Australia	Curren	t Hole Siz	ze:	8.500 i	in Casing OD:	9.6	625 in	AFE Number:	OPS-13-015
Field:			Measu	red Depth	n:	1,926.5 r	m Casing MD:	762	2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918	True V	ertical De	epth:	1,926.5 r	m Casing TVD:	762	2.7 m	Supp AFE No:	
Ground Le	evel:	141.0 m	24 Hr F	Progress:		0.0 r	m TOL MD:			Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C	On Well:		27.0	0 TOL TVD:			AFE:	
Plan TD (I	MD):	2,021.0 m	Days S	Since Spu	d:	15.4	8 Lnr Shoe ME):		Daily Cost:	\$ 77,464
Plan TD (TVD):	2,021.0 m	Last B	OP Date:		19 Jan 201	3 Lnr Shoe TV	D:		Cum. Cost:	\$ 3,015,553
			FIT/LO	T:		/16.72 pp	g			Last LTI Date:	05 Feb 2012
										Days Since LTI:	359
	p @ 0600:					-	ing down HWT dr				
Planned C	Op:		•		rs - Mak	eup cement	stinger and run ir	n to set plugs -	Hallibu	irton setting cemer	nt plugs as per
			program	n							
Summary	for Period	0000 Hrs to	2400 Hr	s on 29 J	Jan 2013	3					
Tripping o HNGS-SP		ay down M	WD and F	Pathfinder	r directio	nal tools - P.	JSM rigging up Se	chlumberger lo	ogging f	tools - Run Log #1	ADT-HRLA-PEX-
Operation	ns for Perio	d 0000 Hrs	to 2400 H	irs On 29	9 Jan 20	13					
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		Ac	tivity De	escription	
PH0	Р	то	00:00	04:30	4.50	1,926.5	-		m to lay	out Directional /M	ND tools and
PH0	U	то	04:30	05:00	0.50	1,926.5	conduct Wireline Flow check - Mix		ıd		
PH0 PH0	P	то	04.30	10:15	5.25	1,926.5				ace laying down di	rectional tools
FU		10	05.00	10.15	0.20	1,920.5	Review JSA and			ace laying down di	
PH0	Р	WL	10:15	12:15	2.00	1,926.5				ıp to run wireline lo	as Pick up and
1110				12.10	2.00	1,020.0	make up tool stri	-	. rug u		go. Thok up unu
PH0	Р	WL	12:15	19:30	7.25	1,926.5	Run No: 1 - ADT	0	S - SP		
PH0	Р	WL	19:30	21:30	2.00	1,926.5	Run #1 on surfa	ce - Layout an	d picku	p run #2 tools SSC	AN - GPIT
PH0	Р	WL	21:30	24:00	2.50	1,926.5		-	-	, #2 - Logging SSC	
Operation	ns for Perio	d 0000 Hrs	to 0600 H	lrs On 30) Jan 20	13					
PHSE	CLS	OP	From	То	Hrs	Depth		Ac	tivity De	escription	
	(RC)	5.				(m)		/10	, D		
PH0	(e) P	WL	00:00	04:00	4.00	1,926.5	Schlumberger ru	Innina I oa #?	SSCAN	l - GPIT - Log at su	urface
PH0	P	WL	00:00	04:30	0.50	1,926.5				d clear from drill flo	
PH0	P	HBH	04:30	06:00	1.50	1,926.5		-		rs and HWDP, Lay	
						,	Service break Ke			, . ,	
Performa	nce Summa	ary									
Performa	nce Summa	iry			Dail	у				Cumulative Well	
Performa	nce Summa		F	Irs	Dail	,	%	F	Irs	Cumulative Well	%
Performa	nce Summa			Irs 3.5	Dail		% 97.9		lrs 04.8	Cumulative Well	% 91.8
P	nce Summa		2		Dail	ç		59		Cumulative Well	
P TP	nce Summa		2	3.5	Dail	ç	97.9	59 4	94.8	Cumulative Well	91.8
	nce Summa		2	3.5).0	Dail	9 9 9 9 9	97.9 0.0	59 4 49	94.8 1.0	Cumulative Well	91.8 0.6



WBM Data								Cost Today:	\$ 604
Mud Desc:	4PHB	API FL:		CI:		Solids:	7.8 %	Glycol:	
Check Depth:	1,926.0 m	Filter-Cake:	1 /32nd"	KCI:	2.0 %	H2O:	92 %	Viscosity:	42 s/qt
Time:	16:00	HTHP-FL:		Hard/Ca:	400.00 mg/L	Sand:	2.0 %	PV:	10 cP
Weight:	9.10 ppg	HTHP-Cake:		MBT:	0.30 %	pH:	9	YP:	20 lbf/100ft ²
Temp:	38.0 °C	HTHP-Temp:		Pm:	0.10 m³	PHPA:		Gel 10s:	9 lbf/100ft ²
		HTHP-Press:		Pf:	0.15	Mf:	0.50 m³	Gel 10m:	13 lbf/100ft ²
Comment:								RPM	Reading
1									

Pumps	S										
				Pump da	ta - Last 2	4 Hrs				Slow Pu	mp Data
No	Туре		Liner (in)	SPM	Eff. (%)	Flow (galUS/min)	SPP (psi)	Depth (m)	MW (ppg)	SPM	SPP (psi)
1 2	Continental Emsco/F Continental Emsco/F		5.500 5.500	80 80	97 97		1,532 1,532	1,808.0 1,808.0	9.10 9.10	60 40	400 300
Casing	g										
	OD		LOT			FIT	Casing	g Shoe (MD)		Casing Shoe	(TVD)
	406 mm (16") 244 mm (9 5/8")		1	6.70 ppg					.0 m 2.7 m		11.0 m 762.7 m
BHA #	4				•						
BHA T	ype:			D	irectional	Total Weight Wet:					
Depth	In/Out:		1,:	296.0 m/1	,926.5 m	Weight Below Jar	Wet:				
Date Ir	n/Out:	#23 (25 J	Jan 2013)/	#27 (29 J	an 2013)						
Total L	.ength:				196.2 m						
BHA D	Description:		-		-	abiliser, 6 3/4" Float x 4 1/2" HWDP.	Sub (with flo	oat), 6 3/4" ⊦	IDSI Collar	, X/O, X/O, 12	x 6 1/2"
BHA R	Run Comment:	Direction	al BHA rur	n to correc	ct deviation	and return well path	h to target ce	entre.			

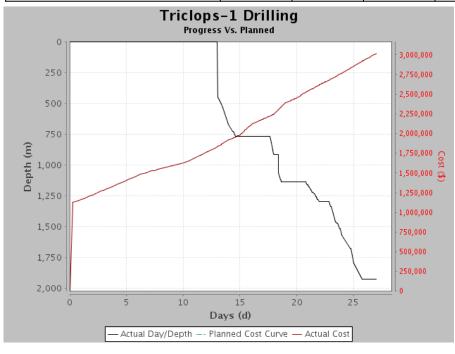


BHA Daily Summary												
Pickup Weight:	() klb	Torque (max):			0 ft-lbs	D.C.	(1) Ann \	/eloo	city:		0 ft/s
Slack-Off Weight:	() klb	Torque Avg. Off Bottom	:		0 ft-lbs	D.C.	(2) Ann \	/eloc	city:		0 ft/s
String Weight:	() klb	Torque Avg. On Bottom	:		0 ft-lbs	H.W	.D.P. Ann	. Ve	locity:		0 ft/s
Jars Hours Logged:	0.0	00 h					D.P.	Ann. Velo	ocity	:		0 ft/s
Summary:												
BHA Component												
Equipment			Description		Length (m)	OI (ir		ID (in)		Seria	#	Hours
Bit	Bakar Hu	abos	Christian PDC 5 Blade, B	it	0.3	`	.500	(11)	7	033541		
	No: 3	gries		ii.	0.5		.500		'	000041		
Mud Motor	Standard	Pathfi	nder motor 7 stator/8 roto	or,	7.8	5 3	.750	3.000) F	67270		
	1.15degre	e ben	d. bit to bend 1.98 degre	es								
Stabilizer					1.7	8 6	.750	2.750) E	3 67T135		
Float Sub	Float sub	comes	s with ported float		1.0	2 6	.865	2.750) [067F742		
NM Drill Collar	HDS1 Col	lar			9.1	6 6	.750	2.750) [067F742		
X-Over	NC50 Box	5 1/2	" FH Pin		0.9	8 6	.875	3.000) [067CX637	7	
X-Over	NC46 Box	NC50) Pin		1.1	0 6	.500	2.750) E	365X053A	۱	
6 1/2" DC			P5922-9, 30-2-21, 30-2-2,		108.2	0 6	.188	2.938	3			
			03231, GP5922-9, 29013	,								
	GP3837.3											
6 1/2" Hydraulic Jar	Bico Hydro	o-Mec	hanical		9.5	3 6	.375	2.500		04. 3D003.13	200	
6 1/2" DC	SN: S2613	32 10	29008		18.4	1 6	.313	2.938	_	50003.13	5390	
HWDP							.250	2.875				
	SN: A587	5, A58	3730, A58716, A58720		37.8	2 0	.200	2.070	, I			
Directional Data	510: A587:	5, A58	3730, A58716, A58720		37.8	2 0	.230	2.075	<u>' </u>			
		5, A58	Rotate Time:		37.8	0.00 h		Time:	<u>'</u>			0.00 h
Directional Data Slide Time:					37.8		Circ.	Time:	<u>'</u>			0.00 h
Directional Data	0.0		Rotate Time:		37.8		Circ. Circ.	Time:				0.00 h 8.00 h
Directional Data Slide Time: Slide (%):	0.0	00 h	Rotate Time: Rotate (%):			0.00 h	Circ. Circ.	Time: (%):				
Directional Data Slide Time: Slide (%): Total Slide Time:	0.0	00 h 00 h	Rotate Time: Rotate (%): Total Rotate Time:			0.00 h 2.90 h	Circ. Circ.	Time: (%):			Nozz	8.00 h
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs:	0.0	00 h 00 h	Rotate Time: Rotate (%): Total Rotate Time: HSI:			0.00 h 2.90 h	Circ. Circ. Tota	Time: (%): I Circ. Tim		#		8.00 h les
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3	0.1 0.1 0 K	00 h 00 h revs	Rotate Time: Rotate (%): Total Rotate Time: HSI: e:		0.0	0.00 h 2.90 h 00 hp/in²	Circ. Circ. Tota	Time: (%): I Circ. Tim	ne:		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size:	0.0 0.1 0 K 216 mm (8 1/2")	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e:		0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne:	# 5		8.00 h les
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size:	0.0 0.1 0 K 216 mm (8 1/2") BHI (Hughes	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del:		0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer:	0.0 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del:		0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment:	0.0 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del:		0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters	0.0 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del:		0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4	0.0 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del:	-S-X-I	0.(PDC Q505F -BT-PR	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth:	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO	-S-X-I	0.0 PDC Q505F	0.00 h 2.90 h 00 hp/in ² IADC #: TFA:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²		S	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h 00 h revs Typ Moo	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO	-S-X-I	0.(PDC Q505F -BT-PR	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5	S X	8.00 h les ize (/32nd")
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth:	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min	-S-X-I	0.(PDC Q505F -BT-PR DECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5	S x Max	8.00 h les ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min	-S-X-I	0.(PDC Q505F -BT-PR DECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost:	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga	X X Max alUS/mi	8.00 h ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min 0 rpm	-S-X-I	0.(PDC Q505F -BT-PR D ECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost: Avg JalUS/mir 0 rpm	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga	S x Max alUS/mi) rpm	8.00 h ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Slide Time: Total Slide Time: Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min 0 rpm 0 rpm 0 rpm	-S-X-I	0.(PDC Q505F -BT-PR D ECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost: Avg alUS/mir 0 rpm 0 rpm	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga	S x Max alUS/mi) rpm) rpm	8.00 h ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Bit Wear Comment: BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min 0 rpm 0 rpm 0 rpm 0 psi	-S-X-I	0.(PDC Q505F BT-PR DECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost: Avg yalUS/mir 0 rpm 0 rpm 0 psi	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga	S x Max alUS/mi) rpm) rpm 0 psi	8.00 h les ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Bit Wear Comment: Drilling Parameters BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure Torque	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min 0 rpm 0 rpm 0 rpm 0 psi 0 ft-lbs	-S-X-I	0.(PDC Q505F BT-PR DECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost: Avg JalUS/mir 0 rpm 0 rpm 0 psi 0 ft-lbs	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga	S x Max alUS/mi) rpm 0 psi ft-lbs	8.00 h les ize (/32nd") 12
Directional Data Slide Time: Slide (%): Total Slide Time: Total Revs: Bit #3 Size: Manufacturer: Serial #: Bit Run Comment: Bit Wear Comment: Bit Wear Comment: BHA Run #4 Top Depth: Bottom Depth: Flow Surface RPM Downhole RPM Pressure	0.1 0.1 0 K 216 mm (8 1/2") BHI (Hughes Christensen)	00 h revs Moc Bit \	Rotate Time: Rotate (%): Total Rotate Time: HSI: e: del: Wear: 2-7-RO 1,926.5 m Min 0 galUS/min 0 rpm 0 rpm 0 rpm 0 psi	-S-X-I	0.(PDC Q505F -BT-PR DECD:	0.00 h 2.90 h 00 hp/in ² IADC #: TFA: Cost: Cost: Avg yalUS/mir 0 rpm 0 rpm 0 psi	Circ. Circ. Tota	Time: (%): I Circ. Tim M2	ne: 223 in ²	5 0 ga ((((((((((((((()))))))))	S x Max alUS/mi) rpm) rpm 0 psi	8.00 h les ize (/32nd") 12





Formations							
Name					Top (m)		
Mackunda Formation							641.5
Allaru Mudstone							745.0
Toolebuc Formation							1,038.0
Wallumbilla Formation							1,094.0
Cadna-Owie Formation							1,311.0
Murta Formation							1,397.5
Namur Sandstone							1,424.5
Westbourne Formation							1,516.5
Adori Sandstone							1,594.5
Birkhead Formation							1,634.5
Hutton Sandstone							1,727.0
Poolowanna Formation							1,926.5
Personnel On Board							
Job Title	Personn	el	C	Company		Pax	
			ENSIGN				23
			Drillsearch				4
			Sub Contract	or			20
			Oil Industry C	atering Service	s		4
					Total		51
Bulk Stocks							
Name	Unit	Start	Previous	In	Used	Adjust	Balance
		Amount	Balance				
Diesel Fuel (ltr)	ltr		26,661	0	3,580	0	23,081
Pot Water (Itr)	ltr		53,400	0	7,400	0	46,000
Camp Fuel (Itr)	ltr		3,000	0	400	0	2,600



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Triclops-1	Drilling									
Report Nur	mber :		28	B Day V	Vellsite F	Representa	tive: Guy L. Holmes	Rig	Manager:	Scott Cameron
Latitude (S	South)	141°	14' 40.40'	' Night	Wellsite	Represent	ative: Kevin Gordon	Drill	ing Company:	ENSIGN
Longitude	(East)	25° :	59' 43.40'	•				Wel	lsite Geologist:	Andrew James
Well Data			-							
Country:		Australia		t Hole Siz		8.500		625 in	AFE Number:	OPS-13-015
Field:				red Depth		1,926.5		62.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De		1,926.5	-	62.7 m	Supp AFE No:	
Ground Le	vel:	141.0 m		rogress:		0.0			Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C			28.			AFE:	• • · - - • •
Plan TD (M		2,021.0 m		ince Spu	d:	16.			Daily Cost:	\$ 347,533
Plan TD (T	VD):	2,021.0 m	FIT/LO	DP Date:		19 Jan 20			Cum. Cost: Last LTI Date:	\$ 3,363,086
				1:		/16.72 p	pg		Days Since LTI:	05 Feb 2012 360
Current Op	@ 0600:		POOH	laying do	wn drill p	oipe				000
Planned O	p:		Continu	ie setting	abando	nment cem	ent plugs as per programme.			
Summary	for Period	0000 Hrs to	2400 Hrs	s on 30 J	lan 2013					
	-	-					ponents from derrick - POOH a	nd laid	down BHA compone	ents - Picked up
2 7/8" cmt	stinger - R	IH and set #1	and #2 a	abandonr	nent cerr	nent plugs.				
Operation	s for Perio	od 0000 Hrs 1	to 2400 H	lrs On 30) Jan 20	13				
PHSE	CLS	OP	From	То	Hrs	Depth	A	ctivity D	Description	
	(RC)	-				(m)				
PH0	Р	WL	00:00	04:00	4.00	1,926.5	Schlumberger running Log #2		v	
PH0	Р	WL	04:00	04:30	0.50	1,926.5	Rigging down Schlumberger t			
PH0	Р	НВН	04:30	08:00	3.50	1,926.5	RIH with 6.50" Drill collars and Kelly connections	d HWD	P, Lay down same	Service break
PH0	Р	TRCP	08:00	09:00	1.00	1,926.5	Rig up 2 7/8" tubing equipmer	nt - Mal	ke up 2 7/8" cement s	stinger to 47m.
PH0	Р	TRCP	09:00	12:00	3.00	1,926.5	RIH with 2 7/8" cement stinge	r on DF	P f/ 47m t/ 1186m.	
PH0	Р	TRCP	12:00	14:30	2.50	1,926.5	Continue RIH f/ 1186m t/ 191			
PH0	Р	CMP	14:30	17:30	3.00	1,926.5	Make up circulating swage - F and condition hole for abando			43m - Circulate
PH0	Р	CMP	17:30	18:30	1.00	1,926.5	Held PJSM with Halliburton -			nd surface lines.
PH0	Р	CMP	18:30	19:30	1.00	1,926.5	Cement plug #1 1926m to 182			
							Pressure test surface lines t/ 2	2000ps	i f/ 5mins Mix and pu	mp 34.4bbl of
							15.6ppg cement slurry - Pump			ment with 76bbl
							mud - CIP (cement in place)			
PH0	Р	CMP	19:30	20:30	1.00	1,926.5	Rig down surface lines - POO			
PH0	Р	CMP	20:30	21:30	1.00	1,926.5	Circulate 1.5 x bottoms up to		-	
PH0	Р	CMP	21:30	22:30	1.00	1,926.5	Cement plug #2 1727m to 160			
							cement slurry - Pump 3.6bbl v	vater -	Displace cement with	1 68001 mua -
PH0	Р	CMP	22:30	22.20	1.00	1 0 2 6 5	CIP @ 22:25hrs. Rig down surface lines - POC		hu fl 1707m tl 1400m	
PH0 PH0	P	CMP	22:30	23:30 24:00	0.50	1,926.5 1,926.5	Circulate 1.5 x bottoms up to			
		od 0000 Hrs 1				•				
PHSE	CLS	OP	From	To	Hrs	Depth			Description	
	(RC)				113	(m)				
ABN	Р	CMP	00:00	00:30	0.50	1,926.5	Continue circulate bottoms up annulus.	to flus	h cement from drill st	tring and
ABN	Р	CMP	00:30	01:30	1.00	1,926.5	Cement Plug #3: From 1,422	m to 1,	315m - Mix and pum	p 35.2bbl of
							15.6ppg cement slurry - Pump			
ABN	Р	CMP	01:30	02:00	0.50	1,926.5	mud - CIP @ 01:15hrs. Rig down surface lines - POO	Helow	ly from 1.422 to 1.23	37m
	Г	UNIF	01.50	02.00	0.50	1,520.5	The nowin surface lines - FOU	11 310 W	iy ii Oili 1, 4 22 to 1,23	// III.

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	Wall - Trialana 4 Drilling											
	Well : Triclops-1 Drilling ADN D 00.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00<											
ABN	Р	CMP	02:00	02:30	0.50	1,926.5	Circulate 1.5 x b	pottoms up to flush cement from	n drill string and annulus.			
ABN	Р	CMP	02:30	03:00	0.50	1,926.5	POOH from 1,2	37 to 892m.				
ABN	Р	CMP	03:00	03:30	0.50	1,926.5	Pump 30bbl Hi-	Vis pill and displace with 34.5b	bl mud.			
ABN	Р	CMP	03:30	03:45	0.25	1,926.5	POOH from 892	2m to 792m.				
ABN P CMP 03:45 04:45 1.00 1,926.5 Cement Plug #4: from 792m to 702m. Mix and pump 26.7bbl of 15.8ppg cement slurry. Pump 4.9bbl water. Displace cement with 22.5bbl mud. CIP @ 04:25hrs.												
ABN	Р	CMP	04:45	05:15	0.50	1,926.5	POOH from 792	2m to 617m.				
ABN	Р	CMP	05:15	05:45	0.50	1,926.5	Circulate 1.5 x b	pottoms up to flush cement from	n drill sting and annulus.			
ABN	Р	CMP	05:45	06:00	0.25	1,926.5	[In Progress] PC	DOH laying out DP from 617m	to 48m.			
Performa	nce Summa	ry										
					Dail	у		Cumulat	ive Well			
			F	Irs			%	Hrs	%			
Р			24	4.0			100.0	618.8	92.1			
ТР			C	0.0			0.0	4.0	0.6			

U		0.	0	0.	0		49	9.2		7.3
Undefined		0.	0	0.	0		0	.0		0.0
Total		24	.0	100).0		67	2.0		100.0
WBM Data									Cost Today:	\$ 853
Mud Desc:	4PHB	API FL:	9.0 cm ³ /30mir	n CI:	34,	200 %	Solids:	7.8 %	Glycol:	
Check Depth:	1,926.0 m	Filter-Cake:	1 /32nd	" KCI:		2.5 %	H2O:	92 %	Viscosity:	42 s/qt
Time:	08:00	HTHP-FL:		Hard/Ca:	450.00) mg/L	Sand:	2.0 %	PV:	10 cP
Weight:	9.10 ppg	HTHP-Cake:		MBT:	C	.30 %	pH:	9	YP:	18 lbf/100ft ²
Temp:	38.0 °C	HTHP-Temp:		Pm:	0	.10 m³	PHPA:		Gel 10s:	8 lbf/100ft ²
		HTHP-Press:		Pf:		0.15	Mf:	0.50 m³	Gel 10m:	12 lbf/100ft ²
Comment:									RPM	Reading

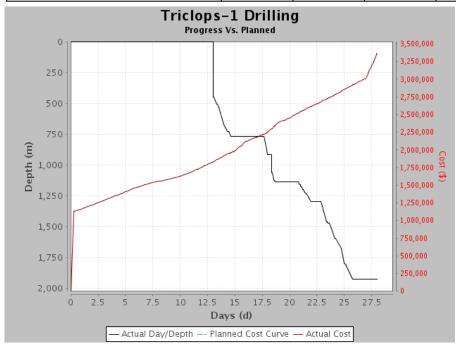
Pumps	5										
				Pump da	ita - Last 2	4 Hrs				Slow Pu	mp Data
No	Туре	L	iner	SPM	Eff.	Flow	SPP	Depth	MW	SPM	SPP
			(in)		(%)	(galUS/min)	(psi)	(m)	(ppg)		(psi)
1	Continental Emsco/I	F-800	5.500	80	97		1,532	1,808.0	9.10		
2	Continental Emsco/I	F-800	5.500	80	97		1,532	1,808.0	9.10	60	400
										40	300
Casing]	· · ·							-	· ·	
	OD		LOT			FIT	Casing	g Shoe (MD))	Casing Shoe	(TVD)
	406 mm (16")							11	I.0 m		11.0 m
	244 mm (9 5/8")		10	6.70 ppg				762	2.7 m		762.7 m
BHA #	5						•				
BHA T	ype:			Cemei	nt Stinger	Total Weight Wet:					
Depth	In/Out:		1,9	926.0 m/1	,926.0 m	Weight Below Jar	Wet:				
Date In	n/Out:	#28 (30 Ja	n 2013)/	#30 (01 F	eb 2013)						
Total L	ength:				59.7 m						
BHA D	escription:	5 X 2-7/8" I	EUE TB	G, X/O, X	/0						
BHA R	un Comment:										



BHA Daily Summary								
Pickup Weight:	84 klb	Torque (max):		0 ft-lbs	D.C. (1) A	nn Ve	elocity:	0 ft/s
Slack-Off Weight:	84 klb	Torque Avg. Off Bottom		0 ft-lbs	D.C. (2) A			0 ft/s
String Weight:	84 klb	Torque Avg. On Bottom	:	0 ft-lbs	H.W.D.P. /	Ann. '	Velocity:	0 ft/s
Jars Hours Logged:	0.00 h				D.P. Ann.	Veloc	city:	0 ft/s
Summary:								
BHA Component								
Equipment		Description	Length	OE) ID		Serial #	Hours
			(m)	(in) (in)		
2.875" EUE Tubing	Open Ended		58.48	2.	875 2.	091		
Crossover	2-7/8" EUE PIN	X NC38 BOX	0.53	4.	875 2.	375	475-20	
Crossover	NC38 PIN X NO	246 BOX	0.67	6.	250 2.	375	65-120	
Directional Data								
Slide Time:		Rotate Time:			Circ. Time	:		
Slide (%):		Rotate (%):			Circ. (%):			
Total Slide Time:	0.00 h	Total Rotate Time:		0.00 h	Total Circ.	Time	2	0.00 h
Total Revs:		HSI:	0.0) hp/in²				
Drilling Parameters								
BHA Run #4								
Top Depth:			PWD ECD:					
Bottom Depth:		1,926.5 m						
		Min		Avg			Max	
Flow		0 galUS/min	0 ga	alUS/min			0 galUS/min	
Surface RPM		0 rpm	() rpm			0 rpm	
Downhole RPM		0 rpm	() rpm			0 rpm	
Pressure		0 psi		0 psi			0 psi	
Torque		0 ft-lbs	C	ft-lbs			0 ft-lbs	
WOB		0 klbs	() klbs			0 klbs	
ROP		0.00 m/h	0.	00 m/h			0.00 m/h	
Formations								
	Name				Тор	(m)		
Mackunda Formation								641.5
Allaru Mudstone								745.0
Toolebuc Formation								1,038.0
Wallumbilla Formation								1,094.0
Cadna-Owie Formation								1,311.0
Murta Formation								1,397.5
Namur Sandstone								1,424.5
Westbourne Formation								1,516.5
Adori Sandstone								1,594.5
Birkhead Formation								1,634.5
Hutton Sandstone								1,727.0
Poolowanna Formation								1,926.5
Personnel On Board								
Job Title		Personnel	Co	mpany			Pax	
			ENSIGN					21
			Drillsearch					4
			Sub Contractor					9
			Oil Industry Ca	tering Se	ervices			4
					Total			38



Bulk Stocks							
Name	Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fuel (Itr)	ltr		23,081	0	81	0	23,000
Pot Water (Itr)	ltr		46,000	0	11,100	0	34,900
Camp Fuel (Itr)	ltr		2,600	0	300	0	2,300





Triclops-1	Drilling									
Report Nur	mber :		29	Day \	Vellsite F	Representa	tive: Guy L. Holmes	Rig	Manager:	Scott Cameron
Latitude (S	,	141°	14' 40.40'	" Night	Wellsite	Represent	ative: Kevin Gordon	Drilli	ng Company:	ENSIGN
Longitude	(East)	25°	59' 43.40'					Well	site Geologist:	Andrew James
Well Data			1							
Country:		Australia		t Hole Siz		8.500	•	25 in	AFE Number:	OPS-13-015
Field:				red Depth		1,926.5	e e	2.7 m	Original AFE:	\$ 3,447,294
Rig:		Ensign 918		ertical De	•	1,926.5	v v	2.7 m	Supp AFE No:	
Ground Le	vel:	141.0 m		Progress:		0.0			Orig. & Sup.	\$ 3,447,294
RT to GL		5.20 m	Days C			29.			AFE:	• · - • · • ·
Plan TD (N		2,021.0 m	-	ince Spu	d:	17.			Daily Cost:	\$ 156,181
Plan TD (T	VD):	2,021.0 m		DP Date:		19 Jan 20			Cum. Cost:	\$ 3,519,268
			FIT/LO	1:		/16.72 p	pg		Last LTI Date: Days Since LTI:	05 Feb 2012 361
Current Op	@ 0600·		Nipplo	down BO	D				Days Since LTI.	301
Planned O	-					OP Remo	ve CHF. Complete tank cleaning	n Ria	Release	
	ρ.		Comple	te nippie				y. Thy	Release.	
			Rig Dov	wn and p	repare to	move.				
Summary	for Period	0000 Hrs to	2400 Hrs	s on 31 J	lan 2013					
Pump P&A	Plug 3: 1,3	315m -1,422	m and Plu	ug 4: 702	m - 792n	n. Pull bac	k and lay out drill pipe. RIH to 6	17m a	nd tag top of cemen	t @ 663m.
	-			-			be. RIH with stinger and place F			0
Oneration	o for Dorio	d 0000 Hrs	to 2400 H	Iro On 24	Lion 20	12		-		
•							A =			
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)	AC		escription	
ABN	Р	CMP	00:00	00:30	0.50	1,926.5	Continue circulate bottoms up annulus.	to flusl	h cement from drill si	tring and
ABN	Ρ	CMP	00:30	01:30	1.00	1,926.5	Cement Plug #3: From 1,422r 15.6ppg cement slurry - Pump mud - CIP @ 01:15hrs.			
ABN	Р	CMP	01:30	02:00	0.50	1,926.5	Rig down surface lines - POOI	l slow	y from 1,422 to 1,23	37m.
ABN	Р	CMP	02:00	02:30	0.50	1,926.5	Circulate 1.5 x bottoms up to fl	ush ce	ment from drill string	g and annulus.
ABN	Р	CMP	02:30	03:00	0.50	1,926.5	POOH from 1,237 to 892m.			
ABN	Р	CMP	03:00	03:30	0.50	1,926.5	Pump 30bbl Hi-Vis pill and disp	blace v	vith 34.5bbl mud.	
ABN	Р	CMP	03:30	03:45	0.25	1,926.5	POOH from 892m to 792m.			
ABN	Р	CMP	03:45	04:45	1.00	1,926.5	Cement Plug #4: from 792m to cement slurry. Pump 4.9bbl w CIP @ 04:25hrs.			
ABN	Р	CMP	04:45	05:15	0.50	1,926.5	POOH from 792m to 617m.			
ABN	P	CMP	05:15	05:45	0.50	1,926.5	Circulate 1.5 x bottoms up to fl	ush ce	ment from drill stina	and annulus.
ABN	Р	CMP	05:45	08:00	2.25	1,926.5	POOH laying out DP from 617			
ABN	Р	CMP	08:00	09:00	1.00	1,926.5	RIH with DP stands from derric			
ABN	Р	CMP	09:00	10:30	1.50	1,926.5	POOH laying out DP from 480	n to 4	8m.	
ABN	Р	CMP	10:30	11:30	1.00	1,926.5	RIH with DP stands from derric	k to 6	17m.	
ABN	Р	CMP	11:30	15:00	3.50	1,926.5	Circulate hole clean while wait	on cei	ment.	
ABN	Р	CMP	15:00	15:30	0.50	1,926.5	RIH and tag hard cement @ 66	63m - I	POOH to 655m.	
ABN	Р	CMP	15:30	16:45	1.25	1,926.5	Pressure test cement plug to 1			
ABN	Р	CMP	16:45	19:45	3.00	1,926.5	Held PJSM - POOH laying out			
ABN	Р	CMP	19:45	20:30	0.75	1,926.5	Change elevators - Rack 2 7/8		-	errick.
ABN	Р	CMP	20:30	21:00	0.50	1,926.5	Change elevators and retrieve		-	
ABN	Р	CMP	21:00	21:30	0.50	1,926.5	RIH with balance of DP stands			
ABN	Р	CMP	21:30	22:15	0.75	1,926.5	POOH laying out DP from 192			
ABN	Р	CMP	22:15	23:30	1.25	1,926.5	Change elevators - Pick up cer	nent s	tinger - Push chemic	cal sacks down
							hole to form raft at 30m.			

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Well : Triclops-1 Drilling

Operatio	ons for Perio	d 0000 Hrs t	o 2400 Hr	s On 31	Jan 20)13						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		,	Activity Desc	cription		
ABN	Р	CMP	23:30	24:00	0.50	1,926.5	Set cement Plug #5: from 30mRT to 5mRT - Halliburton pump 10bbl water - Mix and pump 6.3bbl cement slurry @ 15.8ppg - Displace cem					
							with 0.1bbl wate	er.				
Operatio	ons for Perio	d 0000 Hrs t	o 0600 Hr	s On 01	Feb 20	013						
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)	Activity Description					
ABN	Р	CMP	00:00	01:00	1.00	1,926.5	5 Rig down Halliburton cement equipment and lines - Lay out 2 7/8" of stinger.					
ABN	Р	CMP	01:00	01:30	0.50	1,926.5	Lay out 2 7/8" e racks.	equipment - C	Clear DP and	1 2 7/8" cem	ent stinger fr	rom pipe
RMO	Р	RBR	01:30	06:00	4.50	1,926.5	[In Progress] Fl Open ram doors and start cleani	s, clean ram	cavities, clos	se and retor	que doors. I	Dump
							lines, Mud gas and remove Ko on stump.	separator vei	nt line, flare	line. Depres	ssure Koome	ey system
Dorforme				I								
Fenorina	ance Summa	y			Dai	lv.		1		umulative W	ماا	
			Hrs	s	Dai	iy	%		Hrs		%	
Р			24.				100.0		642.8		92.3	
TP			0.0)			0.0		4.0		0.6	
U			0.0)			0.0 49.2 7.1					
Undefined	1		0.0)			0.0		0.0		0.0	
Total			24.	0			100.0		696.0		100.0	
WBM Da	nta									Cost To	day:	\$ 0
Mud Desc:		4PHB API FL		8.0 (cm³/30m	in CI:	33	,500 % Solids:	. 7	.3 % Glycol:		
Check Dept	th: 1,9	26.0 m Filter-0				d" KCI:		2.0 % H2O:		93 % Viscosity	y:	42 s/qt
Time:		08:00 HTHP	-FL:			Hard/Ca:	400.0	0 mg/L Sand:	1	.5 % PV:		8 cP
Weight:		10 ppg HTHP				MBT:		0.10 % pH:		9 YP:		22 lbf/100ft ²
Temp:	(38.0 °C HTHP				Pm:	C	0.10 m ³ PHPA:		Gel 10s		9 lbf/100ft ²
Comment	:		-Press:			Pf:		0.14 Mf:	0.5	i0 m³ Gel 10m	PM	13 lbf/100ft ² Reading
Pumps												
				Pur	np data	a - Last 24	Hrs				Slow Pu	mp Data
No	Ту	pe	Liner (in)	r SF	РМ	Eff. (%)	Flow (galUS/min)	SPP (psi)	Depth (m)	MW (ppg)	SPM	SPP (psi)
1 (Continental E	msco/F-800	5.5	00	80	97	-	1,532	1,808.0	9.10		
2 0	Continental E	msco/F-800	5.5	00	80	97		1,532	1,808.0	9.10	60 40	400 300
Casing												
	OD		LO	T			FIT	Casino	g Shoe (MD)	(Casing Shoe	(TVD)

 OD
 LOT
 FIT
 Casing Shoe (MD)
 Casing Shoe (TVD)

 406 mm (16")
 11.0 m
 11.0 m
 11.0 m

 244 mm (9 5/8")
 16.70 ppg
 762.7 m
 762.7 m

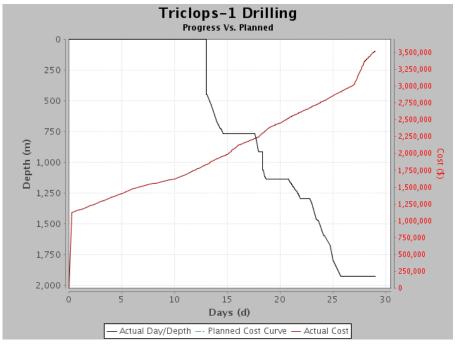
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BHA #5				-						
BHA Type:			Cement Stinger	Total W	eight Wet:					
Depth In/Out:		1 (926.0 m/1,926.0 m		Below Jar We	st.				
Date In/Out:	#28 (30 .		#30 (01 Feb 2013)	weight						
Total Length:	# 2 0 (00 (oun 2010)/	59.7 m							
BHA Description:	5 X 2-7/8	B" FUF TB	G, X/O, X/O							
BHA Run Comment:	0712170		0,700,700							
BHA Daily Summary										
		84 klb					D.C. (1) A	nn)//	looit <i>u</i>	0 ft/s
Pickup Weight: Slack-Off Weight:			Torque (max):	ttom.) ft-lbs) ft-lbs	. ,		•	0 ft/s
		84 klb 84 klb	Torque Avg. Off Bo				D.C. (2) A H.W.D.P.			0 ft/s
String Weight: Jars Hours Logged:		04 KiD 0.00 h	Torque Avg. On Bo	Duom.	l l) ft-lbs	D.P. Ann.			0 ft/s
Summary:		0.0011					D.F. AIIII.	VEIO	Jity.	0 10 5
BHA Component										
			D 1.11							
Equipment			Description		Length (m)	OE (in			Serial #	Hours
2.875" EUE Tubing		Ended			58.48			.091		
Crossover	-	-	X NC38 BOX		0.53			.375	475-20	
Crossover	NC38	3 PIN X NC	46 BOX		0.67	6.	250 2	.375	65-120	
Directional Data										
Slide Time:			Rotate Time:				Circ. Time	e:		
Slide (%):			Rotate (%):				Circ. (%):			
Total Slide Time:		0.00 h	Total Rotate Time:			0.00 h	Total Circ	. Time	2:	0.00 h
Total Revs:			HSI:		0.00	hp/in²				
Drilling Parameters										
BHA Run #4										
Top Depth:				PV	VD ECD:					
Bottom Depth:			1,926.	5 m						
			Min			Avg			Max	
Flow			0 galUS/min		0 gal	US/min			0 galUS/min	
Surface RPM			0 rpm		0	rpm			0 rpm	
Downhole RPM			0 rpm			rpm			0 rpm	
Pressure			0 psi			psi			0 psi	
Torque			0 ft-lbs			ft-lbs			0 ft-lbs	
WOB			0 klbs			klbs			0 klbs	
ROP			0.00 m/h		0.0	0 m/h			0.00 m/h	
Formations										
	Name	e					Тој	p (m)		
Mackunda Formation										641.5
Allaru Mudstone										745.0
Toolebuc Formation										1,038.0
Wallumbilla Formation										1,094.0
Cadna-Owie Formation										1,311.0
Murta Formation										1,397.5
Namur Sandstone										1,424.5
Westbourne Formation										1,516.5
Adori Sandstone										1,594.5
Birkhead Formation										1,634.5
Hutton Sandstone										1,727.0
Poolowanna Formation										1,926.5



Personnel On Board										
Job Title	Personn	el	C	Company		Pax				
			ENSIGN				20			
			Drillsearch				4			
			Sub Contracto	or			10			
			Oil Industry C	atering Service	s		4			
					Total		38			
Bulk Stocks										
Name	Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance			
Diesel Fuel (ltr)	ltr		23,000	0	1,500	0	21,500			
Pot Water (Itr)	ltr		34,900	0	3,400	0	31,500			
Camp Fuel (Itr)	ltr		2,300	0	350	0	1,950			





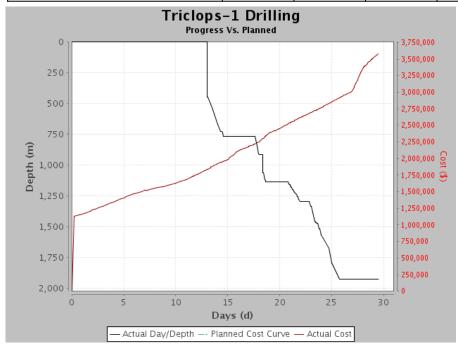
Triclops-1	I Drilling						· ·							
Report Nu Latitude (Longitude	South)		30 14' 40.40' 59' 43.40'	Night		Representat e Representa		Guy L. Holmes Kevin Gordon	Drillir	/lanager: ng Company: site Geologist:	Scott Cameron ENSIGN Andrew James			
Well Data														
Well Data Country: Field: Rig: Ground Lee RT to GL Plan TD (N Plan TD (1 Current Op Planned C	evel: MD): TVD): p @ 0600:	Australia Ensign 918 141.0 m 5.20 m 2,021.0 m 2,021.0 m	Measur True Ve 24 Hr F Days C Days S	ince Spu)P Date:	n: pth:	8.500 1,926.5 1,926.5 0.0 29.4 17.9 19 Jan 201 /16.72 pp	m Casing ME m Casing TV m TOL MD: 46 TOL TVD: 94 Lnr Shoe 13 Lnr Shoe	D: 76; /D: 76; MD:	25 in 2.7 m 2.7 m	AFE Number: Original AFE: Supp AFE No: Orig. & Sup. AFE: Daily Cost: Cum. Cost: Last LTI Date: Days Since LTI:	OPS-13-015 \$ 3,447,294 \$ 3,447,294 \$ 63,146 \$ 3,582,414 05 Feb 2012 362			
Lay out ce doors and	ementing too clean BOP	cavities and	wn ceme bolt door	nters. La s.	iyout ha	Indling gear				OP, Kill and Choke				
-	flowline, kill		nes. Nipp	le down l	30Ps a	nd mount on	stump. Cut Ca	asing head above	e cellar	floor and cap well.	Clean tanks.			
Operation	ns for Perio	d 0000 Hrs 1	o 2400 H	rs On 01	Feb 20)13								
PHSE	CLS (RC)	OP	From	То	Hrs	Depth (m)		Ac	tivity De	escription				
ABN	Р	CMP	00:00	01:00	1.00	1,926.5	Rig down Halli stinger.	iburton cement e	equipme	ent and lines - Lay c	out 2 7/8" cement			
ABN	Р	CMP	01:00	01:30	0.50	1,926.5	Lay out 2 7/8" racks.	equipment - Cle	equipment - Clear DP and 2 7/8" cement stinger from pipe					
RMO	Ρ	RBR	01:30	09:30										
RMO	Р	ССТ	09:30	11:00	1.50	1,926.5				to back off casing h d. Tanks cleaned.	nead. Cut 9 5/8"			
							RIG RELEASE	E						
Performa	nce Summa	ary												
					Dai	ly				Cumulative Well				
				rs			%		lrs		%			
P				1.0			00.0		53.8		92.5			
ТР				.0			0.0		.0		0.6			
U			0	.0			0.0		9.2		7.0			
Undefined			0	.0			0.0	(0.0		0.0			
Total			11	1.0		1	00.0	70	07.0		100.0			



Pumps	6											
				Pump da	ata - Last 2	4 Hrs					Slow Pu	mp Data
No	Туре		Liner	SPM	Eff.	Flo	w	SPP	Depth	MW	SPM	SPP
			(in)		(%)	(galUS	/min)	(psi)	(m)	(ppg)		(psi)
1	Continental Emsco/F	-800	5.500	80	97			1,532	1,808.0	9.1	10	
2	Continental Emsco/F	-800	5.500	80	97			1,532	1,808.0	9.1	10 60	400
											40	300
Casing	9											
	OD		LOT			FIT		Casir	g Shoe (MD)	Casing Shoe	(TVD)
	406 mm (16")								1'	1.0 m		11.0 m
	244 mm (9 5/8")		1	6.70 ppg					762	2.7 m		762.7 m
BHA #	5				·		·					
BHA T	уре:			Ceme	nt Stinger	Total Wei	ght Wet:					
Depth	In/Out:		1,	926.0 m/	1,926.0 m	Weight B	elow Jar V	Vet:				
Date Ir	n/Out:	#28 (3	0 Jan 2013)/	#30 (01 l	eb 2013)							
Total L	ength:				59.7 m							
BHA D	escription:	5 X 2-7	7/8" EUE TB	G, X/O, X	(/O							
BHA R	Run Comment:											
BHA D	aily Summary											
•	Weight:			Torque					D.C. (1) Anr			0 ft/s
	Off Weight:				Avg. Off Bo				D.C. (2) Anr			0 ft/s
-	Weight:			Torque	Avg. On Bo	ottom:			H.W.D.P. Ar		ity:	0 ft/s
	ours Logged:		0.00 h						D.P. Ann. V	elocity:		0 ft/s
Summ												
BHA C	component											
	Equipment			Descrip	tion		Length (m)	OD (in)	ID (in)		Serial #	Hours
2.875"	EUE Tubing	Op	en Ended				58.4	8 2.8	75 2.09	91		
Crosso	over		/8" EUE PIN		BOX		0.5					
Crosso	over	NC	38 PIN X NC	46 BOX			0.6	7 6.2	50 2.3	75 65-1	120	
	ional Data											
Slide T				Rotate					Circ. Time:			
Slide (,			Rotate					Circ. (%):			
	Slide Time:		0.00 h		otate Time:				Total Circ. T	ime:		0.00 h
Total R				HSI:			0.0	00 hp/in ²				
	g Parameters											
BHA Ru Top De						D\A/I	D ECD:					
	i Depth:				1,926.		DECD.					
Bolloff	г Берш.			Min	1,920.	5 111		Avg	I		Max	
Flow				0 galUS/	min		0 ~	avg JalUS/min			0 galUS/min	
Surface	• RPM			0 galos/ 0 rpm			-	0 rpm			0 gal05/min 0 rpm	
	iole RPM			0 rpm				0 rpm			0 rpm	
Pressu				0 psi				0 psi			0 psi	
110000												
Torque	2			0 ft-lb	s			0 ft-lbs			0 ff-lbs	
Torque WOB	•			0 ft-lbs 0 klbs				0 ft-lbs 0 klbs			0 ft-lbs 0 klbs	



Formations								
Na	ime					Top (m)		
Mackunda Formation								641.5
Allaru Mudstone								745.0
Toolebuc Formation								1,038.0
Wallumbilla Formation								1,094.0
Cadna-Owie Formation								1,311.0
Murta Formation								1,397.5
Namur Sandstone								1,424.5
Westbourne Formation								1,516.5
Adori Sandstone								1,594.5
Birkhead Formation								1,634.5
Hutton Sandstone								1,727.0
Poolowanna Formation								1,926.5
Personnel On Board								
Job Title		Personn	el	C	Company		Pax	
				ENSIGN				20
				Drillsearch				4
				Sub Contract	or			10
				Oil Industry C	atering Service	s		4
						Total		38
Bulk Stocks								
Name		Unit	Start Amount	Previous Balance	In	Used	Adjust	Balance
Diesel Fuel (Itr)		ltr		21,500	0	0	0	21,500
Pot Water (ltr)		ltr		31,500	0	0	0	31,500
Camp Fuel (Itr)		ltr		1,950	0	0	0	1,950
							•	



'Copyright IDS 2011', AT 20110518, IDS_drllg_onshore Printed on 5 February 2013 01:52 PM (GMT+08:00) Appendix 2 – Drilling Mud Reports

							D				Tet				<u> </u>	4.0		<u></u>	<u></u>
	WZ	ATER	RΔS		/1116		Repo Rig #					al MD al VD			60 0	to to			m m
			_		_	F	Date			1/14/2013			, pth Dr	halli	U	10			m
RHEOCHEM	Da	ily Dr	filling	g Rep	or	r –	Spud	Date		1/14/2013		-	Depth		d			-	m
OPERATOR	D	rillCooro	h					CON						Drine	u			0	
REPORT FOR		<u>rillSearc</u> ay Miller		astle				REPO				sign	Doher	tv					
WELL NAME A				43110				FIELD		<u> </u>				LY		STA	TE		
		riclops 1	{Rev	5}					ATP	539			r Basi	in				sland	
BHA BIT		JET SIZE		DEPTHS/	CASI	NG				E (BBL)					ULATIO				
		4 14 14 1 4 0 0	15.25	Riser Length	ı	n		OLE VOL 18	. MI	JD INHOLE 18			Inches	•		CIRCU	LATI	ON 114	psi
DRILL PIPE TY	YPE LENG	īΤΗ	16	Conductor (0	20 m	n Ao	ctive Pits	Re	eserve Pits	PU	MP MC	DEL %	EFFICIE	INCY	SURFA	CE	0	min
SIZE (") DRILL PIPE TY	YPE LENG	0 i iTH		Surface @		n	۱ -	338		141 TING VOL		mco F-		97 STK / M	UNI BO	TO BI DTTOM			
SIZE (") DRILL COLLAR SIZE (HW	0	m	Intermediate	e @	n		IOTALO	356			3BL / S ⁻ 0.0642		169		T CIRC	С ТІМ	E 33	min
	") LENG 6.5 51		m	Prod. or LN	R @	n	ı	STO	RAGE T	ANKS	E	3BL / M 10.84		GAL / M 455	IN	ECD)		
	MUD PR	OPERTIE	S				·		¥			1010			PERTY	SPE	CIF	ICATION	S
SAMPLE FROM						Р	it	P	it		Ν	lud W	t 8.8 - 9	9.0 Vis	(F)	40 - 6	55 Y I	ld Pt	5 - 18
MUD TYPE						4K	PP	4K	PP		Α	PI Lo	s 15-	12 pH	(9.0 - 9.	.5 K	CI	4 - 3
TIME SAMPLE TA	AKEN					16:	:00	20	:00					MU	D COMI	MENT	ſS		
FLOWLINE TEMP	-			°F/	°C	84	29	86	30						nple at th				oo of
TOTAL MEASUR	ED DEPTH (TN	MD)		Metr		2	-	-	0	 	20	00 pp	m and 4	50 ppm	1 respecti	vely. T	The v	tal hardnes vater was	39 UI
WEIGHT				ppg / s	SG	8.7	1.04	8.8	1.06).2 ppb to 5 ppb PAC	LIV
FUNNEL VISCOS) API	100)°F/49	000	3			8		an	nd 25-3	30 ppb F	PHB at	premix ta	nk. A t	total	of 420 bbls	
RHEOLOGY 600			-		-	16	10	20	12						system h			repared. 1ozzle, mud	Ч
RHEOLOGY 200 RHEOLOGY 6	: 100 RPM : 3 RPM) ⁰ F/49) ⁰ F/49		8 4	5 2	10 6	6 4		pu	imp fo	r 3 hour	s.Spud	ded in rar	n the S	Scom	io cetrifuge	
PLASTIC VISCOS) ⁰ F/49		- -		-			af	ter the	1st 20 i	m drille	d with fine	er shał	ker s	creen.	
YIELD POINT	(lb / 100 ft ²)		120) F / 49	°C	4			4		_								
GEL STRENGTH	· /			10min/30		2 4	L I	4	7		_		OP	FRAT		сом	MEN	ITS	
LOW SHEAR RAT		(LSRV)							1		M	ade un						oudded at	
n K (lb / 100 ft						0.68	0.15	0.74	0.12		12	230H fr	om surf	face to	60 mVD ۱	with FN		t reporting	time.
API FILTRATE (13	.6	1	4		No	ote: I o	tco surv	vey eve	ry 30 m d	rilled.			
HPHT FILTRATE	•	.)		°F /	°C														
API:HPHT (Cak	ke / 32nd in.)					2			2										
pH ALKALINITY MUI) (Dm)					9. 0.1			.5 20		_								
ALKALINITY MUL		f)				0.14	-	0.17	-		_								
CHLORIDE (mg		.,				21			50		_								
TOTAL HARDNES		M (mg)	/L)			43			00										
SULPHITE (mg		. 3	,								v	Vater	Sourc	e Tu	rkeys N	est			
KCL (% by Wt.))					4.	0	4	.0			MU	D ACC	OUNT	ring (B	BLS)		SUMM	ARY
K+ (mg	/ L)					216	616	21	616			FL	UID BUIL	T	FLUID	LOSSE	S	Start Vol	0
PHPA (Calc pp						0.	5	0	.5		D	rill Wa	ater	486	S.C.E.		21	Received	0
METHYLENE BLU											С	hemic	al	32	Dischar	ge	0	Backload	0
BENTONITE ADD		(ppb / %				25	2.8	25	2.8		s	ump/S	SeaWat	0	Downho	ole	0	Built	518
OTHER PRODUC	15 ADDED	(ppb / %	0 IOV YO			0.0					0	ther F	lec'd	0	Trippin	3		Lost sub	0
OIL	(% by Vol)										-0	ther E	Built	0	Other		0	Lost srf	21
TOTAL WATER (97	.1	96	6.3			T	∩ ⊤ ∧ י	MUL		C /L	h!~`	. 407	
TOTAL SOLIDS						3.			.7	1		10	JIAL	WUD	ON RI	G (D	UIS)	,.49/	
	(% by Vol)					0.	2	0	.2										
	PRODUC	CT USAGI					SOLI	DS CONTI	ROL E	EQUII	PMEN	Г		1	Time	e Breakd	own		
Product	UnitSize		Received		Close		Туре					Hrs	O		UF			ysis Item	
Maxigel	25 Kg Sack		0	291	465		sander		Cone Size		0	0	0		0		rilling	-	11
KCI (fine)	25 Kg Sack		0	164	796		silter d Clear		Cone Size	Qty	0	0	0		0		1/U B Other		3 10
Rheopac L Caustic Soda	25 Kg Sack		0	8	97 28	-	ntrifuge		Scomo	DE-1000		6	0 8.9		10.3		101		
Soda Ash	25 Kg Drum 25 Kg Sack		0	4	28 44		ntrifuge					0	0		0				1
Xanthan Gum (P)	25 Kg Sack 25 Kg Sack		0	4	77	Cut	tings D	Dryer				0	0		0				
			v				gasser					0		1 I	NALYSIS	;			
										0x100x170		8	Salt %	0.9	HGS %				-
						Sha	ale Sha	aker #2	17UX1/	0x100x100		8 0	Corrected	26		2.6			
						1-						0	Solids %	2.6	Drilled Solids%	-0.1			+
												0							1
							CL	JRRENO	CY		DAII	LY CO	ST		CU	MULA	TIVE	E COSTS	
						1		AUD			\$10	.642.	65			\$10	.642	2.65	

					Rep	ort #		2	Total MI)	60	to	361	m
	WATER	BAS		MUL) Rig	#			Total VI		60	to	361	m
	Daily D	rillind	a Rei	oor	t Date					pth Drille			301	m
RHEOCHEM	-				- Spu	d Date		1/14/2013	Interval	Depth Dri	lled		301	m
OPERATOR	DrillSearc						TRAC		Ensigr					
REPORT FOR	Ray Mille	r/Don Ca	astle			_	ORT F	OR		Doherty		OT 4		
WELL NAME AND No.	Triclops ⁻		51			FIEL	D ATP	520	LOCA	r Basin		STA	ensland	
BHA BIT TYPE	JET SIZE		DEPTHS	/CASI	NG	MUD V			coope		RCULATI			
BIT SIZE (") Baker	14 14 14 14	14	Riser Lengt		m	HOLE VO		JD INHOLE	PUMP SIZ	E		CIRCUL	ATION 220) psi
12.25 Hughes PDC DRILL PIPE TYPE	14 14 0 0 LENGTH	0	Conductor		20 m	147 Active Pite	s Re	147 eserve Pits	5.5 x 9 PUMP M	1		PRE SURFA)E	
SIZE (") 4.5 DRILL PIPE TYPE	181 LENGTH	m —	Surface @	~	m	269		140	Emco F	-800	97	TO BIT BOTTOMS		1 min 3 min
SIZE (") 4.5 HW	38	m	Intermediat	te @	m	TOTAL	416	TING VOL	BBL / S 0.064			OT CIRC		
DRILL COLLAR SIZE (") 8 6.5	LENGTH 51 90	m	Prod. or LN	IR @	m	STO		ANKS	BBL / M		. / MIN 145	ECD		•
MU	D PROPERTIE	S					0		10.5			(SPEC	IFICATION	S
SAMPLE FROM					Pit		Pit	Pit	Mud W	/t 8.8 - 9.0	Vis (F)	40 - 65	5 YId Pt	5 - 18
MUD TYPE					4KPP	4	(PP	4KPP		s 15 - 12		9.0 - 9.5		4 - 3
TIME SAMPLE TAKEN					8:00	14	1:00	20:00			MUD COM	IMENT	S	
FLOWLINE TEMPERATUR			°F /		88 31		31	88 31					remix to raise	
	H(TMD)		Met		195		265	361	ensure	hole cleanin	g and main	itain activ	e mud volun	ne.
WEIGHT FUNNEL VISCOSITY (sec	(at) API		ppg /	50	8.8 1.0 38		1.08 40	9.0 1.08 40		the active n 0 to maintai			da,soda ash a duced total	and
RHEOLOGY 600 : 300 RP		120)°F/49	9 °C	30 25		40 29	40 31 27	hardnes	s and preve	ent bacteria	l degrad	ation of polyn ac-LV, JK-16	
RHEOLOGY 200 : 100 RP		-	^o F / 49	-	18 13	-	17	20 15	additive	s to maintai	n good mud	d propert	ies of the act	ive.
RHEOLOGY 6:3 RP			^o F / 49		5 3		3	6 4	Change				arse due to c e centrifuge t	
	° @	120) ⁰ F/49	9 °C	5		3	4					8.8 - 9.0 ppg	
YIELD POINT (Ib / 100) ⁰ F / 49		20		26	23						
GEL STRENGTH (Ib / 100		10sec/1	0min/30	min	3 5	4	6	5 7	_	OPER	ATIONAL	. COMN	IENTS	
LOW SHEAR RATE VISCO n K (Ib / 100 ft ²)	SITY (LSRV)				0.26 4.8	5 0 14	11.97	0.20 7.8					mVD to 361 prior to Totc	
API FILTRATE (cm ³ /3)	0 min.)				12		1.5	12		every 30 mV		utorns up		,0
HPHT FILTRATE (cm ³ / 30			°F/	°C					Losses	of mud abo	ut 80 bbls te	o sump v	vhen Shaker	no. 2
API : HPHT (Cake / 32nd	•			-	2		2	2	broke d				e while under	
рН					9.5	9	9.5	9.0	repair.					
ALKALINITY MUD (Pm)					0.14		.15	0.14						
ALKALINITY FILTRATE (I	Pf / Mf)				0.24 0.6			0.25 0.8	<u> </u>					
CHLORIDE (mg/L) TOTAL HARDNESS AS CA		(1)			35000 450		0000 500	38000 550	_					
SULPHITE (mg/L)		/∟)			450		00	550	Wate	r Source	Turkeys I	Vest		
KCL (% by Wt.)					4.0	4	4.0	4.0	м	JD ACCOL	INTING (F	BBLS)	SUMM	ARY
K+ (mg/L)					21616	21	616	21616				D LOSSES		1
PHPA (Calc ppb)					0.5	().5	0.15	Drill W	ater 2	218 S.C.E.	10	69 Received	
METHYLENE BLUE CAPA					25.0 2.7			25.0 2.7	onenn	cal	30 Discha	arge	0 Backload	0
		by vol)			30 3.3	3 25	2.8	28 3.1	Sump/	SeaWat	0 Down		0 Built	248
OTHER PRODUCTS ADDE	D (ppb / %	by voi)							Other	Rec'd	0 Trippi		10 Lost sub	-
OIL (% by Vo									Other	Built	0 Other		10 Lost srf	189
TOTAL WATER (% by Vo	-				95.0	9	3.0	93.5	— т	OTAL MI		lG (bb	ols) : 556	
TOTAL SOLIDS (% by Vo	1)				5.0	7	7.0	6.5	•				(13) . 000	
SAND (% by Vo	,				1.5		2	1.5						
	ODUCT USAG		1				SOLI	DS CONTR		1	1		ime Break	
	Size Start Sack 465	Received 0	Used 253	Clos 212		rpe er	Cone Size	Qty	0 0	0F 0	UF 0		malysis Item illing	1 Hrs 22
	Sack 405 Sack 796	0	152	644			Cone Size		0 0	0	0		rculating	2
	Sack 97	0	12	85	Mud Cle	aner		· · · · ·	0	0	0			
	Sack 77	0	8	69	Centrifu	•	Scomo	DE-1000	24	8.9	9.8			
Xanthan Gum (P) 25 Kg	Drum 28	0	7	21	Centrifue Cuttings	•			0	0	0			
Caustic Soda 25 Kg		0	4	40	Degasse				0	-		IS		
Caustic Soda 25 Kg Soda Ash 25 Kg	Sack 44		2	62	-		100x10	0x100x100	24	Salt % 2.				
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr	Drum 64	0			Onale of		1			1		1		
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr		0	2	78		haker #2	100x10	0x100x100	24		LGS %			
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr	Drum 64			78		haker #2	100x10	0x100x100	0	Corrected 2. Solids %	.1 Drilled	2.1 -1.0		
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr	Drum 64			78		haker #2	100x10	0x100x100	0					
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr	Drum 64			78	Shale S	haker #2 CURREN		0x100x100	0	Solids %	.1 Drilled Solids%	-1.0	TIVE COSTS	
Caustic Soda25 KgSoda Ash25 KgIdcide-2020 Ltr	Drum 64			78	Shale S			0x100x100	0 0 0	Solids %	.1 Drilled Solids%	-1.0	TIVE COSTS 435.60	

Any opinion and/or recommendation, expressed orally or written herein, has be prepared carefully and may be used if the user so elects, however, no representation or warranty is made by ourselves or our agents as to its correctness or completeness, and no liability is assumed for any damages resulting from the use of same.

					Re	eport #	#		3	Tota	I MD		36	1 t	0	614	m
	WATER	BAS	EDI	MUL		g #				Tota			36	1 t	0	614	m
	Daily D	rillind	a Rei	bor	t Da				16/2013			oth Drille					m
RHEOCHEM	-		J I		- Sp	oud Da			14/2013	Inter	rval D	Depth Dri	lled			554	m
OPERATOR	DrillSearc						ONTRA				sign						
REPORT FOR	Ray Miller	r/Don Ca	astle				EPORT	FO	R			oherty					
WELL NAME AND No.	Triclops 1		51			FI		P53	0		CAT	Basin			TATE	= Island	
BHA BIT TYPE	JET SIZE		DEPTHS	/CASI	NG	миг				00	oper						
BIT SIZE (") Baker	14 14 14 14	14	Riser Leng		m	HOLE	E VOL	MUD	INHOLE		P SIZE			CIR	CULA	TION 500	psi
12.25 Hughes PDC DRILL PIPE TYPE	14 14 0 0 LENGTH	•	Conductor		20 m	Active	64 e Pits		264 rve Pits		x 9 1P MOI	DFI OF			PRESS RFACE		
SIZE (") 4.5 DRILL PIPE TYPE	372 LENGTH	m —	Surface @	-	0 m	26	67		63	Em	ico F-8	00	97	TC) BIT OMS U	2 P 23	
SIZE (") 4.5 HW	38	m	Intermedia	te @	0 m	TOT	AL CIRCUL 531		G VOL		BL / STI).0642		(/ MIN 164	TOT C			
DRILL COLLAR SIZE (") 8 6.5	LENGTH 51 90	m	Prod. or LN	NR @	0 m		STORAGE	E TAN	KS	BE	BL / MI	N GAL	/ MIN			9.2	
MU		S					0				10.52		42 ROPEF			ICATIONS	
SAMPLE FROM		-			Pit		FL		Pit	М	ıd Wt	8.8 - 9.0				rld Pt	5 - 1
MUD TYPE					4KPP	>	4KPP		4KPP			15 - 12	. ,		- 9.5 I		4 - 3
TIME SAMPLE TAKEN					8:00		14:00		20:00					OMME		-	
FLOWLINE TEMPERATUR	RE		°F/	°C	87 3	31			88 31							at the premi	
TOTAL MEASURED DEPT	H(TMD)		Met		515		552		614	mu	d loss	es at the s	urface e	equipme	nts an	ume level di d downhole	Э
WEIGHT			ppg /	SG		.09 9	9.1 1.0	9 9	9.1 1.0							ind SI-70P	
FUNNEL VISCOSITY (see RHEOLOGY 600:300 RF		100)°F/4	9 00	45 38 3	32	44 39 32	,	44 37 31	ppr		800 ppm.	P.0910	55.70 110			
RHEOLOGY 800 : 300 RF		-	$^{0}F/4$	-		-	39 32 24 15		22 14	_	essed	up screen	to finer	mesh wi	nen ci	ittings appe	eared
	PM) ^o F/49			-	9 6	-	9 7	to b	e fron	n coarse si	ize to lit	tle bit fin	ersize	.Maintained	l good
	P@		^o F / 4		6		7		6							d the FV of f 25 to ensu	
YIELD POINT (Ib / 100)ft ²)		^o F / 4		26		25		25	the	hole is	s cleaned.					
GEL STRENGTH (Ib / 100) ft ²)	10sec/1	0min/30)min	8 12	7	7 11	8	8 10			OPER		IAL CO	MME	NTS	
LOW SHEAR RATE VISCO	OSITY (LSRV)															mVD to 614	
n K (lb/100 ft ²)	0				0.25 6.	.82 0	0.29 5.4	0 0	0.26 6.3							or to Totco n nor drag v	
API FILTRATE (cm ³ / 3 HPHT FILTRATE (cm ³ / 3			°F/	°C	12		11		12			reporting t				inter andg i	
API : HPHT (Cake / 32nd	•		F /	-0	2		2		2	_							
pH					9.0		9.5		9.5								
ALKALINITY MUD (Pm)					0.20		0.10		0.10								
ALKALINITY FILTRATE (Pf / Mf)				0.30 0).7 0	0.20 0.7	70	0.15 0.0	6							
CHLORIDE (mg/L)					42000	-	46000		43000								
TOTAL HARDNESS AS CA	ALCIUM (mg	/L)			1000		1800	_	1400	w	ater	Source	Turke	vs Nest			
SULPHITE (mg/L) KCL (% by Wt.)					5.0		4.0	_	4.0								
KCL (///by WI.) K+ (mg/L)					27020)	21616		21616	_					-	SUMM	
PHPA (Calc ppb)					1	-	1	-	1	Dri	ill Wat		254 S.C			Start Vol Received	556 0
METHYLENE BLUE CAPA	CITY (ppb/%	by vol)			28.0 3	3.1 2	27.0 3.0	0 2	28.0 3.	4	emica			scharge		Backload	
BENTONITE ADDED	(ppb / %	by vol)							25 2.8	<u> </u>		eaWat		wnhole		Built	270
OTHER PRODUCTS ADDE	ED (ppb / %	by vol)									her Re		0 Tri	pping	10	Lost sub	10
<u> </u>										Ot	her Bi	uilt	0 Ot		5	Lost srf	122
OIL (% by Vo TOTAL WATER (% by Vo					92.3		92.8	_	92.3	_							
TOTAL WATER (% by Vo					92.3		92.0 7.3	_	92.3 7.8	_	тс	DTAL MI	JD OI	N RIG	(bbls	s): 694	
SAND (% by Vo	,				2		1.5	-	2	_							
	ODUCT USAG	E					SO	LIDS	CONTR		QUIP	MENT			Tin	ne Breako	down
Product Uni	tSize Start	Received	Used	Clos		Туре					Hrs	OF		UF	Ana	alysis Item	
-	g Sack 212	0	107	105			Cone S		Qty	0	0	0	_	0	Drilli	-	22
	g Sack 644	0	80	564		er Cleaner	Cone S	οiZθ	Qty	0	0	0	+	0	Circi	ulating	2
	g Sack 78 g Sack 69	0	10 7	68 62	Centrif			no DE	E-1000		24	8.6	-	12.8			-
	g Drum 21	0	4	17	Centrif	•					0	0		0			
	g Sack 85	0	3	82		gs Drye	er				0	0		0			
	g Sack 40	0	3	37	Degas			170	100-100		0	SOLID	-	-			
	r Drum 16	0	2	14		Shaker Shaker	r #1 170x ⁻ r #2 100x ⁻		100x100 100x100		24 24	Salt % 3.	2 HGS	5 % 5 % 2.6			
					Shale	Juaker	π <u></u> 100X					Corrected 2.					-
												Solids %	Solic				
		_									0	1					
							RENCY				Y COS					/E COSTS	
							RENCY UD				Y COS 223.5				ILATI\ 29,6 5		

		TED	D 4 0				Repor	rt #		4	Tot	al MD		614	to	76	66	m
\mathbf{c}	WA	TER	BAS	ED N)	Rig #					al VD		614	to	o 76	66	m
	Dai	ilv Dı	rilling	i Rec	or	[-	Date			1/17/2013			h Drilled					m
RHEOCHEM				,r		-	Spud			1/14/2013	Inte	erval D	epth Drill	ed		70)6	m
OPERATOR		illSearc						CONT				sign						
REPORT FOR		y Miller	/Don Ca	astle				REPO		OR		ivid Do			0.7			
WELL NAME AND	-	iolono 1	{Rev 5					FIELD	ATP:	20		DCATI Doper				ATE leensla	and	
BHA BIT TY		ET SIZE		epths/	CASI	NG	M	UD VO				бореі		CULATI			anu	
BIT SIZE (") Baker	14 14	14 14	14	Riser Length		m	HC	DLE VOL	-	D INHOLE		/IP SIZE			CIRC	ULATION	۰ 628	ps
12.25 Hughes P DRILL PIPE TYPE	DC 14 14 LENGT		•	Conductor (0 m		331 tive Pits	Be	331 serve Pits		x 9 IMP MOD			SURF	RESS ACE		
SIZE (") 4.5	1 5107	586	m ———	Surface @	e			232		17		mco F-80	0 97	,	TO	BIT	2	mi mi
SIZE (") 4.5 HW	LENGT	38	m ı	ntermediate	e @	m		OTAL CI	RCULAT 563	ING VOL	E	3BL / STK 0.0642	STK /		BOTTO		50	
DRILL COLLAR SIZE (") 8 6.5	LENGT 51		m F	Prod. or LNI	R @	m	1	STOF	RAGE TA	ANKS	I	BBL / MIN		MIN	EC		9.2	
	MUD PRO								0			11.36	47 MUD PRO				-	
SAMPLE FROM			<u> </u>			P	it	Pi	it	Pit	N		8.8 - 9.0 Vi			65 Yld		5 - 1
						4KI	-	4KI	-	4KPP			15 - 12 pl	. ,	-	9.5 KCI	-	4 -
TIME SAMPLE TAKE	N					8:0	00	14:	00	20:00	÷			JD COI				
FLOWLINE TEMPER	ATURE			°F/	°C	108	42	110	43				e active by					
TOTAL MEASURED I	DEPTH (TM	D)		Metr		73		74	-	766	20		the high TH H and 10,0					
WEIGHT				ppg / S	SG	9.0	1.08		1.09	8.9 1.0	7 bi	uild up ne	earing TD b Maintained	y limiting	the vo	lume in	the activ	e at
FUNNEL VISCOSITY	· · ·	API	100	0E / 40	00	4		47		49	L\	/ and JK		yoou mu	ια μισρ	ernes D)	auung	raC-
RHEOLOGY 600:30 RHEOLOGY 200:10			-	^o F / 49 ^o F / 49	-	50 33	40 26	55 35	40 28	55 40 35 28		ressed	p the shake	r screen	ns with	finer mo	sh and r	an
RHEOLOGY 200:10	RPM RPM			^o F / 49 ^o F / 49		33 12	26 9	35 13	28 10	35 28 13 10	th	e centrifi	Jge till TD a	t 766 m\	VD to d	ecrease		
PLASTIC VISCOSITY				^o F / 49		1	-	15	-	15 15	of	solids fr	om MW of s	9.1 ppg t	o 8.9 p	pg.		
YIELD POINT (Ib	/ 100 ft ²)			^o F / 49		30	0	2	5	25								
GEL STRENGTH (Ib	/ 100 ft ²)		10sec/1	0min/30r	min	9 1 [.]	1 13	10 12	2 14	10 12 1	4		OPERA	TIONA		IMENT	S	
LOW SHEAR RATE V	ISCOSITY ((LSRV)										rillling 12	1/4 in. dia.	Hole fro	m 614	mVD to	program	med
n K (lb/100 ft ²)	2 / 00 1						5.38		2.28	0.46 2.2			mVD. Circu 5 bbls HVN					
APIFILTRATE (cm HPHTFILTRATE(cn				°F/	°C	12	2	1.	1	11	su	irface at	reporting til	ne. Note	e:A tigh	nt spot a	t 733 m\	/D
API : HPHT (Cake / 3)		°F /	°C	2	,	2	,	2	Wa	as encou	intered. Re	amed an	nd proc	eeded d	Irilling ah	ead.
pH	52110 111.)					9.		9.		9.5								
ALKALINITY MUD (Pm)					0.1	-	0.1	-	0.10								
ALKALINITY FILTRA	TE (Pf/Mf)				0.22	0.8	0.22	1.0	0.20 1.0	0							
CHLORIDE (mg / L)					334	00	355	00	35500								
TOTAL HARDNESS A		M (mg	/L)			15	00	160	00	1600	V	Nator 9	ource T	urkove	Noct			
SULPHITE (mg/L)											Ľ							
KCL (% by Wt.) K+ (mg/L)						3. 194		3. 178		3.3 17833	_		ACCOUN				SUMM	ARY
K + (mg / L) PHPA (Calc ppb))					194		1/0		1/033					ID LOSS	••	art Vol	694
METHYLENE BLUE ((ppb/%	by vol)			27.0	3.0	26.0	2.9	26.0 2.9	~	rill Wate		4 S.C.E			eceived ackload	0
BENTONITE ADDED		(ppb / %				25	2.8	25	2.8	25 2.8	~ ~	ump/Se		4 Disch	-	15 Bi		48
OTHER PRODUCTS	ADDED	(ppb / %	by vol)								_	ther Re		0 Trippi			ost sub	15
											_	ther Bu		0 Othe	-		ost srf	147
											_			•				
	by Vol)					93	.0	92	8			TO	TAL MUI	d on f	rig (ł	obls) :	580	
TOTAL WATER (%I	by Vol))						94.3								
TOTAL WATER(%I TOTAL SOLIDS(%I	by Vol) by Vol)					7.	0	7.	3	5.8							Breakd	own
TOTAL WATER(%I TOTAL SOLIDS(%I	by Vol) by Vol) by Vol)	TUSAG	E				0	7. 1.	3 5	5.8 1.5			IENT			Time		Hrs
TOTAL WATER (%) TOTAL SOLIDS (%) SAND (%)	by Vol) by Vol) by Vol) PRODUC			Used	Close	7.	0	7.	3 5	5.8	IOL E			111	=		sis Item	
TOTAL WATER(%I TOTAL SOLIDS(%I	by Vol) by Vol) by Vol)		E Received 0	Used 44	Close 998	7. 2 e	0	7.	3 5	5.8 1.5 DS CONTR	OL E	EQUIPN Hrs 0	DF	UF 0			sis Item	14
TOTAL WATER (%) TOTAL SOLIDS (%) SAND (%) Product Water	by Vol) by Vol) by Vol) PRODUC UnitSize	Start	Received			7. 2 e Des Des	0 Type sander silter	7.: 1.: c	3 5 SOLII	5.8 1.5 OS CONTR		Hrs 0 0	OF 0 0	0		Analys Drilling Circulati	ng	4
TOTAL WATER (%) TOTAL SOLIDS (%) SAND (%) Product Water JK-161 LV Soda Ash	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack	Start 1042 68 37	Received 0 0 0	44 12 10	998 56 27	Pe Des Des Muc	0 Type sander silter d Clean	7. 1. c c ner	3 5 SOLIE cone Size cone Size	5.8 1.5 DS CONTR Qty Qty	0	Hrs 0 0 0 0	OF 0 0 0	0 0 0		Analys Drilling	ng	14 4 6
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Kanthan Gum (P)	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62	Received 0 0 0 0	44 12 10 6	998 56 27 56	7. 2 e Des Des Muc Cer	0 Type sander silter d Clean	7. 1. c c ner 1 S	3 5 SOLIE cone Size cone Size	5.8 1.5 DS CONTR	0	Hrs 0 0 0 22	OF 0 0 0 8.9	0 0 0 10.	.5	Analys Drilling Circulati	ng	4
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Xanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	7. 2 Des Des Cer Cer	0 Type sander silter d Clean	7. 1. c c c c er 1 S 2	3 5 SOLIE cone Size cone Size	5.8 1.5 DS CONTR Qty Qty	0	Hrs 0 0 0 0	OF 0 0 0	0 0 0	.5	Analys Drilling Circulati	ng	4
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Xanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62	Received 0 0 0 0	44 12 10 6	998 56 27 56	Pestore Certo Cert	0 Type sander silter d Clean htrifuge htrifuge tings D gasser	7. 1. c c c c c c c r er 1 S 2 ryer	3 5 SOLIE one Size Scomo	5.8 1.5 DS CONTR Qty Qty DE-1000	0	Hrs 0 0 0 22 0	OF 0 0 0 8.9 0	0 0 0 10. 0 0	.5	Analys Drilling Circulati	ng	4
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Xanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge tings D gasser ale Sha	7. 1. c c c c c c c c c c c c c c c c c c	3 5 SOLIE ione Size Scomo	5.8 1.5 DS CONTR Qty Qty DE-1000 Dx170x170	0	Hrs 0 0 0 22 0 0 0 10 0 10 18	OF 0 0 8.9 0 0	0 0 10. 0 0 ANALYS	5	Analys Drilling Circulati	ng	4
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Xanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge tings D gasser ale Sha	7. 1. c c c c c c c c c c c c c c c c c c	3 5 SOLIE ione Size Scomo	5.8 1.5 DS CONTR Qty Qty DE-1000	0	Hrs 0 0 0 22 0 0 0 18	OF 0 0 8.9 0 0 SOLIDS salt % 2.6	0 0 10. 0 0 ANALYS HGS %	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Analys Drilling Circulati	ng	4
TOTAL WATER (% I TOTAL SOLIDS (% I SAND (% Product Water JK-161 LV Soda Ash Xanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge tings D gasser ale Sha	7. 1. c c c c c c c c c c c c c c c c c c	3 5 SOLIE ione Size Scomo	5.8 1.5 DS CONTR Qty Qty DE-1000 Dx170x170	0	Hrs 0 0 0 0 22 0 0 0 18 18 0 0	OF 0 0 8.9 0 0 SOLIDS	0 0 10. 0 0 ANALYS HGS % LGS %	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Analys Drilling Circulati	ng	4
TOTAL WATER (* 6 TOTAL SOLIDS (* 7 SAND (* 7 Product Water JK-161 LV Soda Ash Kanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge tings D gasser ale Sha	7. 1. c c c c c c c c c c c c c c c c c c	3 5 SOLIE ione Size Scomo	5.8 1.5 DS CONTR Qty Qty DE-1000 Dx170x170	0	Hrs 0 0 0 22 0 0 0 18 18 0 0 0	OF 0 0 8.9 0 0 SOLIDS aalt % 2.6	0 0 10. 0 0 ANALYS HGS %	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Analys Drilling Circulati	ng	4
TOTAL WATER (%) TOTAL SOLIDS (%) SAND (%) Product Water JK-161 LV	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge jasser ale Sha ale Sha	7. 1. c c c c c c c c c c c c c c c c c c	3 5 SOLIE one Size cone Size Scomo 70x17(40x14(5.8 1.5 DS CONTR Qty Qty DE-1000 Dx170x170	0	Hrs 0 0 0 0 22 0 0 18 18 0 0	OF 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 10. 0 0 ANALYS LGS % LGS % Drilled Solids%	5 SIS 1.6 -1.1	Analys Drilling Circulati	ing	-
TOTAL WATER (* 6 TOTAL SOLIDS (* 7 SAND (* 7 Product Water JK-161 LV Soda Ash Kanthan Gum (P) Rheopac L	by Vol) by Vol) by Vol) PRODUC UnitSize 1 bbl 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack 25 Kg Sack	Start 1042 68 37 62 82	Received 0 0 0 0 0 0	44 12 10 6 1	998 56 27 56 81	Pestore Cerror Cuttor Degos Shares Sh	0 Type sander silter d Clean htrifuge htrifuge jasser ale Sha ale Sha	7. 1. C C C C C C C C C C C C C	3 5 SOLIE one Size cone Size Scomo 70x17(40x14(5.8 1.5 DS CONTR Qty Qty DE-1000 Dx170x170	0 0	Hrs 0 0 0 22 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	OF 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 10. 0 0 ANALYS LGS % LGS % Drilled Solids%	5 5 1.6 -1.1	Analys Drilling Circulati Tripping	COSTS	4

							Repo	rt#			5 To	otal MD)		766	to	5	766	m
	WATE	ER E	BAS	ED N	NUC)	Rig #			9	18 To	otal VD)		766	to	D	766	m
	Daily	Dril	lling		nor	•	Date			1/18/201	3 Da	aily De	pth D	rilled				0	m
RHEOCHEM	Dany		inig	JUC		•	Spud	Date		1/14/201	3 In	terval	Deptl	h Drille	ed			0	m
OPERATOR	DrillS	earch						CON	TRAC	TOR	E	nsign	1						
REPORT FOR	Guy H	lolmes	s/Don	Castle				REPO	ort f	OR	0	David I	Dohe	erty					
WELL NAME AND NO								FIEL	D		L	-OCA1	ΓΙΟΝ			ST	ATE		
		ps1 {							ATP		C	Coope	r Bas					sland	
BHA BIT TYPE	JET 9		D	EPTHS	/CASI	NG		IUD VO					-	CIRC	ULATI				
BIT SIZE (") None 12.25	0 0 0	0 0	15.25 F	Riser Leng	th	n		188		JD INHOLE 188		UMP SIZE 5 x 9		es			CULAT PRESS		psi
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	0 m	16 (Conductor	@	20 n	n Ao	ctive Pits	Re	serve Pits				% EFFICI			FACE BIT	c) _{mir}
DRILL PIPE TYPE	LENGTH	0	9.625	Surface @)	761 n	n	421 TOTAL C	IRCULAT	129 TING VOL		Emco F-		97 STK / I		BOTTC		P (
SIZE (") 4.5 HW DRILL COLLAR SIZE (")	LENGTH	0 m	-	ntermediat	te @	0 ⁿ			609			BBL/3	IN			тот си	RC TIN	1E	mir
8 6.5	0	0 m	F	Prod. or LN	IR @	0 n	n	STC	RAGE T	ANKS		BBL / M	IIN	GAL / N	ЛIN	E	CD		
Μ	IUD PROPE	RTIES							<u> </u>				MU	ID PRC	PERT	Y SPE	ECIF	CATION	s
SAMPLE FROM						Р	it				ľ	Mud W	/t	0 Vi :	s (F)		0	'ld Pt	
MUD TYPE						4P	НВ					API Los		0 pH			0 1		
TIME SAMPLE TAKEN						8:	00						-	-	ID CON	ИМЕМ		-	
FLOWLINE TEMPERATU	JRE			°F/	°C													l with 0.5 p	pb
TOTAL MEASURED DEF	PTH (TMD)			Met	res	76	66											cide 20 to and preve	ont
WEIGHT				ppg /	SG	9.1	1.09					bacterial	l infect	tion in po	olymers.			the total ac	
FUNNEL VISCOSITY (s		I					8			<u> </u>		mud usiı The sha				ed with	י 170	4 for SS#	1 and
RHEOLOGY 600:300 H			-	°F / 49	-	49	39					200x4 fc	or SS#	2. Ran d	centrifug			own MW fr	
RHEOLOGY 200 : 100 F				°F / 49		32	25					9.1 to 8. Dumped				oval) t	to free	from cutti	nas
	RPM			^o F / 49		12	9		<u> </u>			and solid				, . sij t			.50
	cP@		120	^o F / 49	9 °C	1													
GEL STRENGTH (Ib / 1	00 ft ²)	1		0min/30			9 2 14				-								
LOW SHEAR RATE VISO			0560/1	01111/30	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10 1	2 14								ΓΙΟΝΑΙ				
n K (lb / 100 ft ²)	JUSITY (LSI	4V)				0.33	5.01											s K55, 9 5/ irculated 2	
API FILTRATE (cm ³ /	30 min)						2					casing s					VD. C	irculated 2.	x
HPHT FILTRATE (cm ³ /				°F/	°C		2											onducted and tail o	4450
API : HPHT (Cake / 32n				1 /	U	:	2											reporting t	
pH							- .5												
ALKALINITY MUD (Pm)					-	10												
ALKALINITY FILTRATE						0.20	0.7												
CHLORIDE (mg/L)	. ,						000			<u></u>									
TOTAL HARDNESS AS	CALCIUM (mg / L)			15	00							_					
SULPHITE (mg/L)												Water	Sour	rce Tu	urkeys	Nest			
KCL (% by Wt.)						3.	.0					MU	D AC	COUN	ting (BBLS	5)	SUMM	ARY
K+ (mg/L)						162	212					FL	UID BU	JILT	FLUI	D LOS	SES	Start Vol	580
PHPA (Calc ppb)									1			Drill Wa	ater	26	S.C.E		35	Received	0
METHYLENE BLUE CAP	4.1					26.0	2.9					Chemic	cal	1	I Disch	arge	10	Backload	0
BENTONITE ADDED		b / % by				25	2.8					Sump/S	SeaWa	at (Down	hole	-106	Built	27
OTHER PRODUCTS ADI	DED (ppl	o / % by	/ vol)									Other F	Rec'd	0) Trippi	ing	20	Lost sub	-106
0												Other E	Built	0	Othe	r	-90	Lost srf	-25
OIL (% by) TOTAL WATER(% by)	,					00	2.3												
TOTAL WATER (% by)	,						3 .8					T	ΟΤΑΙ		O ON F	rig (bbls): 738	
SAND (% by	,						.8 2												
		SAGE				f			SOLI	DS CON	TROI	FOUI		JT			Tim	e Breako	hown
			colucal	Llood	Clas		т		JOLI			Hrs	-			_			_
		tart Re 98	eceived 0	Used 26	Clos 972		Type sander		Cone Size	Q	ty 0			DF 0	<u>UF</u> 0			Ivsis Item	
		3	0	4	9		silter		Cone Size	Q	· ·			0	0			lating	2
		27	0	4	23		d Clear	ner		· · ·		0		0	0		Tripp	-	2
	_	62	0	3	59	Cei	ntrifuge	1	Scomo	DE-1000	-	15	8	3.9	12.	6	Cem	enting Job	4
		18	0	1	47		ntrifuge					0		0	0		• •	e-up BOP	2
	-						ttings D	-				0		0	0		Othe	r	5
							gasser		170.17	0.170-17	0	0		1	ANALYS	1			-
										0x170x17 0x140x14		12 12	Salt %	% 2.4	HGS %				+
						Sha	ale Sha	ıker #2	14UX14	UX 14UX 14	U	12	Correcte	4 0 he	LGS %				-
	1											0	Solids '		Drilled Solids%	0.6			-
						_									1	1			
												0							
						_	CL	JRREN	CY		DA	0 AILY CO	OST		C	CUMUI	LATIV	E COSTS	
							CL	JRREN AUD	CY			-			C		LATIV 33,82		

	\ \/	TED				► –	Repor	t #		-		al MD			766	to		766	m
	WA	TER	BAS	ED I	MUL) п	Rig #			918		al VD			766	to		766	m
	Dai	ily Dr	illind	ı Rei	oort	. D	Date		1	/19/2013	Dail	y Dep	oth Dri	lled				0	m
RHEOCHEM	Bu			,		S	pud l	Date	1	/14/2013	Inte	erval [Depth	Drille	ed			0	m
OPERATOR	Dri	illSearc	h					CONT	RACT	OR	En	sign							
REPORT FOR	Gu	y Holm	es/Don	Castle				REPC	RT FC	DR	Da	vid C	Oher	y					
WELL NAME AND N								FIELD				CAT				ST/	ATE		
		iclops 1	-	-					ATP5		Co	oper	[.] Basi					sland	
BHA BIT TYPI		ET SIZE		EPTHS	CASI	NG		UD VC			DUIN			CIRC	ULATIO			0.11	
BIT SIZE (") None 8.5		0 0 0		Riser Lengt	th	m	HC	187	MUL	187		IP SIZE x 9	Inches			CIRCL PF	JLATI RESS	ON	ps
DRILL PIPE TYPE SIZE (") 4.5	LENGT	Ή 0 r	16 (Conductor	@	20 m	Ac	tive Pits	Res	erve Pits		MP MO			IENCY	SURF/		0	mi
DRILL PIPE TYPE	LENGT		9.625 5	Surface @)	761 m	т	421	RCULATI	129 NG VOI		nco F-8 BL/ST		97 97/STK		TO B BOTTON		0	
SIZE (") 4.5 HW DRILL COLLAR SIZE (")	LENGT	0 r	n li	ntermediat	te @	o m			608		D	BL / 31	IX.	011(71		OTCIR	С ТІМ	E	mi
8 6.5	0 LENG	П 0 г	n F	Prod. or LN	IR @	0 m		STO	RAGE TA 0	NKS	E	BBL / MI	IN C	GAL/N	ЛIN	ECI	D	9	p
1	MUD PRO	PERTIES	S						0				MUD	PRC	PERTY	SPE	CIFI	CATIONS	S
SAMPLE FROM			-			Pit	t	Р	it		м	lud Wt		0 Vi				d Pt	
						4PH	-	4P	-			PI Los		0 pH	. ,		0 K		
TIME SAMPLE TAKEN						8:0	0	16	00		F			•	JD CON	MEN		0.	
FLOWLINE TEMPERA	TURE			°F/	°C						Pre	etreate	ed prem	ix with	the sod	um sul	phite	to neutral	ize
TOTAL MEASURED DI	EPTH (TM	D)		Met	-	766	6	76	6									lab test on eatment w	
WEIGHT				ppg /	SG	9.0	1.08	9.0	1.08		70	P and	Soda a	sh.Th	e TH has	alread	ly bee	en decline	d by
FUNNEL VISCOSITY (sec / qt)	API				47		4	6	<u> </u>			tive to E loride is			H has a	a con	c of 520 p	pm
RHEOLOGY 600 : 300	RPM		-	°F / 49	-	50	39	48	39										
RHEOLOGY 200 : 100				°F / 49		35	30	37	33						kers with been dor			S#1 and 2	200x4
RHEOLOGY 6:3	RPM		120	^o F / 49	9 °C	15	11	14	10									pening the	e bov
PLASTIC VISCOSITY	cP @			^o F / 49		11		ç)									igl etc.and	
•	100 ft ²)		120		28		3					sumea g prior t			ing do	wn tn	e MW fror	n 9.0	
GEL STRENGTH (Ib /			10sec/1	min	11 15	18	10 1	4 17				OP	ERA	TIONAL	COM	MEN	ITS		
OW SHEAR RATE VI	SCOSITY (LSRV)											and a	accessori	es. BO	P pre	essure test	ts at	
n K (lb/100 ft ²)						4.18	0.30			rep	oorting	time.							
API FILTRATE (cm ³				0	12		11	.5											
HPHT FILTRATE (cm ³)		°F/	°C														
API: HPHT (Cake / 32	2nd in.)					2	-	2											
						9.5		9.											
ALKALINITY MUD(Pi ALKALINITY FILTRATI		<u>,</u>				0.20	-	0.24	-										
CHLORIDE (mg/L)	= (P1 / M1)				0.34	1.9	0.24											
TOTAL HARDNESS AS		/ ma/	1.)			640		520											
SULPHITE (mg/L)	CALCION	/ (ing/	L)			80	-	8			V	Vater	Sourc	e Tu	urkeys N	Vest			
KCL (% by Wt.)						3.0		3.			-	MU			TING (E			SUMM	
K+ (mg/L)						1621		162			_				· ·	D LOSS		1	
PHPA (Calc ppb)												rill Wa) S.C.E.	J LUSSI		Start Vol Received	738
METHYLENE BLUE CA	PACITY (ppb / %	by vol)			26.0	2.9	26.0	2.9			hemic			Discha	argo		Backload	
BENTONITE ADDED		(ppb / %				25	2.8	25	2.8		-		eaWat		Discha	-		Built	12
OTHER PRODUCTS A		(ppb / %									_	ther R			D Trippi			Lost sub	
												ther B			0 Other			Lost srf	13
OIL (% by	/ Vol)										-	шег Б	uni	Ľ	Uner		U	LUSUSIT	
TOTAL WATER(% by	v Vol)					93.	5	93	.5			т	DTAL	MUE		lG (b	bls)	: 737	
TOTAL SOLIDS (% by	v Vol)					6.5	5	6.	5								,		
SAND (% by	/ Vol)					1.5	5	1.											
	PRODUC	T USAGE							SOLID	S CONTR			MENT				Time	e Breako	lowr
Product	UnitSize		Received		Close		Туре				-	Hrs	OF		UF			vsis Item	
Water	1 bbl	972	0	22	950		ander		Cone Size	Qty	0	0	0		0			-up BOP	8
. ,	5 Kg Sack	564	0	12	552	Desil			Cone Size	Qty	0	0	0		0		BOP T		12
	5 Kg Sack	48	0	4	44		Clean trifuge		Scomo D	E-1000		15	0 8.8		0 14.5		Other		4
	0 Ltr Drum	9	0	2	7		trifuge					0	0.8		0	,			-
	5 Kg Sack	23	0	2	21		ngs Di					0	0		0				1
dcide-20 2	0 Ltr Drum	59	0	1	58		asser	·				0		IDS A	ANALYS	s			
								ker #1	70x170	x170x170		0	Salt %		HGS %				
						Shale	e Shal	ker #2	40x140	x140x140		0			LGS %	2.6			
						_		_					Corrected	2.6	Drilled	-0.1			
												0	Solids %		Solids%				
												0							
						_		RRENC	γ						С			E COSTS	
1						1		AUD		1	¢0	51.30)			¢3/	1,774	136	
											φσ	51.50	, 			Ψ0-	•,• •	1.00	

							Repo	rt#		7	Total I	ND		766	to		849	m
	WAT	ER	BAS	ED I	MU)	Rig #			918	Total	٧D		766	to		849	m
	Dail	v D	rilling	a Rei	por	t	Date			1/20/2013			Drilled					m
RHEOCHEM						-	Spud			1/14/2013			oth Drille	ed			83	m
OPERATOR REPORT FOR		Searc	ch nes/Don	Caatla				CONT REPO			Ensig		a set u					
WELL NAME AND N		пош	ies/Don	Castle				FIELD		Un	Davie LOC				ST	ATE		
		lops [.]	1 {Rev \$	5}					ATP	539	Coop						sland	
BHA BIT TYPE	-	SIZE		DEPTHS	/CASI	NG		IUD VO					CIRC	CULATI				
BIT SIZE (") Baker 8.5 Hughes PDC	12 12 1 0 0			Riser Leng	th	r	m HO	OLE VOL 171	MU	ID INHOLE	PUMP S 5.5 x		ches		CIRCI	ULATI RESS	ON 550	psi
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	658	m —	Conductor		20 r	n Ac	ctive Pits 485	Re	serve Pits 140		MODEL F-800	/0 20		SURF. TO E		3	min
DRILL PIPE TYPE SIZE (") 4.5 HW	LENGTH	38	9.625	Surface @		761	1	TOTAL CI	RCULAT			/ STK	97 STK /	MIN	BOTTOM		» 14	min
DRILL COLLAR SIZE (")	LENGTH			Intermedia Prod. or LN		0 r	_	STOP	656 RAGE TA	ANKS		642 / MIN	160 GAL / N		OTCIR		-	
8 6.5		154			in @	0 1			0			.27	431		EC		9.32	
I SAMPLE FROM	MUD PROP	ERTIE	:5					D		1					SPE		CATIONS	5
							'it 'HB	P 4P	-		Mud API		1V 0 Hq 0	s (F)		0 Y	ld Pt	(
TIME SAMPLE TAKEN							:00	20:			APT	Los		JD CON	IMEN	-	CI	
FLOWLINE TEMPERAT	URE			٥F/	°C	114	46	113	45				/PHB/Pol	recycled	mud sl	heare	ed slowly to	
TOTAL MEASURED DE	PTH (TMD)		Met	tres	8	11	84	-				isplacing t ecycled m				after DOC.	. Pre-
WEIGHT				ppg /	SG	8.9	1.07	8.9	1.07		neutra	alize ce		ntaminatio	on.Mair	ntaine	ed the treat	tment
FUNNEL VISCOSITY (RHEOLOGY 600:300	1 /	Ы	100	0 ^o F / 4	9.00	4 50	4 39	49 49			mud.l	Prepare	e 130 bbls				dilution on	the
RHEOLOGY 600 : 300 RHEOLOGY 200 : 100			-	$^{0}F / 4$	-	50 32	39 26	49 30	38 25		active	syster	m.					
RHEOLOGY 6:3	RPM) ^o F/49		13	9	12	10		Ran t	he cen	trifuge an	d mainta	ined M	W-8.9) ppg.	
	cP @		120	^o F / 4	9 °C	-	1	1	-	LL								
	100 ft ²)		120	⁰ F/4	9 °C		28	2										
GEL STRENGTH (Ib / ·			10sec/1	0min/30)min	91	2 14	10 1	3 15				OPERA	TIONAL	COM	IME	NTS	
	COSITY (L	SRV)				0.00	4.40	0.07	0.00								3HA and 8	
n K(lb/100 ft ²) API FILTRATE (cm ³	/ 30 min.)					0.36	4.18 2.5	0.37	3.86								OC at 741 m.Clean ho	
HPHT FILTRATE (cm ³				°F/	°C	12			2				rom wate				esumed dri D and	illing
API : HPHT (Cake / 32				. /	0		2	2	2		condu	ucted L	OT.Conti	nued drill	ing fror		9 mVD to 8	849
рН						9	.5	9.	5		mVD	with FN	VR at rep	orting tim	e.			
ALKALINITY MUD (Pm						-	10	0.	-									
	(Pf/Mf)					0.20		0.20	0.9									
CHLORIDE (mg/L) TOTAL HARDNESS AS		(ma	(1)				500 00	330 55										
SULPHITE (mg/L)	OALOIOM	(ing	/ ⊑ /				80	8			Wat	er So	urce T	urkeys I	Vest			
KCL (% by Wt.)							.5	4.			N	IUD A	CCOUN	iting (I	BBLS)	SUMMA	ARY
K + (mg / L)						18	914	216	616			FLUID I			D LOSS		Start Vol	737
PHPA (Calc ppb)										1	Drill	Water	12	1 S.C.E.		35	Received	0
METHYLENE BLUE CA						26.0	2.9	26.0	2.9		Cher	nical		4 Disch	arge	9	Backload	0
BENTONITE ADDED OTHER PRODUCTS AD		•	6 by vol) 6 by vol)			25	2.8	25	2.8			p/Sea\		0 Down		-	Built	125
	DED (p											r Rec'		0 Trippi	-		Lost sub	15
OIL (% by	Vol)										Othe	r Built		0 Other		2	Lost srf	51
TOTAL WATER (% by	Vol)					93	3.8	93	.8			тот	AL MUI	D ON F	lG (b	bls	; 796	
TOTAL SOLIDS (% by	,						.3	6.										
SAND (% by	Vol) PRODUCT		-				2	2		DS CONTR						T:	o Drookd	
				I I a a al	01	_			SOLIL	JS CONTR							e Breakd	-
Product Water	UnitSize 1 bbl	<u>Start</u> 780	Received 0	Used 121	Clos 659		<u>Type</u> sander		one Size	Qty	0 (0F 0	UF 0		Ana 30P	l vsis Item Test	Hrs 1
	5 Kg Sack	552	0	38	514		silter	C	one Size	Qty	0 0)	0	0		Trippi		3
Rheopac L 25	5 Kg Sack	81	0	2	79		d Clear				(0	0		Drillin	g	20
	5 Kg Sack	47	0	2	45		ntrifuge		scomo	DE-1000	1		8.7	14.3	3			
	5 Kg Sack	56	0	2	54		ntrifuge ttings D				(0	0				
) Ltr Drum	58	0	1	57	De	gasser				(SOLIDS		IS			
	0 Ltr Drum 5 Kg Sack	7 21	0	1	6 20					0x170x170	1		lt % 2.6					
	5 Kg Sack 5 Kg Sack	44	0	1	20 43	Sh	ale Sha	ker #2 2	200x200	0x200x200	1			LGS %	1.6			
		••				_					(Coli	ected 1.6 ds %	Drilled Solids%	-1.1			
						-					(
							CL	JRRENC	Y		DAILY			С	UMUL	ATIV	E COSTS	
							CL	JRRENC AUD	Ϋ́					С		ATIV 6,82		

							Repor	rt#			8 1	otal MI)		849	to	1134	m
	WA ⁻	TER	BAS	ED M	UĽ		Rig #				-	Total VE			849	to	1134	m
	Deil	س م <i>د</i> ا			~ ~ +	F	Date			1/21/2	013 E	Daily De	pth Dril	led			285	m
RHEOCHEM	Dali	IY Dr	mmg	g Rep	ori		Spud	Date		1/14/2	013 I	nterval	Depth D)rille	d		368	m
OPERATOR	Dril	IISearc	h				-	CONT	FRAC	TOR	I	Ensigr	1					
REPORT FOR		y Holme		Castle				REPC					Doherty	v				
WELL NAME AND	No.							FIELD)			LOCA	ΓΙΟΝ			STA	ΓE	
	Tric	clops 1							ATP			Coope	r Basin			Quee	ensland	
BHA BIT TYP BIT SIZE (") Baker		T SIZE		EPTHS/C	ASI	NG	_	UD VC		E (BBL	-	PUMP SIZ			ULATIO		ATION	
8.5 Hughes PE	DC 0 0	0 0 0		Riser Length		rr	n IK	272		230			Inches			PRE	SS III	1 psi
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	⊣ 942 n	n ———	Conductor @	þ	20 m	n Ac	tive Pits 420	Re	serve Pi 109	ts	PUMP MO		FFICIE		URFAC TO BIT		4 mii
DRILL PIPE TYPE	LENGTH	-	9.625	Surface @		761 m	T	TOTAL CI	IRCULAT		L	BBL/S		97 TK / M		TTOMS		8 mi
SIZE (") 4.5 HW DRILL COLLAR SIZE (")	LENGTH	<u>38</u> n H		Intermediate		0 ^m	_	0.13	650 RAGE T/			0.064 BBL / N		164 AL/M		r circ	TIME 6	i 2 mii
8 6.5	0	154 n		Prod. or LNR		0 m	n	310	0	-1117.3		10.5	2	442		ECD	9.	
	MUD PROP	PERTIES	6										MUD	PRO	PERTY	SPEC	IFICATION	IS
SAMPLE FROM						F			Ľ		Pit	Mud W		0 Vis	. ,	C	YId Pt	
						4P			HB		HB	API Lo	S	0 pH			KCI	
TIME SAMPLE TAKE				0= / 0	0	124	00 57	16 136	:00 58	20	:00	Thorow		-			5 from the nor	malot
TOTAL MEASURED D	-	.		°F/C Metre	-	134 10			34	11	34						The cuttings	
WEIGHT		- /		ppg / S		9.0	40 1.08	9.0	34 1.08	9.0	1.08						sticky clay v to the increa	
FUNNEL VISCOSITY	(sec/at)	API		rry / 0	-	5.0			8		1.00	the visc	osity of the	e activ	ve mud. A	ll other	r mud propei	ties
RHEOLOGY 600 : 30			120	°F / 49 0	ЪС	56	42	45	36	45	36						t bit balling,v mud from pre	
RHEOLOGY 200 : 10	0 RPM		120	^o F / 49	°C	31	25	34	30	34	30	with 4%	KCl/.5 ppl	PAC	C-LV and s	soda a	sh to active t	0
RHEOLOGY 6:3	RPM			°F / 49		15	13	17	15	18	16						nake up wate to augment	er at
PLASTIC VISCOSITY				°F/ 49		1			9		9	evaport		due	to temp in		ed significan	tly
•	/ 100 ft ²)		-	^o F / 49 ^o	-	2	-		27	_	27	Irom 40	to 57 deg	U.al	now line.			
GEL STRENGTH (Ib		0.010	10sec/1	0min/30m	iin	18 2	0 22	17 2	23	17 2	20 23	-	OPE	RAT	IONAL C	COMN	IENTS	
LOW SHEAR RATE V n K (lb/100 ft ²)	ISCOSITY (L	LSRV)				0.41	3.16	0.32	4.84	0.32	4.84				from 849			foor
API FILTRATE (cm	3 / 30 min))				1			4.04 3		3						5/8 in. dia. S hot at report	
HPHT FILTRATE (cm				°F/	°C		•		•		•	time.						
API : HPHT (Cake / 3	,			• /	Ŭ	2	2	:	2		2	-						
рН						9.	.5	9	.5	9	.5							
ALKALINITY MUD (F	°m)					0.2	20	0.	10	0.	10							
ALKALINITY FILTRAT)				0.32	1.7	0.16	0.6	0.16								
CHLORIDE (mg/L)						340			000		000	_						
TOTAL HARDNESS A		(mg /	L)			50	_	-	50 80	_	50	Water	Source	Tu	rkeys Ne	est		
SULPHITE (mg/L)				CIUM (mg/L)							30 .0							
						8	0	4				MU	ID ACCO		ring (Be	SLS)	SUMN	IARY
KCL (% by Wt.)						4.		4 24			020				E 1 1 1 D 1	0005		
KCL (% by Wt.) K + (mg / L)									.5 318		020	1			FLUID I		0.0	
KCL (% by Wt.) K + (mg / L) PHPA (Calc ppb)		ppb / %	by vol)			4.					020	Drill W	ater	60	S.C.E.	6	61 Received) b
KCL (% by Wt.) K + (mg / L)	APACITY (p	ppb / % l ppb / %				4. 216	516	243	318	27		Drill W	ater cal	60 7	S.C.E. Dischar	ge 2	51 Received) t
KCL (% by Wt.) K + (mg / L) PHPA (Calc ppb) METHYLENE BLUE C	APACITY (F		by vol)			4. 216 10.0	516 1.1	243 10.0	318 1.1	27 10.0	1.1	Drill W	ater cal SeaWat	60 7 0	S.C.E.	ge 2 le 1	61 Received	d () d () 67
KCL (% by Wt.) K + (mg/L) PHPA (Calc ppb) METHYLENE BLUE C BENTONITE ADDED OTHER PRODUCTS A	APACITY (r () ADDED (r	ppb / %	by vol)			4. 216 10.0	516 1.1	243 10.0	318 1.1	27 10.0	1.1	Drill W Chemic Sump/	ater cal SeaWat Rec'd	60 7 0 0	S.C.E. Dischar Downho	ge 2 le 1	61 Received 20 Backload 16 Built	d () d () 67
KCL (% by Wt.) K + (mg/L) PHPA (Calc ppb) METHYLENE BLUE C BENTONITE ADDED OTHER PRODUCTS A OIL (% t	APACITY (p (i) ADDED (p	ppb / %	by vol)			4. 216 10.0 8	516 1.1 0.9	243 10.0 8	318 1.1 0.9	270 10.0 8	1.1 0.9	Drill W Chemic Sump/ Other I	ater cal SeaWat Rec'd	60 7 0 0	S.C.E. Discharg Downho Tripping	ge 2 le 1	61 Received 20 Backload 16 Built 5 Lost sub	d (d (67) 16
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8 6.5 MUD SAMPLE FROM MUD TYPE TIME SAMPLE TAKEN FLOWLINE TEMPERATURE TOTAL MEASURED DEPTH WEIGHT FUNNEL VISCOSITY (sec / RHEOLOGY 600 : 300 RPM RHEOLOGY 6: 3 RPM PLASTIC VISCOSITY cP @ YIELD POINT (Ib / 100 ft GEL STRENGTH (Ib / 100 ft LOW SHEAR RATE VISCOSI n K (Ib / 100 ft ²) API FILTRATE (cm ³ / 30 ft	0 154 PROPERTIE (TMD) qt) API 0 2) 2) TY (LSRV)	120 120 120 120 120 120 120	^o F / 49 ^o F / 49	°C res SG ∂°C	Pi 4Ph 8:0 113 9.0 47 45	t 1B 00 34 1.08	Pi 4Pi 16: 11:	0 it 1B 00 34	NKS	M Al Tre pre	MU ud Wt PI Los eated the ac	D PRO 0 Vi 0 pt ML ctive mu rial degr	DPERTY is (F) H JD COM Id while on radation in	SPECI 0 0 WENTS static w polyme	FICATION YId Pt KCI ith Idcide 20 rs. Equalized	S (
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TIME SAMPLE TAKEN FLOWLINE TEMPERATURE TOTAL MEASURED DEPTH WEIGHT FUNNEL VISCOSITY (sec / RHEOLOGY 600 : 300 RPM RHEOLOGY 200 : 100 RPM RHEOLOGY 6 : 3 RPM PLASTIC VISCOSITY CP (YIELD POINT (Ib / 100 ft GEL STRENGTH (Ib / 100 ft LOW SHEAR RATE VISCOSI n K (Ib / 100 ft ²) API FILTRATE (cm ³ / 30 r HPHT FILTRATE (cm ³ / 30 r	qt) API 2) 2) TY (LSRV)	120 120 120 120 120	Metr ppg / 3 °F / 49 °F / 49 °F / 49 °F / 49	res SG 9 °C	8:0 113 9.0 47 45	00 34 1.08	16: 11:	00 34		Tre	eated the ac	0 pł ML tive mu rial degr	H JD COM Id while on radation in	Static w polyme	ith Idcide 20 rs. Equalized	
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RHEOLOGY 600:300 RPM RHEOLOGY 200:100 RPM RHEOLOGY 6:3 RPM PLASTIC VISCOSITY CP (c) YIELD POINT (Ib / 100 ft) GEL STRENGTH (Ib / 100 ft) LOW SHEAR RATE VISCOSIN N N (Ib / 100 ft²) API FILTRATE (cm³ / 30 ft) HPHT FILTRATE (cm³ / 30 ft)	2 2 2 2) TY (LSRV)	120 120 120 120	^o F / 49 ^o F / 49 ^o F / 49	∂°C	45	7	1	1.07				•		•	0	
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RHEOLOGY 6:3 RPM PLASTIC VISCOSITY CP @ YIELD POINT (Ib / 100 ft GEL STRENGTH (Ib / 100 ft LOW SHEAR RATE VISCOSIN K (Ib / 100 ft ²) API FILTRATE (cm ³ / 30 rt HPHT FILTRATE (cm ³ / 30 rt	2) 2) 2) TY (LSRV)	120 120 120	^o F / 49 ^o F / 49		34	36 30	44 30	36 27			•			-	kore end die	abos
$\begin{array}{llllllllllllllllllllllllllllllllllll$	2) 2) 2) TY (LSRV)	120 120	•@ <u>120 °F / 49 °C</u>								aneu up po	0000111 D	ing, the S	iale SII8	kers and dito	M62.
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LOW SHEAR RATE VISCOS n K (Ib / 100 ft ²) API FILTRATE (cm ³ / 30 r HPHT FILTRATE (cm ³ / 30 r	TY (LSRV)				17 20		-	5 5 19			-			00111		
n K (Ib / 100 ft ²) API FILTRATE (cm ³ / 30 r HPHT FILTRATE (cm ³ / 30 r		-					"						TIONAL			. +c
API FILTRATE (cm ³ / 30 r HPHT FILTRATE (cm ³ / 30 r					0.32	4.84	0.29	5.93							interval back culation/muc	
	nin.)				14		14			cor	nditioning. F	RIH from	n 548 mVE) to 741	mVD(inside	
API : HPHT (Cake / 32nd in	nin.)		°F /	°C							sing) while v		or Schlun	iberger	DD and tools	at
)				2		2				0					
pН					9.	5	9.	5								
ALKALINITY MUD (Pm)					0.1	-	0.1	-								
ALKALINITY FILTRATE (Pf	/ Mf)				0.20	0.6	0.20	0.7								
CHLORIDE (mg/L)					330		325			_						
TOTAL HARDNESS AS CAL	CIUM (mg	/L)			55	-	50	-		W	ater Sou	rce T	urkevs N	est		
					80		8								_	
KCL (% by Wt.)					4.		4.			_	MUD AC		· ·		SUMM	1
K + (mg / L) PHPA (Calc ppb)					243	18	216	10			FLUID BL			LOSSES	0101110	
PHPA (Calc ppb) METHYLENE BLUE CAPACI	TV (nnh / %	by yol)			10.0	1.1	10.0	1.1			ill Water		3 S.C.E.		7 Received	
BENTONITE ADDED	(ppb / %) (ppb / %)				8	0.9	8	0.9		_	nemical		0 Discha	•	0 Backload	
OTHER PRODUCTS ADDED	(ppb / /« (ppb / %					0.0		0.0			ump/SeaWa		0 Downh		0 Built	13
		-, -,							I	_	ther Rec'd		0 Trippin	g 1	0 Lost sub	
OIL (% by Vol)										Ot	her Built		0 Other		0 Lost srf	37
TOTAL WATER (% by Vol)					93.	.0	93	.8			TOTA			G (hh	s) : 735	
TOTAL SOLIDS (% by Vol)					7.	0	6.	3						- ,50	-,	
SAND (% by Vol)					2		2									
PROI	UCT USAG	E						SOLID	S CONTR	IOL E	QUIPMEN	IT.		Ti	me Breako	lown
Product UnitSiz		Received		Close		Туре				^	-	DF	UF		nalysis Item	
Water 1 bbl	599	0	13	586		ander		one Size	Qty Qty	0		0	0		iging	12
Idcide-20 20 Ltr D		32	2	87	Des	ilter I Clear		one Size	uty	U		0	0		ping culating	9
Soda Ash 25 Kg S		48	1	65	C	trifuge		сото Г	DE-1000			0 3.8	14	UI	Julauliy	
Barite 25 Kg S		152	0	1272	Con	trifuge						0	0			-
Fracseal (fine) 25 lb Sa		105	0	210	-	ings D						0	0			
JK-161 LV 25 Kg S KCl (fine) 25 Kg S		40 860	0	96 1298	0	asser					0 50	OLIDS	ANALYSIS	;		
		860 504	0	609	Sha				x270x270		3 Salt 9	% 2.6	HGS %			
Maxigel 25 Kg S Quickseal (M) 18 Kg S		504 50	0	100	Sna	le Sha	aker #2 2	00x200	x200x200		3	_	LGS %	1.6		
Sodium Sulphite 25 Kg S		50 48	0	91	<u> </u>						0 Correct		Drilled Solids%	0.8		—
	40	40	U	31							0 Solids	· ·	Soling %			
						CI	JRRENC	Y		וומח	U Y COST		CI	ΙΜΙ ΙΙ ΔΤ	IVE COSTS	
					-						52.50				83.59	
Rheochem Engineer: Rico							ochem l			ΨŽ		.	_		108282	

OPERATOR REPORT FOR WELL NAME AND NO BHA BIT TYPE	Dai	TER ly Dr	_	ED M	_	Ri	eport ig #	π			918 T	otal MI otal VI)		1134 1134	to to	1140 1140	-	m
OPERATOR REPORT FOR WELL NAME AND NO BHA BIT TYPE		ly Dr	rillinc	1 Ron	_	-	-												m
OPERATOR REPORT FOR WELL NAME AND NO BHA BIT TYPE		יש צי			_r1	. De	ate		1	/23/20	13 D	aily De	pth Dr	illed			6	r	m
REPORT FOR WELL NAME AND NO BHA BIT TYPE				y nep		Sp	pud D)ate	1	/14/20	13 Ir	nterval	Depth	Drille	d		374	r	m
WELL NAME AND NO	Dri	llSearc	h				C	CONT	RACI	OR	E	Ensign	۱						
BHA BIT TYPE		y Holm	es/Don	Castle			R	REPO	rt fo	OR		David		rty					
	-						F	FIELD					-			STA			
			{Rev 5			10			ATP5			Сооре	er Bas				enslar	nd	
BIT SIZE (") Baker		T SIZE	2	EPTHS/C			-	JD VOI		(RRF)		UMP SIZ	E	CIRC	ULATIO		LATION		
8.5 Hughes PDC DRILL PIPE TYPE	0 0 LENGTI		0	Riser Length		m		273		232	5	.5 x 9	Inche			PF	ESS	892	psi
SIZE (") 4.5		954	m	Conductor	@	20 m		ve Pits 365	Res	serve Pits 144	5	PUMP MO Emco F		EFFICIE 97		SURFA TO B	Т	4	min
DRILL PIPE TYPE SIZE (") 4.5 HW	LENGT	H 38 I		Surface @	. @	0 m	ТО	DTAL CIR	CULAT 597	ING VOL	-	BBL/S		STK / M 151		DTTON		20	
DRILL COLLAR SIZE (") 8 6.5	LENGTI 0			Prod. or LNI		0 m	_	STOR	AGE TA	NKS		0.064 BBL / N	ЛIN	GAL / M		T CIRO ECI		62	
					-	-			0			9.69			PERTY			9.29	
SAMPLE FROM		FERIL	5			Pit		Pi		F	. 1	Mud W		0 Vis		SPE			
MUD TYPE						4PHE		4PH		491		API Lo		0 vis 0 pH	(F)		0 MCI	L .	0
TIME SAMPLE TAKEN						8:00		16:0		20:		AFTEO	5		D COMI	MENT			
FLOWLINE TEMPERAT	URE			°F/	°C					131				nud witl	h 0.5 ppb	Citric	acid to re		
TOTAL MEASURED DEI	PTH (TMI	D)		Metr	es	1134	4	113	4	114					The recy or pump f				
WEIGHT				ppg / S	SG		.07		1.08	9.0	1.08	by prem	ixing 2	ppb PH	B, 1 ppb	Xanth	am gum	and 0.	.5
FUNNEL VISCOSITY (s		API			00	45		42		4	1	rac-Lv	io reduc	e tilter (cake thicl	ness	and fluid	ioss ai	ла YF
RHEOLOGY 600 : 300			-	^o F / 49	-		36	30	24	29		Dresseo 200 x 4.		aker #1	with 325	x4 whi	le Shake	er #2 wi	ith
RHEOLOGY 200 : 100 RHEOLOGY 6 : 3	RPM RPM			^o F / 49 ^o F / 49			27 10	20 6	15 4	23 5	19 3	∠∪∪ X 4.							
	cP @			^o F/ 49		14 8	10	6	-+	э 5	-								
	00 ft ²)		120	^o F / 49	°Č	28		18		19									
GEL STRENGTH (Ib / 1			10sec/1	0min/30n	nin	13 16	19	58	10	68	8 11		OF	PERAT	IONAL	сом	MENTS		_
LOW SHEAR RATE VIS	COSITY (LSRV)										POOH f			o surface				le up
n K (lb/100 ft ²)							5.93	0.32			4.38	BHA#3	(Pendul	lum). RI	H from si Continue	urface	to shoe	at 761	
API FILTRATE (cm ³				0	0	12		12		12	.5				Commen				
HPHT FILTRATE (cm ³ /)		°F/	°C	•		•				hole pro		from 11	136 mVD	to 11	40 mVD	with FN	/IR at
API:HPHT (Cake / 32r pH	ia in.)					2 9.5		2 9.0	,	2 9.	•	roporting	g time.						
ALKALINITY MUD (Pm)					0.10		0.1		0.1									
ALKALINITY FILTRATE	-)				0.20	0.7	0.22	0.8	0.20	0.6								
CHLORIDE (mg/L)	-	·				3250	0	335	00	334	00								
TOTAL HARDNESS AS	CALCIUN	1 (mg/	Ľ)			500)	50		45		Water	Course	Tu	rkevs N	aat			
SULPHITE (mg/L)						40		40		40					,				
KCL (% by Wt.)						4.0		4.0		4.		MU	ID ACC	COUNT	'ING (B			UMMA	١RY
K + (mg / L) PHPA (Calc ppb)						2161	6	216	16	216	016		UID BUI		FLUID	LOSSI		t Vol	735
METHYLENE BLUE CAP		nnh/%	by vol)			8.0	0.9	7.0	0.8	7.0	0.8	Drill Wa			S.C.E.		40 Rec		0
BENTONITE ADDED		(ppb / %					0.7	6	0.7	6	0.7	Chemie Sump/	cai SeaWat		Dischar Downh	•	0 Bac 6 Buil		0 67
OTHER PRODUCTS AD		ppb / %										Other I		-	Trippin		10 Los		6
												Other I			Other	9	5 Los		55
OIL (% by	-											Othern	built		Oulei		5		
TOTAL WATER (% by	,					93.8		93.		93		т	OTAL	MUD	ON RI	G (b	bls) : 7	741	
TOTAL SOLIDS (% by) SAND (% by						6.3 2		6.5 1.5		6. 1.									
	PRODUCT		-									L EQUI	PMFN	г			Time B	reakd	own
	JnitSize		Received	Used	Close		Туре			2 001		Hrs			UF	_	Analysis		Hrs
Water	1 bbl	586	0	66	520	Desar		Co	ne Size	C	Qty (0		0		I/U BHA		3
-	Kg Sack	609	0	10	599	Desilt			ne Size	C	Qty C		C		0		ripping		8
	Kg Sack	20	0	2	18		Cleane		omo "	DE-1000	h	0	0		0		rilling		13
	Kg Sack	75	0	2	73		ifuge 1 ifuge 2				,	0	8. 0		14 0				+
Xanthan Gum (P) 25	Kg Sack	54	0	1	53		ings Dry					0	0		0				+
						Dega						0		1	NALYSIS	;			
										x325x3		5	Salt %	2.7	HGS %				\vdash
						Shale	e Shake	er #2 20	00x200	x200x2	00	5	0			2.3			+
												0	Corrected Solids %		Drilled Solids%	1.7			+
												0		1					+
							CUR	RENC	(D	AILY CC	DST		CL	MULA	TIVE CO	OSTS	
			1			1										**	,390.70		-
							P	AUD				\$707.1	1			\$40	,390.70		

							Repo	rt #			11]	otal MI)		1140	to	1277	m
	WA	TER	BAS	ED N	IUE)	Rig #					Fotal VE			1140	to	1277	m
	Dei		ممنالك				Date			1/24/2	013 E	Daily De	pth Dril	led			137	m
RHEOCHEM	Dai		ınınğ	g Rep	or	L	Spud	Date		1/14/2			Depth D		1		511	m
OPERATOR	Dri	illSearc	h					CON	RAC	TOR		Ensign						
REPORT FOR		y Holm		Castle				REPO					Doherty	у				
WELL NAME AND N								FIELD)			LOCA				STA	TE	
	Tri	iclops 1	{Rev {	5}					ATP	539		Coope	r Basir	า		Que	ensland	
BHA BIT TYPE		ET SIZE		DEPTHS/	CASI	NG		IUD VC	1		-			CIRCI	JLATIO			
BIT SIZE (") Baker 8.5 Hughes PDC		12 12 1 0 0		Riser Lengt	h		m H	OLE VOL 305	. ML	D INHO 261		PUMP SIZI 5.5 x 9					LATION 10 ESS	00 psi
DRILL PIPE TYPE	LENGT	Н	16	Conductor	@	20	m Ao	ctive Pits	Re	serve Pi		PUMP M	1	FFICIE	NCY	SURFA	CE	5 min
SIZE (") 4.5 DRILL PIPE TYPE	LENGT	1.091 I	9.625	Surface @		761	m	350		130		Emco F	-800	97		TO BI		5 min 21 min
SIZE (") 4.5 HW		38	m	Intermediate	e @	0		TOTAL C	611	ING VO		BBL / S 0.064		STK / M 155		OT CIRC		61 min
DRILL COLLAR SIZE (") 8 6.5	LENGT 0	`H 148 ⊨	m	Prod. or LN	R @	0	m	STO	RAGE TA	ANKS		BBL/N		AL / MI		ECE		.42 ppc
	MUD PRO								0			9.94		418 PROI	DERTV			
SAMPLE FROM			5				Pit		it	F	Pit	Marel M	/t 8.9-9.					
MUD TYPE							РНВ		HB		HB						5 YId Pt	2 - 17
TIME SAMPLE TAKEN							:00		:00		:00	API Lo	s 9-1	4 pH	D COM	9.0 - 9.		%-3%
FLOWLINE TEMPERAT	IIRE			°F/	00	132	56	140	60	140	60	Active m	ud treate				3 da ash, SI-7	70P sod
TOTAL MEASURED DE		וח		Metr	-		213		53		277	sulphite	and IDCI	de 20	to contr	ol hard	ness, oxyge	nated
WEIGHT		-,		ppg / S		9.0	1.08	9.0	1.08	9.0	T	water,ar	nd preven	nt from	bacteria	al infect	ion in polym ained and co	ners.
FUNNEL VISCOSITY (sec / at)	API		PP9/			15		3		4	by Xantl	nam gum	and m	naxigel	betw 40)-45 spq. Dil	lution of
RHEOLOGY 600 : 300		•	120	^o F / 49	°C	37	30	40	34	39	30		ith light m deg C to			to the fl	owline temp	went up
RHEOLOGY 200 : 100			-	⁰ F / 49	-	27	23	27	23	26	22					x4 to 2	70x4 due to	cuttings
RHEOLOGY 6:3	RPM			^o F / 49		15	13	14	12	13	11	appeare	ed to be fi	ned sil	tstone.	Ran the	centrifuge t	
PLASTIC VISCOSITY	cP @			^o F/ 49		-	7		6	-	9	uown M	W from 9	.u ppg	ιυ 8.9 p	pg.		
YIELD POINT (Ib / 1	100 ft ²)		120	^o F / 49	°Č	2	23	2	8	2	21							
GEL STRENGTH (Ib / ·	100 ft ²)		10sec/1	0min/30r	nin	11 1	13 15	10 1	2 14	12 1	4 16		OPF	RAT	ΟΝΔΙ	COM	MENTS	
LOW SHEAR RATE VIS	COSITY (LSRV)				I	1			I		Drilling 8					1140 mVD t	to 1277
n K(lb/100 ft ²)						0.30	4.55	0.23	7.89	0.38	2.84	mVD wit	th FMR at	t repor	ting time	e. Note	: Circulated	btms up
API FILTRATE (cm ³	/ 30 min.)				1	12	12	2.5	1	3	prior to o	conduct s	ingle s	shot surv	vey eve	ry 20 m drill	ed.
HPHT FILTRATE (cm ³	/ 30 min.)		°F/	°C													
API:HPHT (Cake / 32	nd in.)						2	:	2		2							
рН						9	0.0	9	.0	9	.0							
ALKALINITY MUD (Pm	-					0.	.10	0.	10	0.	10							
ALKALINITY FILTRATE	(Pf / Mf)				0.18	0.8	0.20	0.8	0.20	0.7							
CHLORIDE (mg/L)						34	500	34	500	34	000							
TOTAL HARDNESS AS	CALCIUN	/I (mg/	′L)				00	4	50		50	Wator	Source	Т	de ava N	laat		
SULPHITE (mg/L)							10		0		10	water	Source		keys r	vesi		
KCL (% by Wt.)							.5	_	.0		.0	MU	D ACCO	олит	'ing (e	BLS)	SUM	MARY
K+ (mg/L)						24	318	21	616	21	616	FL	UID BUILT	Г	FLUID) LOSSE	S Start Vo	ol 741
PHPA (Calc ppb)												Drill Wa	ater	94	S.C.E.		58 Receive	ed 0
METHYLENE BLUE CA						5.0	0.6	6.0	0.7	6.0	0.7	Chemio	cal	2	Discha	rge	5 Backlo	ad 0
BENTONITE ADDED		(ppb / %	-			4	0.4	4	0.4	5	0.6	Sump/s	SeaWat	0	Downh	ole	18 Built	96
OTHER PRODUCTS AD	DED ((ppb / %	by vol)									Other F	Rec'd	0	Trippir	ng	10 Lost su	ıb 18
	Vel)					-						Other E	Built	0	Other		5 Lost sr	f 78
OIL (% by TOTAL WATER(% by						0	3.0	0	3.5	~	3.5	-						
TOTAL WATER (% by	,						3.0 '.0		.5 .5		5.5 .5	T	OTAL	MUD	ON R	IG (bl	ols) : 741	I
SAND (% by							2		.5		.5							
	PRODUCT	TUSAGE	=				-	· ·				L L EQUI	PMENT			•	Time Brea	kdown
	UnitSize		Received	Used	Clos	0	Tura	-	COLI			Hrs			LIE			
Water	1 bbl	Start 520	0	94	426		Type sander		Cone Size		Qty	0 0	0F 0		<u>UF</u> 0		Analysis Ite rilling	m Hrs 22
	5 Kg Sack	599	0	8	591		silter		Cone Size			0 0	0		0		irculating	2
-	5 Kg Sack	73	0	7	66		ud Clear				· · · · ·	0	0		0		3	
) Ltr Drum	87	0	2	85	Ce	ntrifuge	e 1	Scomo	DE-100	00	22	8.7		14			
	5 Kg Sack	53	0	2	51	Ce	ntrifuge	2				0	0		0			
. ,) Ltr Drum	6	0	1	5		ittings D	-				0	0		0			
	5 Kg Sack	65	0	1	64		gasser					0	1	Т	NALYSI	S		
	5 Kg Sack	91	0	1	90			aker #1				22	Salt %	F	HGS %			
		<u>.</u> .	v	<u>⊢ ·</u>		Sh	ale Sha	aker #2	270x270	JX270X2	270	22			LGS %	2.3		
				<u> </u>								0	Corrected Solids %	2.3	Drilled Solids%	1.8		
				<u> </u>								0			/0			
				+ +			CI	JRRENO	CY		г	DAILY CC	ST		CI		TIVE COST	rs
							00							1	5			-
													01			\$42	.193.71	
Rheochem Engineer:	D' 1'						5	AUD				\$1,803.0	01 04108214		_		, 193.71 4108282	

							Repo	rt#		12	2 Tota	I MD)	127	7 t	0	1297	m
	WA	TER	BAS	ED N	IUC)	Rig #			918				1277		0	1297	m
	De		illine			•	Date			1/25/2013	Dail	y Dej	pth Drill	ed			20	m
RHEOCHEM	Da		rilling	ј кер	O	L	Spud	Date		1/14/2013			Depth D				531	m
OPERATOR	Dr	illSearc	h				-	CONT	RAC	TOR	Ens	sign						
REPORT FOR			es/Don	Castle				REPC					Doherty	,				
WELL NAME AND								FIELD			LO	CAT	TION		S	ΓΑΤ	E	
	Tr	iclops 1	{Rev 5	5}					ATP	539	Co	ope	r Basin		Q	ueer	nsland	
BHA BIT TYP		ET SIZE		EPTHS/0	CASI	NG		UD VC	-	<u> </u>				IRCULA	T			
BIT SIZE (") Baker 8.5 Hughes Pl		2 12 12 ⁻ 0 0		Riser Lengtl	n	r	n HO	DLE VOL 309	MU	JD INHOLE 263		PSIZE	Inches			CULA PRES		b psi
DRILL PIPE TYPE	LENG	ГН	16	Conductor	@	20 r	n Ac	tive Pits	Re	serve Pits	PUN	ИР МО	DEL % EF	FICIENCY	SUF	FACE		1
SIZE (") 4.5 DRILL PIPE TYPE	LENG	<u>1.101</u> ГН		Surface @		761 n	n –	310		92 TING VOL		nco F-		97	BOTTO	BIT		111011
SIZE (") 4.5 HW		38	m	Intermediate	e @	0 ^r		UTAL CI	573	ING VOL		BL / ST 0.0642		rk / Min 170	TOT C			
DRILL COLLAR SIZE (") 8 6.5	LENGT 0	TH 158	m	Prod. or LN	R @	0 r	n	STO	RAGET	ANKS		BL / M		L / MIN		CD	9.	-
	MUD PRC	PERTIE	s						0			10.91		458 PROPER				
SAMPLE FROM			-			Р	it	F	1		М	ud W	t 8.9-9.0				Yld Pt	2 - 17
							HB	4P				PI Los				9.5		%-3%
	N						00	20			-	T LOS	3 314	MUD CO				/0 0 /0
FLOWLINE TEMPER				°F/	°C			136	58		Pill	tank	with HVM				h Barite to	
TOTAL MEASURED	DEPTH (TM	ID)		Metr	-	12	96	12	97								s of which I	
WEIGHT	```	-		ppg / S	SG	9.1	1.09	9.1	1.09								leg C) for s ds of pipe.	aiely
FUNNEL VISCOSITY	(sec/qt)	API				4	2	4	1								nin the spec	cs.
RHEOLOGY 600:30	0 RPM		-	°F / 49	-	39	31	39	33		Rai	n the	centrifuae	with feed	rate of 3	ap 88	m to reduce	e the
RHEOLOGY 200:10	0 RPM			^o F / 49		26	22	27	23		MM	V from					11.0 ppg)	
RHEOLOGY 6:3	RPM			^o F / 49		12	10	14	12		ppg	y						
PLASTIC VISCOSITY	-		120	^o F/ 49	°C	1	3	6	5									
	/ 100 ft ²)			^o F / 49			3	2										
GEL STRENGTH (Ib	,		10sec/1	0min/30r	nin	10 1	2 14	12 1	4 16				OPE	RATION	AL CO	MME	INTS	
LOW SHEAR RATE V	ISCOSITY	(LSRV)															1277 mVI	
n K (lb / 100 ft ²)	2					0.33		0.24									to run dire notor and r	
API FILTRATE (cm				0	0	1	2	1	3					sing shoe.				un
HPHT FILTRATE (cm)		°F/	°C												om at 1296 3 mVD to 1	
API:HPHT (Cake/3	32nd in.)						2	2						reporting t		11230		291
pH ALKALINITY MUD(F	2m \					-	.0 10	9. 0.	-									
		•)				0.20	0.7	0.20	0.7									
CHLORIDE (mg/L))					500	340										
TOTAL HARDNESS A		M (ma	(1)				500	540										
SULPHITE (mg/L)		n (ing/	-,				0	4			W	/ater	Source	Turkey	s Nest			
KCL (% by Wt.)							.0		0		-	MII		UNTING	(BBI 9	S)	SUMM	ARV
K+ (mg/L)							516	216						-	UID LOS		Start Vol	1
PHPA (Calc ppb)											Dr	ill Wa		15 S.C.		-	Received	
METHYLENE BLUE C	APACITY	(ppb / %	by vol)			6.0	0.7	6.0	0.7			nemic		1 Disc		-	Backload	_
BENTONITE ADDED		(ppb / %	by vol)			5	0.6	4	0.4				SeaWat	0 Dov	-		Built	16
OTHER PRODUCTS A	ADDED	(ppb / %	by vol)									her R		0 Trip			Lost sub	
												her B		0 Oth			Lost srf	82
	oy Vol)												unt	0			•	
TOTAL WATER(%比							2.8	92				т	OTAL N	IUD ON	RIG (bbl	s): 665	
TOTAL SOLIDS (% b							.3	7.										
SAND (% I	by Vol)	TUOAO	-			1	.5	1.				01115						
- · · · · ·	PRODUC								SOLI	DS CONTR						-	ne Break	-
Product Barite	UnitSize	Start 1272	Received 320	Used 30	Clos		Type sander		Cone Size	Qty	0	Hrs 0	OF		UF	An Drilli	alvsis Item	Hrs 4
Water	25 Kg Sack 1 bbl	426	320 0	18	1562 408		silter		Cone Size	Qty	0	0	0		0	Trip	•	17
Caustic Soda	25 Kg Drum	420	32	0	408		d Clear					0	0		0		BHA	3
Cellplug (Coarse)	25 lb Sack	35	35	0	70		ntrifuge		Scomo	DE-1000		22	8.8		14			
Citric Acid	25 Kg Sack	18	20	0	38	Ce	ntrifuge	2			_	0	0		0			
Microflow	20 Ltr	32	16	0	48		ttings D	ryer]	0	0	-	0			
Quickseal (C)	18 Kg Sack	25	25	0	50		gasser		05			0	1	DS ANAL				
Rheopac L	25 Kg Sack	66	70	0	136					5x325x325		4	Salt %	2.7 HGS				_
Salt	25 Kg Sack	384	384	0	768	Sna	ale Sha	ker #2 2	270x27	0x270x270		4	0	LGS		<u> </u>		_
Sand Seal (fine)	25 Kg Sack	25	25	0	50							0	Corrected Solids %	3.1 Drille Solids				
Xanthan Gum (P)	25 Kg Sack	51	40	0	91	_						0		Condo				
(,)	3 - 2011		-	-			CL	JRRENC	Y		DAIL	Y CO	ST		CUMU	LATI	VE COSTS	
								AUD				57.00					50.71	
Dhaaabarr 5	Dies M-	ombo-					- × ח	-	ا المعالم	d T -12 2								
Rheochem Engineer:	HICO Mac	ampac			(Junce:	кле	Jonem	LIMITE	d Teleph	one:	089	4108214	Fa	ax: 08	5941	08282	

	WAT	ED	BVC			Repo				Total N			12	-	to	1521	m
			_		-					Total \		D (11)	12	97	to	1521	m
RHEOCHEM	Daily	y Di	rilling	g Rep	or	t Date	e d Date			Daily D						224	m
						Spuc	1			Interva		oth Dri	lea			224	m
OPERATOR REPORT FOR	Drills		:h les/Don	Ca -+!-				TRAC		Ensig							
WELL NAME AND No		Hoim	ies/Don	Castle			FIEL	<u>DRT F</u>	OR	David LOC/					TAT	=	
WELL NAME AND NO		one 1	{Rev 5				FIEL		530	Coop	-			-		∟ ısland	
BHA BIT TYPE		SIZE) EPTHS/	CASI	NG				0000			CUI				
BIT SIZE (") Baker	12 12 12	2 12 .	12	Riser Lengt		-	HOLE VOI		ID INHOLE	PUMP S		-		-	RCULA	TION 1778	B psi
8.5 Hughes PDC DRILL PIPE TYPE	0 0 0 LENGTH	0 0	0	Conductor			361 Active Pits	Be	310 serve Pits	5.5 x		ches - % EFF		SU SU	PRES RFACE		
SIZE (") 4.5		1.325	m	Surface @	w.	761 m	352		49	Emco	F-800		101ENC 97	10) BIT		5 min
DRILL PIPE SIZE (") 4.5 HW	LENGTH	38		Intermediate	- @	0 m	TOTAL C	IRCULAT 662	ING VOL	BBL / 0.06			/ MIN 82		OMS L		2 min
DRILL COLLAR SIZE (") 8 6.5	LENGTH 0	158		Prod. or LN		0 m	STC	DRAGE T	ANKS	BBL		GAL					7 min
	-					-		0		11	.68		90 20 D E			9.4	
	UD PROPE	RIIE	3			-	_	- !+	Dia	T						ICATION	
SAMPLE FROM						FL 4PHB	_	Pit PHB	Pit 4PHB	-		3.9-9.0				YId Pt	2 - 17
						8:00		6:00	20:00	API L	.0S	9-14			- 9.5	KCI	%-3%
FLOWLINE TEMPERATU	RE			°F/	°C	148 64	-		20.00	Treate	d dilut					ash. Prem	nix
TOTAL MEASURED DEP)		Metr	•	1440		190	1521	KCI/PI	HB/pol	ly at 1 -2	2 ppb t	o the act	ive sy	stem to cov	ver the
WEIGHT	,	•		ppg / S		9.1 1.09		1.09		active	ion rati syster	.e. DW t m to con	utal of npens	about 30 ate the e	vepor	added into ation with fl	ເກe low line
FUNNEL VISCOSITY (se	ec/qt)Al	PI				40	4	14	43	temp	of 148	deg F.					
RHEOLOGY 600 : 300 R				°F / 49		38 30	42	32	40 31							325 mesh x e don't have	
RHEOLOGY 200:100 R				^o F / 49		25 21	27	21	26 21			nesh sci					
	RPM			^o F / 49		12 10		11	13 11							ie at 50 gpr	m to
	P@			^o F / 49		8		10	9	lower	the MV	N from 9	9.1 pp	g to 9.0 p	pg.		
YIELD POINT (Ib / 10 GEL STRENGTH (Ib / 10				^o F / 49 0min/30r		22 9 11 13	-	22 12 14	22 10 12 14	_							
LOW SHEAR RATE VISC	-		10360/1	01111/301		9 11 1.	3 10	12 14	10 12 14	_				NAL CO			
n K (lb/100 ft ²)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				0.34 3.58	8 0.39	2.78	0.37 3.13							uction hole orting time	
API FILTRATE (cm ³ /	30 min.)					13		13	13.5							ile circulatir	
HPHT FILTRATE (cm ³ / 3				°F/	°C												
API : HPHT (Cake / 32nd	d in.)					2		2	2								
рН						9.0	g	9.0									
ALKALINITY MUD (Pm)						0.10	0.	.10	0.10								
ALKALINITY FILTRATE	(Pf / Mf)					0.18 0.5			0.18 0.7								
CHLORIDE (mg/L)		,	·• 、			35400		000	34500	_							
TOTAL HARDNESS AS C SULPHITE (mg/L)	ALCIUM	(mg /	/ L)			450		00	450 40	Wat	er So	urce	Turke	eys Nes	t		
KCL (% by Wt.)						40 4.5		40 1.0	40			000			<u>C)</u>	SUMM	
K+ (mg/L)						24318		616	21616				1	G (BBL FLUID LO		_	1
PHPA (Calc ppb)						0.25		.25	0.25		Nater		41 S.		1	Start Vol Received	
METHYLENE BLUE CAP	ACITY (pp	ob / %	by vol)			5.0 0.6	6.0	0.7	6.0 0.7	Chen				scharge		Backload	
BENTONITE ADDED	(pi	pb / %	by vol)			4 0.4	4	0.4	4 0.4		/SeaV	Nat		ownhole		Built	143
OTHER PRODUCTS ADD	ED (pp	ob / %	by vol)								Rec'o			ipping		Lost sub	
										Othe	r Built		0 0		-	5 Lost srf	79
OIL (% by V													·				
TOTAL WATER(% by V TOTAL SOLIDS(% by V	,					92.8 7.3	_	2.8 7.3	92.8 7.3		тот	AL MU	ID O	N RIG	(bbls	s):711	
SAND (% by V						1.5		.5	1.5								
	RODUCT U	JSAGI	E						DS CONTRO	DL EQL	JIPME	ENT			Tir	ne Break	down
			Received	Used	Clos	e Tyr	20			Hr		OF		UF		alysis Item	_
		411	0	141	270			Cone Size	Qty	0 0		0		0	Drilli		19
KCI (fine) 25 I	Kg Sack 1	1298	0	8	1290			Cone Size	Qty	0 0		0		0		ulating	2
Maxigel 25 I	Kg Sack	591	0	8	583			Carri		0		0	_	0	Othe	er	3
	•	136	0	4	132	Centrifug Centrifug	,-	SCOMO	DE-1000	24		8.8 0	+	15 0			_
	0	64	0	4	60	Centrifug				0		0	+	0			
	Kg Sack	96	0	2	94	- Degasse	-			0	_	SOLIDS	S ANA				
Xanthan Gum (P) 25 I	Kg Sack	91	0	2	89	Shale Sh	naker #1	230x23)x230x230	24	1 Sal	lt % 2.3	7 HG	S %			
						Shale Sh	naker #2	270x270)x270x270	24				S % 3.0	_		
1						_				0	Colic		-	lled 2.6 ids%			_
						_				0			301	uð 70			_
										0	1						
						0	URREN	СҮ		DAILYC	OST			CUM	JLATI	VE COSTS	3
						C	URREN	CY		DAILY C						VE COSTS 88.72	6

	14/ 6 -	TED	D 4 0				eport #	#			14 T	Fotal	MD		1521		D 1	759	m
\mathbf{c}	WA	IEK	BAS				g #					Fotal			1521	te			m
	Dail	lv Di	rilling	ı Rer	oor		ate			1/27/20				Drilled					m
RHEOCHEM		· , - ·		,		- Sp	oud Da	ate	1	1/14/20	13	nter	val Dep	oth Drill	ed		4	62	m
OPERATOR		llSearc							RACI			Ens							
REPORT FOR		y Holm	es/Don	Castle					RT FO	OR			id Dol						
WELL NAME AND No							FI	ELD								-	ATE		
			Rev 5						ATP5			Coc	per B				Jeens	land	
BHA BIT TYPE BIT SIZE (") Baker		T SIZE		EPTHS/	CASI	NG	HOLE	-		(BBL)	F	PUMP	917E	CIR	CULA		DATA CULATK		
8.5 Hughes PDC	0 0	0 0	0 15.25	Riser Leng	th	m		16	MIC	359		5.5 x	9 In				PRESS	^{DN} 1554	psi
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	⊣ 1.563 ⊨	16	Conductor	@	20 m	Active		Res	serve Pit	s	PUM		- % EFFIC			FACE BIT	7	min
DRILL PIPE TYPE	LENGTH		9.625	Surface @)	761 m	36 TOT		RCULAT	49 ING VOL	_		:o F-800 L/STK	9 STK /			DMS UP	29	
SIZE (") 4.5 HW DRILL COLLAR SIZE (")	LENGTH	38	m	ntermediat	te @	o m			721				0642	15	6	TOT CI	RC TIME	72	min
8 6.5	0	158	m	Prod. or LN	IR @	0 m		STOR	AGE TA	NKS			L / MIN 10.01	GAL / 42		E	CD	9.5	ppc
М		PERTIE	S													TY SP	ECIFIC	ATIONS	3
SAMPLE FROM			-			FL		Pi	t	Р	it	Mu		3.9-9.0 V)-45 YI		2 - 17
						4PHB	3	4PF		4PI	-		Los	9-14 p			9.5 K		%-3%
TIME SAMPLE TAKEN						8:00		16:		20:			200			MME			/0 0 /0
FLOWLINE TEMPERATU	RE			°F/	°C		64					Prer	nixed 12					active w	hen
TOTAL MEASURED DEP		2)		Met	•	1426	-	172	28									m while 4	
WEIGHT	,	,		ppg /					1.09	9.1	1.09	of th	is type a ammed	at Hutton (OCR Ap	Sst dep	oth 1730 -compl	umVD a eted an	as per DF d done.	
FUNNEL VISCOSITY (se	ec/at)	API		11.9		55		43		4		Dilut	ed activ	e with ligh	nt fresh	mud to	covert	he deplet	
RHEOLOGY 600 : 300 F		-	120	°F / 49	9 °C		34 4	40	30	39	29							oq (due to q viscosit	
RHEOLOGY 200 : 100 F				^o F / 49				26	21	25	21		/een 40-		-+0 UeC	, i) i O a		ษ ขาอบบอไไ	y ange
	RPM			^o F / 49				13	11	12	10							e from 35	
	л. Р@			^o F/ 49		11	-+	10			-							og to 9.0 j ue to fine	
YIELD POINT (Ib / 10				^o F / 49		23		20		1								m Drillsea	
GEL STRENGTH (Ib / 10			10sec/1			-	12 1				2 14	-		OPERA	TION			те	
LOW SHEAR RATE VISC	-	_SRV)								-		-							1.
n K (lb/100 ft ²)	(- /				0.40 2	.73 0	0.41	2.26	0.43	2.02	from	ng (silair 1521 m	ND to 17	g) 8.5 ir '59 mVI	n dia ma D with F	ain proc MR at	luction ho	ie time.
API FILTRATE (cm ³ /	30 min.))				13.5		13		1			-					-1 5	
HPHT FILTRATE (cm ³ /				°F/	°C				-		-								
API : HPHT (Cake / 32nd				• /	•	2		2		2	2								
pH	. ,					9.0		9.0	0	9.	0								
ALKALINITY MUD(Pm))					0.10		0.1	0	0.	10								
ALKALINITY FILTRATE	(Pf/Mf))				0.18 0).7 0).16	0.8	0.18	0.6	-							
CHLORIDE (mg/L)	. ,					33500	0	350	00	335		-							
TOTAL HARDNESS AS C	ALCIUM	(mg/	/L)			500		40	0	45	50								
SULPHITE (mg/L)												Wa	ater So	urce ⊺	urkeys	s Nest			
KCL (% by Wt.)						4.5		3.	3	4.	0		MUD A	CCOUN	ITING	(BBLS	S)	SUMM	ARY
K+ (mg/L)						24318	В	178	33	216	616	1	FLUID I		1	UID LOS	-	Start Vol	
PHPA (Calc ppb)						0.25						Dril	I Water		3 S.C.			Received	0
METHYLENE BLUE CAP	ACITY (p	opb / %	by vol)			5.0 0).6 5	5.0	0.6	5.0	0.6		mical		7 Disc		-	Backload	
BENTONITE ADDED	(ppb / %	by vol)			4 0).4	4	0.4	4	0.4	-	np/Sea\		0 Dow	-	18		170
OTHER PRODUCTS ADD)ED (p	ppb / %	by vol)									-	er Rec'		0 Trip			.ost sub	18
						-						_	er Built		0 Oth			ost sub	93
OIL (% by V	/ol)											Oth	er Bullt			er	5	031311	50
TOTAL WATER (% by V	'ol)					92.8		92.	.8	92	.8		тот	AL MU		BIG (bbls)	: 770	
TOTAL SOLIDS (% by V	/ol)					7.3		7.:	3	7.	3				0.0		5515)		
SAND (% by V	/ol)					1.5		1.	5	1.	5								
	RODUCT	USAG	E					:	SOLIC	os col	NTRO	LEC	UIPME	ENT			Time	Breakc	lown
P		Start	Received	Used	Clos	e -	Туре						Irs	OF	ι	JF	Anal	/sis Item	Hrs
	nitSize	070	0	163	107				one Size		,	0	0	0		0	Drilling		22
Product U	1 bbl	270		38	1252				one Size	0	Qty	0	0	0		0	Circula	iting	2
Product U Water		270 1290	0			Mud C	Cleaner						0	0	1	0			
Product U Water CKCl (fine) 25 I Microflow 2	1 bbl Kg Sack 20 Ltr	1290 48	0	16	32	- · · ·		-	·		n					-			1
Product U Water CKCl (fine) 25 I Microflow 2	1 bbl Kg Sack	1290			575	Centri	fuge 1	S	icomo [DE-100	0		24	8.8		15			
Product U Water - KCI (fine) 25 I Microflow 2 Maxigel 25 I	1 bbl Kg Sack 20 Ltr	1290 48	0	16		Centrit Centrit	fuge 1 fuge 2		icomo [DE-100	0		0	0		0			
Product Ul Water - KCI (fine) 25 I Microflow 2 Maxigel 25 I Rheopac L 25 I	1 bbl Kg Sack 20 Ltr Kg Sack	1290 48 583	0	16 8	575	Centrit Centrit Cutting	fuge 1 fuge 2 gs Drye		icomo [DE-100	0		0	0 0		0 0			
ProductUWater-KCI (fine)25 IMicroflow2Maxigel25 IRheopac L25 IIdcide-2020 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack	1290 48 583 132	0 0 0	16 8 4	575 128	Centrit Centrit Cutting Degas	fuge 1 fuge 2 gs Drye sser	er					0 0 0	0 0 SOLIDS	ANALY	0 0 'SIS			
ProductUWater-KCI (fine)25 IMicroflow2Maxigel25 IRheopac L25 IIdcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum	1290 48 583 132 85	0 0 0 0	16 8 4 2	575 128 83	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser Shaker	er r #1 2	30x230)x230x2	30		0 0 24 Sal	0 0	ANAL Y	0 0 ′SIS %			
ProductUWater-KCI (fine)25 IMicroflow2Maxigel25 IRheopac L25 IIdcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum Kg Sack	1290 48 583 132 85 94	0 0 0 0 0	16 8 4 2 2	575 128 83 92	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser	er r #1 2	30x230)x230x2	30		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 SOLIDS It % 2.7	ANALY HGS	0 0 /SIS % % 3.1			
ProductUWater-KCI (fine)25 IVicroflow2Maxigel25 IRheopac L25 Idcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum Kg Sack	1290 48 583 132 85 94	0 0 0 0 0	16 8 4 2 2	575 128 83 92	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser Shaker	er r #1 2	30x230)x230x2	30		0 0 24 Sal 24 0 Corre	0 0 SOLIDS	ANAL Y	0 7 SIS % 6 3.1 1 2.7			
ProductUWater-KCI (fine)25 IVicroflow2Maxigel25 IRheopac L25 Idcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum Kg Sack	1290 48 583 132 85 94	0 0 0 0 0	16 8 4 2 2	575 128 83 92	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser Shaker	er r #1 2	30x230)x230x2	30		0 0 24 24 0 Correc	0 0 SOLIDS It % 2.7	ANALY HGS LGS 9 Drilled	0 7 SIS % 6 3.1 1 2.7			
ProductUWater-KCI (fine)25 IMicroflow2Maxigel25 IRheopac L25 IIdcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum Kg Sack	1290 48 583 132 85 94	0 0 0 0 0	16 8 4 2 2	575 128 83 92	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser Shaker	er r #1 2 r #2 2	30x230 30x230)x230x2	30 30		0 0 24 24 0 0 Corre 0 Solid	0 0 SOLIDS It % 2.7	ANALY HGS LGS 9 Drilled	0 7 SIS % 6 3.1 1 2.7 %	LATIVE	COSTS	
ProductUWater-KCI (fine)25 IMicroflow2Maxigel25 IRheopac L25 Idcide-2020 IJK-161 LV25 I	1 bbl Kg Sack 20 Ltr Kg Sack Kg Sack _tr Drum Kg Sack	1290 48 583 132 85 94	0 0 0 0 0	16 8 4 2 2	575 128 83 92	Centrit Centrit Cutting Degas Shale	fuge 1 fuge 2 gs Drye sser Shaker Shaker CURF	er r #1 2 r #2 2	30x230 30x230)x230x2	30 30 	DAILY	0 0 24 24 0 Corre 0 Solid 0 0	0 0 SOLIDS It % 2.7	ANALY HGS LGS 9 Drilled	0 7 SIS % % % 3.1 1 2.7 % CUMU	LATIVE		

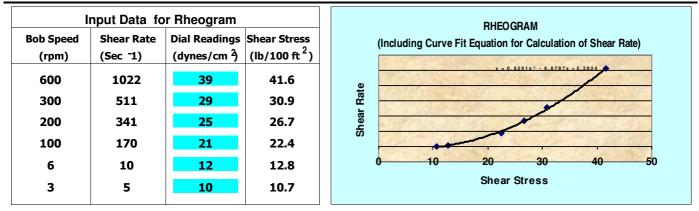


Operator: DrillSearch

DMR: 14

DRILLING FLUID RHEOLOGY AND HOLE CLEANING REPORT

(in accordance with API Recommended Practice 13D)



Hole Size	Cuttings Diameter	Particle Density	Mud Weight	Flow Rate	Riser Booster	FLOW REGIME (API 13D, Eqn 1)	REYNOLDS NUMBER (NRe)	FLOW REGIME
(inches)	(inches)	, (sg)	(ppg)	(GPM)	(GPM)	FOR DP IN OPEN HOLE	LAMINAR	
						FOR DP INSIDE CASING	924	LAMINAR
8.5	0.2	2.6	9.1	420	0	FOR DP INSIDE RISER	110	LAMINAR
	C	ALCULA	TION OF C		S SLIP VEL	OCITY (by Walker Maye	es (API) Method))
Boundry	Shear Rat	e:	308.3				p Velocity (Vs)	
Particle	Inticle Shear Stress: (1b/100^2) 12.1				DP IN OPEN		/ min m / se 0.40.00	

			Π / Sec	π / min	m / sec	m / min
Particle Shear Stress: (lb/100^2)	12.1	FOR DP IN OPEN HOLE	0.01	0.4	0.00	0.1
Particle Shear Rate:	0	FOR DP INSIDE CASING	0.01	0.4	0.00	0.1
Apparent Viscosity (cP)	578866	FOR DP INSIDE RISER	0.01	0.4	0.00	0.1

CUTTINGS TRANSPORT RATIO (Rt) (API 13D Equation 115)

Drill Pipe OD (in)	4.5		Cuttings Transport Ratio	Annular Velocity ft / min	Efficiency %
	0.755	FOR DP IN OPEN HOLE	1.00	198	100
Casing ID (in)	8.755	FOR DP INSIDE CASING	1.00	182	100
Riser ID (in)	15.3	FOR DP INSIDE RISER	0.99	48	99

	CUTTINGS	CARRYING INDEX (CCI)	(API 13D Equation	122)	
MW (ppg)	9.1		Cuttings Carrying Index		eqn 126
PV (cP) YP (lb/100 ft^2)	<u>10</u>	FOR DP IN OPEN HOLE	4.64	GOOD	n/a
n	0.231	FOR DP INSIDE CASING	4.28	GOOD	n/a
k	35.0	FOR DP INSIDE RISER	1.14	GOOD	n/a

	CUTTINGS CONC	ENTRATION IN ANNULU	S (Ca) (API 13D Eq	juation 114)	
			Cuttings Conc. Annulus %	Max Ca %	Max ROP (m/hr)
ROP (m/hr)	11	FOR DP IN OPEN HOLE	1.387	6	48
ROP (ft/hr)	36	FOR DP INSIDE CASING	1.387	6	48
		FOR DP INSIDE RISER	1.396	6	47

							Repo	rt#			15 T	Total ME)		1759	to	1926	m
	WA	TER	BAS	ED N	IUE)	Rig #					Total VD			1759	to	1926	m
			-		-		Date			1/28/2			pth Drille				167	m
RHEOCHEM	Da		rilling	ј ке	oor	[Spud	Date		1/14/2			Depth D		ł		629	m
OPERATOR	Dr	illSearc	h				•		TRAC			Ensign			-		020	
REPORT FOR			es/Don	Castle					ORT F				Doherty					
WELL NAME ANI		y nom	00/2011	ouono				FIEL		•		LOCA				STA	TE	
		iclops 1	{Rev \$	5}					ATP:	539			r Basin			Que	ensland	
BHA BIT T		ET SIZE		, DEPTHS/	CASI	NG	M	IUD V	OLUME	E (BBL		•		IRCL	JLATIO	N DA	ТА	
BIT SIZE (") Bake 8.5 Hughes		2 12 12		Riser Leng	th	r	m H0	OLE VO	L MU	JD INHC		PUMP SIZI 5.5 x 9				CIRCU PRI	LATION 16	63 psi
DRILL PIPE TYPE		ГН	16	Conductor		20 r	m Ad	454 ctive Pits	Re	393 serve P		PUMP M	1	FICIE	NCY	SURFA		7 min
SIZE (") 4.5 DRILL PIPE TYPE	LENGT	1.730	m 9.625	Surface @)	761	m	260		49		Emco F	-800	97	-	TO BI		7 min 31 min
SIZE (") 4.5 HW	LLINGI	38		Intermedia		0 "		TOTAL C	IRCULAT 653	ring vo	DL	BBL / S 0.064		K / MI 162		T CIRC		63 min
DRILL COLLAR SIZE (") 8 6.5	LENGT 0	TH 158	m	Prod. or LN	IR @	0 1	m	STO	RAGE T	ANKS		BBL/N	1IN GA	L / MI		ECD		.43 ppq
	MUD PRO								0			10.39		437 PROF	FRTV			
SAMPLE FROM	MODITIC		5				۶L		Pit		Pit	Mud W	/t 8.9-9.0				5 Yid Pt	0 - 15
MUD TYPE							чнв		PHB		РНВ		s =<9 cc		(Г)			%-2%
TIME SAMPLE TAK	FN						:00		6:00):00	APILO			D COM			7 0- ∠70
FLOWLINE TEMPER				°F/	°C	154	68					Premix I					FL from 13	cc to
TOTAL MEASURED		ID)		Met	-		345	19	921	19	926	=<9 cc a	at main pro	ducti	on hole.	Mainta	ined all othe	er mud
WEIGHT	(,		ppg /		9.1	1.09	9.1	1.09	9.1	1	propertient nearing	es in good TD.DW at	cond a rate	ແທກ. Min ອ 1.5 -2 h	imizec bls/hr	build-up m has been p	ua while remixed
FUNNEL VISCOSITY	(sec/qt)	API				-	13	-	42	-	42	into the	active (with	ו FLT	of 154 d	leg F)	to prevent g	elled-up
RHEOLOGY 600:3				°F /	оС	39	29	38	28	38	29						e weighted hot pipe trip	
RHEOLOGY 200:1	00 RPM			°F /	°C	25	20	24	20	24	20	Ran the	centrifuge	at ste	eady fee	drate a	t 55 gpm to	
RHEOLOGY 6:3	RPM			°F /	°C	10	8	12	10	11	9		sate solids aiting for th				arser mesh screen.	n screen
PLASTIC VISCOSIT		-		°F/	°C		0		10		9							
	b / 100 ft ²)			°F/	°C		19		18		20							
GEL STRENGTH (I			10sec/1	0min/30	min	9 1	11 13	10 [·]	12 14	9	11 14		OPE	RATI	ONAL	сом	IENTS	
LOW SHEAR RATE	VISCOSITY	(LSRV)										Drilling (sliding/rota	ting)	8.5 in dia	a hole	rom 1759 n	nVD to
n K (lb/100 ft ²)	2 / 00 1					0.43	-		1.80	0.39							ns up. POO e logs at re	
API FILTRATE (ci				0-	0-	1	9	8	3.5		8	time.		Oniu	mberger	wirein	e iogs at re	porting
HPHT FILTRATE (c)		°F/	°C		_	-			_	-						
API:HPHT (Cake / pH	32nd in.)						1		1 9.0		1).0	-						
рп ALKALINITY MUD(Pm \					-	.0		.0 .10		.0 .10	-						
	-	• •				0.18	-	-	0.6	0.15								
CHLORIDE (mg/l		,					500	-	500		500	_						
TOTAL HARDNESS		M (ma	/L)				00		50		00	-						
SULPHITE (mg/L			_,			-				-		Water	Source	Tur	keys Ne	est		
KCL (% by Wt.)	,					3	.3	3	3.0	3	3.0	MU	D ACCO	UNT	ING (BI	BLS)	SUM	MARY
K+ (mg/L	.)					17	833	16	212	16	212				FLUID			
PHPA (Calc ppb)												Drill Wa		48	S.C.E.		91 Receive	
METHYLENE BLUE						5.0	0.6	2.5	0.3	2.5	0.3	Chemio	cal		Dischar	ge	0 Backlos	ad 0
BENTONITE ADDED			by vol)			3	0.3	2	0.2	2	0.2	Sump/9	SeaWat	0	Downho	ble	24 Built	62
OTHER PRODUCTS	ADDED	(ppb / %	by vol)									Other F	Rec'd	0	Tripping	3	10 Lost su	ıb 24
												Other B	Built	0	Other		5 Lost sr	f 106
	by Vol)					~		-	0.0	-	0.0	-		-				
TOTAL WATER(% TOTAL SOLIDS(%							2.3 ′.8		2.3 7.8		2.8 7.3	T	OTAL N	UD	ON RI	G (bł	ols) : 702	2
•	by Vol)						.o 2		2			-						
	PRODUC		F				2					L EQUI	DMENT			- 1	ime Brea	kdown
Product	UnitSize	Start	Received	Used	Clos		т	_	UULI			Hrs	1		UF	_		
KCI (fine)	25 Kg Sack	1252	0	64	1188		Type sander		Cone Size		Qty	0 0	0F 0		<u> </u>		Analysis Ite rilling	m Hrs 18
Barite	25 Kg Sack	1562	0	48	1514		silter		Cone Size			0 0	0		0		rculating	2
Water	1 bbl	107	0	48	59	Mu	ud Clear	ner				0	0		0	١T	ipping	4
Maxigel	25 Kg Sack	575	0	40	535		entrifuge		Scomo	DE-10	00	24	8.8		14			
Rheopac L	25 Kg Sack	128	0	14	114		ntrifuge					0	0		0			
ldcide-20	20 Ltr Drum	83	0	10	73		ittings D	-				0	0					
Xanthan Gum (P)	25 Kg Sack	89	0	6	83		gasser		230x230	0x230v	230	24		-				
JK-161 LV	25 Kg Sack	92	0	4	88				230x230			24	Salt %	-	HGS %	3.2		
Defoam A	25 Kg Drum	12	0	1	11		0110					0	Corrected			3.0		
SI-70P	20 Ltr Drum	5	0	1	4							0	Solids %		Solids%			
												0			1			
							CL	JRREN	CY			DAILY CC			CU	MULA	TIVE COST	S
						AUD					\$7,714.9	90			\$62	992.64		
Rheochem Enginee	r: Rico Mac	ambac	_		Ċ	Office	: Rhe	ochem	Limite	d Tel	ephon	e: 089	4108214	_	Fax:	0894	108282	_
		/-																

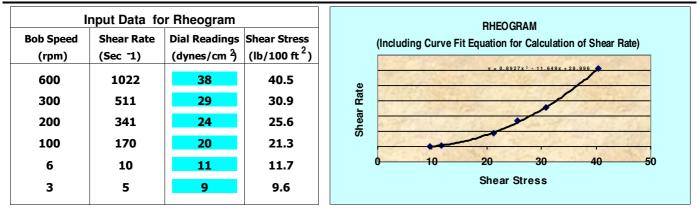


Operator: DrillSearch

DMR: 15

DRILLING FLUID RHEOLOGY AND HOLE CLEANING REPORT

(in accordance with API Recommended Practice 13D)



Hole Size	Cuttings Diameter	Particle Density	Mud Weight	Flow Rate	Riser Booster	FLOW REGIME (API 13D, Eqn 1)	REYNOLDS NUMBER (NRe)	FLOW REGIME
(inches)	(inches)	, (sg)	(ppg)	(GPM)	(GPM)	FOR DP IN OPEN HOLE	1164	LAMINAR
						FOR DP INSIDE CASING	1026	LAMINAR
8.5	0.2	2.6	9.1	437	0	FOR DP INSIDE RISER	128	LAMINAR
	C	ALCULA		CUTTINGS	S SLIP VEL	OCITY (by Walker Maye	es (API) Method))
Boundry	Shear Rat	e:	308.3				p Velocity (Vs)	
Particle	rticle Shear Stress: (b/100^2) 12.1				DP IN OPEN		/ min m / se 0.60.00	

			TT / Sec	tt / min	m / sec	m / min
Particle Shear Stress: (lb/100^2)	12.1	FOR DP IN OPEN HOLE	0.01	0.6	0.00	0.2
Particle Shear Rate:	0	FOR DP INSIDE CASING	0.01	0.6	0.00	0.2
Apparent Viscosity (cP)	218073	FOR DP INSIDE RISER	0.01	0.6	0.00	0.2

CUTTINGS TRANSPORT RATIO (Rt) (API 13D Equation 115)

Drill Pipe OD (in)	4.5		Cuttings Transport Ratio	Annular Velocity ft / min	Efficiency %
	0.755	FOR DP IN OPEN HOLE	1.00	206	100
Casing ID (in)	8.755	FOR DP INSIDE CASING	1.00	190	100
Riser ID (in)	15.3	FOR DP INSIDE RISER	0.99	50	99

	CUTTINGS	CARRYING INDEX (CCI)	(API 13D Equation	n 122)	
MW (ppg)	9.1		Cuttings Carrying Index		eqn 126
PV (cP) YP (lb/100 ft^2)	<u>9</u> 20	FOR DP IN OPEN HOLE	6.10	GOOD	n/a
n	0.254	FOR DP INSIDE CASING	5.63	GOOD	n/a
k	30.4	FOR DP INSIDE RISER	1.49	GOOD	n/a

	CUTTINGS CONCE	ENTRATION IN ANNULU	S (Ca) (API 13D E	quation 114)	
			Cuttings Conc. Annulus %	Max Ca %	Max ROP (m/hr)
ROP (m/hr)	12	FOR DP IN OPEN HOLE	1.456	6	49
ROP (ft/hr)	39	FOR DP INSIDE CASING	1.456	6	49
		FOR DP INSIDE RISER	1.470	6	49

	W۵.	TFR	B AS	ED M	Г		Repor Ria #	ι#				al MD al VD			1926 1926	to to	1926 1926	m m
			_		-		Date			910 1/29/2013		-	oth Drille		1920	10	0	m
RHEOCHEM	Dai	ly Di	rilling	j Rep	or	[–	Spud	Date		1/14/2013		· ·	Depth Dr		1		629	m
OPERATOR	Dri	llSearc	h				•					sign						
REPORT FOR			es/Don	Castle				REPO					Doherty					
VELL NAME AND N		,						FIELD				CAT				STA	TE	
	Trie	clops 1	Rev 5	i}					ATP5	539	Co	ope	r Basin			Que	ensland	
BHA BIT TYPE		T SIZE		EPTHS/C	ASI	NG		UD VO						IRCU	JLATIO			
BIT SIZE (") None 8.5		0 0 0 0	0 15.25	Riser Length		m		0LE VOL 454	MU	D INHOLE 393		IP SIZE x 9	Inches			CIRCUL		I
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	⊣ 1.730	16	Conductor)	20 m	Ac	tive Pits	Re	serve Pits				FICIE	NCY	SURFA		0
RILL PIPE TYPE	LENGTH		9.625	Surface @		761 m	T	125 OTAL CIF	RCULAT	43 ING VOL		nco F-		97 K/MI	N BC	DTTOMS		0
SIZE (") 4.5 HW	LENGTH	38	m	ntermediate	@	0 m			518						то	T CIRC	TIME	
8 6.5	0	158	m	Prod. or LNR	@	0 m		STOR	AGE TA	NKS	В	BBL / M	IN GA	L / MIN	N	ECD	9.	1
	MUD PROI	PERTIE	S										MUD P	ROP	PERTY	SPEC	IFICATION	IS
AMPLE FROM						Pi	t	Pi	t		М	lud Wi	t 8.9-9.0	Vis	(F)	40-4	5 Yid Pt	0 -
IUD TYPE						4PH	ΙB	4PH	ΙB		Α	PI Los	s =<9 cc	рН		9.0	KCI	%
IME SAMPLE TAKEN						8:0		16:							COMI			
LOWLINE TEMPERAT				°F / °	-	120	49	100	38								LV at 1 ppb a	
OTAL MEASURED DE	PTH (TMI))		Metre		129		192			su	ction.T	ake note:	The s	suction t	ank is i	solated from	the
				ppg / S	G		1.09		1.09								on has been (mudlogger i	
FUNNEL VISCOSITY (RHEOLOGY 600 : 300		API	100	°F / 49 0		42 38	29	42 40	2 30				nate) while			srop		
RHEOLOGY 600 : 300			-	^o F / 49 ^o F / 49 ^o	-	38 25	29 23	40 24	30 21		Ce	entrifue	ie on ston	ped o	peration	since	0400H. Cond	duct
RHEOLOGY 6:3	RPM			^o F / 49		25 12	23 10	24 11	21				e servicin					
PLASTIC VISCOSITY	cP @			^o F/ 49		12 9	-	10	-		_							
	100 ft ²)			^o F / 49		20		20										
GEL STRENGTH (Ib /			-	0min/30m		10 12			13		_		OPE		ONAL	COM	IENTS	
OW SHEAR RATE VIS	COSITY (I	LSRV)							_		PC						HA - done. R	liaa
K (lb/100 ft ²)						0.39	2.55	0.41	2.26		up	Schlu	mberger l	oggin	g tools a	t rig flo	or.Conducte	
API FILTRATE (cm ³						8		8.	5		wir	reline l	ogging at	report	ting time			
IPHT FILTRATE (cm ³	/ 30 min.))		°F/ (°C													
API:HPHT (Cake/32	nd in.)					1		1										
Н						9.0	-	9.	-									
ALKALINITY MUD (Pn	,					0.1	-	0.1	-									
ALKALINITY FILTRATE	(Pf/Mf))				0.16	0.6	0.15	0.5									
CHLORIDE (mg/L)			(1)			340		335										
OTAL HARDNESS AS	CALCIUM	(mg)	/L)			40	U	40	U		N	Vater	Source	Tur	keys N	est		
(CL (% by Wt.)						2.5	5	2.0	n			MIL	D ACCO				SUMN	
() (mg/L)						135	-	108	-						•	LOSSE		-
PHPA (Calc ppb)												rill Wa		100	S.C.E.		Start Vol 24 Received	_
METHYLENE BLUE CA	PACITY (opb/%	by vol)			2.5	0.3	2.5	0.3			hemic			S.C.E. Dischar		10 Backload	_
BENTONITE ADDED			by vol)			2	0.2	2	0.2				eaWat		Downho	3.	14 Built	1
OTHER PRODUCTS AD	DED (ppb / %	by vol)								-	ther R			Trippin		14 Lost sub	
												ther B			Other	9	20 Lost srf	-
DIL (% by	,												un	v	ounor			
OTAL WATER (% by						92.		92.	-			т	OTAL M	UD	ON RI	G (bb	ls) : 561	
TOTAL SOLIDS (% by						7.8		7.										
SAND (% by	PRODUCT		-			2		2		S CONTR						1 1	ime Break	day
				Lined	01		-		SOLIL									-
Product Vater	UnitSize 1 bbl	Start 59	Received 2000		Close 1959		<u>Type</u> ander		one Size	Qty	0	Hrs 0	OF 0		<u>UF</u> 0		nalysis Iten pping	n ⊦
	5 Kg Sack	1188	0		1180				one Size	Qty	0	0	0		0		gging	
CI (fine) 2	5 Kg Sack	535	0	8	527		Clean	er				0	0		0			
	5 Kg Sack	114	0	2	112	Cent	trifuge	1 S	como l	DE-1000		4	8.7		14			
laxigel 2	-	58	0	1	57		trifuge					0	0		0			\downarrow
axigel 24 heopac L 24	5 Kg Sack					Cuttings Dryer Degasser Shale Shaker #		ryer				0	0		0			_
axigel 24 heopac L 24	5 Kg Sack								20.000	12220-2020		0		1		5		
axigel 24 heopac L 24	5 Kg Sack											4	Salt %		IGS %	3.5		+
axigel 24 heopac L 24	5 Kg Sack							naker #2 230x230x2							LGS %	ა.უ		
laxigel 2 heopac L 2	5 Kg Sack					Shal						0	Corrected	35 1	Drillod	33		
axigel 24 heopac L 24	5 Kg Sack					Shal						0	Corrected Solids %		Drilled Solids%	3.3		
axigel 24 heopac L 24	5 Kg Sack					Shal										3.3		
axigel 24 heopac L 24	5 Kg Sack					Shal		RRENC	Y		DAIL	0	Solids %		Solids%		TIVE COSTS	3
axigel 24 heopac L 24	5 Kg Sack					Shal		RRENC AUD	Y			0	Solids %		Solids%	IMULA	TIVE COSTS 596.15	3

	WAT	ED I					Repo	rt#			Tota				1926 1926	to			m
						-	Rig # Date			918 1/30/2013		Total VD Daily Depth Drilled		1920	to) 1		m	
RHEOCHEM	Daily	y Dri	illing	j Re∣	por	F -	Spud	Data		1/30/2013		· · · · ·	Depth		d			_	m m
	Drill	Search					· .							Drine	u			0	
OPERATOR REPORT FOR		Search Holme		Castle					TRAC		Ens Dav		Dohei	rtv					
WELL NAME AND NO			0/2011	ouotio				FIEL					TION	. y		ST	ATE		
	Tric	lops 1	{Rev 5	5}					ATP	539	Cod	ope	r Bas	in		Qu	eens	sland	
BHA BIT TYPE		SIZE		EPTHS	CASI	NG		-	OLUME	· · ·				CIRC	ULATI	-			
BIT SIZE (") None 8.5		0 0 0 0 0 0		Riser Lenç	gth	n	n HO	OLE VOI 454	L MU	D INHOLE 409	PUMF 5.5 x		E Inche	s			ULATI	ON	ps
DRILL PIPE TYPE SIZE (") 4.5	LENGTH	1.926 m	16	Conductor	r @	20 m	n Ac	tive Pits	Re	serve Pits			DDEL %	EFFICI		SURF TO I		0	mi
DRILL PIPE TYPE	LENGTH		9.625	Surface @	2	761 m	n T	163 OTAL C	IRCULAT	75 ING VOL		ICO F-		97 STK / M		зотто		• 0	
SIZE (") 4.5 HW DRILL COLLAR SIZE (")	LENGTH	0 m		Intermedia	ate @	0 m	n		572						т	OT CIF	RC TIM	E	mi
8 6.5	0	0 m		Prod. or L	NR @	0 m	n	STC	RAGE TA	ANKS	BE	BL / M	lin	GAL / N	lin	EC	D	9.1	р
N	IUD PROPI	ERTIES											MUE	D PRO	PERT	(SPE	CIFI	CATIONS	S
SAMPLE FROM							it						t 8.9-		• •	40	-45 Y	ld Pt	0 - 1
						4P					AP	PI Los	s =<9				9.0 K	CI	%-2
TIME SAMPLE TAKEN	IDE			0-	. 0.0	-	00				Dro	mivo	d 60 bb					ot pill topk	
FLOWLINE TEMPERAT)		• •	/ ^o C tres	100	38 26				Incr	rease	d the N	/W from	n 8.7 pp	g to 9.	1 by 8	at pill tank Salt weight	ed
WEIGHT		/		ppg /		9.1	1.09											422 m - 13 has been	315 n
FUNNEL VISCOSITY (s	ec/qt)A	PI		rr3/		4		1	1	<u> </u>	retu	irned	to the	suction	on a sh	ort sys	stem.	Subseque	
RHEOLOGY 600:300			-	°F/4		38	28	L			#s 1	ı to 4	NOIOT.	ea the s	same se	quenc	e with	water a sp	pace
RHEOLOGY 200:100	RPM			^o F / 4		23	21												
	RPM			^o F/4		10	9												
	cP@		120	^o F/ 4	9°C	1					_								
YIELD POINT (Ib / 1 GEL STRENGTH (Ib / 1	00 ft ²)			0min/30		-	8 0 12				_								
LOW SHEAR RATE VIS			10000/1	011117/00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0 1	0 12								TIONAL				
n K (lb / 100 ft ²)		,				0.44	1.80											and acc. La Irface to bo	
API FILTRATE (cm ³ /	30 min.)						9				at 1	926	m.Circu	ulated w	vell clear	ned 1.	.5x ho	le volume.	
HPHT FILTRATE (cm ³ /	30 min.)			°F/	°C										at reporti			1926 mVD	10
API: HPHT (Cake / 32n	id in.)						1												
pH						9.	-				_								
ALKALINITY MUD (Pm ALKALINITY FILTRATE						0.15	10 0.5		1		_								
CHLORIDE (mg/L)	(17 101)						200												
TOTAL HARDNESS AS	CALCIUM	(ma / l	L)				50												
SULPHITE (mg/L)			,								W	ater	Sourc	ce Tu	urkeys I	Vest			
KCL (% by Wt.)						2.	.5					MU	D ACC	COUN	TING (E	BBLS)	SUMM	ARY
K + (mg / L)						135	510					FL	UID BUI	LT	FLUI	DLOS	SES	Start Vol	561
PHPA (Calc ppb)									1	-	Dri	ill Wa	ater	165	S.C.E.		15	Received	(
METHYLENE BLUE CAF BENTONITE ADDED		pb/%b pb/%b				2.5 2	0.3 0.2					emic			Discha	-		Backload	(
OTHER PRODUCTS AD		pb / % t	-			2	0.2						SeaWat		Down			Built	168
			<i>,</i> , , , ,										Rec'd		Trippi	-		Lost sub	12 70
OIL (% by	Vol)										Otr	her B	Sullt	U	Other		15	Lost srf	7
TOTAL WATER(% by						92	2.3					т	OTAL	MUD		lig (l	bls)	: 647	
TOTAL SOLIDS (% by						7.													
SAND (% by	VOL) PRODUCT (ISACE				2	2		SOLIE	OS CONTR				т			Tim	e Breakd	lown
			Received	Used	Clos	•	Туре		JOLIL			Hrs	0		UF			lysis Item	-
		1959	0	165	1794		sander	,	Cone Size	Qty	0	0	0 0		0		Loggi		8
Salt 25	Kg Sack	768	0	36	732		silter		Cone Size	Qty	0	0	C		0		Trippi	-	12
Sall 25	Kg Sack	83	0	3	80		d Clear		Cocre -	DE 1000		0	C)	0		Ceme	enting Job	4
	1						ntrifuge ntrifuge		SCOLUO	DE-1000		0	C	,	0				
		1					ttings D				-+	0	0		0				
					1	Dec	gasser					0	SO	LIDS A	NALYS	IS			
											E	10							1
						Sha)x230x230		10	Salt %	2.4	HGS %				_
						Sha)x230x230)x230x230		10			LGS %	3.3			
						Sha						10 0	Salt %	d 3.3					
						Sha						10	Corrected	d 3.3	LGS % Drilled	3.3			
						Sha	ale Sha		230x230		DAILY	10 0 0	Corrected Solids %	d 3.3	LGS % Drilled Solids%	3.3 3.1	ATIV	E COSTS	
						Sha	ale Sha	ker #2	230x230			10 0 0	Corrected Solids %	d 3.3	LGS % Drilled Solids%	3.3 3.1 UMUL	_ATIV		

					Repo	rt #	18	Total MI	D		1926	to) .	1926	m
	WATER	BASED	MU	כ	Rig #		918	Total VI	כ		1926	to) ·	1926	m
	Dailv Dr	illing Re	epor	t	Date		1/31/2013	Daily De	•						m
RHEOCHEM	-	-		•	Spud		1/14/2013	Interval	Depth	Drille	d			0	m
OPERATOR	DrillSearc					CONTRA		Ensigr							
REPORT FOR WELL NAME AND No.		es/Don Cast	е			REPORT FIELD	FOR	David LOCA		ty		ст	ATE		
WELL NAME AND NO.	Triclops 1	{Bev 5}					P539	Coope	-	in				sland	
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n K(lb / 100 ft ²) API FILTRATE (cm ³ / 3	20 min)			0.34	3.58 8									pectively) bes. RIH C	
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KCL (% by Wt.) K + (mg / L) PHPA (Calc ppb) METHYLENE BLUE CAP/ BENTONITE ADDED DTHER PRODUCTS ADD DIL (% by V TOTAL WATER (% by V SAND (% by V Product Ur	(ppb / % ED (ppb / % /ol) /ol) /ol) RODUCT USAGE nitSize Start	by vol) by vol)		1.0 0.5 92 7 1 9 De De De Mu Ce Cu Cu De Sh	0.1 0.1 0.1 2.8 7.3 .5 Type sander silter ud Clear entrifuge entrifuge tttings D gasser ale Sha ale Sha	cone Si Cone Si Cone Si 1 Scom 2 ryyer ker #1 230x2 ker #2 230x2	ze Qty Ze Qty o DE-1000	Brill W Chemi Sump/ Other I O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	ater cal SeaWat Rec'd Built OTAL PMENT OTAL OI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C C C C C C C C C C C C C C C C C C C	Disch Down Trippi Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other Other	arge hole ing r RIG (I SIS 3.5 3.4	20 10 30 10 bbls Ceme Trippi	Received Backload Built Lost sub Lost srf) : 752 e Breakce lysis Item enting Job ng	17 7 10 12

Appendix 3 – Deviation Survey Report

PATHEINDER

Drill Search - Triclops-1 FINAL Survey Geodetic Report (Def Survey)

					(Def S	urvey)							
Report Date:	J	lanuary 29, 2013 - 04:3	34 PM			Survey / DLS Computation	: 1	Minimum Curvature / Lul	binski				
Client:		Drill Search				Vertical Section Azimuth:		0.000 ° (Grid North)					
Field:		ATP 539				Vertical Section Origin:		0.000 m, 0.000 m RKB					
Structure / Slot: Well:		riclops-1 / Triclops-1 riclops-1				TVD Reference Datum: TVD Reference Elevation:		KKB 146.150 m above MSL					
Borehole:		riclops-1				Seabed / Ground Elevation		141.000 m above MSL					
UWI / API#:		Jnknown / 13AUS0009				Magnetic Declination:		7.250 °					
Survey Name:		Drill Search - Triclops-1	FINAL			Total Gravity Field Strengt	h:	998.2823mgn (9.80665	Based)				
Survey Date: Tort / AHD / DDI / ERD Ratio:		lanuary 29, 2013 32.149 ° / 33.274 m / 3.	545 / 0 017			Total Magnetic Field Streng Magnetic Dip Angle:		53856.332 nT -57.346 °					
Coordinate Reference System		GDA94/MGA94 Zone 5			Grid 94	Declination Date:		January 25, 2013					
Location Lat / Long:		6 25° 59' 43.42988", E				Magnetic Declination Mode		HDGM 2012					
Location Grid N/E Y/X: CRS Grid Convergence Angle:		V 7124803.000 m, E 52 0.1072 °	24475.000 m			North Reference: Grid Convergence Used:		Grid North ·0.1072 °					
Grid Scale Factor:		.9996074				Total Corr Mag North->Grid							
Grid Scale Factor.	u	.9990074				Local Coord Referenced To							
						Local Coord Referenced 1	0:	Structure Reference Poi	.nt				
Comments	MD	Incl (*)	Azim Grid (°)	TVD	TVDSS	VSEC	NS (m)	EW (m)	DLS	Northing	Easting	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Triclops-1 Tie-In	(m) 0.00	0.00	0.00	(m) 0.00	(m) -146.15	(m) 0.00	0.00	0.00	(*/30m) N/A	(m) 7124803.00		S 25 59 43.43	E 141 14 40.38
	137.00 328.00	0.25	247.36 337.36	137.00 328.00	-9.15 181.85	-0.12 0.11	-0.12 0.11	-0.28 -0.82	0.05	7124802.88 7124803.11	524474.72 524474.18	S 25 59 43.43 S 25 59 43.43	E 141 14 40.37 E 141 14 40.35
	348.00	0.25	332.36	348.00	201.85	0.19	0.19	-0.86	0.08	7124803.11	524474.18	S 25 59 43.43	E 141 14 40.35
	367.00	0.25	137.36	367.00	220.85	0.19	0.19	-0.85	0.78	7124803.19	524474.15	S 25 59 43.42	E 141 14 40.35
	386.00 398.00	0.50	92.36 2.36	386.00 398.00	239.85 251.85	0.16 0.21	0.16	-0.74 -0.68	0.58	7124803.16 7124803.21	524474.26 524474.32	S 25 59 43.42 S 25 59 43.42	E 141 14 40.35 E 141 14 40.36
	406.00	0.75	47.36	406.00	259.85	0.28	0.28	-0.64	1.99	7124803.28	524474.36	S 25 59 43.42	E 141 14 40.36
	425.00	0.75	47.36	425.00	278.85	0.45	0.45	-0.46	0.00	7124803.45	524474.54	S 25 59 43.42	E 141 14 40.36
	444.00 455.00	0.50 0.50	37.36 347.36	443.99 454.99	297.84 308.84	0.60 0.68	0.60 0.68	-0.32 -0.30	0.43 1.15	7124803.60 7124803.68	524474.68 524474.70	S 25 59 43.41 S 25 59 43.41	E 141 14 40.37 E 141 14 40.37
	464.00	0.75	55.36	463.99	317.84	0.76	0.76	-0.26	2.43	7124803.76	524474.74	S 25 59 43.41	E 141 14 40.37
	483.00 502.00	0.50 0.75	17.36 357.36	482.99 501.99	336.84 355.84	0.91 1.11	0.91 1.11	-0.13 -0.11	0.74 0.52	7124803.91 7124804.11	524474.87 524474.89	S 25 59 43.40 S 25 59 43.39	E 141 14 40.38 E 141 14 40.38
	522.00	0.50	27.36	521.99	375.84	1.32	1.32	-0.08	0.61	7124804.32	524474.92	S 25 59 43.39	E 141 14 40.38
	541.00 580.00	0.75 1.00	27.36 357.36	540.99 579.98	394.84 433.83	1.50 2.07	1.50 2.07	0.01 0.12	0.39 0.39	7124804.50 7124805.07	524475.01 524475.12	S 25 59 43.38 S 25 59 43.36	E 141 14 40.38 E 141 14 40.38
	580.00 599.00	1.00	357.36	579.98 598.98	433.83 452.83	2.07	2.07	0.12	0.39	7124805.36		S 25 59 43.36 S 25 59 43.35	E 141 14 40.38 E 141 14 40.39
	618.00	1.00	67.36	617.98	471.83	2.56	2.56	0.46	0.82	7124805.56	524475.46	S 25 59 43.35	E 141 14 40.40
	657.00 674.00	1.00 1.00	347.36 92.36	656.97 673.97	510.82 527.82	3.02 3.16	3.02 3.16	0.70	0.99 2.80	7124806.02 7124806.16	524475.70 524475.82	S 25 59 43.33 S 25 59 43.33	E 141 14 40.41 E 141 14 40.41
	680.00	0.75	2.36	679.97	533.82	3.20	3.20	0.87	6.25	7124806.20	524475.87	S 25 59 43.33	E 141 14 40.41
	695.00 715.00	0.50 1.00	307.36 312.36	694.97 714.97	548.82 568.82	3.34 3.51	3.34 3.51	0.82	1.24 0.76	7124806.34 7124806.51	524475.82 524475.63	S 25 59 43.32 S 25 59 43.32	E 141 14 40.41 E 141 14 40.40
	716.00	0.75	22.36	715.97	569.82	3.52	3.51	0.62	30.73	7124806.51	524475.62	S 25 59 43.32	E 141 14 40.40
	734.00	1.00	12.36	733.97	587.82	3.78	3.78	0.70	0.49	7124806.78	524475.70	S 25 59 43.31	E 141 14 40.41
	753.00 792.00	1.00 0.70	52.36 94.85	752.97 791.96	606.82 645.81	4.05 4.23	4.05 4.23	0.87 1.37	1.08 0.52	7124807.04 7124807.23	524475.87 524476.37	S 25 59 43.30 S 25 59 43.29	E 141 14 40.41 E 141 14 40.43
	801.60	0.44	347.27	801.56	655.41	4.26	4.26	1.42	2.91	7124807.26	524476.42	S 25 59 43.29	E 141 14 40.43
	811.30 830.70	0.26	355.57 2.96	811.26 830.66	665.11 684.51	4.32 4.41	4.32 4.41	1.41 1.41	0.58	7124807.32 7124807.41	524476.41 524476.41	S 25 59 43.29 S 25 59 43.29	E 141 14 40.43 E 141 14 40.43
	850.00	0.44	124.82	849.96	703.81	4.41	4.41	1.48	0.96	7124807.41	524476.48	S 25 59 43.29	E 141 14 40.43
	888.70 908.00	1.23 1.41	133.38 141.98	888.66 907.95	742.51 761.80	4.04 3.71	4.04 3.71	1.90 2.20	0.62	7124807.04 7124806.71	524476.90 524477.20	S 25 59 43.30 S 25 59 43.31	E 141 14 40.45 E 141 14 40.46
	946.50	1.41	159.55	946.44	800.29	2.90	2.90	2.65	0.34	7124805.89		S 25 59 43.34	E 141 14 40.48
	985.00	1.49	169.95 175.36	984.93	838.78	1.96 1.00	1.96	2.91 3.03	0.21	7124804.96 7124804.00	524477.91	S 25 59 43.37	E 141 14 40.48 E 141 14 40.49
	023.40 062.20	1.41 1.67	175.36	1023.32 1062.10	877.17 915.95	-0.04	1.00 -0.04	3.03	0.12 0.21	7124804.00		S 25 59 43.40 S 25 59 43.43	E 141 14 40.49 E 141 14 40.49
1	100.80	2.02	185.30	1100.68	954.53	-1.28	-1.28	3.04	0.32	7124801.72	524478.04	S 25 59 43.47	E 141 14 40.49
	139.40 178.10	2.37 2.37	177.39 177.09	1139.25 1177.92	993.10 1031.77	-2.76 -4.36	-2.76 -4.36	3.02 3.09	0.36	7124800.24 7124798.64	524478.02 524478.09	S 25 59 43.52 S 25 59 43.57	E 141 14 40.49 E 141 14 40.49
1	216.80	3.43	177.71	1216.57	1070.42	-6.31	-6.31	3.18	0.82	7124796.69	524478.18	S 25 59 43.63	E 141 14 40.50
	255.30 274.60	2.81 2.73	173.33 168.62	1255.01 1274.29	1108.86 1128.14	-8.40 -9.32	-8.40 -9.32	3.34 3.48	0.52	7124794.60 7124793.68	524478.34 524478.48	S 25 59 43.70 S 25 59 43.73	E 141 14 40.50 E 141 14 40.51
1	294.00	2.55	163.33	1293.67	1147.52	-10.19	-10.19	3.70	0.47	7124792.82	524478.70	S 25 59 43.76	E 141 14 40.51
	303.60	1.85	158.99	1303.26	1157.11	-10.54 -10.77	-10.54	3.81	2.25	7124792.47		S 25 59 43.77	E 141 14 40.52
	313.20 322.90	1.23 0.88	151.31 142.34	1312.86 1322.56	1166.71 1176.41	-10.77 -10.92	-10.77 -10.92	3.92 4.01	2.04 1.19	7124792.23 7124792.08	524478.92 524479.01	S 25 59 43.78 S 25 59 43.78	E 141 14 40.52 E 141 14 40.53
1	332.60	0.70	139.31	1332.26	1186.11	-11.03	-11.03	4.10	0.57	7124791.98	524479.10	S 25 59 43.79	E 141 14 40.53
	342.20 351.90	0.53	132.53 123.62	1341.86 1351.56	1195.71 1205.41	-11.10 -11.14	-11.10 -11.14	4.17 4.22	0.58 1.09	7124791.90 7124791.86	524479.17 524479.21	S 25 59 43.79 S 25 59 43.79	E 141 14 40.53 E 141 14 40.53
1	371.30	0.18	101.48	1370.96	1224.81	-11.16	-11.16	4.27	0.11	7124791.84	524479.27	S 25 59 43.79	E 141 14 40.53
	380.90 390.70	0.35	93.29 93.86	1380.55 1390.35	1234.40 1244.20	-11.17 -11.17	-11.17 -11.17	4.31 4.36	0.54	7124791.84 7124791.83	524479.31 524479.36	S 25 59 43.79 S 25 59 43.79	E 141 14 40.54 E 141 14 40.54
1	400.30	0.44	91.70	1399.95	1253.80	-11.17	-11.17	4.41	0.81	7124791.83	524479.41	S 25 59 43.79	E 141 14 40.54
1	419.60	0.53	92.36 87.59	1419.25 1428.95	1273.10 1282.80	-11.18 -11.18	-11.18	4.58	0.14	7124791.83 7124791.83	524479.57 524479.67	S 25 59 43.79 S 25 59 43.79	E 141 14 40.55
	429.30 448.60	0.62	87.59 78.86	1428.95 1448.25	1282.80	-11.18 -11.16	-11.18 -11.16	4.67 4.85	0.32	7124791.83 7124791.85	524479.67 524479.85	S 25 59 43.79 S 25 59 43.79	E 141 14 40.55 E 141 14 40.56
	458.20	0.44	72.88	1457.85	1311.70	-11.14	-11.14	4.92	0.14	7124791.86	524479.92	S 25 59 43.79	E 141 14 40.56
	467.90 477.60	0.44 0.62	64.01 20.79	1467.55 1477.25	1321.40 1331.10	-11.11 -11.05	-11.11 -11.05	4.99 5.04	0.21 1.31	7124791.89 7124791.96	524479.99 524480.04	S 25 59 43.79 S 25 59 43.79	E 141 14 40.56 E 141 14 40.56
1	487.20	0.79	348.40	1486.85	1340.70	-10.93	-10.93	5.05	1.33	7124792.07	524480.05	S 25 59 43.78	E 141 14 40.56
	496.70 515.80	1.23 1.49	338.58 334.75	1496.35 1515.44	1350.20 1369.29	-10.78 -10.36	-10.78 -10.36	5.00 4.82	1.49 0.43	7124792.23 7124792.64	524479.99 524479.81	S 25 59 43.78 S 25 59 43.77	E 141 14 40.56 E 141 14 40.55
1	535.00	1.41	326.88	1534.64	1388.49	-9.94	-9.94	4.58	0.33	7124793.07	524479.58	S 25 59 43.75	E 141 14 40.55
	554.30	1.32	322.23	1553.93	1407.78	-9.56	-9.56	4.31	0.22	7124793.44		S 25 59 43.74	E 141 14 40.54
	573.50 583.10	1.32	319.45 320.67	1573.13 1582.72	1426.98 1436.57	-9.22 -9.05	-9.22 -9.05	4.04 3.89	0.10	7124793.78 7124793.95	524479.03 524478.89	S 25 59 43.73 S 25 59 43.72	E 141 14 40.53 E 141 14 40.52
1	592.60	1.41	322.46	1592.22	1446.07	-8.87	-8.87	3.75	0.31	7124794.13	524478.75	S 25 59 43.72	E 141 14 40.52
	611.70 631.00	1.06 0.88	302.07 306.20	1611.32 1630.62	1465.17 1484.47	-8.59 -8.41	-8.59 -8.41	3.46 3.19	0.87	7124794.41 7124794.59		S 25 59 43.71 S 25 59 43.70	E 141 14 40.51 E 141 14 40.50
1	650.20	1.06	315.80	1649.81	1503.66	-8.20	-8.20	2.95	0.38	7124794.81	524477.95	S 25 59 43.70	E 141 14 40.49
	659.90	0.88	316.77	1659.51	1513.36	-8.08	-8.08	2.83 2.74	0.56	7124794.93	524477.83	S 25 59 43.69 S 25 59 43.69	E 141 14 40.48 E 141 14 40.48
	669.60 679.30	0.97 1.06	331.96 334.98	1669.21 1678.91	1523.06 1532.76	-7.95 -7.80	-7.95 -7.80	2.74 2.67	0.80 0.32	7124795.05 7124795.21		S 25 59 43.69 S 25 59 43.68	E 141 14 40.48 E 141 14 40.48
	698.70	1.41	336.32	1698.30	1552.15	-7.42	-7.42	2.49	0.54	7124795.59		S 25 59 43.67	E 141 14 40.47
	718.00 727.66	1.32 1.32	329.29 323.97	1717.60 1727.26	1571.45 1581.11	-7.01 -6.82	-7.01 -6.82	2.29 2.16	0.30 0.38	7124796.00 7124796.18		S 25 59 43.66 S 25 59 43.65	E 141 14 40.46 E 141 14 40.46
1	747.00	1.41	319.35	1746.59	1600.44	-6.46	-6.46	1.88	0.22	7124796.54	524476.88	S 25 59 43.64	E 141 14 40.45
	766.20 785.60	1.23 1.14	307.68 300.71	1765.79 1785.18	1619.64 1639.03	-6.16 -5.93	-6.16 -5.93	1.56 1.23	0.50 0.26	7124796.85 7124797.07		S 25 59 43.63 S 25 59 43.62	E 141 14 40.44 E 141 14 40.42
	785.60	1.14 1.32	300.71	1785.18 1794.98	1639.03	-5.93 -5.82	-5.93 -5.82	1.23	0.26	7124797.07 7124797.18	524476.05	S 25 59 43.62 S 25 59 43.62	E 141 14 40.42
1	805.10	1.41	300.93	1804.68	1658.53	-5.70	-5.70	0.85	0.28	7124797.30	524475.85	S 25 59 43.62	E 141 14 40.41
	824.40 843.40	1.32 1.14	299.88 293.37	1823.97 1842.97	1677.82 1696.82	-5.47 -5.29	-5.47 -5.29	0.45	0.15 0.36	7124797.53 7124797.71		S 25 59 43.61 S 25 59 43.60	E 141 14 40.40 E 141 14 40.38
1	862.80	0.97	298.57	1862.36	1716.21	-5.13	-5.13	-0.23	0.30	7124797.87	524474.77	S 25 59 43.60	E 141 14 40.37
	872.50 882.00	1.06	302.83 302.87	1872.06	1725.91	-5.04	-5.04	-0.38	0.36	7124797.96		S 25 59 43.59 S 25 59 43 59	E 141 14 40.37 E 141 14 40.36
	002.UU	1.06		1881.56	1735.41 1745.11	-4.95 -4.85	-4.95	-0.53	0.00	7124798.05 7124798.15		S 25 59 43.59 S 25 59 43.59	E 141 14 40.36 E 141 14 40.36
1	891.70	1.06	305.89	1891.26	1745.11	-4.85	-4.85	-0.67	0.17	/124/98.15	324474.33	5 25 59 43.59	
1	891.70 911.00	1.06	300.99	1910.55	1764.40	-4.65	-4.65	-0.97	0.14	7124798.35	524474.03	S 25 59 43.58	E 141 14 40.35
1 1 1 1 1 1 1	891.70										524474.03 524473.97		

Survey Type:

Def Survey

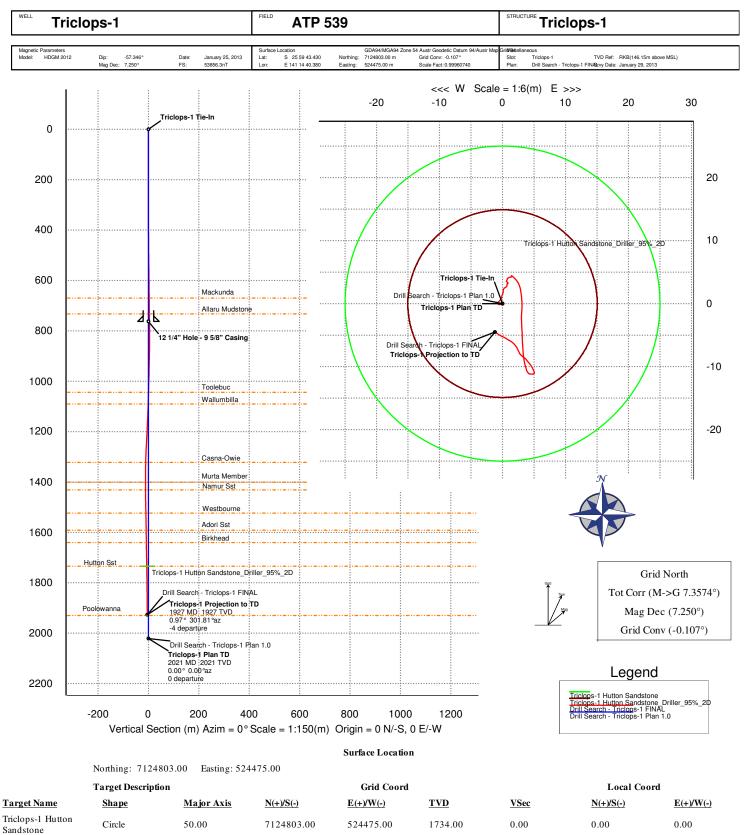
ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma Survey Error Model: Survey Program:

Description	MD From (m)	MD To (m)	EOU Freq (m)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	5.150	Act Stns	12.250	9.625	SLB_PHOTO-MSS-Depth Only	Triclops-1 / Drill Search - Triclops- 1 FINAL
	5.150	762.600	Act Stns	12.250	9.625	SLB_PHOTO-MSS	Triclops-1 / Drill Search - Triclops- 1 FINAL
	762.600	1914.090	Act Stns	8.500	7.000	SLB_INC_ONLY<10	Triclops-1 / Drill Search - Triclops- 1 FINAL
	1914.090	1927.090	Act Stns	8.500	7.000	SLB_BLIND+TREND	Triclops-1 / Drill Search - Triclops- 1 FINAL



A Schlumberger Company

Drill Search



0.00		0.00	0.00
E(+)/W(-)	DLS		Quality Control Date Drawn: January 29, 2013 04:50:29 PM
0.00			Drawn by: Jessica Ortiz
-1 21	0.00		Checked by: Troy Narvaez

Client OK:

Triclops-1 Hutton

Critical Point

Triclops-1 Tie-In

Projection to TD

Triclops-1

_2D

Sandstone_Driller_95% Polygon

<u>MD</u>

0.00

1927.09

0.00

AZIM

301.81

0.00

INCL

0.00

0.97

7124803.00

TVD

0.00

1926.64

Critical Points

524475.00

<u>VSEC</u>

0.00

-4.51

1734.00

-1.21

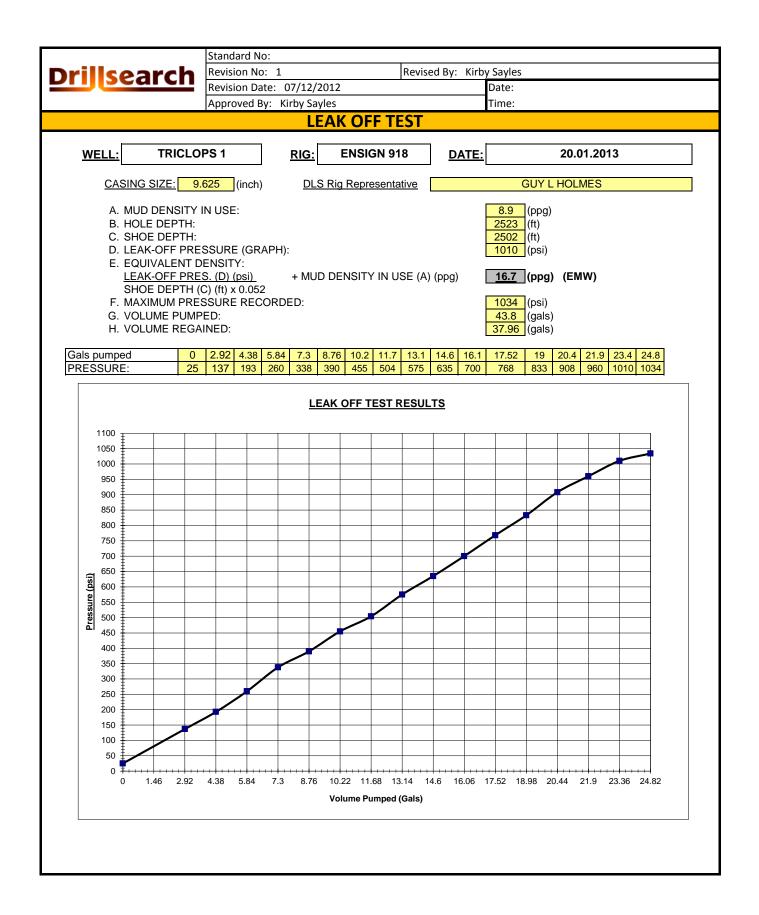
0.00

<u>N(+) / S(-)</u>

0.00

-4.51

Appendix 4 – Leak Off Test Report



Appendix 5 – Casing and Cementing Report



Oil and Gas Production and Exploration Level 16 / 55 Clarence Street Sydney NSW 2000

Cooper Basin Onshore

Triclops #1 (Oil Well)

Post Job Report

Prepared for Martik Berberian and Matthew Siegmann 5th March 2013 Revision: 2.0

Submitted by Ekkalak Wuthayavanich



Tuesday 05th March 2013

TO: Drillsearch

ATT: Martik Berberian and Matthew Siegmann

RE: Triclops #1 – Post Job Report Rev 2.0

Dear Martik, Matthew

Please find attached a Post Job Report for Triclops #1–9-5/8" Surface Casing cement job and the P&A cement job.

Included are the following:

- 9-5/8" Surface Casing to ≈750m
 - Lead Slurry planned to be 11.8 ppg; TOC is at surface with 75% OH Excess.

- Tail Slurry planned to be 15.8 ppg to 100m above the 9 5/8 with 75% OH Excess Note Excess to Be Reviewed before the job. Amount of Cement to be requested from Drillsearch coman.

- Job Summary
 - Job Log
 - Key Performance Indicators
 - Customer Satisfaction Survey
- Job Charts.
- Plug and Abandonment
 - Plug #1, 2 and 3 are planned to be 15.6 ppg slurry HTB Cement blend with 20% OH excess based on calliper data.
 - Plug #4 and 5 are planned to be 15.8 ppg slurry Class "G" with 20% OH excess based on calliper data

Note Excess to Be Reviewed before the job. Amount of Cement to be requested from Drillsearch co-

man. •

- Job Summary
 - Job Log
 - Key Performance Indicators
 - Customer Satisfaction Survey
- Job Charts

Regards,

Ekkalak Wuthayavanich Technical Professional Cementing

Revision History

Rev. 0.0	Initial End of the well report
Rev 1.0	Updated with actual job volumes
Rev 2.0	Updated with Plug#3 graph

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NF-6

1.0 Proposed 9-5/8" Surface Casing

0.125

JOB PARAMETERS			
Casing measured depth	: 750m l	BHST temperature:	54°C
True vertical depth:		BHCT temperature:	41°C
Depth to top lead:		Drilling mud type:	WBM -KCI+Polymer
Depth to top tail:	650m l	Drilling mud density:	≈8.90ppg
WELLBORE			
Casing/Tubing 0-750m 95	/8in 36ppf Casing (K	-55 BTC)	
0-700m 90		-35 610)	
Annulus			
0-750m 12.	25in open hole (75%	excess)	
		-	
SPACERS			
Spacer - 40.0bbl Fresh			
Freshwater	42.00 gal/bbl	(125m OH annular fill / 5m	in contact time)
Contact times are based on the	displacement rate.		
LEAD CEMENT - Econ	oCem™		
Composition		Properties	
Adelaide Brighton Class	s G	Surface density:	11.80 ppg
Bentonite	12.00 %BWOC	Surface yield:	2.77 ft³/sk
HR-5	0.26 %BWOC	Total mixing fluid:	16.61 gal/sk
Freshwater	16.61 gal/sk	Laboratory Report REF :	
NF-6	0.125		
Note that %BWOC are based of	n a 94 lb sack		
TAIL CEMENT - HalCe	mTM		
Composition		Properties	
Adelaide Brighton Class	G	Surface density:	15.80 ppg
Freshwater	5.08 gal/sk	Surface yield:	1.15 ft³/sk
HR-5	0.09% BWOC	Total mixing fluid:	5.08 gal/sk
	0.0370 DWOC		0.00 ga#3k

Laboratory Report REF :

HALLIBURTON

VOLUME CALCULATIONS		
Lead Cement		
9 5/8in Casing / 12.25in hole volume	650 m x 0.1830 bbl/m	119.0 bbl
9 5/8in Casing / 12.25in hole excess	0.75 x 119.0 bbl	89.2 bbl
	Total lead slurry volume	=208.2 bbl
Quantity of lead cement	208.2 bbl x 5.6146 / 2.77 ft³/sk	422 sacks
Quantity of lead mix fluid	422 sacks x 16.61 gal/sk	166.9 bbl
Tail Cement		
9 5/8in Casing / 12.25in hole volume	100 m x 0.1830 bbl/m	18.3 bbl
9 5/8in Casing / 12.25in hole excess	0.75 x 18.3 bbl	13.7 bbl
Shoe track volume	12 m x 0.2536 bbl/m	3.0 bbl
	Total tail slurry volume	=35.1 bbl
Quantity of tail cement	35.1 bbl x 5.6146 / 1.15 ft³/sk	171 sks
Quantity of tail mix fluid	171 sks x 5.08 gal/sk	20.7 bbl
Displacement		
9 5/8in Casing volume	738 m x 0.2536 bbl/m	187.2 bbl
	Total displacement volume	=187.2 bbl

The final job calculations are to be completed on location by cementer, based on actual well parameters. <u>All</u> calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES

	Volume (bbl)	Rate (bbl/min)	Time (min)
Make up lines	N/A	N/A	` 30´
Rig circulate 2 x Hole volume:	860.9	8.0	108
CMT Unit pump Fresh Water + Test lines	40.0	8.0	5
Release bottom plug:	N/A	N/A	5
Mix & pump lead cement:	208.2	5.0	42
Mix & pump tail cement:	35.1	4.0	9
Release top plug + Flush Lines	N/A	N/A	10
CMT Unit pump displacement:	187.2	8.0	23

Total job time (including circulation):	232 min	3hr 52min
Minimum lead cement thickening time (with 2hr safety factor):	204 min	3hr 24min
Minimum tail cement thickening time (with 2hr safety factor):	162 min	2hr 42min

2.0 9-5/8" Job Summary

LIAI	HALLIBURTON				Star	Start Date mm/dd/yy		End Date mm/dd/yy		
MAL					17-	Jan-13		19-Jan-12		
		Cemen	ting Services	s Post Job Rep	ort Sum	mary				
WELL Name & Number		RIG Name & Nu	mber	HES REP		0	USTOMER RE	P		
Triclops# 1		Ensign # 18		Scott Redding	Scott Redding			Guy Holmes		
JOB PURPOSE CODE				SALES ORDER No.			USTOMER PO	#		
SURFACE CASING	7521			0 9001	48952	2 0)			
WELL CATEGORY	WELL TYPE		TECHNOLOGY	COUNTRY		E OF OPS		BDA		
01 Development	01 OIL		20 Other	Australia	Mo	omba		Perth		

PERSONELL

SAP#	PERSONNEL	HOURS	SAP#	PERSONNEL	HOURS	SAP#	PERSONNEL	HOURS
497686	Jamie Wandel	104.5						
488759	Scott Redding	104.5						
488324	Jason Batson	104.5						
413978	Stephan Vianelio	4						

EQUIPMENT

SAP#	PUMPING / MIXING	HOURS	SAP#	BULK/COMPRESSORS	HOURS	SAP#	VEHICLES/OTHER	HOURS
10967410	Elite 2 - Blackadder	104.5	10375406	10375408C A Trailer	104.5	11813016	KW DAY CAB - SB22ES	104.5
			10375408	8 Trailer	104.5	11557328	KW DAY CAB - SB65EE	104.5
						RENTAL	380 bbl Tank	104.5

FLOAT EQUIPMENT AND CASING EQUIPMENT

PN#	FLOAT EQUIPMENT	QTY	PN#	PLUGS	QTY	PN# OTHER	QTY
	Centralisers	17		Bottom Plug	1	Weld "A"	1
	Float And Shoe	1		Top Plug	1		

WELL PROFILE

WELL COMPONENT	\$IZE (in)	WEIGHT (ppf)	GRADE	THREAD	TOP (MD) (ft)	END (MD) (ft)	END (TVD) (N)	EXCESS %	LENGTH (ft)
NEW CASING	9 5/8	36	k55	butt	0	2502	2502	80%	2502

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Drijsearch Triclops #1 END OF THE WELL REPORT REV 2.0

8 . 6 . 6 . 6		I Sand Inde	- <i>a</i> 10, 1	CUSTOMER	Start Date mm	dd/yy	End Date mm/dd/yy	
HALLIBURTON				Drillsearch	17-Jan-13		19-Jan-12	
		Cemen	ting Service	s Post Job Repo	ort Summary			
WELL Name & Number	WELL Name & Number RIG Name & Number		HES REP	HES REP		CUSTOMER REP		
Triclops# 1		Ensign # 18	1	Scott Redding		Guy Holmes		
JOB PURPOSE CODE				SALES ORDER No.		CUSTOMER PO)#	
SURFACE CASING	7521			0 90	0148952	0		
WELL CATEGORY	WELL TYPE		TECHNOLOGY	COUNTRY	BASE OF OPS		BDA	
01 Development	01 OIL		20 Other	Australia	Moomba		Perth	

FLUID SUMMARY (Refer to Lab Reports for full details)

									FLUIC)					
-		T	1	2	3	4	5	6	7	8	9	10	11	12	
DETAIL		ИОМ		Lead	Tail	Displace									TOTAL
S	Volume	bbls		210.40	41.50	191.00									443
PROPERTIES	Density	ppg	•	11.80	15.80										NA
Ř	Yield	cuft/sk		2.76	1.16										N/
Š.	Water Requirement	gal/sk		16.56	5.09										N/
Ξ	Total Fluid Req	gal/sk		16.58	5.11										N/
CMT	ABC Class 'G'	sk		428											42
อี	НТВ	sk		201.00											20
õ		bbis													0
430 H30		bbls													0
	Bentonite	lb		4817											4,8
K	HR-5	lb		104	17.00										12
	NF6	gal/sk		1.00	3.00										4
CHEMICAL		:											ĺ		0
															0
										1	É	724	H)	Ł	1

HALLIBURTON

CUSTOMER SATISFACTION SURVEY

Sales Order #:	0 9CO148952	Line Item:	10
Customer:	Drillsearch	Job Type (BOM):	SURFACE CASING 7521
Customer	Guy Holmes	API / UWI: (Leave Blank if unknown)	
Well Name:	Triclops# 1	Well Number:	
Well Type:	01 OIL	Well Country:	Australia
H2S Present:	No/Yes	Well State:	Perth

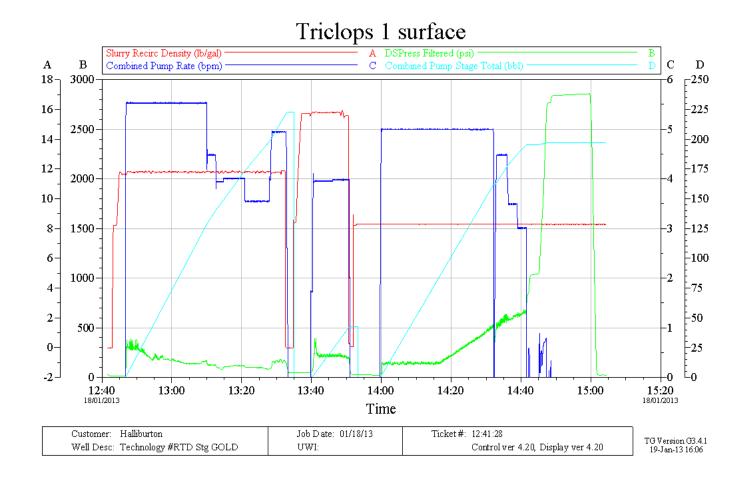
Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	19/01/2012
Survey Interviewer	The survey interviewer is the person who initiated the survey.	Jamie Wandel
Customer Participation	Did the customer partipripate in this survey? (Y/N)	Y
Customer Representative	Enter the Customer representative name	Guy Hoimes
HSE	Was our HSE performance satisfactory? Circle Y or N	Y
Equipment	Were you satisfied with our Equipment? Circle Y or N	Y
Personnel	Were you satisfied with our people? Circle Y or N	Ŷ
Customer Comment	Good Job, May need to use defomer for future jobs	A. 1000-1000-1000-1000-1000-1000-1000-100
CUSTOMER SIGNATURE	G.H.	
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3.0 9-5/8" Job Charts



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4.0 Plug and Abandonment

4.1 P&A Plug #1 8 1/2" OH Section 1,926-1,826 mRT

JOB PARAMETERS			
Plug bottom MD:	1,926 mRT	BHST temperature:	130°C
Plug bottom TVD:	1,926 mRT	BHCT temperature:	110°C
Plug top MD:	1,826 mRT	Drilling mud type:	WBM
Plug length:	100m	Drilling mud density:	≈9.10ppg
Plug length with DP in	i: 105m		
WELLBORE			
Workstring			
0-1,926mRT	4 1/2 in 16.6 ppf tubing (I	D= 3.826 in)	
Annulus			
0-1,926mRT	9.478234 in open hole (2	0% excess)- 20% Excess	s Calliper data
SPACERS			
Spacer - Freshwater	at 8.34ppg		
Freshwater	42.00 gal/bbl	20.0bbl ahead and 3 (60 m annular fill / 3r	.3bbl behind to balance nin contact time)

Contact times are based on the displacement rate.

CEMENT SLURRY - PlugCem™								
Composition		Properties						
Adelaide Brighton Class G		Surface density:	15.60 ppg					
SSA-1	35.0% BWOC	Surface yield:	1.57 ft³/sk					
Halad-344	0.60% BWOC	Total mixing fluid:	6.58 gal/sk					
Halad-413	0.65% BWOC							
SCR-100	0.40% BWOC							
Freshwater	6.58 gal/sk							
NF-6 Note that %BWOC are based on a 94 lb Note : HTB Blend = ABC "G" + 35% BW								

VOLUME	CALCULATIONS
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Cement		
9.478234 in hole volume	100 m x 0.2863 bbl/m	28.6 bbl
9.478234 in hole excess	0.20 x 28.6 bbl	5.7 bbl
	Slurry volum	e =34.4 bbl
Quantity of cement	34.4 bbl x 5.6146 / 1.57 ft³/sk	123 sacks
Quantity of mix fluid	123 sacks x 6.58 gal/sk	19.3 bbl
Displacement		
4 ¹ / ₂ in tubing volume	1,749 m x 0.0467 bbl/m	81.6 bbl
	Total displacement volum	e =81.0 DDI

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES				
	Volume (bbl)	Rate (bbl/min)	Time (min)	
Make up lines & pressure test:	N/A	N/A	30	
Circulate 1.5 x hole volume::	940.9	6.0	157	
Pump spacers ahead:	20.0	6.0	3	
Mix & pump cement:	34.4	5.0	7	
Pump spacers behind:	3.3	6.0	1	
Pump displacement:	81.6	6.0	14	
Pull workstring 152 m above TOC:	252m	9.1m/min	28	
Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.				
Drop wiper ball:	N/A	N/A	5	
Circulate workstring clean:	78.0	6.0	13	

Total job time (including circulation):	258 min	4hr 18min
Minimum cement thickening time (with 2hr safety factor):	188 min	3hr 08min

Spacer - Freshwater Freshwater	23.3 bbl
Cement	
Adelaide Brighton Class G	5 MT(117 ft³)
SSA-1	4,047 lbs
Halad-344	69 lbs
Halad-413	75 lbs
SCR-100	46 lbs
Fresh Water	19.3 bbl
NF-6	1 gal

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance. The final job calculations are to be completed by cementer, based on actual well parameters. All Calculations must be verified by the independent calculation of the Drillsearch Co-man on site.

4.2 Plug #1 Job Procedure

Note: Set firm base below the plug such as Fast Drill bridge plug or Hi-Vis Pill at depth for successful cement plug

Note: Prior to commencing the balance plug, drill pipe should be run to 1,926 m and the well circulated thoroughly (1.5 times hole volumes recommended) in order to adequately clean and to remove any debris that may be left prior to spotting cement plug.

- 1. Rig up cementing unit to pump down the drill pipe.
- 2. Pump 5.0 bbls freshwater spacer ahead to establish circulation.
- 3. Pressure test surface lines to 2,000 psi. Bleed off.

Note: Max pressure to be discussed with Drillsearch co-man.

- 4. Pump 15.0 bbls freshwater spacer ahead.
- 5. Mix and pump 34.4 bbls of 15.6ppg slurry on surface
- 6. Pump 3.3 bbl freshwater behind.
- 7. Displace with 81.6 bbls of displacement fluid to spot the balanced plug. (Under displaced by 0.5 bbls to aid dry POOH, **OR** as agreed by Company Representative onsite)

Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.

Note: re-calculate numbers above with actual string and actual well condition on location and double check with <u>Drillsearch co-man</u>.

- 8. Begin pulling drill pipe slowly (1 joint per minute) back to 152m above theoretical TOC and reverse circulate drill pipe clean.
- 9. Ensure that workstring clean before POOH

4.3 P&A Plug #2 8 1/2" OH Section 1,727-1,604 mRT

JOB PARAMETERS			
Plug bottom MD:	1,727 mRT	BHST temperature:	120°C
Plug bottom TVD:	1,727 mRT	BHCT temperature:	97°C
Plug top MD:	1,604 mRT	Drilling mud type:	WBM
Plug length:	123 m	Drilling mud density:	≈9.10ppg
Plug length with DP in:	130 m		
WELLBORE			
Workstring			
0-1,727mRT 4 ½	in 16.6 ppf tubing	(ID= 3.826 in)	
Annulus			
	95241 in open hole	(20% excess) - 20% Exce	ss Calliper data
	-		
SPACERS			
Spacer - Freshwater at 8			
Freshwater	42.00 gal/bbl		3.6 bbl behind to balance
		(64 m annular fill / 3	min contact time)
Contact times are based on the displacement rate.			
CEMENT SLURRY - Plug	Cem™		
Composition		Properties	

	Properties	
	Surface density:	15.60 ppg
35.0% BWOC	Surface yield:	1.57 ft³/sk
0.60% BWOC	Total mixing fluid:	6.56 gal/sk
0.65% BWOC	-	-
0.40% BWOC		
6.58 gal/sk		
ack		
	0.60% BWOC 0.65% BWOC 0.40% BWOC 6.58 gal/sk 0.125 gal/10bbIMF	35.0% BWOC Surface yield: 0.60% BWOC Total mixing fluid: 0.65% BWOC 0.40% BWOC 6.58 gal/sk 0.125 gal/10bbIMF ack

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VOLUME	CALCULATIONS
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Cement			
9.195241 in hole volume	123 m x 0.2695 bbl/m	33.1 bbl	
9.195241in hole excess	0.20 x 33.1 bbl	6.6 bbl	
	Slurry volum	e =39.8 bbl	
Quantity of cement	39.8 bbl x 5.6146 / 1.57 ft³/sk	142 sacks	
Quantity of mix fluid	142 sacks x 6.58 gal/sk	22.3 bbl	
Displacement			
4 1/2 in tubing volume	1,520 m x 0.0467 bbl/m	70.9 bbl	
-	Total displacement volume =70.9 bbl		

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

	Volume (bbl)	Rate (bbl/min)	Time (min)	
Make up lines & pressure test:	N/A	N/A	30	
Circulate 1.5 x hole volume::	791.3	6.0	132	
Pump spacers ahead:	20.0	6.0	3	
Mix & pump cement:	39.8	5.0	8	
Pump spacers behind:	3.6	6.0	1	
Pump displacement:	70.9	6.0	12	
Pull workstring 152 m above TOC:	275m	9.1m/min	30	
Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.				
Drop wiper ball:	N/A	N/A	5	
Circulate workstring clean:	68.0	6.0	11	

Total job time (including circulation):	232 min	3hr 52min
Minimum cement thickening time (with 2hr safety factor):	187 min	3hr 07min

Spacer - Freshwater Freshwater	23.6 bbl
Cement	
Adelaide Brighton Class G	6 MT(141 ft³)
SSA-1	4,672 lbs
Halad-344	80 lbs
Halad-413	87 lbs
SCR-100	53 lbs
Fresh Water	22.2 bbl
NF-6	1 gal

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance. The final job calculations are to be completed by cementer, based on actual well parameters. All Calculations must be verified by the independent calculation of the Drillsearch Co-man on site.

4.4 Plug #2 Job Procedure

Note: Set firm base below the plug such as Fast Drill bridge plug or Hi-Vis Pill at depth for successful cement plug

Note: Prior to commencing the balance plug, drill pipe should be run to 1,727 m and the well circulated thoroughly (1.5 times hole volumes recommended) in order to adequately clean and to remove any debris that may be left prior to spotting cement plug.

- 1. Rig up cementing unit to pump down the drill pipe.
- 2. Pump 5.0 bbls freshwater spacer ahead to establish circulation.
- 3. Pressure test surface lines to 2,000 psi. Bleed off.

Note: Max pressure to be discussed with Drillsearch co-man.

- 4. Pump 15.0 bbls freshwater spacer ahead.
- 5. Mix and pump 39.8 bbls of 15.6ppg slurry on surface
- 6. Pump 3.6 bbl freshwater behind.
- 7. Displace with 70.9 bbls of displacement fluid to spot the balanced plug. (Under displaced by 0.5 bbls to aid dry POOH, **OR** as agreed by Company Representative onsite)

Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.

Note: re-calculate numbers above with actual string and actual well condition on location and double check with <u>Drillsearch co-man</u>.

- 8. Begin pulling drill pipe slowly (1 joint per minute) back to 152m above theoretical TOC and reverse circulate drill pipe clean.
- 9. Ensure that workstring clean before POOH

4.5 P&A Plug #3 8 1/2" OH Section 1,422-1,315 mRT

JOB PARAMETERS			
Plug bottom MD:	1,422 mRT	BHST temperature:	103°C
Plug bottom TVD:	1,422 mRT	BHCT temperature:	83°C
Plug top MD:	1,315 mRT	Drilling mud type:	WBM
Plug length:	107m	Drilling mud density:	≈9.10ppg
Plug length with DP ir	n: 113m		
WELLBORE			
Workstring			
0-1,422mRT	4 1/2 in 16.6 ppf tubing (ID= 3.826 in)	
Annulus			
0-1,422mRT	9.129036 in open hole (2	20% excess) - 20% Exce	ss Calliper data
SPACERS			
Spacer - Freshwater at 8.34ppg			
Freshwater	42.00 gal/bbl	20.0bbl ahead and 3 (66m annular fill / 3r	3.7bbl behind to balance min contact time)
		(••••••

Contact times are based on the displacement rate.

CEMENT SLURRY - PlugCem™				
Composition		Properties		
Adelaide Brighton Class G		Surface density:	15.60 ppg	
SSA-1	35.0% BWOC	Surface yield:	1.57 ft³/sk	
Halad-344	0.60% BWOC	Total mixing fluid:	6.56 gal/sk	
Halad-413	0.65% BWOC	-	-	
SCR-100	0.40% BWOC			
Freshwater	6.58 gal/sk			
NF-6	0.125 gal/10bbIMF	:		
Note that %BWOC are based on a 94 lb sack Note : HTB Blend = ABC "G" + 35% BWOC SSA-1				

VOLUME CALCULATIONS	5
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Cement			
9.129036 in hole volume	107 m x 0.2656 bbl/m	28.4 bbl	
9.129036in hole excess	0.20 x 28.4 bbl	5.7 bbl	
	Slurry volum	e =34.1 bbl	
Quantity of cement	34.1 bbl x 5.6146 / 1.57 ft³/sk	122 sacks	
Quantity of mix fluid	122 sacks x 6.58 gal/sk	19.1 bbl	
Displacement			
$4\frac{1}{2}$ in tubing volume	1,230 m x 0.0467 bbl/m	57.4 bbl	
	Total displacement volume =57.4 bbl		

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES				
	Volume (bbl)	Rate (bbl/min)	Time (min)	
Make up lines & pressure test:	N/A	N/A	30	
Circulate 1.5 x hole volume::	641.7	6.0	107	
Pump spacers ahead:	20.0	6.0	3	
Mix & pump cement:	34.1	5.0	7	
Pump spacers behind:	3.7	6.0	1	
Pump displacement:	57.4	6.0	10	
Pull workstring 152 m above TOC:	259 m	9.1m/min	28	
Note: The flow rate is to be slowed down to 1-2 BPM	l for the last 5 b	bls of the displace	ment.	
Drop wiper ball:	N/A	N/A	5	
Circulate workstring clean:	54.0	6.0	9	

Total job time (including circulation):	200 min	3hr 20min
Minimum cement thickening time (with 2hr safety factor):	180 min	3hr 00 min

Spacer - Freshwater Freshwater	23.7 bbl
Cement	
Adelaide Brighton Class G	5 MT(164 ft³)
SSA-1	4,014 lbs
Halad-344	69 lbs
Halad-413	75 lbs
SCR-100	46 lbs
Fresh Water	19.1 bbl
NF-6	1 gal

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance. The final job calculations are to be completed by cementer, based on actual well parameters. All Calculations must be verified by the independent calculation of the Drillsearch Co-man on site.

4.6 Plug #3 Job Procedure

Note: Set firm base below the plug such as Fast Drill bridge plug or Hi-Vis Pill at depth for successful cement plug

Note: Prior to commencing the balance plug, drill pipe should be run to 1,422 m and the well circulated thoroughly (1.5 times hole volumes recommended) in order to adequately clean and to remove any debris that may be left prior to spotting cement plug.

- 1. Rig up cementing unit to pump down the drill pipe.
- 2. Pump 5.0 bbls freshwater spacer ahead to establish circulation.
- 3. Pressure test surface lines to 2,000 psi. Bleed off.

Note: Max pressure to be discussed with Drillsearch co-man.

- 4. Pump 15.0 bbls freshwater spacer ahead.
- 5. Mix and pump 34.1 bbls of 15.6ppg slurry on surface
- 6. Pump 3.7 bbl freshwater behind.
- 7. Displace with 57.4 bbls of displacement fluid to spot the balanced plug. (Under displaced by 0.5 bbls to aid dry POOH, **OR** as agreed by Company Representative onsite)

Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.

Note: re-calculate numbers above with actual string and actual well condition on location and double check with <u>Drillsearch co-man</u>.

- 8. Begin pulling drill pipe slowly (1 joint per minute) back to 152m above theoretical TOC and reverse circulate drill pipe clean.
- 9. Ensure that workstring clean before POOH

4.7 P&A Plug #4 8 ½" OH & 9 5/8" CSG Section 702-792 mRT

JOB PARAMETERS			
Plug bottom MD:	792 mRT	BHST temperature:	56°C
Plug bottom TVD:	792 mRT	BHCT temperature:	45°C
Plug top MD:	702 mRT	Drilling mud type:	WBM
Plug length:	90 m	Drilling mud density:	≈9.10ppg
Plug length with DP in:	97 m		
WELLBORE			
Workstring	4.1/ in 10.0 and tubing (IF) - 2 026 in)	
0-792 mRT	4 $\frac{1}{2}$ in 16.6 ppf tubing (IE)= 3.820 m)	
Annulus			
0-750 mRT	9 5/8 in 36 ppf Casing (8.	921in ID)	
750-792 mRT	9.518518 in open hole (20%	,	s based on Calliper Data
SPACERS			
Spacer - Freshwater a	t 8.34ppg		
Freshwater	42.00 gal/bbl	20.0bbl ahead and 4 (79m annular fill / 3n	4.9bbl behind to balance nin contact time)
Contact times are based on the	e displacement rate.		

CEMENT SLURRY - PlugCem™			
Composition		Properties	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Freshwater	5.08 gal/sk	Surface yield:	1.15 ft³/sk
NF-6 Note that %BWOC are based on a 94 lb sack	0.125 gal/10bblMF	Total mixing fluid:	5.08 gal/sk

VOLUME CALCULATIONS

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES					
	Volume (bbl)	Rate (bbl/min)	Time (min)		
Make up lines & pressure test:	N/A	N/A	30		
Circulate 1.5 x hole volume::	285.9	6.0	48		
Pump spacers ahead:	20.0	6.0	3		
Mix & pump cement:	26.7	5.0	5		
Pump spacers behind:	4.9	6.0	1		
Pump displacement:	27.5	6.0	5		
Pull workstring 152 m above TOC:	242 m	9.1m/min	26		
Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.					
Drop wiper ball:	N/A	N/A	5		
Circulate workstring clean:	26.0	6.0	4		
Total iob tim	e (including	circulation).	127 min	2hr 07min	

rotar job time (including circulation):	1 27 min	2nr 07min
Minimum cement thickening time (with 2hr safety factor):	166 min	2hr 46min

MINIMUM MATERIAL REQUIREMENTS				
Spacer - Freshwater				
Freshwater	24.9 bbl			
Cement Adelaide Brighton Class G Fresh Water NF-6	6 MT(141 ft³) 15.7 bbl 1 gal			

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance. The final job calculations are to be completed by cementer, based on actual well parameters. All Calculations must be verified by the independent calculation of the Drillsearch Co-man on site.

4.8 Plug #4 Job Procedure

Note: Set firm base below the plug such as Fast Drill bridge plug or Hi-Vis Pill at depth for successful cement plug

Note: Prior to commencing the balance plug, drill pipe should be run to 792 m and the well circulated thoroughly (1.5 times hole volumes recommended) in order to adequately clean and to remove any debris that may be left prior to spotting cement plug.

- 1. Rig up cementing unit to pump down the drill pipe.
- 2. Pump 5.0 bbls freshwater spacer ahead to establish circulation.
- 3. Pressure test surface lines to 2,000 psi. Bleed off.

Note: Max pressure to be discussed with Drillsearch co-man.

- 4. Pump 15.0 bbls freshwater spacer ahead.
- 5. Mix and pump 26.7 bbls of 15.8ppg slurry on surface
- 6. Pump 4.9 bbl freshwater behind.
- 7. Displace with 27.5 bbls of displacement fluid to spot the balanced plug. (Under displaced by 0.5 bbls to aid dry POOH, **OR** as agreed by Company Representative onsite)

Note: The flow rate is to be slowed down to 1-2 BPM for the last 5 bbls of the displacement.

Note: re-calculate numbers above with actual string and actual well condition on location and double check with <u>Drillsearch co-man</u>.

- 8. Begin pulling drill pipe slowly (1 joint per minute) back to 152m above theoretical TOC and reverse circulate drill pipe clean.
- 9. Ensure that workstring clean before POOH
- 10. WOC and tag cement plug to confirm cement is hard and in place.
- 11. Pressure test cement plug to 1,510 psi to confirm shoe cement is hard and in place (≈500 psi above leak off)

Note : WOC should be at least the time for the cement plug reach 500 psi or 3,000 psi for a KOP. Best results have been obtained by a mandatory 24 Hrs before disturbing the plug.

4.9 P&A Plug 5 Details – 9 5/8 in Casing (5-30 mRT)

JOB PARAMETERS				
Plug bottom MD:	30 mRT	BHST temperature:	33°C	
Plug bottom TVD:	30 mRT	BHCT temperature:	27°C	
Plug top MD:	5 mRT	Drilling mud type:	WBM	
Plug length:	25 m	Drilling mud density:	≈9.10ppg	
Plug length with DP in:	27 m			
WELLBORE				
Workstring				
-30 mRT 4 ½ in 16.6 ppf tubing (ID= 3.826 in)				
Annulus				
0-30 mRT 9 5/8 in 36 ppf Casing (8.921in ID)				
SPACERS				
Spacer - Freshwater at	t 8.34ppg			
Freshwater	42.00 gal/bbl	10.0bbl ahead and (53m annular fill / 2		
Contact times are based on the	displacement rate.			

CEMENT SLURRY - PlugCem™			
Composition		Properties	
Adelaide Brighton Class G		Surface density:	15.80 ppg
Freshwater	5.08 gal/sk	Surface yield:	1.15 ft³/sk
NF-6 Note that %BWOC are based on a 94 lb sack	0.125	Total mixing fluid:	5.08 gal/sk

VOLUME CALCULATIONS

Cement

9 5/8in casing volume

Quantity of cement

Quantity of mix fluid

Displacement 4 ½ in tubing volume 25 m x 0.2536 bbl/m 6.3 bbl Slurry volume =6.3 bbl

6.3 bbl x 5.6146 / 1.15 ft³/sk31 sacks31 sacks x 5.08 gal/sk3.8 bbl

Total displacement volume = --- bbl

The final job calculations are to be completed on location by cementer, based on actual well parameters. All calculations from slurry volumes to additive dosages & requirements must be verified by the independent calculations of the drilling rep.

PUMPING SCHEDULE & TIMES			
	Volume	Rate	Time
	(bbl)	(bbl/min)	(min)
Make up lines & pressure test:	N/A	N/A	30
Circulate 1.5 x hole volume::	10.6	6.0	2
Pump spacers ahead:	10.0	6.0	2
Mix & pump cement:	6.3	5.0	1
Pump spacers behind:	0.1	6	-
Pump displacement:	-	-	-
Slowly Pull workstring to Surface and Flush	-	-	-
Drop wiper ball:	N/A	N/A	-
Circulate workstring clean:	20.0	6.0	3

Total job time (including circulation):	38 min	0hr 38min
Minimum cement thickening time (with 2hr safety factor):	158 min	2hr 38min

MINIMUM MATERIAL REQUIREMENTS	
Spacer - Freshwater	
Freshwater	10.1 bbl
Cement	
Adelaide Brighton Class G	1 MT(23 ft³)
Fresh Water	3.8 bbl
NF-6	1 gal

These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance. The final job calculations are to be completed by cementer, based on actual well parameters. All Calculations must be verified by the independent calculation of the Drillsearch Co-man on site.

4.10 Plug #5 Job Procedure

Note: Set firm base below the plug such as Fast Drill bridge plug or Hi-Vis Pill at depth for successful cement plug

Note: Prior to commencing the balance plug, drill pipe should be run to 792 m and the well circulated thoroughly (1.5 times hole volumes recommended) in order to adequately clean and to remove any debris that may be left prior to spotting cement plug.

- 1. Rig up cementing unit to pump down the drill pipe.
- 2. Pump 5.0 bbls freshwater spacer ahead to establish circulation.
- 3. Pressure test surface lines to 1,500 psi. Bleed off.

Note: Max pressure to be discussed with Drillsearch co-man.

- 4. Pump 5.0 bbls freshwater spacer ahead.
- 5. Mix and pump 6.3 bbls of 15.8ppg slurry on surface
- 6. Pump 0.1 bbl freshwater behind.
- 7. Begin pulling drill pipe slowly (1 joint per minute) back to Surface and flush lines.
- 8. Pump Fresh Water through Workstring , ensure that workstrings are clean.
- 9. WOC should be at least the time for the cement plug reach 500 psi or 3,000 psi for a KOP. Best results have been obtained by a mandatory 24 Hrs before disturbing the plug.

. . .

5.0 Plug and Abandonment Job Summary

					Start Date mn	v/dd/yy	End Date mm/dd/yy	
HALLIBURTON				Drill Search	29-Jan-13		01-Feb-13	
		ting Services	Post Job Repo	ort Summary	1			
WELL Name & Number RIG Name & Number		HES REP		CUSTOMER REP				
Tryclops #1		Ensign #918	3	Wayne Penna		Guy Holmes		
JOB PURPOSE CODE				SALES ORDER No.	0.000	CUSTOMER P	0æ	
PLUG TO ABANDO	N 7528			0 900	181118	0		
WELL CATEGORY			COUNTRY	BASE OF OP	s	BOA		
06 Abandoned	01 OIL	02 Multi - Lateral A		Australia	Australia Moomba		Perth	

PERSONELL

SAP#	PERSONNEL	HOURS	SAP#	PERSONNEL	HOURS	SAP#	PERSONNEL	HOURS
	Wayne Penna	74	328939	Ralph Goehring	12	413978	Stephan Vianello	3
515629	Jesse Quinn	74	402573	Michael Jamieson	12			
							1	

EQUIPMENT

	PUMPING / MIXING	HOURS	SAP#	BULK/COMPRESSORS	HOURS	SAP#	VEHICLES/OTHER	HOURS
A STATE OF A	Elite 1 - White Knight	62	March Contractor Contractor	MARIA - SY42DF	62	11534231	WAN544 - MACK BUNK TRUCK	62
10954421	Eitle I - Wille Knight			78404	62	10942587	XIT-524 KENWORTH T900	62
			10010000			10330266	YCV997 DOLLY	62
						12043887	LANDCRUISER S827ASP	22
	_							

FLOAT EQUIPMENT AND CASING EQUIPMENT

I LOAT LOOT MENT 7000 OT		DN# OTHER QTY
PN# FLOAT EQUIPMENT Q	TY PN# PLUGS QTY	PN# OTHER UN
PN# FLOAT EQUIPMENT Q	A CONTRACTOR OF A CONTRACTOR O	

WELL PROFILE

WELL COMPONENT	SIZE	WEIGHT (col)	GRADE	THREAD	TOP (MD) (II)	END (MD) (N)	END (TVD)	EXCESS %	(11)
PREVIOUS CSG	9 5/8	36	k55	BTC	0	2598	2598		2598

HAI		107	"ANI	CUSTOMER	CUSTOMER Start Da			End Date mm/dd/yy	
HALLIBURTON				Drill Search		29-Jan-13		01-Feb-13	
		Cemen	ting Services	Post Job Rep	ort S	ummary		and the second second second	
WELL Name & Number RIG Name & Number		HES REP	HES REP			P			
Tryclops #1		Ensign #91	8	Wayne Penna			Guy Holmes		
JOB PURPOSE CODE				SALES ORDER No.			CUSTOMER PC		
PLUG TO ABANDO	N 7528			<u> </u>	811	8	0		
WELL CATEGORY	WELL TYPE		TECHNOLOGY					BDA	
06 Abandoned 01 OIL 02 Multi - Lateral		Australia		BASE OF OPS Moomba		Perth			

FLUID SUMMARY (Refer to Lab Reports for full details)

2.04.22									FLUI	D					
			1	2	3	4	5	6	7	8	9	10	11	12	
	DETAIL	υом	Spacer	Plug #1	Plug #2	Plug #3	Plug #4	s# Snid							TOTAL
S	Volume	bbls		37	40	35	27	8	1	a ustraction could	-06800020020	TENANZIGE	14.42.00	2010/01/241	147
PROPERTIES	Density	ppg	8.33	15.60	15.60	15.60	15.80	15.80	- 1						NA
Ш	Yield	cuft/sk		1.57	1.57	1.57	1.15	1.15		<u> </u>	<u> </u>		<u>├</u>		NA
8	Water Requirement	gal/sk		6.68	6.58	6.58	5	5					[——-		NA
Δ.	Total Fluid Req	gal/sk		6.58	6.58	6.58	5	6							NA
CMT	ABC Class 'G'	sk					130	31							161
<u>5</u>	НТВ	sk		123	142	122				<u> </u>				(387
HZO		bbls													0
Î		bbls													0
	Halad-344	lb		69	80	69									218
CHEMICAL	Halad-413	dl		75	87	75									218
	SGR-100	lb		46	53	46	-								
Ē	NF-6			2	2	2	1	1							145
No.		- +											{		8

HALLIBURTON

CUSTOMER SATISFACTION SURVEY

Sales Order #:	0 900181118	Line Item:	10
Customer:	Drill Search	Job Type (BOM):	PLUG TO ABANDON 7528
Customer	Guy Holmes	API / UWI: (Leave Blank if unknown)	
Well Name:	Tryclops #1	Well Number:	
Well Type:	01 OIL	Well Country:	Australia
H2S Present:	No/Yes	Well State:	Perth

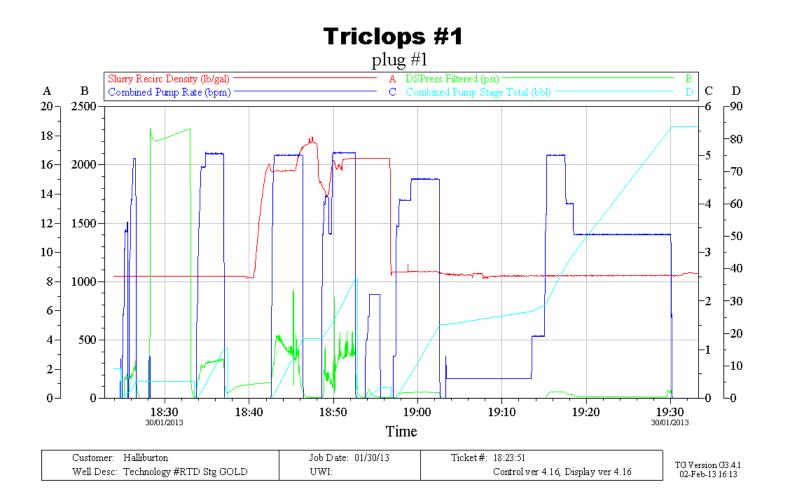
Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

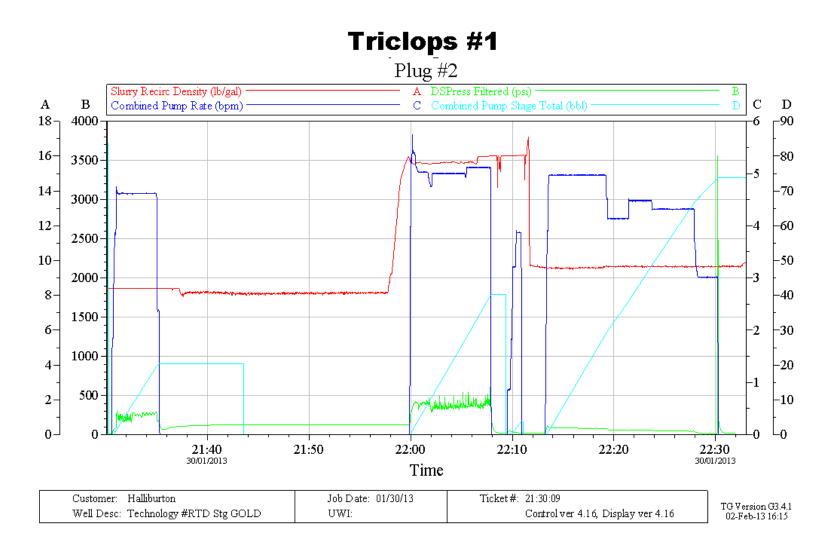
Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CATEGORY	CUSTOMER SATISFACTION RESPONSE		
Survey Conducted Date	The date the survey was conducted	1/02/2013	
Survey Interviewer	The survey interviewer is the person who initiated the survey.	Wayne Penna	
Customer Participation	Did the customer partipcipate in this survey? (Y/N)	Ч	
Customer Representative	Enter the Customer representative name	Guy Holmes	
:HSE	Was our HSE performance satisfactory? Circle Y or N	4	
Equipment	Were you satisfied with our Equipment? Circle Y or N	\sim	
Personnel	Were you satisfied with our people? Circle Y or N	Y	
Customer Comment	Eficient good service impress trainer	xed with	

6.0 Plug and Abandonment Job Charts



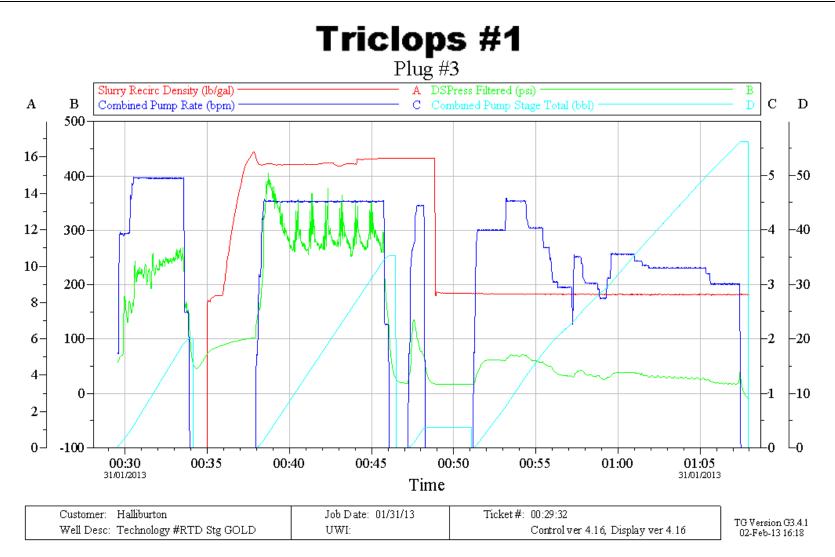
HALLIBURTON

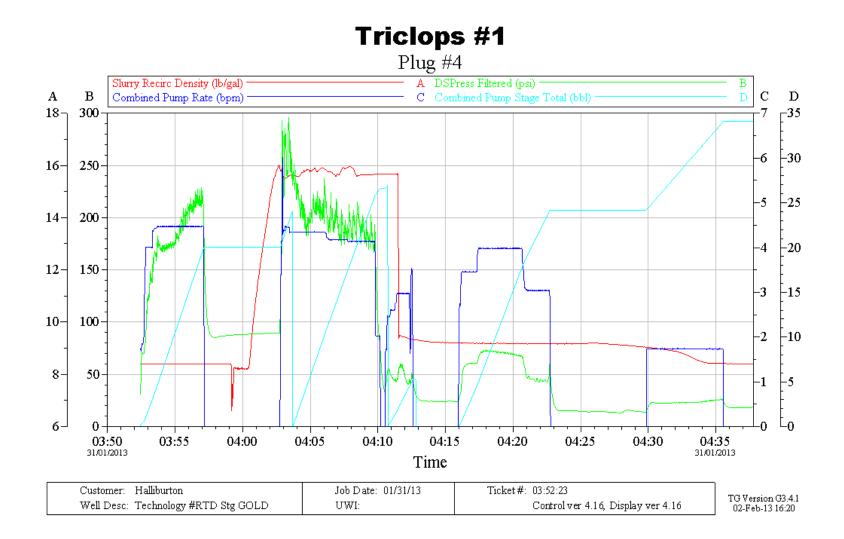


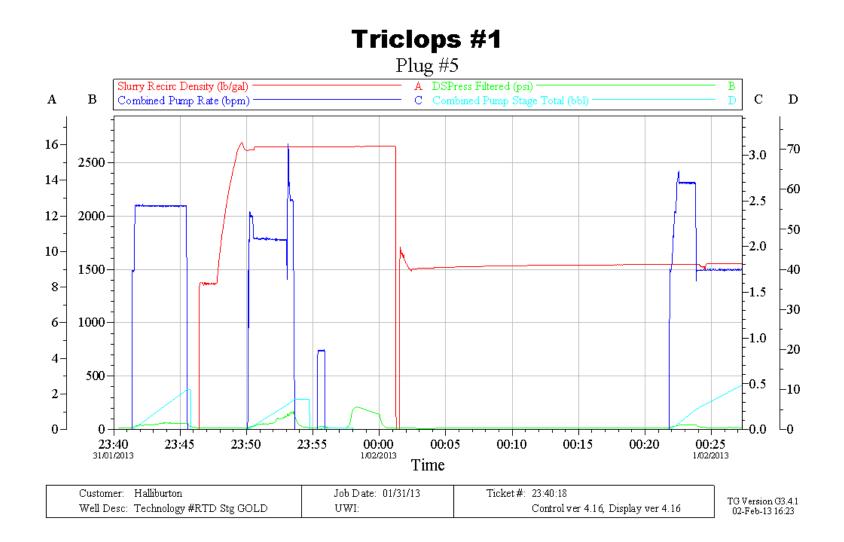
HALLIBURTON

Drillsearch

Triclops #1 END OF THE WELL REPORT REV 2.0







Appendix 6 – Bit Record

BAKER HUGHES PERFORMANCE AND DULL GRADING REPORT

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	12 ¼" FC519	Serial No.	7032698	Date Run	14-01-2013

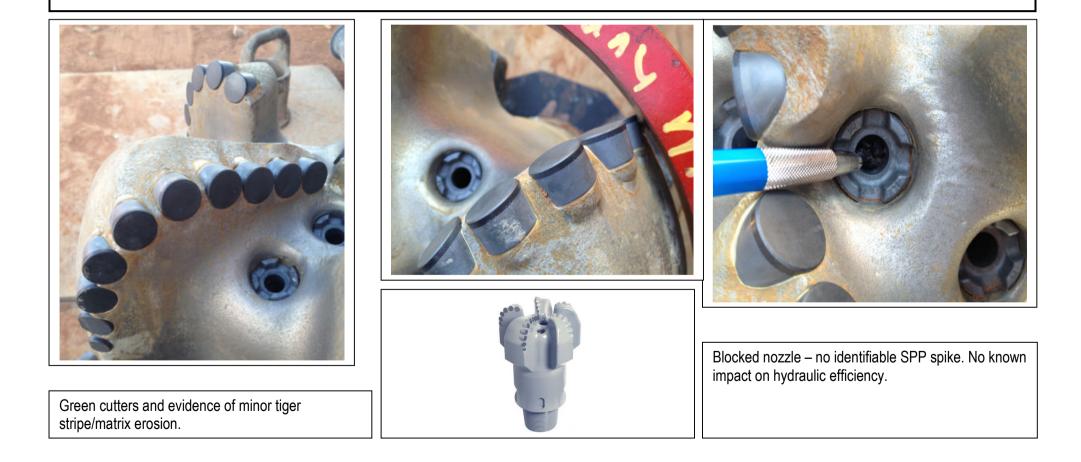
BIT PE	BIT PERFORMANCE					
Depth Out	766m					
Footage	753.5m					
Hours (drilling)	70.5					
KREV	303					
ROP (On Bottom)	24.4m/hr (avg.)					
WOB	2-6klbs (3.25 avg)					
RPM	30-160 (110 avg)					
Drive System	Rotary					
Inc – Start	0.25deg					
Inc – End	0.75deg					
Mud Weight	8.7 – 9.1ppg					
Nozzles/TFA	7 x 14/32" / 1.052in ²					
Flowrate	426-485GPM (456 avg)					
SPP	460psi (avg)					
HSI	0.72					
Mud Type	WBM					
Formation	Winton/Mackunda/Allaru					
Lithology	Silts/Sands/Clays					
	Coal/Cemented-					
	Sands/Carbonate Stringers					
Recommendation	Re-runnable					



Dull Grade		0	DC	L	В	G	OC	RP
Rig	1	1	WT	Α	X	I	ER	TD
HCC	1	1	WT	Α	X	I	ER	TD

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	12 ¼" FC519	Serial No.	7032698	Date Run	14-01-2013

Comments Good drilling performance through 753.3m 12-1/4" drilling section. Good penetration rates through top formations while control drilling to hold inclination. Carbonate, cemented sand and coal stringers encountered throughout run resulting in reduced penetration rate in parts. Green dull with minimum wear. Minor erosion and tiger stripes to bit body indicate formation – matrix contact due to high depth of cut. One blocked nozzle was observed, apparently caused while drilling formation or possibly while POOH, since no significant suface SPP spike observed during the run. Bit inguage and recommended for re-run.



BAKER HUGHES PERFORMANCE AND DULL GRADING REPORT

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	8 ½" Q505F	Serial No.	7033845	Date Run	20-01-2013

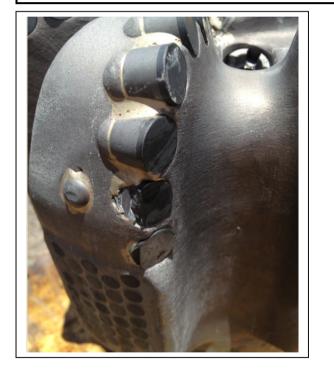
BIT PE	BIT PERFORMANCE					
Depth Out	1138.72m					
Footage	357.72m					
Hours (drilling)	16					
KREV	117					
ROP (On Bottom)	23.3m/hr					
WOB	1-11klbs (4.5 avg)					
RPM	60-150 (127 avg)					
Drive System Rotary						
Inc – Start	0.75					
Inc – End	2.00					
Mud Weight	9.0ppg					
Nozzles/TFA	5 x 12/32" / 0.552in ²					
Flowrate	430GPM (avg)					
SPP	1100psi (avg)					
HSI	1.61					
Mud Type	WBM					
Formation	Allaru/Toolebuc/Wallumbilla					
Lithology	Siltstone w/ minor sand and					
	dolomite					
Recommendation	Re-runnable					



Dull Grade		0	DC	L	В	G	OC	RP
Rig	1	2	BT	S	Х	I	WT	BHA
HCC	1	2	BT	S	X	I	WT	BHA

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	8 ½" Q505F	Serial No.	7033845	Date Run	20-01-2013

Comments Drilling through predominantly sand stone, the Q505F maintained ROP's above 25m/hr for majority of drilling section. Drilling parameters optimized at 1041m where penetration rate dropped below 10m/hr. Bit pulled for BHA due to unacceptable hole deviation. Relatively green dull, with broken cutters in the shoulder. Each of these broken cutters has a back up ovoid. In re-runnable condition.



Blade-1: broken Teeth in shoulder, minor ovoid wear.







Broken cutter in shoulder blade-3

BAKER HUGHES PERFORMANCE AND DULL GRADING REPORT

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	8 ½" Q505F	Serial No.	7033541	Date Run	24-01-2013

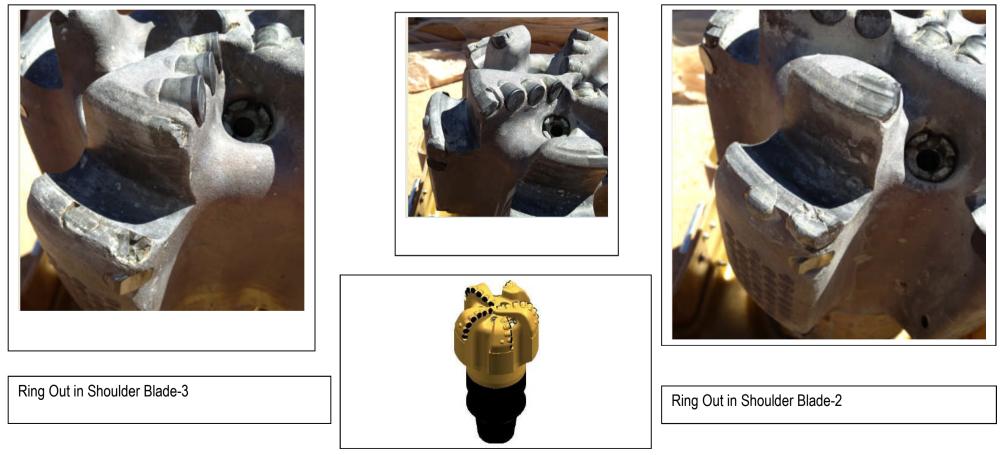
BIT PERFORMANCE						
Depth Out	1926.6m					
Footage	630.6m					
Hours (drilling)	46.5					
KREV	180					
ROP (On Bottom)	13.6m/hr					
WOB	1-19klbs (8.3 avg)					
RPM (Total)	95-206 (165 avg)					
Drive System Rotary + Motor						
Inc – Start	3.00					
Inc – End	1.10					
Mud Weight	9.1ppg					
Nozzles/TFA	5 x 12/32" / 0.552in ²					
Flowrate	435 GPM (avg)					
SPP	psi (avg)					
HSI	1.61					
Mud Type	WBM					
Formation	Cadna-Owie, Murta, Namur, Westbourne, Adori, Birkhead, Hutton, Poolowanna					
Lithology	Interbedded Siltstone /					
	Sandstone					
Recommendation	More heavy set PDC required					
	for motor application					



Dull Grade		0	DC	L	В	G	OC	RP
Rig	2	7	RO	S	Х		BT	PR
HCC	2	7	RO	S	Х	Ι	BT	PR

Customer	Drillsearch	Location	Triclops-1	Rig	Ensign-918
Bit Type	8 ½" Q505F	Serial No.	7033541	Date Run	24-01-2013

Comments Drilling with motor and bent sub directional BHA, the Q505F drilled 630.6m through lower Wallumbilla formation to production hole TD in Poolowanna. With penetration rate dying early in the the Poolowanna formation, the decision was made pull for penetration rate, with TD subsequently called early. Good performance observed with mud motor through upper formations but unable to drill at low RPM in the Hutton and Poolowanna formations resulting in poor drilling efficiency. Bit recovered on surface rung out in shoulder area. Recommend more heavier set PDC option for motor drilling in this application.



Appendix 7 – Daily Geology Reports (DGR)



				Triclop	os-1 Drilli	ng					
Date: 14 Jan 2013			DAIL	Y GEOLOG		NUMBER: 1			(assoc	(associated DDR # 1)	
				We	II Details						
Depth MDBRT	: 107.0) m	Report P	eriod	:00:00 - 2	4:00	Date		: 14 Jan 20)13	
Depth TVDBRT	: 107.0) m	Last Csg Size				Progre	ss	:95.0 m		
Depth TVDSS	:		Last Csg	Shoe MD	:		Report	Start Depth	:12.0 m		
RT - GL	: 5.2 m	ı	Last Csg	Shoe TVD	:		Report	End Depth	:130.5 m		
Ground Level	: 141.0) m	Liner MD		:		Days s	ince Spud	:0.48		
RT - Hanger	:		Liner TVI	C	:		Rig		: Ensign 91	8	
Hole Size	: 12.25	50 in	FIT / LOT		:/		Mud W	eight	:8.80 ppg		
Lag Depth	:		Hole Size	Carbide	:		Mud Ty	/pe	: Spud mud	t	
Last Survey (MDRT/TV	' DRT) :/		Liner (MD	ORT/TVDRT)	:/		Est. Po	re Pressure	:		
Survey Deviation	:										
			Geolo	gy 24hr C)perations	s Summar	٠v				
24hr Summary:		C			-		<u> </u>	ead in 311 mm	hole out of si	urface	
24m Summary.				12 m picking	•	1 at 1250 mg	5. Dillicu ali			inace	
24hr Forward Plan:				11 mm hole		mm occina r	oint				
24111 FOIWard Flath.		וטן			lowarus 244	min casing p					
				Form	ation Top	s					
Formation	Inverted?		Prognosed	Prognosed Actual				Diff.	Thickness	Pick Criteria	
		MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	TVD		
		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)		
Winton Formation	No	5.2	5.2	-140.95	5.2	5.2	-140.95	0 High		From surface.	
Mackunda Formation	No	670.2	670.2	524.05				670.2 High	0.0		
Allaru Mudstone	No	733.2	733.2	587.05				733.2 High	0.0		
Toolebuc Formation	No	1044.2	1044.2	898.05				1,044.2 High	0.0		
Wallumbilla Formation	No	1090.2	1090.2	944.05				1,090.2 High	0.0		
Cadna-Owie Formation	No	1322.2	1322.2 1322.2 1					1,322.2 High	0.0		
Nurta Formation	No	1401.2 1401.2 1255.05					1,401.2 High	0.0			
Namur Sandstone	No	1431.2						1,431.2 High	0.0		
Westbourne Formation	No	1523.2	1523.2	1377.05				1,523.2 High	0.0		
Adori Sandstone	No	1591.2	1591.2	1445.05				1,591.2 High	0.0		
Birkhead Formation	No	1640.2	1640.2	1494.05				1,640.2 High	0.0		
	1	17010	4704.0	4500.05				4 704 0 1 1			

Hutton Sandstone

Poolwanna Formation

No

No

1734.2

1930.2

1734.2

1930.2

1588.05

1784.05

1,734.2 High

1,930.2 High

0.0

0.0



Internal mid NUCKNormal intra-100 with min part with some some source with the some source with the					Lithc	logy S	ummar	y					
12.0 - 38.0 Min 7: 5.0 Avg 15.00 Max 45.00 Lithology Summary Lithology Description CLAYSTONE with minor interbedded ARGILLACEOUS SANDSTONE CLAYSTONE (50%), very keak or and compact, well for any final and compact by the anneaceus metaline. (10% sitt trace achonaceus defitus. Min 2000) 38.0 - 54.0 Min 15.00 Avg 18.00 Max 25.00 Min 15.00 Avg 18.00 Max 25.00 Min 15.00 Avg 18.00 Max 25.00 Lithology Summary Lithology Description CLAYSTONE CLAYSTONE 54.0 - 71.0 Min 3.00 Avg 20.00 Max 25.00 Lithology Summary Lithology Description CLAYSTONE CLAYSTONE 54.0 - 71.0 Min 3.00 Avg 20.00 Max 25.00 Lithology Description Max 25.00 ArGILLACEOUS SANDSTONE (10%): green grey to light dive grey, soft to firm, sub-blocky, 1 Minology Description Min 3.00 Avg 20.00 Max 25.00 71.0 - 88.0 Min 3.100 Avg 20.00 Max 25.00 Lithology Summary Lithology Description Max 25.00 ArGILLACEOUS SANDSTONE Avg 20.00 Max 25.00 71.0 - 88.0 Min 3.00 Avg 20.00 Max 25.00 Lithology Summary Lithology Description Max 25.00 ArGILLACEOUS SUNDSTONE Avg 20.00 Max 25.00 71.0 - 88.0 Min 3.100 Avg 20.00 Max 25.00 Lithology Summary Lithology Description Max 25.00 ArGILLACEOUS SUNDSTONE (10%): fight grey to light green grey, firm, sub- blocky, weakly calcaroous, fork, wey poor visible porosity, no hydrocarbon moderately hard, minor angliaceus smartix, very poor visible porosity, no hydrocarbon moderately hard, minor angliaceus smartix, very poor visible porosity, no hydrocarbon moderately hard, minor angliaceus smartix, very poor visible porosity, no hydrocarbon moderately hard, minor angliaceus	Internal m MDR	Г ROP (m/h)						Litholog	y Comme	ents			
Cas & Shows Comments Nil. 38.0 - 54.0 Min :15.00 Mar :25.00 Lithology Summary Lithology Description CLAYSTONE (400%); green grey to light olive grey, soft to firm, sub-blocky, 1 % silt, trace carbonaceous defitus. 54.0 - 71.0 Min :8.00 Arg :20.00 Mar :44.00 Lithology Summary Lithology Summary Arg :20.00 Mar :44.00 ArGILLACEOUS SANDSTONE Lithology Summary Lithology Summary Arg :20.00 Mar :44.00 ArGILLACEOUS SANDSTONE (100%): metlum light grey to green grey, friable to firm in part, 40% argitaleceous matrix supported, fine to dominantly rounded, weel sorted, sub-spherical to sub elongate, weak siliceous coment, up to 3% lithic fragments, trace carbonaceous defitus, very poor visible poresity, no hydrocarbon fluorescence. 71.0 - 89.0 Min :1100 Lithology Summary Lithology Summary Arg :17.50 Mar :28.00 ARENACEOUS SILTSONE Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Arg :28.00 Mar :40.00 ARENACEOUS SILTSONE Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary Lithology Summary ROP Comments ROP Comment		Min :7.50 Avg :15.00				CL/ bloc trac AR arg sor	AYSTONE AYSTONE cky, very v ce carbona GILLACE dillaceous r ted, sub-s	with min (90%): v veakly cal ceous de DUS SAN natrix, fin oherical, v	or interbe ery pale c lcareous, tritus. DSTONE e to domir weak silice	dded ARG prange to trace very (10%): da nantly ver	grey oran / fine arer ark yellow y fine, sul	ge, soft to naceous r / orange, b-roundeo	o firm in part, sub- naterial, 10% silt, friable, 0% t to angular, well
Arg: 18.00 Nax: 25.00 Lithology Description Gas & Shows Comments ROP Comments CLAYSTONE (100%): green grey to light olive grey, soft to firm, sub-blocky, 1 % sill, trace carbonaceous detritus. 54.0 - 71.0 Min :8.00 Lithology Summary Max: 44.00 ARGILLACEOUS SANDSTONE 1 Lithology Summary Max: 44.00 ARGILLACEOUS SANDSTONE (100%): medium light grey to green grey, fitable to firm in part, 40% argifaceous matrix supported, fine to dominantly very fine, sub-angular to dominantly rounded, well softed, sub-physical to sub elongate, weak silecous cement, up to 3% lithic fragments, trace carbonaceous detritus, very poor visible porosity, no hydrocarbon fluorescence. 71.0 - 89.0 Min :11.00 ARCINCEOUS SILTSONE Nax: 28.00 Lithology Summary Nil. ARENACEOUS SILTSONE 89.0 - 130.5 Min :8.00 Avg: 27.80 Max: 40.00 Lithology Summary Lithology Description ARENACEOUS SILTSONE and CLAYSTONE. 89.0 - 130.5 Min :8.00 Avg: 28.00 Max: 40.00 Lithology Summary Lithology Description Interbedded SANDSTONE and CLAYSTONE. 89.0 - 130.5 Min :8.00 Avg: 28.00 Max: 40.00 Lithology Summary Lithology Description Interbedded SANDSTONE and CLAYSTONE. 88.0 - 130.5 Min :8.00 Avg: 28.00 Max: 40.00 Lithology Summary Lithology Description Interbedded SANDSTONE and CLAYSTONE. 88.0 - 130.5 Min :8.00 Avg: 28.00 Max: 40.00 Lithology Summary Lithology Description Interbedded SANDSTONE and CLAYSTONE. CLAYSTONE (0 to 70%): yellow grey to very				Gas & Shows Comments			Tocarbon		100.				
Second state ROP Comments Acril LACEOUS SANDSTONE 54.0 - 71.0 Min 3.00 Argue 20.00 Max :44.00 Lithology Joserription ARGILLACEOUS SANDSTONE (100%): medium light grey to green grey. friable to firm in part, 40% argiliaceous matrix supported, fine to dominantly very fine, sub-angular to dominantly rounded, well informates, sub-spherical to sub- elongate, weak silicous sement. up to 3% information and use protection fluorescence. 71.0 - 89.0 Min :11.00 AreINACEOUS SILTSONE 1 Lithology Summary AREINACEOUS SILTSONE Lithology Description AREINACEOUS SILTSONE (100%): light grey to light green grey, firm, sub- blocky, weakly catacreous. 10% catagrantes to anon fire sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous defitus. 89.0 - 130.5 Min 3.00 Max :40.00 Lithology Summary Min 3.00 Max :40.00 Lithology Summary Lithology Description Methoded SANDSTONE and CLAYSTONE. SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor angilaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, noderately sorted, sub-elongate, weakly catagregous in part, trace mice flecks and lithic fragments, very por visible prossily, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): light green to light green prey aggregates, friable to moderately hard, minor angilaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, noderately sorted, sub-elongate, weakly catagraceous in part, trace carbonaceous part, trace carbonaceous part, trace carbonaceous part, trace carbonaceous part, trace carbonaceous part, trace carb	38.0 - 54.0	Avg :18.00	Litho	Lithology Description		CL/ % s	AYSTONE silt, trace c	: (100%):			olive grey	r, soft to fi	rm, sub-blocky, 10
54.0 - 71.0 Min :8.00 Avg :20.00 Max :44.00 Lithology Summary Lithology Description ARGILLACEOUS SANDSTONE ARGILLACEOUS SANDSTONE (Max :44.00 71.0 - 89.0 Min :11.00 Max :43.00 Lithology Summary Lithology Summary ARGINACEOUS SILTSONE Max :28.00 ARGILLACEOUS SILTSONE Max :28.00 71.0 - 89.0 Min :11.00 Max :28.00 Lithology Summary Lithology Description Max :28.00 AREINACEOUS SILTSONE Lithology Summary Lithology Summary Lithology Description Max :28.00 89.0 - 130.5 Min :3.00 Avg :26.00 Max :40.00 Lithology Summary Lithology Description Max :40.00 AREINACEOUS SILTSONE Lithology Summary Lithology Description Max :40.00 89.0 - 130.5 Min :3.00 Avg :26.00 Max :40.00 Lithology Summary Lithology Description Max :40.00 Interbedded SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor agillaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, molerately sorted, sub-elongate, weakly calcareous in part, trace main flexib sorted, sub-elongate, weakly calcareous packs and brow black coally fragments with woody texture. Gas & Shows Comments ROP Comments Mil. Nil. Gas & Shows Comments ROP Comments SANDSTONE (30 to 70%): light grey to light green grey, soft to firm in part, sub-blocky, slightly slith with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody						nts NII.							
Avg: 20.00 Max: 44.00 Lithology Description Max: 44.00 ARGILLACEOUS SANDSTONE (100%): medium light grey to green grey, friable to firm in part, 40% argilaceous matrix supported, fine to dominantly very fine, sub-angular to dominantly rounded, well sorded, sub-spherical to sub elongate, weak siliceous cement, up to 3% lithic fragments, trace carbonaceous detritus, very poor visible porosity, no hydrocarbon fluorescence. 71.0 - 89.0 Min :11.00 Avg: 17.50 Max: 28.00 Min :10.00 Avg: 17.50 Max: 28.00 ARENACEOUS SILTSONE Lithology Description Max: 28.00 ARENACEOUS SILTSTONE (100%): light grey to light green grey, firm, sub- blocky, weakly calcareous, 10% day material and up to 40% very fine to mino fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous detritus. 89.0 - 130.5 Min :8.00 Avg: 26.00 Max: 40.00 Lithology Summary Lithology Summary Lithology Description Max: 40.00 Interbedded SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor argillaceous mixty, very fine to fine, dominantly medium, sub-angular to angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible porosity, no hydrocarbon fluorescence. Cas & Shows Comments ROP Comments NII. Cas & Shows Comments ROP Comments NII. Cas & Shows Comments ROP Comments NII. Cas & Shows Comments ROP Comments NII. <td< td=""><td>54.0 74.0</td><td>N/- 0.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td>D070:</td><td></td><td></td><td></td><td></td></td<>	54.0 74.0	N/- 0.00							D070:				
Gas & Shows Comments ROP Comments Nill. 71.0 - 89.0 Min :11.00 Avg :17.50 Max :28.00 Lithology Summary Avg :17.50 Max :28.00 ARENACEOUS SILTSTONE (100%): light grey to light green grey, firm, sub- blocky, weakly calcareous, 10% clay material and up to 40% very fine to minor fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous detritus. 89.0 - 130.5 Min :8.00 Avg :26.00 Max :40.00 Lithology Summary Avg :26.00 Max :40.00 Lithology Summary Lithology Summary Interbedded SANDSTONE and CLAYSTONE. 89.0 - 130.5 Min :8.00 Avg :26.00 Max :40.00 Lithology Summary Lithology Description Interbedded SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor angilaceous matrix, very fine to fine, dominantly medianeous specks and brown black coally fragments, very poor visible porosity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): yellow grey to very light brown grey, soft to firm in part, sub-blocky, slightly silly with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody texture. Gas & Shows Comments ROP Comments Nill. Gas & Shows Comments ROP Comments Nill. Drilled 12.0 - 130.5 (Min 0.0 (May).0 (May).0 (May).0 In	Avg :20.00			Lithology Description			GILLACEC ble to firm y fine, sub ngate, wea bonaceou	DUS SAN in part, 40 -angular t ak siliceou	DSTONE 0% argilla to domina us cement	(100%): ceous ma ntly rounc t, up to 3%	atrix supp led, well s 6 lithic fra	orted, fine sorted, su gments, t	e to dominantly b-spherical to sub race
T1.0 - 89.0 Min :11.00 Avg :17.50 Max :28.00 Lithology Summary Lithology Description ARENACEOUS SILTSONE ARENACEOUS SILTSTONE (100%): light grey to light green grey, firm, sub- blocky, weakly calcareous, 10% clay material and up to 40% very fine to minor fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous detritus. 88.0 - 130.5 Min :8.00 Max :40.00 Lithology Summary Max :40.00 Interbedded SANDSTONE and CLAYSTONE. SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor argillaceous matrix, very fine to fine, dominantly medium, sub-angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible porosity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): light with up 10% very fine quart grains, trace carbonaceous specks and brown black coally fragments with woody texture. Gas & Shows Comments Nil. ROP Comments Nil. Gas Type Depth m Total Gas % C1 ppm C1 ppm C2 ppm C3 ppm IC4 ppm nC4 ppm IC5 ppm NC5 ppm GWR-not required Drilled 12.0 - 130.5 (Min 0.0 (Max) 0.0 (Avg) 0.0 Impm Impm Impm Impm Impm Impm GWR - not required GWR - not required Drilled 12.0 - 130.5 (Min 0.0 (Max) 0.0 (Avg) 0.0 Impm Impm Impm Imp Imp <td></td> <td></td> <td>Gasa</td> <td>& Shows</td> <td>Commer</td> <td>nts Nil.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			Gasa	& Shows	Commer	nts Nil.							
Arg :17.50 Max :28.00 Lithology Description ARENACEOUS SILTSTONE (100%): light grey to light green grey, firm, sub- blocky, weakly calcareous, 10% clay material and up to 40% very fine to minor fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous detritus. 89.0 - 130.5 Min :8.00 Avg :26.00 Max :40.00 Lithology Summary Lithology Description Interbedded SANDSTONE and CLAYSTONE. SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor argillaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible poorsity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): yellow grey to very light brown grey, soft to firm in part, sub-blocky, sightly silty with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody texture. Gas & Shows Comments ROP Comments Nil. Gas Type Depth Total C1 C2 C3 IC4 nC4 IC5 nC5 CO2 H25 GWR-not required Drilled 12.0 - 130.5 (Min) 0.0 (Max) 0.0 (May) 0.0 (May) 0.0 (May) 0.0 In In In In In In In GWR - not required General Comments Interbedded SANDSTONE in C1 Gas & Shows Comments NIII <td></td> <td colspan="3"></td> <td>its</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>					its								
ROP Comments Interbedded SANDSTONE and CLAYSTONE. 89.0 - 130.5 Min :8.00 Avg :26.00 Max :40.00 SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor argillaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible porosity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): yellow grey to very light brown grey, soft to firm in part, sub-blocky, slightly silty with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody texture. Gas Type Depth Total C1 C2 C2 C3 IC4 nC4 IC5 nC5 CO2 H2S (GWR/LHR/OCQ) Drilled 12.0 - 130.5 (Min 0.0 (May	71.0 - 89.0	Avg :17.50		Lithology Description			ARENACEOUS SILTSTONE (100%): light grey to light green grey, firm, sub- blocky, weakly calcareous, 10% clay material and up to 40% very fine to mino fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous detritus.						very fine to minor
89.0 - 130.5 Min :8.00 Ag :26.00 Max :40.00 Lithology Description Interbedded SANDSTONE and CLAYSTONE. SANDSTONE (30 to 70%): light grey to light green grey aggregates, friable to moderately hard, minor argillaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible porosity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): yellow grey to very light brown grey, soft to firm in part, sub-blocky, slightly silty with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody texture. Gas X Shows Comments Nii. ROP Comments Nii. Drilled 12.0 - 130.5 C1 (Min) 0.0 (May 0.0 (Avg.) 0.0 C1 (Avg.) 0.0 C2 (Avg.) 0.0 C3 (C2 (Avg.) 0.0 C3 (C2 (Av						1 ts INII.							
Gas Type Depth Total C1 C2 C3 iC4 nC5 CO2 H2S GWR/LHR/OCQ) Drilled 12.0 - 130.5 (Min) 0.0 (Max) 0.0 (Avg.) 0.0 CO2 H2S GWR - not required LHR - not required OCQ - not required Drilled 12.0 - 130.5 (Min) 0.0 (Max) 0.0 (Avg.) 0.0 Image: Colspan="6">CO2 H2S GWR - not required Drilled 12.0 - 130.5 (Min) 0.0 (Avg.) 0.0 Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">CO2 H2S GWR - not required Drilled 12.0 - 130.5 (Min) 0.0 (Avg.) 0.0 Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">CO2 H2S GWR - not required Drilled 12.0 - 130.5 (Min) 0.0 (Avg.) 0.0 Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Colspan="6">Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Colspan="6">Image: Colspan="6">Colspan="6">Image: Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Image: Colspan="6">Image: Colspan="6">Image: Colspan="6">Colspan="6"Colspan="6" Drilled 12.0 - 130.5 Colspa= "6"Colspa="6"Colspan="6"Colspan="6"Colspan="6"Colspa	89.0 - 130.5	Avg :26.00	Litho Gas a	Lithology Summary Interbedded SANDSTONE and CLAYS Lithology Description SANDSTONE (30 to 70%): light grey to moderately hard, minor argillaceous ma medium, sub-angular to angular, moder calcareous in part, trace mica flecks and porosity, no hydrocarbon fluorescence. CLAYSTONE (30 to 70%): yellow grey to part, sub-blocky, slightly silty with up 10 carbonaceous specks and brown black					grey to lig ous matri , moderat ecks and li cence. w grey to h up 10%	ght green grey aggregates, friable to ix, very fine to fine, dominantly tely sorted, sub-elongate, weakly lithic fragments, very poor visible very light brown grey, soft to firm in 6 very fine quartz grains, trace			
Gas Type Depth Total C1 C2 C3 iC4 nC4 iC5 nC5 CO2 H2S (GWR/LHR/OCQ) Drilled 12.0 - 130.5 (Min 0.0 (Max) 0.0 (Avg.) 0.0 (Min 0.0) Image: Simple state st													
Outer type Doptin Form Or Or Form Det Inter Inter Inter Inter Inter Inter m Gas % ppm inter inter <td< td=""><td></td><td></td><td></td><td></td><td>G</td><td>as Sum</td><td>imary</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>					G	as Sum	imary						
(Max) 0.0 (Avg.) 0.0 (Avg.) 0.0 General Comments	Gas Type	•										_	(GWR/LHR/OCQ)
	Drilled	12.0 - 130.5	(Max) 0.0										required LHR - not require OCQ - not
Comments					Gene	eral Co	mments	5					
						Comme	nts						



	06:00 Hrs Update								
Time / Date:	06:00 Hrs on 15 Jan 2013								
Depth (MDRT):	182.0m								
Progress Since Midnight:	75.0m								
Status @ 0600hrs:	Drilled ahead in 311 mm hole.								
ROP Summary:									
Formation Summary:	Winton Formation								
Lithology Summary:	Interbedded CLAYSTONE and SANDSTONE.								
Gas Summary:	Nil gas.								
	Wellsite Geologist(s)								
	(Days) - Andrew James (Nights) - Andrew James								



		Triclop	s-1 Drilling							
Date: 15 Jan 2013		DAILY GEOLOGY	REPORT NUMBER: 2		(associated DDR # 2)					
Well Details										
Depth MDBRT	:421.0 m	Report Period	:00:00 - 24:00	Date	: 15 Jan 2013					
Depth TVDBRT	:421.0 m	Last Csg Size	:	Progress	: 326.0 m					
Depth TVDSS	:	Last Csg Shoe MD	:	Report Start Depth	: 130.5 m					
RT - GL	:5.2 m	Last Csg Shoe TVD	:	Report End Depth	:466.5 m					
Ground Level	: 141.0 m	Liner MD		Days since Spud	: 1.48					
RT - Hanger	:	Liner TVD		Rig	: Ensign 918					
Hole Size	: 12.250 in	FIT / LOT	:/	Mud Weight	:9.00 ppg					
Lag Depth	:	Hole Size Carbide	•	Mud Type	: KCI - PHPA - Pre					
Last Survey (MDRT/TVDRT)	:/	Liner (MDRT/TVDRT)	:/		Hydrated Bentonite					
Survey Deviation	:		••	Est. Pore Pressure	:					

Geology 24hr Operations Summary							
24hr Summary: Drilled ahead in 12.1/4" hole from 107 to 421 m with surveys.							
24hr Forward Plan:	Drill ahead in 12.1/4" hole towards 9.5/8" casing point.						

	Formation Tops												
Formation	Inverted?		Prognosed			Actual		Diff.	Thickness	Pick Criteria			
		MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	TVD				
		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)				
Winton Formation	No	5.2	5.2	-140.95	5.2	5.2	-140.95	0 High		From surface.			
Mackunda Formation	No	670.2	670.2	524.05				670.2 High	0.0				
Allaru Mudstone	No	733.2	733.2	587.05				733.2 High	0.0				
Toolebuc Formation	No	1044.2	1044.2	898.05				1,044.2 High	0.0				
Wallumbilla Formation	No	1090.2	1090.2	944.05				1,090.2 High	0.0				
Cadna-Owie Formation	No	1322.2	1322.2	1176.05				1,322.2 High	0.0				
Murta Formation	No	1401.2	1401.2	1255.05				1,401.2 High	0.0				
Namur Sandstone	No	1431.2	1431.2	1285.05				1,431.2 High	0.0				
Westbourne Formation	No	1523.2	1523.2	1377.05				1,523.2 High	0.0				
Adori Sandstone	No	1591.2	1591.2	1445.05				1,591.2 High	0.0				
Birkhead Formation	No	1640.2	1640.2	1494.05				1,640.2 High	0.0				
Hutton Sandstone	No	1734.2	1734.2	1588.05				1,734.2 High	0.0				
Poolwanna Formation	No	1930.2	1930.2	1784.05				1,930.2 High	0.0				



		Litholog	Jy Summary
Internal m MDRT	ROP (m/h)		Lithology Comments
130.5 - 191.5	Min :7.50 Avg :27.50 Max :50.10	Lithology Summary Lithology Description Gas & Shows Comments	ARGILLACEOUS SANDSTONE with interbedded CLAYSTONE ARGILLACEOUS SANDSTONE (10 to 100%): light grey to very light green grey, friable, 30% very light grey argillaceous matrix, very fine to fine, 10% medium, sub-angular to angular, moderately to well sorted, sub-spherical, weak siliceous cement, abundant grey green lithic fragments, very poor visible porosity, no hydrocarbon fluorescence. CLAYSTONE (0 to 90%): yellow grey to very light brown grey, soft to very soft, sub-blocky, 5% silty material, trace carbonaceous detritus, trace micro-mica. Nil.
		ROP Comments	
191.5 - 287.0	Min :4.20 Avg :29.50	Lithology Summary	Interbedded ARGILLACEOUS SANDSTONE and ARGILLACEOUS SILTSTONE
	Max :46.50	Lithology Description	ARGILLACEOUS SANDSTONE (30 to 100%): light grey to very light green grey, light olive grey in part, friable, 30 to 40% very light grey argillaceous matrix, fine to dominantly very fine, sub-angular to angular, well sorted, sub- spherical, weak siliceous cement, trace lithic fragments, trace carbonaceous specks, very poor visible porosity, no hydrocarbon fluorescence. ARGILLACEOUS SILTSTONE (0 to 70%): very light grey to light green grey, minor pale brown, soft to minor firm, 30 to 40% argillaceous material, trace very fine carbonaceous specks and fine carbonaceous wisps, locally minor coally detritus, trace micro-mica.
		Gas & Shows Comments	Nil.
		ROP Comments	
287.0 - 319.0	Min :3.40	Lithology Summary	SANDSTONE with interbedded SILTY CLAYSTONE
	Avg :28.10 Max :62.80	Lithology Description	SANDSTONE (30 to 90%): mottled very light grey to light green grey, friable, 10 to 15% argillaceous matrix, very fine to fine, sub-angular to dominantly angular, well sorted, sub-spherical, minor weak calcareous to dominantly weak siliceous cement, 20 to 30% green grey lithics, trace micro mica, very poor visible porosity, no hydrocarbon fluorescence. SILTY CLAYSTONE (10 to 70%): light olive grey to light brown grey, soft, sub- blocky to weakly amorphous and sticky, 20 to 25% quartz silt, up to 5% very fine sand, trace carbonaceous specks and detritus, trace micro-mica.
		Gas & Shows Comments	Nil.
		ROP Comments	
319.0 - 365.5	Min :2.60 Avg :23.10 Max :60.50	Lithology Summary Lithology Description	SANDSTONE with interbedded SILTY CLAYSTONE SANDSTONE (10 to 80%): mottled very light grey to light green grey, friable to moderately hard, minor very light grey to white argillaceous matrix, minor very fine grained - dominantly fine to medium, angular to sub-sounded, well sorted, minor weak siliceous cement to dominantly moderately strong calcareous cement, 20 to 25% green grey lithic fragments, trace mica flecks, very poor visible porosity, no hydrocarbon fluorescence. SILTY CLAYSTONE (20 to 90%): light olive grey to light brown grey, soft becoming firm in part, sub-blocky to weakly amorphous, 20 to 25% quartz silt, trace carbonaceous specks and detritus, trace micro-mica.
	Gas	Gas & Shows Comments	First detected gas from 345 m.
		ROP Comments	



		Litholog	ly Summary					
Internal m MDRT	ROP (m/h)	Lithology Comments						
365.5 - 403.0	Min :3.70 Avg :29.00 Max :41.00	Lithology Summary Lithology Description	SILTY CLAYSTONE with SANDSTONE interbeds SILTY CLAYSTONE (0 to 90%): light olive grey to light brown grey, very pale green grey in part, soft becoming dominantly form, sub-blocky, 20 to 25% quartz silt, trace carbonaceous specks and detritus, trace micro-mica. SANDSTONE (10 to 100%): mottled very light grey to light green grey, trace red and pale orange stained quartz grains, friable to moderately hard, up 15% very light grey to white argillaceous matrix, minor very fine grained - dominantly fine to medium, angular to sub-sounded, well sorted, minor weak siliceous cement to dominantly moderately strong calcareous cement, 20 to 25 % green grey lithic fragments, trace mica flecks, very poor visible porosity, no hydrocarbon fluorescence.					
		Gas & Shows Comments	Nil.					
		ROP Comments						
403.0 - 465.5	Min :2.80 Avg :30.30 Max :51.20	Lithology Summary Lithology Description	SILTY CLAYSTONE SILTY CLAYSTONE (100%): pale brown becoming dominantly very light grey, up to 30% quartz silt, locally 20 to 40% very fine quartz grading to ARENACEOUS CLAYSTONE, locally up to 5% coarse calcite (vein / fracture infill) fragments, 5 to 10% pale brown to moderate brown fragments with abundant coally detritus.					
		Gas & Shows Comments	Nil.					
		ROP Comments						

	Gas Summary											
Gas Type	Depth m	Total Gas %	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm	(GWR/LHR/OCQ)
Drilled	345.0 - 466.5	(Min) 0.0 (Max) 0.2 (Avg.) 0.1	837	6								GWR - not required LHR - not required OCQ - not required
				•								

General Comments

Nil.

	06:00 Hrs Update								
Time / Date:	06:00 Hrs on 16 Jan 2013								
Depth (MDRT):	489.0m								
Progress Since Midnight:	3.0m								
Status @ 0600hrs:	Drilled ahead in 12.1/4" hole from 421 to 489 m with surveys.								
ROP Summary:	Effective penetration rate since 2400 hrs 11.3 m/hr.								
Formation Summary:	Winton Formation								
Lithology Summary:	Interbedded SILTY CLAYSTONE and ARGILLACEOUS SANDSTONE								
Gas Summary:	Maximum: 14 units Average: 9 units								
	Wellsite Geologist(s)								
	(Days) - Andrew James (Nights) - Andrew James								



				Triclop	os-1 Drillii	ng				
Date: 16 Jan 2013			DAIL	Y GEOLOG	Y REPORT N	NUMBER: 3			(assoc	ciated DDR # 3)
				We	II Details					
Depth MDBRT	:672.0	m		Report Period : 00:00 - 24:00					: 16 Jan 20)13
Depth TVDBRT	:672.0	m	Last Csg	Size	:		Progre	SS	:251.0 m	
Depth TVDSS	:		Last Csg	Shoe MD	:			t Start Depth	:466.5 m	
RT - GL	:5.2 m	l	Last Csg	Shoe TVD	:			t End Depth	:691.0 m	
Ground Level	: 141.0	m	Liner MD		:		Days s	ince Spud	:2.48	
RT - Hanger	:		Liner TVI	כ	:		Rig		: Ensign 9	18
Hole Size	: 12.25	i0 in	FIT / LOT		:/		Mud W	/eight	:9.10 ppg	
Lag Depth	:		Hole Size	Carbide	:		Mud T	уре	: KCI - PHI	PA - Pre
Last Survey (MDRT/T)	/DRT) :652.0) m /	Liner (MD	ORT/TVDRT)	:/				Hydrated	Bentonite
Survey Deviation : Inc. 1.00 °							Est. Po	ore Pressure	:	
			Geolo	gy 24hr C	perations	s Summar	y			
24hr Summary:		Dr	illed ahead ir	n 12.1/4" hole	e from 421 to	672 m with s	surveys.			
24hr Forward Plan:		Dr	ill ahead to p	roposed sec	tion TD at 75	8 m. Conditi	on hole and	pull out. Rig u	p and comme	ence running
		9.5	5/8" casing.							
				Form	ation Top	s				
Formation	Inverted?		Prognosed			Actual		Diff.	Thickness	Pick Criteria
		MDRT TVDRT		TVDSS	MDRT TVDRT		TVDSS	+/- TVD	ТVD	
		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Winton Formation	No	5.2	5.2	-140.95	5.2	5.2	-140.95	0 High	636.3	From surface.
Mackunda Formation	No	670.2	670.2	524.05	641.5	641.5	495.35	28.7 High	0.0	Lithology / ROP
Allaru Mudstone	No	733.2	733.2	587.05				733.2 High	0.0	
Toolebuc Formation	No	1044.2	1044.2	898.05				1,044.2 High	0.0	
Wallumbilla Formation	No	1090.2	1090.2	944.05				1,090.2 High	0.0	
Cadna-Owie Formation	No	1322.2	1322.2	1176.05				1,322.2 High	0.0	
Murta Formation	No	1401.2	1401.2	1255.05				1,401.2 High	0.0	
Namur Sandstone	No	1431.2	1431.2	1285.05				1,431.2 High	0.0	
Westbourne Formation	No	1523.2	1523.2	1377.05				1,523.2 High	0.0	
Adori Sandstone	No	1591.2 1591.2 1445.05						1,591.2 High	0.0	
								-		
Birkhead Formation	No	1640.2	1640.2	1494.05				1,640.2 High	0.0	
Birkhead Formation Hutton Sandstone	No No	1640.2 1734.2	1640.2 1734.2	1494.05 1588.05				1,640.2 High 1,734.2 High	0.0	



Lithology Summary			
Internal m MDRT	ROP (m/h)	Lithology Comments	
466.5 - 540.0	Min :1.30 Avg :22.10 Max :50.10	Lithology Summary Lithology Description	ARGILLACEOUS SANDSTONE with minor interbedded SILTY CLAYSTONE ARGILLACEOUS SANDSTONE (40 to 90%): very light grey, friable to minor
			moderately hard aggregates, common white argillaceous matrix, very fine to fine, sub-angular to dominantly sub-sounded, well sorted, sub-spherical, weak siliceous cement - dominantly locally strong calcareous cement, 5% pale green lithics, rare aggregates with carbonaceous / coally laminations, coarse carbonaceous detritus in part, very poor visible porosity, no hydrocarbon fluorescence. SILTY CLAYSTONE (10 to 60%): pale brown to moderate brown, very light grey in part, soft to firm, minor moderately hard, minor to locally common
		Gas & Shows Comments	carbonaceous detritus and rare very fine coally laminations. Nil.
		ROP Comments	
540.0 - 626.5	Min :1.80	Lithology Summary	SANDSTONE with thin SILTSTONE interbeds
010.0 020.0	Avg :22.80 Max :55.90	Lithology Description	SANDSTONE (20 to 90%): mottled light grey / white / green grey, friable to dominantly moderately hard, locally hard, 5 to 10% argillaceous matrix, very fine, minor fine to medium, well sorted, sub-spherical, moderately strong to strong calcareous cement - locally very strong, common lithics and carbonaceous detritus, trace fine feldspar fragments, very poor visible
			porosity, no hydrocarbon fluorescence. SILTSTONE (10 to 80%): light olive grey to pale brown, minor very light grey, soft to dominantly firm, minor moderately hard, sub-blocky, 10% very fine quartz grains, 10% lithics, trace to locally minor micro mica, trace uniformly distributed very fine carbonaceous detritus, rare fine coally laminations.
		Gas & Shows Comments	Nil.
		ROP Comments	Strong calcareously cemented sandstones giving reverse drilling breaks throughout interval.
626.5 - 641.5	Min :8.30	Lithology Summary	Interbedded SILTSTONE and SANDSTONE
	Avg :30.10 Max :53.80	Lithology Description	SILTSTONE (10 to 70%): medium grey to light brown grey, minor brown grey, soft to dominantly firm, sub-blocky to blocky, 15 to 20% clay locally grading to ARGILLACEOUS SILTSTONE and slightly sticky, trace very fine carbonaceous wisps and coally laminations, trace to locally common micro mica. SANDSTONE (30 to 90%): mottled light grey / white / green grey, friable to moderately hard, 5 to 10% argillaceous matrix, very fine to fine, well sorted, sub-spherical, moderately strong to strong calcareous cement, common lithics and carbonaceous detritus, trace fine feldspar fragments, very poor visible porosity, no hydrocarbon fluorescence.
		Gas & Shows Comments	Nil.
044 5 004 0	Min -0.40	ROP Comments	
641.5 - 691.0	Min :6.40 Avg :26.10	Lithology Summary	SILTSTONE with minor SANDSTONE interbeds
	Max :53.80	Lithology Description	SILTSTONE (20 to 70%): olive grey to minor brown grey, 10%, clay, trace very fine carbonaceous detritus - uniformly textured. SANDSTONE (30 to 80%): mottled white / very light grey / green grey, moderately hard to dominantly friable, 10% white argillaceous matrix, very fine to fine, sub-angular to dominantly sub-sounded, well sorted, sub-spherical, weak siliceous to pervasive weak to locally moderately strong calcareous cement, 5 to 10% lithics and fine feldspar fragments, trace carbonaceous detritus, very poor visible porosity, no hydrocarbon fluorescence.
		Gas & Shows Comments	Nil.
		ROP Comments	



					Ga	as Sum	mary						
Gas Type	Dej n		Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm	(GWR/LHR/OCQ)
Drilled	466.5 -	- 540.0	(Min) 5.0 (Max) 18.6 (Avg.) 11.8	2,332	22	5							GWR - not required LHR - not required OCQ - not required
Drilled	540.0 -	- 626.5	(Min) 5.6 (Max) 21.4 (Avg.) 13.5	2,161	32	16							GWR - not required LHR - not required OCQ - not required
Drilled	626.5 - 641.5 (Min) 9.2 (Max) 28.0 (Avg.) 18.6			3,169	70	39							GWR - not required LHR - not required OCQ - not required
Drilled	641.5 -	- 691.0	(Min) 8.9 (Max) 23.0 (Avg.) 16.0	2,894	72	44							GWR - not required LHR - not required OCQ - not required
					Gene	eral Cor	nments	;					
						Comme	nts						
Nil.													
					06:0	00 Hrs l	Jpdate						
Time / Date:		06:00 Hrs	on 17 Jan 2	2013									
Depth (MDRT):		723.0m											
Progress Since M	_	51.0m											
Status @ 0600hrs	s:		ead in 12.1/4										
ROP Summary:		· ·	enetration r	ate since	2400 hrs	8.5 m/hr.							
Formation Summ	-		Formation										
Lithology Summa	ary:		NE with inter	rbedded S	SANDST	ONE							
Gas Summary:		Maximum: Average:											
		, werage.				4. 0		\					
						ite Géo	logist(s						
	(Days) - Andrew James (Nights) - Andrew James												



				Triclop	os-1 Drillii	ng					
Date: 17 Jan 2013			DAIL	Y GEOLOG	Y REPORT N	NUMBER: 4			(assoc	ciated DDR # 4)	
				We	II Details						
Depth MDBRT	:766.0) m	Report P	eriod	:00:00 - 2	4:00	Date		: 17 Jan 2013		
Depth TVDBRT	:766.0) m	Last Csg Size : F					SS	:94.0 m		
Depth TVDSS	:619.8	35 m	Last Csg	Shoe MD	:			Start Depth	:691.0 m		
RT - GL	: 5.2 m		Last Csg	Shoe TVD	:			End Depth	:766.0 m		
Ground Level	:141.0) m	Liner MD		:			ince Spud	:3.48		
RT - Hanger	:		Liner TVI	C	:		Rig		: Ensign 9 ⁻	18	
Hole Size	: 12.25		FIT / LOT		:/		Mud W	•	:8.90 ppg		
Last Survey (MDRT/TV	•		Liner (MD	ORT/TVDRT)	:/		Mud Ty	уре	: KCI - PHI	PA - Pre	
Survey Deviation	: Inc. 0								Hydrated	Bentonite	
	Az 0.	00 °									
			Geolo	gy 24hr C	Operations	s Summar	ъ				
24hr Summary:								ached section d to rig down flo		ed hole and	
24hr Forward Plan:		Ru	in and cemei	nt 9.5/8" surf	ace casing.	Wait on cem	ent.				
				Form	ation Top	s					
Formation	Inverted?		Prognosed			Actual		Diff.	Thickness	Pick Criteria	
		MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	TVD		
		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)		
Winton Formation	No	5.2	5.2	-140.95	5.2	5.2	-140.95	0 High	636.3	From surface.	
Mackunda Formation	No	670.2	670.2	524.05	641.5	641.5	495.35	28.7 High	103.5	Lithology /	
										ROP	
Allaru Mudstone	No	733.2	733.2	587.05	745.0	745.0	598.85	11.8 Low	0.0	Lithology / ROP	
Toolebuc Formation	No	1044.2	1044.2	898.05				1,044.2 High	0.0		
Wallumbilla Formation	No	1090.2	1090.2	944.05				1,090.2 High	0.0		
Cadna-Owie Formation	No	1322.2	1322.2	1176.05				1,322.2 High	0.0		
Murta Formation	No	1401.2	1401.2	1255.05				1,401.2 High	0.0		
Namur Sandstone	No	1431.2	1431.2	1285.05				1,431.2 High	0.0		
Westbourne Formation	No	1523.2	1523.2	1377.05				1,523.2 High	0.0		
Adori Sandstone	No	1591.2	1591.2	1445.05				1,591.2 High	0.0		
Birkhead Formation	No	1640.2	1640.2	1494.05				1,640.2 High	0.0		
Hutton Sandstone	No	1734.2	1734.2	1588.05				1,734.2 High	0.0		
Poolwanna Formation	No	1930.2	1930.2	1784.05				1,930.2 High	0.0		



					Litho	logy S	ummar	y					
Internal m MDR	TF	ROP (m/h)						Lithology	y Comme	ents			
Internal m MDR 691.0 - 745.0 745.0 - 766.0	Gas & ROP Litho	logy Sun logy Des & Shows Commen logy Sun logy Des	Commen Its	SAN loca sort calc cart fluo SIL harc unif ts Nil. SIL SIL SIL	N/A SILTSTONE with minor SANDSTONE SILTSTONE (20 to 70%): light olive grey to minor pale brown, firm to moderately hard, sub-blocky, 10 to 20% very fine quartz grains locally gradin to ARENACEOUS SILTSTONE, 5 to 10% very fine lithics and feldspar								
					fragments, 1% micro mica, trace carbonaceous wisps and viaminations. SANDSTONE (30 to 80%): mottled light grey / light green gimoderately hard, 5% argillaceous matrix, dominantly very figrained, very well sorted, sub-angular to dominantly sub-so spherical, strong to moderate calcareous cement, 10% very and feldspar fragments, trace carbonaceous wisps, very poporosity, no hydrocarbon fluorescence. Gas & Shows Comments Nil. ROP Comments N/A						green gr ly very fir y sub-sou 0% very	rrey, friable to ine to minor fine unded, sub- y fine to fine lithic	
				- 04		is Sum							(GWR/LHR/OCQ)
Gas Type	Dej n		Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm	(GWR/LHR/OCQ)
Drilled	691.0 -	- 745.0	(Min) 9.0 (Max) 16.0 (Avg.) 12.5	1,815	56	40	16	9	6	2			GWR - not required LHR - not required OCQ - not required
Drilled	745.0 -	- 766.0	(Min) 8.0 (Max) 31.0 (Avg.) 19.5	1,808	72	38	14	6	5	2			GWR - not required LHR - not required OCQ - not required
					Gene	ral Co	mments	3					
Nil.						Comme							
					06:0	0 Hre	Update						
Time / Date:		06:00 Hrs	on 18 Jan 2	2013		01115	opuate						
Depth (MDRT):		766.0m											
Progress Since Mi	idnight:	0.0m											
Status @ 0600hrs		-	wn flow line	e. Rigged	up to run	9.5/8" si	urface cas	ing. Com	menced	running ca	asing: sho	be at 241	m at 0600 hrs.
ROP Summary:		N/A											
Formation Summa	ormation Summary: Allaru Mudsto												
Lithology Summa	ithology Summary: N/A												
Gas Summary:		N/A											



Wellsi	te Geologist(s)
(Days) - Andrew James	(Nights) - Andrew James



					Tricl	ops-1 I	Drilling	1					
Date: 18 Jan 2013	3			DAIL	Y GEOLC	GY REP	ORT NU	IMBER: 5				(asso	ociated DDR # 5)
					W	/ell Det	tails						
Depth MDBRT Depth TVDBRT Depth TVDSS RT - GL Ground Level RT - Hanger		: 766.0 : 766.0 : 619.8 : 5.2 m : 141.0 :	m 5 m	Report Pe Last Csg Last Csg Last Csg Liner MD Liner TVD	Size Shoe MD Shoe TVI	:9.6 :76	:00 - 24: 625 in 2.6 m 2.6 m	00	Rep Rep	o gress ort Start ort End I s since S	Depth	: 18 Jan 2 : : 766.0 m : 766.0 m : 4.48 : Ensign 9	
Hole Size Last Survey (MDF Survey Deviation		: 12.250 T) : 716.0 : Inc. 0. Az 0.0	m / .80 °	FIT / LOT	FIT / LOT :/ Mud Weight Liner (MDRT/TVDRT) :/ Mud Type							: 9.10 ppg : KCI - PHPA - Pre Hydrated Bentonite	
				Geolo	gy 24hr	[.] Opera	tions	Summar	У				
24hr Summary: Ran and cemented 9.5/8" casing. Waited on cement. Commenced nippling up BOPs. 24hr Forward Plan: Complete nippling up BOPs and pressure test. Pick up 8.1/2" BHA and run in hole with slip and cut of drilling line. Drill out cement and 3 m of new formation. Conduct LOT. Drill ahead in 8.1/2" hole.													
					For	mation	Tops						
Formation	Inv	verted?		Prognosed				Actual		0	Diff.	Thickness	Pick Criteria
			MDRT (m)	TVDRT (m)	TVDSS (m)		DRT n)	TVDRT (m)	TVDSS (m)	-	· TVD (m)	TVD (m)	
Winton Formation	No		5.2	5.2	-140.95	5 5	.2	5.2	-140.9		High	636.3	From surface.
Mackunda Formati			670.2	670.2	524.05	64	1.5	641.5	495.35		7 High	103.5	Lithology / ROP
Allaru Mudstone	No		733.2	733.2	587.05	74	5.0	745.0	598.85	5 11.	8 Low	0.0	Lithology / ROP
Toolebuc Formatic	-		1044.2	1044.2	898.05						0		
Wallumbilla Forma			1090.2	1090.2	944.05					_			
Cadna-Owie Form			1322.2	1322.2	1176.05							0.0	
Murta Formation	No		1401.2	1401.2	1255.05							0.0	
Namur Sandstone	-		1431.2	1431.2	1285.05							0.0	
Westbourne Forma			1523.2	1523.2	1377.05							0.0	_
Adori Sandstone	No		1591.2	1591.2	1445.05	-						0.0	
Birkhead Formatio			1640.2	1640.2	1494.0							0.0	
Hutton Sandstone	-		1734.2	1734.2	1588.05							0.0	
Poolwanna Forma	ition No		1930.2	1930.2	1784.0	-						0.0	
						s Sum							
Gas Type	D	Depth m	Tota Gas Unit	ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S (ppm	GWR/LHR/OCQ)
Trip										GWR - not equired .HR - not required DCQ - not equired			
Comment -	Gas recor	rded while	circulating	casing prior to	o cement	job.							
					Gene	ral Cor	nment	s					
						Commei	nts						
Ran carbide lag tes	st at TD. E	Estimated	hole size 1	2.48".									
Ran carbide lag test at TD. Estimated hole size 12.48".													



	06:00 Hrs Update									
Time / Date:	06:00 Hrs on 19 Jan 2013									
Depth (MDRT):	766.0m									
Progress Since Midnight:	0.0m									
Status @ 0600hrs:	Completed nippling up BOPs. Commencing pressure testing.									
ROP Summary:	N/A									
Formation Summary:	Allaru Mudstone									
Lithology Summary:	N/A									
Gas Summary:	18 unit peak recorded while circulating casing on bottom.									
	Wellsite Geologist(s)									
	(Days) - Andrew James (Nights) - Andrew James									



				Triclop	os-1 Drilli	ng				
Date: 19 Jan 2013			DAIL	Y GEOLOG	Y REPORT I	NUMBER: 6			(assoc	iated DDR # 6)
				Wel	I Details					
Depth MDBRT :766.0 m Depth TVDBRT :766.0 m Depth TVDSS :619.85 m RT - GL :5.2 m Ground Level :141.0 m RT - Hanger : Hole Size :12.250 in Last Survey (MDRT/TVDRT) :716.0 m / Survey Deviation :Inc. 0.80 ° Az 0.00 ° :			Last Csg Liner MD Liner TVD FIT / LOT	eriod Size Shoe MD Shoe TVD	: 00:00 - 2 : 9.625 in : 762.6 m : 762.6 m : : :	24:00	Report	Start Depth End Depth ince Spud	: 19 Jan 2013 : : 766.0 m : 5.48 : Ensign 918 : 9.10 ppg : KCI - PHPA - Pre Hydrated Bentonite	
			Geolo	gy 24hr O	peration	s Summar	у			
24hr Summary:		Co	ompleted nipp	ling up BOP	s and press	ure tested. C	ommenced	picking up 8.5'	BHA.	
24hr Forward Plan:		Rı		ip and cut dr	illing line. D					ell to mud and
				Forma	ation Top	s				
Formation	Inverted?		Prognosed			Actual		Diff.	Thickness	Pick Criteria
		MDRT (m)	TVDRT (m)	TVDSS (m)	MDRT (m)	TVDRT (m)	TVDSS (m)	+/- TVD (m)	TVD (m)	
Winton Formation	No	5.2	5.2	-140.95	5.2	5.2	-140.95	0 High	636.3	From surface.
Mackunda Formation	No	670.2	670.2	524.05	641.5	641.5	495.35	28.7 High	103.5	Lithology / ROP
Allaru Mudstone	No	733.2	733.2	587.05	745.0	745.0	598.85	11.8 Low	0.0	Lithology / ROP
Toolebuc Formation	No	1044.2	1044.2	898.05					0.0	
Wallumbilla Formation	No	1090.2	1090.2	944.05					0.0	
Cadna-Owie Formation	No	1322.2	1322.2	1176.05					0.0	
Murta Formation Namur Sandstone	No No	1401.2 1431.2	1401.2 1431.2	1255.05 1285.05					0.0	
Westbourne Formation	No	1431.2	1431.2	1265.05					0.0	
Adori Sandstone	No	1523.2	1523.2	1445.05					0.0	
Birkhead Formation	No	1640.2	1640.2	1494.05					0.0	
Hutton Sandstone	No	1734.2	1734.2	1588.05					0.0	
	No	1930.2	1930.2	1784.05					0.0	
	1		· · ·		I Comme	nts		1	•	1
				Co	omments					
				06:00	Hrs Upda	te				
Time / Date:	06:00	Hrs on 20 J	an 2013							
Depth (MDRT):	766.0									
Progress Since Midnig										
Status @ 0600hrs:		d up 8 5" BH	A and ran in I	hole Slinne	d and cut dri	lling line Co	mpleted Acc	umulater Test		
ROP Summary:	N/A	0.0 DI		and another					-	
Formation Summary:		Mudstone								
	N/A	MUUSIONE								
Lithology Summary:										
Gas Summary:	N/A.									
				Wellsite	Geologis	st(s)				
		(Da	ays) - Andrew	James	(Nights) - And	rew James			



				Triclop	os-1 Drilli	ng					
Date: 20 Jan 2013			DAIL	Y GEOLOG	Y REPORT I	NUMBER: 7			(assoc	ciated DDR # 7)	
				Wel	I Details						
Depth MDBRT Depth TVDBRT	:916.0 :916.0		Report P Last Csg		: 00:00 - 2 : 9.625 in	4:00	Date Progres	ss	:20 Jan 20 :150.0 m)13	
Depth TVDSS RT - GL	: 769.8 : 5.2 m		Last Csg	Last Csg Shoe MD :762.6 m Last Csg Shoe TVD :762.6 m			Report	•		5.0 m	
Ground Level RT - Hanger	: 141.0 m :				:			ince Spud	: 6.48 : Ensign 9′	18	
Hole Size :8.500 in Last Survey (MDRT/TVDRT) :907.0 m / Survey Deviation :Inc. 0.50 °			FIT / LOT	Liner TVD : Rig FIT / LOT :/ 16.72 ppg Muc Liner (MDRT/TVDRT) :/ Muc					: 8.90 ppg	g - Pre Hydrated	
Az 0.00 °											
			Geolo	gy 24hr O	peration	s Summar	У				
24hr Summary: 24hr Forward Plan:		tes Co	st. Drilled ou	t cement, sho rilling ahead i	be track and	3 m of new f	ormation. Co	it drilling line. onducted LOT survey.			
					ation Top	s					
Formation	Inverted?		Prognosed			Actual		Diff.	Thickness	Pick Criteria	
		MDRT (m)	TVDRT (m)	TVDSS (m)	MDRT (m)	TVDRT (m)	TVDSS (m)	+/- TVD (m)	TVD (m)		
Winton Formation Mackunda Formation	No No	5.2 670.2	5.2 670.2	-140.95 524.05	5.2 641.5	5.2 641.5	-140.95 495.35	0 High 28.7 High	636.3 103.5	From surface. Lithology / ROP	
Allaru Mudstone	No	733.2	733.2	587.05	745.0	745.0	598.85	11.8 Low	0.0	Lithology / ROP	
Toolebuc Formation Wallumbilla Formation	No No	1044.2 1090.2	1044.2 1090.2	898.05 944.05					0.0		
Cadna-Owie Formation Murta Formation	No No	1322.2 1401.2	1322.2 1401.2	1176.05 1255.05					0.0 0.0		
Namur Sandstone Westbourne Formation	No No	1431.2 1523.2	1431.2 1523.2	1285.05 1377.05					0.0 0.0		
Adori Sandstone Birkhead Formation	No No	1591.2 1640.2	1591.2 1640.2	1445.05 1494.05					0.0 0.0		
Hutton Sandstone Poolwanna Formation	No No	1734.2 1930.2	1734.2 1930.2	1588.05 1784.05					0.0 0.0		



		Litholog	yy Summary
Internal m MDRT	ROP (m/h)		Lithology Comments
766.0 - 811.0	Min :2.60 Avg :25.40 Max :43.70	Lithology Summary Lithology Description	SILTSTONE with minor thin SANDSTONE interbeds SILTSTONE (70 to 95%): medium light grey becoming dominantly medium grey, firm to moderately hard in part, sub-blocky to minor blocky, up to 20% very fine sand grading in part to ARENACEOUS SILTSTONE, trace lithics and fine carbonaceous detritus, trace pyrite, trace calcareous vein fragments. SANDSTONE (5 to 30%): light grey to minor medium grey, moderately hard, very fine to minor fine grained - silty in part grading to SILTY SANDSTONE, very well sorted, sub-angular, sub-spherical, strong calcareous cement, 5 to 10 % very fine to fine lithic and feldspar fragments, trace carbonaceous specks, no visible porosity, no hydrocarbon fluorescence.
		Gas & Shows Comments ROP Comments	Nil. N/A
811.0 - 858.0	Min :26.20 Avg :33.00 Max :43.70	Lithology Summary Lithology Description Gas & Shows Comments ROP Comments	SILTSTONE with rare, thin SANDSTONE interbeds and rare very thin DOLOMITIC laminations SILTSTONE (70 to 100%): medium grey to dominantly medium dark grey, moderately hard to dominantly firm, sub-blocky to minor sub-fissile, 10 to 15% very finely arenaceous, uniformly textured with trace disseminated pyrite and very fine carbonaceous specks, trace micro mica. SANDSTONE (0 to 30%): medium light grey to medium grey, moderately hard, very fine, silty grading to SILTY SANDSTONE, very well sorted, sub-angular to angular, sub-spherical, strong calcareous cement, 5 to 10% very fine to minor feldspar and lithics, trace uniformly distributed carbonaceous specks and very fine wisps. DOLOMITE (0 to 5%): olive grey to brown grey, very hard, sub-fissile to fissile, crypto- to micro-crystalline, generally homogenous - trace very fine carbonaceous / black mineral specks (?) and isolated pyrite grains. Nil. N/A.
858.0 - 990.0	Min :10.10 Avg :29.30 Max :41.20	Lithology Summary Lithology Description Gas & Shows Comments ROP Comments	SILTSTONE with rare very thin DOLOMITIC laminations SILTSTONE (97 to 100%): medium dark grey becoming dominantly medium grey, firm, sub-blocky to dominantly sub-fissile, minor fissile, generally uniformly textured - slightly argillaceous in part, weakly calcareous, trace carbonaceous specks, rare shell fragments, trace granular pyrite fragments. DOLOMITE (0 to 3%): olive grey to brown grey, very hard, sub-fissile to fissile, crypto- to micro-crystalline, generally homogenous - trace very fine carbonaceous / black mineral specks (?) and isolated pyrite grains. No shows - lithology interval still open but closed off as at 0400 hrs.



					Ga	as Sum	mary						
Gas Type	Der n		Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm	(GWR/LHR/OCQ)
Drilled	766.0 -	811.0	(Min) 1.0 (Max) 10.0 (Avg.) 5.5	977	44	35	11	4	2	1			GWR - not required LHR - not required OCQ - not required
Drilled	811.0 -	858.0	(Min) 6.0 (Max) 13.0 (Avg.) 9.5	1,717	88	84	26	10	4	1			GWR - not required LHR - not required OCQ - not required
Drilled	858.0 -	990.0	(Min) 8.0 (Max) 30.0 (Avg.) 19.0	2,257	154	173	51	31	10	3			GWR - not required LHR - not required OCQ - not required
					Gene	eral Cor	nments	;					
						Comme							
Chromatograph in and replayed to re	- ·								•				•
					06:0	00 Hrs l	Jpdate						
Time / Date:		06:00 Hrs	on 21 Jan 2	2013									
Depth (MDRT):		1,015.0m											
Progress Since M	/lidnight:	99.0m											
Status @ 0600hr	s:	Drilled ahe	ad in 8 1/2'	' hole fror	n 916 to 1	1015 m.							
ROP Summary		Effective	enetration r	ate since	2400 hrs	16.5 m/h	r						

ROP Summary:	Effective penetration rate since 2400 hrs 16.5 m/hr.							
Formation Summary:	Allaru Mudstone							
Lithology Summary:	SILTSTONE							
Gas Summary: Maximum: 30.3 units								
	Average: 22.1 units							
Wellsite Geologist(s)								

(Days) - Andrew James

(Nights) - Andrew James



		Tr	riclops-1 Drilling				
Date: 21 Jan 2013		DAILY GEO	DLOGY REPORT NUMBER: 8			(asso	ociated DDR # 8)
			Well Details				
Depth MDBRT Depth TVDBRT Depth TVDSS RT - GL Ground Level RT - Hanger Hole Size Last Survey (MDRT/TVDRT) Survey Deviation	: 1,138.0 m : 1,138.0 m : 991.80 m : 5.20 m : 141.0 m : : 8.500 in : 1,101.0 m / : Inc. 2.00 ° Az 185.00 °	Report Period Last Csg Size Last Csg Shoe Last Csg Shoe Liner MD Liner TVD FIT / LOT Liner (MDRT/T\	TVD : 762.7 m : : : / 16.72 ppg	Rep Rep Day Rig Mud	e gress ort Start Depth ort End Depth s since Spud I Weight I Type	: 1,138.0 : 7.48 : Ensign 9 : 9.00 ppg : 4% KCI	m 018
		Geology 24	4hr Operations Summa	ry			
24hr Summary:			" hole from 916 to 1138 m. Su and commenced pulling out ta	5		, ,	angle.
24hr Forward Plan:	C	Complete surveying w	vell. Rig up directional drilling	service.	•		
		F	ormation Tops				
Formation	Progn	osod	Actual		Diff	Thickness	Pick Criteria

					Tops				
Formation		Prognosed			Actual		Diff.	Thickness	Pick Criteria
	MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	TVD	
	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROP
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	0.0	Lithology / ROP
Cadna-Owie Formation	1322.3	1322.3	1176.05					0.0	
Murta Formation	1401.3	1401.3	1255.05					0.0	
Namur Sandstone	1431.3	1431.3	1285.05					0.0	
Westbourne Formation	1523.3	1523.3	1377.05					0.0	
Adori Sandstone	1591.3	1591.3	1445.05					0.0	
Birkhead Formation	1640.3	1640.3	1494.05					0.0	
Hutton Sandstone	1734.3	1734.3	1588.05					0.0	
Poolwanna Formation	1930.3	1930.3	1784.05					0.0	



		Litholog	ly Summary
Internal m MDRT	ROP (m/h)		Lithology Comments
990.0 - 1,038.0	Min :13.30 Avg :20.20 Max :27.30	Lithology Summary Lithology Description	SILTSTONE SILTSTONE: medium grey, firm to minor moderately hard, sub-fissile to fissile in part, generally uniformly textured - slightly argillaceous in part, trace carbonaceous specks.
		Gas & Shows Comments ROP Comments	Nil. N/A.
1,038.0 - 1,094.0	Min :19.20 Avg :30.00 Max :45.10	Lithology Summary Lithology Description	SILTSTONE SILTSTONE (1) (10 to 100%): grey black to olive black, minor brown black, firm to moderately hard, sub fissile to fissile, strongly calcareous - uniformly very finely arenaceous, up to 5% shell and Inoceramus fragments, trace pyrite Becoming SILTSTONE (2) (0 to 90%): medium dark grey to dominantly dark grey, firm to dominantly moderately hard, sub-fissile to fissile, strongly calcareous, locally 5 to 10% very fine quartz grains, trace micro mica. Wet gas peak associated with high TOC Toolebuc Formation
		ROP Comments	N/A
1,094.0 - 1,138.0	Min :11.70 Avg :28.40 Max :37.10	Lithology Summary Lithology Description	SILTSTONE SILTSTONE (100%): medium dark grey, moderately hard, sub-blocky to sub- fissile, generally weakly calcareous with 5% moderate brown carbonate fragments (as vein partings?), uniformly 15 to 20% very finely arenaceous grading to ARENACEOUS SILTSTONE in part with associated trace to 10% very fine to fine glauconite, trace micro mica and pyritic streaks.
		Gas & Shows Comments ROP Comments	Nil. N/A.
			Summary

	Gas Summary											
Gas Type	Depth m	Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm	
Drilled	990.0 - 1,038.0	(Min) 18.0 (Max) 52.7 (Avg.) 35.4	2,811	323	618	140	317	95	69			
Drilled	1,038.0 - 1,094.0	(Min) 51.0 (Max) 519.0 (Avg.) 285.0	12,851	1,757	3,594	629	1,940	428	466			
Drilled	1,094.0 - 1,138.0	(Min) 35.0 (Max) 128.3 (Avg.) 81.7	4,747	604	1,317	267	908	259	317			

General Comments Comments

Nil.

06:00 Hrs Update							
06:00 Hrs on							
1,138.0m							
0.0m							
ontiinued to pull out of hole taking a single shot survey each stand.							
I/A							
Wallumbilla Formation							
SILTSTONE							
N/A							
Wellsite Geologist(s)							
(Days) - Andrew James (Nights) - Andrew James							



Date: 22 Jan 2013				riclops-1 [ORT NUMBE			(265	ociated DDR # 9)	
			DAILT GL					(835		
Depth MDBRT	: 1,138.0	m F	Report Period		:00 - 24:00	Da	ite	:22 Jan	2013	
Depth TVDBRT	: 1,138.0		-				ogress	: 0.0 m	2010	
Depth TVDSS	: 991.80 r		Last Csg Shoe		2.7 m		port Start Dept		m	
RT - GL	:5.20 m	-	ast Csg Shoe		2.7 m		port End Depth			
Ground Level	: 141.0 m		Liner MD	. UVD .70	2.7 111		lys since Spud			
RT - Hanger	:		iner TVD			Ri	• •	: Ensign	918	
Hole Size	:8.500 in		TT / LOT	·/ 1	6.72 ppg		ud Weight	:9.00 pp		
Last Survey (MDRT/TVDF	RT) :1,120.0		.iner (MDRT/T		0.72 ppg		ud Type		- Pre Hydrated	
Survey Deviation	: Inc. 2.00								ite - Polymer	
	Az 175.0	00 °							-	
			Geology 2	4hr Opera	tions Sum	mary				
24hr Summary:		Comp		-			not surveys each	stand. Ran ba	ack in to shoe	
		· · ·	aited on directi							
24hr Forward Plan:		Pull or	ut of hole and r	nake up pend	ulum BHA. R	Run in hole ar	nd drill ahead in	8 1/2" hole from	n 1138 m.	
		· ·		Formation	Tops					
Formation		Prognosed			Actual		Diff.	Diff. Thickness Pick		
	MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	ТVD		
	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)		
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.	
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP	
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP	
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROP	
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	0.0	Lithology / ROP	
Cadna-Owie Formation	1322.3	1322.3	1176.05					0.0		
Murta Formation	1401.3	1401.3	1255.05					0.0		
Namur Sandstone	1431.3	1431.3	1285.05					0.0		
Westbourne Formation	1523.3	1523.3	1377.05					0.0		
Adori Sandstone	1591.3	1591.3	1445.05					0.0		
Birkhead Formation	1640.3	1640.3	1494.05					0.0		
Hutton Sandstone	1734.3	1734.3	1588.05					0.0		
Poolwanna Formation	1930.3	1930.3	1784.05					0.0		
			G	eneral Cor	nments					
N 111				Commer	nts					
Nil.										
	1		C	6:00 Hrs l	Jpdate					
Depth (MDRT):	1,138.0n	1								
Progress Since Midnight										
Status @ 0600hrs:	-	on equipmen	t							
ROP Summary:	N/A	ille Ferrerati								
Formation Summary:		illa Formatior	1							
Lithology Summary:	N/A N/A									
Gas Summary:	IN/A									
			We	ellsite Geo	- · ·					
		(Days)	- Andrew Jame	es	(Nights)	- Andrew Jar	nes			



					<u>Drilling</u>						
Date: 24 Jan 2013			DAILY GEO			र: 11		(assoc	ciated DDR # 11		
				Well Det	ails						
Depth MDBRT	: 1,296.0 ו		Report Period		:00 - 24:00		ate	:24 Jan 2	:24 Jan 2013		
Depth TVDBRT	: 1,296.0 ו	n	_ast Csg Size	:9.6	625 in	Pi	ogress	:130.0 m	1		
Depth TVDSS	: 1,149.80	m I	Last Csg Shoe	MD :76	2.7 m		eport Start Dept		m		
RT - GL	:5.20 m	1	_ast Csg Shoe	TVD :76	2.7 m		eport End Depth		m		
Ground Level	: 141.0 m	1	_iner MD	:			ays since Spud	:10.48			
RT - Hanger	:	1	_iner TVD	:		Ri	-	: Ensign 9			
Hole Size	: 8.500 in		FIT / LOT		6.72 ppg		ud Weight	: 9.00 pp	-		
Last Survey (MDRT/TVDF			_iner (MDRT/T	VDRT) :/		M	ud Type		- Pre Hydrated		
Survey Deviation	: Inc. 3.00							Bentoni	te - Polymer		
	Az 160.0	0									
			Geology 2	4hr Opera	tions Sum	mary					
24hr Summary:		Drillec	l ahead in 8-1/2	2" hole from 1	168 to 1296 n	n with single	shot surveys. Co	ommenced circ	ulating hole		
		clean.									
24hr Forward Plan:					-	-	n in hole and dril	ahead in 8-1/2	2" hole from		
		1296	m directionally	correcting we	Ilbore trajecto	ry back to ta	rget centre.				
				Formation	Tops						
Formation		Prognosed	1		Actual		Diff.	Thickness	Pick Criteria		
	MDRT TVDRT		TVDSS	MDRT	TVDRT TVDSS		+/- TVD	ТУД			
	(m)	(m)	(m)	(m)	(m)	(m) (m)		(m)			
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.		
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROI		
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROI		
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROF		
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	0.0	Lithology / ROF		
Cadna-Owie Formation	1322.3	1322.3	1176.05								
Murta Formation	1401.3	1401.3	1255.05								
Namur Sandstone	1431.3	1431.3	1285.05								
Westbourne Formation	1523.3	1523.3	1377.05								
Adori Sandstone	1591.3	1591.3	1445.05								
Birkhead Formation	1640.3	1640.3	1494.05								
Hutton Sandstone Poolwanna Formation	1734.3 1930.3	1734.3 1930.3	1588.05 1784.05								
	1930.3	1930.3									
			Lit	thology Sι	ummary						
Internal m MDRT	ROP (m/h)				Lith	ology Comr	nents				
1,180.0 - 1,296.0	Min :2.50	Litho	logy Summary	SILT	STONE with	minor SILTY	SANDSTONE in	terbeds in upp	er part of interva		
	Avg :8.90		logy Descripti				k grey, firm to me				
	Max :18.40						textured with tra				
					-		ILTY SANDSTO		• •		
				both	fine silt and s	and laminati	ons associated w	vith 5 to 10% gl	auconite and		
				inclu	ded pyritic ag	arenates					
							6): mottled white				

Gas & Shows Comments

C1

ppm

952

ROP Comments

Total Gas

Units

(Min) 4.8

(Max) 24.2 (Avg.) 14.5 Nil.

Gas Summary

C2

ppm

93

to control well inclination.

C3

ppm

172

Depth

m

1,180.0 - 1,296.0

Gas Type

Drilled

CO2

ppm

H2S

ppm

% dusky green glauconite, very fine, well sorted, sub-angular to sub-sounded, sub-spherical, strong calcareous cement, common fine white lithics, very poor

Efficient penetration rate reduced due to application of reduced WOB in order

nC4

ppm

101

iC5

ppm

25

nC5

ppm

31

visible porosity, no hydrocarbon fluorescence.

iC4

ppm

36



	General Comments								
	Comments								
Nil.									
	06:00 Hrs Update								
Depth (MDRT):	1,296.0m								
Progress Since Midnight:	0.0m								
Status @ 0600hrs:	laking up directional drilling BHA.								
ROP Summary:	N/A								
Formation Summary:	Wallumbilla Formation.								
Lithology Summary:	SILTSTONE with minor SILTY SANDSTONE interbeds								
Gas Summary:	N/A								
	Wellsite Geologist(s)								
	(Days) - Andrew James (Nights) - Andrew James								



			1	riclops-1	Drilling					
Date: 25 Jan 2013			DAILY GE	OLOGY REP	ORT NUMBEI	R: 12		(asso	ciated DDR # 23)	
				Well De	tails					
Depth MDBRT	: 1,336.0	m F	Report Period	: 0	0:00 - 24:00	Da	te	: 25 Jan 2	: 25 Jan 2013	
Depth TVDBRT	: 1,336.0	m L	ast Csg Size	:9	.625 in	Pro	ogress	:170.0 m	1	
Depth TVDSS	: 1,189.80) m 🛛 🚺	ast Csg Sho	e MD : 70	62.7 m	Re	port Start Deptl	n :1,296.0	m	
RT - GL	:5.20 m	L	ast Csg Shoe	• TVD : 7	62.7 m	Re	port End Depth	: 1,360.0	m	
Ground Level : 141.0 m			iner MD			Da	ys since Spud	:11.48		
RT - Hanger		iner TVD	:		Rig	1	: Ensign 9	918		
Hole Size	:8.500 in	F	IT / LOT	:/	16.72 ppg	Mu	d Weight	:9.10 pp	g	
Last Survey (MDRT/TVDF	RT) :1,284.0	m/ L	iner (MDRT/T		FF G	Mu	d Type	:4% KCl	- Pre Hydrated	
Survey Deviation	: Inc. 3.00		- (,				Bentoni	te - Polymer	
	Az 160.0	00 °								
			Geology 2	4hr Oner	ations Sum	mary				
24hr Forward Plan:		instruc	tion from direc	tional driller	Ind commence to correct well ole sliding as r	pore trajectory	ling ahead from /.	1296 m as req	uired under	
				Formatio	n Tops					
Formation		Prognosed			Actual		Diff.	Thickness	Pick Criteria	
	MDRT (m)	TVDRT (m)	TVDSS (m)	MDRT (m)	TVDRT (m)	TVDSS (m)	+/- TVD (m)	TVD (m)		
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.	
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP	
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP	
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROP	
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	217.0	Lithology / ROP	
Cadna-Owie Formation	1322.3	1322.3	1176.05	1311.0	1311.0	1164.8	11.3 High	0.0	Lithology	
Murta Formation	1401.3	1401.3	1255.05							
Namur Sandstone	1431.3	1431.3	1285.05							
Westbourne Formation	1523.3	1523.3	1377.05							
Adori Sandstone	1591.3	1591.3	1445.05							

Birkhead Formation

Hutton Sandstone

Poolowanna Formation

1640.3

1734.3

1930.3

1640.3

1734.3

1930.3

1494.05

1588.05

1784.05



		Litholog	gy Summary					
Internal m MDRT	ROP (m/h)		Lithology Comments					
1,296.0 - 1,311.0	Min :6.90 Avg :17.90 Max :26.00	Lithology Summary Lithology Description Gas & Shows Comments ROP Comments	SILTSTONE SILTSTONE (100%): dark grey, firm to moderately hard, fissile to splintery in part, generally uniformly textured with trace to locally common micro mica. Nil. ROP influenced by directional drilling sliding and rotating.					
1,311.0 - 1,318.0	Min :16.40	Lithology Summary	SILTSTONE with SANDSTONE interbed					
1,311.0 - 1,310.0	Avg :27.10 Max :30.50	Lithology Description	SILTSTONE (80 to 90%): dark grey to dominantly olive black, dusky yellow brown in part, firm to dominantly moderately hard, sub-fissile to dominantly fissile, generally uniformly textured - locally very finely arenaceous with associated minor micro mica, trace pyrite aggregates. SANDSTONE (10 to 20%): dark yellow brown to dusky yellow brown, mottled medium grey in part, hard to very hard, very fine, very well sorted, sub-angular to angular, sub-spherical, slightly silty in part, strong calcareous-dolomitic cement, common white lithic / feldspar fragments, trace glauconite, very poor to no visible porosity, 100% uniform dull orange brown mineral fluorescence, no hydrocarbon fluorescence.					
		Gas & Shows Comments	Nil.					
		ROP Comments	ROP influenced by directional drilling sliding and rotating.					
1,318.0 - 1,321.5	Min :8.60 Avg :20.40 Max :26.80	Lithology Summary Lithology Description	Interbedded ARGILLACEOUS SANDSTONE and ARENACEOUS SILTSTONE ARGILLACEOUS SANDSTONE (50%): white to very light grey, pale brown in part, hard, very fine, very well sorted, sub-angular to sub-sounded, sub- spherical, 25 to 30% white argillaceous matrix, strong calcareous cement, weakly dolomitic in part, 5% white lithics / feldspar fragments, trace pyritic cement / matrix, very poor to no visible porosity, 20% dull orange brown mineral fluorescence, no hydrocarbon fluorescence. ARENACEOUS SILTSTONE (50%): dusky yellow brown, firm to dominantly moderately hard, sub-blocky to dominantly sub-fissile, 20 to 30% very fine quartz grains, common very fine lithics, minor micro mica, trace very fine carbonaceous detritus.					
		Gas & Shows Comments	Nil.					
		ROP Comments	ROP influenced by directional drilling sliding and rotating.					
1,321.5 - 1,360.0 Min :3.20 Avg :25.20 Max :34.70		Lithology Summary Lithology Description	 SANDSTONE with minor SILTSTONE interbeds SANDSTONE (20 to 100%): generally white / very light grey, 30 to 40% as d aggregated loose clear to translucent grains, very fine to fine, commonly medium to coarse, moderately sorted, sub-angular in part - dominantly sub-sounded to rounded, sub-spherical to sub-elongate, 10 to 15% white argillaceous matrix, moderate to locally strong calcareous cement, minor fine carbonaceous laminations, poor inferred porosity, no hydrocarbon fluorescence. SILTSTONE (0 to 80%): dusky yellow brown to brown grey, moderately hard to hard, sub-fissile to minor fissile, uniformly very finely arenaceous grading to ARENACEOUS SILTSTONE, minor cuttings fragments with sandstone visibl as laminations grading back to siltstone, locally common fine carbonaceous detritus and laminations. 					
		Gas & Shows Comments	Nil.					
		ROP Comments	ROP influenced by directional drilling sliding and rotating.					



				G	as Sumi	mary						
Gas Type		Depth m	Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm
Trip	1	1,296.0 -	10.0									
Drilled	1,290	6.0 - 1,311.0	(Min) 5.0 (Max) 19.1 (Avg.) 12.0	1,415	140	215	42	99	22	26		
Drilled	1,31	1.0 - 1,318.0	(Min) 19.2 (Max) 44.6 (Avg.) 31.9	2,716	302	509	120	275	80	84		
Drilled	1,318	8.0 - 1,321.5	(Min) 17.8 (Max) 30.2 (Avg.) 24.0	2,017	208	358	88	213	66	73		
Drilled	1,32	1.5 - 1,360.0	(Min) 11.4 (Max) 22.3 (Avg.) 16.9	2,132	181	266	58	157	51	60		
				Gen	eral Con	nments						
					Commer	its						
Last slide from 1346	to 1351 m	-										
				06:	00 Hrs L	Jpdate						
Depth (MDRT):		1,413.0m										
Progress Since Mid	night:	77.0m										
Status @ 0600hrs:		Drilling ahead in	8-1/2" hole.									
ROP Summary:		Effective penetra	ation rate sind	ce 2400 hr:	s 12.8 m/h	r.						
Formation Summar	y:	Cadna Owie Fo	rmation									
Lithology Summary	:	ARENACEOUS	SILTSTONE	with minor	r interbedd	ed SANDS	TONE					
Gas Summary:	Gas Summary: Maximum: 40 units Average: 25 units											
				Wells	site Geol	logist(<u>s</u>)						
])	Days) - Andre	w James		(Night	s) - Andrev	v James				



		Triclop	s-1 Drilling									
Date: 26 Jan 2013		DAILY GEOLOGY	REPORT NUMBER: 13		(associated DDR # 24)							
Well Details												
Depth MDBRT Depth TVDBRT Depth TVDSS RT - GL Ground Level RT - Hanger Hole Size Last Survey (MDRT/TVDRT) Survey Deviation	: 1,568.0 m : 1,568.0 m : 1,421.80 m : 5.20 m : 141.0 m : : 8.500 in : 1,554.3 m / 1,553.9 m : Inc. 1.30 ° Az 322.23 °	Report Period Last Csg Size Last Csg Shoe MD Last Csg Shoe TVD Liner MD Liner TVD FIT / LOT Liner (MDRT/TVDRT)	: 00:00 - 24:00 : 9.625 in : 762.7 m : 762.7 m : : : / 16.72 ppg : /	Date Progress Report Start Depth Report End Depth Days since Spud Rig Mud Weight Mud Type	: 26 Jan 2013 : 232.0 m : 1,360.0 m : 1,578.0 m : 12.48 : Ensign 918 : 9.10 ppg : 4% KCI - Pre Hydrated Bentonite - Polymer							

Geology 24hr Operations Summary

24hr Summary:Drilled ahead in 8-1/2" hole from 1336 to 1568 m directionally drilling as required to maintain target trajectory.24hr Forward Plan:Continue to drill ahead in 8-1/2" hole directionally drilling as required.

	Formation Tops												
Formation		Prognosed			Actual		Diff.	Thickness	Pick Criteria				
	MDRT (m)	TVDRT (m)	TVDSS (m)	MDRT (m)	TVDRT (m)	TVDSS (m)	+/- TVD (m)	TVD (m)					
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.				
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP				
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP				
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROP				
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	217.0	Lithology / ROP				
Cadna-Owie Formation	1322.3	1322.3	1176.05	1311.0	1311.0	1164.8	11.3 High	86.5	Lithology				
Murta Formation	1401.3	1401.3	1255.05	1397.5	1397.5	1251.3	3.8 High	27.0	Lithology				
Namur Sandstone	1431.3	1431.3	1285.05	1424.5	1424.5	1278.3	6.8 High	92.0	Lithology				
Westbourne Formation	1523.3	1523.3	1377.05	1516.5	1516.5	1370.3	6.8 High	0.0	Lithology / ROP				
Adori Sandstone	1591.3	1591.3	1445.05										
Birkhead Formation	1640.3	1640.3	1494.05										
Hutton Sandstone	1734.3	1734.3	1588.05										
Poolowanna Formation	1930.3	1930.3	1784.05										



Lithology Summary							
Internal m MDRT	ROP (m/h)		Lithology Comments				
1,360.0 - 1,389.0	Min :16.50 Avg :26.00 Max :34.80	Lithology Summary Lithology Description	ARENACEOUS SILTSTONE with minor interbedded SANDSTONE ARENACEOUS SILTSTONE (20 to 80%): dusky yellow brown to dominantly brown grey, hard, sub-fissile to fissile, 20 to 40% very finely arenaceous grading in part to SILTY SANDSTONE, trace carbonaceous specks and micro mica. SANDSTONE (20 to 80%): white to very light grey, hard to very hard in part, very fine, sacharoidally textured, very well sorted, sub-angular, sub-spherical, 10% white argillaceous matrix, strong calcareous cement, trace very fine carbonaceous specks and white lithics, very poor to no visible porosity, no hydrocarbon fluorescence.				
		Gas & Shows Comments	Nil.				
		ROP Comments	N/A				
1,389.0 - 1,397.5	Min :25.80 Avg :29.20 Max :33.90	Lithology Summary Lithology Description	SILTSTONE with minor interbedded SANDSTONE SILTSTONE (70 to 90%): medium dark grey to dark grey, moderately hard, fissile to dominantly sub-fissile, uniformly textured - very finely arenaceous in part, trace carbonaceous detritus, trace to locally minor micro mica. SANDSTONE (10 to 30%): light grey to medium light grey, moderately hard to hard, very fine, sacharoidally textured, very well sorted, sub-angular to angular, sub-spherical, grades to SILTY SANDSTONE in part, trace black mineral / carbonaceous specks, no visible porosity, no hydrocarbon fluorescence.				
		Gas & Shows Comments	Nil.				
		ROP Comments	N/A				
1,397.5 - 1,409.5	397.5 - 1,409.5 Avg :28.30 Max :34.40	Lithology Summary Lithology Description	Interbedded SANDSTONE and ARENACEOUS SILTSTONE SANDSTONE (10 to 60%): mottled white / translucent aggregates - 5% loose clear to translucent grains, moderately hard, medium to coarse, minor very coarse, moderately to well sorted, angular to sub-angular, sub-elongated, 5 to 10% white argillaceous matrix, weak calcareous cement, very poor visible to fair inferred porosity. ARENACEOUS SILTSTONE (40 to 90%): dark grey, firm to moderately hard in part, sub-blocky to dominantly sub-fissile, minor very fine lithic fragments, trace carbonaceous detritus and micro mica.				
		Gas & Shows Comments	FLUORESCENCE 1401 to 1404 m: trace pinpoint moderately bright green yellow fluorescence in tight sandstone aggregates, very weak very slow diffuse dull green white cut, very thin residual ring fluorescence, no visible residue. Poor show - no associated gas peak.				
1 400 5 1 404 5	Min :21 10						
1,409.5 - 1,424.5	1,409.5 - 1,424.5 Min :31.10 Avg :29.90 Max :36.10	Lithology Summary Lithology Description	SANDSTONE and interbedded ARENACEOUS SILTSTONE SANDSTONE (20 to 70%): light grey aggregates - very fine, 50% as fine to dominantly medium translucent to clear dis-aggregated grains, friable to moderately hard, moderately to well sorted, sub-angular to dominantly sub- sounded, rounded in part, sub-elongate to dominantly sub-spherical, 5 to 10% white argillaceous matrix, weak calcareous cement, poor visible to fair inferred porosity. ARENACEOUS SILTSTONE (30 to 80%): dark grey, firm to moderately hard in part, sub-blocky to dominantly sub-fissile, minor very fine lithic fragments, common very fine carbonaceous / coally laminations and detritus.				
		Gas & Shows Comments	FLUORESCENCE 1419 to 1424.5 m: 100% patchy very dull orange mineral fluorescence with trace pinpoint / scattered green yellow fluorescence in tight sandstone aggregates with trace carbonaceous detritus (locally generated?), slow streaming dull to moderately bright blue white cut, moderately thick residual ring fluorescence, no visible residue. Poor show: broad gas peak 57 units on a 35 unit background. N/A				



Lithology Summary							
Internal m MDRT	ROP (m/h)		Lithology Comments				
1,424.5 - 1,435.5	Min :28.60	Lithology Summary	SANDSTONE with thin interbeds of SILTSTONE				
	Avg :31.10 Max :33.90	Lithology Description	SANDSTONE (70 to 95%): white to very light grey aggregates, dominantly as translucent to clear disaggregated grains, moderately hard to dominantly friable, fine to dominantly medium, rarely coarse, sub-angular to sub-rounded, well sorted, weakly calcareous, trace to 5% white argillaceous matrix, rare carbonaceous laminations, poor to fair inferred porosity. SILTSTONE (5 to 30%): dark grey to brown black, sub-blocky, moderately hard, very finely arenaceous in part with locally common micro mica, occasionally moderately carbonaceous.				
		Gas & Shows Comments	FLUORESCENCE 1424.5 to 1435.5 m: 30 to 10% very dull green patchy fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue.				
		ROP Comments	N/A				
1,435.5 - 1,460.0	Min :10.70	Lithology Summary	SANDSTONE with interbedded SILTSTONE				
	1,435.5 - 1,460.0 Min :10.70 Avg :27.10 Max :35.10	Lithology Description	SANDSTONE: very light to minor very pale brown aggregates, dominantly as dis-aggregated translucent to clear grains, friable, fine to dominantly medium, minor coarse, well sorted, sub-angular to minor sub-sounded, sub-spherical to sub-elongate, minor elongated, weak calcareous cement - weakly siliceous in part, 5% decreasing white argillaceous matrix, fair inferred porosity. SILTSTONE: brown grey to olive grey, moderately hard, sub-fissile to minor fissile, uniformly very finely arenaceous, trace fine mica flecks, trace fine carbonaceous detritus.				
		Gas & Shows Comments ROP Comments	FLUORESCENCE 1435.5 to 1451 m: 10% to 70% (from 1440 to 1443 m) dull green pinpoint to patchy fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue. Poor show - weak gas peaks of 45 units on a 30 unit background. N/A				
1,460.0 - 1,487.0	Min :11.60	Lithology Summary	SANDSTONE with minor SILTSTONE interbeds				
	Avg :21.40 Max :31.80	Lithology Description	SANDSTONE (30 to 100%): minor very light grey aggregates - dominantly as broken / dis-aggregated translucent to clear grains, fine to dominantly medium rarely coarse, well sorted, sub-angular to angular, sub-spherical to sub- elongate, very weakly calcareous, weak siliceous cement, trace white argillaceous matrix, poor visible to dominantly fair inferred porosity. SILTSTONE (0 to 70%): grey black, firm to moderately hard, sub-fissile, very finely arenaceous, moderately to very carbonaceous, trace micro mica.				
		Gas & Shows Comments	FLUORESCENCE 1460 to 1487 m: 5% to trace dull green pinpoint fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue. Poor show - potentially largely cavings in lower part of section. Not supported by elevated gas values.				



Lithology Summary							
Internal m MDRT	ROP (m/h)		Lithology Comments				
1,487.0 - 1,516.5	Min :4.80 Avg :15.30 Max :35.30	Lithology Summary Lithology Description	SANDSTONE with minor interbedded SILTSTONE SANDSTONE (60 to 100%): white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable, medium to dominantly fine, rarely coarse, moderately to well sorted, sub-angular to minor sub- sounded, sub-spherical, strong calcareous cement, 15 to 20% white argillaceous matric in part grading to ARGILLACEOUS SANDSTONE, very poor visible porosity. SILTSTONE (0 to 40%): grey black becoming commonly dusky yellow brown, firm to moderately hard, sub-fissile, very finely arenaceous, common carbonaceous detritus, trace micro mica.				
		Gas & Shows Comments	FLUORESENCE 1494 to 1503 m: 20% to trace moderately bright green yellow scattered fluorescence in tight sandstone aggregates, slow diffuse dull blue white crush cut, very thin residual ring, no visible residue. Poor show - gas trap down over part of interval but not supported by any increase in gas levels.				
		ROP Comments	N/A				
1,516.5 - 1,556.0	Min :7.50 Avg :14.80 Max :26.50	Lithology Summary Lithology Description Gas & Shows Comments	Interbedded SILTSTONE and sacharoidally textured SANDSTONE SILTSTONE (10 to 80%): yellow brown becoming dominantly brown grey, firm to moderately hard, sub blocky to sub-fissile, uniformly very finely arenaceous, minor micro mica and trace very fine carbonaceous specks. SANDSTONE (20 to 90%): light grey to yellow grey in part, friable to moderately hard, very fine to fine - uniformly sacharoidally textured, well sorted, sub-angular to angular, sub-spherical to spherical, 5 to 10% white argillaceous matrix, weakly calcareous - moderate siliceous cement, trace carbonaceous specks - rare brown grey silty laminations, very poor visible porosity. FLUORESCENCE 1516.5 to 1536 m: trace to 70% pinpoint to patchy dull moderately to bright green yellow fluorescence, very weak slow dull blue white diffuse crush cut, very thin dull blue white residual ring, no visible residue. Poor show - 95 unit peak on 45 unit background.				
		ROP Comments	N/A				
1,556.0 - 1,572.5	Min :11.10 Avg :19.70 Max :29.80	Lithology Summary Lithology Description	Interbedded ARENACEOUS SILTSTONE and sacharoidally textured SANDSTONE ARENACEOUS SILTSTONE (20 to 90%): uniformly brown grey, firm to mediately bard in part, sub facile to minor sub blocky, 40 to 50% year fine				
		Gas & Shows Comments	moderately hard in part, sub-fissile to minor sub-blocky, 40 to 50% very fine quartz grains grading to SILTY SANDSTONE, non-calcareous, trace carbonaceous specks, locally common micro mica. SANDSTONE (10 to 80%): white to pale yellow brown, firm to dominantly moderately hard, very fine to minor fine - uniformly sacharoidally textured, very well sorted, sub-angular, sub-spherical, minor white argillaceous matrix, very weakly calcareous in part - dominantly as strong siliceous cement, very poor to no visible porosity, no hydrocarbon fluorescence. Nil.				
		ROP Comments	N/A				



Lithology Summary											
Internal m MDRT	ROP (m/h)		Lithology Comments								
1,572.5 - 1,578.0	Min :3.90 Avg :7.90 Max :10.70	Lithology Su Lithology De Gas & Show	s Comme	SAN aggr mod sub- fair ir SILT blocl trace nts FLU brigh gree gree gree Fair brea m/hr	DSTONE (egated qua erately hard rounded, su fierred pore STONE (0 ky to sub-fis every fine co ORESCEN t yellow gre n white cru n white res show - 449 kdown: 55/	80 to 100% artz grains, d, fine to m ub-spheric: osity. to 20%): d ssile, unifo carbonaced CE 1572.5 een fluores sh cut with idual ring, unit peak	LTSTONE i 6): dominar minor very inor mediul al to spheric usky yellow rmly very fil bus specks to 1574 m scence, slow secondary no visible re on a 65 uni ROP breal	tly as tran light grey m, well sor cal, weak s v brown, fir nely arena and detritu : 100% dea w diffuse g v streaming esidue.	aggregates ted, sub-an siliceous ce m to mode ceous, min us. creasing to reen white grains, thi und. Chron	s, friable to ngular to do ement, poor arately hard or micro mi 15% solid cut - instar ck moderat	minor pminantly visible to , sub ica and to patchy it bright tely bright
		ROP Comme		N/A							
One Trees	Dentili	Tatal Cas		as Sumi		104		:05	nC5	000	1100
Gas Type	Depth m	Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	ppm	CO2 ppm	H2S ppm
Drilled	1,360.0 - 1,389.0	(Min) 15.0 (Max) 32.8 (Avg.) 23.9	2,412	208	296	67	180	65	72		
Drilled	1,389.0 - 1,397.5	(Min) 31.0 (Max) 39.5 (Avg.) 35.3	3,270	317	452	108	271	103	107		
Drilled	1,397.5 - 1,409.5	(Min) 21.9 (Max) 44.7 (Avg.) 33.3	3,105	296	416	108	266	111	111		
Drilled	1,409.5 - 1,424.5	(Min) 27.1 (Max) 56.8 (Avg.) 42.0	4,017	339	424	106	269	116	117		
Drilled	1,424.5 - 1,435.5	(Min) 18.4 (Max) 38.5 (Avg.) 28.5	3,319	229	252	64	172	79	83		
Drilled	1,435.5 - 1,460.0	(Min) 24.0 (Max) 44.7 (Avg.) 34.4	3,485	244	263	68	182	87	91		
Drilled	1,460.0 - 1,487.0	(Min) 12.0 (Max) 41.8 (Avg.) 26.9	2,249	147	138	33	89	47	55		
Drilled	1,487.0 - 1,516.5	(Min) 10.0 (Max) 40.3 (Avg.) 25.2	2,625	208	217	53	121	61	55		
Drilled	1,516.5 - 1,556.0	(Min) 12.0 (Max) 95.4 (Avg.) 53.7	5,787	508	570	163	340	177	137		
Drilled	1,556.0 - 1,572.5	(Min) 23.2 (Max) 73.3 (Avg.) 48.3	5,783	508	567	160	355	187	153		
Drilled	1,572.5 - 1,578.0	(Min) 32.7 (Max) 449.4 (Avg.) 241.1	9,796	1,448	2,131	718	1,538	782	639		



General Comments

Comments

Generally, shows noted in this report are interpreted to be residual or locally generated from carbonaceous siltstones in the oil window as evidenced by the thin residual rings obtained from crushed carbonaceous samples. Often these carbonaceous, cutting siltstones are interbedded with fluorescing, tight sandstone aggregates.

Oil show in the interval from from 1572.5 to 1578 m is much better quality with a strong gas peak. The sand is likely to be poorly developed based on ROP data however.

	06:00 Hrs Update							
Depth (MDRT):	1,609.0m							
Progress Since Midnight:	41.0m							
Status @ 0600hrs:	Drilling ahead in 8-1/2" hole.							
ROP Summary:	Effective penetration rate since 2400 hrs 6.8 m/hr.							
Formation Summary:	Adori Sandstone							
Lithology Summary:	SANDSTONE							
Gas Summary:	Maximum: 449 units Average: 75 units							
	Wellsite Geologist(s)							
	(Days) - Andrew James (Nights) - Andrew James							



			_ <u>_</u>	riclops-1	Drilling				
Date: 27 Jan 2013 DAILY GEOLOGY REPORT NUMBER: 14								(assoc	ciated DDR # 25
				Well De	tails				
Depth MDBRT	: 1,795.0	m l	Report Period	:00):00 - 24:00	Da	te	: 27 Jan 2	2013
Depth TVDBRT	: 1,795.0	m	ast Csg Size	:9.	625 in	Pro	ogress	:227.0 m	1
Depth TVDSS	: 1,648.80		Last Csg Sho		62.7 m	Re	port Start Dept	h :1,578.0	m
RT - GL	:5.20 m	I	_ast Csg Shoe	• TVD · 76	62.7 m	Re	port End Depth	:1,796.5	m
Ground Level	: 141.0 m		_iner MD			Da	ys since Spud	:13.48	
RT - Hanger	:		_iner TVD			Rig	1	: Ensign 9	918
Hole Size	: 8.500 in			• / •	16.72 ppg	Mu	d Weight	:9.10 pp	g
Last Survey (MDRT/TVD	RT) : 1,785.6		_iner (MDRT/1			Mu	d Type	:4% KCI	- Pre Hydrated
	1,795.0			,				Bentoni	te - Polymer
Survey Deviation	: Inc. 1.10) °							-
	Az 300.7	71 °							
			Geology 2	24hr Opera	ations Sum	mary			
24hr Summary:		Drillec	ahead in 8-1/	2" hole from	1568 to 1795 r	n directionally	drilling as requi	red to maintain	target trajectory.
24hr Forward Plan:			nue to drill ahead in 8-1/2" hole directionally drilling as required towards well TD in the Poolowanna						Poolowanna
		Forma	ation. Circulate	e and condition	n well. Pull ou	ut of hole to ru	in wireline logs.		
				Formatior	n Tops				
Formation		Prognosed	d Actual			Diff.	Thickness	Pick Criteria	
	MDRT	TVDRT	TVDSS	MDRT	TVDRT	TVDSS	+/- TVD	TVD	
	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROF
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	217.0	Lithology / ROP
Cadna-Owie Formation	1322.3	1322.3	1176.05	1311.0	1311.0	1164.8	11.3 High	86.5	Lithology

1397.5

1424.5

1516.5

1594.5

1634.5

1727.0

1397.5

1424.5

1516.5

1594.5

1634.5

1727.0

1251.3

1278.3

1370.3

1448.3

1488.3

1580.8

3.8 High

6.8 High

6.8 High

3.2 Low

5.8 High

7.3 High

27.0

92.0

78.0

40.0

92.5

0.0

Lithology

Lithology

Lithology / ROP

Lithology / ROP

Lithology / ROP

Lithology / ROP

1401.3

1431.3

1523.3

1591.3

1640.3

1734.3

1930.3

1401.3

1431.3

1523.3

1591.3

1640.3

1734.3

1930.3

1255.05

1285.05

1377.05

1445.05

1494.05

1588.05

1784.05

Murta Formation

Adori Sandstone

Birkhead Formation

Hutton Sandstone

Namur Sandstone

Westbourne Formation

Poolowanna Formation



Internal m MDRT	ROP (m/h)		
	· · ·		Lithology Comments
1,578.0 - 1,594.5	Min :3.20 Avg :8.20 Max :16.10	Lithology Summary Lithology Description	SANDSTONE SANDSTONE (100%): white, hard to friable in part, very fine to dominantly fine grained, well sorted, sub-angular to angular, moderately strong siliceous cement with minor quartz overgrowths, trace carbonaceous specks, very poor visible porosity.
		Gas & Shows Comments	FLUORESCENCE 1578 to 1594.5 m: trace pinpoint yellow green fluorescence, slow diffuse green white cut - instant bright green white crush cut with secondary streaming grains, thin moderately bright green white residual ring, no visible residue. Poor show - no associated gas peak.
		ROP Comments	N/A
1,594.5 - 1,634.5	Min :3.20 Avg :11.10 Max :30.30	Lithology Summary Lithology Description	SANDSTONE with minor thin SILTSTONE interbeds SANDSTONE (97 to 100%): very light grey, minor very pale brown staining, fine, dominantly medium to coarse, moderately to well sorted, angular - common broken coarse grains, sub-spherical to sub-elongated, moderate to locally strong siliceous cement with occasional quartz overgrowths, poor visible porosity, trace intergranular (in aggregates) black bitumen staining. SILTSTONE (0 to 3%): brown black, firm, sub-fissile to fissile, moderately arenaceous - uniformly carbonaceous, trace micro mica.
		Gas & Shows Comments	 FLUORESCENCE 1604 to 1608 m: 70% to 20% patchy bright green white fluorescence, instant diffuse dull green white cut - slow streaming moderately bright blue white cut, thick green white residual ring, no visible residue. FLUORESCENCE 1614 to 1623 m: 30 to 20% patchy moderately bright to dull yellow fluorescence, instant blue white crush cut, thick green residual ring, no visible residue. Mud sample collected at gas peak at 1616 m. When mixed with boiling water and placed in a cup under the fluoroscope, oil bubbles observed breaking out on surface - bright green yellow droplets and streaks. Gas peaks of 218, 602 and 461 units on a 35 unit background at 1604.5, 1615.5 and 1623 m respectively. Average chromatograph breakdown: 56/10/ 14/13/7.
		ROP Comments	N/A
1,634.5 - 1,649.5			SILTSTONE with thin SANDSTONE interbeds SILTSTONE (60 to 95%): brown grey to brown black, firm, sub-blocky to dominantly sub-fissile, generally uniformly textured - locally moderately arenaceous, moderately carbonaceous in part - trace carbonaceous detritus and micro mica. SANDSTONE (5 to 40%): medium light grey, moderately hard, very fine to minor fine, very well sorted, 10 to 15% argillaceous matrix, weakly calcareous, common lithics and feldspar fragments, trace carbonaceous detritus and wisps, very poor to no visible porosity.
		Gas & Shows Comments	FLUORESCENCE 1647 to 1649.5 m: 50% patchy dull green fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. Poor show - no associated gas peak. N/A



		Litholog	gy Summary
Internal m MDRT	ROP (m/h)		Lithology Comments
1,649.5 - 1,672.0	Min :12.50	Lithology Summary	SILTSTONE with minor thin SANDSTONE interbeds
	Avg :26.60 Max :32.70	Lithology Description	SILTSTONE (40 to 100%): dark grey to brown black, sub-blocky to dominantly sub-fissile, firm to moderately hard, generally very finely arenaceous - slightly argillaceous in part, locally moderately carbonaceous. SANDSTONE (0 to 60%): white to very light grey, translucent to clear loose individual grains, friable, very fine to fine, rarely medium, well sorted, sub-
			angular to angular, sub-spherical, weakly calcareous, trace argillaceous matrix, trace fine lithics, poor inferred porosity, no hydrocarbon fluorescence.
		Gas & Shows Comments	Nil.
		ROP Comments	N/A
1,672.0 - 1,702.5	Min :12.10	Lithology Summary	Interbedded SILTSTONE and SANDSTONE with thin COAL seam
	Avg :21.30 Max :33.90	Lithology Description	SILTSTONE (10 to 90%): dark grey to dominantly brown grey, sub-blocky to dominantly sub-fissile, firm to moderately hard, generally very finely arenaceous - slightly argillaceous in part, locally moderately carbonaceous. SANDSTONE (10 to 90%): white to very light grey, translucent to clear loose individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argillaceous matrix, trace fine lithics, poor inferred porosity.
			COAL (0 to 10%): black, earthy to sub-vitreous, brittle, hackly break, blocky.
		Gas & Shows Comments	FLUORESCENCE 1674 to 1680 m: 100% solid moderately bright to dull green white fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue.
			Poor show - gas peak of 180 units on 90 unit background. Sand porosity apeears to be low.
		ROP Comments	N/A
1,702.5 - 1,727.0	Min :8.30	Lithology Summary	SILTSTONE with interbedded SANDSTONE
	Avg :23.90 Max :32.20	Lithology Description	SILTSTONE (20 to 90%): brown grey becoming dominantly uniformly olive black, sub-blocky to dominantly sub-fissile, firm to moderately hard, generally very finely arenaceous, moderately carbonaceous. SANDSTONE (10 to 80%): white to very light grey, friable, fine, very well sorted, sub-angular to dominantly sub-sounded, sub-spherical, minor white argillaceous matrix, weak to locally moderate siliceous cement, trace lithics, very poor visible porosity.
		Gas & Shows Comments	FLUORESCENCE 1702.5 to 1708 m: 30 to 50% scattered very dull green white fluorescence in tight aggregates, slow very dull blue white crush cut, very thin residual ring, no visible residue. Poor show - 162 unit gas peak on 100 unit background.
		ROP Comments	N/A
1,727.0 - 1,750.0	Min :7.90	Lithology Summary	SANDSTONE with thin SILTSTONE interbeds
, , , , , , , , , , , , , , , , , , , ,	Avg :12.10	Lithology Description	SANDSTONE (80 to 100%): very light grey, dominantly as dis-aggregated
	Max :19.50		translucent to loose grains, friable, fine to dominantly medium, minor coarse, well sorted, angular - common broken grains and trace crystal faces, weak to moderate in part siliceous cement, rare quartz overgrowths, trace fine pale orange garnet fragments, poor to fair inferred porosity, no hydrocarbon fluorescence.
			SILTSTONE (0 to 20%): olive black, firm, sub-blocky, finely arenaceous with trace lithics / feldspar fragments, locally common carbonaceous detritus.
		Gas & Shows Comments	SILTSTONE (0 to 20%): olive black, firm, sub-blocky, finely arenaceous with trace lithics / feldspar fragments, locally common carbonaceous detritus. Nil.



			Litho	ology Sι	immary						
Internal m MDRT	ROP (m/h)	n/h) Lithology Comments									
1,750.0 - 1,796.5	Min :4.80	Lithology S	Lithology Summary SANDSTONE with minor thin SILTSTONE interbeds								
	Avg :12.40 Max :29.00		Lithology Description SANDSTONE (70 to 100%): very light grey - dominantly as dis-aggre translucent aggregates, minor aggregates with trace white argillaced fine to medium in part - dominantly coarse to very coarse, moderatel sorted, angular - minor crystal faces, sub-elongate to elongate, com quartz overgrowths, trace pale orange garnet fragments, poor to fair porosity. SILTSTONE (0 to 30%): olive black to dark grey, firm, sub fissile, un very finely arenaceous, minor very fine SANDSTONE laminations.								us matrix, y to poorly non inferred
		Gas & Show		nts FLU yello resid	ORESCEN	CE 1750 to ence, very o visible res	o 1760 m: t slow dull bl sidue.	race pinpo ue white s	ace pinpoint dull to moderately bright e white streaming cut, thin dull green		
	I		G	as Sumi	marv						
Gas Type	Depth m	Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm
Drilled	1,578.0 - 1,594.5	(Min) 28.9 (Max) 63.8 (Avg.) 46.4	2,837	228	271	90	232	156	150		PP-0
Drilled	1,594.5 - 1,634.5	(Min) 16.3 (Max) 602.1 (Avg.) 309.2	6,847	936	1,276	403	915	431	393		
Drilled	1,634.5 - 1,649.5	(Min) 77.1 (Max) 385.6 (Avg.) 231.4	17,190	2,226	2,336	505	1,227	434	422		
Drilled	1,649.5 - 1,672.0	(Min) 100.1 (Max) 271.7 (Avg.) 185.9	17,015	2,369	2,446	472	1,187	414	343		
Drilled	1,672.0 - 1,702.5	(Min) 65.7 (Max) 182.2 (Avg.) 124.0	9,724	1,331	1,356	303	735	444	250		
Drilled	1,702.5 - 1,727.0	(Min) 89.1 (Max) 163.8 (Avg.) 126.5	10,549	1,430	1,329	338	696	465	252		
Drilled	1,727.0 - 1,750.0	(Min) 30.4 (Max) 106.3 (Avg.) 68.4	3,554	352	292	82	179	273	95		
Drilled	1,750.0 - 1,796.5	(Min) 25.6 (Max) 64.4 (Avg.) 45.0	3,711	313	224	59	118	243	50		
			Gen	eral Cor	nments						
				Commer							
Jnusual to get such int	tense fluorescence in A	dori Sandstone	e although i	nterval is r	nost likely f	to be of low	/ permeabil	lity.			
			06:	00 Hrs L	Jpdate						
Depth (MDRT):	1,839.0m										
Progress Since Midn	ight: 44.0m										
Status @ 0600hrs:	Drilling ahead	in 8-1/2" hole.									
ROP Summary:	Effective pene	tration rate sin	ce 2400 hr	s 7.3 m/hr.							
Formation Summary	: Hutton Sandst	one									
Lithology Summary:	SANDSTONE										
Gas Summary:	Maximum: 57 Average: 38 u										



Wellsi	te Geologist(s)
(Days) - Andrew James	(Nights) - Andrew James



			I	riclops-1	Drilling					
Date: 28 Jan 2013 DAILY GEOLOGY REPORT NUMBER: 15								(asso	ciated DDR # 26	
				Well Det	tails					
Depth MDBRT Depth TVDBRT Depth TVDSS RT - GL Ground Level RT - Hanger Hole Size Last Survey (MDRT/TVDRT Survey Deviation	1,914.4 r : Inc. 1.00	m m 	Report Period Last Csg Size Last Csg Shoe Last Csg Shoe Liner MD Liner TVD FIT / LOT Liner (MDRT/T	:00 :9.6 • MD :76 • TVD :76 : : : : :	200 - 24:00 625 in 2.7 m 2.7 m 6.72 ppg	Date Progress Report Start Depth Report End Depth Days since Spud Rig Mud Weight Mud Type		: 132.0 m n : 1,796.5 : 1,926.5 : 14.48 : Ensign : 9.10 pp : 4% KCI	: 28 Jan 2013 : 132.0 m : 1,796.5 m : 1,926.5 m : 14.48 : Ensign 918 : 9.10 ppg : 4% KCI - Pre Hydrated Bentonite - Polymer	
	Az 301.8	51 °	Geology 2	Abr Opera	tiono Sum					
24hr Summary: 24hr Forward Plan:		Callec condit		dtioned hole a commenced	and conducted pulling out.	d wiper trip to	at suspected top 1300 m. Ran b			
			l	Formation	Tops					
Formation	MDRT (m)	Prognosed TVDRT (m)	TVDSS (m)	MDRT (m)	Actual TVDRT (m)	TVDSS (m)	Diff. +/- TVD (m)	Thickness TVD (m)	Pick Criteria	
Winton Formation Mackunda Formation Allaru Mudstone	5.3 670.3 733.3	5.3 670.3 733.3	-140.95 524.05 587.05	5.2 641.5 745.0	5.2 641.5 745.0	-141 495.3 598.8	0.1 High 28.8 High 11.7 Low	636.3 103.5 293.0	From surface. Lithology / ROF Lithology / ROF	
Toolebuc Formation Wallumbilla Formation Cadna-Owie Formation	1044.3 1090.3 1322.3	1044.3 1090.3 1322.3	898.05 944.05 1176.05	1038.0 1094.0 1311.0	1038.0 1094.0 1311.0	891.8 947.8 1164.8	6.3 High 3.7 Low 11.3 High	56.0 217.0 86.5	Lithology / RO Lithology / RO Lithology	
Murta Formation Namur Sandstone Westbourne Formation	1401.3 1431.3	1401.3 1431.3	1255.05 1285.05 1377.05	1397.5 1424.5 1516.5	1397.5 1424.5 1516.5	1251.3 1278.3	3.8 High 6.8 High	27.0 92.0 78.0	Lithology Lithology Lithology / RO	
Adori Sandstone	1523.3 1591.3	1523.3 1591.3	1445.05	1516.5	1516.5	1370.3 1448.3	6.8 High 3.2 Low	40.0	Lithology / RC	

Birkhead Formation

Poolowanna Formation

Hutton Sandstone

1640.3

1734.3

1930.3

1640.3

1734.3

1930.3

1494.05

1588.05

1784.05

1634.5

1727.0

1926.5

1634.5

1727.0

1926.5

1488.3

1580.8

1780.3

5.8 High

7.3 High

3.8 High

92.5

199.5

0.0

Lithology / ROP

Lithology / ROP

Lithology / ROP



Lithology Summary						
Internal m MDRT	ROP (m/h)		Lithology Comments			
1,796.5 - 1,858.5	Min :4.40 Avg :8.60 Max :18.80	Lithology Summary Lithology Description	SANDSTONE with minor thin SILTSTONE interbeds SANDSTONE (95 to 100%): very light grey, dominantly as dis-aggregated milky to translucent grains, occasionally as moderately hard aggregates, medium to dominantly coarse, minor fine and very coarse, moderately to poorly sorted, angular to sub-angular, minor sub-sounded, sub-elongate to elongated, trace broken crystal faces - weakly calcareous, locally moderately strong siliceous cement with trace quartz overgrowths, trace pale orange garnet fragments, fair inferred porosity, trace bitumen staining, no hydrocarbon fluorescence. SILTSTONE (0 to 5%): grey black, moderately hard, sub-fissile, carbonaceous.			
		Gas & Shows Comments ROP Comments	Nil. N/A			
1,858.5 - 1,889.5	Min :4.10 Avg :11.20 Max :30.50	Lithology Summary Lithology Description	SANDSTONE SANDSTONE (100%): very light grey to light grey, minor very pale brown stained aggregates, dominantly as dis-aggregated clear to translucent / minor			
			milky quartz grains, friable to moderately hard in aggregates, medium grained, minor fine and coarse, well sorted, sub-sounded to sub-angular, minor angular, sub-spherical to sub-elongate, weakly calcareous - minor quartz overgrowths, trace white argillaceous matrix, fair inferred porosity, no hydrocarbon fluorescence.			
		Gas & Shows Comments ROP Comments	Nil. N/A			
1,889.5 - 1,926.0	Min :5.40 Avg :9.50 Max :21.50	Lithology Summary Lithology Description	SANDSTONE with minor SILTSTONE interbeds SANDSTONE (20 to 100%): light grey - dominantly as dis-aggregated translucent to milky quartz grains, friable, fine to dominantly medium, occasionally coarse, well sorted, angular to sub-angular, minor sub-sounded, sub-spherical to dominantly sub-elongate, trace to locally up to 10% white argillaceous matrix, weakly calcareous, weak to moderate siliceous cement with minor quartz overgrowths, poor to fair inferred porosity, no hydrocarbon fluorescence. SILTSTONE (0 to 80%): dark grey, firm, sub-fissile to fissile, generally uniformly textured - locally very finely arenaceous, trace lithics and carbonaceous specks.			
		Gas & Shows Comments	Nil.			
1,926.0 - 1,926.5	Min :0.50 Avg :0.50 Max :0.50	ROP Comments Lithology Summary Lithology Description	N/A SILTSTONE SILTSTONE (5%): grey black to brown black, firm to moderately hard, sub- fissile to fissile in part, trace very fine arenaceous material, locally moderately carbonaceous with trace to 5% bright coally laminations / fragments, trace micro pyritic aggregates.			
		Gas & Shows Comments ROP Comments	Nil. N/A			



Gas Summary												
Gas Type		Depth m	Total Gas Units	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	iC5 ppm	nC5 ppm	CO2 ppm	H2S ppm
Drilled	1,79	6.5 - 1,858.5	(Min) 22.3 (Max) 120.7 (Avg.) 71.5	3,808	324	208	54	97	170	33		
Drilled	1,85	8.5 - 1,889.5	(Min) 22.4 (Max) 66.0 (Avg.) 44.2	3,521	274	152	37	64	142	20		
Drilled	1,88	9.5 - 1,926.0	(Min) 21.0 (Max) 46.7 (Avg.) 33.9	3,169	304	171	36	66	91	18		
Drilled	Drilled 1,926.0 - 1,926.5		(Min) 27.1 (Max) 27.1 (Avg.) 27.1	2,870	218	103	20	38	70	12		
General Comments												
Comments												
Nil.												
06:00 Hrs Update												
Depth (MDRT):		1,926.5m										
Progress Since Midnight: 0.0m		0.0m	.0m									
Status @ 0600hrs: P		Pulling out of hole after wiper trip - preparing to handle BHA.										
ROP Summary:		N/A										
Formation Summary:		N/A										
Lithology Summary:		N/A										
Gas Summary:		N/A										
				Wells	site Geo	logist(s)						
		(Days) - Andre	w James		(Night	s) - Andrev	v James				



Depth MDBRT :		Well							
Depth MDBRT :		Well Details							
Depth TVDSS : RT - GL : Ground Level : RT - Hanger : Hole Size : Last Survey (MDRT/TVDRT) : Survey Deviation :	1,926.5 m 1,926.5 m 5.20 m 141.0 m 8.500 in 1,914.8 m / 1,914.4 m 1,914.4 m 1,914.4 m	Report Period Last Csg Size Last Csg Shoe MD Last Csg Shoe TVD Liner MD Liner TVD FIT / LOT Liner (MDRT/TVDRT)	: 00:00 - 00:00 : 9.625 in : 762.7 m : 762.7 m : : : : / 16.72 ppg :/	Date Progress Report Start Depth Report End Depth Days since Spud Rig Mud Weight Mud Type	: 29 Jan 2013 : 0.0 m : 1,926.5 m : 1,926.5 m : 15.48 : Ensign 918 : 9.10 ppg : 4% KCl - Pre Hydrated Bentonite - Polymer				

24hr Summary: Completed pulling out of hole and laid out mud motor and MWD collar. Rigged up and ran w				
	Run 1 ADT-HRLA-PEX-HNGS-SP. Commenced Run 2 GPIT-PPC-Sonic Scanner-PPC.			
24hr Forward Plan:	Complete wireline logging. Commence plug and abandon operations.			

Formation Tops									
Formation	Prognosed			Actual			Diff.	Thickness	Pick Criteria
	MDRT (m)	TVDRT (m)	TVDSS (m)	MDRT (m)	TVDRT (m)	TVDSS (m)	+/- TVD (m)	TVD (m)	
Winton Formation	5.3	5.3	-140.95	5.2	5.2	-141	0.1 High	636.3	From surface.
Mackunda Formation	670.3	670.3	524.05	641.5	641.5	495.3	28.8 High	103.5	Lithology / ROP
Allaru Mudstone	733.3	733.3	587.05	745.0	745.0	598.8	11.7 Low	293.0	Lithology / ROP
Toolebuc Formation	1044.3	1044.3	898.05	1038.0	1038.0	891.8	6.3 High	56.0	Lithology / ROP
Wallumbilla Formation	1090.3	1090.3	944.05	1094.0	1094.0	947.8	3.7 Low	217.0	Lithology / ROP
Cadna-Owie Formation	1322.3	1322.3	1176.05	1311.0	1311.0	1164.8	11.3 High	86.5	Lithology
Murta Formation	1401.3	1401.3	1255.05	1397.5	1397.5	1251.3	3.8 High	27.0	Lithology
Namur Sandstone	1431.3	1431.3	1285.05	1424.5	1424.5	1278.3	6.8 High	92.0	Lithology
Westbourne Formation	1523.3	1523.3	1377.05	1516.5	1516.5	1370.3	6.8 High	78.0	Lithology / ROP
Adori Sandstone	1591.3	1591.3	1445.05	1594.5	1594.5	1448.3	3.2 Low	40.0	Lithology / ROP
Birkhead Formation	1640.3	1640.3	1494.05	1634.5	1634.5	1488.3	5.8 High	92.5	Lithology / ROP
Hutton Sandstone	1734.3	1734.3	1588.05	1727.0	1727.0	1580.8	7.3 High	199.5	Lithology / ROP
Poolowanna Formation	1930.3	1930.3	1784.05	1926.5	1926.5	1780.3	3.8 High	0.0	Lithology / ROP

General Comments

Comments

Final Daily Geological Report for Triclops-1. Field Wireline Log Formation top picks: Toolebuc Formation: 1042.1 m Wallumbilla Formation: 1088.6 m Cadna Owie Formation: 1315.2 m Murta Member: 1399.2 m Namur Sandstone Member: 1422.2 m Westbourne Formation: 1518.6 m Adori Sandstone: 1604.5 m Birkhead Formation: 1636.1 m Hutton Sandstone: 1727.5 m Poolowanna Formation: 1926.5 m Loggers TD: 1927 m



06:00 Hrs Update					
Depth (MDRT):	1,926.5m				
Progress Since Midnight:	0.0m				
Status @ 0600hrs:	Laying out BHA after rigging down wireline.				
ROP Summary:	N/A				
Formation Summary:	N/A				
Lithology Summary:	N/A				
Gas Summary:	N/A				
Wellsite Geologist(s)					
	(Days) - Andrew James (Nights) - Andrew James				

Appendix 8 – Composite Log

Provided electronically on CD

Appendix 9 – Cuttings Descriptions

		1						1			1	TRICLOPS-1 Cuttings Descriptions LITHOLOGY: colour, hardness, fracture and texture, grain size, sorting, angularity, sphericity, matrix, comentation, accessories and fossils, proceity, hydrocarbon shows.	
Depth	Depth	CLYST	SLTST	SST	COAL	LST	DOL %	META			CMT %	Dementation, accessories and rossis, porosity, injurocation shows.	Comments
From	То	%	%	%	%	%	DOL N	· %	%	%	can'i A	CLAYSTONE: very pale orange to grey orange, soft to firm in part, sub-blocky, very weakly calcareous, trace	Surficial Sediments & Winton Formation from
10	20	90		10								very fine arenaceous material, 10% sitt, trace carbonaceous detritus. ARGILLACEOUS SANDSTONE: dark yellow orange, friable, 40% argillaceous matrix, fine to dominantly very fine, sub-rounded to angular, well sorted, sub-spherical, weak siliceous cement, very poor visible porosity, no hydrocarbon fluorescence.	surface.
20 30	30 40	90 100		10								CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above. CLAYSTONE: green grey to light olive grey, soft to firm, sub-blocky, 10% silt, trace carbonaceous detritus.	
40 50	50 60	100		100								CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: medium light grey to green grey, friable to firm in part, 40% argillaceous matrix supported, fine to dominantly very fine, sub-angular to dominantly rounded, well sorted, sub-spherical to sub-elongate, weak siliceous cement, up to 3% lithic fragments, trace carbonaceous detritus, very poor	
60	70			100								visible porosity, no hydrocarbon fluorescence. ARGILLACEOUS SANDSTONE: as above - becoming commonly light grey. ARENACEOUS SILTSTONE: light grey to light green grey, firm, sub-blocky, weakly calcareous, 10% clay	
70 80	80 90		100 100									material and up to 40% very fine to minor fine sand, sub-angular, well sorted, trace to minor lithic fragments, trace carbonaceous deritus. ARGILLACEOUS SANDSTONE: as above. ARENACEOUS SILTSTONE: as above.	
90	100		30	70								ArternoveCous SiL IS TOWE: as above. SANDSTONE: light reyrs to light green grey aggregates, friable to moderately hard, minor argillaceous matrix, very fine to fine, dominantly medium, sub-angular to angular, moderately sorted, sub-elongate, weakly calcareous in part, trace mica flecks and lithic fragments, very poor visible porosity, no hydrocarbon fluorescence.	
100	110	40		60								CLAYSTONE: yellow grey to very light brown grey, soft to firm in part, sub-blocky, slightly silty with up 10% very fine quartz grains, trace carbonaceous specks and brown black coally fragments with woody texture. SANDSTONE: as above - locally coarse carbonaceous flecks and detritus.	
110 120	120 130	60 70		40 30								CLAYSTONE: as above. SANDSTONE: as above - locally coarse carbonaceous flecks and detritus. CLAYSTONE: as above. SANDSTONE: as above.	
130	140			100								ARGILLACEOUS SANDSTONE: light grey to very light green grey, friable, 30% very light grey argillaceous matrix, very fine to fine, 10% medium, sub-angular to angular, moderately to well sorted, sub-spherical, weak siliceous cement, abundant grey green lithic fragments, very poor visible porosity, no hydrocarbon fluorescence.	
140 150	150 160	90 90		10 10								CLAYSTONE: yellow grey to very light brown grey, soft to very soft, sub-blocky, 5% silty material, trace carbonaceous defitus, trace micro-mica. ARGILLACEOUS SANDSTONE: as above. CLAYSTONE: as above - becoming commonly very light grain grey.	
160	170	90 60		40		L	L				L	ARGILLACEOUS SANDSTONE: as above. CLAYSTONE: as above - locally common mica flecks. ARGILLACEOUS SANDSTONE: as above.	
170 180	180 190	30		70 100								CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above - dominantly very fine grained, well sorted. ARGILLACEOUS SANDSTONE: as above.	
190	200			100								ARGILLACEOUS SANUSTONE: light grey to very light green grey, light olive grey in part, friable, 30 to 40% very light grey argillaceous matrix, fine to dominantly very fine, sub-angular to angular, well sorted, sub- spherical, weak siliceous cement, trace lithic fragments, trace carbonaceous specks, very poor visible porosity, no hydrocarbon fluerescence.	
200 210	210 220			100 100								ARGILLACEOUS SANDSTONE: as above. ARGILLACEOUS SANDSTONE: as above.	
220	230			100								ARGILLACEOUS SANDSTONE: as above. ARGILLACEOUS SILTSTONE: very light grey to light green grey, minor pale brown, soft to minor firm, 30 to	
230	240		70	30								40% argillaceous material, trace very fine carbonaceous specks and fine carbonaceous wisps, locally minor coally definity, trace micro-mica. ARGILACEOUS SANDSTONE: as above.	
240 250	250 260		50 40	50 60								ARGILLACEOUS SILTSTONE: as above. ARGILLACEOUS SANDSTONE: as above. ARGILLACEOUS SILTSTONE: as above.	
260	270		50	50								ARGILLACEOUS SANDSTONE: as above. ARGILLACEOUS SILTSTONE: as above. ARGILLACEOUS SANDSTONE: as above.	
270	280		70	30								ARGILLACEOUS SILTSTONE: as above. ARGILLACEOUS SANDSTONE: as above. ARGILLACEOUS SILTSTONE: as above.	
280	290		20	80								SANDSTONE: mottled very light grey to light green grey, friable, 10 to 15% argillaceous matrix, very fine to fine, sub-angular to dominantly angular, well sorted, sub-spherical, minor weak calcareous to dominantly weak siliceous cement, 20 to 30% green grey lithics, trace micro mica, very poor visible porosity, no hydrocarbon fluorescence.	
290	300		10	90								ARGILLACEOUS SILTSTONE: as above. SANDSTONE: as above - becoming dominantly fine to medium, sub-sounded in part, weak to moderately calcareous cement, poor inferred porosity, no hydrocarbon fluorescence. SILTY CLAYSTONE: light olive grey to light brown grey, soft, sub-blocky to weakly amorphous and sticky.	
300	310	70		30								20 to 25% quartz silt, up to 5% very fine sand, trace carbonaceous specks and detritus, trace micro-mica. SANDSTONE: as above - commonly as disaggregated clear to minor translucent loose quartz grains, becoming dominantly medium and sub-sounded to rounded.	
310	320	100										SILTY CLAYSTONE: as above, becoming firm in part. SILTY CLAYSTONE: as above. SANDSTONE: motted very light grey to light green grey, friable to moderately hard, minor very light grey to	
320	330	30		70								Savido Torte: motied very light grey to light green grey, make to moderately rate, minor very light grey to white argillaceous matrix, minor very fine grained - dominantly the to medium, angular to sub-sounded, well sorted, minor weak siliceous cement to dominantly moderately strong calcareous cement, 20 to 25% green grey lithic fragments, trace mica flecks, very poor visible porosity, no hydrocarbon fluorescence.	
330	340	20		80								SILTY CLAYSTONE: as above. SANDSTONE: as above. SILTY CLAYSTONE: as above.	
340 350	350 360	90 60		10 40		-						SANDSTONE: as above. SANDSTONE: as above. SANDSTONE: as above becoming up to 15% very light grey argillaceous matrix.	
360	370	90		10								SANDSTORE: as above becoming up to 15% very light grey adjateous matrix. SULTY CLAYSTORE: light of light grey to fight brown grey, very pade green grey in part, soft becoming dominantly form, sub-blocky, 20 to 25% quartz silt, trace carbonaceous specks and detritus, trace micro- mica. SANDSTORE: as above.	
370	380	90		10								SILTY CLAYSTONE: as above. SANDSTONE: as above.	
380 390	390 400	20		100 80		F						SANDSTONE: as above - trace red and pale orange stained quartz grains. SILTY CLAYSTONE: as above. SANDSTONE: as above.	
400	410	80		20								SILTY CLAYSTONE: as above. SANDSTONE: as above. SILTY CLAYSTONE: very light grey to pale brown, up to 30% quartz silt, locally 20 to 40% very fine quartz	
410 420	420 430	100 100				-	-		-	-	-	SIL1Y CLAYSTONE: very light grey to pale brown, up to 30% quartz sitt, locally 20 to 40% very tine quartz grading to ARENACEOUS CLAYSTONE; trace carbonaceous detritus. SILTY CLAYSTONE: as above - becoming dominantly very light grey.	
430 440	440 450	100 100										SILTY CLAYSTONE: as above. SILTY CLAYSTONE: as above - up to 5% coarse calcite (vein / fracture inflit) fragments, 5 to 10% pale brown to moderate brown fragments with abundant coally detritus.	
450 460	460 470	100 60		40								SILTY CLAYSTONE: as above. SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: very light grey, friable to minor moderately hard aggregates, common white argillaceous matrix, very fine to fine, sub-angular to dominantly sub-sounded, well sorted, sub-spherical, weak siliceous cement - dominantly locally strong calcareous cement, 5% pale green lithics, trace carbonaceous detrius, very poor visible porcesity, no hydrocarbon fluorescence.	
470	480	10		90						-	-	SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above.	
480	490	30		70								ARGILLACEOUS SANUUS ICIVE: as addive. SILTY CLAYSTONE: pale brown to moderate brown, very light grey in part, soft to firm, minor moderately hard, minor to locally common carbonaceous detritus and rare very fine coally laminations. ARGILLACEOUS SANDSTONE: as above.	
490	500	30		70								SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above.	
500	510	40		60							-	SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above. SILTY CLAYSTONE: as above.	
510 520	520 530	30 20		70 80		-	-	-		-	-	ARGILLACEOUS SANDSTONE: as above - more lithic, trace feldspar fragments? SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above.	
530	540	30		70						\square		ARGILLACEOUS SANUS IONE: as above. SILTY CLAYSTONE: as above. ARGILLACEOUS SANDSTONE: as above - rare aggregates with carbonaceous / coally laminations, coarse carbonaceous deritus in part.	

												-
											SILTSTONE: light olive grey to pale brown, minor very light grey, soft to dominantly firm, minor moderately hard, sub-blocky, 10% very fine quartz grains, 10% lithics, trace to locally minor micro mica, trace uniformly	
540	550		80	20							distributed very fine carbonaceous detritus, rare fine coally laminations. ARGILLACEOUS SANDSTONE: as above - rare aggregates with carbonaceous / coally laminations, coarse	
											carbonaceous detritus in part.	
550	560		70	30							SILTSTONE: as above. ARGILLACEOUS SANDSTONE: as above .	
											SILTSTONE: as above. SANDSTONE: mottled light grey / white / green grey, friable to dominantly moderately hard, locally hard, 5 to	
560	570		20	80							10% argillaceous matrix, very fine, minor fine to medium, well sorted, sub-spherical, moderately strong to strong calcareous cement, common lithics and carbonaceous detritus, trace fine feldspar fragments, very	
											poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above.	
570	580		20	80							SANDSTONE: as above.	
580	590		10	90							SILTSTONE: as above. SANDSTONE: as above.	
590	600		30	70							SILTSTONE: as above. SANDSTONE: as above.	
600	610		30	70							SILTSTONE: as above. SANDSTONE: as above - variable calcareous cement - weak to strong.	
610	620		30	70							SILTSTONE: as above. SANDSTONE: as above.	
											SILTSTONE: medium grey to light brown grey, minor brown grey, soft to dominantly firm, sub-blocky to blocky, 15 to 20% clay locally grading to ARGILLACEOUS SILTSTONE and slightly sticky, trace very fine	
620	630		70	30							carbonaceous wisps and coally laminations, trace to locally common micro mica. SANDSTONE: as above.	
											SILTSTONE: as above.	
630	640		10	90							SANDSTONE: as above. SILTSTONE: olive grey to minor brown grey, firm to moderately hard in part, sub-blocky, 10% clay, trace	Mackunda Formation picked from cuttings and ROP
640	650		70	30							very fine carbonaceous detritus - uniformity textured. SANDSTONE: as above.	at 641.5 m.
650	660		60	40							SILTSTONE: as above.	
				-							SANDSTONE: as above. SILTSTONE: as above.	
660	670		30	70							SANDSTONE: mottled white / very light grey / green grey, moderately hard to dominantly friable, 10% white argillaceous matrix, very fine to fine, sub-angular to dominantly sub-sounded, well sorted, sub-spherical,	
000	070		50	/0							weak siliceous to pervasive weak to locally moderately strong calcareous cement, 5 to 10% lithics and fine feldspar fragments, trace carbonaceous detritus, very poor visible porosity, no hydrocarbon fluorescence.	
670	600	\vdash	20	*0	-	-	\vdash	_			SILTSTONE: as above.	
670	680	\vdash	20	80	+		\vdash	\rightarrow	-+		SANDSTONE: as above. SILTSTONE: as above.	
680	690	\vdash	40	60	-		$\left \right $				SANDSTONE: as above. SILTSTONE: as above.	
690	700	$ \downarrow $	60	40	_		\square				SALSTORE: as above. SALSTORE: as above. SILTSTORE: as above.	
											SANDSTONE: mottled light grey / light green grey, friable to locally hard, 5% argillaceous matrix, very fine to	
700	710		10	90							minor fine grained, very well sorted, sub-angular to dominantly sub-sounded, sub-spherical, strong calcareous cement, 10% very fine to fine lithic and feldspar fragments, trace carbonaceous wisps, very poor to an urbitly interactive and velocations (traceaceace	
											to no visible porosity, no hydrocarbon fluorescence.	
710	720		5	95							SILTSTONE: as above. SANDSTONE: as above.	
720	730		5	95							SILTSTONE: as above. SANDSTONE: as above.	
730	740		5	95							SILTSTONE: as above. SANDSTONE: as above.	
740	750		20	80							SILTSTONE: light olive grey to minor pale brown, firm to moderately hard, sub-blocky, 10 to 20% very fine quartz grains locally grading to ARENACEOUS SILTSTONE, 5 to 10% very fine lithics and feldspar	Allaru Mudstone picked from cuttings and ROP at 745 m.
740	750		20	80							fragments, trace micro mica, trace carbonaceous wisps and very thin coally laminations. SANDSTONE: as above.	
750	760		30	70							SILTSTONE: as above. SANDSTONE: as above.	
760	766		70	30							SILTSTONE: as above. SANDSTONE: as above.	Spot sample: bottoms up from 12 1/4" hole section TD.
760	770		15	15						70	SILTSTONE: as above. SANDSTONE: as above.	Start of 8 1/2* hole section: sample heavily cement contaminated.
											SILTSTONE: medium light grey becoming dominantly medium grey, firm to moderately hard in part, sub- blocky to minor blocky, up to 20% very fine sand grading in part to ARENACEOUS SILTSTONE, trace lithics	
770	780		70	30							and fine carbonaceous detritus, trace pyrite, trace calcareous vein fragments. SANDSTONE: as below.	
											SILTSTONE: as above.	
780	790		90	10							SANDSTONE: light grey to minor medium grey, moderately hard, very fine to minor fine grained - silty in part grading to SILTY SANDSTONE, very well sorted, sub-angular, sub-spherical, strong calcareous cement, 5	
											to 10% very fine to fine lithic and feldspar fragments, trace carbonaceous specks, no visible porosity, no hydrocarbon fluorescence.	
790	800		90	10							SILTSTONE: as above. SANDSTONE: as above.	
800	810		95	5							SILTSTONE: as above - becoming slightly argillaceous with associated trace micro mica. SANDSTONE: as above.	
						_					SILTSTONE: as above. DOLOMITE: olive grey to brown grey, very hard, sub-fissile to fissile, crypto- to micro-crystalline, generally	
810	820		95			5					homogenous - trace very fine carbonaceous / black mineral specks (?) and isolated pyrite grains.	
820	830		98			2					SILTSTONE: as above. DOLOMITE: as above.	
											SILTSTONE: as above - trace shell fragments. SANDSTONE: medium light grey to medium grey, moderately hard, very fine, silty grading to SILTY	
830	840		80	20							SANDSTONE, very well sorted, sub-angular to angular, sub-spherical, strong calcareous cement, 5 to 10% very fine to minor feldspar and lithics, trace uniformly distributed carbonaceous specks and very fine wisps,	
					-						very mile to minor reuspar and nuncs, race dimonity distributed carbonaceous specks and very me wisps, SILTSTONE: as above.	
840	850		70	30	_		\square				SILISIONE: as above. SANDSTONE: as above. SILTSTONE: medium grey to dominantly medium dark grey, moderately hard to dominantly firm, sub-blocky.	
850	860		100								SIL IS LONE: medium grey to dominantly medium dark grey, moderately hard to dominantly irrm, sub-blocky to minor sub-fissile, 10 to 15% very finely arenaceous, uniformly textured with trace disseminated pyrite and very fine carbonaceous specks, trace micro mica.	
860	870		100								SILTSTONE: as above.	
870	880	LT	100				LT				SILTSTONE: as above - uniformly medium dark grey, homogenously textured - 10% very fine quartz grains.	
880	890		98			2			T		SILTSTONE: as above - trace calcareous vein / fossil (?) fragments. DOLOMITE: as above.	
890	900		98			2					SILTSTONE: as above - becoming less very finely arenaceous and slightly argillaceous in part. DOLOMITE: as above.	
		$ \rightarrow $			-		\vdash				SILTSTONE: as above.	
900	910	$ \rightarrow $	97		-	3	\square				DILONTE: as adove. DOLOMITE: as above. SILTSTONE: medium dark grey becoming commonly medium grey, firm, sub-blocky to dominantly sub-	
910	920		100								SIL IS LONE: mealum dark grey becoming commonly medium grey, tirm, sub-blocky to dominantly sub- fissile, minor fissile, generally uniformly textured - slightly argillaceous in part, weakly calcareous, trace carbonaceous specks.	
920	930		100								SILTSTONE: as above.	
930 940	940 950		100 100		+		$\left \cdot \right $	\rightarrow			SILTSTONE: as above. SILTSTONE: as above - trace granular pyrite fragments.	
950	960		98			2					SILTSTONE: as above - becoming very finely arenaceous, trace carbonaceous detritus, trace shell fragments.	
	970	$ \downarrow $			-	<u> </u>	\square				nagrians. DOLOMITE: as above. SILTSTONE: as above - dominantly medium grey.	
960 970	980		100 100			L	E				SILTSTONE: as above.	
980	990	⊢	100		+		┝─╿				SILTSTONE: as above. SILTSTONE: as above.	
990	1000	\vdash	97	_	+	3	$\left \right $				DOLOMITE: as above. SILTSTONE: medium grey, firm to minor moderately hard, sub-fissile to fissile in part, uniformly textured,	
1000 1010	1010 1020		100 100		-		\vdash				SILTSTONE: as above - slightly argillaceous in part.	
1020	1020		100								SILTSTONE: as above.	
100			100	_	+	-	$\left \cdot \right $	\rightarrow			SILTSTONE: as above - 1 to 2% Inoceramus fragments. SILTSTONE: grey black to olive black, minor brown black, firm to moderately hard, sub fissile to fissile,	Spot sample at 1043 m: 3% Inoceramus. Toolebuc
1030	1040	1	100								strongly calcareous - uniformly very finely arenaceous, 5% Inoceramus fragments, trace pyrite.	Formation picked from cuttings and ROP at 1038 m.
1030 1040			100				+ +				SILTSTONE: as above.	
1040 1050	1040 1050 1060		100									
1040 1050 1060	1040 1050 1060 1070		100 100								SILTSTONE: as above. SILTSTONE: medium dark grey to dominantly dark grey, firm to dominantly moderately hard, sub-fissile to	
1040 1050	1040 1050 1060		100									
1040 1050 1060 1070 1080	1040 1050 1060 1070 1080 1090		100 100 100 100								SILTSTONE: medium dark grey to dominantly dark grey, firm to dominantly moderately hard, sub-fissile to fissile, strongly calcareous, locally 5 to 10% very fine quartz grains, trace micro mica. SILTSTONE: as above. SILTSTONE: medium dark grey, moderately hard, sub-blocky to sub-fissile, generally weakly calcareous with	
1040 1050 1060 1070	1040 1050 1060 1070 1080		100 100 100								SILTSTONE: medium dark grey to dominantly dark grey, firm to dominantly moderately hard, sub-fissile to fissile, strongly calcareous, locally 5 to 10% very fine quartz grains, trace micro mica. SILTSTONE: as above. SILTSTONE: medium dark grey, moderately hard, sub-blocky to sub-fissile, generally weakly calcareous with 5% moderate brown carbonate fragments (as vein partings?), uniformly 15 to 20% very finely arenaceous grading to ARENACEOUS SILTSONE in part with associated trace very fine glavernice, trace micro mica.	Wallumbilla Formation picked from cuttings and ROP at 1094 m.
1040 1050 1060 1070 1080	1040 1050 1060 1070 1080 1090		100 100 100 100								SILTSTONE: medium dark gray to dominantly dark gray, time to dominantly moderately hard, sub-fissile to tissile, strongly calcareous, locally 5 to 10% very fine quartz grains, trace micro mica. SILTSTONE: as above. SILTSTONE: medium dark gray, moderately hard, sub-blocky to sub-fissile, generally weakly calcareous with 5% moderate brown carbonat erragements (as vein partings?), uniformly 15 to 20% very finely arenaecous	

1140 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130 1130	1			1	1			1				SILTSTONE: as above - finely arenaceous in part grading to ARENACEOUS SILTSTONE with up to 10%	1
And And <td>1120</td> <td>1130</td> <td>\rightarrow</td> <td>100</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>glauconite.</td> <td>Trip out of hole with single shot grows stand the</td>	1120	1130	$ \rightarrow $	100				-				glauconite.	Trip out of hole with single shot grows stand the
Har Har <td>1130</td> <td>1138</td> <td></td> <td>100</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>directional concerns.</td>	1130	1138		100									directional concerns.
Image: Market in the second	1138	1150		70	30							locally very finely arenaceous grading to SiLTY SANDSTONE, minor micro-mica, trace pyritic streaks. SILTY SANDSTONE: medium light grey to medium grey, friable to dominantly hard, very fine to minor fine, very well sorted, sub-angular to angular, sub-spherical, 30 to 40% quartz silt matrix, strong calcareous	
10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <th10< th=""> 10 10 10<!--</td--><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>porosity, no hydrocarbon fluorescence.</td><td></td></th10<>												porosity, no hydrocarbon fluorescence.	
Image	1150	1160		40	60							SILTY SANDSTONE: as above.	
Image Image <th< td=""><td>1160</td><td>1170</td><td></td><td>50</td><td>50</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	1160	1170		50	50								
Image Image <th< td=""><td>1170</td><td>1180</td><td></td><td>70</td><td>30</td><td></td><td></td><td></td><td></td><td></td><td></td><td>SILTSTONE: as above.</td><td></td></th<>	1170	1180		70	30							SILTSTONE: as above.	
108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 <td>1180</td> <td>1190</td> <td></td> <td>80</td> <td>20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>SILTSTONE: as above.</td> <td></td>	1180	1190		80	20							SILTSTONE: as above.	
108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 108 <td>1100</td> <td></td> <td></td> <td></td> <td>-</td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>SILTSTONE: as above.</td> <td></td>	1100				-	_			_			SILTSTONE: as above.	
im im< im< </td <td></td>													
view view <th< td=""><td>1200</td><td>1210</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>SILTY SANDSTONE: as above.</td><td></td></th<>	1200	1210										SILTY SANDSTONE: as above.	
12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12<	1210	1220		80	20							SILTY SANDSTONE: as above	
Mod Mod </td <td>1220</td> <td>1230</td> <td></td> <td>70</td> <td>30</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>trace micro mica, locally very finely arenaceous grading to SILTY SANDSTONE - occasional cuttings with both fine silt and sand laminations associated with 5 to 10% glauconite and included pyritic aggregates. SILTY SANDSTONE: mottled white / very light grey, 5 to locally 10% dusky green glauconite, very fine, well sorted, sub-angular to sub-sounded, sub-spherical, storg actearous cement, common fine white lithics,</td> <td></td>	1220	1230		70	30							trace micro mica, locally very finely arenaceous grading to SILTY SANDSTONE - occasional cuttings with both fine silt and sand laminations associated with 5 to 10% glauconite and included pyritic aggregates. SILTY SANDSTONE: mottled white / very light grey, 5 to locally 10% dusky green glauconite, very fine, well sorted, sub-angular to sub-sounded, sub-spherical, storg actearous cement, common fine white lithics,	
104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 104 <td>1220</td> <td>1240</td> <td></td> <td>70</td> <td>20</td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td>	1220	1240		70	20	_			_				
Desc												SILTY SANDSTONE: as above. SILTSTONE: as above.	
Jow Jow <td>1240</td> <td>1250</td> <td></td> <td>60</td> <td>40</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>SILTY SANDSTONE: as above.</td> <td></td>	1240	1250		60	40							SILTY SANDSTONE: as above.	
June	1250	1260		70	30							SILTY SANDSTONE: as above.	
Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant Variant	1260	1270		80	20								
10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 </td <td>1270</td> <td>1280</td> <td></td> <td>80</td> <td>20</td> <td></td> <td>T</td> <td>T</td> <td></td> <td></td> <td></td> <td>SILTSTONE: as above.</td> <td></td>	1270	1280		80	20		T	T				SILTSTONE: as above.	
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Desc Desc Desc Desc Desc Desc Desc Desc 10 10 10 10 10 10 10 100 100 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10								-	-+	-+			Trip out of hole to pick up directional drilling assembly
Image Image <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>+</td><td>-</td><td></td><td>\rightarrow</td><td></td><td></td><td>at 1296 m.</td></th<>							+	-		\rightarrow			at 1296 m.
1308 1307 1308 1307 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308 1308					5							SILTY SANDSTONE: as above.	
Image Image <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>+</td><td>+</td><td></td><td></td><td></td><td></td><td>1</td></th<>							+	+					1
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July 1 Link Link <thlink< th=""> Link Link <!--</td--><td>1311</td><td>1314</td><td></td><td>90</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td>associated minor micro mica, trace pyrite aggregates. SANDSTONE: cark yellow brown to dusky yellow brown, mottled medium grey in part, hard to very hard, very fine, very well sorted, sub-angular to angular, sub-spherical, slightly silly in part, strong calcareous- dolomitic cement, common while tilthc / feldspart fragments, trace gluaconite, very poor to no visible porosity,</td><td>from cuttings and ROP (?) at 1311 m. ROP strongly</td></thlink<>	1311	1314		90	10							associated minor micro mica, trace pyrite aggregates. SANDSTONE: cark yellow brown to dusky yellow brown, mottled medium grey in part, hard to very hard, very fine, very well sorted, sub-angular to angular, sub-spherical, slightly silly in part, strong calcareous- dolomitic cement, common while tilthc / feldspart fragments, trace gluaconite, very poor to no visible porosity,	from cuttings and ROP (?) at 1311 m. ROP strongly
1111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 1111 111 111 <td< td=""><td>1314</td><td>1317</td><td></td><td>80</td><td>20</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	1314	1317		80	20								
Image: Biology of the stand sta												SILTSTONE: as above.	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1317	1320		50	50								
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No. No. <td></td> <td>very fine carbonaceous detritus.</td> <td></td>												very fine carbonaceous detritus.	
H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H H	1320	1323		50	50							sub-angular to sub-sounded, sub-spherical, 25 to 30% white argillaceous matrix, strong calcareous cement,	
Image: Mode of the stand of the st													
1328 1.28 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 <td< td=""><td>1323</td><td>1326</td><td></td><td>40</td><td>60</td><td></td><td></td><td></td><td></td><td></td><td></td><td>ARENACEOUS SILTSTONE: as above - common carbonaceous detritus and rarely as fine laminations. SANDSTONE: generally white / very light grey, 30 to 40% as dis-aggregated loose clear to translucent grains, very fine to fine, commonly medium to coarse, moderately sorted, sub-angular in part - dominantly sub-sounded to rounded, sub-spherical to sub-elongate, 10 to 15% white argiliaceous matrix, moderate to locally storing calcareous cement, minor fine carbonaceous laminations, poor inferred porsity, no</td><td></td></td<>	1323	1326		40	60							ARENACEOUS SILTSTONE: as above - common carbonaceous detritus and rarely as fine laminations. SANDSTONE: generally white / very light grey, 30 to 40% as dis-aggregated loose clear to translucent grains, very fine to fine, commonly medium to coarse, moderately sorted, sub-angular in part - dominantly sub-sounded to rounded, sub-spherical to sub-elongate, 10 to 15% white argiliaceous matrix, moderate to locally storing calcareous cement, minor fine carbonaceous laminations, poor inferred porsity, no	
133 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 1	1326	1329		20	80							SANDSTONE: as above - fine to medium, becoming well sorted with up to 20% white argillaceous matrix	
132 133 134 134 135 14 136 137 138 137 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138 138	1329	1332			100								
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Image: Point of the stand of the s	1335	1338		10	90							SILTSTONE: dusky yellow brown to brown grey, moderately hard to hard, sub-fissile to minor fissile, uniformly very finely arenaceous grading to ARENACEOUS SILTSTONE.	
132 133 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 135 136 135 136 136 137 138 136 136 136 136 136 136 136 136 136 136 136 136 136 137 40 60 1 1 90 1 2 1 2 1 2 1 2				10								SANDSTONE: as above.	
IAM I				20									
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1347 1350 1350 1350 1350 1360 1370 1370 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380 1380]			SANDSTONE: as above.	
133 133 183 183 183 184 1 Integrate with a addition within a data one within a laminations grading back to allistone. Integrate with a data one within a data one withe data withe data one within a data one within a data o	1347	1350		70	30							SANDSTONE: as above.	
Image: Instant of the standard	1350	1353		80	20			ſ	ſ			fragments with sandstone visible as laminations grading back to siltstone.	
1333 1336 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 134 <th< td=""><td></td><td></td><td>\rightarrow</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>SANDSTONE: as above.</td><td>l</td></th<>			$ \rightarrow $					-				SANDSTONE: as above.	l
1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1339 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330	1353	1356		20	80							SANDSTONE: as above - very fine with strong calcareous cement.	
1350 1362 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50	1356	1359		20	80				_			SANDSTONE: as above.	
1362 1365 10 90 1 1 SILTSTONE: as above. SANDSTONE: while to very light grey, hard to very hard in part, very fine, sacharoidally totured, very well orted, sub-applicing, 10% while argiliaceous matrix, strong calcareous cement, trace very fine arbonaceous specks and while liftic/w werp control to ovisible porosity, no hydrocarbon fluorescence. 1365 1368 20 80 2 2 80 2 3 3 3 40 60 3 3 3 3 3 40 60 2 4 40% every fine/ arenaceous grading in part to SILTY SANDSTONE; ware carbonaceous specks and micro mica. 3 3 3 3 40 60 2 4 40% every fine/ arenaceous grading in part to SILTY SANDSTONE; ware carbonaceous specks and micro mica. 3 1371 1374 40 60 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1359	1362		50	50			Τ				SILTSTONE: as above - minor to locally common carbonaceous detritus with minor micro mica.	
1368 1370 1370 1370 1370 1370 1371 1374 1370 1370 1371 1374 1371 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1380 1374 1380 1381 1380 1382 1380 1382 1380 1382 1380 1383 1386 1380 1382 1380 1392 1392 1392 1393 1392 1393 1393												SILTSTONE: as above. SANDSTONE: white to very light grey, hard to very hard in part, very fine, sacharoidally textured, very well sorted, sub-angular, sub-spherical, 10% white argillaceous matrix, strong calcareous cement, trace very fine	
1368 1370 1370 1370 1370 1370 1371 1374 1370 1370 1371 1374 1371 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1374 1380 1374 1380 1381 1380 1382 1380 1382 1380 1382 1380 1383 1386 1380 1382 1380 1392 1392 1392 1393 1392 1393 1393	1265	1202		20	00	\rightarrow	+	+	-+	\rightarrow		SILTSTONE: as above.	1
1368 1371 I 40 60 I I 40% very finely arenaceous grading in part to SILTY SANDSTONE, trace carbonaceous specks and micro mc.a. SANDSTONE: as above. SANDSTONE: as above. 1380 1386 40 40 40 40 ARENACEOUS SILTSTONE: as above. SANDSTONE: as above. 60 40 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	1365	1308		20	δÛ		_			\rightarrow		SANDSTONE: as above.	
1371 1374 40 60 ARENACEOUS SILTSTOME: as above. 1374 1377 1360 50 50 SANDSTOME: as above. 1377 1380 60 40 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1377 1380 60 40 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1380 1383 60 40 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1380 1383 60 40 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1380 1383 60 40 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1380 1383 80 20 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1380 1384 80 20 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1388 1389 80 20 ARENACEOUS SILTSTOME: as above. SANDSTOME: as above. 1389 1392 90 10 SILTSTOME: medium dark grey, moderately hard, fissile to dominantly sub-fissile, uniformly totatured - very finely arenaceous detrius, trace carbonaceous. 1395 1398	1368	1371		40	60							40% very finely arenaceous grading in part to SILTY SANDSTONE, trace carbonaceous specks and micro mica.	
1374 1377 50 50 ARENACEOUS SUITSTONE: as above. 1377 1380 60 40 ARENACEOUS SUITSTONE: as above. 1377 1380 60 40 ARENACEOUS SUITSTONE: as above. 1377 1380 60 40 ARENACEOUS SUITSTONE: as above. 1380 1383 60 40 ARENACEOUS SUITSTONE: as above. 1380 1384 80 20 ARENACEOUS SUITSTONE: as above. 1380 1382 80 20 ARENACEOUS SUITSTONE: as above. 1380 1382 90 10 ARENACEOUS SUITSTONE: as above. 1380 1392 90 10 SUITSTONE: as above. 1392 1392 90 10 SUITSTONE: medum dark grey, moderately hard, fissile to dominantly sub-fissile, uniformly tactured-very finely arenaceous detrius, trace carbonaceous detrius, trace to locally minor micro mica. 1392 <t< td=""><td>1371</td><td>1374</td><td></td><td>40</td><td>60</td><td></td><td></td><td>+</td><td></td><td></td><td></td><td>ARENACEOUS SILTSTONE: as above.</td><td></td></t<>	1371	1374		40	60			+				ARENACEOUS SILTSTONE: as above.	
13/7 13/7 13/7 13/7 13/7 13/7 13/7 13/7 13/8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-+</td><td></td><td>ARENACEOUS SILTSTONE: as above.</td><td>1</td></th<>									-	-+		ARENACEOUS SILTSTONE: as above.	1
1377 1380 0 40 40 5 SANDSTONE: as above - locally common micro mica. 1380 1383 60 40 40 A ARENACEOUS SUITSTONE: as above - locally common micro mica. 1380 1386 80 20 C ARENACEOUS SUITSTONE: as above - locally common micro mica. 1380 1386 80 20 C ARENACEOUS SUITSTONE: as above. 1386 1389 80 20 C ARENACEOUS SUITSTONE: as above. 1380 1392 90 10 C ARENACEOUS SUITSTONE: as above. 1380 1392 90 10 C SANDSTONE: as above. 1389 1392 90 10 C SUITSTONE: as above. 1390 1392 90 10 C SUITSTONE: as above. 1391 1393 90 10							_	-+	_	\rightarrow		SANDSTONE: as above - sacharoidally textured.	
1360 1363 0 40 40 SANDSTONE: as above. 1383 1386 80 20 ARENACEOUS SUITSTONE: as above. SANDSTONE: as above. 1386 1389 80 20 ARENACEOUS SUITSTONE: as above. SANDSTONE: as above. 1386 1389 80 20 ARENACEOUS SUITSTONE: as above. SANDSTONE: as above. 1389 1392 90 10 SAIDSTONE: as above. SANDSTONE: as above. 1389 1392 90 10 SAIDSTONE: as above. SAIDSTONE: as above. 1392 1395 90 10 SAIDSTONE: as above. SAIDSTONE: as above. 1393 1395 90 10 SAIDSTONE: as above. SAIDSTONE: as above. 1394 1395 90 10 SAIDSTONE: as above. SAIDSTONE: as above. 1395 1398 70 30 SAIDSTONE: as above. SAIDSTONE: as above. 1395 1398 70 30 SAIDSTONE: as above. SAIDSTONE: as above. 1399 1398 70 30 SAIDSTONE: as above. SAIDSTONE: as above. <												SANDSTONE: as above - sacharoidally textured.	
1385 1386 30 20 20 SANDSTONE: as above. 1386 1389 80 20 20 ARCNACEOUS SILTSTONE: as above. SANDSTONE: as above. 1389 1392 90 10 20 ARCNACEOUS SILTSTONE: as above. SANDSTONE: as above. 1389 1392 90 10 20 SANDSTONE: as above. SANDSTONE: as above. 1392 1395 90 10 20 SANDSTONE: as above. SANDSTONE: as above. 1392 1395 90 10 20 20 SILTSTONE: as above. 1393 1395 90 10 20 SILTSTONE: as above. SANDSTONE: as above. 1395 1398 70 30 20 SILTSTONE: as above. SANDSTONE: as above. 1395 1398 70 30 20 SILTSTONE: as above. SILTSTONE: as above. 1395 1398 70 30 20 SILTSTONE: as above. SILTSTONE: as above. 1395 1398 70 30 20 SILTSTONE: as above. SILTSTONE: as above. 1399	1380	1383		60	40							SANDSTONE: as above.	
1386 1389 80 20 ARENACEOUS SILTSTONE: as above grading to SILTSTONE: SANDSTONE: as above - seconing common dark grey and slightly carbonaceous. 1389 1392 90 10 SILTSTONE: as above - becoming common dark grey and slightly carbonaceous. 1389 1392 90 10 SILTSTONE: as above - becoming common dark grey and slightly carbonaceous. 1392 1395 90 10 SILTSTONE: medium dark grey to dark grey, moderately hard, fissile to dominantly sub-fissile, uniformly turbfissile, uniformly turbefissile, uniformly turbfissile, uniformly turbefissile, uniformly turbefissile, uniformly turbfissile, uniformly turbefissile, uniformly turbfissile, uniformly turbefissile, uniform micro mica. 1395 1398 70 30 SILTSTONE: as above. 1399 1398 70 30 SILTSTONE: as above. 1399 1404 00 10 SILTSTONE: as above.	1383	1386		80	20							ARENACEOUS SILTSTONE: as above. SANDSTONE: as above.	1
1389 1392 90 10 SMUGST/ME: as above - becoming common dark grey and slightly carbonaceous. SANDSTONE: as above. 1389 1395 90 10 SILTSTONE: as above. 1392 1395 90 10 SILTSTONE: as above. 1393 1395 90 10 SILTSTONE: as above. 1395 1398 70 30 SILTSTONE: as above. 1395 1398 70 30 SILTSTONE: as above. 1399 1401 00 10 SILTSTONE: as above.	1386	1389		80	20							ARENACEOUS SILTSTONE: as above grading to SILTSTONE.	
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1392 1395 90 10 Image: Interview of infegeration of the processes in part, trace carbonaceous detritus, trace to locally minor micro mica. SANDSTONE: as above. 1395 1398 70 30 Image: SANDSTONE: as above. 1395 1398 70 30 Image: SANDSTONE: as above. 1396 1401 00 10 Image: SANDSTONE: SANDSTONE: Instructured on the processing	1000	2002		55	-0		+	+					1
1398 70 30 30 SANDSTONE: light grey to moderately hard to hard, very fine, sacharoidaly textured, very well sorted, sub-angular, sub-an	1392	1395		90	10							textured - very finely arenaceous in part, trace carbonaceous detritus, trace to locally minor micro mica. SANDSTONE: as above.	
1202 1401 0 10 SILTSTORE: as above - becoming uniformly medium dark grey. Murta Member picked from cuttings at 1397.5 m	ļ								1	1	1		I
1398 1401 90 10 DELTSTORE: as above - becoming uniformly medium dark grey.	1395	1398		70	30				ļ				
	1395	1398		70	30							very well sorted, sub-angular to angular, sub-spherical, grades to SILTY SANDSTONE in part, trace black	

							·	
								SILTSTONE: as above. SANDSTONE (1) 20% as above. CANDSTONE (2) 20% as above.
1401	1404	60	40					SANDSTONE (2) 20% mottled white / translucent aggregates - 5% losse clear to translucent grains, moderately hard, medium to ccarse, minor very coarse, moderately to well sorted, angular to sub-angular, sub-elongated, 5 to 10% white argilaceous matrix, weak calcareous cement, very poor visible to fair inferred
								source figures, 5 to 10% white a glinebood manu, weak cataleous centerit, very poor visible to fail intered porosity, trace pinpoint moderately bright green velow fluorescence in tight sandstone aggregates, very weak very slow diffuse dull green white cut, very thin residual ring fluorescence, no visible residue.
1404	1407	40	60					SILTSTONE: as above. SANDSTONE (1) 30%: as above.
1101	1107	-10	00					SANDSTONE (2) 30%: as above - becoming dominantly as dis-aggregated medium grains, no hydrocarbon fluorescence.
4407		40	60					ARENACEOUS SILTSTONE: dark grey, firm to moderately hard in part, sub-blocky to dominantly sub- fissile, minor very fine lithic fragments, trace carbonaceous detritus and micro mica.
1407	1410	40	60					SANDSTONE (1) 30%: as above. SANDSTONE (2) 30%: as above - dominantly as dis-aggregated medium grains.
								ARENACEOUS SILTSTONE: as above. SANDSTONE: light grey aggregates - very fine, 50% as fine to dominantly medium translucent to clear dis-
1410	1413	30	70					aggregated grains, friable to moderately hard, moderately to well sorted, sub-angular to dominantly sub- sounded, noted to moderately hard, moderately to well sorted, sub-angular to dominantly sub- sounded, noted in part, sub-elongate to dominantly sub-spherical, 5 to 10% white argillaceous matrix,
								weak calcareous cement, poor visible to fair inferred porosity, no hydrocarbon fluorescence.
1413	1416	60	40	-				ARENACEOUS SILTSTONE: as above - common very fine carbonaceous / coally laminations and detritus. SANDSTONE: as above - trace fluorescence as below.
1415	1410	00	40	\perp	<u> </u>		$ \vdash $	
1416	1419	60	40					ARENACEOUS SILTSTONE: as above - common very fine carbonaceous / coally laminations and detritus. SANDSTONE: as above - 50% as below.
				+	-			ARENACEOUS SILTSTONE: as above.
1419	1422	80	20					SANDSTONE: as above - 100% patchy very dull orange mineral fluorescence with trace pinpoint / scattered green yellow fluorescence in tight sandstone aggregates with trace carbonaceous detritus (locally be an experimental and the same state of t
				\perp			\square	generated?), slow streaming dull to moderately bright blue white cut, moderately thick residual ring fluorescence, no visible residue.
								ARENACEOUS SILTSTONE: as above - slightly carbonaceous in part. Top Namur? Probably yes. <u>Namur Sandstone</u> SANDSTONE: white to very light grey aggregates, dominantly as translucent to clear disaggregated grains, <u>Member</u> picked from cuttings at 1424.5 m
1422	1425	30	70					moderately hard to dominantly friable, fine to dominantly medium, rarely coarse, sub-angular to sub-rounded, well sorted, weakly calcareous, trace to 5% white argillaceous matrix, rare carbonaceous laminations, poor to
								fair inferred porosity, 30% very dull green patchy fluorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue.
			-+	+	-	\vdash	┢┼┼┼	SILTSTONE: dark grey to brown black, sub-blocky, moderately hard, very finely arenaceous in part with
1425	1428	10	90	_	1			locally common micro mica, occasionally moderately carbonaceous. SANDSTONE: as above - 30% fluorescence as above.
1428	1431	5	95			\square		SILTSTONE: as above. SANDSTONE: as above - becoming dominantly medium, sub-sounded - 10% fluorescence as above.
		-		+	+	\vdash	+ + +	SILTSTONE: as above.
1431	1434	10	90	+	+	\vdash	+ + +	SANDSTONE: as above. 30% fluorescence as above.
					1			SULTS TO VICE: as addres. SANDSTONE: very light to minor very pale brown aggregates, dominantly as dis-aggregated translucent to clear grains, fritable, fine to dominantly medium, minor coarse, well sorted, sub-angular to minor sub-
1434	1437	2	98		1			ceaer grains, maixe, inne to dominantity meaium, minor coarse, weil sorteo, sub-anguar to minor sub- sounded, sub-spherical to sub-elongate, minor elongated, weak calcareous cement - weakly siliceous in part, 5% decreasing white argillaceous matrix, fair inferred porosity, 10% dull green pinpoint fluorescence in tight
					1			b% oecreasing white argulaceous matrix, trail interred porosity, 10% out green pinpoint nuorescence in tight sandstone aggregates, no crush cut, very thin residual ring fluorescence, no visible residue.
4.405		22		+	+	┝┤		SILTSTONE: brown grey to olive grey, moderately hard, sub-fissile to minor fissile, uniformly very finely
1437	1440	30	70				\square	arenaceous, trace fine mica flecks, trace fine carbonaceous detritus. SANDSTONE: as above - trace fluorescence as above.
1440	1443	60	40	\perp	⊢		$\vdash \downarrow \downarrow$	SILTSTONE: as above. SANDSTONE: as above - 70% fluorescence as above.
1443	1449	80	20					SILTSTONE: as above. SANDSTONE: as above - trace pinpoint fluorescence as above.
1449	1452	10	90					SILTSTONE: as above. SANDSTONE: as above - trace pinpoint fluorescence as above.
1452	1455	10	90					SILTSTONE: as above. SANDSTONE: as above - trace pinpoint fluorescence as above.
1455	1458	10	90					SILTSTONE: as above - locally moderately carbonaceous. SANDSTONE: as above - no hydrocarbon fluorescence.
								SANDSTONE: minor very light grey aggregates - dominantly as broken / dis-aggregated translucent to clear grains, fine to dominantly medium rarely coarse, well sorted, sub-angular to angular, sub-spherical to sub-
1458	1461		100					elongate, very weakly calcareous, weak siliceous cement, trace white argillaceous matrix, poor visible to dominantly fair inferred porosity, 5% dull green pinpoint fluorescence in tight sandstone aggregates, no crush
								cut, very thin residual ring fluorescence, no visible residue.
1461	1464	5	95	-				SILTSTONE: as above - locally abundant carbonaceous detritus. SANDSTONE: as above - trace pinpoint dull green flucrescence.
1464	1467		100					SANDSTONE: as above - angular, trace pinpoint fluorescence as above.
1467	1470		100	+		$\left - \right $	+++	SANDSTONE: as above - angular, trace pinpoint fluorescence as above. SANDSTONE: as above - angular, 5% pinpoint fluorescence generally as above crush cut, no visible
1470	1473		100	+	-	-	+ + +	residue. SANDSTONE: as above - locally 5 to 10% white argillaceous matrix becoming commonly as fine to medium
1473	1476		100	+			┢─┼─┼	aggregates, 5% pinpoint fluorescence generally as above crush cut, no visible residue. SANDSTONE: as above - fine to dominantly medium, well sorted, dominantly dis-aggregated, trace weakly
1476	1479		100					calcareous - generally weak siliceous cement, fair inferred porosity, trace pinpoint fluorescence as above.
1479	1482	10	90					SILTSTONE: grey black, firm to moderately hard, sub-fissile, very finely arenaceous, moderately to very carbonaceous, trace micro mica.
						\vdash	\vdash	SANDSTONE: as above. SILTSTONE: as above.
1482	1485	10	90		-			SANDSTORE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - becoming dominantly dusky yellow brown with common carbonaceous detritus.
1485	1488							
1488	1400	70	30	T				SANDSTONE: as above - becoming dominantly doasy years when common carbonaceous dentitus.
	1488		30 30	+				SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above.
		70		+				SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - to hydrocarbon fluorescence. SANDSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains,
1491		70 70						SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - to hydrocarbon fluorescence. SANDSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable, medium to dominantly fine, rarely coarse, moderately to well sorted, sub-angular to minor sub- sounded, sub-spherical, strong calcareous cerement, 15 to 20% white argillaceous matric in part graing to
	1491	70 70	30					SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable, medium to dominantly fine, rarely coarse, moderately to well sorted, sub-angular to minor sub- sounded, sub-phrierial, strong calcerous cerent, 15 to 20% white argitalecous matric in part grading to ARGILLACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence.
1491	1491 1494	70 70	30 100					SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - trace pinpoint fluorescence. SANDSTONE: as above - on hydrocarbon fluorescence. SANDSTONE: as above - on hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable, medium to dominantly fine, rarely coarse, moderately to well sorted, sub-angular to minor sub- sounded, sub-phricid, strong calcareous certent, 15 to 20% white argitaleacutes markin in part grading to ARGILLACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above. SANDSTONE: as above. becoming commonly coarse - moderately sorted.
	1491	70 70	30					SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable, medium to dominantly fine, rarely coarse, moderately to vell sorted, sub-angular to minor sub- sounded, sub-spherical, strong calcareous cerement, 15 to 20% white argillaceous matric in part grading to ARGILLACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above.
1491 1494	1491 1494 1497	70 70 40	30 100 60					SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, friable.medium to dominarity fine, rarely coarse, moderately to well sorted, sub-agular to minor sub-sounded, sub-agherical, strong calcarecus cement, 15 to 20% white argilizeous matric in part grading to ARGILACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: as above. SUCRESENCE: 20% moderately bright green yellow scattered fluorescence in tight sandstone aggregates, slow diffuse dul blue white crush cut, wy thin residual ring, no visible residue. SILTSTONE: as above.
1491	1491 1494	70 70	30 100					SANDSTONE: as above - trace pinpoint fluorescence as above. SILTSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, SANDSTONE: white to very pale brown aggregates, 30 to 40% as dis-aggregated clear to translucent grains, Sandburt to dominantly fine, rarely coarse, moderately to well sorted, sub-angular to minor sub- sounded, sub-apherical, strong calcarecus centent, 15 to 20% white argliaceous matric in part grading to ARGILLACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above - becoming commonly coarse - moderately sorted. FLUORESENCE: 20% moderately bright green yellow scattered fluorescence in tight sandstone aggregates, slow diffuse du blue white crush cut, very thin residual ring, no visible residue. SILTSTONE: as above. SILTSTONE: as above. SILTSTONE: as above.
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1491 1494 1497 1500 1503 1506 1509 1512 1515	1491 1494 1497 1500 1503 1506 1509 1512 1515 1518	70 70 40 20 10 10 20	30 100 60 80 90 100 100 90 80					SANDSTONE: as above - trace pripoint fluorescence. SILTSTONE: as above - no hydrocarbon fluorescence. SANDSTONE: white to very pale brown aggregates. 30 to 40% as dis-aggregated clear to translucent prins. riable.medium to dominantly fine, rarely corres, moderately wells sorted. support of the sorted sorted sorted. SANDSTONE: white to very pale brown aggregates. sounded.sub-spherical, strong calcaneous cement, 15 to 20% white argilizecous matric in part grading to ARGLLACEOUS SANDSTONE, very poor visible porosity, no hydrocarbon fluorescence. SILTSTONE: as above. SANDSTONE: as above.becoming commonly coarse - moderately sorted. FLUORESENCE: 20% moderately bright green yellow scattered fluorescence in tight sandstone aggregates, slow difuse above - becoming commonly coarse - moderately sorted, 10% fluorescence as above. SILTSTONE: as above. SILTSTONE: as above. SANDSTONE: as above. SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: as above. SANDSTONE: as above. <t< td=""></t<>
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1545	Т	-	- 1		-	_	- T	1	-	-	PILITETONE: as above, becaming deminantly duality vallow brown, leadly your finally propagate grading to	
	1545	40	60								SILTSTONE: as above - becoming dominantly dusky yellow brown, locally very finely arenaceous grading to ARENACEOUS SILTSTONE.	
			_								SANDSTONE: as above. SILTSTONE: as above.	
1548	1548	30	70								SANDSTONE: as above.	
	1551	30	70								SILTSTONE: as above. SANDSTONE: as above.	
1551	1554	20	80								SILTSTONE: as above. SANDSTONE: as above.	
											ARENACEOUS SILTSTONE: uniformly brown grey, firm to moderately hard in part, sub-fissile to minor sub-	
1554	1557	90	10								blocky, 40 to 50% very fine quartz grains grading to SILTY SANDSTONE, non-calcareous, trace carbonaceous specks, locally common micro mica.	
											SANDSTONE: as above.	
											ARENACEOUS SILTSTONE: as above. SANDSTONE: white to pale yellow brown, firm to dominantly moderately hard, very fine to minor fine -	
1557	1560	60	40								uniformly sacharoidally textured, very well sorted, sub-angular, sub-spherical, minor white argillaceous	
											matrix, very weakly calcareous in part - dominantly as strong siliceous cement, very poor to no visible porosity, no hydrocarbon fluorescence.	
1560	1563	70	30								SILTSTONE: as above.	
						_	_				SANDSTONE: as above. SILTSTONE: as above - trace carbonaceous detritus.	
1563	1566	70	30								SANDSTONE: as above.	
1566	1569	70	30								SILTSTONE: as above - trace carbonaceous detritus and becoming dominantly dusky yellow brown. SANDSTONE: as above.	
1569	1572	20	80								SILTSTONE: as above. SANDSTONE: as above - no hydrocarbon fluorescence.	
											SANDSTONE: dominantly as translucent to minor clear dis-aggregated quartz grains, minor very light grey aggregates, friable to minor moderately hard, fine to minor medium, well sorted, sub-angular to dominantly	Spot sample.
1574	1574		100								sub-rounded, sub-spherical to spherical, weak siliceous cement, poor visible to fair inferred porosity, 100%	
1574	1374		100								solid bright yellow green fluorescence, slow diffuse green white cut - instant bright green white crush cut with secondary streaming grains, thick moderately bright green white residual ring, no visible residue.	
1572	1575	10	90								SILTSTONE: as above. SANDSTONE: 70% as sacharoidal aggregates, 30% as above, 100% solid bright yellow green fluorescence	
											as above.	
1575	1578	20	80								SILTSTONE: as above. SANDSTONE: 70% as sacharoidally textured aggregates, 30% as dis-aggregated grains as above, 15%	
		-	-								patchy bright yellow green fluorescence as above.	
1578	1581		100								SANDSTONE: white, hard to friable in part, very fine to dominantly fine grained, well sorted, sub-angular to angular, moderately strong siliceous cement with minor quartz overgrowths, trace carbonaceous specks,	
						_					very poor visible porosity, trace pinpoint fluorescence as above. SANDSTONE: as above - trace pinpoint fluorescence as above.	
	1587 1590		100 100			-+		-+			SANDSTONE: as above - trace pinpoint fluorescence as above. SANDSTONE: as above - trace pinpoint fluorescence as above.	
	1593		100					-	-+	_	SANDSTONE: as above - trace pinpoint fluorescence as above.	
	1596		100								SANDSTONE: as above - fine grained, very well sorted, trace pinpoint fluorescence as above.	
		ſ	_ [Ī			ſ	ſ			SANDSTONE: white to commonly as dis-aggregated translucent quartz grains, friable, fine, very well sorted, sub-angular to angular, sub-spherical, non-calcareous, weak to moderate siliceous cement - trace quartz	Adori Sandstone picked from cuttings and ROP at 1594.5 m
1596	1599		100								overgrowths, minor white argillaceous matrix, very poor to locally fair inferred porosity, trace pinpoint	
1599	1602		100						-+		fluorescence as above. SANDSTONE: as above - trace pinpoint fluorescence as above.	
1335	1002		100			-			+	_	SANDSTONE: very light grey, minor very pale brown staining, fine, dominantly medium to coarse,	
											moderately to well sorted, angular - common broken coarse grains, sub-spherical to sub-elongated, moderate to locally strong siliceous cement with occasional quartz overgrowths, poor visible porosity, trace	
1604	1604		100								intergranular (in aggregates) black bitumen staining, 70% patchy bright green white fluorescence, instant	
											diffuse dull green white cut - slow streaming moderately bright blue white cut, thick green white residual ring, no visible residue.	
1602	1605		100								SANDSTONE: as above - 30% fluorescence as above, trace bitumen staining - slow streaming cuts.	
	1608		100								SANDSTONE: as above - 20% fluorescence.	
											SANDSTONE: as above - becoming dominantly fine, strong siliceous cement, very poor to no visible	
1608	1611	1	99								porosity, trace fluorescence as above.	
1611	1614	3	97								SILTSTONE: brown black, firm, sub-fissile to fissile, moderately arenaceous - uniformly carbonaceous, trace micro mica.	
						_					SANDSTONE: as above - 20% fluorescence as above.	Mud sample collected at gas peak at 1616 m. When
											SANDSTONE: as above - 5% white kaolinite fragments, 30% patchy moderately bright to dull yellow fluorescence, instant blue white crush cut, thick green residual ring, no visible residue.	mixed with boiling water and placed in a cup under the
1614	1620	3	97									fluoroscope, oil bubbles observed breaking out on surface - bright green yellow droplets and streaks.
												surface - bright green yellow droplets and streaks.
1620	1623		100								SANDSTONE: as above, 20% patchy moderately bright to dull yellow fluorescence, instant blue white crush cut, thick green residual ring, no visible residue.	
1623	1626		100								SANDSTONE: as above - common pale brown staining, fine, sub-angular to dominantly angular - rarely as	
	1629		100			_					broken quartz crystal faces, trace fluorescence as above. SANDSTONE: as above, trace fluorescence as above.	
	1629		100							-	SANDSTONE: as above, fine, becoming dominantly sub-sounded, trace fluorescence as above.	
	1635	40	60								SILTSTONE: as below.	
		-									SANDSTONE: as above, trace fluorescence as above. SILTSTONE: brown grey to brown black, firm, sub-blocky to dominantly sub-fissile, generally uniformly	Birkhead Formation picked from cuttings and ROP at
											textured - locally moderately arenaceous, moderately carbonaceous in part - trace carbonaceous detritus and	1634.5 m.
1635	1641	90	10								SANDSTONE: medium light grey, moderately hard, very fine to minor fine, very well sorted, 10 to 15%	
											argillaceous matrix, weakly calcareous, common lithics and feldspar fragments, trace carbonaceous detritus and wisps, very poor to no visible porosity, no hydrocarbon fluorescence.	
											SILTSTONE: as above.	
1641	1644	90	10								SANDSTONE: as above - no hydrocarbon fluorescence.	
1644	1647	95	5								SILTSTONE: as above. SANDSTONE: as above.	
1647	1650	60	40								SILTSTONE: as above. SANDSTONE: as above - 50% patchy dull green fluorescence, slow dull blue white streaming cut, thin blue	
1647	1650	60	40								white residual ring, no visible residue.	
1650	1653	80	20			T				_	SILTSTONE: as above. SANDSTONE: as above.	
		-				+		\rightarrow		_	SILTSTONE: as above.	
1653	1656	50	50								SANDSTONE: white to very light grey, translucent to clear loose individual grains, friable, very fine to fine, rarely medium, well sorted, sub-angular to angular, sub-spherical, weakly calcareous, trace argillaceous	
					_			_			matrix, trace fine lithics, poor inferred porosity, no hydrocarbon fluorescence.	
1656	1659	40	60					1			SILTSTONE: as above. SANDSTONE: as above.	
↓		50	50					-	-+	_	SILTSTONE: as above - becoming argillaceous in part.	
1650	1662	JU	JU			_					SANDSTONE: as above. SILTSTONE: dark grey to brown black, sub-blocky to dominantly sub-fissile, firm to moderately hard,	
1659	1665	100									generally very finely arenaceous - slightly argillaceous in part, locally moderately carbonaceous.	
						-+		\rightarrow			SILTSTONE: as above.	
1662	1669	100				-		1			SILISTONE: as above. SILTSTONE: as above.	
1662 : 1665 :	1668 1671	100 100						1				
1662 : 1665 : 1668 :	1671	100									SILTSTONE as above - becoming dominantly very finely arenaceous grading to ARENACEOUS	
1662 1665 1668 1671	1671 1674	100 100									SILTSTONE.	
1662 1665 1668 16671	1671	100	10								SILTSTONE: SILTSTONE: as above. SANDSTONE: as below - 100% fluorescence as below.	
1662 1665 1668 1671	1671 1674	100 100	10								SILTSTONE. SILTSTONE: as above.	
1662 1665 1668 1671 1674	1671 1674	100 100 90	10								SILTSTONE: SILTSTONE: as above. SANDSTONE: as below - 100% fluorescence as below. SILTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear losse individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical,	
1662 1665 1668 1671 1674	1671 1674 1677	100 100									SILTSTONE: SILTSTONE: as above. SANDSTONE: as below - 100% fluorescence as below. SILTSTONE: as above. SILTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear losse individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argiliaceous matrix, trace fine filtics, poor inferred porosity, 10% solid moderately bright to dul green while fluorescence, slow dull blue while streaming cut, thin blue	
1662 1665 1668 1671 1674	1671 1674 1677	100 100 90									SILTSTONE: SILTSTONE: as above. SANDSTONE: as below 100% fluorescence as below. SILTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear loose individual grains, friable to minor hard aggregates, very fine to dominantly fine, very vell sorted, sub-agular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argiliazeous matrix, trace fine lithics, poor inferred porosity, 100% sold moderately chiph to dull green white fluorescence, slow dul blue white streaming cut, thin blue white residual ring, no visible residue.	
1662 1665 1668 1671 1674 1677	1671 1674 1677	100 100 90 20									SILTSTONE: SILTSTONE: as above. SANDSTONE: as above. SILTSTONE: as above. SILTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear loose individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argilaceous matrix, trace fine lithics, poor inferred porceity, 100% solid moderately bright to duil green white fluorescence, slow duil blue white streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above.	
1662 1 1665 1 1668 1 1671 1 1674 1 1677 1 1680 1	1671 1674 1677 1680 1683	100 100 90 20 30	80 70								SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: as above. SULTSTONE: as above. SULTSTONE: as above. SULTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear loose individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argilaceous matrix, trace fine lithics, poor inferred porceity, 100% solid moderately bright to dull green white fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above. SANDSTONE: as above.	
1662 1665 1668 1671 1674 1677 1680 1683	1671 1674 1677 1680 1683 1686	100 90 20 30 30	80 70 70								SILTSTONE: as above. SANDSTONE: as above. SILTSTONE: as above. SILTSTONE: as above. SILTSTONE: as above. SILTSTONE: as above. SILTSTONE: white to vary light grey, translucent to clear loose individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well sorted, sub-angular to sub-rounded, sub-spherical, moderate claracterous cement, trace to minor argilaceous maritri, trace fine lithics, poor inferred porosity, 100% solid moderately bright to dull green while fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above. 10% fluorescence as above. SILTSTONE: as above. SANDSTONE: as above. SILTSTONE: as above.	
1662 1665 1668 1671 1674 1677 1680 1683 1688	1671 1674 1677 1680 1683 1686 1689	100 90 20 30 30 90	80 70 70 10								SILTSTONE: as above. SANDSTONE: while to very light grey, translucent to clear losse individual grains, friable to minor hard aggregates. very fine to dominantly fine, very well sorted, sub-agular to sub-rounde, sub-spherical, moderate calcareous cement, trace to minor argillaceous matrix, trace fine lithics, poor inferred poresity, ind% sold moderately bright to dud green white fluorescence, slow dull blue while streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above. SILTSTONE: as above. 10% fluorescence as above. SILTSTONE: AS ADVE.	
1662 1665 1668 1671 1674 1677 1680 1683 1688	1671 1674 1677 1680 1683 1686	100 90 20 30 30	80 70 70								SILTSTONE: as above. SANDSTONE: white to very light grey, translucent to clear losse individual grains, friable to minor hard aggregates. very fine to dominantly fine, very vell sorted, sub-agular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor argillaceous matrix, trace fine lithics, poor inferred porceity, ind/% sold moderately bright to dul green white fluorescence, slow dull blue white streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above. SILTSTONE: AS ADVE.	
1662 1665 1668 1671 1674 1677 1680 1680 1683 1686 1689	1671 1674 1677 1680 1683 1686 1689	100 90 20 30 30 90	80 70 70 10								SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: as below. 100% fluorescence as below. SILTSTONE: as above. SANDSTONE: as above. SANDSTONE: white to very light grey, translucent to clear loces individual grains, friable to minor hard aggregates, very fine to dominantly fine, very well softed, sub-angular to sub-rounded, sub-spherical, moderate calcareous cement, trace to minor arginal eases matrix. Trace fine lithics, poor inferred porosity, 100% solid moderately bright to duil green white fluorescence, slow duil blue white streaming cut, thin blue white residual ring, no visible residue. SILTSTONE: as above. SILTSTONE: as above. 10% fluorescence as above. SILTSTONE: as above. 10% fluorescence as above. SILTSTONE: As above. SILTST	
1662 1665 1668 1671 1674 1677 1680 1680 1683 1686 1689	1671 1674 1677 1680 1683 1688 1689 1692	100 100 90 20 30 30 90 50	80 70 70 10 50								SILTSTONE: as above. SANDSTONE: as above. SILTSTONE: AS ABOVE. SILTSTONE	
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1800 1803 100 common fine lithics. 1803 1806 100 SANDSTONE: as above - 5% white argilaceous matrix, dominantly medium grained, becoming commonly sub-sourced. 1806 1809 100 SANDSTONE: as above - face bitumen staining. 1809 1812 100 SANDSTONE: as above - strong siliceous cement with minor quartz overgrowths, fair to poor inferred porosity. 1812 1815 100 SANDSTONE: as above - dominantly fine grained, well sorted.	
1803 1806 100 Common interactions 1803 1806 100 SANDSTONE: as above - 5% white argillaceous matrix, dominantly medium grained, becoming commonly sub-sounded. 1806 1809 100 SANDSTONE: as above - frace bitumen staining. 1809 1812 100 SANDSTONE: as above - strong siliceous cement with minor quartz overgrowths, fair to poor inferred porcesity. 1812 1815 100 SANDSTONE: as above - dominantly fine grained, well sorted.	
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1809 1612 100 porosity. 1812 1815 100 SANDSTONE: as above - dominantly fine grained, well sorted.	
1815 1818 100 SANDSTONE: as above - fine to dominantly medium, minor coarse, angular to minor sub-angular.	
1818 1821 100 SANDSTONE: as above - dominantly medium, minor coarse, well sorted.	
1821 1824 100 SANDSTONE: as above - sub-angular to commonly sub-sounded. 1824 1827 5 95 SLTSTORE: grey black, moderately hard, sub-fissile, carbonaceous.	
1824 1827 5 53 SANDSTONE:as above. 1827 1830 100 SANDSTONE: as above - trace pinpoint fluorescence as above.	
1830 1833 100 SANDSTONE: as above. 1833 1836 100 SANDSTONE: as above moderately calcareous, minor quartz overgrowths.	
1836 1839 100 SANDSTONE: as above - minor pale brown stained aggregates.	
1839 1842 100 SANDSTONE: as above - fine dominantly medium, minor coarse, dominantly angular to sub-angular, minor sub-sounded, minor quartz overgrowths - trace black mineral inclusions.	
1842 1845 100 SANDSTONE: as above. 1845 1848 100 SANDSTONE: as above.	
1848 1851 100 SANDSTONE: as above. 1851 1854 100 SANDSTONE: as above.	
1854 1857 100 SANDSTONE: as above.	
SANDSTONE: very light grey to light grey to light grey, minor very pale brown stained aggregates, dominantly as dis- aggregated clear to translucent / minor milkly quartz grains, friable to moderately hard in aggregates, medium	
1857 1860 100 grained, minor fine and coarse, well sorted, sub-sounded to sub-angular, minor angular, sub-spherical to sub- elongate, weakly calcareous - minor quartz overgrowths, trace white argillaceous matrix, fair inferred porosity,	
Image: Non-State State St	
1863 1866 100 SANDSTONE: as above - coarse to very coarse, angular. 1866 1872 100 SANDSTONE: as above - coarse to dominantly medium, angular.	
1872 1875 100 SANDSTONE: as above.	
1875 1878 100 SANDSTONE: as above. 1878 1881 100 SANDSTONE: as above - medium, angular, moderately calcareous to minor quartz overgrowths, fair inferred	
1881 1884 100 provisity.	
1884 1887 100 SANDSTONE: becoming dominantly medium to fine and sub-sounded. 1887 1890 100 SANDSTONE: a above - medium to coarse, angular.	
1807 1990 100 Constraint of control, original. 1890 1893 20 80 SILTSTONE: as above.	
1893 1896 100 SANDSTONE: as above + becoming very coarse to granular in part - poorly sorted.	
1896 1899 80 20 SILTSTONE: dark grey, firm, sub-fissile to fissile, generally uniformly textured - locally very finely arenaceous, trace littics and carbonaceous specks.	
SANDSTONE: as above. SILTSTONE: as above. SILTSTONE: inplt grey - dominantly as dis-aggregated translucent to milkly quartz grains, friable, fine to	
1899 1902 40 60 Sintos rove: gran gray - dominantly as dis-agging data draits data to minky dualz grants, intello dominantly medium, occasionally coarse, well sorted, angular to sub-angular, minor sub-sounded, sub- spherical to dominantly sub-elongate, trace to locally up to 10% white a gillaceous matrix, weakly calcareous,	
weak to moderate siliceous cement with minor quartz overgrowths, poor to fair inferred porosity, no hydrocarbon florescence.	
1902 1905 80 20 SILTSTONE: as above.	
1905 20 80 SILTSTONE: as above. SANDSTONE: as above. SLITSTONE: as above.	
1908 1911 10 90 SILTSTONE: as above. SANDSTONE: as above.	
150 151 10 50 angular 1911 1914 100 SANDSTONE: as above.	
1911 1914 100 Office office: as above - trace red orange (jasper) lithic fragments, trace sub-sounded to rounded coarse sub-spherical grains.	
1917 1920 100 medium to dominantly coarse to very coarse and <u>commonly sub-sounded</u> .	
1920 1923 100 SANDSTONE: as above - weakly calcareous, medium to dominantly coarse, 5% kaolinitic fragments and locally common white argillaceous matrix, strong siliceous cement, very poor inferred porosity, no hydrocarbon fluorescence.	
1923 1926 100 SANDSTONE: as above.	
1026 E 1026 E E DE arenaceous material, locally moderately carbonaceous with trace to 5% coally laminations / fragments, trace ROP at 1926.5 m.	
1520.3 1520.3 15 15 15 micro pyritic aggregates. SANDSTONE: as above.	tion picked from cuttings and

Appendix 10 – Wireline Report and Log Data

Log Data provided electronically on CD

Electric Wireline Operations End of Well Report



Triclops - 1 Queenlands/Australia

Prepared by:



Mohd Rothi Hamzah afriQA Ltd 2 February 2013



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1. Introduction

This EOW report is intended to serve as a permanent and accurate record of the Wireline Formation Evaluation program performed on exploration well Triclops-1. Triclops - 1 is located in Queensland Block- ATP 539 and operated by Drillsearch Energy Limited.

An operational audit was performed by afriQA Ltd, a specialist Wireline Operations Quality Assurance consultancy group. An audit was performed for Run 1 (8.5" whole section)

The main purpose of the audit was to ensure:

- The safety culture espoused by the Contractor was consistent with industry norms and compliant with both the Contractor's and the Clients own policies
- That the Formation Evaluation objectives were met
- The Formation Evaluation program was completed in an efficient manner possible
- To assist with continuous improvement

In addition to the EOW report, a technical report for each logging operation performed on Triclops-1 was completed and delivered by afriQA Ltd.

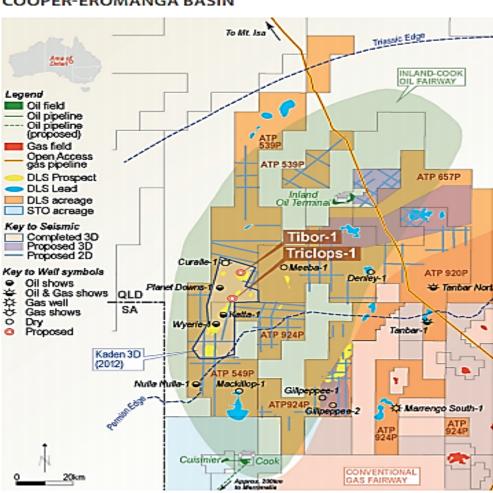
The Formation Evaluation program was performed by Schlumberger. The afriQA audit was performed by Mohd Rothi Hamzah.



2. Critical Formation Evaluation Objectives

The wireline logging programme was a fundamental part of the data acquisition required to achieve the FE objectives, namely the acquisition of appropriate wireline logs to fully evaluate the drilled section as per the detailed logging program.

The main objective of Triclops-1 exploration well is to test the hydrocarbon propectivity of the Inland-Cook Oil Fairway by demonstrating oil migration from the Yamma Yamma Depression into the Western Flank of the SWQ Eromanga Basin. Triclops-1 in ATP 539P, is located approximately 25km east of the South Australian and Queensland border and 250km northeast of Fairway. Triclops-1 is an exploration commitment well in ATP 539P area.



INLAND-COOK OIL FAIRWAY, COOPER-EROMANGA BASIN

Source: Drillsearch Energy Limited

The two closest offset well that can be used to correlate Triclops-1 are Planet Down -1 and Katta-1 well, as shown in the figure above.



Triclops-1 Exploration well is a vertical well. The primary hydrocarbon formation targets are Hutton Sandstone and Birkhead Sandstone formations. The secondary target will be Westbourne Sandstone and Namur Sandstone formations.

To summarize, the main objectives drilling Triclop-1 well are;

- Drill a safe and environmentally sound, low cost well
- Establish presence of oil in place and associated liquids in the primary target: Hutton and Birkhead sandstone formations and secondary target: Westbourne and Namur formations. To also establish the following over these targets
 - o Determine net pay
 - o Evaluate reservoir properties including porosity and hydrocarbon saturation
- TD the well in the Poolowanna Formation to a depth sufficient to meet the well objectives of establishing properties and identifying the presence of hydrocarbons. The planned total depth for Triclops-1 will be +/- 2021 m.
- Run wireline logs including a minimum of GR, Density/Neutron, Sonic and resistivity logs (Laterolog and Dielectric tool)
 - o Run appropriate cement bond logs if required

Having identified the presence of oil and/or associated liquids through mud logs and wireline logging in any one of the 2 primary targets, the next step is to establish the following key reservoir parameters to characterise the reservoir and enable reservoir development planning including estimates of the following for each oil bearing zone. This information is likely to be determined through a combination of wireline results and well testing:

- o Reservoir Fluid properties including gas composition and condensate yield for PVT modelling.
- o Zone pressure and temperature
- o Reservoir kh
- o Skin and non-darcy skin parameters
- o AOF and inflow potential of each zone



3. <u>Safety</u>

There were no LTI's during Schlumberger operations on Triclops -1.

The planning and execution of the well objectives in a safe and environmentally sound manner was a fundamental requirement of all aspects of the drilling programme. All operations were executed in accordance with the HSE management systems and the Schlumberger SOP.

In accordance with these overall objectives, specifically to the wireline logging activities, prior to individual operations, a toolbox talk was held at the worksite where the immediate operation was outlined and any safety issues were discussed between the crews. The Wireline QA Supervisor was present at every Toolbox talk, and reviewed and approved the JSA in agreement with the worksite supervisors.

	PRE-JOB SAFETY MEETING HELD ADEQUATE FOR THE OPERATION	\checkmark
	CORRECT PPE WORN AT ALL TIMES	\checkmark
	RA SOURCE HANDLING PROCEDURES CORRECTLY EXECUTED	\checkmark
	BEFORE AND AFTER LOG SURVEYS COMPLETED	\checkmark
SAFETY	RA STORED IN A SAFE AREA CORRECTLY BARRIERED OFF	\checkmark
UNITED	LIFTING PLAN IN PLACE FOR EQUIPMENT TRANSFER TO AND FROM CATWALK	\checkmark
	SP GROUND CABLES FOR LOGGING IN GOOD CONDITION	\checkmark
	SAFETY SWITCH OPERATIONAL	\checkmark
	GENERAL SAFETY PROCEDURES FOLLOWED AT ALL TIMES	\checkmark

4. General Well Information

Background

The 12.25" open hole section on Triclops-1 was drilled from 24.0 m to 766.0 m. No basic formation evaluation wireline log was performed for this section. The hole was cased with 9 5/8" casing before commencing to drill the Triclops-1, 8.5" hole section. The 8.5" section was drilled from 766.0 m to a total depth (TD) of 1962.5 m at which point wireline log Run 1 and 2 were completed.

The well was planned to be a vertical well. After drilling to 1138 m the well started to build up angle to 2.75 degrees. While waiting for the directional assembly and mud motor to arrive at the well site, drilling was continued using pendulum BHA to 1208 m. The well was then steered and drilled from



1208 m to 1962.5 m to target path when the drill bit failed. The decision was taken to stop drilling and getting ready for wireline operations. The maximum deviation recorded was 3.43 degrees at 1216.8 m.

General

Well	Triclops-1
Block	ATP 539P
Туре	Exploration
Operator	Drillsearch Energy Limited
EWL Contractor	Schlumberger
Area	Roma
Latitude	25° 59' 43.4298" S
Longitude	141° 14' 40.3804" E
Drilling Supervisor	Guy Holmes
Logging Engineer	Astrid Mon Panieda/ Jamie Fraser
Logging Witness	Mohd Rothi Hamzah

<u>Rig data</u>

Rig	ENSIGN 92	18
KB-RT	NA	m
RT-GL	5.2	m
GL-MSL	141.0	m

Sub-surface well information

	Run 1: Triclops - 1
Bit Size	8.5 in
TD Driller	1926.5 m
TD Logger	1926.5 m
Casing Shoe Driller	762.5 m
Casing Shoe Logger	762.7 m
Circulation Stopped at TD	28-Jan-2013 23:40 dd/mm/yy
Circulation Time	70 min
Max Well Deviation	3.43 deg @ 1216.8 mDRT
Casing size	9 5/8 in



Mud system

	Run 1:
Mud Type	KCL-PHB-Polymer
Mud Weight	9.1 ppg
Mud Viscosity	11.0 sec
HPHT Fluid Loss	9.0 cc
РН	9.0
Corr Solids	4.0 %vol
Oil/Water Ratio	NA
CL (whole mud)	33,500 mg/l
Rmf @Temp	0.1649 @ 34.7°C
Rm @ Temp	0.1970 @ 34.2°C
Rmc @ Temp	0.2040 @ 33.7°C

5. Schlumberger tool mnemonics

EDTC	Gamma Telemetry tool
HNGS	Natural Gamma Ray Spectrometry tool
HGNS	Highly Integrated Gamma Ray Neutron Sonde
PEX(TLD)	Platform Express (Three-Detector Lithology Density)
HRLA	High-Resolution Laterolog Array
MAST	Sonic Scanner
ADT	Array Dielectric Tool
SP	Spontaneous Potential
PPC	Powered Caliper
GPIT	General Purpose Inclinometry Tool

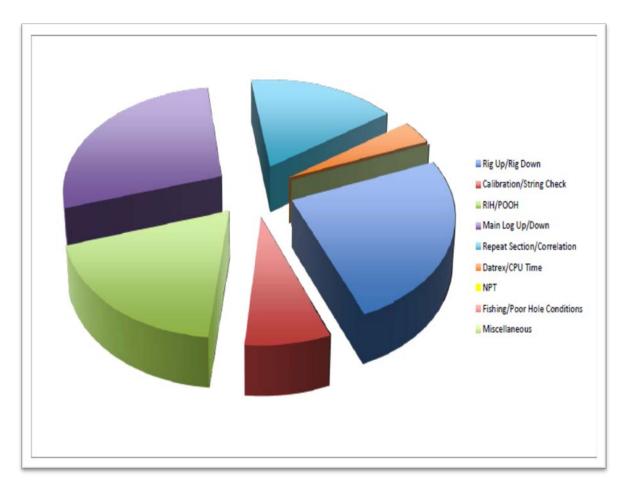


6. Triclops -1 Run 1 Activity summary and Operating Efficiency

For a detailed account of the Activity Summary, please refer to the afriQA Operational Reports for each logging suite.

RUN	SERVICES	RIG UP	RIG DOWN	TOTAL	LOST TIME	BHT
		dd/mm hh:mm	dd/mm hh:mm	TIME	(Contractor)	°C
1	EDTC/SP/HGNS/PEX/HRLA/AD	29/01 10:15	29/01 20:30	10:15	00:00	130
		23/01 10.13	25/01 20.50	10.15	00.00	150
2	EDTC/PPC/MAST/GPIT	29/01 20:30	30/01 04:10	07:40	00:00	130
_				•••••		
	TOTAL TIME FOR WIREL	INE OPERATIONS		17:55	00:00	
	OPERATING EFFICIENCY	(1-LT/OT)x 100		100	.0%	

Triclops-1 Operating Efficiency Run 1 and 2





6.1 Summary Run-1A: EDTC/HGNS/TLD/HRLA/DSLT/SP

Run 1 was completed in 10 hours and 15 min without NPT recorded.

Narrative

Upon arrival at the Triclops-1 wellsite, a complete operational and mobilisation audit was conducted by afriQA representative on the Contractors equipment. Refer to the operational audit report submitted for operational detail of Run 1 logging operations.

After an initial HSE meeting, standard open-hole logging conveyance equipment was rigged up in the derrick. An <u>EDTC/SP/HGNS/PEX-TLD/HRLA/ADT</u> combination was rigged up and run in hole. The Schlumberger primary depth control procedures were followed closely. The first point of reference was taken around 140m. The run in hole speed was set to around 3600 ft/hr to avoid undesired depth slippage for the first run. HRLA and MCFL calibration performed below the casing shoe. The TLD and ADT caliper were also verified inside casing prior to logging down.

Down log was logged from casing shoe to 1870 m and avoiding area around TD. Only HRLA, GR, Spectra GR and TNPH data were valid as all calipers were closed. Another depth control observation was done during down log. The measurements indicated that the downlog depth could be used as depth references. Tools were pulled back to log repeat pass from 1655 to 1555 m for all sensors. This specific interval would cover top of Birkhead sandstone and all Adori sandstone. Upon completion of repeat pass, data and plot were produced to be sent to town.

The main pass was recorded from TD to 50m above casing show depth (762.5 m) at 1800 ft/hr to allow for high resolution playback of the data if required. The main pass data file was depth shifted +0.38m to depth match the down log. On completion of the main pass, the tool string was pulled to surface.

The tool string was kept at 100 m in order to prepare ADT data for processing in town. Due to huge amount of ADT data recorded; the Maxwell program was very slow to process even for the depth shifting.

The tool string was pulled out of the hole, all after-log verifications were performed and the string was rigged down.

<u>Summary</u>

1. Run 1 was the 1st run in the hole and the down log would serve as the main depth reference log as per Schlumberger procedures.



- 2. Experienced over pull over the 1655 to 1555 m interval. Stick and pull observed during the main or the repeat pass, due to major washouts over this interval. The maximum overpull applied on both passes was around 1,600 lbs.
- 3. Neutron was corrected for whole mud salinity of 25616 ppm and logged in Limestone matrix.
- 4. RHOZ Density was corrected for borehole and mud density; and presented in Limestone Compatible scale.
- 5. RXO from the MCFL electrodes failed to function. The inversion process from the HRLA can be used as replacement.
- 6. The hole volume and cement volume was computed from the HCAL calliper (density tool), verified in casing (8.9" ID), tool reading 8.63". HCAL reset to Casing ID.
- 7. Maximum reading BHT from thermometer was 130 Deg C at 1940.5m MDRT 15hrs and 30 min after final TD circulation.
- 8. Bulk Density (RHOZ) and ADT data were affected badly by washout and borehole rugosity.

	OBSERVATIONS AND LOG QUALITY CONTROL					
1. DEPTH CONTROL Run 1 down log was the main depth reference log						
	Good repeatable data recorded. Density corrections (HDRA) within					
2. RHOZ	expected range over gauge hole. Borehole rugosity (washout) affected					
	density data badly.					
3. GR	Good data recorded.					
4 70.0	Good repeatable data recorded. Corrected for whole mud salinity of 25616					
4. TPHI	ppm. Borehole rugosity (washout) affected porosity data badly.					
5. HNGS	Good data recorded. NO Uranium rich formation seen.					
C ADT	Good data recorded. Proper QC cannot be done because of processing					
6. ADT	requirement. All the QC flags were OK.					
7. HRLA	Good repeatable data recorded. Different invasion profile seen when					
	comparing TD section and top section of the log.					

6.2 Summary Run-2: EDTC/PPC/MAST(Sonic Scanner)/GPIT

Run 2 was completed in 7 hours 40 Minutes with no NPT recorded.

<u>Narrative</u>

On completion of Run 1, the PPC/MAST (Sonic Scanner)/GPIT was rigged up. The PPC caliper and GR were calibrated before setting tool "ZERO" depth and run in hole. The crew ran the cable at 60,000 ft/hr to top of 9 5/8" casing shoe before setting the sonic scanner for down log. For down log the



sonic scanner was set for compressional slowness only – BHC mode. In this case, the down log can be logged from casing to 1870 m at 60,000 ft/hr. Run 1 was used for correlation in order to put this log on depth.

The tool was then moved up to 1655.0 m for repeat pass. The repeat pass interval was consistent with run 1. With PPC caliper set to open and sonic scanner set to standard mode (full wave and crosss dipole), the repeat pass was logged from 1655 m to 1550 m. GPIT QC flags were all showing good responses. GPIT data was required in order to orientate the anisotropy seen by the cross dipole sonic processing. The compressional slowness and shear wave slowness (compressional and dipole) were all showing good data. The compressional slowness also follow the same trend seen in the offset well, Planet Down-1. The tool was then moved to TD for main pass.

Main pass was logged using same sonic scanner standard from TD to surface at 1800 ft/hr. GR was also logged to surface as per client request. The sonic scanner data required more processing at Schlumberger data centre.

<u>Summary</u>

- 1. Run 2 was correlated to Run 1
- 2. Sonic scanner was logged in BHC mode for down log in order to log using faster logging speed at 6000 ft/hr.
- 3. Sonic scanner log in standard sonic mode for repeat pass and main pass. Fullwave monopole, inline dipole and cross dipole were recorded in this mode.
- 4. GPIT data and QC flags were all showing good inclinometry data: which were also recorded. GPIT also read good field intensity and field magnetometer for the well.
- 5. PPC caliper showing same borehole washout seen by the density tool. PPC is a 2-axis calipers. The washout only showed on one side of the well with the other orthogonal side still in gauge.

	OBSERVATIONS AND LOG QUALITY CONTROL							
1.	Depth Control	Run 2 down log tied into run 1						
2.	GR	Good repeatable data recorded						
3.	MAST(Sonic Scanner)	Reasonable data recorded. Sonic fullwave						
		and cross dipole need further processing in						
		Schlumberger data centre.						
4.	GPIT	Good data recorded						
5.	РРС	Good data recorded						





Figure-1 Schlumberger tool checkout for Run 1 EDTC/SP/HNGS/PEX-TLD/HRLA/ADT



Figure-2 Showing MCFL buttons situated in between the TLD detectors.





Figure 4- ADT top and lower Transmitters (in the middle) and 4 set-Top and Bottom receivers



Figure 4- ADT caliper and large caliper ring used to calibrate the caliper section.



7. Summary and Recommendations for continuous improvement

During the Triclops-1 wireline logging operations, there were no NPT recorded. The seismic checkshot planned for DRY CASE logging operation was cancelled due to Schlumberger not being able to mobilize on time. The first two runs were performed successfully without any backup tools at all. The mobilizations also included the MDT, MSCT and FMI tools, which were not run. The crew failed to setup the satellite communication due to very low satellite signal received at the wellsite. This setback affected the logging crew to perform real time logs monitoring via "INTERACT".

The assigned engineers for this job were quite new. They appear knowledgeable in operating the logging system and logging tools. However they were still lacking in experiences to read log. They weren't paying attention to how all the data or curves behaving on the screen. They also showed lack of attention to QC all input spectrums, data graph and waveforms, which is the first step to getting good data.

Client faced difficulties to read in time with the logging as the process monitor was also used for display monitor. In future assigning a separate monitor will improve the operation between client and logging engineers. Running MDT without a second screen would negatively impact the process of achieving good results.

Nevertheless, the advantages of schlumberger system and logging tools are its reliability and easiness for engineers to operate with.

7.1 Highlights:

- 1. No accidents recorded during the logging operation.
- 2. No environmental incidents recorded.
- 3. Good commitment shown by the on-site wireline crew to perform the operation in a safe and efficient manner.
- 4. All formation evaluation objectives were met during Run 1 and 2 operations.
- 5. With the exception of RXO data from the MCFL pad of TLD tool, generally good quality data was received.

7.2 Lowlights:

- 1. Full back up strings were not loaded out for the job. This current well location is quite remote and not having the capability of changing tools when tool failures occur is not good practise.
- 2. Crew refusal to check MDT at the wellsite was not acceptable. MDT tool and operations had been in operation for a long time. Hence, the crew should find ways to overcome the problem of handling heavy tool at the wellsite.



- 3. Logging truck was not set up properly for this logging. Plotter wasn't connected to provide plots for QC.
- 4. Logging system should have two monitors; one for process and the other for display. This way log LQC can be done by the client also.
- 5. Data depth shifting took considerable time after logging.
- 6. Slow data transfer due to big data size. For critical data transfer, only required curves or data should be transferred.
- 7. Complete formation slowness should be provided to client for all types sonic run. Engineers should QC the data real time and try to find the best sonic setup to get the best formation slowness result.

Run 1 Wireline operations

1. Run 1 – The RXO reading from the TLD pad failed to operate. The similar RXO reading can also be derived from ADT and HRLA tool through inversion process. Both reading were checked and compared real time, and reading from HRLA appeared to be the best choice.

Run 2 Wireline operations

1. Run 2 – Sonic Scanner slowness were satisfactorily good real time. Engineers still refused to release the shear and stoneley slowness to client.

7.3 Best practices and Continuous improvement:

- 1. Inspect all rig-up equipment before every load out or at the wellsite to ensure operational status
- 2. Mobilise QA/QC supervisor to assist with tool checks in SLB base in ROMA or MOOMBA, reducing time required on site for an audit and in so, significantly reducing the direct cost due to equipment standby rates on site.
- 3. Perform pre-job logging plan review with SLB in ROMA or MOOMBA to ensure correct equipment is mobilised to site for upcoming operations.
- 4. Initiate a customer rig book in aiding efficient hand-over between engineers in charge and being consistent to client requirements.
- 5. Request RITE maintenance history for the specific Schlumberger equipment being mobilised to site.



HEADING INFORMATION & RUN SUMMARY



extending your reach ...

Well	Triclops-1		Rig	Ensign 918		Mud Type	KCL PHB POLYMER	
Block	ATP 539		RKB	NA	m	Mud Weight	9.10	ppg
Туре	Exploration		RT Elevation	5.20	m above GL	Mud Viscosity	11	S
Operator	Drillsearch		Ground Level	141.00	m above MSL	Fluid Loss	9	cc
EWL Contractor	Schlumberger		Bit Size	8.50	in	PH	9.0	
Area	Queensland		TD Driller	1926.50	m	Corr Solids	4.0	%vol
Latitude	25degs 59' 43.42988	" S	TD Logger	1926.50	m	Oil/Water Ratio	NA	
Longitude	141degs 14' 40.38024	" E	CSG Shoe Driller	762.70	m	Cl ⁻ (whole mud)	33,500	mg/L
Drilling Supervisor	Guy Holmes		CSG Shoe Logger	762.50	m	Rmf @ temp	0.1649	34.7 °C
Logging Engineer	Astrid Mon Panieda/J	amie Fisher	Circ Stopped at TD	28-Jan-13 23:40	dd/mm/yy hh:mm	Rm @ temp	0.197	34.2 °C
Logging Witness	Rothi Hamzah/Andrey	v James	Circulation time	70	mins	Rmc @ temp	0.204	33.7 ℃
Job start date	29-Jan-13		Max Dev @ depth	3.43	at 1216.8 m			
SER	VICES	RIG UP		TOTAL TIME	LOST TIME	LOST TIME	TOP LOGGED	DOTTON
		KIG UF	RIG DOWN		LOST TIME	LOST TIME	TOP LOGGED	BOTTOM LOGGED
		dd/mm hh:mm	dd/mm hh:mm	TOTAL TIME	(Due to Contractor)	(3rd party NPT)	INTERVAL (m)	INTERVAL (m)
	n 1 : NGS/PEX/HRLA/ADT			10:15				
ERCD/EDTC/SP/HI	ın 1 :	dd/mm hh:mm	dd/mm hh:mm		(Due to Contractor)	(3rd party NPT)	INTERVAL (m)	INTERVAL (m)

 TOTAL TIME FOR THE LOGGING JOB
 17:55
 0:00

 OPERATING EFFICIENCY (1-LT/OT)x 100
 100.00%

SCHLUMBERGER SERVICE QUALITY

0:00

The Schlumberger logging crew on the Ensign 918 performed well during the logging operation and showed good commitment. Unfortunately due to failures on setting the satellite communication, real time data streaming could not be done. All crew worked safely and no HS&E occurred throughout the logging operations. It could have been better if Schlumberger crew had brought backup tool for 100% coverage. One of the tool failed downhole and the crew had no choice but to log without it. The truck should be equipped with all the required test harness, in order to check the tool properly on surface and trouble shoot any existing problems. The level of experiences of the operators and specialist were good. The level of experiences of the logging engineers were satisfactory. The total operating efficiency was good with the jobs running flawlessly without any operational problems. Good quality geological and petro-physical data was recorded. The equipment failures need to be investigated and reports on error-cause-removal submitted.



EQUIPMENT QA/QC



Well	Triclops-1	TD Driller	1926.50	m	CSG Shoe Driller	762.70 m
Block	ATP 539	TD Logger	1926.50	m	CSG Shoe Logger	762.50 m
EWL Contractor	Schlumberger	Bit Size	8.50	in	Circ Stopped at TD	28-Jan-13 23:40 dd/mm/yy hh:mm
Job date	29-Jan-13	Max Dev @ depth	3.43	at 1216.8 m	Circulation time	70 min
Logging Engineer	Astrid Mon Panieda/Jamie Fisher	Mud Type	KCL PHB POLYMER		Rmf @ temp	0.1649 34.7 °C
Logging Witness	Rothi Hamzah/Andrew James	Mud Weight	9.10	ppg	Rm @ temp	0.197 34.2 °C
Report Date	31-Jan-13	Suite	1		Rmc @ temp	0.204 33.7 °C

Logging Run	ТооІ Туре	Description	Primary Equipment	CALIBRATED	Backup Equipment		
-			Asset Number	CALIBRATED	Asset Number	CALIBRATED	COMMENTS
	LEH-QT	Cable head	9004	NA			
	ECRD	Electrical release cable head	-	NA			8k weak point
	SPA-A	Spontaneous Potential	9999	NA			
	AH-369	Mass Isolation sub	752	NA			
	EDTC-BB	Down hole telemetry	8378	28 January 2013			
	EDTH-B	Down hole telemetry	8379	28 January, 2013			
	HEH-K	Spectral GR HNGS housing	19	NA			
	HNGS-BA	Spectral GR Sonde	19	11 January 2013			
	HNGH-AA	Spectral GR housing	47	NA			
_	HNGC-AA	Spectral GR cartridge	221	NA			
	HNGH-AA	Neutron and Gamma Ray	2954	27 November 2012			
<u>Run 1:</u>	HNGS-BA	Neutron and Gamma Ray	3852	28 January, 2013			
ECRD/EDTC/SP/	HRCC-H	Density Housing	4854	NA			
HNGS/PEX/HRLA/AD	HRMS-H	Density Sonde	4973	NA			
Ţ	HRGD-H	Density Pad	4967	10 January 2013			
	AH-184	Mass Isolation sub	5955	NA			
	HRUC-B	Laterolog Upper cartridge	939	NA			
	HRUH-B	Laterolog Upper housing	933	NA			
	HRLS-B	Laterolog Sonde	928	29 January, 2013			
	HRLC-B	Laterolog Lower cartridge	920	NA			
	HRLH-B	Laterolog Lower housing	915	NA			
_	AH-270	Mass Isolation sub	845	NA			
	HECH-KDB	ADT	772	NA			
	ADC-C	ADT	759	29 January, 2013			
	ADS-C	ADT	761	NA			
	ADP-C	ADT	761	NA			
_	LEH-QT	Cable head	9004				8k weak point
	ECRD	Electrical release cable head	-				
	EDTC-BB	Down hole telemetry	8378	29 January 2013			
	EDTH-B	Down hole telemetry	8379	29 January, 2013			
_	PPC	4-arm Caliper	8291	29 January, 2013			
	ECH-SF	Sonic Scanner	6733	NA			
<u>Run 2:</u>	MAPC-BA	Sonic Scanner	8265	NA			
ECRD/EDTC/PPC/M	MAMS-BA	Sonic Scanner	8262	NA			
AST/GPIT	MASS-BA	Sonic Scanner	8218	NA			
	MAXS-BA	Sonic Scanner	8221	NA			
	GPIH-B	GPIT	2816	28 January 2013			
	DHRU-F	GPIT	1823	NA			
-	GPIC-H	GPIT	1823	NA			
	MSLC	Wireline logging truck	3144	NA			1
Surface	IDW	Depth measuring device	978	26/10/2012			
Sunace	7-46ZVXS	Wireline	75134	NA			
			1				

EQUIPMENT PREPARATION REMARKS

1. Only one (1) set of complete string mobilized to the wellsite

2. Only standalone system was inside the logging truck. No backup system available inside the truck or mobilized for this job.

3. The logging operations were based on DRY CASE programme. The seismic checkshot planned for third run has been cancelled due to unavailability of the vibrator unit.

4. All pre-log verifications performed during pre-job check at surface and before rig-up. Resistivity tools were checked without test harness.

5. Unable to set up satellite communication system due to poor signal.

6. All tool stand-offs calipered manually and the tool diagram handed to the company representative before rig-up.

7. The HNGS tools were cooled with CO2 before rig-up as per Schlumberger SOP.

8. MAST cross operation was tested on surface but dipole waveforms and monopole waveforms were not tested because special shuck or half-trough was not mobilized.

9. All PPC level was checked during surface test. Level 2 will be used for logging with MAST (Sonic Scanner)

10. MDT and MSCT were not tested on surface.



EQUIPMENT QA/QC

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Well	Triclops-1	TD Driller	1926.50	m	CSG Shoe Driller	762.70	m
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Report Date	31-Jan-13	Suite	1		Rmc @ temp	0.204	33.7 °C
						-	

	Equipment QC								
Logging Run	Tool Type	Description	Primary Equipment Asset Number	CALIBRATED	Backup Equipment Asset Number	CALIBRATED	COMMENTS		
	LEH-QT	Cable head	9004						
	ECRD	Electrical release cable head	-						
	EDTC-BB	Down hole telemetry	8611						
	EDTH-B	Down hole telemetry	8600						
	MRPC	MDT power cartridge	1083						
	MRCH	MDT power cartridge housing	1083						
	MRMS	6 Tank sample carrier	75						
	MPSR	450cc Sample chamber							
	MPSR	450cc Sample chamber							
	MPSR	450cc Sample chamber							
	MPSR	450cc Sample chamber							
Run 3: MDT	MPSR	450cc Sample chamber							
	MPSR	450cc Sample chamber							
	MRSC	Sample chamber - large volume							
	MRSC	Sample chamber - large volume							
	MRPO	MDT Pump	734						
	MRSC	Sample chamber - large volume	612						
	MRFA	MDT Fluid analyser	8263						
	MRPO	MDT Pump	734						
	MRHY	MDT hydraulics	751						
	MRPQ	MDT probe section	3290						
	MRPP	MDT Power panel							
	MRTM	MDT communications panel							
	LEH-QT	Cable head	9004						
	SGH-K	Gamma Ray	3322						
	MCCM	Rotary coring tool	239						
Run 4: MSCT	MCEC-AA	Rotary coring tool	240						
	MDMU-AA	Rotary coring tool	8090						
	MCRCM	Rotary coring tool	691						
	MCPP	Power panel	239						

EQUIPMENT PREPARATION REMARKS

1. DRY CASE operations- run 3 and run 4 were cancelled

2. Tools for these runs were not checked.



PRE-JOB QA/QC CHECKS



extending your reach...

CSG Shoe Driller TD Drille Well Triclops-1 1926.50 m 762.70 m CSG Shoe Logge TD Logge ATP 539 1926.50 m 762.50 Block EWL Contractor Bit Size Circ Stopped at TD 28-Jan-13 23:40 dd/mm/yy hh:mm Schlumberger 8.50 in Job date ev @ depth Mud Type 3.43 KCL PHB POLYMER at 1216.8 m Circulation time 70 min 0.1649 34.7 °C 29-Jan-13 Astrid Mon Panieda/Jamie Fisher Max D Logging Engineer Rmf @ temp Logging Witness Report Date Rothi Hamzah/Andrew James Mud Weigh Suite Rm @ tem 0.197 34.2 °C 0.204 33.7 °C 9.1 ppg Rmc @ temp 31-Jan-13 Pre-Job QA/QC Checks STATUS COMMENTS WIRELINE CONTINUITY AND INSOLATION Checked at the base and was recorded on the cable sheet Good CABLEHEAD CONTINUITY AND INSOLATION NA nside the truck NA WIRELINE LENGTH SUFFICIENT FOR LOGGING JOB Primary 75134 = 3900m; WIRELINE TORTURE TEST NA Not checked, readily installed with ERCD and ready to go DEPTH ENCODER SURFACE CHECK NA IDW # 1933 Calibration date 26-Oct-2012. MULTI METER AND MEGGER IN GOOD WORKING ORDER 28/1/2013 GEIGER COUNTER IN GOOD WORKING ORDEF 28 January, 2013 Calibration due date July 2013. SURFACE RA SOURCE INSTALLATION TOOL IN GOOD WOR ING ORDER NA EQUIPMENT SOURCE CATCHER IN GOOD WORKING ORDER 11/1/2013 Using makeup plate - Dual purposes LIFTING CAPS IN GOOD CONDITION AND CERTIFIED NA Certified in in date TOOL STAND-OFFS CALIPERED FOR ACCURATE OD AND DIAGRAMS WITH CO-MAN NA Physically measured OK EQUIPMENT FUNCTIONALLITY CHECK ON PRIMARY AND BACK-UP SYSTEM 27/11/2012 No BACK up tool supplied COPY OF MASTER CALIBRATION ON PRIMARY AND BACK-UP SYSTEM 28 January, 2013 Verified during logging RIG-UP EQUIPMENT CERTIFICATION NA CABLE CUTTER AVAILABILITY NA Not checked WEAK POINT SELECTION 10/1/2013 8k weak point in ECRD. SHOP CALIBRATION NA BEFORE LOG SURVEY NA CALIBRATIONS NA AFTER LOG SURVEY 29 January, 2013 CALIBRATION EQUIPMENT CONDITION PRE-JOB SAFETY MEETING HELD ADEQUATE FOR THE OPERATION NA CORRECT PPE WORN AT ALL TIMES NA RA SOURCE HANDLING PROCEDURES CORRECTLY EXECUTED NA BEFORE AND AFTER LOG SURVEYS COMPLETED NA RA AND EXPLOSIVE BUNKERS STORED IN A SAFE AREA CORRECTLY BARRIERED OFF 29 January, 2013 Stored behind logging truck for transport. NO Bunker SAFETY LIFTING PLAN IN PLACE FOR EQUIPMENT TRANSFER TO AND FROM CATWALK NA Picked up sources using wireline GROUND CABLES FOR EXPLOSIVE OPERATIONS IN GOOD CONDITION NA SAFETY SWITCH OPERATIONAL NA GENERAL SAFETY PROCEDURES FOLLOWED AT ALL TIMES 29 January, 2013 FISHING BOX INVENTORY UPDATED AND COMPLETE 29 January, 2013 Not checked-Short on time-Crew arrived late FISHING EQUIPMENT CERTIFIED AND IN GOOD CONDITION 29 January, 2013 COPY OF FISHING OPERATING PROCEDURES IN THE FISHING BOX NA FISHING FISHING HAND TOOLS IN GOOD OPERATING CONDITION NA TWO UNUSED CABLE HEAD GRAPPLES AVAILABLE NΔ CABLE CLAMP IN GOOD CONDITION NA MALE WET CONNECT CHECKED FOR CONTINUITY AND INSOLATION NA FEMALE WET CONNECT CHECKED FOR CONTINUITY AND INSOLATION 28/1/2013 SIDE ENTRY SUB AVAILABLE AND CERTIFIED NA ALL RELEVANT CROSS-OVERS AVAILABLE AND CERTIFIED NA TLC KIT WET CONNECTS FUNCTION TESTED FOR LATCHING AND SYSTEM COMMUNICATION NA CABLE GUARD AVAILABLE NA TLC HAND TOOL IN GOOD CONDITION NA NA COPY OF TLC PROCEDURES AVAILABLE IN UNIT SYSTEM AND BACK-UP OPERATING CORRECTLY NA No back-up. Stand alone system Need to remedy- brake catching the drum flange when drum moving WINCH IN OPERATIONAL CONDITION Good downward. BACK-UP WIRELINE AVAILABLE ON LOCATION AND IN GOOD CONDITION NA UNIT ALL FLUID LEVELS CHECKED AND SATISFACTOR Good AC'S OPERATIONAL Good Not enough, only one unit available LIGHTS ADQUATE Good POWER PACK AND GENERATOR OPERATIONAL Good UNIT CHECK SHEET COMPLETED BEFORE EVERY JOB Not Done Late arrival to location RE-HEAD SPARE PARTS AVAILABLE Good BACK-OFF EQUIPMENT CHECKED, LABLED AND STORED READY STATE NA MECHANICAL SETTING TOOL OPERATIONAL, REDRESS KITS AVAILABLE NA BOP AVAILABLE, SERVICED AND IN READY STATE NA SQUEEZE GUNS AVAILABLE NA WORKSHOP SPARE CABLE HEAD BUILD, CHECKED AND READY NA AC'S OPERATIONAL NA LIGHTS ADEQUATE NA GR/CCL TOOLS AVAILABLE FOR VARIOUS OPERTIONS AND HOLE ID'S NA HAND TOOLS ADEQUATE NA

PRE-JOB QA/QC REMARKS

1. The Schlumberger crew arrived on site about 16hrs from rig up time. Only the first two (2) confirmed runs were surface checked

2. All down-hole equipment was checked on site as per the Equipment QC sheet

3. All rig-up equipment was checked on site

4. Satellite communication was attempted but failed due to poor 'signal' in this remote location.

5. RA survey was done prior to moving the sources to assigned secured location.

6. Cablehead was already made up, hence cable test only limited to insulation and continuity test.



SEQUENCE OF EVENTS RUN 1



extending your reach...

Well	Triclops-1		TD Driller	1926.50	m	CSG Shoe Driller	762.70 m
Block	ATP 539		TD Logger	1926.50	m	CSG Shoe Logger	762.50 m
EWL Contractor	Schlumberger		Bit Size	8.50	in	Circ Stopped at TD	28-Jan-13 23:40 dd/mm/yy hh:mm
Job date	29-Jan-13		Max Dev @ depth	3.43	at 1216.8 m	Circulation time	70 min
Logging Engineer	Astrid Mon Panieda/Jamie Fisher		Mud Type	KCL PHB POLYMER		Rmf @ temp	0.165 34.7 °C
Logging Witness	Rothi Hamzah/Andrew James		Mud Weight	9.1	ppg	Rm @ temp	0.197 34.2 °C
Report Date	31-Jan-13		Logging Suite	1		Rmc @ temp	0.204 33.7 °C
Start	End	Hre	Code	Operation and Comm	onte		

Start	End	Hrs	Code	Operation and Comments
dd/mm hh:mm	dd/mm hh:mm	(hh:mm)		Run 1: ERCD/EDTC/SP/HNGS/PEX/HRLA/ADT
29/01 10:15	29/01 10:30	0:15	1	Conducted pre-job safety meeting on drill floor
29/01 10:30	29/01 11:40	1:10	1	Rig up wireline equipment and made up Run 1 tool string
29/01 11:40	29/01 12:05	0:25	2	Performed surface Ops checks; Loaded thermometers into cable head
29/01 12:05	29/01 12:25	0:20	2	Installed R/A sources to PEX tool
29/01 12:25	29/01 12:30	0:05	2	Zero tool string at head = 26.05m. Checked head tension at surface = 1435 lb. Surface 1400 lb.
29/01 12:30	29/01 12:40	0:10	3	RIH to 150m to perform depth control for first run
29/01 12:40	29/01 13:25	0:45	3	Continue run in hole to casing shoe @ 762.7 m and performed calipers verification, HRLA and MCFL calibration
29/01 13:25	29/01 14:30	1:05	4	Recorded log file 'log down CS' at 3600ft/hr from 726.0 m to 1870m with SP/HNGS/PEX/HRLA. Stopped at 1760m to do another depth control and continue run in hole to 1870m. Tension up at 3670lbs and HTEN at 1820 lbs.
29/01 14:30	29/01 14:45	0:15	3	Picked up tool to 1665 m for repeat pass. Opened PEX and ADT calipers when approaching close to repeat depth.
29/01 14:45	29/01 15:05	0:20	4	Recorded repeat pass file 'REPEAT Pass' @ 1800ft/hr from 1655 to 1555m (Top of Birkhead and Adori formations) Depth shifted +0.5 m to tie into down pass in the interval 1655 m - 1555 m. Experienced overpull of 1,500lbs due to washout hole.
29/01 15:05	29/01 15:20	0:15	3	Run in hole back to TD and slack cable around 2 m.
29/01 15:20	29/01 17:50	2:30	4	Recorded main pass from TD to 50m above 9 5/8" casing shoe at 1800ft/he in Hi-Resolution (4spf). Experienced tight spot at 1607m and pulling 1600lbs overpull. Data over this depth can be bad due to this stick and pull problems.
29/01 17:50	29/01 18:20	0:30	3	POOH and stopped at 100m for safety with radiation sources.
29/01 18:20	29/01 19:00	0:40	6	Standby at 100m to process data for transfer to town- ADT data priority to be processed to decide next runs
29/01 19:00	29/01 19:30	0:30	3	Pull out of hole, on surface and remove R/A sources.
29/01 19:30	29/01 20:30	1:00	1	At surface and rig down Run 1 tool string
Total hours:		10.25	(decimal)	
Logging Codes:		•	•• /	
1. Rigging up, rigging	down	4. Logging up, logging	g down	7. NPT due to wireline
2. Calibrations, tool ch	ecks	5. Repeat Section, de	pth correlation	8. Drilling / wellbore co
3. Running in, pulling o	out of hole	6. Data transmission,	CPU time.	

REMARKS

1. Run 1 was the first run in the hole and will serve as the primary depth reference. A depth shift of +0.12m was applied to get the first repeat pass on depth with downlog. A further +0.36m adjustment required by the main pass to put on depth with down log.

2. All wireline depth was measured from RT - 5.2 m above GL.

3. Run 1 was deployed on wireline. All passes were done in high resolution (2")

4. PEX/ADT data was adversely affected by borehole conditions in sections resulting in stick and pull during Run 1. Severe stick and pull between 1605 and 1607m due to washout borehole. Maximum over pull applied was 1600lbs. Pads closed and opened to free the tool. A repeat log was completed over this interval when the stick and pull observed were improving.

5. TLD PEX was recorded in Limestone matrix and real time borehole corrections were applied.

6. The SP data was recorded for all passes. No noisy SP experienced during logging.

7. The LDT calliper read 8.6" and ADT caliper read 8.3" inside casing. True casing ID = 8.914". Caliper data was corrected to true casing ID before recording repeat and main pass.

8. The HRLA run stood off at high resolution. 2 rubber standoffs were positioned below and above the sonde.

9. The top tool string was run, decentralised using decentralizer on the Neutron Housing. The tool below PEX ran with a knuckle joint to position HRLT about 2" from the borehole wall. Another knuckle joint below the HRLA was used to make the ADT decentralized again.

10. Total hole volume = 48.31 m^3 computed from 1926.5 m - 730 m using data from HRMS (CALI)-arm calliper.

11. Total cement volume = 30.42 m^3 computed from 1926 m - 730 m using data from HRMS (CALI)-arm calliper for 5.5" casing to set.

12. The borehole temperature from the maximum reading themometers were 129 degC, 130 degC and 129 degC at 1920.0 m, 15 hrs 40 mins after bottom hole circulation at TD.

	OBSERVATIONS AND LOG QUALITY CONTROL
1. DEPTH CONTROL:	Run1 will serve as the main depth reference file. Downlog was used as the reference after doing measurement on surface and close to TD.
2. EDTC:	Good repeatable data recorded.
3. HNGS:	The spectra data real-time QC flags were all good. No anomalies seen on the log
4. PEX:	Density and Neutron data affected by the borehole washout and rugosity. Stick and pull over these zones also affected the data. Over the gauge hole, data was repeated well. MCFL -for rxo data failed to read correctly
5. SP:	Good data recorded - SP data recorded for all passes.
6. HRLA:	Good repeatable data recorded. FMI image data affected in wash-outs and slight amount of stick/slip. Tool requires good pad contact to work well. Output curves/data were not QC while logging due to requiring further processing by DCS(Schlumberger).
7. ADT:	The QC flags were found to be good while logging.



SEQUENCE OF EVENTS RUN 2



extending your reach...

Well	Triclops-1	TD Driller	1926.50	m	CSG Shoe Driller	762.70 m
Block	ATP 539	TD Logger	1926.50	m	CSG Shoe Logger	762.50 m
EWL Contractor	Schlumberger	Bit Size	8.50	in	Circ Stopped at TD	28-Jan-13 23:40 dd/mm/yy hh:mm
Job date	29-Jan-13	Max Dev @ depth	3.43	at 1216.8 m	Circulation time	70 min
Logging Engineer	Astrid Mon Panieda/Jamie Fisher	Mud Type	KCL PHB POLYMER		Rmf @ temp	0.165 34.7 °C
Logging Witness	Rothi Hamzah/Andrew James	Mud Weight	9.1	ppg	Rm @ temp	0.197 34.2 °C
Report Date	31-Jan-13	Logging Suite	1		Rmc @ temp	0.204 33.7 °C

Start End		Hrs	Code	Operation and Comments				
dd/mm hh:mm	dd/mm hh:mm	(hh:mm)		Run 2 - ERCD/EDTC/PPC/MAST/GPIT				
29/01 20:30	29/01 21:30	1:00	1	Rig-up Run 2 tool string				
29/01 21:30	29/01 21:40	0:10	1	Installed thermometers in cable head.				
29/01 21:40	29/01 22:10	0:30	2	Performed tool string ops check at surface. Calibrated EDTC(GR). Zero tool string at 19.13m.				
29/01 22:10	29/01 22:30	0:20	3	RIH to 9 5/8" casing shoe.				
29/01 22:30	29/01 23:20	0:50	4	Recorded downlog in BHC mode from casing shoe to 1870.0 m at 6,000 ft/hr				
29/01 23:20	29/01 23:40	0:20	3	Pulled up to 1655m for Repeat pass over birkheads and Adori formations				
29/01 23:40	29/01 23:55	0:15	4	Recorded repeat pass with Sonic Scanner set for Standard Mode (Fullwave monopole/Inline and X-dipole)				
29/01 23:55	30/01 00:10	0:15	3	RIH back to TD for Main pass and slack 2 m.				
30/01 00:10	30/01 03:15	3:05	5	Recorded Main pass from TD to surface.				
30/01 03:15	30/01 04:00	0:45	1	Verified EDTC(GR) and rig down run 2				
30/01 04:00	30/01 04:10	0:10	1	Completed rig down Schlumberger.				
Total hours:		7.67	(decimal)					
Logging Codes: 1. Rigging up, rigging o 2. Calibrations, tool cho 3. Running in, pulling o	ecks	 Logging up, logging Repeat Section, dep Data transmission, 0 	oth correlation	7. NPT due to wireline 8. Drilling / wellbore co				

REMARKS

1. Run 2 was tied into Run 1 depth at 1655 m. Run 1 is the main depth reference file.

2. The GPIT real time QC flag indicated good data. All the reading seen during logging were within the tolerances of this location. 3. Sonic scanner (MAST) was logged in Standard mode to acquire inline dipole, cross dipole and monopole data sets. The DT compressional was compared with the offset well and the reading were all within ranges. The DTS from the inline dipole were also reading good with a very tight coherence confidences.

4. Cross dipole data were not QC during logging but the raw waveforms look fine. More processing required to be done by geoscience centre.

5. PPC caliper showed all the breakouts over the washout zone were one sided-at minimum stress.

6. All tool ran centralized using 4 slipover centralizers and standoff on the MAST isolator section.

7. Sonic scanner and GR were logged to surface. Sonic scanner was logged using the same standard mode.

8. The borehole temperature from the maximum reading themometers were 131 degC, 131 degC and 130 degC at 1905.0 m, 24 hrs 30mins after bottom hole circulation at TD.

OBSERVATIONS AND LOG QUALITY CONTROL

1. DEPTH CONTROL:	Log correlated to Run 1 - ECRD/EDTC/SP/HNGS/PEX/HRLA/ADT
2. EDTC:	Good repeatable data recorded.
	Caliper from PPC showed same washout as seen from the PEX-TLD caliper. Interesting part was the washout only happened to one of the orthogonal calipers. This indicated breakout only on the low stress side of the formation.
4. MAST:	The compressional arrival read almost the same as the offset well used for Triclops-1. The inline dipole, cross dipole and monopole worked well as seen on the display screen.



Operating Efficiency Chart



Drillsearch Energy Limited

Triclops-1 Runs 1 - 2





SUMMARY AND RECOMMENDATIONS



Bick AIP 532 To Logger 122.50 m CS 6 shoe Logger 722.50 Job date 23-Jan-13 Mud Tyge (XCPH POLYNE) 3.43 at 1216.8 m Rm 6 temp 0.163 5J.47 C Logging mynnes Ruti Man Panical/Amie Fiher Mud Tyge (XCPH POLYNE) Rm 6 temp 0.163 5J.47 C Ropt Date Si Jan-13 Mud Weght 9.1 pgg Rm 6 temp 0.153 5J.47 C Ropt Date Si Jan-13 Mud Weght 9.1 pgg Rm 6 temp 0.153 5J.47 C Ropt Date Si Jan-13 Rm 6 temp 0.153 5J.47 C Rm 6 temp 0.204 5J.37 C Ropt Date Right Date All of 200 0.153 7 C Rm 6 temp 0.204 5J.37 C Ropt Date Right Date Jan 12 BC/DEDTC/PPC/MAS/PEX/RL/ADT 2401 20-30 10.15 00.00 00.00 130.0 1926.5 TOTAL TAME FOR WRELNE OPERATIONS 17.55 0.00 00.00 131.0 1926.5 OPERATING EFFCRENCY (L1.TOTA: 100 17.55 0.00 00.00 131.0 1926.5 OPERATING EFFCRENCY (L1.TOTA: 100 100.074 00.00 00.00 130.0 1926.5 OPERATING EFFCRENCY (L1.TOTA: 100 100.074 00.00 00.00 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>												
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The main pass was done from TD to 50m above 9 5/8 casing shoe. No scale all the auxiling risk may and neutron data were badly affected. A couple of stick and pulls were also experienced during recording. The maximum overpull applied to get free was around 1600bs. The main pass was done from TD to 50m above 9 5/8 tring, for the cross dipole process to provide the asimultial direction of the anisotropy. The PC was used for tool centralization and to provide and cross dipole. The GPT was in the SPC data showed the same was about severity as density run burn of in one direction of the PPC ottoshogonal caligner. This highlighted the possibility of running dual density or short-axis arrangeme over the same formations on the next well. Tool reached surface without any problem and rigged down safely. IDENTIFY INCLUDED 1. Ocod commitment shown by the logging crew during the entire operation. 2. Good quality geological and petrophysical data recorded. 3. Good calaboration between SE-thimberger office based personnel and the field to process the ADT log. 4. No HS&E issues during the entire operation. 2. Standalone system with									
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Appendix 11 – Petrophysical Report

Provided electronically on CD

Appendix 12 – MudLogging Data (Geoservices)

Provided electronically on CD

DATA PROCESSING REPORT

Triclops 1 Well Completion Report:

- Appendix 8 Geologists's Composite Log
- Appendix 10 Wireline Report Logs
- Appendix 11 Petrophysical Report Data
- Appendix 12 Mudlogging Data

DUE TO ITS LARGE FILE SIZE

DATA CAN BE OBTAINED FROM

QDEX Scanning Manager Department of Natural Resources and Mines (DNRM) Geological Survey of Queensland Exploration Data Centre

68 Pineapple St. Zillmere Queensland Australia 4034

Phone 07 3863 8715 Fax 07 3263 7019